As filed with the Securities and Exchange Commission on December 3, 2024

Registration No. 333-282357

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

AMENDMENT NO. 1
TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

FIREFLY NEUROSCIENCE, INC.

(Exact name of registrant as specified in its charter)

Delaware	7372	54-1167364
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(IRS Employer Identification Number)**

Jon Olsen
Chief Executive Officer
1100 Military Road
Kenmore, NY 14217
(888) 237-6412

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Jon Olsen
Chief Executive Officer
1100 Military Road
Kenmore, NY 14217
(888) 237-6412

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Rick A. Werner, Esq.
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30 Rockefeller Plaza, 26th Floor
New York, NY 10112
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Approximate date of commencement of proposed offer to the public: From time to time after this Registration Statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 (the "Securities Act") check the following box: ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large, accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large, accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large, accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(A) OF THE SECURITIES ACT OF 1933 OR UNTIL THIS REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE SEC, ACTING PURSUANT TO SAID SECTION 8(A), MAY DETERMINE.

The information in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the U.S. Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and does not constitute the solicitation of offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED DECEMBER 3, 2024

PRELIMINARY PROSPECTUS

FIREFLY NEUROSCIENCE, INC.

990,192 Shares of Common Stock

Up to 504,323 Shares of Common Stock Underlying Pre-Funded Warrants

Up to 823,530 Shares of Common Stock Underlying Private Placement Warrants

Up to 168,071 Shares of Common Stock Underlying Series C Warrants

Up to 61,866 Shares of Common Stock Underlying Series D Warrants

Up to 11,663 Shares of Common Stock Underlying Broker Warrants

This prospectus relates to the offer and sale, from time to time, by the selling securityholders named in this prospectus or their permitted transferees (the "selling securityholders") of an aggregate of 2,559,645 shares of common stock, par value $0.0001 per share ("Common Stock") of Firefly Neuroscience, Inc., a Delaware corporation ("Firefly," the "Company," "we," "us" or "our"), consisting of (A) 670,985 shares of Common Stock, which include: (i) 209,613 shares of Common Stock issued upon the conversion of certain shares of Series C Preferred Stock, par value $0.0001 per share, issued to the investors in a series of private placement transactions as part of the Series C units (the "Series C Financing"), which such units consist of shares of Series C Preferred Stock and warrants (the "Series C Warrants") to purchase shares of Common Stock (the "Series C Units") and (ii) 461,372 shares of Common Stock previously issued by Private Firefly after the Effectiveness Date (as defined below); (B)(i) 319,207 shares of Common Stock (the "PIPE Shares") issued to the investors in a private placement transaction (the "Private Placement" and such investors, the "PIPE Investors") pursuant to that certain Securities Purchase Agreement, dated as of July 26, 2024, by and among us and the PIPE Investors, (ii) up to 504,323 shares of Common Stock issuable upon the exercise of the pre-funded warrants (the "Pre-Funded Warrants") issued to the PIPE Investors, and (iii) up to 823,530 shares of Common Stock issuable upon the exercise of the private placement warrants (the "Warrants") issued to the PIPE Investors; (C) up to 168,071 shares of Common Stock issuable upon the exercise of the Series C Warrants issued to the investors in the Series C Financing; (D) up to 61,866 shares of Common Stock issuable upon the exercise of certain Series D Warrants issued to certain consultants of the Company for prior consulting services rendered (the "Series D Warrants"); and (E) up to 11,663 shares of Common Stock issuable upon the exercise of warrants issued to certain brokers as compensation in connection with certain transactions consummated prior to the Merger (as defined below) (the "Broker Warrants").

The shares of Common Stock, including the PIPE Shares, the shares of Series C Preferred Stock, the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants were issued in reliance upon the exemption from the registration requirements in Section 4(a)(2) of the Securities Act of 1933, as amended (the "Securities Act") and Regulation D promulgated thereunder.

On August 12, 2024 (the "Closing Date"), we consummated the reverse merger transaction (the "Merger") contemplated by that certain Agreement and Plan of Merger, dated as of November 15, 2023 (as amended from time to time, the "Merger Agreement"), by and among WaveDancer, Inc., a Delaware corporation ("WaveDancer"), FFN Merger Sub, Inc., a Delaware corporation and wholly owned subsidiary of WaveDancer ("FFN"), and Firefly Neuroscience, Inc., a Delaware corporation ("Private Firefly"), pursuant to which FFN merged with and into Private Firefly, with Private Firefly surviving the merger as a wholly owned subsidiary of WaveDancer. On the Closing Date (i) pursuant to the Amended and Restated Certificate of Incorporation of WaveDancer, we changed our name to Firefly Neuroscience, Inc., and (ii) pursuant to an amendment to its Certificate of Incorporation, Private Firefly changed its name to Firefly Neuroscience 2023, Inc. and (iii) Private Firefly and FFN filed the Certificate of Merger with the State of Delaware. At the effective time of the Merger, among other things: (i) each outstanding share of Private Firefly common stock was converted into the right to receive the number of shares of the Company Common Stock equal to the Exchange Ratio, as described herein and (ii) we assumed all of Private Firefly's rights and obligations under the warrants that were outstanding and unexercised as of immediately prior to the effective time of the Merger, and such warrants became become exercisable for shares of our Common Stock.

In addition, in connection with the Merger, we filed a registration statement on Form S-4 on January 22, 2024, which such registration statement was declared effective by the Securities and Exchange Commission on February 6, 2024 (the "Effectiveness Date").

The selling securityholders will receive all of the proceeds from any sales of the shares offered hereby. We will bear all costs, expenses and fees in connection with the registration of the shares of Common Stock. The selling securityholders will bear all commissions and discounts, if any, attributable to their respective sales of the shares of Common Stock. We will not receive any of the proceeds, but we will incur expenses in connection with the offering. To the extent the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants are exercised for cash, if at all, we will receive the exercise price of such warrants. We intend to use those proceeds, if any, for general corporate purposes.

Our shares of Common Stock are listed on the Nasdaq Capital Market ("Nasdaq") under the symbol "AIFF." On December 2, 2024, the closing sale price of shares of our Common Stock was $3.21.

Investing in our securities involves significant risks. Investing in shares of our Common Stock involves risks that are described in the "Risk Factors" section beginning on page 8 of this prospectus to read about the factors you should consider before buying our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2024.

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You should rely only on the information contained in this prospectus. No one has been authorized to provide you with information that is different from that contained in this prospectus. This prospectus is dated as of the date set forth on the cover hereof. You should not assume that the information contained in this prospectus is accurate as of any date other than that date.

For investors outside of the United States: We have not done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of our securities and the distribution of this prospectus outside the United States.

This document contains references to trademarks and service marks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that the applicable licensor will not assert, to the fullest extent under applicable law, its rights to these trademarks and trade names. Firefly does not intend its use or display of other companies' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of Firefly by, any other companies.

Notwithstanding references thereto in this prospectus, Firefly's website is not part of and is not incorporated in the prospectus, and you should not consider information found on Firefly's website to be part of this prospectus.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this prospectus may constitute "forward-looking statements" for purposes of the federal securities laws and the Private Securities Litigation Reform Act of 1995. Forward-looking statements are any statements that look to future events and include, but are not limited to, statements regarding our business strategy, plans and objectives; anticipated future operating results and operating expenses, cash flows, capital resources, and liquidity; trends, opportunities and risks affecting our business, industry and financial results; the expected benefits of use of our solutions; future expansion or growth plans and potential for future growth; our business prospects; our systems and technology, future profitability; the sufficiency of our existing cash and cash equivalents to meet our working capital and capital expenditure needs over the next twelve months; acquisitions; and our expectations or beliefs concerning future events. In addition, the words "anticipates," "appear," "approximate," "believe," "continue," "could," "estimate," "expect," "foresee," "intends," "may," "might," "plan," "possible," "potential," "predict," "project," "seek," "should," "would" and similar expressions may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking. Forward-looking statements are neither historical facts nor assurances of future performance, and are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Therefore, you should not place undue reliance on these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following:

- fluctuation and volatility in market price of our Common Stock due to market and industry factors, as well as general economic, political and market conditions;
- the impact of dilution on our stockholders, including through the issuance of additional equity securities in the future;
- our ability to realize the intended benefits of the Merger;
- the impact of our ability to realize the anticipated tax impact of the Merger;
- the outcome of litigation or other proceedings may become subject to in the future;
- delisting of our Common Stock from Nasdaq or the failure for an active trading market to develop;
- the failure of our altered business operations, strategies and focus to result in an improvement for the value of our Common Stock;
- the availability of and our ability to continue to obtain sufficient funding to conduct planned operations and realize potential profits;
- our limited operating history;
- the impact of the complexity of the regulatory landscape on our ability to seek and obtain regulatory approval for its BNA Platform, both within and outside of the U.S.;
- challenges that we may face with maintaining regulatory approval, if achieved;
- the impact of the concertation of capital stock ownership with our insiders on stockholders' ability to influence corporate matters.
- the impacts of future acquisitions of businesses or products and the potential to fail to realize intended benefits of such acquisition;
- the potential impact of changes in the legal and regulatory landscape, both within and outside of the U.S.;
- our dependence on third parties;
- challenges we may face with respect to our BNA Platform achieving market acceptance;
- the impact of pricing of our BNA Platform;
- emerging competition and rapidly advancing technology in our industry;
- our ability to obtain, maintain and protect its trade secrets or other proprietary rights, operate without infringing upon the proprietary rights of others and prevent others from infringing on its proprietary rights;
- our ability to maintain adequate cyber security and information systems;
- our ability to generate sufficient revenue to achieve and sustain profitability;
- the risk that our significant increased expenses and administrative burdens as a public company could have an adverse effect on our business, financial condition and results of operations; and
- the other factors set forth in the section of this prospectus entitled "Risk Factors."

These forward-looking statements are based on information available as of the date of this prospectus and current expectations, forecasts and assumptions, and involve a number of judgments, risks and uncertainties. Accordingly, forward-looking statements should not be relied upon as representing our views as of any subsequent date, and we do not undertake any obligation to update forward-looking statements to reflect events or circumstances after the date they were made, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

FREQUENTLY USED TERMS

"2024 Plan" means the Firefly Neuroscience, Inc. 2024 Long-Term Incentive Plan.

"AI" means artificial intelligence.

"BNA Platform" means Firefly's FDA-510(k) cleared Brain Network Analytics software platform.

"Board" means the Board of Directors of Firefly.

"Broker Warrants" means the warrants to purchase shares of Common Stock issued to certain brokers as compensation in connection with certain transactions consummated prior to the Merger.

"Bylaws" means the Amended and Restated Bylaws of Firefly Neuroscience, Inc.

"Charter" means the Amended and Restated Certificate of Incorporation of Firefly Neuroscience, Inc.

"Closing Date" means August 12, 2024, the closing date of the Merger.

"Common Stock" means the shares of common stock of Firefly Neuroscience, Inc., par value $0.0001 per share.

"DGCL" means the General Corporation Law of the State of Delaware.

"EEG" means electroencephalograms.

"Effectiveness Date" means February 6, 2024, the date on which the SEC declared the registration statement on Form S-4 (File No. 333-276649) effective.

"Exchange Act" means the U.S. Securities Exchange Act of 1934, as amended.

"Exchange Ratio" means 0.1040, the ratio in which the shares of WaveDancer Common Stock were converted to shares of Firefly Common Stock.

"FDA" means the U.S. Food and Drug Administration.

"GAAP" means U.S. generally accepted accounting principles.

"Merger" means the reverse merger transaction contemplated by the Merger Agreement.

"Merger Agreement" means that certain Agreement and Plan of Merger, dated as of November 15, 2023, as amended by that certain Amendment No. 1 on January 12, 2024, and that certain Amendment No. 2 on June 17, 2024, by and among Firefly Neuroscience, Inc. (formerly known as WaveDancer, Inc.), FFN Merger Sub, Inc. and Firefly Neuroscience 2023, Inc. (formerly known as Firefly Neuroscience, Inc.)

"Nasdaq" means the Nasdaq Capital Market.

"FFN" or "Merger Sub" means FFN Merger Sub, Inc., a Delaware corporation.

"Firefly" means Firefly Neuroscience, Inc., a Delaware corporation (formerly known as WaveDancer, Inc. prior to the consummation of the Merger).

"PIPE Investors" means the investors signatory to the Securities Purchase Agreement in the Private Placement.

"PIPE Shares" means the shares of Common Stock issued and sold in the Private Placement pursuant to the Securities Purchase Agreement.

"Pre-Funded Warrants" means the pre-funded warrants to purchase up to an aggregate of 504,323 shares of Common Stock at an exercise price of $0.0001 per share, issued to the PIPE Investors in the Private Placement.

"Private Firefly" means Firefly Neuroscience, Inc. a company incorporated under the State of Delaware

"Private Placement" means the private placement transaction contemplated by the Securities Purchase Agreement, which closed on August 12, 2024, simultaneously with the closing of the Merger.

"SEC" means the U.S. Securities and Exchange Commission.

"Securities Act" means the U.S. Securities Act of 1933, as amended.

"Securities Purchase Agreement" means that certain Securities Purchase Agreement to purchase shares of Common Stock, Pre-Funded Warrants and Warrants of Firefly, dated as of July 26, 2024, by and between Firefly and the purchasers named therein.

"selling securityholders" means the securityholders named in this prospectus.

"Series C Financing" means a series of private placement transactions of Series C Units conducted by Private Firefly between February 6, 2024, and the date of this prospectus.

"Series C Preferred Stock" means the shares of Series C Preferred Stock, par value $0.0001 per share, issued to investors to Series C Financing.

"Series C Units" means the shares of Series C Preferred Stock and Series C Warrants issued in connection with the Series C Financing.

"Series C Warrants" means the warrants to purchase shares of Common Stock issued as part of the Series C Units to investors in Series C Financing.

"Series D Warrants" means the warrants to purchase shares of Common Stock issued as compensation to certain consultants of Private Firefly for prior consulting services rendered.

"Warrants" means the warrants to purchase up to an aggregate of 823,530 shares of Common Stock at an exercise price of $0.71 per share, issued to the PIPE investors in the Private Placement.

"Warrant Shares" means, collectively, the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants.

"WaveDancer" means WaveDancer, Inc., a Delaware corporation (which was renamed Firefly Neuroscience, Inc. in connection with the Merger).

MARKET AND INDUSTRY DATA

Certain industry data and market data included in this prospectus were obtained from independent third-party surveys, market research, publicly available information, reports of governmental agencies and industry publications and surveys. All of management's estimates presented herein are based upon management's review of independent third-party surveys and industry publications prepared by a number of sources and other publicly available information. All of the market data used in this prospectus involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. We believe that the information from these industry publications and surveys included in this prospectus is reliable. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section titled "Risk Factors." These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

BASIS OF PRESENTATION

On the Closing Date, FFN merged with and into Private Firefly, with Private Firefly surviving the merger as a wholly owned subsidiary of WaveDancer, Inc. Additionally on the Closing Date, (i) pursuant to the Amended and Restated Certificate of Incorporation of WaveDancer, we changed our name to "Firefly Neuroscience, Inc.," (ii) pursuant to an amendment to its Certificate of Incorporation, Private Firefly changed its name to Firefly Neuroscience 2023, Inc. and (iii) Private Firefly and FFN filed the Certificate of Merger with the State of Delaware. Unless the context indicates otherwise, references in this prospectus to the "Company," "Firefly," "we," "us," "our" and similar terms refer to Firefly Neuroscience, Inc. (formerly known as WaveDancer, Inc.) and its consolidated subsidiaries after the consummation of the Merger. References to "WaveDancer" refer to the predecessor company prior to the consummation of the Merger. References to "Private Firefly" refer to Firefly Neuroscience, Inc. and its consolidated subsidiaries prior to the consummation of the Merger.

Additionally, unless otherwise noted, share and per-share figures reflect the 1-for-3 reverse stock split of WaveDancer effectuated on August 12, 2024, and the application of the Exchange Ratio, as applicable.

PROSPECTUS SUMMARY

This summary highlights selected information from this prospectus and may not contain all of the information that is important to you in making an investment decision. Before investing in our securities, you should carefully read this entire prospectus, including our financial statements and the related notes included in this prospectus and the information set forth under the headings "*Risk Factors*" *and* "*Management's Discussion and Analysis of Financial Condition and Results of Operations*." *See also the section entitled* "*Where You Can Find Additional Information.*"

Overview

We are an Artificial Intelligence ("AI") technology company developing innovative neuroscientific solutions that improve brain health outcomes for patients with mental illnesses and neurological disorders. Our FDA-510(k) cleared Brain Network Analytics software platform (the "BNA Platform") and is focused on advancing diagnostic and treatment approaches for people suffering from mental illnesses and cognitive disorders, including depression, dementia, anxiety disorders, concussions, and attention-deficit/hyperactivity disorder. We have taken a period of 15 years and an investment of approximately $60 million, to develop the software, compile the requisite database of brain wave tests, gain patent protection, and receive Federal Drug Administration ("FDA") approval to market and sell the BNA Platform. The BNA Platform is a software as a medical solution that was developed using AI through unsupervised machine learning (via clustering analysis) on our extensive proprietary database of standardized, high-definition longitudinal electroencephalograms ("EEG") of over 17,000 patients representing twelve disorders, as well as clinically normal patients. The BNA Platform, in conjunction with an FDA-cleared EEG system, can provide clinicians with comprehensive insights into brain function (cognition). These insights can enhance a clinician's ability to accurately diagnose mental illnesses and cognitive disorders and to evaluate what therapy or drug is best suited to optimize a patient's outcome.

W As of the date of this filing, the BNA Platform has been developed and is in the pre-commercial stages, but has not yet been launched and is not available on the market. We currently do not have any products available on the market. We are currently planning to undertake a commercial launch of the BNA Platform in the first half of 2025. We do not expect that additional development costs to achieve this commercial launch will be material. We believe there is great potential for such commercialization, both with respect to pharmaceutical companies in their drug research and clinical trial activities, as well as medical practitioners in their clinics. In concert with the commercialization of BNA Platform, we are collaborating with neuroscience drug development companies to support their clinical strategies. We plan to generate revenue through two segments: through the use of BNA Platform by United States neurologists and through collaborations with pharmaceutical companies in support of neuroscience drug development.

The clinical utility of EEG technology to support better outcomes for patients with mental illnesses and cognitive disorders has been well documented. Historically, clinical adoption of EEG by medical professionals, including psychiatrists, neurologists, nurse practitioners and general practitioners, has been limited due to the complexity of interpreting EEG recordings and the inability to practically compare a patient's brain function to that of a clinically normal age-matched patient. we believe that without defining a standard deviation to the norm, it is not possible to objectively assess brain function. By establishing an objective baseline measurement of brain function, the BNA Platform enables clinicians to optimize patient care, leading to improved outcomes for people suffering from mental illnesses and cognitive disorders.

Our value proposition is supported by real-world use of the BNA Platform. Incorporating the BNA Platform as part of a patient management protocol demonstrated improved response rates, enhanced therapy compliance, reduced non-responder rates and a reduction in need for medication switching among patients. Further, we believe that our extensive clinical database, when combined with advanced AI, provides the opportunity to identify clinically relevant biomarkers that will support better patient outcomes through precision medicine and companion diagnostics. We expect to gather additional data through the clinical deployments and clinical studies conducted by drug companies. This additional data should allow us to discover new biomarkers and objectively measure the impact of therapeutic interventions on patients of different types, further enhancing our platform's effectiveness. We believe that we will be able to enhance accurate diagnosis and predict what therapy or drug, or a combination thereof, is best suited to optimize patient outcomes. This represents a paradigm shift in how clinicians manage patients with mental illnesses and cognitive disorders holding the potential to transform brain health.

Recent Developments

Merger with WaveDancer, Inc.

On November 15, 2023, Private Firefly entered into the Merger Agreement with WaveDancer and FFN. On August 12, 2024, FFN merged with and into Private Firefly, with Private Firefly surviving the Merger as a wholly owned subsidiary of WaveDancer. Additionally on August 12, 2024, (i) pursuant to the Amended and Restated Certificate of Incorporation of WaveDancer, we changed our name to "Firefly Neuroscience, Inc.," (ii) pursuant to an amendment to its Certificate of Incorporation, Private Firefly changed its name to Firefly Neuroscience 2023, Inc. and (iii) Private Firefly and FFN filed the Certificate of Merger with the State of Delaware. Additionally on August 12, 2024, prior to the consummation of the Merger, WaveDancer effectuated a 1-for-3 reverse stock split of its common stock. On August 12, 2024, the Merger closed, and on August 13, 2024, we began trading on Nasdaq under the ticker symbol "AIFF."

Private Placement

On July 26, 2024, prior to the consummation of the Merger, we entered into a securities purchase agreement with certain institutional investors, pursuant to which we agreed to issue and sell an aggregate of (i) 319,207 PIPE Shares (or 7,918,552 Shares and/or Pre-Funded Warrants (as defined below) in lieu thereof prior to adjustment for the Exchange Ratio), (ii) pre-funded warrants (the "Pre-Funded Warrants") to purchase up to 504,323 shares of our Common Stock, and (iii) warrants (the "Warrants") to purchase up to 823,530 shares of Common Stock in the Private Placement (or Warrants to purchase up to 7,918,552 shares of Common Stock prior to adjustment for the Exchange Ratio). The purchase price of each PIPE Share and accompanying Warrant was $4.25 (0.442 prior to the adjustment for the Exchange Ratio) and the purchase price of each Pre-Funded Warrant and accompanying Warrant was $4.249 (0.4419 prior to the adjustment for the Exchange Ratio). The Private Placement closed on August 12, 2024, substantially contemporaneously with the consummation of the Merger. The aggregate gross proceeds from the transaction were approximately $3.5 million before deducting estimated offering expenses payable by us.

Series C Financing

Between October 17, 2023, and June 30, 2024, we raised an aggregate of $3,039,000 from a private placement of 2,374,219 Series C units (the "Series C Units"), which such Series C Units were comprised of shares of Series C Preferred Stock and the Series C Warrants to purchase up to 2,374,219 shares of Common Stock, which were sold at a combined purchase price of $1.28 per Series C Unit. Each Series C Warrant has an exercise price of $2.56 per share (subject to adjustment from time to time in accordance with the terms thereof), is exercisable immediately upon issuance and expires at 4:30 p.m. (New York time) three years following the initial date of issuance.

Risk Factors

Our business is subject to numerous risks and uncertainties, including those highlighted in the section entitled "Risk Factors" immediately following this prospectus summary, that represent challenges that we face in connection with the successful implementation of our strategy and the growth of our business. In particular, the following considerations, among others, may offset our competitive strengths or have a negative effect on our business strategy, which could cause a decline in the price of shares of our Common Stock and result in a loss of all or a portion of your investment:

- We are in the development stage with minimum revenues and have no operating history in the broad commercialization of medical devices or platforms for consumer use.
- Our financial statement footnotes include disclosure regarding the substantial doubt about our ability to continue as a going concern.
- We may be unable to raise additional capital, which could harm our ability to compete.
- We are subject to operating risks, including excess or constrained capacity and operational inefficiencies, which could adversely affect our results of operations.
- If we are not successful in enhancing awareness of our BNA platform, driving adoption across our current target population and expanding the population of eligible patients, our sales, business, financial condition and results of operations will be negatively affected.
- Our commercial success will depend on the future adoption of the BNA platform into patient work streams in clinics. If we are unable to successfully drive interest in our BNA Platform, our business, financial condition and results of operations would be harmed.
- We may be unable to compete successfully with competitive technologies, which could harm our sales, business, financial condition and results of operations.
- Use of our BNA Platform requires appropriate training and inadequate training may lead to negative clinician experiences, which could harm our business, financial condition, and results of operations.

- We are highly dependent on our senior management team and key personnel, and our business could be harmed if we are unable to attract and retain personnel necessary for our success.
- We may not be able to achieve or maintain satisfactory pricing and margins for our BNA Platform, which could harm our business and results of operations.
- Future sales of our BNA Platform may depend on healthcare providers' or patients' ability to obtain reimbursement from third-party payors, such as insurance carriers.
- Complying with regulations enforced by FDA and other regulatory authorities is expensive and time consuming, and failure to comply could result in substantial penalties.
- We may not receive the necessary authorizations to market our BNA Platform or any future new products, and any failure to timely do so may adversely affect our ability to grow our business.
- Since our BNA Platform will utilize cloud-based information systems and the exchange of information between patents and doctors, we will be subject to numerous U.S. federal and state laws and regulations related to the privacy and security of personally identifiable information, including health information.
- If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud. As a result, shareholders could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our Common Stock.
- Our success depends in part on our proprietary technology, and if we are unable to successfully enforce our intellectual property rights, our competitive position may be harmed.
- We use AI in our business, and challenges with properly managing its use could result in reputational harm, competitive harm, and legal liability, and adversely affect our results of operations.

Implication of Being a Smaller Reporting Company

We are a "smaller reporting company" as defined in Item 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, providing only two years of audited financial statements. We will remain a smaller reporting company until the last day of any fiscal year for so long as either (1) the market value of our shares of Common Stock held by non-affiliates does not equal or exceed $250 million as of the prior June 30th, or (2) our annual revenues did not equal or exceed $100 million during such completed fiscal year and the market value of our shares of Common Stock held by non-affiliates did not equal or exceed $700 million as of the prior June 30th. To the extent we take advantage of any reduced disclosure obligations, it may make comparison of our financial statements with other public companies difficult or impossible.

Corporate Information

Our corporate history began in April 2006 with the formation of Elminda Ltd, a company organized under the laws of the State of Israel, for the purpose of developing a system to provide clinicians with an objective assessment of brain function to support better outcomes for people with mental illnesses and cognitive disorders. On November 15, 2023, we entered into the Merger Agreement with WaveDancer and FFN, and on August 12, 2024, FFN merged with and into Private Firefly, with Private Firefly surviving the Merger as a wholly owned subsidiary of WaveDancer. On the Closing Date (i) pursuant to the Amended and Restated Certificate of Incorporation of WaveDancer, we changed our name to "Firefly Neuroscience, Inc.," (ii) pursuant to an amendment to its Certificate of Incorporation, Private Firefly changed its name to Firefly Neuroscience 2023, Inc. and (iii) Private Firefly and FFN filed the Certificate of Merger with the State of Delaware.

Our principal executive offices are located at 1100 Military Road, Kenmore, NY 14217, and our telephone number is (888) 237-6412. Our website address is *www.fireflyneuro.com*. Information contained on our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

THE OFFERING

Shares of Common Stock Offered by the Selling Securityholders	We are registering the resale by the selling securityholders named in this prospectus, or their permitted transferees, of an aggregate of 2,559,645 shares of Common Stock, consisting of: • 670,985 shares of Common Stock, which include: (i) 209,613 shares of Common Stock issued upon the conversion of certain shares of Series C Preferred Stock and (ii) 461,372 shares of Common Stock previously issued by Private Firefly after the Effectiveness Date; • 319,207 shares of Common Stock issued to the PIPE Investors; • up to 504,323 shares of Common Stock issuable upon the exercise of the Pre-Funded Warrants issued to the PIPE Investors; • up to 823,530 shares of Common Stock issuable upon the exercise of the Warrants issued to the PIPE Investors; • up to 168,071 shares of Common Stock issuable upon the exercise of the Series C Warrants issued and sold as part of the Series C Units in the Series C Financing; • up to 61,866 shares of Common Stock issuable upon the exercise of the Series D Warrants; and • up to 11,663 shares of Common Stock issuable upon the exercise of the Broker Warrants.
Terms of the Offering	The selling securityholders will determine when and how they will dispose of the securities registered for resale under this prospectus.
Use of Proceeds	We will not receive any proceeds from the sale of shares of Common Stock by the selling securityholders. We will receive any proceeds from the exercise of the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants for cash, but not from the sale of the shares of Common Stock issuable upon such exercise. See the section titled "*Use of Proceeds*."
Risk Factors	See "*Risk Factors*" and the other information included in this prospectus for a discussion of factors you should consider before investing in our securities.
Market for Common Stock	Our shares of Common Stock are listed on Nasdaq under the symbol "AIFF."

For additional information concerning the offering, see the section titled "*Plan of Distribution*" beginning on page 106 of this prospectus.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before you make a decision to buy our securities, in addition to the risks and uncertainties discussed above under "Cautionary Note Regarding Forward-Looking Statements," you should carefully consider the risks and uncertainties described below together with all of the other information contained in this prospectus, including our financial statements and related notes appearing at the end of this prospectus and in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations," before deciding to invest in our securities. If any of the events or developments described below were to occur, our business, prospects, operating results, and financial condition could suffer materially, the trading price of our securities could decline, and you could lose all or part of your investment. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business.

Risks Related to our Financial Position

We are in the development stage with minimum revenues and have no operating history in the broad commercialization of medical devices or platforms for consumer use.

We are in the development stage and faces all of the risks and uncertainties associated with a new and unproven business. Our future is based on an unproven business plan with no historical facts to support projections and assumptions. We have no operating history as a distributor of medical devices to clinicians. We are currently generating minimum revenues and do not expect to generate significant revenue until we have successfully launched broad commercialization of the BNA Platform.

Investors should understand that an investment in a start-up business is significantly riskier than an investment in a business with any significant operating history. There can be no assurance that we will ever achieve revenues or profitability. Our operations are subject to all of the risks inherent in the establishment of a new business enterprise. The likelihood of our success must be considered in light of the problems, expenses, difficulties, complications and delays frequently encountered in connection with the formation of a pre-revenue business. Our lack of a significant and relevant operating history makes it difficult to manage operations and predict future operating results.

Our financial statement footnotes include disclosure regarding the substantial doubt about our ability to continue as a going concern.

Our financial statement footnotes include disclosure regarding the substantial doubt about our ability to continue as a going concern. As of each of September 30, 2024, and December 31, 2023, we had stockholder's equity of negative $2,776,000 and $109,000, respectively. In addition, we had cash flows used in operating activities for the nine months-ended September 30, 2024, of $4,937,000 and cash flows used in operating activities for the nine months ended September 30, 2023, of $$1,662,000. Further, the footnotes to our financial statements indicated that as of September 30, 2024, we had recurring losses with minimal revenue from operations.

To strengthen our liquidity in the foreseeable future, we have taken the following measures: (i) negotiating with existing and new investors to raise additional capital; and (ii) taking various cost control measures to reduce the operational cash burn. While our management believes that we can continue raising additional equity capital to continue in operational existence for the foreseeable future, if we are unable to raise additional capital, we may be required to take additional measures to conserve liquidity. No assurances can be provided that new financing will be available to us on commercially acceptable terms, if at all.

We may be unable to raise additional capital, which could harm our ability to compete.

We expect to expend significant capital to launch our commercialization program for the BNA Platform, build our brand, and continue to improve our product offerings. These initiatives may require us to raise additional capital over the next few years. We may consume available resources more rapidly than anticipated and we may not be able to raise additional funds when needed or on acceptable terms.

If we raise additional funds through issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences, and privileges superior to those of holders of our Common Stock. While our management team believes that we can continue raising additional equity capital to continue in operational existence for the foreseeable future, if we are unable to obtain adequate financing or financing on terms satisfactory to us, when we require it, our ability to continue to pursue our business objectives and to respond to business opportunities, challenges, or unforeseen circumstances could be significantly limited, and our business, operating results, financial condition, and prospects could be materially adversely affected.

Risks Related to our Business and Operations

We are subject to operating risks, including excess or constrained capacity and operational inefficiencies, which could adversely affect our results of operations.

We are subject to operating risks, including excess or constrained capacity and pressure on our internal systems and personnel. In order to manage current and anticipated future operations effectively, we must continually implement and improve our operational, financial and management information systems, hire, train, motivate, manage and retain employees. We may be unable to balance near-term efforts to meet existing demand with future customer demand, including adding personnel, creating scalable, secure and robust systems and operations, and automating processes needed for long term efficiencies. Any such failure could have a material impact on our business, operations and prospects.

Our products and information technology systems are critical to our business. Issues with product development or enhancements, IT system integration, implementation, updates and upgrades could disrupt our operations and have a material impact on our business and operating results.

We rely on the efficient, uninterrupted and secure operation of our IT systems and are dependent on key third-party software embedded in our products and IT systems as well as third-party hosted IT systems to support our operations. All software and IT systems are vulnerable to damage, cyber attacks or interruption from a variety of sources. To effectively manage and improve our operations, our IT systems and applications require an ongoing commitment of significant expenditures and resources to maintain, protect, upgrade, enhance and restore existing systems and develop new systems to keep pace with continuing changes in information processing technology, evolving industry and regulatory standards, increasingly sophisticated cyber threats, and changing consumer preferences. Failure to adequately protect and maintain the integrity of our products and IT systems may result in a material effect on our financial position, results of operations and cash flows.

We plan to continuously upgrade and issue new releases of our products and customer-facing software applications, upon which our operations depend. Software applications and products containing software frequently contain errors or defects, especially when first introduced or when new versions are released. Additionally, the third-party software integrated into or interoperable with our products and services will routinely reach end of life, and as a consequence, may be exposed to additional vulnerabilities, including increased security risks, errors and malfunctions that may be irreparable or difficult to repair. The discovery of a defect, error or security vulnerability in our products, software applications or IT systems, incompatibility with future customers' computer operating systems and hardware configurations with a new release or upgraded version or the failure of our products or primary IT systems may cause adverse consequences, including: delay or loss of revenues, significant remediation costs, delay in market acceptance, loss of data, disclosure of financial, health or other personal information of any customers or patients, product recalls, damage to our reputation, or increased service costs, any of which could have a material effect on our business, financial condition or results of our operations and the operations of our potential customers or our business partners.

Our operations and financial performance depend on global and regional economic conditions. Inflation, fluctuations in currency exchange rates, changes in consumer confidence and demand, and weakness in general economic conditions and threats, or actual recessions, could materially affect our business, results of operations, and financial condition.

Macroeconomic conditions impact consumer confidence and discretionary spending, which could adversely affect demand for any products we bring to market. Consumer spending habits are affected by, among other things, inflation, fluctuations in currency exchange rates, weakness in general economic conditions, threats or actual recessions, pandemics, wars and military actions, levels of employment, wages, debt obligations, discretionary income, interest rates, volatility in capital, and consumer confidence and perceptions of current and future economic conditions. Changes and uncertainty can, among other things, reduce or shift spending away from treatments and procedures to address mental illness and cognitive disorders, and could drive patients and clinicians towards other options in the marketplace that may cost less than our products, reduce patient traffic in clinicians' offices or reduce demand for services to treat mental illness and cognitive disorder generally. The recent declines in, or uncertain economic outlooks for, the U.S., European and certain other international economies has and may continue to adversely affect consumer and healthcare practice spending. The increase in the cost of fuel and energy, food and other essential items along with elevated interest rates could reduce consumers' disposable income, resulting in less discretionary spending for products like ours. Decreases in disposable income and discretionary spending or change in consumer confidence and spending habits may adversely affect our revenues and operating results.

Inflation continues to adversely impact spending and trade activities and we are unable to predict the impacts of higher inflation on global and regional economies. Higher inflation has also increased domestic and international shipping costs, raw material prices, and labor rates, which could adversely impact the costs of producing, procuring and shipping any products we bring to market. If similar trends continue once we begin marketing our BNA Platform, our ability to recover these cost increases through price increases may have limited effectiveness, resulting in downward pressure on our operating results. Attempts to offset cost increases with price increases could reduce sales, increase customer dissatisfaction or otherwise harm our reputation. Further, we are unable to predict the impact of efforts by central banks and federal, state and local governments to combat elevated levels of inflation. If their efforts to reduce inflation are too aggressive, they may lead to a recession. Alternatively, if they are insufficient or are not sustained long enough to lower inflation to more acceptable levels, consumer spending may be adversely impacted for a prolonged period of time. Any of these events could materially affect our business and operating results.

Our business could be impacted by political events, trade and other international disputes, war, and terrorism, including the military conflict between Russia and Ukraine.

Political events, trade and other international disputes, war, and terrorism could harm or disrupt international commerce and the global economy and could have a material effect on our business as well as our potential customers, suppliers, contract manufacturers, distributors, and other business partners.

Political events, trade and other international disputes, wars, and terrorism can lead to unexpected tariffs or trade restrictions, which could adversely impact our business. Once we begin marketing our products, these increased costs could adversely impact our gross margin and make our products less competitive or reduce demand. Countries could also adopt other measures, such as controls on imports or exports of goods, technology or data, that could adversely impact our operations and supply chain and limit our ability to offer products and services. These measures could require us to take various actions, including changing suppliers or restructuring business relationships. Complying with new or changed trade restrictions is expensive, time-consuming and disruptive to our operations. Such restrictions can be announced with little or no advance notice and we may be unable to effectively mitigate the adverse impacts of such measures. If disputes and conflicts escalate in the future, actions by governments in response could be significantly more severe and restrictive and could materially affect our business.

Political unrest, threats, tensions, actions and responses to any social, economic, business, geopolitical, military, terrorism, or acts of war involving key commercial, development or manufacturing markets such as China, Mexico, Israel, Europe, or other countries or regions could materially impact any international operations we undertake. For example, our employees in Israel could be obligated to perform annual reserve duty in the Israeli military and be called for additional active duty under emergency circumstances. If any of these events or conditions occur, the impact on us, our employees and potential customers is uncertain, particularly if emergency circumstances, armed conflicts or an escalation in political instability or violence disrupts our product development, data or information exchange, payroll or banking operations, product or materials shipping by us or our suppliers and other unanticipated business disruptions, interruptions and limitations in telecommunication services or critical systems or applications reliant on a stable and uninterrupted communications infrastructure.

U.S. and global markets are experiencing volatility and disruption following the escalation of geopolitical tensions and the start of the military conflict between Russia and Ukraine. On February 24, 2022, a full-scale military invasion of Ukraine by Russian troops was reported. In response to the military conflict, the United States and other North Atlantic Treaty Organization member states, as well as non-member states, announced targeted economic sanctions on Russia, including certain Russian citizens and enterprises, and the continuation of the conflict may trigger additional economic and other sanctions. The potential impacts of the conflict and related sanctions could include supply chain and logistics disruptions, macro financial impacts resulting from the exclusion of Russian financial institutions from the global banking system, volatility in foreign exchange rates and interest rates, inflationary pressures on raw materials and energy and heightened cybersecurity threats. We have no way to predict the progress or outcome of the conflict in Ukraine or the reactions by governments, businesses or consumers. A prolonged conflict, intensified military activities or more extensive sanctions impacting the region and the resulting economic impact could have a material effect on our business, results of operations, financial condition, liquidity, growth prospects and business outlook.

We conduct certain of our operations in Israel. Conditions in Israel, including the recent attack by Hamas and other terrorist organizations from the Gaza Strip and Israel's war against them, may affect our operations.

We currently have seven full-time employees, who are located in and/or reside in Israel. As a result, our business and operations are directly affected by economic, political, geopolitical and military conditions in Israel. Since the establishment of the State of Israel in 1948, a number of armed conflicts have occurred between Israel and its neighboring countries and terrorist organizations active in the region. These conflicts have involved missile strikes, hostile infiltrations and terrorism against civilian targets in various parts of Israel, which have negatively affected business conditions in Israel.

In October 2023, Hamas terrorists infiltrated Israel's southern border from the Gaza Strip and conducted a series of attacks on civilian and military targets. Hamas also launched extensive rocket attacks on Israeli population and industrial centers located along Israel's border with the Gaza Strip and in other areas within the State of Israel. Following the attack, Israel's security cabinet declared war against Hamas and a military campaign against these terrorist organizations commenced in parallel to their continued rocket and terror attacks. Moreover, the clash between Israel and Hezbollah in Lebanon, may escalate in the future into a greater regional conflict.

Any hostilities involving Israel could adversely affect our operations and results of operations. Shelter-in-place and work-from-home measures, government-imposed restrictions on movement and travel and other precautions taken to address the ongoing conflict may temporarily disrupt our employees' ability to effectively perform their daily tasks.

The Israel Defense Force (the "IDF"), the national military of Israel, is a conscripted military service, subject to certain exceptions. Several of our employees are subject to military service in the IDF and have been and may be called to serve. It is possible that there will be further or longer military reserve duty call-ups in the future, which may affect our business due to a shortage of skilled labor and loss of institutional knowledge, and necessary mitigation measures we may take to respond to a decrease in labor availability, such as overtime and third-party outsourcing, for example, which may have unintended negative effects and adversely impact our results of operations, liquidity or cash flows.

It is currently not possible to predict the duration or severity of the ongoing conflict or its effects on our business, operations and financial conditions. The ongoing conflict is rapidly evolving and developing, and could disrupt our business and operations.

Our operations may be impacted by natural disasters, which may become more frequent or severe as a result of climate change and may adversely impact our business and operating results as well as those of our potential customers and suppliers.

Natural disasters can impact us and our potential customers, as well as suppliers critical to our operations. Natural disasters include earthquakes, tsunamis, floods, droughts, hurricanes, wildfires, and other extreme weather conditions that can cause deaths, injuries, and critical health crises, power outages, restrictions and shortages of food, water, shelter, and medical supplies, telecommunications failures, materials scarcity, price volatility and other ramifications. Climate change is likely to increase both the frequency and severity of natural disasters and, consequently, risks to our business and operations.

The effects of climate change on regional and global economies could change the supply, demand or availability of sources of energy or other resources material to our products and operations and affect the availability or cost of natural resources and goods and services on which we and our suppliers rely.

Risks Related to the BNA Platform

If we are not successful in enhancing awareness of our BNA Platform, driving adoption across our current target population and expanding the population of eligible patients, our sales, business, financial condition and results of operations will be negatively affected.

Our business currently depends primarily on our ability to successfully market our BNA Platform, which involves successfully launching our commercialization program, increasing adoption of and driving utilization our BNA Platform by target clinicians, namely neurologists in the United States. We are aiming to increase awareness about our BNA Platform, as well as grow the number of clinicians that utilize our BNA Platform after the launch of our commercialization program, but there can be no assurance that we will succeed.

The commercial success of our BNA Platform will continue to depend on a number of factors, including the following:

- the actual and perceived effectiveness and clinical benefit, of our BNA Platform;
- the prevalence and severity of any adverse patient events involving our BNA Platform;
- our ability to provide earlier awareness of and education about our BNA Platform to patients and clinicians;
- the degree to which clinicians and patients adopt our BNA Platform;
- the availability, relative cost and perceived advantages and disadvantages of alternative technologies or treatment methods for cognitive disorders;
- the results of future clinical and other studies relating to the health, economic or other benefits of our BNA Platform;
- whether key thought leaders in the medical community accept that our future clinical utility is sufficiently meaningful to influence their decision to adopt our BNA Platform;
- the extent to which we are successful in educating clinicians and patients about the benefits of our BNA Platform;
- our reputation among clinicians and patients;
- our ability to predict product performance;
- the strength of our marketing and distribution infrastructure, including our ability to drive adoption and utilization of our BNA Platform;
- our ability to obtain, maintain, protect, enforce and defend our intellectual property rights, including those covering our BNA Platform;
- our ability to maintain compliance with all legal and regulatory requirements, including those applicable to our BNA Platform; and
- our ability to continue to attract and retain key talent.

If we fail to successfully initiate our broad commercialization program, market and sell our BNA Platform cost-effectively, our sales, business, financial condition and results of operations will be negatively affected.

Our commercial success will depend on the future adoption of the BNA Platform into patient work streams in clinics. If we are unable to successfully drive interest in our BNA Platform, our business, financial condition and results of operations would be harmed.

Our commercial success will depend in large part on the future adoption of the BNA Platform into patient work streams in clinics. We cannot predict how quickly, if at all, clinicians and patients will adopt our BNA Platform. Moreover, we cannot predict how quickly, if at all, those currently living with mental illness or cognitive disorders but who are not being treated will seek treatment. Our ability to grow sales of our BNA Platform and drive market acceptance will depend on successfully educating clinicians and patients of the relative benefits of our BNA Platform. If we are unable to successfully drive interest in our BNA Platform, our business, financial condition and results of operations would be harmed.

We may be unable to compete successfully with competitive technologies, which could harm our sales, business, financial condition and results of operations.

Our industry is competitive and has been evolving rapidly. Our BNA Platform is indicated for use in in individuals 12 to 85 years of age for the post-hoc statistical analysis of the human electroencephalogram, including event-related potentials.

Our initial market entry strategy is focused on neurologists in the United States. Once we commence a broad commercialization program of our BNA Platform, we will face competition in the market for our BNA Platform from competing technologies, and we expect competition from new companies that may enter the market or introduce new technologies in the future. Third-party payors may encourage the use of competitors' products due to lower costs of competing products or alternatives. Additionally, treating neurologists may promote the use of other competitors' products or alternative therapies.

Our current and future competitors may include large, well-capitalized companies with significant market share and resources. They may have more established sales and marketing programs than we do and have greater name recognition. In addition to competing for market share, competitors may develop or acquire patents or other rights that may limit our ability to compete.

Our current and future competitors may include large, well-capitalized companies with significant market share and resources. They may have more established sales and marketing programs than we do and have greater name recognition. In addition to competing for market share, competitors may develop or acquire patents or other rights that may limit our ability to compete.

We believe that the competitive advantages of our BNA Platform will be important factors in our future success. Our continued success depends on, among other things, our ability to:

- successfully launch our commercialization program to target clinicians (i.e. neurologists in the United States);
- drive awareness to increase the number of mental illness and cognitive impairment patients referred to target clinicians, namely neurologists in the United States;
- attract and retain skilled research, development, sales, marketing and clinical personnel;
- continue to innovate in order to improve our BNA Platform and enhance the patient and provider experience;
- adequately predict product performance;
- obtain and maintain regulatory clearances and approvals, including for expanded indications;
- cost-effectively market and sell our BNA Platform;
- obtain, maintain, protect, enforce and defend our intellectual property rights and operate our business without infringing, misappropriating or otherwise violating the intellectual property rights of others; and
- acquire products or technologies complementary to or necessary for our business.

The medical device industry is intensely competitive, subject to rapid change and significantly affected by new product introductions and other market activities of industry participants. There can be no assurance that other companies or institutions will not succeed in developing or marketing devices and products that are more effective than our BNA Platform or that would render our BNA Platform obsolete or noncompetitive.

Use of our BNA Platform requires appropriate training and inadequate training may lead to negative clinician experiences, which could harm our business, financial condition, and results of operations.

The successful use of our BNA Platform depends in part on the training and skill of the clinician performing EEG recording and reading BNA reports. Clinicians could experience difficulty interpreting the results of BNA reports. Moreover, clinicians rely on their previous medical training and experience when recommending or utilizing our BNA Platform, and we cannot guarantee that all clinicians will have the necessary skills to properly utilize the BNA Platform. We cannot be certain that clinicians that will use our BNA Platform will have received sufficient training, and clinicians who have not received adequate training may nonetheless attempt to use our BNA Platform with their patients. If clinicians utilize our BNA Platform incorrectly, or without adhering to or completing all relevant training, their patient outcomes may not be consistent with the outcomes achieved in our research studies and any future clinical studies. Adverse safety outcomes that arise from improper or incorrect use of our BNA Platform may negatively impact the perception of patient benefit and the safety of our BNA Platform, notwithstanding results from our research studies and any future clinical studies. These results could limit adoption of our BNA Platform, which would harm our sales, business, financial condition, and results of operations.

We are highly dependent on our senior management team and key personnel, and our business could be harmed if we are unable to attract and retain personnel necessary for our success.

We are highly dependent on our senior management and key personnel. Our success will depend on our ability to retain senior management and to attract and retain qualified personnel in the future, including sales and marketing professionals, engineers, scientists, data science specialists and other highly skilled personnel and to integrate current and additional personnel in all departments.

Competition for skilled personnel in our market is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms, or at all. To induce valuable employees to remain at our company, in addition to salary and cash incentives, we have issued stock options that vest over time, restricted share units subject to vesting conditions, and certain performance warrants. The value to employees of stock options that vest over time may be significantly affected by fluctuations in our stock price that are beyond our control, and may at any time be insufficient to counteract more lucrative offers from other companies. Despite our efforts to retain valuable employees, members of our management and other key personnel may terminate their employment with us on short notice. Our employment arrangements with our employees provide for at-will employment, which means that any of our employees could leave our employment at any time, with or without notice. We also do not maintain “key man” insurance policies on the lives of these individuals or the lives of any of our other employees.

As we launch the commercialization program for our BNA Platforms, expand our product offerings in the future and increase our future marketing efforts, we will need to build and expand the reach of our marketing and sales networks. Our future success will depend largely on our ability to continue to hire, train, retain and motivate skilled employees with significant technical knowledge in various areas. An inability to attract, hire, train and retain employees will harm our sales, business, financial condition, and results of operations.

We expect to increase the size of our organization in the future, and we may experience difficulties in managing the operational elements or timing of this growth. If we are unable to manage or appropriately time the anticipated growth of our business, our future revenue and operating results may be harmed.

As of the date of this prospectus, we have seven full time employees and six contractors. As our sales and marketing strategies evolve and as we launch commercialization of our BNA Platform, we may need additional managerial, operational, sales, marketing, financial and other personnel. Future growth would impose significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining and motivating additional employees;
- managing our internal development efforts effectively, while complying with our contractual obligations to contractors and other third parties; and
- improving our operational, financial and management controls, reporting systems and procedures.

Our future financial performance and our ability to successfully market and sell our BNA Platform will depend, in part, on our ability to effectively manage or time any future growth, and our management may also have to divert a disproportionate amount of attention away from day-to-day activities in order to devote a substantial amount of time to managing these growth activities.

As demand for our BNA Platform increases in the future, we will need to expand customer service, billing and systems processes and enhance our internal quality assurance program. We cannot be certain that any increases in scale, related improvements and quality assurance will be successfully implemented or that appropriate personnel will be available to facilitate the growth of our business. If we encounter difficulty meeting market demand, quality standards or clinician expectations, our reputation will be harmed and our business will suffer. Additionally, additional growth may result in higher fixed costs and may slow our ability to reduce costs in the face of a sudden decline in demand for our products.

We may not be able to achieve or maintain satisfactory pricing and margins for our BNA Platform, which could harm our business and results of operations.

The medical device industry has a history of price competition, and we can give no assurance that we will be able to maintain satisfactory prices for our BNA Platform or any future products at competitive levels. The pricing of our products could be impacted by several factors, including pressure to reduce prices by our customers due to a decline in the amount that third-party payors reimburse for EEG tests for clinicians utilizing our BNA Platform. If we are forced to lower or are unable to increase the price we charge for our BNA Platform, our gross margins will decrease, which will harm our ability to invest in and grow our business. If we are unable to maintain our prices, or if our costs increase and we are unable to offset such increase with an increase in our prices, our margins could erode, which could harm our business and results of operations.

Future sales of our BNA Platform may depend on healthcare providers' or patients' ability to obtain reimbursement from third-party payors, such as insurance carriers.

Future sales of our BNA Platform may depend on healthcare providers' or patients' ability to obtain reimbursement from third-party payors, such as insurance carriers. Where such insurance or third-party reimbursement becomes available in the future, any reduction in insurance or other third-party payor reimbursement for our BNA Platform may cause negative price pressure, which would reduce our revenues. Without a corresponding reduction in the cost to produce such products, the result would be a reduction in our overall gross profit. Similarly, any increase in the cost of such products would reduce our overall gross profit unless there was a corresponding increase in third-party payor reimbursement. Failure by our patients or healthcare provider customers to obtain or maintain coverage or to secure adequate reimbursement for our treatment by third-party payors could have an adverse effect on our business, results of operations, and financial condition.

Our results of operations may be harmed if we are unable to accurately forecast clinician demand for our BNA Platform or any future products.

Our ability to accurately forecast demand for our BNA Platform or our future our products could be negatively affected by many factors, including our failure to accurately manage our expansion strategy, product introductions by competitors, our inability to forecast the lifecycle of our products, an increase or decrease in customer demand for our products or for competitor products, our failure to accurately forecast customer adoption of new products, unanticipated changes in general market conditions or regulatory matters and weakening of economic conditions or consumer confidence in future economic conditions. Inventory levels in excess of customer demand may result in inventory write-downs or write-offs, which would cause our gross margin to be adversely affected and could impair the strength of our brand, which may negatively affect our business, financial condition, and results of operations.

Adoption of our BNA Platform depends on positive clinical data as well as clinician acceptance of the data and our products, and negative clinical data or perceptions among these clinicians would harm our sales, business, financial condition, and results of operations.

The rate of adoption and sales of our products is heavily influenced by clinical data. Although we have positive research data from a 2023 white paper study, there can be no assurance that future clinical studies, including those to demonstrate the efficacy of our BNA Platform or future products in current target patient populations and those to support label retention and expansion for our products, will demonstrate clinical utility and effectiveness. Unfavorable or inconsistent clinical data from future clinical studies conducted by us, our competitors, or third parties, or the negative interpretation of our clinical data internally and externally, including by customers, competitors, patients, and regulators could harm our business, financial condition, and results of operations.

The rate of adoption and sales of our products are also influenced by clinician perceptions. Negative perceptions of our products by clinicians, including due to negative clinical data, could result in decreased adoption or use of our products, which would harm our business, financial condition, and results of operations. Further, if we are not able to attain strong working relationships with clinicians and receive their advice and input, the marketing of our products could suffer, which could harm our business, financial condition and results of operations.

Our future success also depends upon patients having an experience with our products that meets their expectations in order to increase clinician demand for our products as a result of positive feedback and word-of-mouth. Patients may be dissatisfied if their expectations of the BNA Platform are not met or if the performing clinicians are not adequately trained on use of our BNA Platform. If the results of our products do not meet the expectations of the patient it could discourage the patient and/or their healthcare provider from continuing to use our device or referring our products to others. Dissatisfied patients may express negative opinions through social media, advocacy, or other publicity. Any failure to meet patient expectations and any resulting negative publicity could harm our reputation and future sales.

We may acquire businesses or products, or form strategic alliances, in the future, and may not realize the benefits of such acquisitions.

We may acquire additional businesses or products, form strategic alliances, or create joint ventures with third parties that we believe will complement or augment our existing business. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with its existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing, and marketing any new products resulting from a strategic alliance or acquisition that delay or prevent it from realizing our expected benefits or enhancing our business. There is no assurance that, following any such acquisition, we will achieve the synergies expected to justify the transaction, which could result in a material adverse effect on our business and prospects.

Risks Related to Legal, Regulatory and Compliance Matters

Complying with regulations enforced by FDA and other regulatory authorities is expensive and time consuming, and failure to comply could result in substantial penalties.

Our product, the BNA Platform (for which we have obtained FDA 510(k) clearance), and our future products are considered medical devices and, accordingly, are subject to rigorous regulation by government agencies in the U.S. and other countries in which we intend to sell our products. Compliance with these rigorous regulations will affect capital expenditures, earnings and the competitive position of the Company. These regulations vary from country to country but cover, among other things, the following activities with respect to medical devices:

- design, development and manufacturing;
- testing, labeling, content and language of instructions for use and storage;
- product storage and safety;
- marketing, sales and distribution;
- pre-market clearance and approval;
- record keeping procedures;
- advertising and promotion;
- recalls and field safety corrective actions;
- post-market surveillance;
- post-market approval studies; and
- product import and export.

The regulations to which we are subject are complex. Regulatory changes could result in restrictions on our ability to carry on or expand our operations, higher than anticipated costs, or lower than anticipated sales. Our failure to comply with applicable regulatory requirements could result in enforcement action by FDA or state agencies, which may include any of the following sanctions:

- warning letters, fines, injunctions, consent decrees, and civil penalties;
- repair, replacement, refunds, recall, or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing our requests for 510(k) clearance or pre-market approval of new products, new intended uses, or modifications to existing products;
- withdrawing clearance or pre-market approvals that have already been granted; and
- criminal prosecution.

If any of these events were to occur, they could harm our business.

We may not receive the necessary authorizations to market our BNA Platform or any future new products, and any failure to timely do so may adversely affect our ability to grow our business.

Before we can sell a new medical device in the U.S., or market a new use of, new claim for, or significant modification to a legally marketed device, we must first obtain either FDA 510(k) clearance or approval, unless an exemption applies. In the 510(k) clearance process, before a device may be marketed, the applicant must submit a premarket notification to FDA under Section 510(k) of the FD&C Act, and FDA must determine that a proposed device is "substantially equivalent" to a legally-marketed "predicate" device. To be "substantially equivalent," the proposed device must have the same intended use as the predicate device, and either have the same technological characteristics as the predicate device or have different technological characteristics, not raise different questions of safety or effectiveness than the predicate device, and be as safe and as effective as the predicate device. The 510(k) clearance process can be expensive and uncertain and typically takes from three to 12 months, but may last significantly longer. Clinical data may be required in connection with an application for 510(k) clearance. Furthermore, even if we are granted regulatory clearances or approvals, they may include limitations on the indications for use or intended uses of the device, which may limit the market for the device.

Our BNA Platform is a Class II medical device, which was cleared by FDA for commercialization in the U.S. pursuant to the 510(k) notification process for the post-hoc statistical analysis of the human electroencephalogram in December 2020 for use in individuals 12 to 85 years of age.

FDA can delay, limit, or deny 510(k) clearance, or other approval or reclassification, of a device for many reasons, including:

- we may be unable to demonstrate to FDA's satisfaction that the products or modifications are substantially equivalent to a proposed predicate device or safe and effective for their intended uses;
- we may be unable to demonstrate that the clinical and other benefits of the device outweigh the risks; and
- the applicable regulatory authority may identify deficiencies in our submissions or in the facilities or processes of our third party contract manufacturers.

Any delay or failure to obtain necessary regulatory clearances or approvals could harm our business. For example, if we decide to market the BNA Platform for a broader or additional indication(s) for use and/or make any material modifications to any element of the device and/or the manufacturing or distribution thereof in the future, an additional 510(k) submission, and FDA clearance thereof, will be required prior to making any promotional communications expressly or impliedly claiming that the device may be used for such indication(s) and/or prior to making such modification, respectively.

In addition, FDA may change its policies, adopt additional regulations, revise existing regulations, or take other actions, or Congress may enact different or additional statutory requirements, which may prevent or delay clearance of our future products under development or impact our ability to modify our currently marketed products on a timely basis. Such policy, statutory, or regulatory changes could impose additional requirements upon us that could delay our ability to obtain new 510(k) clearances, increase the costs of compliance, or restrict our ability to maintain our current marketing authorizations.

We received our European CE mark, indicating that we affirm our product's conformity with European health, safety and environmental protection standards, in 2021. We will also need to obtain regulatory approval in other foreign jurisdictions in which we plan to market and sell our products. The time required to obtain registrations or approvals, if required by other countries, may be longer than that required for FDA clearance, and requirements for such registrations, clearances, or approvals may significantly differ from FDA requirements. If we modify our products, we may need to apply for additional regulatory approvals before we are permitted to sell the modified product. In addition, we may not continue to meet the quality and safety standards required to maintain the authorizations that we have received. If we are unable to maintain our authorizations in a particular country, we will no longer be able to sell the applicable product in that country.

Failure to comply with these rules, regulations, self-regulatory codes, circulars, and orders could result in significant civil and criminal penalties and costs and could have a material adverse impact on our business. Also, these regulations may be interpreted or applied by a prosecutorial, regulatory, or judicial authority in a manner that could require us to make changes in our operations or incur substantial defense and settlement expenses. Even unsuccessful challenges by regulatory authorities or private relators could result in reputational harm and the incurring of substantial costs. In addition, many of these laws are vague or indefinite and have not been interpreted by the courts and have been subject to frequent modification and varied interpretation by prosecutorial and regulatory authorities, increasing compliance risks.

Certain modifications to our products may require new 510(k) clearance or other marketing authorizations.

Once a medical device is permitted to be legally marketed in the U.S. pursuant to a 510(k) clearance, a medical device developer may be required to notify FDA of certain modifications to the device. Medical device developers determine in the first instance whether a change to a product requires a new premarket submission, but FDA may review any such decision.

While our BNA Platform received 510(k) clearance in December 2020, we may in the future apply for 510(k) clearance for updated components of our BNA Platform, which must, then, be found by the FDA to be substantially equivalent to the cleared BNA Platform and, thus, may not be lawfully marketed in the U.S. until FDA make a substantial equivalence determination and issues the requisite 510(k) clearance for the updated BNA Platform. Although the development of our BNA Platform has been carefully monitored and documented by professionals who are experienced in the FDA clearance process, there is no assurance that the FDA will agree that an updated component of our BNA Platform is substantially equivalent to the cleared BNA Platform and allow the updated BNA Platform to be marketed in the United States. The FDA may determine that the device is not substantially equivalent and require a premarket approval ("PMA") or, more likely, a de novo reclassification, and/or require further information, such as additional test data, including data from clinical studies, before it is able to make a determination regarding substantial equivalence. By requesting additional information, the FDA can delay market introduction of an updated BNA Platform. Delays in receipt of or failure to receive any necessary 510(k) clearance, de novo classification, or PMA, or the imposition of stringent restrictions for our BNA Platform, could have a material adverse effect on our business, results of operations and financial condition.

In the future, we may make other modifications to our products, including our BNA Platform, and determine, based on our review of the applicable FDA regulations and guidance, that in certain instances new 510(k) clearances or other premarket submissions are not required. If FDA disagrees with our determinations, we may be subject to a wide range of enforcement actions, including, for example, a warning letter, among other consequences, after which we will likely have to cease marketing the applicable modified product and/or to recall distributed units of such modified product until we obtain the requisite clearance or approval.

Ongoing changes in healthcare regulation could negatively affect our revenues, business and financial condition.

The United States healthcare system has been continually evolving at the federal and state level due to comprehensive reforms relating to the payment for, the availability of and reimbursement for healthcare services. Key reforms have ranged from fundamentally changing federal and state healthcare reimbursement programs, including providing comprehensive healthcare coverage to the public under government-funded programs, to minor modifications to existing programs, and many have been challenged (with some being overturned or modified) along the way. One example, among countless others, is the Patient Protection and Affordable Care Act (the "Affordable Care Act"), which was the most significant federal healthcare reform law enacted in the U.S. in recent history. The Affordable Care Act has undergone substantial challenges and changes since its enactment in 2010, and numerous other federal healthcare reform legislation, executive orders, and judicial rulings have been implemented in the years since, most of which have been or are aimed at lowering healthcare costs in the U.S. To the extent any such reform measures or any future initiatives reduce reimbursement or coverage eligibility or any amounts or funds available (such as by reductions in reimbursement to our healthcare provider customers) for our BNA Platform and/or any future products we may market in the U.S. (if any), our business may be adversely affected.

Healthcare reform initiatives will continue to be proposed and may reduce healthcare related funding. It is impossible to predict the ultimate content and timing of any healthcare reform legislation and its resulting impact on us. If significant reforms are made to the healthcare system in the United States, or in other jurisdictions, those reforms may increase our costs or otherwise negatively effect on our business, results of operations, and financial condition.

On April 5, 2017, the European Parliament passed the Medical Devices Regulation (Regulation 2017/745), which repeals and replaces the EU Medical Device Directive and became effective on May 26, 2021. The Medical Devices Regulation, among other things, is intended to establish a uniform, transparent, predictable, and sustainable regulatory framework across the EEA for medical devices and ensure a high level of safety and health while supporting innovation. The new regulations, among other things:

- strengthen the rules on placing devices on the market and reinforce surveillance once they are available;
- establish explicit provisions on manufacturers' responsibilities for the follow-up of the quality, performance and safety of devices placed on the market;
- improve the traceability of medical devices throughout the supply chain to the end-user or patient through a unique identification number;
- set up a central database to provide patients, healthcare professionals and the public with comprehensive information on products available in the European Union; and
- strengthen rules for the assessment of certain high-risk devices, such as implants, which may have to undergo an additional check by experts before they are placed on the market.

These modifications may have an effect on the way we conduct our business in the EEA.

Any change in the laws or regulations that govern the clearance and approval processes relating to our current, planned and future products could make it more difficult and costly to obtain clearance or approval for new products or to produce, market and distribute existing products. Significant delays in receiving clearance or approval or the failure to receive clearance or approval for our new products would have an adverse effect on our ability to expand our business.

Our products may cause or contribute to adverse medical events that we are required to report to FDA and other governmental authorities, and if we fail to do so, we would be subject to sanctions that could harm our reputation, business, results of operations, and financial condition. The discovery of serious safety issues with our products, or a recall of our products either voluntarily or at the direction of FDA or another governmental authority, could have a negative impact on us.

We are required to timely file various reports with FDA, including reports required by the medical device reporting regulations which require us to report to FDA when we receive or become aware of information that reasonably suggests that one of our products may have caused or contributed to a death or serious injury or malfunctioned in a way that, if the malfunction were to recur in the device or a similar device that we market, could cause or contribute to a death or serious injury. If we fail to comply with our reporting obligations, FDA or other governmental authorities could take action, including warning letters, untitled letters, administrative actions, criminal prosecution, imposition of civil monetary penalties, revocation of our device clearance, seizure of our products, or delay in clearance of future products. FDA and certain foreign regulatory bodies have the authority to require the recall of commercialized products under certain circumstances.

A government-mandated or voluntary recall by us could occur as a result of an unacceptable risk to health, component failures, malfunctions, labeling or design deficiencies, packaging defects, or other deficiencies, or failures to comply with applicable regulations. If we do not adequately address problems associated with our devices, we may face additional regulatory requirements or enforcement action, including required new marketing authorizations, FDA warning letters, product seizure, injunctions, administrative penalties, or civil or criminal proceedings.

We may initiate voluntary withdrawals, removals, or corrections for our products in the future that we determine do not require notification of FDA because no material compliance issue or safety risk is involved. If FDA disagrees with our determinations, it could require us to report those actions and we may be subject to enforcement action. A future recall announcement or other corrective action could harm our financial results and reputation, potentially lead to product liability claims against us, require the dedication of our time and capital, and negatively affect our sales.

In addition, FDA's and other regulatory authorities' policies may change, and additional government regulations may be enacted that could prevent, limit, or delay regulatory approval of our future products. For example, in November 2018, FDA announced that it plans to develop proposals to drive manufacturers utilizing the 510(k) pathway toward the use of newer predicates. It is unclear the extent to which any proposals, if adopted, could impose additional regulatory requirements on us that could delay our ability to obtain new 510(k) clearances, increase the costs of compliance, or restrict our ability to maintain our current clearances.

We also cannot predict the likelihood, nature, or extent of government regulation that may arise from future legislation or administrative or executive action, either in the U.S. or abroad. For example, the Trump Administration previously enacted several executive actions that could impose significant burdens on, or otherwise materially delay, FDA's ability to engage in routine regulatory and oversight activities. It is difficult to predict how these executive actions and executive actions that may be taken under the Biden Administration may affect FDA's ability to exercise its regulatory authority. If these executive actions impose constraints on FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

Changes in internet regulations could adversely affect our business.

Laws, rules, and regulations governing internet communications, advertising, and e-commerce are dynamic, and the extent of future government regulation is uncertain. Federal and state regulations govern various aspects of our online business, including intellectual property ownership and infringement, trade secrets, the distribution of electronic communications, marketing and advertising, user privacy and data security, search engines, and internet tracking technologies. Future taxation on the use of the internet or e-commerce transactions could also be imposed. Existing or future regulation or taxation could increase our operating expenses and expose us to significant liabilities.

Disruptions at the FDA, other agencies or notified bodies caused by funding shortages or global health concerns could hinder their ability to hire, retain, or deploy key leadership and other personnel, or otherwise prevent new or modified products from being developed, cleared or approved, or commercialized in a timely manner, or at all, which could negatively impact our business.

The ability of the FDA, other agencies and notified bodies to review and authorize or certify for marketing new products can be affected by a variety of factors, including government budget and funding levels, statutory, regulatory and policy changes, agency's or notified body's ability to hire and retain key personnel and accept the payment of user fees, and other events that may otherwise affect the agency's or notified body's ability to perform routine functions. Average review times at the FDA and other agencies and notified bodies have fluctuated in recent years as a result. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable. Disruptions at the FDA, other agencies and notified bodies may also slow the time necessary for new medical devices or modifications to be reviewed and/or cleared, approved or certified by necessary agencies or notified bodies, which would adversely affect our business. For example, over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical FDA employees and stop critical activities. In addition, in recent years, the FDA postponed most inspections of domestic and foreign manufacturing facilities at various points in response to the global COVID-19 pandemic. If a prolonged government shutdown occurs, or if global health concerns, including pandemics, were to prevent the FDA or other regulatory authorities from conducting their regular inspections, reviews, or other regulatory activities, it could significantly impact the ability of the FDA or other regulatory authorities to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

In the EU, notified bodies must be officially designated to certify products and services in accordance with the MDR, which regulates the development and sale of medical devices in Europe. While several notified bodies have been designated, the COVID-19 pandemic significantly slowed down their designation process and the current designated notified bodies are facing a large amount of requests with the new regulation, as a consequence of which review times have lengthened although a regulation amending the EU MDR was adopted in March 2023, extending existing transitional provisions to December 31, 2028. This situation could significantly impact the ability of notified bodies to timely review and process our regulatory submissions, which could have a material adverse effect on our business in the EU and EEA (which consists of the 27 EU member states plus Norway, Liechtenstein and Iceland).

The misuse or off-label use of our BNA Platform may harm our reputation in the marketplace, result in injuries that lead to product liability suits or result in costly investigations, fines or sanctions by regulatory bodies, particularly if we are deemed to have engaged in the promotion of these uses, any of which could be costly to our business.

Our BNA Platform is a Class II medical device cleared by FDA for commercialization in the U.S. pursuant to the 510(k) notification process for the post-hoc statistical analysis of the human electroencephalogram in December 2020 for use in individuals 12 to 85 years of age. We, thus, are not currently able to promote the BNA Platform for any other indications for use or make any promotional claims that are inconsistent with, or outside the scope of, such FDA clearance (often referred to as "off-label" claims). However, the assessment of whether a given claim is or is not consistent with a given FDA clearance or approval can often be subjective, and we cannot guarantee that FDA will always agree with our position regarding a particular claim or that all of our employees, representatives, and agents will abide by our marketing policies. If FDA determines that we have promoted any product without the requisite clearance or approval and/or for an off-label or unapproved use, it could take any number of enforcement actions against us, including (among others), issuing untitled or warning letters and/or pursuing an injunction, seizure, civil fine and/or criminal penalties. It is also possible that other federal, state or foreign enforcement authorities might take action under other regulatory authority, such as laws prohibiting false claims for reimbursement, any of which would have a material adverse effect on our financial condition and/or business as a whole.

Additionally, we must have competent and reliable scientific evidence or, where applicable, other adequate substantiation for each reasonable interpretation of every promotional claim we make. In particular, comparative or superiority claims generally require adequate, well controlled, head-to-head clinical studies, comparing the product to the applicable competing products. To the extent we make any claims, or are otherwise held responsible for third-party claims about any product we may market in the United States, without the requisite clinical substantiation, we could be subject to enforcement action by FDA and/or the Federal Trade Commission (FTC), as well as a competitor challenge via the National Advertising Division (NAD) of the Better Business Bureau. Our plans to utilize social media as a primary promotional tool for our device(s) increases the applicable enforcement risk, as it makes it easier for our employees, affiliates, and any third parties with which we may have a relationship and/or arrangement under which we are deemed responsible for such party's claims about our product(s) to disseminate promotional claims about our product(s) that may be inconsistent with applicable regulations governing device promotions. Further, consumers can bring private false-advertising lawsuits, including class actions, against us for any material misrepresentations and/or deceptive or unsubstantiated claims (among other similar causes of action) in our promotional materials or other advertising. Any of the foregoing could have a material adverse effect on our business.

We may be subject to certain federal, state, and foreign fraud and abuse laws, health information privacy and security laws, and transparency laws, which, if violated, could subject us to substantial penalties. Additionally, any challenge to or investigation into our practices under these laws could cause adverse publicity and be costly to respond to, and thus could harm our business.

There are numerous U.S. federal and state, as well as foreign, laws pertaining to healthcare fraud and abuse, including anti-kickback, false claims, and physician transparency laws. Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations may involve substantial costs. Our business practices and relationships with providers and patients are subject to scrutiny under these laws. We may also be subject to patient information privacy and security regulation by both the federal government and the states and foreign jurisdictions in which we conduct our business. The healthcare laws and regulations that may affect our ability to operate include:

- the federal healthcare Medicare and Medicaid Patient Protection Act of 1987 (the "Anti-Kickback Statute"), which prohibits, among other things, persons, and entities from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, lease, order, or arrange for or recommend a good or service, for which payment may be made, in whole or in part, under federal healthcare programs, such as Medicare and Medicaid. The term "remuneration" has been broadly interpreted to include anything of value. The government can establish a violation of the Anti-Kickback Statute without proving that a person or entity had actual knowledge of the law or a specific intent to violate. Moreover, the government may assert that a claim including items or services resulting from a violation of the federal healthcare Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Although there are a number of statutory exceptions and regulatory safe harbors to the federal healthcare Anti-Kickback Statute protecting certain common business arrangements and activities from prosecution or regulatory sanctions, the exceptions and safe harbors are drawn narrowly. Practices that involve remuneration to those who prescribe, purchase, or recommend medical device products, including discounts, or engaging individuals as speakers, consultants, or advisors, may be subject to scrutiny if they do not fit squarely within an exception or safe harbor. Our practices may not in all cases meet all of the criteria for safe harbor protection from anti- kickback liability. Moreover, there are no safe harbors for many common practices, such as reimbursement support programs, educational or research grants, or charitable donations;
- the federal civil False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, false or fraudulent claims for payment of federal government funds, and knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to avoid, decrease or conceal an obligation to pay money to the federal government. Private individuals, commonly known as "whistleblowers," can bring civil False Claims Act qui tam actions, on behalf of the government and such individuals and may share in amounts paid by the entity to the government in recovery or settlement. False Claims Act liability is potentially significant in the healthcare industry because the statute provides for treble damages and mandatory penalties for each false or fraudulent claim or statement. The government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim under the federal civil False Claims Act. Many pharmaceutical and medical device manufacturers have been investigated and have reached substantial settlements under the federal civil False Claims Act in connection with alleged off-label promotion of their products and allegedly providing free products to customers with the expectation that the customers would bill federal health care programs for the product. In addition, manufacturers can be held liable under the federal civil False Claims Act even when they do not submit claims directly to government payers if they are deemed to "cause" the submission of false or fraudulent claims. There are also criminal penalties, including imprisonment and criminal fines, for making or presenting false, fictitious or fraudulent claims to the federal government;
- Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), which created additional federal criminal statutes that prohibit, among other things, knowingly and willfully executing or attempting to execute a scheme to defraud any healthcare benefit program, including private third-party payers, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statements or representations, or making or using any false writing or document knowing the same to contain any materially false, fictitious or fraudulent statement or entry in connection with the delivery of, or payment for, healthcare benefits, items or services. Similar to the federal healthcare Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation;
- the federal Physician Payments Sunshine Act under the Affordable Care Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the United States Department of Health and Human Services, Centers for Medicare and Medicaid Services, information related to payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, and applicable manufacturers and group purchasing organizations, as well as ownership and investment interests held by physicians and their immediate family members. Since January 2022, applicable manufacturers are also required to report information regarding payments and transfers of value provided to physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, and certified nurse-midwives;

- HIPAA, as amended by Health Information Technology for Economic and Clinical Health Act ("HITECH"), and their respective implementing regulations, which imposes privacy, security, and breach reporting obligations with respect to Protected Health Information ("PHI"), upon entities subject to the law, such as health plans, healthcare clearinghouses and certain healthcare providers, and their respective business associates that perform services on their behalf that involve PHI. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make HIPAA compliance as well as civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions; and
- analogous state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payer, including commercial insurers or patients; state laws that require device companies to comply with the industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state and local laws that require the licensure of sales representatives; state laws that require device manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures and pricing information; data privacy and security laws and regulations in foreign jurisdictions that may be more stringent than those in the United States (such as the EU, which adopted the General Data Protection Regulation, which became effective in May 2018); state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts; and state laws related to insurance fraud in the case of claims involving private insurers.

These laws and regulations, among other things, may constrain our business, marketing, and other promotional activities by limiting the kinds of financial arrangements, including sales programs, we may have with physicians or other potential purchasers of our products and consulting agreements we enter into with physicians. Further, while we do not submit claims and our future customers will make the ultimate decision on whether or how to submit any potential claims, we may provide reimbursement guidance and support regarding our products, to the extent reimbursement may be available, which could implicate these laws. Due to the breadth of these laws, the narrowness of statutory exceptions and regulatory safe harbors available, and the range of interpretations to which they are subject, it is possible that some of our current or future practices might be challenged under one or more of these laws.

To enforce compliance with healthcare regulatory laws, certain enforcement bodies have recently increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. For example, U.S. federal and state regulatory and enforcement agencies continue to actively investigate violations of healthcare laws and regulations, including pursuing novel theories of liability under these laws. These government agencies recently have increased regulatory scrutiny and enforcement activity with respect to manufacturer reimbursement support activities and patient support programs, including bringing criminal charges or civil enforcement actions under the federal healthcare Anti-Kickback statute, federal civil False Claims Act, the health care fraud statute, and HIPAA privacy provisions. Responding to investigations can be time and resource consuming and can divert management's attention from the business. Any such investigation or settlement could increase our costs or otherwise have an adverse effect on our business. Even an unsuccessful challenge or investigation into our practices could cause adverse publicity, and be costly to respond to.

If our operations are found to be in violation of any of the healthcare laws or regulations described above or any other healthcare regulations that may apply to us, we may be subject to administrative, civil and criminal penalties, damages, fines, disgorgement, substantial monetary penalties, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, imprisonment, additional reporting obligations, and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws, reputational harm, and the curtailment or restructuring of our operations.

Since our BNA Platform will utilize cloud-based information systems and the exchange of information between patents and doctors, we will be subject to numerous U.S. federal and state laws and regulations related to the privacy and security of personally identifiable information, including health information.

Among other data-privacy and/or confidentiality laws to which we may be subject, HIPAA establishes privacy and security standards that limit the use and disclosure of PHI and require covered entities and business associates to implement administrative, physical, and technical safeguards to ensure the confidentiality, integrity, and availability of individually identifiable health information in electronic form, among other requirements.

Violations of HIPAA may result in civil and criminal penalties. We must also comply with HIPAA's breach notification rule which requires notification to affected individuals and the Secretary of Health and Human Services ("HHS"), and in certain cases to media outlets, in the case of a breach of unsecured PHI. The regulations also require business associates of covered entities to notify the covered entity of breaches by the business associate.

State attorneys general also have the right to prosecute HIPAA violations committed against residents of their states, and HIPAA standards have been used as the basis for the duty of care in state civil suits, such as those for negligence or recklessness in misusing personal information. In addition, HIPAA mandates that HHS conduct periodic compliance audits of HIPAA covered entities and their business associates for compliance.

Many states also have laws that protect the privacy and security of sensitive and personal information, including health information. These laws may be similar to or even more protective than HIPAA and other federal privacy laws. For example, the laws of the State of California are more restrictive than HIPAA. Where state laws are more protective than HIPAA, we must comply with the state laws we are subject to, in addition to HIPAA. For example, California passed the California Consumer Privacy Act or CCPA on June 28, 2018, which went into effect January 1, 2020. On November 3, 2020, the California Privacy Rights Act of 2020 ("CPRA"), which amends the CCPA and adds new privacy protections that became effective on January 1, 2023, was enacted through a ballot initiative. While information we maintain that is covered by HIPAA may be exempt from the CCPA, other records and information we maintain related to patients or personnel may be subject to the CCPA. In certain cases, it may be necessary to modify our planned operations and procedures to comply with these more stringent state laws. Not only may some of these state laws impose fines and penalties upon violators, but also some, unlike HIPAA, may afford private rights of action to individuals who believe their personal information has been misused. In addition, state and federal privacy laws subject to frequent change.

In addition to HIPAA and state health information privacy laws, we may be subject to other state and federal privacy laws, including laws that prohibit unfair privacy and security practices and deceptive statements about privacy and security, laws that place specific requirements on certain types of activities, such as data security and texting, and laws requiring holders of personal information to maintain safeguards and to take certain actions in response to a data breach.

Foreign data protection, privacy, and other laws and regulations are often more restrictive than those in the U.S. The E.U., for example, traditionally has imposed stricter obligations under its laws and regulations relating to privacy, data protection and consumer protection than the U.S. In May 2018, the GDPR, governing data practices and privacy in the E.U., became effective and replaced the data protection laws of the individual member states. GDPR requires companies to meet stringent requirements regarding the handling of personal data of individuals in the E.U. These more stringent requirements include expanded disclosures to inform members about how we may use their personal data, increased controls on profiling members, and increased rights for members to access, control and delete their personal data. In addition, there are mandatory data breach notification requirements. The law also includes significant penalties for non-compliance, which may result in monetary penalties of up to 20 million Euros or 4% of a company's worldwide turnover, whichever is higher. GDPR and other similar regulations require companies to give specific types of notice, and informed consent is required for the placement of a cookie or similar technologies on a user's device for online tracking for behavioral advertising and other purposes and for direct electronic marketing. The GDPR also imposes additional conditions in order to satisfy such consent, such as a prohibition on pre-checked consents. It remains unclear how the U.K. data protection laws or regulations will develop in the medium to longer term and how data transfer to the U.K. from the E.U. will be regulated. Outside of the E.U., there are many other countries with data protection laws, and new countries are adopting data protection legislation with increasing frequency.

Many of these laws may require consent from individuals for the use of data for various purposes, including marketing, which may reduce our ability to market our products.

There is no harmonized approach to these laws and regulations globally. Consequently, we increase our risk of non-compliance with applicable foreign data protection laws and regulations when we expand internationally. We may need to change and limit the way we use personal information in operating our business and may have difficulty maintaining a single operating model that is compliant. Compliance with such laws and regulations will result in additional costs and may necessitate changes to our business practices and divergent operating models, limit the effectiveness of our marketing activities, adversely affect our business, results of operations, and financial condition, and subject us to additional liabilities.

Our business could be adversely affected by professional and legal challenges to our business model or by new state actions restricting our ability to provide our products and services in certain states.

Since the success of our business will be dependent on the widespread adaptation of our BNA Platform as a valid method for statistical analysis of EEG scans, neurologists across multiple geographies will be needed to use our BNA Platform and provide positive feedback and results. This will expose us to legal risk of patients or neurologists who may have a negative experience with our BNA Platform filing lawsuits claiming damages or other claims. Although we will seek insurance coverage for such legal actions, there is no assurance that the amount of coverage will be sufficient to cover these claims. In addition, such legal actions from consumers and neurologists may result in material and adverse effects on our ability to continue to conduct business due to negative press.

Security breaches, data breaches, cyber attacks, other cybersecurity incidents or the failure to comply with privacy, security and data protection laws could materially impact our operations, patient care could suffer, we could be liable for damages, and our business, operations and reputation could be harmed.

We expect to retain confidential customer personal and financial, patient health information and our own proprietary information and data essential to our business operations. We will rely upon the effective operation of our IT systems, and those of our service providers, vendors, and other third parties to safeguard the information and data. Additionally, our success may be dependent on the success of healthcare providers, many of whom are comprised of individual or small operations with limited IT experience and inadequate or untested security protocols, in managing data privacy and data security requirements. It is critical that the facilities, infrastructure and IT systems on which we depend to run our business and the products we develop remain secure and be perceived by the marketplace and our potential customers to be secure. Despite the implementation of security features in our products and security measures in our IT systems, we and our service providers, vendors, and other third parties may become subject to physical break-ins, computer viruses or other malicious code, unauthorized or fraudulent access, programming errors or other technical malfunctions, hacking or phishing attacks, malware, ransomware, employee error or malfeasance, cyber attacks, and other breaches of IT systems or similar disruptive actions, including by organized groups and nation-state actors. For example, we may experience cybersecurity incidents and unauthorized internal employee exfiltration of company information.

Further, the frequency of third-party cyber-attacks has increased over the last several years. The military conflict in Ukraine may cause nation-state actors or hackers sympathetic to either side of the conflict to carry out cyber-attacks to achieve their goals, which may include espionage, information gathering operations, monetary gain, ransomware, disruption, and destruction. Significant service disruptions, breaches in our infrastructure and IT systems or other cybersecurity incidents could expose us to litigation or regulatory investigations, impair our reputation and competitive position, be distracting to our management, and require significant time and resources to address. Affected parties or regulatory agencies could initiate legal or regulatory action against us, which could prevent us from resolving the issues quickly or force us to resolve them in unanticipated ways, cause us to incur significant expense and liability, or result in judicial or governmental orders forcing us to cease operations or modify our business practices in ways that could materially limit or restrict the products and services we provide. Concerns over our privacy practices could adversely affect others' perception of us and deter potential customers, patients and partners from using our products. In addition, patient care could suffer, and we could be liable if our products or IT systems fail to deliver accurate and complete information in a timely manner. We have internal monitoring and detection systems as well as cybersecurity and other forms of insurance coverage related to a breach event covering expenses for notification, credit monitoring, investigation, crisis management, public relations and legal advice. However, damages and claims arising from such incidents may not be covered or may exceed the amount of any coverage and do not cover the time and effort we may incur investigating and responding to any incidents, which may be material. The costs to eliminate, mitigate or recover from security problems and cyber attacks and incidents could be material and depending on the nature and extent of the problem and the networks or products impacted, may result in network or systems interruptions, decreased product sales, or data loss that may have a material impact on our operations, net revenues and operating results.

Our business will expose us to potential liability for the quality and safety of our products and services, how we advertise and market those products and services and how and to whom we sell them, and we may incur substantial expenses or be found liable for substantial damages or penalties if we are subject to claims or litigation.

Our products and services involve an inherent risk of claims concerning their design, manufacture, safety and performance, how they are marketed and advertised in a complex framework of highly regulated domestic and international laws and regulations, how we package, bundle or sell them to potential customers, who may be private individuals or companies or public entities such as hospitals and clinics, and how we train and support doctors, their staffs and patients who administer or use our products. Moreover, consumer products and services are routinely subject to claims of false, deceptive or misleading advertising, consumer fraud and unfair business practices. Additionally, we may be held liable if any product we develop or manufacture or services we offer or perform causes injury or is otherwise found unhealthy. If our products are safe but they are promoted for off-label usage, we may be investigated, fined or have our products or services enjoined or approvals rescinded or we may be required to defend ourselves in litigation. Although we maintain insurance for product liability, business practices and other types of activities we make or offer, coverage may not be available on acceptable terms, if at all, and may be insufficient for actual liabilities. Any claim for product liability, sales, advertising and business practices, regardless of its merit or eventual outcome, could result in material legal defense costs and damage our reputation, increase our expenses and divert management's attention.

Increased focus on current and anticipated environmental, social and governance ("ESG") laws and increased scrutiny of our ESG policies and practices may materially increase our costs, expose us to potential liability, adversely impact our reputation, employee retention, willingness of potential customers and suppliers to do business with us and willingness of investors to invest in us.

Our operations are subject to a variety of existing local, regional and global ESG laws and regulations, and we will likely be required to comply with new, broader, more complex and more costly laws and regulations that focus on ESG matters. Our compliance obligations will likely span all aspects of our business and operations, including product design and development, materials sourcing and other procurement activities, product packaging, product safety, energy and natural resources usage, facilities design and utilization, recycling and collection, transportation, disposal activities and workers' rights.

Environmental regulations related to greenhouse gases are expected to have an increasingly larger impact on our or our suppliers' energy sources. Many U.S. and foreign regulators have enacted or are considering enacting new or additional disclosure requirements or limits on the emissions of greenhouse gases, including, but not limited to, carbon dioxide and methane, from power generation units using fossil fuels. The effects of greenhouse gas emission limits on power generation are subject to significant uncertainties, including the timing of any new requirements, levels of emissions reductions and the scope and types of emissions regulated. These limits may have the effect of increasing our costs and those of our suppliers and could result in manufacturing, transportation and supply chain disruptions and delays if clean energy alternatives are not readily available in adequate amounts when required. Moreover, alternative energy sources, coupled with reduced investments in traditional energy sources and infrastructure, may fail to provide the predictable, reliable, and consistent energy that we, our suppliers and other businesses need for operations.

Meeting our obligations under existing ESG laws, rules, or regulations is already costly to us and our suppliers, and we expect those costs to increase as new laws are enacted, possibly materially. Additionally, we expect regulators to perform investigations, inspections and periodically audit our compliance with these laws and regulations, and we cannot provide assurance that our efforts or operations will be compliant. If we fail to comply with any requirements, we could be subject to significant penalties or liabilities and we may be required to implement new and materially more costly processes and procedures to come into compliance. Further, these laws are subject to unpredictable changes. Even if we successfully comply with these laws and regulations, our suppliers may fail to comply. We may also suffer financial and reputational harm if future customers require, and we are unable to deliver, certification that our products are conflict free. In all of these situations, our future customers may stop purchasing products from us, and may take legal action against us, which could harm our reputation, revenues and results of operations.

Investor advocacy groups, institutional investors, investment funds, proxy advisory services, stockholders, and consumers are also increasingly focused on corporate ESG practices. Additionally, public interest and legislative pressure related to public companies' ESG practices continues to grow. If our ESG practices fail to meet investors' or other industry stakeholders' evolving expectations and standards, including environmental stewardship, support for local communities, board of director and employee diversity, human capital management, employee health and safety practices, product quality, supply chain management, corporate governance and transparency and employing ESG strategies in our operations, our brand, reputation and employee retention may be negatively impacted, potential customers and suppliers may be unwilling to do business with us and investors may be unwilling to invest in us. In addition, as we work to align our ESG practices with industry standards, we have expanded and will likely continue to expand our disclosures in these areas. We also expect to incur additional costs and require additional resources to monitor, report, and comply with our various ESG practices. If we fail to adopt ESG standards or practices as quickly as stakeholders desire, report on our ESG efforts or practices accurately, or satisfy the disclosure and other expectations of stakeholders, our reputation, business, financial performance, growth, and stock price may be adversely impacted.

We are subject to consumer protection laws that regulate our marketing practices and prohibit unfair or deceptive acts or practices. Our actual or perceived failure to comply with such obligations could harm our business, and changes in such regulations or laws could require us to modify our products, marketing or advertising efforts.

In connection with the marketing or advertisement of our products and services, we could be the target of claims relating to false, misleading, deceptive, or otherwise noncompliant advertising or marketing practices, including under the auspices of the FTC and state consumer protection statutes. If we rely on third parties to provide any marketing and advertising of our products and services, we could be liable for, or face reputational harm as a result of, their marketing practices if, for example, they fail to comply with applicable statutory and regulatory requirements.

If we are found to have breached any consumer protection, advertising, unfair competition, or other laws or regulations, we may be subject to enforcement actions that require us to change our marketing and business practices in a manner which may negatively impact us. This could also result in litigation, fines, penalties, and adverse publicity that could cause reputational harm and loss of patient trust, which could have an adverse effect on our business.

Risks Related to our Intellectual Property

Our success depends in part on our proprietary technology, and if we are unable to successfully enforce our intellectual property rights, our competitive position may be harmed.

Our success will depend in part on our ability to maintain existing intellectual property and to obtain and maintain further intellectual property protection for our products and services, both in the U.S. and in other countries. We intend to protect our intellectual property rights, including our AI technology and related algorithms, through a combination of patent, trademark, copyright, and trade secret laws, as well as third-party confidentiality and assignment agreements. Our inability to do so could harm our competitive position.

We rely on our portfolio of issued and pending patent applications in the U.S. and other countries to protect a large part of our intellectual property and our competitive position; however, our currently pending or future patent filings may not result in the issuance of patents. While we generally apply for patents in those countries where we intend to make, have made, use, or sell patented products, we may not accurately predict all of the countries where patent protection will ultimately be desirable. If we fail to timely file for a patent, we may be precluded from doing so at a later date.

Patent rights are territorial, and patent protection extends only to those countries where we have issued patents. Filing, prosecuting and defending patents on our products and our future products in all countries and jurisdictions throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States could be less extensive than those in the United States. Many countries do not protect intellectual property to the same extent as the U.S. or Europe, and their litigation processes differ. Competitors may successfully challenge or avoid our patents, or manufacture products in countries where we have not applied for patent protection. Changes in the patent laws in the U.S. or other countries may diminish the value of our patent rights. As a result of these and other factors, the scope, validity, enforceability, and commercial value of our patent rights are uncertain and unpredictable.

Furthermore, the patent positions of medical device companies involve complex legal and factual questions, and, therefore, the issuance, scope, validity and enforceability of any patent claims that we may obtain cannot be predicted with certainty. The issuance of a patent, while presumed valid and enforceable, is not conclusive as to its validity or its enforceability and it may not provide us with adequate proprietary protection or competitive advantages against competitors with similar products. Any patents issued to us may be challenged, invalidated, held unenforceable, circumvented, or may not be sufficiently broad to prevent third parties from producing competing products similar in design to our products. In addition, any protection afforded by foreign patents may be more limited than that provided under U.S. patent and intellectual property laws. There can be no assurance that any of our patents, any patents licensed to us, or any patents which we may be issued in the future, will provide us with a competitive advantage or afford us protection against infringement by others, or that the patents will not be successfully challenged or circumvented by third parties, including our competitors. Further, there can be no assurance that we will have adequate resources to enforce our patents. Competitors may also be able to design around our patents. Other parties may develop and obtain patent protection for more effective technologies, designs or methods.

Our ability to enforce our patent rights depends on our ability to detect infringement. It is difficult to detect infringers who do not advertise the components that are used in their products. Moreover, it may be difficult or impossible to obtain evidence of infringement in a competitor's or potential competitor's product, particularly in litigation in countries other than the U.S. that do not provide an extensive discovery procedure. Any litigation to enforce or defend our patent rights, if any, even if we were to prevail, could be costly and time-consuming and would divert the attention of our management and key personnel from our business operations. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded if we were to prevail may not be commercially meaningful.

Moreover, advances in AI technology may generate developments that existing IP laws do not adequately protect. The legislative and regulatory environment is out of our control, may change rapidly and unpredictably, and may negatively influence our revenue, costs, earnings, and growth. Some rules and regulations may be subject to litigation or other challenges that delay or modify their implementation and impact on us.

We also may seek to rely on protection of copyright, trade secrets, know how, and confidential and proprietary information. We generally enter into confidentiality and non-compete agreements with our employees, consultants, and collaborative partners upon their commencement of a relationship with us. However, these agreements may not provide meaningful protection against the unauthorized use or disclosure of our trade secrets or other confidential information, and adequate remedies may not exist if unauthorized use or disclosure were to occur. The exposure of our trade secrets and other proprietary information would impair our competitive advantages and could have a material adverse effect on our operating results, financial condition, and future growth prospects. In particular, a failure to protect our proprietary rights might allow competitors to copy our technology, which could adversely affect our pricing and market share. We may not be able to prevent the unauthorized disclosure or use of our technical knowledge or trade secrets by consultants, vendors, former employees and current employees. Further, other parties may independently develop substantially equivalent know-how and technology.

We currently own registered trademarks for our BNA Platform, and we intend to rely on both registered and common law rights for our trademarks in the future. There can be no assurance that our future trademark applications will be approved. Third parties may also oppose our trademark applications, or otherwise challenge our use of the trademarks. In the event that our trademarks are successfully challenged, we could be forced to rebrand our products and services, which could result in loss of brand recognition, and could require us to devote resources to advertising and marketing new brands. Further, there can be no assurance that competitors will not infringe our trademarks, or that we will have adequate resources to enforce our trademarks.

Litigation, interferences, oppositions, re-exams, inter partes reviews, post grant reviews, or other proceedings are, have been, and may in the future be necessary in some instances to determine the validity and scope of certain of our proprietary rights, and in other instances to determine the validity, scope, or non-infringement of certain proprietary rights claimed by third parties to be pertinent to the manufacture, use, or sale of our products or provision of our services. These types of proceedings are unpredictable and may be protracted, expensive, and distracting to management. The outcome of such proceedings could adversely affect the validity and scope of our patent or other proprietary rights, hinder our ability to manufacture and market our products and provide our services, require us to seek a license for the infringed product or technology, or result in the assessment of significant monetary damages. An unfavorable ruling could include monetary damages or, in cases where injunctive relief is sought, an injunction prohibiting us from selling our products or providing our services. Any of these results from litigation could adversely affect our business, financial condition, and results of operations.

Successful cybersecurity attacks, data breaches, unapproved use of machine learning or AI tools, or other security incidents could result in the loss of IP and key technological advantages. Security incidents could result in, for example, unauthorized access to, disclosure, modification, misuse, loss, or destruction of company, patient, or other third party data; theft or import of sensitive, regulated, or confidential data including personal information and IP, such as key innovations in AI; the loss of access to critical data or systems through ransomware; and business delays.

If we infringe or violate the patents or proprietary rights of other parties or are subject to an intellectual property infringement or misappropriation claim, our ability to grow our business may be severely limited.

Our commercial success also depends upon our ability, and the ability of any third party with which we may partner, to develop, manufacture, market and sell our products, if approved, and use our patent-protected technologies without infringing the patents of third parties. Extensive litigation over patents and other intellectual property rights is common in the medical device industry.

We may not have identified all patents, published applications or published literature that affect our business either by blocking our ability to commercialize our products, by preventing the patentability of one or more aspects of our products, or by covering the same or similar technologies that may affect our ability to market our products. For example, we may not have conducted a patent clearance search sufficient to identify potentially obstructing third party patent rights. Moreover, patent applications in the United States are maintained in confidence for up to 18 months after their filing. In some cases, however, patent applications remain confidential in the U.S. Patent and Trademark Office, or the USPTO, for the entire time prior to issuance as a U.S. patent. Patent applications filed in countries outside of the United States are not typically published until at least 18 months from their first filing date. Similarly, publication of discoveries in the scientific or patent literature often lags behind actual discoveries. We cannot be certain that we were the first to invent, or the first to file, patent applications covering our products. We also may not know if our competitors filed patent applications for technology covered by our pending applications or if we were the first to invent the technology that is the subject of our patent applications. Competitors may have filed patent applications or received patents and may obtain additional patents and proprietary rights that block or compete with our patents.

We may therefore in the future be the subject of patent or other litigation. From time to time, we may in the future receive letters from third parties drawing our attention to their patent rights. While we do not believe that we infringe upon any valid and enforceable rights that have been brought to our attention, and we take necessary steps to ensure that we do not infringe on the rights of others, there may be other more pertinent rights of which we are presently unaware. The defense and prosecution of intellectual property suits, interference proceedings, and related legal and administrative proceedings could result in substantial expense to us and significant diversion of effort by our technical and management personnel. An adverse determination of any litigation or interference proceeding to which we may become a party could subject us to significant liabilities. An adverse determination of this nature could also put our patents at risk of being invalidated or interpreted narrowly or require us to seek licenses from third parties. Licenses may not be available on commercially reasonable terms or at all, in which event, our business would be materially adversely affected. Intellectual property litigation or claims could force us to cease developing, selling or otherwise commercializing one or more of our products; to pay substantial damages for past use of the asserted intellectual property; and redesign, or rename in the case of trademark claims, our product(s) to avoid such third party rights, which may not be possible or which could be costly and time-consuming. Any of these risks coming to fruition could have a material adverse effect on our business, results of operations, financial condition and prospects.

Our failure to secure trademark registrations could adversely affect our ability to market our products and operate our business.

Any future trademark applications in the United States and any other jurisdictions where we may file may not be allowed registration, and we may not be able to maintain or enforce our registered trademarks. During trademark registration proceedings, we may receive rejections. Although we are given an opportunity to respond to those rejections, we may be unable to overcome such rejections. In addition, in the USPTO and in corresponding foreign agencies, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our applications and/or registrations, and our applications and/or registrations may not survive such proceedings. Failure to secure such trademark registrations in the United States and in foreign jurisdictions could adversely affect our ability to market our products and our business.

We may be subject to claims that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

As is common in the medical device industry, we may employ individuals who were previously employed at other companies similar to ours, including our competitors or potential competitors. We may become subject to claims that these employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Obtaining and maintaining patent protection depends on compliance with various procedures and other requirements, and our patent protection could be reduced or eliminated in case of non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to the relevant patent agencies in several stages over the lifetime of the patents and /or applications. The relevant patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patent application process. In many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which the failure to comply with the relevant requirements can result in the abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to use our technologies and know-how which could have a material adverse effect on our business, prospects, financial condition and results of operation.

Patent terms may be inadequate to protect our competitive position on our products for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our products are obtained, once the patent life has expired for a product, we may be open to competition from competitive products. Given the amount of time required for the development, testing and regulatory review of new products, patents protecting such products might expire before or shortly after such products are commercialized. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

We may be subject to claims challenging the inventorship of our patents and other intellectual property.

We may be subject to claims that former employees, collaborators or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor or an author. For example, we may have inventorship or ownership disputes arise from conflicting obligations of consultants or others who are involved in developing our products. Litigation may be necessary to defend against these and other claims challenging inventorship or our ownership of our patents or other intellectual property. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We use AI in our business, and challenges with properly managing its use could result in reputational harm, competitive harm, and legal liability, and adversely affect our results of operations.

We incorporate AI solutions into our BNA platform, services, and features, and these applications are important in our operations. Our competitors or other third parties may incorporate AI into their products more quickly or more successfully than us, which could impair our ability to compete effectively and adversely affect our results of operations.

Additionally, if the content, analyses, or recommendations that AI applications assist in producing are or are alleged to be deficient, inaccurate, or biased, our business, financial condition, and results of operations may be adversely affected. Our use of AI and machine learning is subject to risks related to flaws in our algorithms and datasets that may be insufficient or contain biased information. The development of AI technologies is complex, and there are several challenges associated with achieving the desired level of accuracy, efficiency, and reliability. The algorithms and models used in our AI systems may have limitations, including biases, errors, or inability to handle certain data types or scenarios. There is a risk of system failures, disruptions, or vulnerabilities that could compromise the integrity, security, or privacy of our platform. These failures could result in reputational damage, legal liabilities, or loss of user confidence, which could materially affect our business.

The use of AI applications has resulted in, and may in the future result in, cybersecurity incidents that implicate the personal data of patients and users of such applications. Any such cybersecurity incidents related to our use of AI applications could adversely affect our reputation and results of operations. AI also presents emerging ethical issues, and if our use of AI becomes controversial, we may experience brand or reputational harm, competitive harm, or legal liability. The rapid evolution of AI, including potential government regulation of AI, will require significant resources to develop, test and maintain our platform, services, and features to help us implement AI ethically in order to minimize unintended, harmful impact.

Legislative and governmental activity in the privacy area may result in new laws or regulations that are applicable to us and that may hinder our business, for example, by restricting use or sharing of patient data, limiting our ability to provide certain data to our customers, limiting our ability to develop or modify our AI systems, or otherwise regulating AI and machine learning, including the use of algorithms and automated processing in ways that could materially affect our business, or which may lead to significant increases in the cost of compliance.

General Risks Related To Us

We may not continue to meet the continued listing requirements of Nasdaq, which could result in a delisting of our Common Stock.

Our Common Stock is listed on Nasdaq. While we are currently in compliance, WaveDancer has been in the past been, and we may in the future be, unable to comply with certain of the listing standards that we are required to meet to maintain the listing of our Common Stock on Nasdaq. For instance, on August 8, 2024, WaveDancer received a letter from the Listing Qualifications Department of the Nasdaq Stock Market LLC (the "Staff") indicating that in the former WaveDancer's Quarterly Report on Form 10-Q filed with the SEC on May 14, 2024, WaveDancer reported stockholders' equity of $1,708,520 for the period ended March 31, 2024, which did not comply with Listing Rule 5550(b)(1) (the "Minimum Stockholders' Equity Requirement"). Additionally, as previously reported, in a decision dated November 14, 2023, a Nasdaq Hearings Panel (the "Panel") confirmed that we had regained compliance with the Minimum Stockholders' Equity Requirement for a prior outstanding deficiency under the Minimum Stockholders' Equity Requirement as related to the WaveDancer's stockholders' equity for the period ended March 31, 2023. In the decision, the Panel imposed a Mandatory Panel Monitor for a period of one year or until November 14, 2024, which would require the Staff to issue a Delist Determination Letter in the event that WaveDancer, prior to the consummation of the Merger, or we, following the consummation of the Merger, failed to maintain compliance with the Minimum Stockholders' Equity Rule. On August 13, 2024, we received a notice from the Nasdaq Stock Market LLC indicating that following the Staff's review of the Merger, the Staff determined that we now comply with the Minimum Stockholders' Equity Requirement and that the matter is now closed.

While we have regained compliance with the continued listing requirements for Nasdaq, it cannot be assured that we will continue to do so. If Nasdaq delists our Common Stock from trading on its exchange for failure to meet the listing standards, an investor would likely find it significantly more difficult to dispose of or obtain our shares, and our ability raise future capital through the sale of our shares could be severely limited. Delisting could also have other negative results, including the potential loss of confidence by employees, the loss of institutional investor interest and fewer business development opportunities. Additionally, if we are unable to list on Nasdaq, it would likely be more difficult to trade in or obtain accurate quotations as to the market price of our Common Stock. If our securities are delisted from trading on Nasdaq, and we are not able to list its securities on another exchange or to have them quoted on Nasdaq, our securities could be quoted on the OTC Bulletin Board or on the "pink sheets." As a result, we could face significant adverse consequences including:

- a limited availability of market quotations for its securities;

- a determination that our Common Stock is a "penny stock," which will require brokers trading in our Common Stock to adhere to more stringent rules and possibly result in a reduced level of trading activity in the secondary trading market for our securities;
- a limited amount of news and analyst coverage for us; and
- a decreased ability to issue additional securities (including pursuant to short-form registration statements on Form S-3) or to obtain additional financing in the future.

Our stockholders may not realize a benefit from the Merger commensurate with the ownership dilution they will experience in connection with the Merger.

If we are unable to realize the full strategic and financial benefits currently anticipated from the Merger, our stockholders will have experienced substantial dilution of their ownership interests in their respective companies without receiving any commensurate benefit, or only receiving part of the commensurate benefit to the extent the combined organization is able to realize only part of the strategic and financial benefits currently anticipated from the merger. Furthermore, if we fail to realize the intended benefits of the Merger, the market price of our Common Stock could decline to the extent that the market price reflects those benefits.

The market price of our Common Stock may be subject to significant fluctuations and volatility, and the stockholders of the company may be unable to resell their shares at a profit and may incur losses.

Prior to the Merger, there has not been a public market for our Common Stock. The market price of our Common Stock could be subject to significant fluctuation. The previous business of WaveDancer differs from our business in important respects and, accordingly, our results of operations and the market price of our Common Stock following the Merger may be affected by factors different from those currently affecting the results of operations of WaveDancer. Market prices for securities of life sciences and medical technology companies in particular have historically been particularly volatile and have shown extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry factors, as well as general economic, political and market conditions such as recessions or interest rate changes, may seriously affect the market price of our Common Stock, regardless of our actual operating performance. Some of the factors that may cause the market price of our Common Stock to fluctuate include:

- investors reacting negatively to the effect of our business and prospects from the Merger;
- the announcement of new products, new developments, services or technological innovations by us or our competitors;
- actual or anticipated quarterly increases or decreases in revenue, gross margin or earnings, and changes in our business, operations or prospects;
- announcements relating to strategic relationships, mergers, acquisitions, partnerships, collaborations, joint ventures, capital commitments, or other events by us or our competitors;
- conditions or trends in the life sciences and medical technology industries;
- changes in the economic performance or market valuations of other life sciences and medical technology companies;
- general market conditions or domestic or international macroeconomic and geopolitical factors unrelated to our performance or financial condition;
- sale of our Common Stock by stockholders, including executives and directors;
- volatility and limitations in trading volumes of our Common Stock;
- volatility in the market prices and trading volumes of the life sciences and medical technology stocks;
- our ability to finance our business;
- ability to secure resources and the necessary personnel to pursue our plans;
- failure to meet external expectations or management guidance;
- changes in our capital structure or dividend policy, future issuances of securities, sales or distributions of large blocks of Common Stock by stockholders;
- our cash position;
- announcements and events surrounding financing efforts, including debt and equity securities;
- analyst research reports, recommendations and changes in recommendations, price targets, and withdrawals of coverage;
- departures and additions of key personnel;
- disputes and litigation related to intellectual properties, proprietary rights, and contractual obligations;
- investigations by regulators into our operations or those of our competitors;
- changes in applicable laws, rules, regulations, or accounting practices and other dynamics; and
- other events or factors, many of which may be out of our control.

In the past, following periods of volatility in the overall market and the market prices of particular companies' securities, securities class action litigation has often been instituted against these companies. Litigation of this type, if instituted against us, could result in substantial costs and a diversion of our management's attention and resources. Any adverse determination in any such litigation or any amounts paid to settle any such actual or threatened litigation could require us to make significant payments.

We currently take advantage of reduced disclosure and governance requirements applicable to smaller reporting companies, which could result in our Common Stock being less attractive to investors.

We have a public float of less than $250 million and therefore qualify as a smaller reporting company under the rules of the SEC. As a smaller reporting company, we are able to take advantage of reduced disclosure requirements, such as simplified executive compensation disclosures and reduced financial statement disclosure requirements in our SEC filings. Decreased disclosures in our SEC filings due to our status as a smaller reporting company may make it harder for investors to analyze our results of operations and financial prospects. We cannot predict if investors will find our Common Stock less attractive if we rely on these exemptions. If some investors find our Common Stock less attractive as a result, there may be a less active trading market for our Common Stock and our stock price may be more volatile. We may take advantage of the reporting exemptions applicable to a smaller reporting company until we are no longer a smaller reporting company, which status would end once we have a public float greater than $250 million. In that event, we could still be a smaller reporting company if our annual revenues were below $100 million and we have a public float of less than $700 million.

Our Charter provides that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our Charter provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware is the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action asserting a claim of breach of a fiduciary duty owed by any current or former director, officer or stockholder to us or our stockholders, (iii) any action asserting a claim against the Company, its current or former directors, officers or employees arising pursuant to any provision of the DGCL or the Charter or the Bylaws, (iv) any action as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware, or (v) any action asserting a claim against us, our directors, officers or employees governed by the internal affairs doctrine. This exclusive forum provision would not apply to suits brought to enforce any liability or duty created by the Securities Act or the Exchange Act, or any other claim for which the federal courts have exclusive jurisdiction. To the extent that any such claims may be based upon federal law claims, Section 27 of the Exchange Act creates exclusive federal jurisdiction over all suits brought to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder.

This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or employees, which may discourage such lawsuits against us and our directors, officers or employees. If a court were to find the choice of forum provision contained in our certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may issue additional equity securities in the future, which may result in dilution to existing investors.

To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may, from time to time, sell additional equity securities in one or more transactions at prices and in a manner it determines. If we sell additional equity securities, existing stockholders may be materially diluted. In addition, new investors could gain rights superior to existing stockholders, such as liquidation and other preferences. In addition, the number of shares available for future grant under our equity compensation plans may be increased in the future. In addition, the exercise or conversion of outstanding options or warrants to purchase shares of capital stock may result in dilution to our stockholders upon any such exercise or conversion.

All of WaveDancer's outstanding shares of common stock, and any shares of WaveDancer Common Stock that were issued in the Merger are, freely tradable without restrictions or further registration under the Securities Act, except for any shares held by our affiliates, as defined in Rule 144 under the Securities Act. Rule 144 defines an affiliate as a person who directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, us and would include persons such as our directors and executive officers and large stockholders. In turn, resales, or the perception by the market that a substantial number of resales could occur, could have the effect of depressing the market price of our Common Stock.

The concentration of the capital stock ownership with our insiders will likely limit the ability of our stockholders to influence corporate matters.

Following the Merger, our executive officers, directors, five percent or greater stockholders, and the respective affiliated entities beneficially own approximately 43% of our outstanding Common Stock. As a result, these stockholders, acting together, have control over matters that require approval by our stockholders, including the election of directors and approval of significant corporate transactions. Corporate actions might be taken even if other stockholders oppose them. This concentration of ownership might also have the effect of delaying or preventing a corporate transaction that other stockholders may view as beneficial.

Certain stockholders could attempt to influence changes, which could adversely affect our operations, financial condition and the value of our Common Stock.

Our stockholders may from time to time seek to acquire a controlling stake, engage in proxy solicitations, advance stockholder proposals or otherwise attempt to effect changes. Campaigns by stockholders to effect changes at publicly traded companies are sometimes led by investors seeking to increase short-term stockholder value through actions such as financial restructuring, increased debt, special dividends, stock repurchases or sales of assets or the entire company. Responding to proxy contests and other actions by activist stockholders can be costly and time-consuming and could disrupt our operations and divert the attention of the Board and senior management from our business and operations. These actions could adversely affect our operations, financial condition and the value of our Common Stock.

The sale or availability for sale of a substantial number of shares of Common Stock of could adversely affect the market price of such shares.

Sales of a substantial number of shares of Common Stock in the public market and other legal restrictions on resale, or the perception that these sales could occur, could adversely affect the market price of such shares and could materially impair our ability to raise capital through equity offerings in the future. As of November 15, 2024, we had approximately have outstanding approximately 8,503,365 shares of Common Stock outstanding, without giving effect to the Reverse Stock Split, excluding securities underlying options and warrants, and based on the Exchange Ratio of 0.1040. This includes the shares being issued to our stockholders as merger consideration, which may be resold in the public market immediately without restriction. We are unable to predict what effect, if any, market sales of securities held by our significant stockholders, directors or officers or the availability of these securities for future sale will have on the market price of our Common Stock.

If securities analysts do not publish research or reports about our business, or if they publish negative evaluations, the price of our Common Stock could decline.

The trading market for our Common Stock will rely in part on the availability of research and reports that third-party industry or financial analysts publish about us. There are many large, publicly traded companies active in the life sciences and medical technology industries, which may mean it will be less likely that we receive widespread analyst coverage. Furthermore, if one or more of the analysts who do cover us downgrades our stock, our stock price would likely decline. If one or more of these analysts cease coverage of us, we could lose visibility in the market, which in turn could cause our stock price to decline. Additionally, if securities analysts publish negative evaluations of competitors in the life sciences and medical technology industries, the comparative effect could cause our stock price to decline.

Our management will be required to devote substantial time to comply with public company regulations.

As a public company, we will incur significant legal, accounting and other expenses we did not incur as a private company. The Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), as well as rules implemented by the SEC and Nasdaq, impose various requirements on public companies, including those related to corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these requirements. Moreover, these rules and regulations will increase our legal and financial compliance costs relative to those of we incurred as a private company, and will make some activities more time consuming and costly.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of its internal control over financial reporting to allow management and our independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act ("Section 404"). Our compliance with these requirements will require that we incur substantial accounting and related expenses and expend significant management efforts. We will likely need to hire additional accounting and financial staff to satisfy the ongoing requirements of Section 404. The costs of hiring such staff may be material and there can be no assurance that such staff will be immediately available to us. Moreover, if we are not able to comply with the requirements of Section 404, or if we or our independent registered public accounting firm identifies deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, investors could lose confidence in the accuracy and completeness of our financial reports, the market price of our Common Stock could decline and we could be subject to sanctions or investigations by Nasdaq, the SEC or other regulatory authorities.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud. As a result, shareholders could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our Common Stock.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation could cause us to fail to meet our reporting obligations. In addition, any testing by us conducted in connection with Section 404 or any subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our ordinary shares.

A "material weakness" is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim consolidated financial statements will not be prevented or detected on a timely basis. Prior to the Merger in August 2024, we were a private company with limited accounting personnel and other resources with which to address our internal controls and procedures. In preparing our consolidated financial statements for the ended December 31, 2023, we and our independent registered public accounting firm identified material weaknesses in our internal control over financial reporting as related to the (i) lack of any documented flow charts or formal written procedures related to internal controls, (ii) lack of invoices and other documentation to support payments made to vendors and reimbursed expenses to contractors, and (iii) lack of sufficient documentation to show that journal entries are consistently reviewed and approved by someone other than the preparer.

To remediate our material weaknesses, we expect to incur substantially more additional costs for addressing our material weaknesses and deficiencies. Our remedial measures will include: (a) developing, maintaining and revising, as necessary, written records of all controls in place for each processing cycle, including the names and functions of each individual involved in the overall control environment to ensure there is proper segregation of duties; (b) creating a unified and organized system of recordkeeping to support all transactions entered into by us or any of our affiliated entities including voucher packages comprised of the following applicable documents, purchase order, sales orders, invoices, shipping documents, payment support and the proper review and approval of such items; and (c) development of policies and procedures that require written approval of journal entries by the appropriate supervisor of, or an individual that is in an oversight role to, the individuals who prepare them and retain such documentation. We have commenced the implementation of several aforementioned remedial measures, which we expect to complete in 2025.

The implementation of any or all of these aforementioned measures, however, still may not fully address the material weaknesses in our internal control over financial reporting. Additionally, as most of our documentation will be prepared internally, we do not expect there to be significant material costs to implement our remedial measures. Our failure to correct the material weaknesses or our failure to discover and address any other material weaknesses or control deficiencies could result in inaccuracies and material misstatements in our financial statements, which could result in a restatement of our consolidated financial statements, cause us to fail to meet our reporting obligations, reduce our ability to obtain financing or cause investors to lose confidence in our reported financial information, leading to a decline in our stock price. Material weaknesses could also impair our ability to comply with applicable financial reporting requirements and related regulatory filings on a timely basis, reduce our ability to obtain financing or cause investors to lose confidence in our reported financial information, leading to a decline in our stock price, and significantly hinder our ability to prevent fraud.

We may not be able to timely and effectively implement controls and procedures required by Section 404 that are applicable to us as public company.

The standards required for a public company under Section 404 of the Sarbanes-Oxley Act are significantly more stringent than those required of a privately held company. Management may not be able to effectively and timely implement controls and procedures that adequately respond to the increased regulatory compliance and reporting requirements that will be applicable to us as a public company. If management is not able to implement the additional requirements of Section 404 in a timely manner or with adequate compliance, it may not be able to assess whether its internal control over financial reporting is effective, which may subject us to adverse regulatory consequences and could harm investor confidence and cause the market price of our Common Stock to decline.

We may be required to take write-downs or write-offs, restructuring and impairment or other charges that could have a significant negative effect on its financial condition, results of operations and stock price, which could cause you to lose some or all of your investment.

Although WaveDancer and Private Firefly had conducted due diligence on each other prior to the consummation of the Merger, there can be no assurances that their diligence revealed all material issues that may be present in our business, that all material issues through a customary amount of due diligence will be uncovered, or that factors outside of our control will not later arise. As a result, we may be forced to later write-down or write-off assets, restructure operations, or incur impairment or other charges that could result in losses. Even if due diligence successfully identifies certain risks, unexpected risks may arise, and previously known risks may materialize in a manner not consistent with each company's preliminary risk analysis. Even though these charges may be non-cash items and may not have an immediate impact on liquidity, the fact that we report charges of this nature could contribute to negative market perceptions about us or our securities. In addition, charges of this nature may make future financing difficult to obtain on favorable terms or at all.

Anti-takeover provisions under Delaware corporate law may make it difficult for our stockholders to replace or remove our Board, and could deter or delay third parties from acquiring us, which may be beneficial to our stockholders.

We are subject to the anti-takeover provisions of Delaware law, including Section 203 of the DGCL. Under these provisions, which became effective upon the closing of the Merger, if anyone becomes an "interested stockholder," we may not enter into a "business combination" with that person for three (3) years without special approval, which could discourage a third party from making a takeover offer and could delay or prevent a change of control. For purposes of Section 203 of the DGCL, "interested stockholder" means, generally, someone owning fifteen percent (15%) or more of our outstanding voting stock during the past three (3) years, subject to certain exceptions as described in Section 203 of the DGCL.

We do not anticipate that we will pay any cash dividends in the foreseeable future.

The current expectation is that we will retain our future earnings, if any, to fund the development and growth of our business. As a result, capital appreciation, if any, of our Common Stock will be your sole source of gain, if any, for the foreseeable future.

An active trading market for our Common Stock may not develop.

The listing of our Common Stock on Nasdaq does not assure that a meaningful, consistent and liquid trading market exists. An active trading market for shares of our Common Stock may never develop or be sustained. If an active market for our Common Stock does not develop, it may be difficult for investors to sell their shares either without depressing the market price for the shares or at all.

USE OF PROCEEDS

All of the shares of Common Stock offered by the selling securityholders pursuant to this prospectus will be sold by the selling securityholders for their respective accounts. We will not receive any of the proceeds from these sales. We will pay certain expenses associated with the registration of the securities as described in the "*Plan of Distribution*" section of this prospectus.

We will receive up to an aggregate of approximately $9,864,666 from the exercise of the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants, if such warrants are exercised in full for cash. We expect to use the net proceeds from the exercise of the aforementioned warrants for general corporate purposes. We will have broad discretion over the use of proceeds from the exercise of the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants. There is no assurance that the holders of the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants will elect to exercise any or all of such warrants.

DETERMINATION OF OFFERING PRICE

The offering price of the shares of Common Stock underlying the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants is determined by reference to the exercise price of such warrants. The exercise price of the Pre-Funded Warrants is $0.0001 per share, the exercise price of the Warrants is $0.71 per share, the exercise price of the Series C Warrants is $2.56 per share, the exercise price of the Series D Warrants is $0.104 per share, and the exercise price of the Broker Warrants is $5.98 per share.

We cannot currently determine the price or prices at which shares of Common Stock may be sold by the selling securityholders under this prospectus.

MARKET PRICE OF OUR COMMON STOCK AND DIVIDENDS

Market Information

Our shares of Common Stock are listed on Nasdaq under the symbol "AIFF."

As of November 15, 2024, there were 8,503,365 shares of our Common Stock outstanding, held of record by 406 holders.

Dividend Policy

We have not declared or paid any dividends on shares of Common Stock to date. We anticipate that we will retain our future earnings to finance the further development and expansion of our business and do not intend to pay cash dividends in the foreseeable future. Any future determination to pay dividends will be at the discretion of the Board and will depend on our financial condition, results of operations, capital requirements and future agreements and financing instruments, business prospects, and such other factors as the Board deems relevant.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This summary highlights selected information from this prospectus and may not contain all of the information that is important to you in making an investment decision. Before investing in our securities, you should carefully read this entire prospectus, including our financial statements and the related notes included in this prospectus and the information set forth under the headings " *Risk Factors*" *and* " *Management*' *s Discussion and Analysis of Financial Condition and Results of Operations*." *See also the section entitled* " *Where You Can Find Additional Information*."

Overview

We are an Artificial Intelligence ("AI") technology company developing innovative neuroscientific solutions that improve brain health outcomes for patients with mental illnesses and neurological disorders. Our FDA-510(k) cleared Brain Network Analytics software platform (the "BNA Platform") and is focused on advancing diagnostic and treatment approaches for people suffering from mental illnesses and cognitive disorders, including depression, dementia, anxiety disorders, concussions, and attention-deficit/hyperactivity disorder. We have taken a period of 15 years and an investment of approximately $60 million, to develop the software, compile the requisite database of brain wave tests, gain patent protection, and receive Federal Drug Administration ("FDA") approval to market and sell the BNA Platform. The BNA Platform is a software as a medical solution that was developed using AI through unsupervised machine learning (via clustering analysis) on our extensive proprietary database of standardized, high-definition longitudinal electroencephalograms ("EEG") of over 17,000 patients representing twelve disorders, as well as clinically normal patients. The BNA Platform, in conjunction with an FDA-cleared EEG system, can provide clinicians with comprehensive insights into brain function (cognition). These insights can enhance a clinician's ability to accurately diagnose mental illnesses and cognitive disorders and to evaluate what therapy or drug is best suited to optimize a patient's outcome.

As of the date of this filing, the BNA Platform has been developed and is in the pre-commercial stages, but has not yet been launched and is not available on the market. We currently do not have any products available on the market. However, we are currently planning to undertake a commercial launch of the BNA Platform in the first half of 2025. We do not expect that additional development costs to achieve this commercial launch will be material. We believe there is great potential for such commercialization, both with respect to pharmaceutical companies in their drug research and clinical trial activities, as well as medical practitioners in their clinics. In concert with the commercialization of BNA Platform, we are collaborating with neuroscience drug development companies to support their clinical strategies. We plan to generate revenue through two segments: through the use of BNA Platform by United States neurologists and through collaborations with pharmaceutical companies in support of neuroscience drug development.

The clinical utility of EEG technology to support better outcomes for patients with mental illnesses and cognitive disorders has been well documented. Historically, clinical adoption of EEG by medical professionals, including psychiatrists, neurologists, nurse practitioners and general practitioners, has been limited due to the complexity of interpreting EEG recordings and the inability to practically compare a patient's brain function to that of a clinically normal age-matched patient. Firefly believes that without defining a standard deviation to the norm, it is not possible to objectively assess brain function. By establishing an objective baseline measurement of brain function, the BNA Platform enables clinicians to optimize patient care, leading to improved outcomes for people suffering from mental illnesses and cognitive disorders.

Our value proposition is supported by real-world use of the BNA Platform. Incorporating the BNA Platform as part of a patient management protocol demonstrated improved response rates, enhanced therapy compliance, reduced non-responder rates and a reduction in need for medication switching among patients. Further, we believe that our extensive clinical database, when combined with advanced AI, provides the opportunity to identify clinically relevant biomarkers that will support better patient outcomes through precision medicine and companion diagnostics. We expect to gather additional data through the clinical deployments and clinical studies conducted by drug companies. This additional data should allow us to discover new biomarkers and objectively measure the impact of therapeutic interventions on patients of different types, further enhancing our platform's effectiveness. We believe that we will be able to enhance accurate diagnosis and predict what therapy or drug, or a combination thereof, is best suited to optimize patient outcomes. This represents a paradigm shift in how clinicians manage patients with mental illnesses and cognitive disorders holding the potential to transform brain health.

Reverse Merger with WaveDancer

On November 15, 2023, we entered into the Agreement and Plan of Merger (as amended, the "Merger Agreement") with WaveDancer and FFN Merger Sub, Inc. ("Merger Sub"), pursuant to which, among other things, subject to the satisfaction or waiver of the conditions set forth in the Merger Agreement, Merger Sub merged with and into Private Firefly, with Private Firefly becoming a wholly-owned subsidiary of WaveDancer and the surviving corporation of the merger (the "Merger"). On August 12, 2024, prior to the consummation of the Merger, WaveDancer effectuated a 1-for-3 reverse stock split of its common stock (the "Reverse Stock Split"). On August 12, 2024, the Merger closed, and on August 13, 2024, we began trading on the Nasdaq Capital Market under the ticker symbol "AIFF."

Private Placement

On July 26, 2024, prior to the consummation of the Merger, we entered into a securities purchase agreement with certain institutional investors, pursuant to which we agreed to issue and sell an aggregate of (i) 319,207 PIPE Shares (or 7,918,552 Shares and/or Pre-Funded Warrants (as defined herein) in lieu thereof prior to adjustment for the Exchange Ratio), (ii) pre-funded warrants (the "Pre-Funded Warrants") to purchase up to 504,323 shares of our Common Stock, and (iii) warrants (the "Warrants") to purchase up to 823,530 shares of Common Stock in the Private Placement (or Warrants to purchase up to 7,918,552 shares of Common Stock prior to adjustment for the Exchange Ratio). The purchase price of each PIPE Share and accompanying Warrant was $4.25 (0.442 prior to the adjustment for the Exchange Ratio) and the purchase price of each Pre-Funded Warrant and accompanying Warrant was $4.249 (0.4419 prior to the adjustment for the Exchange Ratio). The Private Placement closed on August 12, 2024, substantially contemporaneously with the consummation of the Merger. The aggregate gross proceeds from the transaction were approximately $3.5 million, before deducting estimated offering expenses payable by us.

Series C Financing

Between October 17, 2023 and June 30, 2024, we raised an aggregate of $3,039,000 from a private placement of 596,145 (or 2,374,219 Series C units (the "Series C Units") prior to the adjustment for the merger and Exchange Ratio), which such Series C Units were comprised of shares of Series C Preferred Stock and warrants to purchase up to 596,145 (as adjusted for the merger and exchange ratio) shares of common stock, which were sold at a combined purchase price of $12.31 per Series C Unit. Each warrant has an exercise price of $24.62 per share (subject to adjustment from time to time in accordance with the terms thereof), is exercisable immediately upon issuance and expires at 4:30 p.m. (New York time) three years following the initial date of issuance.

Financial Operations Overview

Revenue

Revenue consists of BNA testing, equipment rental and the undertaking of projects and/or clinical studies. In the future, we plan to generate revenue through two segments: through the use of BNA Platform by neurologists in the United States and through collaborations with pharmaceutical companies in support of neuroscience drug development.

Operating Expense

Research and Development Expense

Research and development expenses represent costs incurred to conduct research and development, such as the development of the BNA Platform. We recognize all research and development costs as they are incurred. Research and development expenses consist primarily of the following:

- salaries and benefits;
- consulting arrangements; and
- other expenses incurred to advance our research and development activities.

The largest component of our operating expenses has historically been the investment in research and development activities. We expect research and development expenses will increase in the future as we further refine and optimize the BNA Platform and invest in its evolution. It is likely that we will continue to evaluate opportunities and strategic partnerships to acquire or license other products and technologies, which may result in higher research and development expenses due to licensing fees and/or integrations.

Selling and Marketing Expenses

Selling and marketing expenses consist of employee-related expenses, including salaries, benefits, travel, clinical fees and other marketing functions, as well as fees paid for consulting services.

General and Administrative Expenses

General and administrative expenses consist of employee-related expenses, including salaries, benefits, travel and noncash stock-based compensation, and other administrative functions, as well as fees paid for legal, and accounting services, consulting fees and facilities costs not otherwise included in research and development expense. Legal costs include general corporate legal fees and patent costs. We expect to incur additional expenses as a result of operating as a public company, including expenses related to compliance with the rules and regulations of the SEC and Nasdaq, additional insurance, investor relations and other administrative expenses and professional services.

Other (Income) Expense

Other (income) expense consists primarily of interest bank fees and loan fees, foreign exchange gain or loss and penalties.

Critical Accounting Estimates

The preparation of unaudited condensed consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and reported amounts of revenues and expenses during the reported periods. Actual results could differ from those estimates.

Results of Operations

Comparison of the three months ended September 30, 2024, to the three months ended September 30, 2023

The following table sets forth amounts from our condensed consolidated statements of operations for the three months ended September 30, 2024, and 2023:

The following tables set forth our results of operations for the periods presented:

	Three months ended September 30, *$US, in thousands*		
	2024	**2023**	**Change ($)**
REVENUE	33	23	10
OPERATING EXPENSES:			
Research and development expenses	878	392	486
Selling and marketing expenses	431	95	336
General and administration expenses	2,992	183	2,809
TOTAL OPERATING EXPENSES	**4,301**	**670**	**3,631**
OPERATING LOSS	**4,268**	**647**	**3,621**
OTHER (INCOME) EXPENSE			
Interest and bank fees	24	3	21
Unrealized (gain) loss on foreign exchange	2	-	2
Other (Income) Expenses	(5)	-	(5)
LOSS BEFORE INCOME TAX	**4,289**	**650**	**3,639**

Revenue

Revenue for the three months ended September 30, 2024, was $33,000, as compared to $23,000 in the three months ended September 30, 2023, representing an increase of $10,000 or 43%. The increase is primarily due to increased customer BNA scans and initial revenue from the start of a clinical study.

Operating Expenses

Research and Development Expenses

Research and development expenses for the three months ended September 30, 2024, were $878,000, as compared to $392,000 for the three months ended September 30, 2023, representing an increase of $486,000, or 124%. The increase was primarily due to management options vesting in connection with the consummation of the Merger and the remainder due to additional internal resources being brought on in 2024.

Selling and Marketing Expenses

Selling and marketing expenses for the three months ended September 30, 2024, were $431,000, as compared to $95,000 for the for the three months ended September 30, 2023, representing an increase of $336,000, or 354%. The increase was primarily due to three main drivers; (i) management options and other compensation vesting in connection with the consummation of the Merger, (ii) additional internal resources in 2024 as compared to 2023, and (iii) marketing services related to being a public company following the consummation of the Merger.

General and Administrative Expenses

General and administration expenses for the three months ended September 30, 2024, were $2,992,000, as compared to $183,000 for the three months ended September 30, 2023, representing an increase of $2,809,000, or 1535%. The increase was primarily due to five main drivers: (i) management options and other compensation vesting in connection with the consummation of the merger, (ii) costs related to warrants vesting in connection with the consummation of the Merger, (iii) consulting agreements paid with equity related to the consummation of the Merger, (iv) increased legal fees related to the consummation of the Merger, and (v) other ongoing costs related to being a public company following the consummation of the Merger including the purchase of D&O insurance.

Other (Income) Expense

Other (Income) Expense for the three months ended September 30, 2024, was $21,000, as compared to $3,000 for the three months ended September 30, 2023, representing an increase of $18,000 or 600%. The primary reason for the increase relates to bridge loan interest incurred just prior to the consummation of the Merger.

Comparison of the nine months ended September 30, 2024, to the nine months ended September 30, 2023

The following table sets forth amounts from our condensed consolidated statements of operations for the nine months ended September 30, 2024, and 2023:

The following tables set forth our results of operations for the periods presented:

	Nine months ended September 30, *$US, in thousands*		
	2024	**2023**	**Change ($)**
REVENUE, NET	55	479	(424)
OPERATING EXPENSES:			
Research and development expenses	1,517	712	805
Selling and marketing expenses	973	399	574
General and administration expenses	4,183	879	3,304
TOTAL OPERATING EXPENSES	**6,673**	**1,990**	**4,683**
OPERATING LOSS	**6,618**	**1,511**	**5,107**
OTHER (INCOME) EXPENSE			
Interest and bank fees	36	13	23
Unrealized (gain) loss on foreign exchange	(1)	-	(1)
Other (income) expense	22	2	20
NET LOSS AND COMPREHENSIVE LOSS	**6,675**	**1,526**	**5,149**

Revenue

Revenue for the nine months ended September 30, 2024, was $55,000, as compared to $479,000 in the nine months ended September 30, 2023, representing a decrease of $424,000 or 89%. The decrease is primarily due to the recognition of deferred revenue relating to outstanding contracts when such contractual obligations were deemed fulfilled in 2023.

Operating Expenses

Research and Development Expenses

Research and development expenses for the nine months ended September 30, 2024, were $1,517,000, as compared to $712,000 for the nine months ended September 30, 2023, representing an increase of $805,000, or 113%. The increase was primarily due to the vesting of outstanding management options in connection with the consummation of the Merger and the remainder due to additional internal resources being brought on in 2024.

Selling and Marketing Expenses

Selling and marketing expenses for the nine months ended September 30, 2024, were $973,000, as compared to $399,000 for the for the nine months ended September 30, 2023, representing an increase of $574,000, or 144%. The increase was primarily due to four main drivers; (i) the vesting of management options in connection with the consummation of the Merger, (ii) additional internal resources in 2024 as compared to 2023, (iii) marketing services and related to being a public company following the consummation of the Merger, and (iv) a branding initiative to update company branding.

General and Administration Expenses

General and administration expenses for the nine months ended September 30, 2024, were $4,183,000, as compared to $879,000 for the nine months ended September 30, 2023, representing an increase of $3,304,000, or 376%. The primary increase was due to five main drivers being; (i) the vesting of management options and other compensation in connection with the consummation of the Merger, (ii) costs related to the vesting of certain warrants in connection with the consummation of the Merger, (iii) consulting agreements paid with equity related to the consummation of the Merger, (iv) legal fees related to the consummation of the Merger, (iv) audit fees related to the audited financial statements and notes thereto for the year ended December 31, 2023 and 2022 and (v) other ongoing costs related to being a public company following the consummation of the Merger, including the purchase of D&O insurance

Other (income) expense

Other (income) expense for the nine months ended September 30, 2024, were $57,000, as compared to $15,000 for the nine months ended September 30, 2023, representing an increase of $42,000 mainly due to foreign exchange fluctuations associated with operations in Canada and Israel, interest on bridge financing related to the Merger and penalties related to late filing of historical taxes.

Comparison of the year ended December 31, 2023, to the year ended December 31, 2022

The following tables set forth Firefly's results of operations for the periods presented:

	Year Ended December 31,		
	$US, in thousands		
	2023	**2022**	**Change**
REVENUE	498	-	498
OPERATING EXPENSES:			
Research and development expenses, net	741	1,299	(558)
Selling and marketing expenses	639	524	115
General administration expenses	2,196	1,542	654
Impairment Loss on equipment	-	79	(79)
TOTAL OPERATING EXPENSES	**3,576**	**3,444**	**132**
OPERATING LOSS	**(3,078)**	**(3,444)**	**366**
OTHER (INCOME) EXPENSE			
Interest, bank fees and loan fees	18	440	(422)
Unrealized (gain) loss on foreign exchange	(37)	134	(171)
Loss on extinguishment of debt	-	59	(59)
Other (Income) Expenses	(457)	(173)	(284)
LOSS BEFORE INCOME TAX	**(2,602)**	**(3,904)**	**(1,302)**
Income Tax Provision	1	-	1
NET LOSS AND COMPREHENSIVE LOSS	**(2,603)**	**(3,904)**	**(1,301)**

Revenue

Revenue for the year ended December 31, 2023, was $498,000, an increase of $498,000 compared to the year ended December 31, 2022. The increase is primarily due to satisfying performance obligations of a contract resulting in deferred income being recognized.

Operating Expenses

Research and Development

Research and development expense for the year ended December 31, 2023, was $741,000, as compared to $1,299,000 for the year ended December 31, 2022, resulting in a decrease of $558,000. This decrease was primarily due to a reduction in staff in one of our global entities and closure of the physical office and related costs.

Selling and Marketing Expense

Selling and marketing expense was $639,000 for the year ended December 31, 2023, an increase of $115,000, or 22%, as compared to $524,000 for the for the year ended December 31, 2022. This increase was primarily due to bringing on staff in the latter part of 2023 and an increase in travel related to marketing the next generation BNA Platform.

General and Administrative Expense

General and administrative expense increased by $654,000 or 42% to $2,196,000 for the year ended December 31, 2023, as compared to $1,542,000 for the year ended December 31, 2022. This increase was primarily due to ongoing legal and professional costs associated with the contemplated business combination with WaveDancer, Inc., as well as preparation of year end audited statements.

Impairment Loss

The impairment loss for the year ended December 31, 2023, was $0, as compared to $79,000 for the year ended December 31, 2022 resulting in a decrease of $79,000. This decrease was due to antiquated hardware being deprecated in 2022.

Liquidity and Capital Resources

Going Concern

As of September 30, 2024, we had an accumulated deficit of $83,299,000 (December 31, 2023: $76,624,000) and negative cash flow from operating activities for the nine months ended September 30, 2024 of $4,937,000 (September 30, 2023: $1,662,000). Further, we have recurring losses with minimal revenue from operations. While we are attempting to raise funds for commercialization, our monthly cash requirements during the nine months ended September 30, 2024 have been met through issuance of shares to new and existing shareholders. These conditions raise substantial doubt about our ability to continue as a going concern. Therefore, we may be unable to realize our assets and discharge our liabilities in normal course of business. To strengthen our liquidity in the foreseeable future, we have taken the following measures:

(i) Negotiating further funding with existing and new investors to raise additional capital;

(ii) Taking various cost control measures to reduce the operational cash burn; and

(iii) Commercializing product to generate recurring sales.

Management has a reasonable expectation that we can continue raising additional equity capital to continue in operational existence for the foreseeable future.

For the next 12 months, we expect to continue to incur negative cash flows from operations as we continue to make targeted investments in sales and marketing and research and development of our next generation BNA Platform.

Beyond the next 12 months, our ability to achieve profitability depends on the commercialization of our flagship product, the BNA Platform. We expect to incur significant costs for at least two to four years to commercialize and distribute our products, and we expect our expenses to increase in connection with our ongoing activities, particularly as we continue our research and development and expand our production capabilities, as needed. As a result, we will require significant capital to support our ongoing operations and to drive our business strategy before we can be profitable.

Until we can generate adequate revenues from the sale of our products to cover our operating expenses and capital expenditure requirements, we expect to finance our operations through the sale of equity, debt financing, or other sources. There can be no guarantee that debt or equity financings will be available to us on commercially reasonable terms, if at all. Additionally, we may be unable to further pursue our business plan and we may be unable to continue operations. The report of our independent registered public accounting firm for the year ended December 31, 2023, states that there is substantial doubt about our ability to continue as a going concern.

The estimates and assumptions underlying our belief in the sufficiency of our capital resources in the short term and our ability to obtain capital resources in the long term may prove to be wrong, and we could exhaust our capital resources sooner than we expect and may not be able to obtain resources on favorable terms, or at all.

We have no material off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors.

Cash flows for the nine months ended September 30, 2024, to the nine months ended September 30, 2023

The following table sets forth the significant sources and uses of cash for the periods noted below:

	For the nine months ended September 30,		
	2024	**2023**	**Change**
		(in thousands)	
Net cash (used in) provided by			
Operating activities	$ (4,937)	$ (1,662)	$ (3,275)
Investing activities	$ (401)	$ –	$ (401)
Financing activities	$ 4,425	$ 2,497	$ 1,928

Operating Activities

For the nine months ended September 30, 2024, net cash used in operating activities was $4,937,000, as compared to $1,662,000 for the nine months ended September 30, 2023, representing an increase of $3,275,000, or 197%. This increase in net cash used in operating activities is primarily due to an increase in day-to-day operating costs, a reduction in liabilities, costs related to the Merger, prepayment of insurance policies and research costs associated with the development of the next generation of the BNA Platform.

Investing Activities

For the nine months ended September 30, 2024, net cash used in investing activities was $401,000, as compared to no cash used in investing activities for the nine months ended September 30, 2023. The increase in cash used in investing activities is primarily attributed to our investment into the development of the next generation of the BNA Platform and associated hardware.

Financing Activities

For the nine months ended September 30, 2024, net cash provided from financing activities was $4,425,000, as compared to $2,497,000 for the nine months ended September 30, 2023, representing an increase of $1,928,000, or 77%. The increase was primarily due to secured private financing in connection with the Merger.

Cash flows for the year ended December 31, 2023, compared to the year ended December 31, 2022

The following table sets forth the significant sources and uses of cash for the periods noted below:

	For the year ended December 31,	
	2023	**2022**
(in thousands)		
Net cash (used in) provided by		
Operating activities	$ (2,172)	$ (2,892)
Investing activities	$ (386)	$ 262
Financing activities	$ 4,643	$ 2,035

Operating Activities

For the year December 31, 2023, cash used in operating activities was $2,172,000, as compared to $2,892,000 for the year December 31, 2022. This increase in cash used is primarily due an increase in liabilities, a decrease in interest on convertible debt and recognition of deferred revenue.

Investing Activities

For the year December 31, 2023, net cash used in investing activities was $386,000, as compared to cash provided by investing activities of $ 262,000 for the year December 31, 2022, which was primarily attributed to our investment into the development of the next generation BNA Platform in 2023 and the sale of deprecated equipment in 2022.

Financing Activities

For the year December 31, 2023, net cash provided from financing activities was $4,643,000, as compared to $2,035,000 for the year December 31, 2022. The increase of $2,608,000 was primarily due to the proceeds from Series B and Series C financing and ceasing the sale of convertible debt.

Other (Income) Expense

Other Income for the year ended December 31, 2023, was $476,000 as compared to Losses of ($460,000) for the year December 31, 2022, resulting in a decrease of Other Expenses of $936,000. This is primarily due to a decrease in convertible loan fees, a decrease in foreign exchange losses and a contract expiring resulting in deferred income being recognized.

Known Trends, Events, and Uncertainties

As with other companies that are in our industry, we will need to successfully manage normal business and scientific risks. Research and development of new technologies is, by its nature, unpredictable. We cannot assure you that our technology will be adopted, that we will ever earn revenues sufficient to support our operations, or that we will ever be profitable. In addition, the emergence and effects of public health crises, such as endemics and epidemics are difficult to predict and the consequences of the ongoing war between Israel and Hamas, including related sanctions and countermeasures and the effects of such war on our employees in Israel, are difficult to predict, and could adversely impact geopolitical and macroeconomic conditions, the global economy, and contribute to increased market volatility, which may in turn adversely affect our business and operations. Furthermore, other than as discussed in this prospectus, we have no committed source of financing and may not be able to raise money as and when we need it to continue our operations. If we cannot raise funds as and when we need them, we may be required to severely curtail, or even to cease, our operations.

Other than as discussed above and elsewhere in this prospectus, we are not aware of any trends, events or uncertainties that are likely to have a material effect on our financial condition.

Critical Accounting Policies and Estimates

The preparation of our financial statements is in accordance with accounting principles generally accepted in the United States of America ("GAAP"), which require us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and other related disclosures. While we believe our estimates, assumptions and judgments are reasonable, they are based on information presently available. Actual results may differ significantly from these estimates due to changes in judgments, assumptions and conditions as a result of unforeseen events or otherwise, which could have a material impact on our financial position and results of operations.

Quantitative and Qualitative Disclosures about Market Risk

Not Applicable.

Changes In and Disagreements With Accountants on Accounting and Financial Disclosure

On October 29, 2024, the Audit Committee dismissed Turner, Stone & Company LLP ("Turner Stone") as our independent registered public accounting firm, effective immediately.

The reports of Turner Stone on our consolidated financial statements for the years ended December 31, 2023, and December 31, 2022, did not contain an adverse opinion or a disclaimer of opinion, and was not qualified or modified as to uncertainty, audit scope, or accounting principles, except that Turner Stone's reports for the years ended December 31, 2023, and December 31, 2022, each contained an explanatory paragraph stating there was substantial doubt about the Company's ability to continue as a going concern.

During the two most recent fiscal years ended December 31, 2023, and December 31, 2022, and the subsequent interim period through October 29, 2024, there were no disagreements (as defined in Item 304(a)(1)(iv) of Regulation S-K of the Securities Exchange Act of 1934, as amended ("Regulation S-K") and the related instructions to Item 304 of Regulation S-K) with Turner Stone on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreements, if not resolved to the satisfaction of Turner Stone, would have caused Turner Stone to make reference to the subject matter of the disagreements in connection with its reports on the Company's consolidated financial statements for such years. Also during this time, there were no "reportable events," as defined in Item 304(a)(1)(v) of Regulation S-K, except that Turner Stone and our management identified material weaknesses in our internal control over financial reporting related to (i) lack of any documented flow charts or formal written procedures related to internal controls, (ii) lack of invoices and other documentation to support payments made to vendors and reimbursed expenses to contractors, and (iii) lack of sufficient documentation to show that journal entries are consistently reviewed and approved by someone other than the preparer.

ovided Turner Stone with a copy of the above disclosures and requested that Turner Stone furnish us with a letter addressed to the SEC stating whether or not it agrees with the statements made above. A copy of Turner Stone's letter dated October 31, 2024, is attached as Exhibit 16.1 to this registration statement of which this prospectus forms a part.

ctober 31, 2024, the Audit Committee engaged Marcum Canada, LLP ("Marcum") as our independent registered public accounting firm for the fiscal year ending December 31, 2024, effective immediately. During the fiscal years ended December 31, 2023, and December 31, 2022, and the subsequent interim period through October 31, 2024, neither we nor anyone on our behalf has consulted with Marcum regarding (i) the application of accounting principles to any specified transaction, either completed or proposed or the type of audit opinion that might be rendered on our consolidated financial statements, and neither a written report nor oral advice was provided to us that Marcum concluded was an important factor considered by us in reaching a decision as to any accounting, auditing, or financial reporting issue, or (ii) any matter that was either the subject of a "disagreement," as defined in Item 304(a)(1)(iv) of Regulation S-K, or a "reportable event," as defined in Item 304(a)(1)(v) of Regulation S-K.

BUSINESS

Overview

We are an Artificial Intelligence ("AI") technology company developing innovative neuroscientific solutions that improve brain health outcomes for patients with mental illnesses and neurological disorders. Our FDA-510(k) cleared Brain Network Analytics software platform (the "BNA Platform") and is focused on advancing diagnostic and treatment approaches for people suffering from mental illnesses and cognitive disorders, including depression, dementia, anxiety disorders, concussions, and attention-deficit/hyperactivity disorder. We have taken a period of 15 years and an investment of approximately $60 million, to develop the software, compile the requisite database of brain wave tests, gain patent protection, and receive Federal Drug Administration ("FDA") approval to market and sell the BNA Platform. The BNA Platform is a software as a medical solution that was developed using AI through unsupervised machine learning (via clustering analysis) on our extensive proprietary database of standardized, high-definition longitudinal electroencephalograms ("EEG") of over 17,000 patients representing twelve disorders, as well as clinically normal patients. The BNA Platform, in conjunction with an FDA-cleared EEG system, can provide clinicians with comprehensive insights into brain function (cognition). These insights can enhance a clinician's ability to accurately diagnose mental illnesses and cognitive disorders and to evaluate what therapy or drug is best suited to optimize a patient's outcome.

As of the date of this filing, the BNA Platform has been developed and is in the pre-commercial stages, but has not yet been launched and is not available on the market. We currently do not have any products available on the market. However, we are currently planning to undertake a commercial launch of the BNA Platform in the first half of 2025. We do not expect that additional development costs to achieve this commercial launch will be material. We believe there is great potential for such commercialization, both with respect to pharmaceutical companies in their drug research and clinical trial activities, as well as medical practitioners in their clinics. In concert with the commercialization of BNA Platform, we are collaborating with neuroscience drug development companies to support their clinical strategies. We plan to generate revenue through two segments: through the use of BNA Platform by United States neurologists and through collaborations with pharmaceutical companies in support of neuroscience drug development.

The clinical utility of EEG technology to support better outcomes for patients with mental illnesses and cognitive disorders has been well documented. Historically, clinical adoption of EEG by medical professionals, including psychiatrists, neurologists, nurse practitioners and general practitioners, has been limited due to the complexity of interpreting EEG recordings and the inability to practically compare a patient's brain function to that of a clinically normal age-matched patient. Firefly believes that without defining a standard deviation to the norm, it is not possible to objectively assess brain function. By establishing an objective baseline measurement of brain function, the BNA Platform enables clinicians to optimize patient care, leading to improved outcomes for people suffering from mental illnesses and cognitive disorders.

Our value proposition is supported by real-world use of the BNA Platform. Incorporating the BNA Platform as part of a patient management protocol demonstrated improved response rates, enhanced therapy compliance, reduced non-responder rates and a reduction in need for medication switching among patients. Further, we believe that our extensive clinical database, when combined with advanced AI, provides the opportunity to identify clinically relevant biomarkers that will support better patient outcomes through precision medicine and companion diagnostics. We expect to gather additional data through the clinical deployments and clinical studies conducted by drug companies. This additional data should allow us to discover new biomarkers and objectively measure the impact of therapeutic interventions on patients of different types, further enhancing our platform's effectiveness. We believe that we will be able to enhance accurate diagnosis and predict what therapy or drug, or a combination thereof, is best suited to optimize patient outcomes. This represents a paradigm shift in how clinicians manage patients with mental illnesses and cognitive disorders holding the potential to transform brain health.

Background and Corporate History

Corporate History

Firefly's corporate history began in April 2006 with the formation of Elminda Ltd, a company organized under the laws of the State of Israel, for the purpose of developing a system to provide clinicians with an objective assessment of brain function to support better outcomes for people with mental illnesses and cognitive disorders.

Firefly spent over ten years building a significant database of standardized longitudinal EEG brain scans using clinically defined paradigms that captured patients brain activity while resting and while activated (evoke response potential). Firefly collected this data in over 100 sites, over 20 countries, and over 40 studies. Significant time and resources went into analyzing and interpreting the data as well as preparing for an FDA 510k application process.

On May 2, 2014, management of Firefly Neuroscience Ltd. incorporated a new wholly owned subsidiary company named "Elminda Inc." in the State of Delaware for the purpose of initiating the company's United States marketing and distribution activity.

In July 2014, Firefly received Class II medical device 510(k) clearance from the U.S. Food and Drug Administration (the "FDA") for the BNA Analysis System, the predicate device to the BNA Platform, with indication for use in individuals 14 to 24 years of age.

In September 2014, the company received the Conformity European approval for the BNA Platform allowing use in European Economic Area.

In December 2020, Firefly received Class II medical device 510(k) clearance from the FDA for Firefly's current product, the BNA Platform, with indication for use in individuals 12 to 85 years of age.

On April 13, 2022, the name of Elminda Inc. was changed to "Elminda 2022 Inc."

On April 21, 2022, management of Firefly Neuroscience Ltd. incorporated a new wholly owned subsidiary company named "Elminda Inc." for the purpose of re-domiciling the company to enhance access to capital markets.

On July 5, 2022, Elminda Ltd. became a subsidiary of Elminda Inc. via a share exchange agreement wherein Elminda Inc. issued shares to shareholders of Elminda Ltd. against shares of Elminda Ltd.

On September 15, 2022 and October 24, 2022 management changed the name from Elminda Inc. and Elminda Ltd, respectively, to "Firefly Neuroscience, Inc." and "Firefly Neuroscience Ltd.", respectively.

On the August 12, 2024, pursuant to the Merger Agreement, FFN merged with and into Firefly Neuroscience, Inc., with Firefly Neuroscience, Inc. surviving the merger as a wholly owned subsidiary of WaveDancer, Inc. On the Closing Date (i) pursuant to the Amended and Restated Certificate of Incorporation of WaveDancer, we changed our name to Firefly Neuroscience, Inc. and (ii) pursuant to an amendment to its Certificate of Incorporation, Firefly changed its name to Firefly Neuroscience 2023, Inc. and (iii) Firefly and FFN filed the Certificate of Merger with the State of Delaware.

Our Strategy

We are dedicated to transforming brain health by advancing diagnostic and treatment approaches for people suffering from mental illnesses and cognitive disorders. Firefly's strategy is to develop state-of-the-art technologies that bridge the gap between neuroscience and clinical practice. Firefly's next steps to realize this strategy include:

Commercially launching the BNA Platform to medical professionals, including neurologists, psychiatrists, nurse practitioners, and general practitioners in the United States. Firefly believes that there are significant clinical, societal, and economic benefits that can be realized when BNA Platform is used as part of a regular patient management protocol. Firefly aims to realize these benefits by providing medical professionals and their patients with objective, comparative data of their brain function (cognition). Poor outcomes associated with the treatment of mental illnesses and cognitive disorders often result from the subjective, trial and error approach to patient treatment. Through the BNA Platform, Firefly brings an objective quantifiable measurement of brain function (cognition) to medical professionals who are treating people suffering from mental illnesses and cognitive disorders.

Firefly believes that by providing clinicians with the ability to compare a patient's EEG recordings to its FDA-cleared normative age-matched database will give both the clinician and the patient an objective baseline comparison of their brain function (cognition) that could aid in the diagnosis and optimization of the patient's treatment pathway. This strategy is supported by the fact that real-world clinical use of the BNA Platform has shown that, when used as part of a patient management protocol, patients showed improved response rates, enhanced therapy compliance, and reduced non-responder rates and a reduction in the need for medication switching.

In addition to improving patient outcomes, there is a strong motivation for medical professionals to integrate the BNA Platform into their clinics. The BNA Platform is a new recurring revenue stream opportunity for the medical practitioner while providing new patient management strategies to improve patient outcomes. In addition, the adoption of the BNA Platform represents an incremental recurring revenue opportunity to the clinic and is a competitive advantage for the clinic.

Performing research and clinical studies to identify clinically relevant biomarkers that could support diagnosis and possibly identify patients who are most likely to positively respond to a certain drug or treatment. Firefly is continuously improving the BNA Platform by actively analyzing its comprehensive database, which includes clinical and behavioral data, to discover biomarkers that can support diagnosis and optimize patient care pathways. In doing so, Firefly intends to empower the practitioners to apply principles of precision medicine to improve outcomes for people suffering from mental illnesses and cognitive disorders. By utilizing the Company's ML pipeline to analyze its database, it is possible to identify patterns (EEG-based biomarkers) that are useful for predicting treatment outcomes (predictive biomarkers), predicting disease progression (prognostic biomarkers) and monitoring treatment effects (monitoring biomarkers). Leveraging such biomarkers can inform patient selection and stratification in clinical trials in a way that will optimize trial design, leading to improved outcomes while reducing the cost and time it takes to obtain approval for the drug.

Partnering with leading drug development companies in the central nervous system ("CNS") space in support of clinical research and companion diagnostics. Firefly is focused on growing its CNS pharmaceutical company partnerships for drug development. Based on the work Firefly has done with pharmaceutical companies like Novartis, Takeda Pharmaceutical Company Limited, Bright Mind Bioscience and others, Firefly believes that EEG data, processed by the BNA Platform, can be effective in CNS drug development by providing objectively measured brain activations that indicate normal or pathological neuronal processes. The BNA-based EEG data can be used as objective endpoints for pharmacokinetic-pharmacodynamic modelling. Moreover, by measuring electrophysiology commonly associated with cognitive functions, BNA biomarkers can also assist in understanding the drug's effects in the cognitive domain and identifying adverse cognitive events. By enabling a quantitative and objective measurement of the change in brain function following a treatment, drug developers could further optimize dose selection for next phases of development.

Management believes that through integration of the BNA Platform into drug development strategies, CNS pharmaceutical companies can realize significant savings of both cost and time by understanding a drug's effect better and targeting patients who will respond better to the drug (patient enrichment). Improving patient targeting and effects on patient populations segments could lead to demonstrable improvement in clinical efficacy.

Many new CNS drugs being developed are considered to be high cost, often having annual costs of tens of thousands of dollars. There is considerable resistance from healthcare providers, governments, and Insurers to absorb the high cost of new CNS drugs without knowing who is most likely to benefit from the drug. Firefly believes that biomarkers represent a significant opportunity for drug development companies and practicing medical professionals. For drug development companies, conducting clinical trials with patients who are more likely to respond positively to the drug (patient enrichment) can reduce the clinical trial size required to show positive clinical outcomes (efficacy) and significantly reduce the cost and speed of clinical trials. Furthermore, the ability to show increased efficacy of the drug within a targeted patient group could expedite regulatory approval and provide justification for the cost of the new drug with payors. In concert with Firefly's commercialization strategy, medical professionals who integrate the BNA Platform into their clinic will be able to prescribe the drug to their patients who will benefit the most based on the companion diagnostic criteria

Considering strategic acquisitions. Firefly may consider strategic acquisition opportunities where such transactions can accelerate Firefly's market positioning through horizontal or vertical integration, expanding capacity, or gaining intellectual property that strengthens its competitive advantage.

Firefly believes that it is in a strong position to drive the adoption of objective assessment of brain function in clinical practice by making the BNA Platform accessible to medical professionals in the United States and other countries around the world. Initial clinical use of the BNA Platform has demonstrated significant improvements in patient outcomes. Based on this, Firefly believes that the BNA Platform has the potential to deliver significant benefits within the healthcare system to a broad range of stakeholders - patients, clinicians, and payors.

Our Solution - The BNA Platform

Our Database

The BNA Platform is an FDA 510(k) cleared product and is a direct result of applying data science AI and ML expertise to Firefly's extensive proprietary database of standardized, high-definition longitudinal EEG recordings of over 17,000 (77,000 BNA assessments) patients representing twelve disorders, as well as clinically normal patients.

Firefly's proprietary database will continue to grow with each use of the BNA Platform in the clinical and research settings, which, through its application of AI and ML, will allow the insights to continuously evolve and improve with the goal of continually increasing the value proposition of the BNA Platform to clinicians and pharmaceutical company clients. Firefly believes that this virtuous cycle will result in future product development, like biomarkers that will drive the commercial adoption of the BNA Platform to a wider universe of medical professionals, and also enhance its value proposition to drug development companies.

The BNA Platform

The BNA Platform is intended for the post-hoc statistical analysis of the human EEG, utilizing both resting-state EEG and Event-Related Potentials ("ERP") in a patient's response to outside stimuli during various states of alertness, disease, diagnostic testing, treatment, surgery, or drug related dysfunction. An ERP (or "evoked response") is an electrical potential recorded from the nervous system following the presentation of a stimulus (e.g., as part of a cognitive task). An ERP signal consists of typical ERP components - positive or negative voltage spatiotemporal peaks within the ERP waveform that are measured within one second post-stimulus presentation.

The system consists of the following components: a computer environment; EEG data input software algorithms for BNA calculations; a report generator and a functionality for data transfer and storage. In the first step EEG data is measured using a dedicated, commercially available, and FDA-cleared EEG system, which complies with the BNA Platform specifications. The BNA Platform processes and analyzes the data using Firefly's BNA Algorithm (as further described below). Lastly, the results are compiled into individualized easy-to-read reports that provide clinicians with objective insight into brain function. Each incremental scan further supports the growth of Firefly's reference database. The steps are described in further detail below.

Figure 1. Overview of the BNA Platform Process

Measure - EEG Data

The BNA Platform is intended to analyze EEG data recorded at rest ("Resting-EEG") and during the performance of two conventionally used ERP tasks: the Auditory Oddball ("AOB") and the Visual Go-No-Go ("VGNG"). The EEG is recorded continuously while the patient is at rest with eyes-closed or performs one of the ERP tasks. This is highly useful to clinicians as the information from the Resting-EEG and ERP tasks are complementary to each other in many ways. The BNA Platform thus empowers clinicians by providing them with a multi-perspective, objective evaluation of the patient's brain function in one product. The acquisition site is then asked to provide reliable samples of artifact-free digital EEG for purposes of analysis.

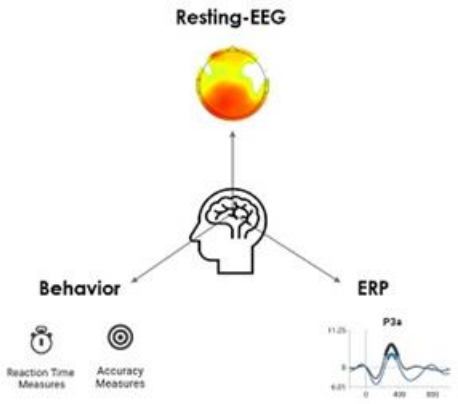

Figure 2. EEG Data Inputs

Analyze - The BNA Algorithm

After the recording, the artifact-free EEG data is imported into the BNA Platform and is automatically analyzed by the algorithm (the "BNA Algorithm"). The BNA Algorithm does so by detecting and quantifying the characteristics of EEG and ERP peaks (AOB task: P50, N100, P200, P3a, P3b; VGNG task: P200, N200, P3a, P3b). The BNA Algorithm leverages Firefly's normative database to extract clinically meaningful information from EEG data.

EEG recordings are high-dimensional and complex. This is the result of the dynamic spatiotemporal nature of the neurophysiological signals. For example, the event-related potential wave measured at first, at a relatively focal location in time and space on the scalp, and then it evolves and propagates in the cortex while its amplitude changes simultaneously.

Traditional methods for EEG and ERP analysis follow waveform morphology over time at selected electrode locations, using either time-domain or frequency-domain tools, while neglecting the spatiotemporal dynamics associated with the electric field at the scalp. Moreover, focusing on a specific electrode or subset of electrodes, the traditional methods ignore the expected variability between patients in terms of where the ERP component appears on the scalp due to natural differences between cortex and scalp anatomy. The aim of the BNA Algorithm is to improve the accuracy of the ERP component detection by considering the spatiotemporal nature of the signal. It achieves this improvement by parceling the EEG activity into major spatiotemporal events - ERP peaks and their surrounding - spatiotemporal parcels.

The key strengths of the BNA Algorithm are:

1. **Adaptive peak detection** - the ERP peaks are detected in a more patient-specific way, by incorporating some degree of freedom in both time and space in a way that is proportional to the normal variability in time and space of the ERP peaks.

2. **Displaying ERP-peak location** - thanks to the adaptive peak detection by the BNA Algorithm, the ERP peak is identified and displayed in the BNA report on a topographical map together with the group ERP-peak position. This adds clinically useful information to the physician.

3. **Neural-Consistency score** - another unique feature of the BNA report is the presentation of the Neural-Consistency score. Since this is a differentiating score, the Company will describe here shortly what this score is and why Firefly believes it is important.

Since the ERP signal is an average of multiple single-trial ERP signals which can differ largely from each other, assessing the consistency between them may provide complementary functional information to the average measure. As part of the new peak-analysis, the algorithm calculates a new score - 'Neural Consistency' based on the similarity of the amplitude activation between single-ERP trials. The score is calculated based on averaging the inter-single trials variability of the ERP-peak and its surrounding points.

Act - Individualized Reports

The results of the data processed by the BNA Algorithm are compiled into individualized easy-to-read reports that provide clinicians with objective insight into brain function:

- ERP Report
- Behavioral Report
- Summary Report
- Resting-EEG Report

Scores are presented as z-scores based on comparing the patient to an age-matched relevant reference group based on Firefly's proprietary standardized longitudinal normative database. This presentation expresses the differences between the patient and the reference group. The reports are intended to be used by clinicians to enable the evaluation of the patient's brain activity during a specific task compared to an age-range matched reference group.

The following diagram breaks down the components of Firefly's normative database that underpins the BNA Platform:

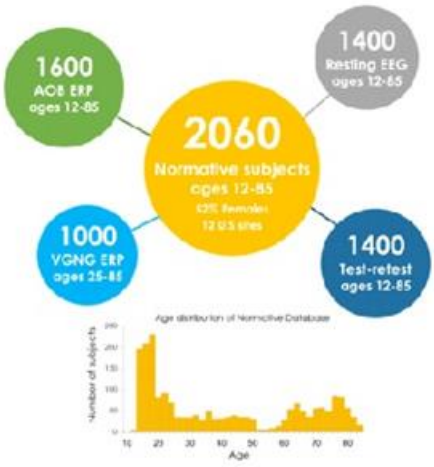

Figure 4. Components of the BNA Platform normative database.

The database is age-differentiated, featuring control for age-related effects; includes data from Resting-EEG and ERP tasks; includes test-retest database, measuring test-retest reliability and allowing to model test-retest expected variance; and enables standardization by using z-scores, which improves clinical interpretability.

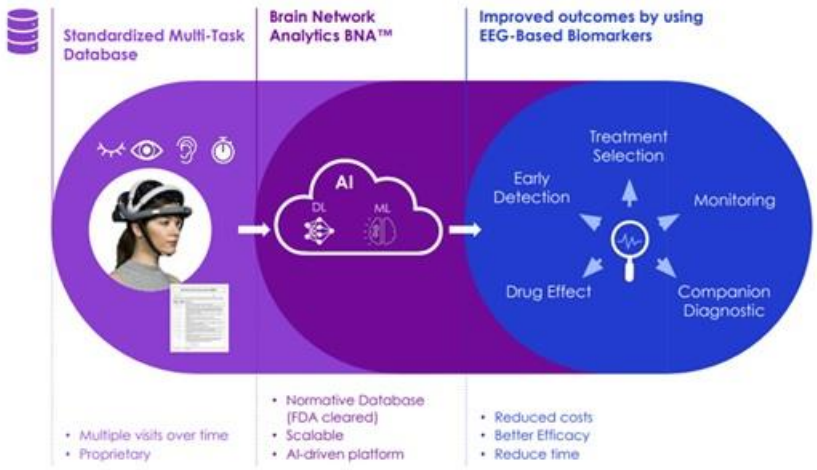

Figure 5. The BNA Platform Database

Real-World Evidence for the BNA Platform Clinical Utility

The findings presented in 2023 white paper study "*Brain Network Analytics (BNA) in the Psychiatric Practice. Real-Life Data Analysis*" by Charlotte Baumeister, Ph.D., with analysis by Offir Laufer, Ph.D., strongly support the potential of the BNA Platform to transform psychiatric care by automating the analysis of EEG data. The comprehensive research involved a cohort of 2,253 patients seeking treatment at a prominent psychiatric and multispecialty clinic in the United States. The study demonstrated that the BNA Platform significantly improved disease management in psychiatric patients suffering from major depressive disorder (MDD), generalized anxiety disorder ("GAD"), and ADHD.

The study has unveiled valuable insights into how the BNA Platform can revolutionize disease management in the field of psychiatry. Key highlights from the research include:

- ***Enhanced Treatment Compliance***: Patients grappling with depression, who underwent therapy guided by BNA, exhibited a significant 15% increase in their adherence to MDD treatment protocols, encompassing both antidepressant medications and Transcranial Magnetic Stimulation (TMS).

- ***Decreased Medication Alteration Necessity***: The study demonstrated a noteworthy reduction of over 50% in the requirement to switch antidepressant medications among the patient population. This emphasizes the potential of the BNA Platform in optimizing medication selection and dosing.

- ***Amplified Improvements in General Functionality.*** Individuals diagnosed with MDD, GAD, and ADHD experienced more than double the improvement in their overall general functioning when receiving BNA-guided interventions. This suggests that BNA Platform has the potential to comprehensively enhance patients' quality of life and daily functioning.

- ***Elevated Rates of Antidepressant Response***: The application of the BNA Platform was associated with a notable 10% increase in antidepressant response rates, signaling its potential to augment the effectiveness of traditional treatment approaches.

- ***Reduction in Non-Responder Rates***: Among MDD patients, the study observed a significant 17% decrease in the rate of treatment non-responders, indicating that the BNA Platform holds promise in mitigating treatment resistance and improving positive outcomes.

The study thus demonstrated that the BNA Platform represents a significant advancement in patient care in a real world setting and addressed the challenges associated with EEG utilization by medical professionals.

By automating EEG analysis and providing comprehensive insights into brain function (cognition), the BNA Platform has the potential to revolutionize disease management, enhance treatment outcomes, and improve the overall well-being of patients with mental illnesses and cognitive disorders. Based on the real-world results highlighted above, Management believes that the societal impact of better outcomes for patients suffering from mental illnesses and cognitive disorders is substantial and the associated cost savings to healthcare systems and payors could be significant. Firefly intends to study the potential health economic benefits associated with the above findings to support rapid adoption of the BNA Platform into standard patient management protocols.

Research and Development

Firefly focuses its research and development efforts on advancing the treatment of patients suffering from mental illnesses and cognitive disorders. These efforts are enhanced by the strong relationships that Firefly has developed with neurologists, psychiatrists, neuroscientists, and other experts. Firefly believes the BNA Platform can drive a better standard of care for patients suffering from mental illnesses and cognitive disorders.

Firefly's research and development activities encompass basic research and product development. Firefly's research and development team has biomedical engineering, neuroscience, software development, project management, data science, and AI and ML expertise. Firefly believes the strength and strategic vision of its research and development team will continue to drive Firefly's leadership position in the category of advancing the understanding of brain function in support of better outcome for Firefly's target patient population leveraging EEG hardware with the BNA Platform.

Firefly's near-term research and development efforts are focused on continuing to improve the BNA Platform, enhancing the patient and provider experience, and expanding the population of patients that can be assessed with the BNA Platform. Since inception, Firefly's research and development activities have resulted in significant improvements to the BNA Platform, Firefly's first clearance and predicate device to the BNA Platform dates back to 2014 when Firefly received Class II medical device 510(k) clearance from FDA for the BNA Analysis System, with indication for use in individuals 14 to 24 years of age. In December 2020, Firefly received Class II medical device 510(k) clearance from the FDA for Firefly's current product, the BNA Platform, with indication for use in individuals 12 to 85 years of age.

Additionally, Firefly's near-term development pipeline includes enhancements that leverage its extensive normative database, its growing database, its advanced data analysis, ML and AI capabilities to enable medical professionals to enhance their clinical assessments, and to enable drug development companies to improve the success of their drug development programs, bringing new drugs to market faster while reducing the cost and risk.

Market Opportunity

The market for the BNA Platform and Firefly's future products is vast and growing significantly. According to the World Health Organization, in 2019, 1 in every 8 people, or 970 million people around the world were living with a mental disorder, with anxiety and depressive disorders being the most common. The economic burden of people suffering from depression alone in the United States was estimated at $326.2 billion for the year 2020. As our societies age, the number of cases of mental illness and cognitive disorders is projected to increase, along with the associated economic costs. For example, the number of people with dementia is estimated to increase from 57.3 million cases globally in 2019 more than 150 million cases in 2050. Yet, despite the growing need for effective treatment and substantial unmet treatment needs, CNS drug development remains costly, with the cost of developing a new drug typically ranging from $10 to 15 billion per drug, with CNS drugs having the lowest success rate of all other drug categories.

Our initial commercial focus will be on the sale of the BNA Platform to neurologists in the United States. Based on assumptions regarding the use of the BNA Platform by neurologists in the United States, this market segment represents a total addressable market (TAM) of approximately $800,000,000 based on the following figures (based on the number of neurologists in the United States currently performing EEGs, the number of times such neurologists would perform a BNA analysis and approximate number of working days per year, summarized as follows).

According to data from Definitive Healthcare for 2023, there are 22,115 neurologists in the United States, of which 8,278 are currently performing EEGs. Our business model and TAM assumes that neurologists in the United Sates currently performing EEGs will perform a BNA analysis on average of two times per day over approximately 250 working days per year. Currently, our model assumes that a clinician will be invoiced $200 for each BNA analysis.

Firefly believes that improving outcomes for people suffering from mental illnesses and cognitive disorders requires objective measurement. The clinical benefit of using EEG to understand how a person's brain is functioning has been studied for decades. However, Firefly believes that, due to the complexity and time required to analyze and interpret EEG recordings, the inability to compare EEG recordings to what is clinically normal, and the inability to track changes over time, the clinical use of EEG has been limited. The BNA Platform holds the potential to transform brain health by allowing integration of EEG testing and analysis into patient care pathways to provide clinicians with an objective tool that can help them diagnosis and assess treatment efficacy, objectively and quickly. In addition, through Firefly's research and development initiatives, the Company believes that by introducing biomarkers that could diagnose the illnesses or disorder and identify what treatment will provide the most benefit for the patient will drive adoption by clinicians and payors.

Through ongoing research of Firefly's growing database, using the BNA Platform, Firefly will enter other markets including, executive medical health and wellness for consumers who want to more actively manage their healthcare and lifestyles.

Sales and Marketing

The BNA Platform is indicated for use by medical professionals in the United States. This includes but is not limited to neurologists, psychiatrists, nurse practitioners and general practitioners. Firefly has made the strategic decision to initially target neurologists working in clinics in the United States to adopt the BNA Platform into their patient care protocols. As of 2021, there were over 13,800 active neurologists practicing in the United States, with over 11,600 of these neurologists engaged in patient care. Through building strong relationships with neurologists, who are generally regarded as experts in cognition, Firefly will generate the necessary clinical validation to support defendable reimbursement for other medical professionals to integrate the BNA Platform into their practice. In addition, Firefly believes that its current product will be able to provide more direct insight into diagnosis and therapy optimization by introducing clinical biomarkers that actively support streamlined decision-making by medical professionals who are not familiar with EEG.

Firefly plans to offer its BNA Platform on a subscription model basis. In addition, Firefly plans to provide EEG recording equipment on a monthly rental basis or as part of a bundle price. Firefly's management has a deep understanding of business development in the medical technology space. Driving adoption in the specialty of neurology will ensure that Firefly will be able to reach its full potential. For this reason, Firefly will initially adopt a direct selling model that is supported by field based clinical specialists and medical affairs personnel. As adoption progresses, supported by clinical validation, biomarkers and improvements to the BNA Platform, Firefly aims to partner with national distributors that complement Firefly's target markets, including EEG companies and installed bases of EEG systems in use today by medical professionals.

To further support the adoption of the BNA Platform in neurology, Firefly plans to attend trade shows and conferences at national and regional levels. In addition, Firefly plans to increase awareness of its BNA Platform amongst target clinicians, namely neurologists in the United States, who care for patients with cognitive disorders through education and outreach designed to drive patient referrals. As the Company grows awareness and utilization of the BNA Platform, Firefly plans to continue to enhance its marketing and analytics capabilities to support its growing customer base to include other medical professionals.

In concert with the commercialization of the BNA Platform to medical professionals, Firefly plans to actively engage with drug development companies and develop extensive strategic partnerships to support their drug development strategies. As of January 1, 2023, there were 187 trials assessing 141 unique treatments for Alzheimer's disease. As of January 4, 2023, there were more than 160 pharmaceutical companies developing drugs to treat mental illnesses. In order to take full advantage of the opportunity in the CNS drug development market, Firefly intends to invest in business development resources focused on the CNS drug development sector.

Competition

Firefly's industry is competitive and has been evolving rapidly with the introduction of new products and technologies as well as the market activities of industry participants. The BNA Platform is indicated for use in individuals 12 to 85 years of age for the post-hoc statistical analysis of the human electroencephalogram, including event-related potentials and Firefly currently markets its device to qualified medical professionals. Firefly competes against other companies that have developed AI-driven platforms, in the target market of neurological disorders.

Firefly believes that the BNA Platform is a paradigm shift on the approach to treating cognitive disorders and mental illnesses. Firefly's BNA Platform offers distinct advantages, including its BNA Algorithm for data analysis, its proprietary extensive normative age matched database underpinning the BNA Platform, and the ability of the BNA Platform to generate individual reports that clinicians can use to optimize patient care. Firefly believes the BNA Platform can become a standard of care tool in addressing the primary unmet needs in mental illness and cognitive disorders today. Firefly also believes that the BNA Platform has a wide range of additional applications, including the ability to leverage data gathered through BNA sessions for additional clinical insight, pharmaceutical drug development and new product development. The longitudinal nature of the data, along with clinical disease context, provides many future development opportunities.

Furthermore, EEG technology, in concert with BNA Platform, represents a scalable, low-cost solution when compared to other imaging technologies that assess brain function, such as functional magnetic resonance imaging (fMRI).

Intellectual Property

Firefly's commercial success depends in part on its ability to obtain and maintain intellectual property protection for the BNA Platform and any future products, to prevent others from infringing, misappropriating, or otherwise violating its intellectual property rights, to defend and enforce its intellectual property rights, and to operate without infringing, misappropriating, or otherwise violating valid and enforceable intellectual property rights of others. Firefly actively seeks to protect intellectual property that it believes is important to its business, which includes patents covering the components of the BNA Platform and the methods used for optimizing the therapy that the BNA Platform delivers. Firefly also seeks patent protection for other processes and inventions that are commercially or strategically important to developing and maximizing the value of its enterprise. Firefly takes steps to build and maintain the integrity of its brand, for example, with trademarks and service marks, and Firefly seeks to protect the confidentiality of trade secrets that may be important to the development of its business. Firefly relies on a strategy that combines the use of patents, trademarks, trade secrets, know-how, and license agreements, as well as other intellectual property laws, employment, confidentiality and invention assignment agreements, and contractual protections, to establish and protect its intellectual property rights.

Patents

Our patents and patent applications assert claims generally related methods and systems. Specifically, there are multiple patent families relating to (i) ERP processing algorithms and the comparison to a reference group and estimation of brain function based on the comparison; (ii) prediction of TMS treatment outcome; (iii) method and system for estimating brain concussion; (iv) method and system for managing pain; (v) method for brain stimulation tool configuration. As of December 31, 2023, we owned eight issued U.S. patents, which have expiration dates ranging from November 2028 to November 2037. We own one issued patent in Japan and there are currently patent applications pending in each of Australia, Canada, China, European Union and Israel, which, if issued, are expected to expire in 2037.

The anticipated expiration dates are without taking into account all possible patent term adjustments, extensions, or abandonments, and assuming payment of all appropriate maintenance, renewal, annuity, and other governmental fees. We continue to evaluate our intellectual property portfolio as patents reach end of life to determine the optimal course for continuing to protect our technology. We cannot ensure that patents will issue from any of our pending applications or that, if patents are issued, they will be of sufficient scope or strength to provide meaningful protection for our technology.

We recognize that the ability to obtain patent protection and the degree of such protection depends on a number of factors. The patent positions of medical device companies like ours are generally uncertain and involve complex legal, scientific, and factual questions. The protection afforded by a patent varies on a product-by-product basis, from jurisdiction-to-jurisdiction, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of patent term adjustments and extensions, the availability of legal remedies, and the validity and enforceability of the patent.

In addition, the coverage claimed in a patent application can be significantly narrowed before the patent is issued, and patent claims can be reinterpreted or further altered even after patent issuance. We cannot predict whether the patent applications we are currently pursuing will issue as patents or whether the claims of any issued patents will provide sufficient protection from competitors. A competitor could develop systems, devices, or methods of manufacture or treatment that are not covered by our patents. Accordingly, our ability to stop third parties from commercializing any of our patented inventions, either directly or indirectly, will depend in part on our success in obtaining, maintaining, defending, and enforcing patent claims that adequately cover our inventions.

Our commercial success will also depend, in part, on not infringing, misappropriating, or otherwise violating the intellectual property rights of third parties. Third parties own numerous patents in the U.S. and in jurisdictions outside the U.S. with claims directed to inventions in the fields in which we operate or plan to operate. It is uncertain whether the issuance of any third-party patent would require us to alter our development or commercial strategies, seek licenses, cease certain activities, or participate in USPTO proceedings. Moreover, such licenses may not be available on commercially reasonable terms or at all. Our breach of any license agreements or failure to obtain a license necessary to our business may have a material adverse impact on us.

Trademarks

Our trademark portfolio is designed to protect the brands of our BNA Platform and any future products. As of June 30, 2024, we own one trademark registration for "BNA" in the United States and other countries, including Israel, Switzerland, European Union, Canada, and India. The trademark is also registered with WIPO International.

Trade Secrets

We also rely on trade secrets relating to our product and technology, including our data processing algorithms, and we maintain the confidentiality of such proprietary information to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection. We seek to protect our trade secrets and know-how by entering into confidentiality and invention assignment agreements with employees, contractors, consultants, suppliers, customers, and other third parties, who have access to such information. These agreements generally provide that all confidential information concerning our business or financial affairs developed or made known to the individual during the course of the individual's relationship with us are to be kept confidential and not disclosed to third parties except in specific circumstances.

For more information regarding the risks related to our intellectual property, please see "Risk Factors-Risks Related to Firefly's Intellectual Property."

Manufacturing

Our BNA Platform is hardware-agnostic and we do not manufacture any compatible hardware.

Government Regulation

Our products (including our BNA Platform) are considered medical devices, and, accordingly, are subject to rigorous regulation by government agencies in the United States and other countries in which we intend to sell our products. These regulations vary from country to country but cover, among other things, the following activities with respect to medical devices:

- design, development and manufacturing;
- testing, labeling, content and language of instructions for use and storage;
- product storage and safety;
- marketing, sales and distribution;
- pre-market clearance and approval;
- record keeping procedures;
- advertising and promotion;
- recalls and field safety corrective actions;
- post-market surveillance;
- post-market approval studies; and
- product import and export.

FDA Regulation

In the U.S., numerous laws and regulations govern the processes by which medical devices are developed, manufactured, brought to market and marketed. These include the Federal Food, Drug, and Cosmetic Act ("FD&C Act") and its implementing regulations issued by FDA, among others. Unless an exemption applies, each medical device commercially distributed in the United States requires FDA clearance of a 510(k) premarket notification ("510(k) clearance"), granting of a de novo request, or approval of an application for premarket approval ("PMA"). In general, under the FD&C Act, medical devices are classified in one of three classes on the basis of the controls necessary to reasonably assure their safety and effectiveness. A medical device's classification determines the level of FDA review and approval to which the device is subject before it can be marketed to consumers:

- Class I devices, the lowest-risk FDA device classification, include devices with the lowest risk to the patient and are those for which safety and effectiveness can be assured by adherence to FDA's medical device general controls, including labeling, establishment registration, device product listing, adverse event reporting, and, for some products, adherence to good manufacturing practices through FDA's Quality System Regulations.
- Class II devices, moderate-risk devices, also require compliance with general controls and in some cases, special controls as deemed necessary by FDA to ensure the safety and effectiveness of the device. These special controls may include performance standards, particular labeling requirements, or post-market surveillance obligations. While most Class I devices are exempt from the 510(k) premarket notification requirement, typically a Class II device also requires pre-market review and 510(k) clearance as well as adherence to the Quality System Regulations/good manufacturing practices for devices.
- Class III devices, high-risk devices that are often implantable or life-sustaining, also require compliance with the medical device general controls and Quality System Regulations, and generally must be approved by FDA before entering the market through a PMA application. Approved PMAs can include post-approval conditions and post-market surveillance requirements, analogous to some of the special controls that may be imposed on Class II devices.

Our BNA Platform is a Class II medical device, which was cleared by FDA for commercialization in the U.S. pursuant to the 510(k) notification process for the post-hoc statistical analysis of the human electroencephalogram, including ERP in December 2020. The marketing and distribution of the BNA Platform, is subject to continuing regulation and enforcement by FDA and other government authorities, which includes product listing requirements, medical device reporting regulations. If FDA finds that we have failed to comply with any legal or regulatory requirements, it or other government agencies may institute a wide variety of enforcement actions against us, ranging from Warning Letters to more severe sanctions, including but not limited to financial penalties, withdrawal of 510(k) clearances already granted, and criminal prosecution.

The 510(k) Process

Under the 510(k) process, the applicant must submit to FDA a premarket notification demonstrating that the device is "substantially equivalent" to either a device that was legally marketed prior to May 28, 1976, the date upon which the Medical Device Amendments of 1976 were enacted, and for which a PMA is not required, a device that has been reclassified from Class III to Class II or Class I, or another commercially available device that was cleared through the 510(k) process. To be "substantially equivalent," the proposed device must have the same intended use as the predicate device, and either have the same technological characteristics as the predicate device or have different technological characteristics and not raise different questions of safety or effectiveness than the predicate device. Clinical data is sometimes required to support substantial equivalence.

After a 510(k) premarket notification is submitted, FDA determines whether to accept it for substantive review. If it lacks necessary information for substantive review, FDA will refuse to accept the 510(k) notification. If it is accepted for filing, FDA begins a substantive review. By statute, FDA is required to complete its review of a 510(k) notification within 90 days of receiving the 510(k) notification. As a practical matter, clearance often takes longer, and clearance is never assured. FDA may require further information, including clinical data, to make a determination regarding substantial equivalence, which may significantly prolong the review process. If FDA agrees that the device is substantially equivalent to a predicate device currently on the market, it will grant 510(k) clearance to commercially market the device.

Post-Market Regulation

After a device is cleared or approved for marketing, numerous and extensive regulatory requirements may continue to apply. These include but are not limited to:

- annual and updated establishment registration and device listing with FDA;
- restrictions on sale, distribution, or use of a device;
- labeling, advertising, promotion, and marketing regulations, which require that promotion is truthful, not misleading, and provide adequate risk disclosures and directions for use and that all claims are substantiated, and also prohibit the promotion of products for unapproved or "off-label" uses (i.e., indications that are inconsistent with or beyond the scope of the applicable FDA approval or clearance) and impose other restrictions on labeling;
- clearance or approval of product modifications to legally marketed devices that could significantly affect safety or effectiveness or that would constitute a major change in intended use;
- correction, removal, and recall reporting regulations, and FDA's recall authority;
- complying with the federal law and regulations requiring Unique Device Identifiers on devices; and
- post-market surveillance activities and regulations, which apply when deemed by FDA to be necessary to protect the public health or to provide additional safety and effectiveness data for the device.
- FDA has broad regulatory compliance and enforcement powers. If FDA determines that we failed to comply with applicable regulatory requirements, it can take a variety of compliance or enforcement actions, which may result in any of the following sanctions:
- warning letters, untitled letters, fines, injunctions, consent decrees, and civil penalties;
- recalls, withdrawals, or administrative detention, or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing or delaying requests for 510(k) marketing clearance or PMA approvals of new products or modified products;
- withdrawing 510(k) clearances or PMA approvals that have already been granted;
- refusal to grant export or import approvals for our products; or
- criminal prosecution.

International Regulation

Many countries throughout the world have established regulatory frameworks for marketing and commercialization of medical devices. As a designer and marketer of medical devices, we are obligated to comply with the respective frameworks of these countries to obtain and maintain access to these global markets. The frameworks often define requirements for marketing authorizations which vary by country. Failure to obtain appropriate marketing authorization and to meet all local requirements, including specific quality and safety standards in any country in which we currently market our products, could cause commercial disruption and/or subject us to sanctions and fines. Delays in receipt of, or a failure to receive, such marketing authorizations, or the loss of any previously received authorizations, could have a material adverse effect on our business, financial condition and results of operations.

There is currently no premarket government review of medical devices in the European Economic Area ("EEA"). However, all medical devices placed on the market in the EEA must meet the relevant essential requirements laid down in Annex I of Directive 93/42/EEC concerning medical devices, or the Medical Devices Directive. The most fundamental essential requirement is that a medical device must be designed and manufactured in such a way that it will not compromise the clinical condition or safety of patients, or the safety and health of users and others. In addition, the device must achieve the performances intended by the manufacturer and be designed, manufactured, and packaged in a suitable manner. The European Commission has adopted various standards applicable to medical devices. These include standards governing common requirements, such as sterilization and safety of medical electrical equipment, and product standards for certain types of medical devices. There are also harmonized standards relating to design and manufacture. While not mandatory, compliance with these standards is viewed as the easiest way to satisfy the essential requirements as a practical matter. Compliance with a standard developed to implement an essential requirement also creates a rebuttable presumption that the device satisfies that essential requirement.

On April 5, 2017, the European Parliament passed the Medical Devices Regulation (Regulation 2017/745), which repeals and replaces the EU Medical Device Directive and became effective on May 26, 2021. The Medical Devices Regulation, among other things, is intended to establish a uniform, transparent, predictable, and sustainable regulatory framework across the EEA for medical devices and ensure a high level of safety and health while supporting innovation. The new regulations, among other things:

- strengthen the rules on placing devices on the market and reinforce surveillance once they are available;
- improve the traceability of medical devices throughout the supply chain to the end-user or patient through a unique identification number;
- set up a central database to provide patients, healthcare professionals, and the public with comprehensive information on products available in the E.U.; and
- strengthen rules for the assessment of certain high-risk devices, such as implants, which may have to undergo an additional check by experts before they are placed on the market.

We received our European CE mark, indicating that we affirm our product's conformity with European health, safety and environmental protection standards, in 2021.

Healthcare Regulatory Laws

Within the United States, our products are subject to extensive regulation by a wide range of federal and state agencies that govern business practices in the medical device industry. These laws include federal and state anti-kickback, fraud and abuse, false claims and physician payment transparency laws and regulations.

The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any good, facility, item or service reimbursable, in whole or part by Medicare, Medicaid or other federal healthcare programs. The term "remuneration" has been broadly interpreted to include anything of value, including cash, improper discounts, and free or reduced price items and services. Among other things, the Anti-Kickback Statute has been interpreted to apply to arrangements between medical device manufacturers on the one hand and prescribers and purchasers on the other. Although there are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, the exceptions and safe harbors are drawn narrowly. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor.

Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all of its facts and circumstances. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the Anti-Kickback Statute has been violated. In addition, a person or entity does not need to have actual knowledge of the statute or specific intent to violate, in order to have committed a violation. Further, a claim including items or services resulting from a violation of the federal Anti-Kickback Statute also constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Many states have adopted laws similar to the Anti-Kickback Statute. Some of these state prohibitions apply to referral of patients for healthcare items or services reimbursed by any payor, not only the Medicare and Medicaid programs. Commercial payors may also bring a private cause of action for treble damages against a manufacturer for a pattern of causing false claims to be filed under the federal Racketeer Influenced and Corrupt Organizations Act, or RICO.

The federal civil False Claims Act prohibits, among other things, any person or entity from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment to or approval by the federal government or knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. A claim includes "any request or demand" for money or property presented to the U.S. government. The qui tam provisions of the False Claims Act allow a private individual to bring actions on behalf of the federal government alleging that the defendant has submitted a false claim to the federal government, and to share in any monetary recovery. In recent years, the number of suits brought against healthcare providers by private individuals has increased dramatically. The government has obtained multi-million and multi-billion dollar settlements under the False Claims Act in addition to individual criminal convictions under applicable criminal statutes. In addition, the federal civil monetary penalties statute imposes penalties against any person or entity that, among other things, is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent. Given the significant size of actual and potential settlements, it is expected that the government will continue to devote substantial resources to investigating healthcare providers' and manufacturers' compliance with applicable fraud and abuse laws. Various states have also enacted false claim laws analogous to the federal civil False Claims Act, although many of these state laws apply where a claim is submitted to any third-party payor and not merely a federal healthcare program.

The federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, or HIPAA, among other things, created two new federal crimes: healthcare fraud and false statements relating to healthcare matters. The HIPAA healthcare fraud statute prohibits, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private payors. A violation of this statute is a felony and may result in fines, imprisonment and/or exclusion from government sponsored programs. The HIPAA false statements statute prohibits, among other things, knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement or representation in connection with the delivery of or payment for healthcare benefits, items or services. A violation of this statute is a felony and may result in fines and/or imprisonment. Similar to the Anti-Kickback Statute, a person or entity does not need to have actual knowledge of these statutes or specific intent to violate them in order to have committed a violation.

Additionally, there has been a recent trend of increased federal and state regulation of payments made to physicians and other healthcare providers. The ACA, imposed, among other things, new annual reporting requirements for covered manufacturers for certain payments and "transfers of value" provided to physicians and certain other healthcare providers and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. In addition, certain states require implementation of compliance programs and compliance with the device industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, impose restrictions on marketing practices, and/or tracking and reporting of gifts, compensation and other remuneration or items of value provided to physicians and other healthcare professionals and entities.

Health Information Privacy and Security Laws

There are numerous U.S. federal and state laws and regulations related to the privacy and security of Personally Identifiable Information ("PII"), including health information. Among others, the federal Health Insurance Portability and Accountability Act of 1996, as amended by HITECH, and their implementing regulations, which we collectively refer to as HIPAA, establish privacy and security standards that limit the use and disclosure of Protected Health Information ("PHI") and require covered entities and business associates to implement administrative, physical, and technical safeguards to ensure the confidentiality, integrity, and availability of individually identifiable health information in electronic form, among other requirements.

Violations of HIPAA may result in civil and criminal penalties. We must also comply with HIPAA's breach notification rule which requires notification to affected individuals and HHS, and in certain cases to media outlets, in the case of a breach of unsecured PHI. The regulations also require business associates of covered entities to notify the covered entity of breaches by the business associate.

State attorneys general also have the right to prosecute HIPAA violations committed against residents of their states, and HIPAA standards have been used as the basis for the duty of care in state civil suits, such as those for negligence or recklessness in misusing personal information. In addition, HIPAA mandates that HHS conduct periodic compliance audits of HIPAA covered entities and their business associates for compliance.

Many states also have laws that protect the privacy and security of sensitive and personal information, including health information. These laws may be similar to or even more protective than HIPAA and other federal privacy laws. For example, the laws of the State of California, are more restrictive than HIPAA. Where state laws are more protective than HIPAA, we must comply with the state laws we are subject to, in addition to HIPAA. California passed the California Consumer Privacy Act or CCPA on June 28, 2018, which went into effect January 1, 2020. On November 3, 2020, the California Privacy Rights Act of 2020 ("CPRA"), which amends the CCPA and adds new privacy protections that became effective on January 1, 2023, was enacted through a ballot initiative. While information we maintain that is covered by HIPAA may be exempt from the CCPA, other records and information we maintain on our patients may be subject to the CCPA. In certain cases, it may be necessary to modify our planned operations and procedures to comply with these more stringent state laws. Not only may some of these state laws impose fines and penalties upon violators, but also some, unlike HIPAA, may afford private rights of action to individuals who believe their personal information has been misused. In addition, state and federal privacy laws subject to frequent change.

In addition to HIPAA and state health information privacy laws, we may be subject to other state and federal privacy laws, including laws that prohibit unfair privacy and security practices and deceptive statements about privacy and security, laws that place specific requirements on certain types of activities, such as data security and texting, and laws requiring holders of personal information to maintain safeguards and to take certain actions in response to a data breach.

Foreign data protection, privacy, and other laws and regulations are often more restrictive than those in the U.S. The E.U., for example, traditionally has imposed stricter obligations under its laws and regulations relating to privacy, data protection and consumer protection than the U.S. In May 2018, the GDPR, governing data practices and privacy in the E.U., became effective and replaced the data protection laws of the individual member states. GDPR requires companies to meet stringent requirements regarding the handling of personal data of individuals in the E.U. These more stringent requirements include expanded disclosures to inform members about how we may use their personal data, increased controls on profiling members, and increased rights for members to access, control and delete their personal data. In addition, there are mandatory data breach notification requirements. The law also includes significant penalties for non-compliance, which may result in monetary penalties of up to 20 million Euros or 4% of a company's worldwide turnover, whichever is higher. GDPR and other similar regulations require companies to give specific types of notice and informed consent is required for the placement of a cookie or similar technologies on a user's device for online tracking for behavioral advertising and other purposes and for direct electronic marketing, and the GDPR also imposes additional conditions in order to satisfy such consent, such as a prohibition on pre-checked consents. It remains unclear how the U.K. data protection laws or regulations will develop in the medium to longer term and how data transfer to the U.K. from the E.U. will be regulated. Outside of the E.U., there are many other countries with data protection laws, and new countries are adopting data protection legislation with increasing frequency.

Many of these laws may require consent from individuals for the use of data for various purposes, including marketing, which may reduce our ability to market our products.

There is no harmonized approach to these laws and regulations globally. Consequently, we increase our risk of non-compliance with applicable foreign data protection laws and regulations when we expand internationally. We may need to change and limit the way we use personal information in operating our business and may have difficulty maintaining a single operating model that is compliant. Compliance with such laws and regulations will result in additional costs and may necessitate changes to our business practices and divergent operating models, limit the effectiveness of our marketing activities, adversely affect our business, results of operations, and financial condition, and subject us to additional liabilities.

Employees

As of the date of this prospectus, Firefly had seven full-time employees and six contractors. None of Firefly's employees are represented by a labor union or covered by collective bargaining agreements, and Firefly considers its relationship with its employees to be good.

Facilities

We do not own any real property or facilities. In connection with the Merger, we assumed the lease of WaveDancer's principal executive offices, which such lease will expire in November 2024, and which we do not intend to renew. If we advance our business operations, we may seek to lease facilities of our own in order to support our operational and administrative needs. There can be no assurance that such facilities will be available, or that they will be available on suitable terms. Our inability to obtain such facilities could have a material adverse effect on our future plans and operations.

Legal Proceedings

From time to time, we may become party to legal proceedings in the ordinary course of business. Such legal proceedings may negatively impact our business and financial position, result in brand or reputational harm, and divert the attention of our management from core operations of our business. We are currently not a party to any material legal proceedings.

Company Information

Our principal executive offices are located at 1100 Military Road, Kenmore, NY 14217. Our telephone number is (888) 237-6412.

Our web page address is *www.fireflyneuro.com.* Our investor relations website is located at *www.fireflyneuro.com.* We have and will make available free of charge on our investor relations website under "SEC Filings" our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, our directors' and officers' Section 16 Reports and any amendments to those reports after filing or furnishing such materials to the SEC. References to our website address do not constitute incorporation by reference of the information contained on the website, and the information contained on the website is not part of this document or any other document that we file with or furnish to the SEC.

MANAGEMENT

Officers and Directors

Set forth below are the names, ages and positions of each of the individuals who serve as our directors and officers as of December 2, 2024:

Name	Age	Position
Executive Officers		
Jon Olsen	59	Chief Executive Officer and Director
Paul Krzywicki	40	Chief Financial Officer
Gil Issachar	42	Chief Technology Officer
Samer Kaba	63	Chief Medical Officer
Greg Lipschitz	36	Executive Chairman
Non-Employee Directors		
David DeCaprio	52	Director
Arun Menawat	69	Director
Brian Posner	62	Director
Stella Vnook	49	Director

Executive Officers

Jon Olsen. Mr. Olsen has served as Firefly's CEO since September 2020. Jon is a global executive leader who has spent 25+ years in the Medical Technology industry. Prior to joining Firefly Neuroscience, Mr. Olsen was the Managing Director of Smith & Nephew Canada. Prior to Smith & Nephew, Mr. Olsen had an extensive career at Medtronic PLC in North America and Europe. Mr. Olsen received an MBA from the Asper School of Business, and an undergraduate degree in Science (Hons) from the University of Manitoba.

Paul Krzywicki. Mr. Krzywicki, CPA, CGA has served as Firefly's Chief Financial Officer since March 2024. Mr. Krzywicki initially joined Firefly as its Controller in November 2023 before his appointment as our Chief Financial Officer in March 2024. Over the last 5 years, Mr. Krzywicki has held senior leadership positions in a variety of organizations such as Nucor Canada, EllisDon and Canadian Curtis Refrigeration with a focus on modernization and increasing operating efficiency. Mr. Krzywicki is a Chartered Professional Accountant and holds an Honours Bachelors Degree in Commerce from Laurentian University.

Gil Issachar. Mr. Issachar has served as Firefly's Chief Technology Officer since November 2022. Mr. Issachar is a biomedical engineer and a neuroscientist with an extensive experience working as a director of data-science, team leader, data scientist, and software engineer in the medical device industry (under FDA PMA regulations). Mr. Issachar has managed multiple research and development projects in collaboration with pharmaceutical companies, neuroscientists and other start-up companies. Prior to serving as Firefly's Chief Technology Officer, Mr. Issachar served as Firefly's Vice-President of Research and Data Science, Director of Research and Data-Science, Data-Science Team Leader. Prior to joining Firefly, Mr. Issachar served as R&D Software Engineer for Dune Medical Devices. Mr. Issachar received his Master's Degree in Biomedical/Medical Engineering and Bachelor's Degree from Tel Aviv University.

Samer Kaba. On June 21, 2024, we appointed Samer Kaba, M.D., as our Chief Medical Officer. Prior to joining Firefly, Dr. Kaba held multiple leadership positions in the pharmaceutical industry and served as Chief Medical Officer of various biotechnology companies, where he led the development of multiple pharmaceutical products. In addition to his large expertise in drug development, medical affairs, and regulatory sciences, Dr. Kaba has over 20 years of experience in managing patients with neurological conditions. Dr. Kaba is a board-certified neurologist with additional training in Neuro-immunology (Multiple Sclerosis) at the State University of New York at Buffalo, and in Neuro-oncology at the University of Texas M.D.

Greg Lipschitz. Mr. Lipschitz has served as Firefly's director since August 2024 and on December 2, 2024, Mr. Lipschitz was appointed as the Executive Chairman of the Company. Mr. Lipschitz has over 13 years of combined experience in private equity, merchant banking, capital markets and finance. From June 2018 to February 2024, Mr. Lipschitz served as the Vice President of Lazer Capital. Mr. Lipschitz is currently the Managing Director of Old Stone Advisors, a financial advisory firm. Mr. Lipschitz has advised on over $1 billion of transactions. Mr. Lipschitz is a Chartered Financial Analyst and received his bachelor's degree in Business from the Richard Ivey Business School at the University of Western Ontario. Firefly believes that Mr. Lipschitz's experience in capital markets will make him an asset to the Company.

Non-Employee Directors

David DeCaprio. Mr. DeCaprio has served as a member of Firefly's board of directors since August 2024. Mr. DeCaprio has served in various capacities within the genome research, pharmaceutical development, health insurance, computer vision, sports analytics, speech recognition, transportation logistics, operations research, real-time collaboration, robotics and financial industries since 2003. Mr. DeCaprio has significant experience transitioning advanced technology from academic research labs into successful businesses. Since January 2017, Mr. DeCaprio has served and continues to serve as Chief Technology Officer of ClosedLoop.ai, an award-winning startup focused on building a healthcare specific data science and machine learning platform. Prior to founding ClosedLoop.ai, Mr. DeCaprio was involved in various successful startups. Among other positions, Mr. DeCaprio has served as Chief Technology Officer of Fina Technologies from June 2008 to January 2015 and as Vice President of Engineering of GNS Healthcare from September 2005 to January 2017. Since May 2015, Mr. DeCaprio has served and presently serves as Chief Executive Officer of Cizr, a technology company focused on improving sports coaching efficiency. Mr. DeCaprio also has significant consulting experience, serving as a consultant for various organizations from 2006 to January 2015, for Baylor College of Medicine from January 2015 to June 2015 and for the Icahn School of Medicine at Mount Sinai from September 2016 to April 2017. Mr. DeCaprio received a Bachelor of Science Degree in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology. Firefly believes that Mr. DeCaprio's extensive experience in artificial intelligence and software engineering will make him an asset to the company.

Arun Menawat. Dr. Menawat has served as Firefly's director since August 2024. Dr. Menawat has an accomplished history of executive leadership success in the healthcare industry. Dr. Menawat is the Chief Executive Officer and a Director of Profound Medical Corp. Prior to joining Profound, he served as the Chairman, President and CEO of Novadaq Technologies Inc., a TSX and Nasdaq listed company that marketed medical imaging and therapeutic devices for use in the operating room. Previously, he was President and Chief Operating Officer and Director of another publicly listed medical imaging software company, Cedara Software. His educational background includes a Bachelor of Science in Biology, University of District of Columbia, Washington, D.C., and a Ph.D. in Chemical Engineering, from the University of Maryland, College Park, MD, including graduate research in Biomedical Engineering from the National Institute of Health, Bethesda, MD. He also earned an Executive M.B.A. from the J.L. Kellogg School of Management, Northwestern University, Evanston, IL. Firefly believes that Dr. Menawat's extensive experience executive leadership roles in medical technology companies, as well as capital markets, will make him an asset to the Company.

Brian Posner. Mr. Posner has served as Firefly's director since August 2024. Mr. Posner has served as Chief Financial Officer at several life science and emerging technology companies. He served as the Chief Financial Officer of electroCore, Inc. (Nasdaq: ECOR) ("electroCore"), a commercial stage bioelectronic medicine and wellness company from Apil 2019 to October 2024. Mr. Posner currently serves as a consultant to electroCore. Prior to electroCore, Mr. Posner served as Chief Financial Officer of Cellectar Biosciences, Alliqua BioMedical, Ocean Power Technologies, Power Medical Interventions and Pharmacopeia. Mr. Posner holds an undergraduate degree in accounting from Queens College and an M.B.A. in managerial accounting from Pace University. Firefly believes Mr. Posner's extensive experience in public markets will make him an asset to the Company.

Stella Vnook, Ph.D. Dr. Vnook has served as Firefly's director since August 2024. Dr. Vnook has served as a Chief Executive Officer, Founder, Board Member, C-Suite Advisor with 25 years' experience driving transformational change for global clinical development portfolios from early-stage R&D to commercialization. She has an extensive background in building and managing successful start-up ventures, commercial scale-up, strategy/execution to support brand launch, research and development, acceleration, IP strategy, Corporate Board selection and formation, business development and investment strategy, venture capital initiatives, as well as managed markets and healthcare economics. Dr. Vnook's experience includes Chief Executive Officer of Likarda from April 2023 to Present, Board, Founder and President of Oral Biolife from April 2022 to Present, Founder, President and Executive Advisor to Agile Consulting Group from March 2015 to Present, Mentor-In-Residence / Entrepreneur-in-Residence to Penn State University from April 2024 to present. Firefly believes that Dr. Vnook's extensive experience in executive leadership roles in the pharmaceutical industry will make her an asset to the company.

Corporate Governance

Composition of the Board of Directors

Our business and affairs are organized under the direction of the Board. The Board consists of six (6) members. The primary responsibilities of the Board are to provide oversight, strategic guidance, counseling and direction to our management. The Board meets on a regular basis and additionally as it deems necessary.

In accordance with the terms of the Charter, the Board is divided into three classes, Class I, Class II and Class III, with only one class of directors being elected in each year and each class serving a three-year term, except as described below.

- The Class I directors consist of David DeCaprio, Jon Olsen and Greg Lipschitz, whose terms will expire at the first annual meeting of stockholders to be held following the filing of the Amended and Restated Certificate of Incorporation (the "Filing Date");
- The Class II directors consist of Brian Posner and Stella Vnook, whose terms will expire at the second annual meeting of stockholders to be held following the Filing Date.
- The Class III director consists of Arun Menawat, whose term will expire at the third annual meeting of stockholders to be held following the Filing Date.

At each annual meeting of stockholders to be held after the initial classification, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following their election and until their successors are duly elected and qualified. This classification of the Board may have the effect of delaying or preventing changes in our control or management. There is no cumulative voting with respect to the election of directors.

Board Leadership Structure

Director Independence

We are required to comply with Nasdaq's rules in determining whether a director is independent. The Board undertook a review of the independence of the individuals named above and determined that each of the directors except Jon Olsen and Greg Lipschitz qualify as "independent" as defined under the applicable Nasdaq rules.

The Nasdaq definition of "independence" includes a series of objective tests, such as the director or director nominee is not, and was not during the last three years, our employee and has not received certain payments from, or engaged in various types of business dealings with us. In addition, the Board has made a subjective determination that no relationships exist which, in the opinion of the Board, would interfere with such individual's exercise of independent judgment in carrying out his or her responsibilities as a director. In making these determinations, the Board has reviewed and discussed information provided by the directors with regard to each director's business and personal activities as they may relate us and our management.

With respect to its analysis of Mr. Lipschitz's independence, the Board considered that certain strategic agreement, dated as of August 12, 2024, by and between us and Bower Four Corp. (the "Lipschitz Agreement"). Pursuant to the Lipschitz Agreement, Mr. Lipschitz, through Bower Four Corp., is entitled to receive aggregate consideration of $950,000 in shares of Common Stock during the term of the Lipschitz Agreement comprised of up to $316,667 of annual service credits over three years, as defined in the Lipschitz Agreement. Additionally, Mr. Olsen is our employee pursuant to their respective employment agreements with us.

Committees of the Board of Directors

The Board established an Audit Committee, a Compensation Committee and a Nominating and Corporate Governance Committee. The composition and responsibilities of each of the committees of the Board are described below. Members serve on these committees until their resignation or until otherwise determined by the Board. The Board may establish other committees as it deems necessary or appropriate from time to time.

Audit Committee

The Audit Committee of the Board (the "Audit Committee") consists of Brian Posner, Arun Menawat and Stella Vnook. The Board has determined that each member of the Audit Committee qualifies as "independent" under Nasdaq listing standards and Rule 10A-3(b)(1) of the Exchange Act. The chairperson of the Audit Committee is Brian Posner. The Board has determined that Brian Posner is an "audit committee financial expert" within the meaning of SEC regulations. Each member of our Audit Committee can read and understand fundamental financial statements in accordance with applicable requirements. In arriving at these determinations, the Board has examined each audit committee member's scope of experience and the nature of their employment.

The primary purpose of the Audit Committee is to assist the Board in its oversight of our accounting and financial reporting processes and our compliance with legal and regulatory requirements. To assist the Board in fulfilling its responsibilities, the Audit Committee: (A) oversees: (i) audits of our financial statements; (ii) the integrity of our financial statements; (iii) our processes relating to risk management and the conduct and systems of internal control over financial reporting and disclosure controls and procedures; (iv) the qualifications, engagement, compensation, independence and performance of our independent auditor, and the auditor's conduct of the annual audit of our financial statements and any other services provided to us; and (v) the performance of our internal audit function, if any; and (B) produces the annual report of the Audit Committee. Specific responsibilities of the Audit Committee include, but are not limited, to:

- appoint, compensate, and oversee the work of any independent auditor;
- resolve any disagreements between management and the independent auditor regarding financial reporting;
- pre-approve all audit and permitted non-audit services by the independent auditor;
- retain independent counsel, accountants, or other advisors or consultants to advise and assist the Audit Committee in carrying out its duties, without needing to seek approval for the retention of such advisors or consultants from the Board, and determine the appropriate compensation for any such advisors or consultants retained by the Audit Committee;
- seek any information it requires from our employees or any direct or indirect subsidiary, all of whom are directed to cooperate with the Audit Committee's requests, or external parties;
- meet with any officer or employee, the independent auditor or outside counsel, as necessary, or request that any such persons meet with any members of, or advisors or consultants to, the Audit Committee; and
- oversee that management has established and maintained processes to assure our compliance with applicable laws, regulations and corporate policy.

Compensation Committee

The Compensation Committee of the Board (the "Compensation Committee") consists of David DeCaprio, Arun Menawat and Brian Posner. The chairperson of the Compensation Committee is Arun Menawat. The Board has determined each member of the Compensation Committee qualifies as "independent" under Nasdaq listing standards and as "non-employee directors" as defined in Rule 16b-3 promulgated under the Exchange Act.

The primary purpose of the Compensation Committee is to (A) assist the Board in overseeing our employee compensation policies and practices, including (i) determining and approving the compensation of our Chief Executive Officer and other executive officers, and (ii) reviewing and approving incentive compensation and equity compensation policies and programs, and exercising discretion in the administration of such programs; and (B) produce a compensation discussion and analysis ("CD&A") of the Compensation Committee, if required by applicable SEC rules. Specific responsibilities of the Compensation Committee include, but are not limited, to:

- establish a compensation policy for executive officers designed to (i) enhance our profitability and increase stockholder value; (ii) reward executive officers for their contribution to our growth and profitability; (iii) recognize individual initiative, leadership, achievement, and other contributions; and (iv) provide competitive compensation that will attract and retain qualified executives;
- review competitive practices and trends to determine the adequacy of the executive compensation program;
- review and consider participation and eligibility in the various components of the total executive compensation package;
- annually review and approve corporate goals and objectives relevant to CEO compensation, evaluate the CEO's performance in light of those goals and objectives, and recommend to the Board the CEO's compensation levels based on this evaluation; the CEO may not be present during any deliberations or voting with respect to the CEO's compensation;
- annually review and make recommendations to the Board with respect to compensation of our directors and executive officers other than the CEO;
- approve employment contracts, severance arrangements, change in control provisions and other agreements;
- approve and administer cash incentives and deferred compensation plans for executive officers (including any modification to such plans) and oversight of performance objectives and funding for executive incentive plans;
- approve and oversee reimbursement policies for directors and executive officers;
- approve and oversee compensation programs involving the use of our stock;
- if we are required by applicable SEC rules to include a CD&A in our SEC filings, review the CD&A prepared by management, discuss the CD&A with management and, based on such review and discussions, recommend to the Board that the CD&A be included in our Annual Report on Form 10-K, proxy statement, or any other applicable filing as required by the SEC;
- review all compensation policies and practices for all employees to determine whether such policies and practices create risks that are reasonably likely to have a material adverse effect on us;
- periodically review executive supplementary benefits and, as appropriate, the organization's retirement, benefit, and special compensation programs involving significant cost; and
- fulfill such other duties and responsibilities as may be assigned to the Compensation Committee, from time to time, by the Board and/or the Executive Chairman of the Board.

Nominating and Corporate Governance Committee

The Nominating and Corporate Governance Committee of the Board (the "Nominating Committee") consists of David DeCaprio, Stella Vnook and Brian Posner. The chairperson of the Nominating Committee is Stella Vnook. The Board has determined which members of the Nominating Committee qualify as independent under the Nasdaq listing standards. Specific responsibilities of the nominating and corporate governance committee include, but are not limited, to:

- evaluate the current composition, organization and governance of the Board and its committees, and make recommendations to the Board for approval;
- annually review for each director and nominee, the particular experience, qualifications, attributes or skills that contribute to the Board's conclusion that the person should serve or continue to serve as our director, as well as how the directors' skills and background enable them to function well together as a Board;
- determine desired Board member skills and attributes and conduct searches for prospective directors whose skills and attributes reflect those desired;
- evaluate and propose nominees for election to the Board;
- administer the annual Board performance evaluation process, including conducting surveys of director observations, suggestions and preferences;
- evaluate and make recommendations to the Board concerning the appointment of directors to Board committees, the selection of Board committee chairs, and proposal of the slate of directors for election to the Board.;
- as necessary in the Nominating Committee's judgment from time to time, retain and compensate third party search firms to assist in identifying or evaluating potential nominees to the Board;
- develop, adopt and oversee the implementation of a Code of Business Conduct and Ethics for all our directors, executive officers and employees;
- review and maintain oversight of matters relating to the independence of Board and committee members, keeping in mind the independence standards of the Sarbanes-Oxley Act of 2002 and the rules of Nasdaq;
- oversee and assess the effectiveness of the relationship between the Board and Corporation management; and
- maintain appropriate records regarding its process of identifying and evaluating candidates for election to the Board.

Code of Business Conduct and Ethics

In connection with the Merger, on August 12, 2024, the Board approved and adopted a new Code of Business Conduct and Ethics (the "Code of Ethics") that applies to all of our executive officers, directors and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller or persons performing similar functions. A copy of the Code of Ethics can be found on our website at *www.fireflyneuro.com*. In addition, we will post on our website all disclosures that are required by law or the listing standards of Nasdaq concerning any amendments to, or waivers from, any provision of the Code of Ethics. The reference to our website address does not constitute incorporation by reference of the information contained at or available through our website, and you should not consider it to be a part of this prospectus.

Compensation Committee Interlocks and Insider Participation

None of our Compensation Committee members is or has ever been our executive officer or employee. None of our executive officers currently serve, or have served during the last completed fiscal year, on the Compensation Committee or the Board of any other entity that has one or more executive officers that will serve as a member of the Board or Compensation Committee. See "Certain Relationships and Related Person Transactions."

Limitation on Liability and Indemnification of Directors and Officers

The Charter provides that directors and officers will be indemnified by us to the fullest extent authorized by Delaware law as it now exists or may in the future be amended. The Charter provides that directors will not be personally liable for monetary damages to us except to the extent such exemption from liability or limitation thereof is not permitted under the DGCL as the same exists or may hereafter be amended.

We have entered into agreements with our officers and directors to provide contractual indemnification. The Bylaws permit us to secure insurance on behalf of any officer, director or employee for any liability arising out of his or her actions, regardless of whether Delaware law would permit indemnification. We have purchased directors' and officers' liability insurance that insures our directors and officers against the cost of defense, settlement or payment of a judgment in some circumstances and insures us against our obligations to indemnify the directors and officers.

EXECUTIVE COMPENSATION

This section discusses the material components of the executive compensation program for our named executive officers who are named in the "Summary Compensation Table" below, which such named executive officers consist of (a) any persons who served as our principal executive officer during any part of the year ended December 31, 2023; (b) each of our two most highly compensated executive officers other than our principal executive officer who served as executive officers at the end of 2023; and (c) up to two additional individuals for whom disclosure would have been provided under clause (b) but for the fact that the person was not serving as an executive officer at the end of the fiscal year ended December 31, 2023. For the year ended December 31, 2023, our "named executive officers" and their positions were as follows:

- Jon Olsen, Chief Executive Officer;
- Stephen Purcell, former Chief Financial Officer; and
- Gil Issachar, Chief Technology Officer.

This discussion may contain forward-looking statements that are based on our current plans, considerations, expectations and determinations regarding future compensation programs.

Summary Compensation Table

The following table sets forth information concerning the compensation of our named executive officers for the fiscal years ended December 31, 2023 and 2022. All amounts in the table below are rounded to the nearest whole dollar.

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)	Option Awards ($)(1)	All other compensation ($)	Total ($)
Jon Olsen	2022	$ 159,336	$ -	$ -	$ 254,706(2)(11)	$ -	$ 414,042
Chief Executive Officer	2023	$ 168,380	$ -	$ -(9)	-(3)	$ -	$ 168,380
Stephen Purcell	2022	$ 146,735	$ -	$ -	$ 121,615(7)(12)	$ -	$ 268,350
Former Chief Financial Officer	2023	$ 121,184	$ -	$ -	$ -(8)	$ -	$ 121,184
Gil Issachar	2022	$ 177,899	$ 13,009	$ -	$ 67,124(4)(13)	$ 56,768	$ 314,800
Chief Technology Officer	2023	$ 133,556	$ 12,575	$ -(10)	-(5)	$ 46,738	$ 192,869

(1) Amounts reflect the full grant-date fair value of option awards granted during the relevant fiscal year computed in accordance with ASC Topic 718, rather than the amounts paid to or realized by the named individual. Firefly provides information regarding the assumptions used to calculate the value of all option awards made to its executive officers in Note 11 to the audited consolidated financial statements for the year ended December 31, 2022 contained elsewhere in this prospectus.

(2) Consists of a grant of options to purchase 112,280 shares of Common Stock at an exercise price of $3.00 per share made to Mr. Olsen on November 17, 2022. 40,545 of such options are currently exercisable.

(3) Consists of a grant of options to purchase 725,168 shares of Common Stock made to Mr. Olsen on July 8, 2023, of which 271,938 are exercisable as of December 31, 2023. The options have a term of 5 years and an exercise price equal to a 25% discount to the issue price of Firefly's equity securities in an initial public offering that results in our Common Stock being listed on the Nasdaq Stock Market or another recognized securities exchange or traded on the over-the-counter market.

(4) Consists of a grant of options to purchase 28,070 shares of Common Stock at an exercise price of $3.00 per share made to Mr. Issachar on November 17, 2022. 10,136 of such options are currently exercisable.

(5) Consists of a grant of options to purchase 725,168 shares of Common Stock made to Mr. Issachar on July 8, 2023, of which 271,938 are exercisable as of December 31, 2023. The options have a term of 5 years and an exercise price equal to a 25% discount to the issue price of Firefly's equity securities in an initial public offering that results in our Common Stock being listed on the Nasdaq Stock Market or another recognized securities exchange or traded on the over-the-counter market.

(6) On March 7, 2024, Stephen Purcell resigned as our Chief Financial Officer upon the appointment of our current Chief Financial Officer, Paul Krzywicki

(7) Consists of a grant of options to purchase 56,140 shares of Common Stock at an exercise price of $3.00 per share made to Mr. Purcell on November 17, 2022. As of the date hereof, such options have expired and are no longer exercisable.

(8) Consists of a grant of options to purchase 106,122 shares of Common Stock made to Mr. Purcell on July 8, 2023, of which 17,687 are exercisable as of December 31, 2023. The options have a term of 5 years and an exercise price equal to a 25% discount to the issue price of Firefly's equity securities in an initial public offering that results in our Common Stock being listed on the Nasdaq Stock Market or another recognized securities exchange or traded on the over-the-counter market.

(9) Consists of a restricted share units to purchase valued at $200,000 to Mr. Olsen on July 8, 2023. These shares units vest once the Company lists on a recognized North American Stock Exchange.

(10) Consists of a restricted share units to purchase valued at $200,000 to Mr. Issachar on July 8, 2023. These shares vest once the Company lists on a recognized North American Stock Exchange.

(11) Consists of 3,649 options repriced from $72.12 to 28.85 and immediately vested to Mr. Olsen.

(12) Consists of 694 options repriced from $72.12 to 28.85 and immediately vested to Mr. Purcell.

(13) Consists of 1,606 options repriced from $72.12 to 28.85 and immediately vested to Mr. Olsen

Narrative Disclosure to Summary Compensation Table

We have entered into written employment agreements or other arrangements with each of Jon Olsen and Gil Issachar and prior to his resignation, we had entered into a consulting agreement with ElMindA Ltd., pursuant to which Stephen Purcell served as our Chief Financial Officer. The material terms of the employment agreements or other arrangements with such individuals, as applicable and as currently in effect, are summarized below.

Jon Olsen, Chief Executive Officer

Effective September 4, 2020, we and Mr. Olsen entered into a letter agreement, pursuant to which Firefly offered to employ Mr. Olsen as Chief Executive Officer and a member of our Board on a consultancy basis for a period of 90 days (the "Olsen Letter Agreement"). Under the Olsen Letter Agreement, Mr. Olsen was entitled to an effective annual base salary of $102,000, payable monthly.

Mr. Olsen's employment with us pursuant to the Olsen Employment Agreement commenced as of the effective date of the Olsen Employment Agreement and expired 90 days later.

Effective January 4, 2024, Firefly and Slate Water Ltd., a corporation incorporated pursuant to the laws of Ontario, entered into an agreement pursuant to which Mr. Olsen was hired on a consultancy basis to serve as our Chief Executive Officer (the "CEO Consultancy Agreement"). Pursuant to the CEO Consultancy Agreement, Mr. Olsen is entitled to an effective annual base salary of $180,000, payable monthly. Additional performance bonuses, stock options and targets may be established on an annual basis by the Board. The CEO Consultancy Agreement shall continue indefinitely unless terminated by the parties thereto pursuant to its terms. Either party may terminate the CEO Consultancy Agreement for any reason with 90 days' notice or without such notice in certain designated cases of cause.

The CEO Consultancy Agreement also contains certain standard confidentiality, non-competition, non-solicit, waiver and indemnity provisions.

Gil Issachar, Chief Technology Officer

Effective February 2, 2017, we and Mr. Issachar entered into an employment agreement, which was subsequently amended by four amendments dated April 28, 2018, December 16, 2018, July 1, 2019 and December 11, 2019, respectively, each of which raised Mr. Issachar's base salary in connection with promotions or other events, and that certain Contract Addendum, dated June 21, 2021 (such agreement, as amended, the "Issachar Employment Agreement"), pursuant to which Mr. Issachar was hired as a research and data scientist. Mr. Issachar now serves as our Chief Technology Officer. Under the Issachar Employment Agreement, as amended, Mr. Issachar is entitled to a monthly base salary of approximately $13,340 on an as-converted basis in U.S. dollars. Mr. Issachar also received bonus compensation in the form of a one-time lump-sum cash payment equal to two months of salary in 2021, pursuant to the addendum to the Issachar Employment Agreement. Mr. Issachar will also be entitled to an annual bonus in the amount of one month's salary at the end of each calendar year. Firefly also agrees to provide contributions for the cost of pension and education funds, managers' insurance, disability policies, and other benefits for Mr. Issachar during the term of employment under the Issachar Employment Agreement.

Mr. Issachar's employment with us pursuant to the Issachar Employment Agreement commenced as of the effective date of the Issachar Employment Agreement and will continue until terminated by either party, with such termination effective upon the provision of written notice to the other party. In any event of termination of employment by applicable prior written notice, Firefly shall be entitled to terminate Mr. Issachar's employment, immediately or at any time during the prior notice period, and in such event, if and to the extent required by applicable law, Firefly shall pay Mr. Issachar full or partial prior notice redemption, as applicable. Notwithstanding the foregoing, in the event of termination of the Issachar Employment by us for cause, we shall not be required to pay the redemption of the advance notice period.

The Issachar Employment Agreement also contains certain standard confidentiality and assignment of inventions provisions.

Stephen Purcell, Former Chief Financial Officer

On May 13, 2021, we entered into a consulting agreement with ElMindA Ltd. (the "Purcell Agreement"), pursuant to which we retained Stephen Purcell as our Project Coordinator, and on November 23, 2021, Mr. Purcell was appointed as our Chief Financial Officer. The term of the Purcell Agreement commenced on May 17, 2021, and could be terminated by either us or Mr. Purcell with requisite notice pursuant to the terms and conditions of the Purcell Agreement. Pursuant to the Purcell Agreement, Mr. Purcell was entitled to a fee of $12,500 per month. The Purcell Agreement also contained certain non-solicitation, non-competition and confidentiality provisions customary for agreements of such nature. On March 7, 2024, Mr. Purcell resigned as our Chief Financial Officer upon the appointment of Paul Krzywicki as our Chief Financial Officer.

Equity Compensation

We have offered stock options to our named executive officers (in addition to certain non-executive employees) as the long-term incentive component of our compensation program. Our stock options are subject to the terms and conditions of our 2007 Incentive Plan and allow employees to purchase shares of our Common Stock at a price per share not less than the fair market value of a share of our Common Stock on the date of grant. Other terms of such stock options, such as vesting schedules, exercise periods and forfeiture upon termination of the participant's employment with us, are subject to the discretion of the Board and as set forth in the individual award agreements evidencing the grant of such options.

On November 17, 2022, Mr. Olsen was granted options to purchase 112,280 shares of our Common Stock, at an exercise price of $3.00. All such options vest monthly. The options have a term of ten years and expire on November 17, 2032. 40,545 of such options are currently exercisable.

On July 8, 2023, Mr. Olsen was granted options to purchase 725,168 shares of our Common Stock, at an exercise price described in footnote (3) above. All such options vest monthly. The options had an original term of five years from the date of grant, subject to earlier termination in the case of Mr. Olsen's termination of employment with us, death, disability, retirement or termination for cause. 271,938 of such options are currently exercisable.

On July 8, 2023, Mr. Olsen was granted restricted share units valued at $200,000. These share units vest once the Company lists on a recognized North American Stock Exchange where the opening price is used to calculate the quantity.

On November 17, 2022, Mr. Issachar was granted options to purchase 28,070 shares our Common Stock, at an exercise price of $3.00. All such options vest monthly. The options have a term of ten years and expire on November 17, 2032. 10,136 of such options are currently exercisable.

On July 8, 2023, Mr. Issachar was granted options to purchase 725,168 shares of our Common Stock, at an exercise price of described in footnote (5) above. All such options vest monthly. The options had an original term of five years from the date of grant, subject to earlier termination in the case of Mr. Olsen's termination of employment with us, death, disability, retirement or termination for cause. 271,938 of such options are currently exercisable.

On July 8, 2023, Mr. Olsen was granted restricted share units valued at $200,000. These share units vest once the Company lists on a recognized North American Stock Exchange where the opening price is used to calculate the quantity.

On November 17, 2022, Mr. Purcell was granted options to purchase 56,140 shares our Common Stock, at an exercise price of $3.00. All such options vest monthly. The options have a term of ten years and expire on November 17, 2032. 20,272 of such options are currently exercisable.

On July 8, 2023, Mr. Purcell was granted options to purchase 106,122 shares of our Common Stock, at an exercise price of described in footnote (5) above. All such options vest monthly. The options had an original term of five years from the date of grant, subject to earlier termination in the case of Mr. Purcell's termination of employment with us, death, disability, retirement or termination for cause. 17,687 of such options are currently exercisable.

Other Elements of Compensation

Pursuant to the terms of their respective employment agreements or arrangements, we provide and cover the costs of disability insurance policies and provide contributions to a pension fund for each of Mr. Olsen and Mr. Issachar. For the years ended December 31, 2022 and 2023, there were no health insurance expenses for Mr. Olsen.

Potential Payments Upon Termination of Employment or Change in Control

Upon consummation of the Merger, each outstanding option to acquire shares of Private Firefly's Common Stock held by executive officers was converted into an option to acquire shares of Firefly's Common Stock, post-Merger. In addition, our executive officers also have certain rights to indemnification or to directors' and officers' liability insurance that survived the completion of the Merger.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information concerning the outstanding equity awards that have been previously awarded to each of Firefly's named executive officers and which remain outstanding as of December 31, 2023. Firefly does not have any equity incentive plans other than the Firefly 2007 Incentive Plan and the Firefly 2023 Incentive Plan. As of the date hereof, there are no share-based award plans for any of Firefly's named executive officers or directors. All options vest monthly, beginning as of their respective grant dates and reflect adjustment for the Exchange Ratio.

Named Executive Officer	Number of securities underlying unexercised options (#) exercisable	Number of securities underlying unexercised options (#) unexercisable	Equity incentive plan awards: number of securities underlying unexercised unearned options (#)	Option exercise price	Option expiration date
Jon Olsen	139	-	-	$ 28.85	9/25/2030
	2,635	-	-	$ 28.85	12/14/2030
	832	-	-	$ 28.85	6/21/2031
	4,217	7,461	-	$ 28.85	11/17/2032
	28,287	47,136	-	(1)	7/8/2028
Gil Issachar	13	-	-	$ 72.12	8/13/2018
	222	-	-	$ 28.85	10/14/2030
	76	-	-	$ 28.85	4/1/2031
	12,573	-	-	$ 28.85	6/21/2031
	1,054	1,865	-	$ 28.85	11/17/2032
	28,282	47,136	-	(1)	7/8/2028
Stephen Purcell	693	-	-	$ 28.85	6/21/2031
	2,109	3,731	-	$ 28.85	11/17/2032
	1,840	9,197	-	$ (1)	7/8/2028

(1) Equals 25% discount to the issue price of Firefly's equity securities issued in an IPO Transaction.

Firefly 2007 Incentive Plan

Firefly adopted the Firefly 2007 Share Option Plan (the "Firefly 2007 Incentive Plan") in 2007 for the purpose of granting stock options to employees, service providers, and consultants under Israeli law. The Firefly 2007 Incentive Plan provides for grants to be issued at the determination of the Board and/or any committee of the Board so appointed by the Board in accordance with applicable laws.

At the effective time of the merger, WaveDancer will assume all of Firefly's rights and obligations under all stock options granted under the Firefly 2007 Incentive Plan that are outstanding immediately prior to the effective time of the merger. In addition, the Firefly 2007 Incentive Plan will be assumed by WaveDancer at the effective time of the merger, provided that no additional awards may be issued thereunder.

Authorized Shares. A total of 300,000 shares of Firefly Common Stock have been authorized for the grant of awards under the Firefly 2007 Incentive Plan.

Plan Administration. The Firefly 2007 Incentive Plan is administered by the Board, either directly or upon the recommendation of any committee of the Board so appointed by the Board (the "Committee"). Except as otherwise provided in the Firefly 2007 Incentive Plan, the Committee shall have the power to recommend to the Board, and the Board has full power and authority, to designate optionees, determine the terms and provisions of stock option agreements, determine the fair market value of the shares of Common Stock covered by each stock option, classify whether an award shall be granted pursuant to Section 102 (as defined below) or Section 3(i) (as defined below), designate grants made pursuant to Section 102 as either grants made through a trustee or not through a trustee, alter any restrictions and conditions of any awards, and make all other determinations deemed necessary or advisable for the administration of the Firefly 2007 Incentive Plan.

Stock Options. The Firefly 2007 Incentive Plan provides for the grant of stock options pursuant and subject to (i) Section 102 of the Israeli Income Tax Ordinance (New Version), 1961 (the "Income Tax Ordinance") or any provision which may amend or replace it and any regulations, rules, orders or procedures promulgated thereunder (collectively, "Section 102") and to classify them as (x) either grants made through a trustee or not through a trustee; and (y) grants qualified under capital gain or ordinary income tax treatment; and (ii) Section 3(i) of the Income Tax Ordinance ("Section 3(i)"). In connection with a grant of stock options, grantees receive the right to purchase a specified number of shares of Common Stock at a specified option exercise price, vesting schedule, and other terms and conditions as are specified by the Board and included in the applicable award agreement. The purchase price of each share of Common Stock shall be determined by the Committee in its sole and absolute discretion in accordance with applicable law, subject to any guidelines as may be determined by the Board from time to time.

Options may be exercised by the optionee by giving written notice to Firefly and/or to any third party designated by Firefly, in such form and method as may be determined by Firefly and when applicable, by the trustee in accordance with the requirements of Section 102, which exercise shall be effective upon receipt of such notice and the payment of the purchase price. Such notice shall specify the number of shares of Common Stock with respect to which the option is being exercised. Options may be exercised by the optionee in whole at any time or in part from time to time, to the extent that the options become vested and exercisable, prior to their expiration date, and provided that the optionee is employed by or providing services to Firefly or any of its affiliates during the period beginning with grant date and ending upon the date of exercise. Options, to the extent not previously exercised, shall terminate upon the earlier of: (i) the date set forth in the option agreement; (ii) ninety days after a termination without cause; (iii) six months following a termination as a result of death or disability; or (iv) if further extended by the Committee prior to date of termination.

Dividends. With respect to all shares of Common Stock allocated or issued upon the exercise of options purchased by the optionee and held by the optionee or by the trustee, as the case may be, the optionee shall be entitled to receive dividends in accordance with the quantity of such shares of Common Stock, subject to Firefly's Articles of Association (and all amendments thereto) and any applicable taxation on distribution of dividends and, when applicable, subject to the provisions of Section 102 and the rules, regulations or orders promulgated thereunder.

Certain Adjustments; Corporate Transaction Events. In the event of a merger, acquisition or reorganization of Firefly with one or more other entities in which Firefly is not the surviving entity or a sale of all or substantially all of the assets of Firefly, the Board or the Committee may resolve that the unexercised options then outstanding under the Firefly 2007 Incentive Plan shall be assumed or substituted for an appropriate number of shares or other securities of the successor company (or a parent or subsidiary of the successor company) as were distributed to the shareholders of Firefly in connection and with respect to such a transaction. In the case of such assumption and/or substitution of options, appropriate adjustments shall be made to the purchase price so as to reflect such action and all other terms and conditions of the option agreements shall remain unchanged, including, but not limited to, the vesting schedule, subject to the determination of the Committee or the Board, which determination shall be in their sole and absolute discretion.

Amendment, Termination. The Board may at any time, but when applicable, after consultation with the trustee, amend, alter, suspend or terminate the Firefly 2007 Incentive Plan. No amendment, alteration, suspension, or termination of the Firefly 2007 Incentive Plan shall impair the rights of any optionee, unless mutually agreed otherwise between the optionee and Firefly, which agreement must be in writing and signed by the optionee and Firefly. Termination of the Firefly 2007 Incentive Plan shall not affect the Committee's ability to exercise the powers granted to it under the Firefly 2007 Incentive Plan prior to the date of such termination.

Firefly 2023 Incentive Plan

Firefly adopted the Firefly 2023 Omnibus Equity Incentive Plan (the "Firefly 2023 Incentive Plan") on July 8, 2023. The Firefly 2023 Incentive Plan was adopted to advance the interest of Firefly's stockholders by enhancing Firefly's ability to attract, retain, and motivate persons who are expected to make important contributions to Firefly by (i) providing Firefly with a mechanism to attract, retain and motivate highly qualified directors, officers, employees and consultants, (ii) aligning the interests of such persons with those of Firefly's stockholders, and (iii) enabling and encouraging such persons to participate in the long-term growth of Firefly. The Firefly 2023 Incentive Plan authorizes the grant of stock options, share appreciation rights, deferred share units, restricted share units, and performance share units, or a combination of the foregoing.

At the effective time of the merger, we assumed all of Firefly's rights and obligations under all stock options granted under the Firefly 2023 Incentive Plan that are outstanding immediately prior to the effective time of the merger. In addition, the Firefly 2023 Incentive Plan will be assumed by WaveDancer at the effective time of the merger, provided that no additional awards may be issued thereunder.

Authorized Shares. A total of 4,440,355 shares of Common Stock have been authorized for the grant of awards under the Firefly 2023 Incentive Plan.

Plan Administration. The Firefly 2023 Incentive Plan is administered by the Firefly board of directors or if so delegated in whole or in part by the Firefly board of directors, the Compensation Committee of the Firefly board of directors, or any other duly authorized committee of the board of directors appointed by the board of directors to administer the Firefly 2023 Incentive Plan (the "Committee"). The Committee shall have full and exclusive discretionary power to interpret the terms and the intent of the Firefly 2023 Incentive Plan and any award agreement or other agreement ancillary to or in connection with the Firefly 2023 Incentive Plan, to determine eligibility for awards, and to adopt such rules, regulations and guidelines for administering the Firefly 2023 Incentive Plan as the Committee may deem necessary or proper. Such authority shall include, but not be limited to, selecting award recipients, establishing all award terms and conditions, including grant, exercise price, issue price and vesting terms, whether awards payout in cash or shares where applicable, determining any performance goals applicable to awards and whether such performance goals have been achieved and adopting modifications and amendments to the Firefly 2023 Incentive Plan or any award agreement, including, without limitation, any that are necessary or appropriate to comply with the laws or compensation practices of the jurisdictions in which Firefly and its affiliates operate.

Stock Options. Options granted under the Firefly 2023 Incentive Plan may be granted to participants in such number, and upon such terms, and at any time and from time to time as shall be determined by the Committee in its discretion. Each stock option grant shall be evidenced by an award agreement that shall specify the option price, the duration of the option, the number of shares to which the option pertains, the conditions, if any, upon which an option shall become vested and exercisable, and any such other provisions as the Committee shall determine. Options may not have an exercise price per share of less than 100% of the fair market value of a share on the date of grant. Subject to any provisions of the Firefly 2023 Incentive Plan or the applicable award agreement relating to acceleration of vesting of options, regulatory requirements and the policies of the designated stock exchange or trading platform, the Committee shall determine the vesting provisions of each grant of options at the time. Notwithstanding the foregoing, options granted to any consultant or persons retained to provide investor relations activities shall vest in stages over a period of not less than twelve months with no more than one-quarter of the options vesting in any three-month period. Each option shall expire at such time as the Committee shall determine at the time of grant, provided, however, that, subject to any blackout periods, no option shall be exercisable later than the seventh anniversary date of its grant. The treatment of options under the Firefly 2023 Incentive Plan upon a participant's termination of employment with or service to Firefly is set forth in the applicable award agreement or the Firefly 2023 Incentive Plan, but in no event can options terminate more than one year following the participant's termination.

Share Appreciation Rights ("SARS"*).* Subject to any provisions of the Firefly 2023 Incentive Plan or an applicable award agreement, SARs may be granted to participants at any time and from time to time and upon such terms as shall be determined by the Committee in its discretion. Each SAR award shall be evidenced by an award agreement that shall specify the grant price, the term, and any such other provisions as the Committee shall determine. No SAR shall be exercisable later than the tenth anniversary date of its grant. Upon the exercise of a SAR, a participant shall be entitled to receive payment from Firefly in an amount representing the difference between the of the underlying shares on the date of exercise over the grant price. At the discretion of the Committee, the payment upon the exercise of a SAR may be in cash, shares of equivalent value (based on the fair market value of the shares on the date of exercise of the SAR, as defined in the award agreement or otherwise defined by the Committee thereafter), in some combination thereof, or in any other form approved by the Committee at its sole discretion. The treatment of SARs under the Firefly 2023 Incentive Plan upon a participant's termination of employment with or service to Firefly is set forth in the applicable award agreement or the Firefly 2023 Incentive Plan, but in no event can SARs terminate more than one year following the participant's termination.

Deferred Share Units. Subject to any provisions of the Firefly 2023 Incentive Plan or an applicable award agreement, the Committee, at any time and from time to time, may grant Deferred Share Units to participants in such amounts and upon such terms as the Committee shall determine. Each Deferred Share Unit grant shall be evidenced by an award agreement that shall specify the number of Deferred Share Units granted, the settlement date for Deferred Share Units, and any other provisions as the Committee shall determine, including, but not limited to, a requirement that participants pay a stipulated purchase price for each Deferred Share Unit, restrictions based upon the achievement of specific performance criteria, time-based restrictions, restrictions under applicable laws or other requirements, or holding requirements or sale restrictions placed on the shares upon vesting of such Deferred Share Units. The treatment of Deferred Share Units under the Firefly 2023 Incentive Plan upon a participant's termination of employment with or service to Firefly is set forth in the applicable award agreement or the Firefly 2023 Incentive Plan, but in no event can Deferred Share Units terminate more than one year following the participant's termination.

Restricted Share Units. Subject to any provisions of the Firefly 2023 Incentive Plan or an applicable award agreement, the Committee, at any time and from time to time, may grant Restricted Share Units to participants in such amounts and upon such terms as the Committee shall determine. Each Restricted Share Unit grant shall be evidenced by an award agreement that shall specify the period of any restrictions, the number of Restricted Share Units granted, the settlement date for Restricted Share Units, whether such Restricted Share Unit is settled in cash, shares or a combination thereof or if the form of payment is reserved for later determination by the Committee, and any such other provisions as the Committee shall determine, provided that unless otherwise determined by the Committee or as set out in any award agreement. The Committee shall impose, in the award agreement at the time of grant, such other conditions and/or restrictions on any Restricted Share Units granted pursuant to the Firefly 2023 Incentive Plan as it may deem advisable, including, without limitation, restrictions based upon the achievement of specific performance criteria, time-based restrictions on vesting following the attainment of the performance criteria, time-based restrictions, restrictions under applicable laws or other requirements.

Performance Share Units. Subject to any provisions of the Firefly 2023 Incentive Plan or an applicable award agreement, the Committee, at any time and from time to time, may grant Performance Share Units to participants in such amounts and upon such terms as the Committee shall determine. Each Performance Share Unit shall have an initial value equal to the fair market value of a share on the date of grant. The Committee shall set performance criteria for a performance period in its discretion, which, depending on the extent to which they are met, will determine, in the manner determined by the Committee and set forth in the award agreement, the value and/or number of each Performance Share Unit that will be paid to the participant. Subject to the terms of the Firefly 2023 Incentive Plan and the applicable award agreement, after the applicable performance period has ended, the holder of Performance Share Units shall be entitled to receive payout on the value and number of Performance Share Units, determined as a function of the extent to which the corresponding performance criteria have been achieved. Notwithstanding the foregoing, Firefly shall have the ability to require the participant to hold any shares received pursuant to such award for a specified period of time. Payment of earned Performance Share Units shall be as determined by the Committee and as set forth in the award agreement. Subject to the terms of the Firefly 2023 Incentive Plan, the Committee, in its sole discretion, may pay earned Performance Share Units in the form of: (i) cash equal to the value of the earned Performance Share Units at the end of the applicable performance period, (ii) a number of shares issued from treasury equal to the number of earned Performance Share Units at the end of the applicable performance period, or (iii) in a combination thereof in the discretion of Firefly. Any shares may be granted subject to any restrictions deemed appropriate by the Committee. The determination of the Committee with respect to the form of payout of such awards shall be set forth in the award agreement for the grant of the award or reserved for later determination. The treatment of Performance Share Units under the Firefly 2023 Incentive Plan upon a participant's termination of employment with or service to Firefly is set forth in the applicable award agreement or the Firefly 2023 Incentive Plan, but in no event can Performance Share Units terminate more than one year following the participant's termination.

Certain Adjustments; Corporate Reorganization Events. In the event of any corporate event or transaction (collectively, a "Corporate Reorganization") (including, but not limited to, a change in the shares or the capitalization of Firefly) such as a merger, arrangement, amalgamation, consolidation, reorganization, recapitalization, separation, stock dividend, extraordinary dividend, stock split, reverse stock split, split up, spin-off or other distribution of stock or property of Firefly, combination of securities, exchange of securities, dividend in kind, or other like change in capital structure or distribution (other than normal cash dividends) to stockholders of Firefly, or any similar corporate event or transaction, the Committee shall make or provide for such adjustments or substitutions, as applicable, in the number and kind of shares that may be issued under the Firefly 2023 Incentive Plan, the number and kind of shares subject to outstanding awards, the option price or grant price applicable to outstanding awards, the limit on issuing awards other than options granted with an option price equal to at least the fair market value of a share on the date of grant or SARs with a grant price equal to at least the fair market value of a share on the date of grant, and any other value determinations applicable to outstanding awards or to the Firefly 2023 Incentive Plan, as are equitably necessary to prevent dilution or enlargement of participants' rights under the Firefly 2023 Incentive Plan that otherwise would result from such corporate event or transaction. In connection with a Corporate Reorganization, the Committee shall have the discretion to permit a holder of options to purchase (at the times, for the consideration, and subject to the terms and conditions set out in the Firefly 2023 Incentive Plan and the applicable award agreement) and the holder will then accept on the exercise of such option, in lieu of the shares that such holder would otherwise have been entitled to purchase, the kind and amount of shares or other securities or property that such holder would have been entitled to receive as a result of the Corporate Reorganization if, on the effective date thereof, that holder had owned all shares that were subject to the option. Such adjustments shall be made automatically, without the necessity of Committee action, on the customary arithmetical basis in the case of any stock split, including a stock split effected by means of a stock dividend, and in the case of any other dividend paid in shares.

The Committee shall also make appropriate adjustments in the terms of any awards under the Firefly 2023 Incentive Plan as are equitably necessary to reflect such Corporate Reorganization and may modify any other terms of outstanding awards, including modifications of performance criteria and changes in the length of performance periods. The determination of the Committee as to the foregoing adjustments, if any, shall be conclusive and binding on participants under the Firefly 2023 Incentive Plan, provided that any such adjustments must comply with Section 409A of the Code with respect to any U.S. participants. Subject to the Firefly 2023 Incentive Plan and any applicable law or regulatory requirement, without affecting the number of shares reserved or available hereunder, the Committee may authorize the issuance, assumption, substitution or conversion of awards under the Firefly 2023 Incentive Plan in connection with any Corporate Reorganization, upon such terms and conditions as it may deem appropriate. Additionally, the Committee may amend the Plan, or adopt supplements to the Firefly 2023 Incentive Plan, in such manner as it deems appropriate to provide for such issuance, assumption, substitution or conversion as provided in the previous sentence.

Amendment, Termination. The Firefly board at any time, and from time to time, may amend or suspend any provision of an award or the Firefly 2023 Incentive Plan, or terminate the Firefly 2023 Incentive Plan, subject to those provisions that require the approval of security holders or any governmental or regulatory body regardless of whether any such amendment or suspension is material, fundamental or otherwise, and notwithstanding any rule of common law or equity to the contrary.

Firefly Neuroscience, Inc. 2024 Long-Term Incentive Plan

Prior to the consummation of the Merger, at a special meeting of WaveDancer's stockholders on March 14, 2024, the stockholders of WaveDancer considered and approved the WaveDancer 2024 Long-Term Incentive Plan (the "WaveDancer Incentive Plan"). The WaveDancer Incentive Plan was previously approved and adopted, subject to stockholder approval, by the WaveDancer Board on February 1, 2024. On the Closing Date and following the consummation of the Merger, the Board approved the adoption of the WaveDancer Incentive Plan and to change the name of the WaveDancer Incentive Plan to the Firefly Neuroscience, Inc. 2024 Long-Term Incentive Plan (the "2024 Plan").

Purpose. The purpose of the 2024 Plan is to enable us to remain competitive and innovative in our ability to attract and retain the services of our key employees, key contractors, and non-employee directors of Firefly or any of our subsidiaries. The 2024 Plan provides for the granting of incentive stock options, nonqualified stock options, stock appreciation rights, restricted stock, restricted stock units, performance awards, and other awards, which may be granted singly, in combination, or in tandem, and which may be paid in cash or shares of our Common Stock. The 2024 Plan is expected to provide flexibility to our compensation methods in order to adapt the compensation of our key employees, key contractors, and non-employee directors to a changing business environment, after giving due consideration to competitive conditions and the impact of applicable tax laws.

Effective Date and Expiration. The 2024 Plan was approved by our board of directors on February 1, 2024, subject to the 2024 Plan's approval by our stockholders, and will become effective on the date of such approval (the "Effective Date"). The 2024 Plan will terminate on the tenth anniversary of the Effective Date, unless sooner terminated by our board of directors. No awards may be made under the 2024 Plan after its termination date, but awards made prior to the termination date may extend beyond that date in accordance with their terms.

Share Authorization. Subject to certain adjustments, the number of shares of our Common Stock that are reserved for issuance pursuant to awards under the 2024 Plan is eight hundred thirty-three thousand three hundred thirty-three (833,333) shares, 100% of which may be delivered as incentive stock options. Shares to be issued may be made available from authorized but unissued shares of our Common Stock, shares held by us in our treasury, or shares purchased by us on the open market or otherwise. During the term of the 2024 Plan, we will at all times reserve and keep enough shares available to satisfy the requirements of the 2024 Plan. If an award under the 2024 Plan is cancelled, forfeited, or expires, in whole or in part, the shares subject to such forfeited, expired, or cancelled award may again be awarded under the 2024 Plan. Awards that may be satisfied either by the issuance of Common Stock or by cash or other consideration shall be counted against the maximum number of shares that may be issued under the 2024 Plan only during the period that the award is outstanding or to the extent the award is ultimately satisfied by the issuance of shares. An award will not reduce the number of shares that may be issued pursuant to the 2024 Plan if the settlement of the award will not require the issuance of shares, as, for example, a stock appreciation right that can be satisfied only by the payment of cash. Shares of Common Stock that are otherwise deliverable pursuant to an award under the 2024 Plan that are withheld in payment of the option price of an option or for payment of applicable employment taxes and/or withholding obligations resulting from the award shall be treated as delivered to the award recipient and shall be counted against the maximum number of shares of our Common Stock that may be issued under the 2024 Plan. Only shares forfeited back to us or cancelled on account of termination, expiration, or lapse of an award shall again be available for grant of incentive stock options under the 2024 Plan but shall not increase the maximum number of shares described above as the maximum number of shares of our Common Stock that may be delivered pursuant to incentive stock options.

Administration. Subject to the terms of the 2024 Plan, the 2024 Plan shall be administered by the Board or such committee of the Board of Directors as is designated by the Board of Directors to administer the Plan (the "Committee"). Membership on the Committee shall be limited to "non-employee directors" in accordance with Rule 16b-3 under the Securities Exchange Act of 1934, as amended. The Committee may delegate certain duties to one or more officers as provided in the 2024 Plan. The Committee will determine the persons to whom awards are to be made, determine the type, size and terms of awards, interpret the 2024 Plan, establish and revise rules and regulations relating to the 2024 Plan and make any other determinations that it believes necessary for the administration of the 2024 Plan.

Eligibility. Employees (including any employee who is also a director or an officer), contractors, and non-employee directors of Firefly or any of our subsidiaries, whose judgment, initiative, and efforts contributed to or may be expected to contribute to our successful performance, are eligible to participate in the 2024 Plan. As of the date of this prospectus, we have seven full time employees and six contractors who would be eligible for awards under the 2024 Plan.

Stock Options. The Committee may grant either incentive stock options ("ISOs") qualifying under Section 422 of the Internal Revenue Code of 1986, as amended (the "Code"), or nonqualified stock options, provided that only employees of Firefly and our subsidiaries (excluding subsidiaries that are not corporations) are eligible to receive ISOs. Stock options may not be granted with an option price less than 100% of the fair market value of a share of Common Stock on the date the stock option is granted. If an ISO is granted to an employee who owns or is deemed to own more than 10% of the combined voting power of all classes of our stock (or of any parent or subsidiary), the option price shall be at least 110% of the fair market value of a share of Common Stock on the date of grant. The Committee will determine the terms of each stock option at the time of grant, including, without limitation, the methods by or forms in which shares will be delivered to participants or registered in their names. The maximum term of each option, the times at which each option will be exercisable, and provisions requiring forfeiture of unexercised options at or following termination of employment or service generally are fixed by the Committee, except that the Committee may not grant stock options with a term exceeding 10 years or, in the case of an ISO granted to an employee who owns or is deemed to own more than 10% of the combined voting power of all classes of our stock (or of any parent or subsidiary), a term exceeding five years.

Recipients of stock options may pay the option price (i) in cash, check, bank draft, or money order payable to the order of Firefly; (ii) by delivering to us shares of our Common Stock (included restricted stock) already owned by the participant having a fair market value equal to the aggregate option price and that the participant has not acquired from us within six months prior to the exercise date; (iii) by delivering to us or our designated agent an executed irrevocable option exercise form, together with irrevocable instructions from the participant to a broker or dealer, reasonably acceptable to us, to sell certain of the shares purchased upon the exercise of the option or to pledge such shares to the broker as collateral for a loan from the broker and to deliver to us the amount of sale or loan proceeds necessary to pay the purchase price; (iv) by requesting us to withhold the number of shares otherwise deliverable upon exercise of the stock option by the number of shares having an aggregate fair market value equal to the aggregate option price at the time of exercise (i.e., a cashless net exercise); and (v) by any other form of valid consideration that is acceptable to the Committee in its sole discretion. No dividends or dividend equivalent rights may be paid or granted with respect to any stock options granted under the 2024 Plan.

Stock Appreciation Rights. The Committee is authorized to grant stock appreciation rights ("SARs") as a stand-alone award, or freestanding SARs, or in conjunction with options granted under the 2024 Plan, or tandem SARs. SARs entitle a participant to receive an amount equal to the excess of the fair market value of a share of Common Stock on the date of exercise over the fair market value of a share of our Common Stock on the date of grant. The exercise price of a SAR cannot be less than 100% of the fair market value of a share of our Common Stock on the date of grant. The Committee will determine the terms of each SAR at the time of the grant, including, without limitation, the methods by or forms in which shares will be delivered to participants or registered in their names. The maximum term of each SAR, the times at which each SAR will be exercisable, and provisions requiring forfeiture of unexercised SARs at or following termination of employment or service generally are fixed by the Committee, except that no freestanding SAR may have a term exceeding 10 years and no tandem SAR may have a term exceeding the term of the option granted in conjunction with the tandem SAR. Distributions to the recipient may be made in Common Stock, cash, or a combination of both as determined by the Committee. No dividends or dividend equivalent rights may be paid or granted with respect to any SARs granted under the 2024 Plan.

Restricted Stock and Restricted Stock Units. The Committee is authorized to grant restricted stock and restricted stock units. Restricted stock consists of shares of our Common Stock that may not be sold, assigned, transferred, pledged, hypothecated, encumbered, or otherwise disposed of, and that may be forfeited in the event of certain terminations of employment or service, prior to the end of a restricted period as specified by the Committee. Restricted stock units are the right to receive shares of Common Stock at a future date in accordance with the terms of such grant upon the attainment of certain conditions specified by the Committee, which include a substantial risk of forfeiture and restrictions on their sale or other transfer by the participant. The Committee determines the eligible participants to whom, and the time or times at which, grants of restricted stock or restricted stock units will be made; the number of shares or units to be granted; the price to be paid, if any; the time or times within which the shares covered by such grants will be subject to forfeiture; the time or times at which the restrictions will terminate; and all other terms and conditions of the grants. Restrictions or conditions could include, but are not limited to, the attainment of performance goals (as described below), continuous service with us, the passage of time, or other restrictions and conditions. Except as otherwise provided in the 2024 Plan or the applicable award agreement, a participant shall have, with respect to shares of restricted stock, all of the rights of a stockholder of Firefly holding the class of Common Stock that is the subject of the restricted stock, including, if applicable, the right to vote the Common Stock and the right to receive any dividends thereon.

Performance Awards. The Committee may grant performance awards payable at the end of a specified performance period in cash, shares of Common Stock, units, or other rights based upon, payable in, or otherwise related to our Common Stock. Payment will be contingent upon achieving pre-established performance goals (as discussed below) by the end of the applicable performance period. The Committee will determine the length of the performance period, the maximum payment value of an award, and the minimum performance goals required before payment will be made, so long as such provisions are not inconsistent with the terms of the 2024 Plan and, to the extent an award is subject to Section 409A of the Code, are in compliance with the applicable requirements of Section 409A of the Code and any applicable regulations or guidance. In certain circumstances, the Committee may, in its discretion, determine that the amount payable with respect to certain performance awards will be reduced from the maximum amount of any potential awards. If the Committee determines, in its sole discretion, that the established performance measures or objectives are no longer suitable because of a change in our business, operations, corporate structure, or for other reasons that the Committee deems satisfactory, the Committee may modify the performance measures or objectives and/or the performance period.

Performance Goals. Awards (whether relating to cash or Common Stock) under the 2024 Plan may be made subject to the attainment of performance goals relating to one or more business criteria, and may consist of one or more or any combination of the following criteria: cash flow; cost; revenues; sales; ratio of debt to debt plus equity; net borrowing, credit quality or debt ratings; profit before tax; economic profit; earnings before interest and taxes; earnings before interest, taxes, depreciation and amortization; gross margin; earnings per share (whether on a pre-tax, after-tax, operational or other basis); operating earnings; capital expenditures; expenses or expense levels; economic value added; ratio of operating earnings to capital spending or any other operating ratios; free cash flow; net profit; net sales; net asset value per share; the accomplishment of mergers, acquisitions, dispositions, public offerings or similar extraordinary business transactions; sales growth; price of our Common Stock; return on assets, equity or stockholders' equity; market share; inventory levels, inventory turn or shrinkage; total return to stockholders; or any other criteria determined by the Committee ("Performance Criteria"). Any Performance Criteria may be used to measure the performance of Firefly as a whole or any business unit of Firefly and may be measured relative to a peer group or index. Any Performance Criteria may include or exclude (i) events that are of an unusual nature or indicate infrequency of occurrence, (ii) gains or losses on the disposition of a business, (iii) changes in tax or accounting regulations or laws, (iv) the effect of a merger or acquisition, as identified in our quarterly and annual earnings releases, or (v) other similar occurrences. In all other respects, Performance Criteria shall be calculated in accordance with our financial statements, under generally accepted accounting principles, or under a methodology established by the Committee prior to the issuance of an award which is consistently applied and identified in the audited financial statements, including footnotes, or the Compensation Discussion and Analysis section of our annual report.

Other Awards. The Committee may grant other forms of awards, based upon, payable in, or that otherwise relate to, in whole or in part, shares of our Common Stock, if the Committee determines that such other form of award is consistent with the purpose and restrictions of the 2024 Plan. The terms and conditions of such other form of award shall be specified in the grant. Such other awards may be granted for no cash consideration, for such minimum consideration as may be required by applicable law, or for such other consideration as may be specified in the grant.

Vesting of Awards, Forfeiture, Assignment. The Committee, in its sole discretion, may determine that an award will be immediately vested, in whole or in part, or that all or any portion may not be vested until a date, or dates, subsequent to its date of grant, or until the occurrence of one or more specified events, subject in any case to the terms of the 2024 Plan. If the Committee imposes conditions upon vesting, then, subsequent to the date of grant, the Committee may, in its sole discretion, accelerate the date on which all or any portion of the award may be vested.

The Committee may impose on any award at the time of grant or thereafter, such additional terms and conditions as the Committee determines, including terms requiring forfeiture of awards in the event of a participant's termination of employment or service. The Committee will specify the circumstances on which performance awards may be forfeited in the event of a termination of service by a participant prior to the end of a performance period or settlement of awards. Except as otherwise determined by the Committee, restricted stock will be forfeited upon a participant's termination of employment or service during the applicable restriction period. In addition, we may recoup all or any portion of any shares or cash paid to a participant in connection with any award in the event of a restatement of our financial statements as set forth in our clawback policy, if any, as such policy may be approved or modified by our board of directors from time to time.

Awards granted under the 2024 Plan generally are not assignable or transferable except by will or by the laws of descent and distribution, except that the Committee may, in its discretion and pursuant to the terms of an award agreement, permit transfers of awards to (i) the spouse (or former spouse), children, or grandchildren of the participant ("Immediate Family Members"); (ii) a trust or trusts for the exclusive benefit of such Immediate Family Members; (iii) a partnership in which the only partners are (a) such Immediate Family Members and/or (b) entities which are controlled by the participant and/or his or her Immediate Family Members; (iv) an entity exempt from federal income tax pursuant to Section 501(c)(3) of the Code or any successor provision; or (v) a split interest trust or pooled income fund described in Section 2522(c)(2) of the Code or any successor provision, provided that (x) there shall be no consideration for any such transfer, (y) the applicable award agreement pursuant to which such awards are granted must be approved by the Committee and must expressly provide for such transferability, and (z) subsequent transfers of awards shall be prohibited except those by will or the laws of descent and distribution.

Adjustments Upon Changes in Capitalization. In the event that any dividend or other distribution (whether in the form of cash, shares of our Common Stock, other securities or other property), recapitalization, stock split, reverse stock split, rights offering, reorganization, merger, consolidation, split-up, spin-off, split-off, combination, subdivision, repurchase, or exchange of shares of Common Stock or other securities, issuance of warrants or other rights to purchase shares of Common Stock or other securities, or other similar corporate transaction or event affects the fair value of an award, then the Committee shall adjust any or all of the following so that the fair value of the award immediately after the transaction or event is equal to the fair value of the award immediately prior to the transaction or event: (i) the number of shares and type of Common Stock (or the securities or property) which thereafter may be made the subject of awards; (ii) the number of shares and type of Common Stock (or other securities or property) subject to outstanding awards; (iii) the option price of each outstanding stock option; (iv) the amount, if any, we pay for forfeited shares in accordance with the terms of the 2024 Plan; and (v) the number of or exercise price of shares then subject to outstanding SARs previously granted and unexercised under the 2024 Plan, to the end that the same proportion of our issued and outstanding shares of Common Stock in each instance shall remain subject to exercise at the same aggregate exercise price; provided, however, that the number of shares of Common Stock (or other securities or property) subject to any award shall always be a whole number. Notwithstanding the foregoing, no such adjustment shall be made or authorized to the extent that such adjustment would cause the 2024 Plan or any stock option to violate Section 422 of the Code or Section 409A of the Code. All such adjustments must be made in accordance with the rules of any securities exchange, stock market, or stock quotation system to which we are subject.

Amendment or Discontinuance of the 2024 Plan. Our board of directors may, at any time and from time to time, without the consent of participants, alter, amend, revise, suspend, or discontinue the 2024 Plan in whole or in part; provided, however, that (i) no amendment that requires stockholder approval in order for the 2024 Plan and any awards under the 2024 Plan to continue to comply with Sections 421 and 422 of the Code (including any successors to such sections or other applicable law) or any applicable requirements of any securities exchange or inter-dealer quotation system on which our stock is listed or traded, shall be effective unless such amendment is approved by the requisite vote of our stockholders entitled to vote on the amendment; and (ii) unless required by law, no action by our board of directors regarding amendment or discontinuance of the 2024 Plan may adversely affect any rights of any participants or obligations to any participants with respect to any outstanding awards under the 2024 Plan without the consent of the affected participant.

No Repricing of Stock Options or SARs. The Committee may not "reprice" any stock option or SAR without stockholder approval. For purposes of the 2024 Plan, "reprice" means any of the following or any other action that has the same effect: (i) amending a stock option or SAR to reduce its exercise price or base price, (ii) canceling a stock option or SAR at a time when its exercise price or base price exceeds the fair market value of a share of Common Stock in exchange for cash or a stock option, SAR, award of restricted stock or other equity award, or (iii) taking any other action that is treated as a repricing under generally accepted accounting principles, provided that nothing shall prevent the Committee from (x) making adjustments to awards upon changes in capitalization; (y) exchanging or cancelling awards upon a merger, consolidation, or recapitalization, or (z) substituting awards for awards granted by other entities, to the extent permitted by the 2024 Plan.

Recoupment for Restatements. The Committee may recoup all or any portion of any shares or cash paid to a participant in connection with an award, in the event of a restatement of our financial statements as set forth in our clawback policy, if any, approved by the Board from time to time.

Federal Income Tax Consequences

The following is a brief summary of certain federal income tax consequences relating to the transactions described under the 2024 Plan as set forth below. This summary does not purport to address all aspects of federal income taxation and does not describe any potential state, local, or foreign tax consequences. This discussion is based upon provisions of the Code and the applicable treasury regulations issued thereunder, and judicial and administrative interpretations under the Code and treasury regulations, all as in effect as of the date hereof, and all of which are subject to change (possibly on a retroactive basis) or different interpretation.

Law Affecting Deferred Compensation. In 2004, Section 409A was added to the Code to regulate all types of deferred compensation. If the requirements of Section 409A of the Code are not satisfied, deferred compensation and earnings thereon will be subject to tax as it vests, plus an interest charge at the underpayment rate plus 1% and a 20% penalty tax. Certain performance awards, stock options, SARs, restricted stock units, and certain types of restricted stock are subject to Section 409A of the Code.

Incentive Stock Options. A participant will not recognize income at the time an ISO is granted. When a participant exercises an ISO, a participant also generally will not be required to recognize income (either as ordinary income or capital gain). However, to the extent that the fair market value (determined as of the date of grant) of the shares with respect to which the participant's ISOs are exercisable for the first time during any year exceeds $100,000, the ISOs for the shares over $100,000 will be treated as nonqualified stock options, and not ISOs, for federal tax purposes, and the participant will recognize income as if the ISOs were nonqualified stock options. In addition to the foregoing, if the fair market value of the shares received upon exercise of an ISO exceeds the option price, then the excess may be deemed a tax preference adjustment for purposes of the federal alternative minimum tax calculation. The federal alternative minimum tax may produce significant tax repercussions depending upon the participant's particular tax status.

The tax treatment of any shares acquired by exercise of an ISO will depend upon whether the participant disposes of his or her shares prior to the later of: (i) two years after the date the ISO was granted or (ii) one year after the shares were transferred to the participant (referred to as the "Holding Period"). If a participant disposes of shares acquired by exercise of an ISO after the expiration of the Holding Period, any amount received in excess of the participant's tax basis for such shares will be treated as a short-term or long-term capital gain, depending upon how long the participant has held the shares. If the amount received is less than the participant's tax basis for such shares, the loss will be treated as a short-term or long-term capital loss, depending upon how long the participant has held the shares. If the participant disposes of shares acquired by exercise of an ISO prior to the expiration of the Holding Period, the disposition will be considered a "disqualifying disposition." If the amount received for the shares is greater than the fair market value of the shares on the exercise date, then the difference between the ISO's option price and the fair market value of the shares at the time of exercise will be treated as ordinary income for the tax year in which the "disqualifying disposition" occurs. The participant's basis in the shares will be increased by an amount equal to the amount treated as ordinary income due to such "disqualifying disposition." In addition, the amount received in such "disqualifying disposition" over the participant's increased basis in the shares will be treated as capital gain. However, if the price received for shares acquired by exercise of an ISO is less than the fair market value of the shares on the exercise date and the disposition is a transaction in which the participant sustains a loss which otherwise would be recognizable under the Code, then the amount of ordinary income that the participant will recognize is the excess, if any, of the amount realized on the "disqualifying disposition" over the basis of the shares.

Nonqualified Stock Options. A participant generally will not recognize income at the time a nonqualified stock option is granted. When a participant exercises a nonqualified stock option, the difference between the option price and any higher market value of the shares of Common Stock on the date of exercise will be treated as compensation taxable as ordinary income to the participant. The participant's tax basis for the shares acquired under a nonqualified stock option will be equal to the option price paid for such shares, plus any amounts included in the participant's income as compensation. When a participant disposes of shares acquired by exercise of a nonqualified stock option, any amount received in excess of the participant's tax basis for such shares will be treated as short-term or long-term capital gain, depending upon how long the participant has held the shares. If the amount received is less than the participant's tax basis for such shares, the loss will be treated as a short-term or long-term capital loss, depending upon how long the participant has held the shares.

Special Rule if Option Price is Paid for in Shares. If a participant pays the option price of a nonqualified stock option with previously-owned shares of our Common Stock and the transaction is not a disqualifying disposition of shares previously acquired under an ISO, the shares received equal to the number of shares surrendered are treated as having been received in a tax-free exchange. The participant's tax basis and holding period for these shares received will be equal to the participant's tax basis and holding period for the shares surrendered. The shares received in excess of the number of shares surrendered will be treated as compensation taxable as ordinary income to the participant to the extent of their fair market value. The participant's tax basis in these shares will be equal to their fair market value on the date of exercise, and the participant's holding period for such shares will begin on the date of exercise.

If the use of previously acquired shares to pay the option price of a nonqualified stock option constitutes a disqualifying disposition of shares previously acquired under an ISO, the participant will have ordinary income as a result of the disqualifying disposition in an amount equal to the excess of the fair market value of the shares surrendered, determined at the time such shares were originally acquired on exercise of the ISO, over the aggregate option price paid for such shares. As discussed above, a disqualifying disposition of shares previously acquired under an ISO occurs when the participant disposes of such shares before the end of the Holding Period. The other tax results from paying the option price with previously-owned shares are as described above, except that the participant's tax basis in the shares that are treated as having been received in a tax-free exchange will be increased by the amount of ordinary income recognized by the participant as a result of the disqualifying disposition.

Restricted Stock. A participant who receives restricted stock generally will recognize as ordinary income the excess, if any, of the fair market value of the shares granted as restricted stock at such time as the shares are no longer subject to forfeiture or restrictions, over the amount paid, if any, by the participant for such shares. However, a participant who receives restricted stock may make an election under Section 83(b) of the Code within 30 days of the date of transfer of the shares to recognize ordinary income on the date of transfer of the shares equal to the excess of the fair market value of such shares (determined without regard to the restrictions on such shares) over the purchase price, if any, of such shares. If a participant does not make an election under Section 83(b) of the Code, then the participant will recognize as ordinary income any dividends received with respect to such shares. At the time of sale of such shares, any gain or loss realized by the participant will be treated as either short-term or long-term capital gain (or loss) depending on the holding period. For purposes of determining any gain or loss realized, the participant's tax basis will be the amount previously taxable as ordinary income, plus the purchase price paid by the participant, if any, for such shares.

Stock Appreciation Rights. Generally, a participant who receives a stand-alone SAR will not recognize taxable income at the time the stand-alone SAR is granted, provided that the SAR is exempt from or complies with Section 409A of the Code. If a participant receives the appreciation inherent in the SARs in cash, the cash will be taxed as ordinary income to the recipient at the time it is received. If a recipient receives the appreciation inherent in the SARs in stock, the spread between the then current market value and the exercise price, if any, will be taxed as ordinary income to the participant at the time it is received.

Other Awards. In the case of an award of restricted stock units, performance awards, or other stock or cash awards, the recipient will generally recognize ordinary income in an amount equal to any cash received and the fair market value of any shares received on the date of payment or delivery, provided that the award is exempt from or complies with Section 409A of the Code. In that taxable year, we will receive a federal income tax deduction in an amount equal to the ordinary income which the participant has recognized.

Federal Tax Withholding. Any ordinary income realized by a participant upon the granting, vesting, exercise, or conversion of an award under the 2024 Plan, as applicable, is subject to withholding of applicable federal, state, and local income tax and to withholding of the participant's share of any tax under the Federal Insurance Contribution Act and the Federal Unemployment Tax Act. To satisfy our federal income tax withholding requirements, we will have the right to require, as a condition to delivery of any certificate for shares of our Common Stock or the registration of the shares in the participant's name, that the participant remit to us an amount sufficient to satisfy those withholding requirements. Alternatively, we may withhold a portion of the shares (valued at fair market value) that otherwise would be issued to the participant to satisfy all or part of the withholding tax obligations or may, if we consent, accept delivery of shares (that the participant has not acquired from us within six months prior to the date of exercise) with an aggregate fair market value that equals or exceeds the required tax withholding payment. Withholding does not represent an increase in the participant's total income tax obligation since it is fully credited toward his or her tax liability for the year. Additionally, withholding does not affect the participant's tax basis in the shares. Compensation income realized and tax withheld will be reflected on Forms W-2 supplied by us to employees no later than January 31 of the succeeding year. Deferred compensation that is subject to Section 409A of the Code will be subject to certain federal income tax withholding and reporting requirements.

Tax Consequences to Us. To the extent that a participant recognizes ordinary income in the circumstances described above, we will be entitled to a corresponding deduction provided that, among other things, the income meets the test of reasonableness, is an ordinary and necessary business expense, is not an "excess parachute payment" within the meaning of Section 280G of the Code, and is not disallowed by the $1,000,000 limitation on certain executive compensation under Section 162(m) of the Code discussed below. While deductibility of executive compensation for federal income tax purposes is among the factors the Board and Committee considers when structuring executive compensation arrangements, it is not the sole or primary factor considered. We retain the flexibility to authorize compensation that may not be deductible if we believe it is in our best interests.

Million Dollar Deduction Limit and Other Tax Matters. We may not deduct compensation of more than $1,000,000 that is paid to "covered employees" (as defined in Section 162(m) of the Code), which include (i) an individual (or, in certain circumstances, his or her beneficiaries) who, at any time during the taxable year, is either our principal executive officer or principal financial officer; (ii) an individual who is among our three highest compensated officers for the taxable year (other than an individual who was either our principal executive officer or principal financial officer at any time during the taxable year); or (iii) anyone who was a covered employee for purposes of Section 162(m) of the Code for any tax year beginning on or after January 1, 2017. This limitation on deductions (x) only applies to compensation paid by a publicly-traded corporation (and not compensation paid by non-corporate entities) and (z) may not apply to certain types of compensation, such as qualified performance-based compensation that is payable pursuant to a written, binding contract that was in effect as of November 2, 2017, so long as the contract is not materially modified after that date. To the extent that compensation is payable pursuant to a prior plan award granted on or before November 2, 2017, and if we determine that Section 162(m) of the Code will apply to any such awards, we intend that the terms of those awards will not be materially modified and will be constructed so as to constitute qualified performance-based compensation and, as such, will be exempt from the $1,000,000 limitation on deductible compensation.

If an individual's rights under the 2024 Plan are accelerated as a result of a change in control and the individual is a "disqualified individual" under Section 280G of the Code, then the value of any such accelerated rights received by such individual may be included in determining whether or not such individual has received an "excess parachute payment" under Section 280G of the Code, which could result in (i) the imposition of a 20% federal excise tax (in addition to federal income tax) payable by the individual on the value of such accelerated rights, and (ii) the loss by us of a corresponding compensation deduction on such amounts.

Director Compensation

The following table sets forth summary information concerning the total compensation earned for each non-employee member of the Board during the years ended December 31, 2023 and 2022, and is contemplated to continue serving as a director. All compensation paid to Mr. Olsen is reported above under the heading "Summary Compensation Table," above.

Name	Year	Salary	Bonus	Stock Awards	Option awards (1)	All other compensation	Total
David DeCaprio(1)	2022	-	-	-	-	-	-
	2023	-	-	-	-	-	-
Greg Lipschitz	2022	-	-	-	-	-	-
	2023	-	-	-	(2)	-	-
Arun Menawat(3)	2022	-	-	-	-	-	-
	2023	-	-	-	-	-	-
Brian Posner(4)	2022	-	-	-	-	-	-
	2023	-	-	-	-	-	-
Scott Reeves(6)	2022	-	-	-	-	-	-
	2023	-	-	-	(6)	-	-
Stella Vnook(7)	2022	-	-	-	-	-	-
	2023	-	-	-	-	-	-

(1) Amounts reflect the full grant-date fair value of option awards granted during the relevant fiscal year computed in accordance with ASC Topic 718, rather than the amounts paid to or realized by the named individual. Firefly provides information regarding the assumptions used to calculate the value of all option awards made to its executive officers in the section entitled "Firefly's Management's Discussion and Analysis and Results of Operations" contained elsewhere in this prospectus.
(2) Consists of a grant of options to purchase 530,610 shares of Firefly Common Stock made to 2686255 Ontario Inc., an entity controlled by Mr. Lipschitz, on July 8, 2023, of which 88,435 are currently exercisable.
(3) Mr. DeCaprio has served as a director of the Board since January 2024 and received no compensation in the reported period in his capacity as a director.
(4) Dr. Menawat has served as a director of the Board since August 12, 2024, and received no compensation in the reported period in his capacity as a director.
(5) Mr. Posner has served as a director of the Board since August 12, 2024, and received no compensation in the reported period in his capacity as a director.
(6) Consists of a grant of options to purchase 70,748 shares of Firefly Common Stock made to Mr. Reeves on July 8, 2023, of which 9,826 are currently exercisable. In August 2024, immediately prior to the consummation of the Merger, Mr. Reeves resigned as a member of the Board and all committees thereto.
(7) Ms. Vnook has served as a director of the Board since January 2024 and received no compensation in the reported period in her capacity as a director.

Narrative Disclosure to Director Compensation Table

During the periods covered by the table above, our non-employee directors received no monetary compensation for their service as directors during such periods. The directors' compensation in the form of option awards is reported above.

DESCRIPTION OF CAPITAL STOCK

The following summary of the material terms of our capital stock is not intended to be a complete summary of the rights and preferences of such securities. The full text of the Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws of Firefly Neuroscience, Inc. are included as exhibits to the registration statement of which this prospectus forms a part. You are encouraged to read the applicable provisions of Delaware law, the Charter and Bylaws in their entirety for a complete description of the rights and preferences of our securities.

The following summary of the material terms of our securities is not intended to be a complete summary of the rights and preferences of such securities. The descriptions below are qualified by reference to the actual text of the Charter. We urge you to read the Charter and Bylaws in their entirety for a complete description of the rights and preferences of our securities.

Authorized and Outstanding Stock

Our authorized capital stock consists of 101,000,000 shares of capital stock, consisting of (i) 100,000,000 shares of Common Stock, par value $0.0001 per share and (ii) 1,000,000 shares of preferred stock, par value $0.0001 per share ("Preferred Stock").

As of November 15, 2024, there are 8,503,365 shares of Common Stock outstanding and no shares of Preferred Stock outstanding.

Common Stock

Dividend Rights

Pursuant to the Bylaws, dividends upon the capital stock, subject to applicable law, if any, may be declared by the board of directors. Dividends may be paid in cash, in property, or in shares of capital stock or other securities, subject to the provisions of applicable law.

Voting Rights

Each outstanding share of Common Stock shall entitle the holder thereof to one vote on each matter properly submitted to the stockholders for their vote; provided, however, that, except as otherwise required by applicable law, holders of Common Stock shall not be entitled to vote on any amendment to the Charter (including any certificate of designation filed with respect to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series of Preferred Stock are entitled, either separately or together as a class with the holders of one or more other such series of Preferred Stock, to vote thereon pursuant to applicable law or the Charter (including any certificate of designation filed with respect to any series of Preferred Stock).

No Preemptive or Similar Rights

Holders of our Common Stock do not have preemptive rights, and our Common Stock is not convertible or redeemable.

Right to Receive Liquidation Distributions

Subject to the prior or equal rights, if any, of the holders of shares of any series of Preferred Stock duly created hereafter, the holders of Common Stock shall be entitled (in the event of any dissolution. liquidation or winding-up, whether voluntary or involuntary (sometimes referred to herein as a liquidation), after payment or provision for payment of the debts and other liabilities, to receive our remaining assets, ratably according to the number of shares of Common Stock held.

Preferred Stock

The Charter authorizes the board of directors to provide for the issue of all or any of the unissued and undesignated shares of the Preferred Stock, in one or more series, and to fix the number of shares of such series and to determine or alter for each such series, such voting powers, full or limited, or no voting powers, and such designation, preferences, and relative, participating, optional, or other rights and such qualifications, limitations, or restrictions thereof, as shall be stated and expressed in the resolution or resolutions adopted by the board of directors providing for the issuance of such shares and as may be permitted by the DGCL.

Following the consummation of the Merger, we have no shares of Preferred Stock outstanding.

Warrants

Legacy WaveDancer Warrants

The following warrants were issued by WaveDancer prior to the consummation of the Merger.

August 2021 Warrants

On August 26, 2021, WaveDancer sold 140,000 shares of its Common Stock, and for each share purchased, purchasers were issued a warrant granting the right to purchase an additional share of Common Stock at a price of $30.00 per share, with the warrants expiring on August 31, 2026. 140,000 shares of Common Stock issuable upon exercise of warrants in connection with the offering have been reserved for issuance.

Series A Warrants

On December 10, 2021, WaveDancer sold in a private placement offering from which it raised aggregate gross proceeds of $10,000,000, 328,987 units resulting in the issuance of a like number of shares of Common Stock and 65,802 Series A warrants exercisable for a like number of shares of Common Stock. The warrants are exercisable at a price of $45.00 per share, with the warrants exercisable from January 1, 2023, through December 31, 2026. If the shares underlying the warrants are not registered when the warrants become exercisable, the warrants can be exercised on a cashless basis. The warrants are subject to redemption at a price of $0.01 per warrant, if commencing January 1, 2024, the volume weighted average price per share for 10 consecutive trading days equals or exceeds $125.00. WaveDancer reserves the right to require the warrants to be exercised on a cashless basis following any notice of redemption.

Legacy Firefly Warrants

At the effective time of the Merger, each holder of a Firefly warrant shall be entitled to receive (and such holder shall accept) upon the exercise of such holder's warrants, in lieu of Firefly Common Stock to which such holder was theretofore entitled upon such exercise, and for the same aggregate consideration payable therefor, that number of shares of WaveDancer common stock which the holder would have been entitled to receive as a result of the merger if, immediately prior to the effective time of the merger, such holder had been the registered holder of the number of shares of Firefly Common Stock to which such holder would have been entitled if such holder had exercised such holder's warrants immediately prior to the effective time of the merger. Each Firefly warrant shall continue to be governed by and be subject to the terms of the applicable warrant following the effective time of the merger.

The following is a description of the material terms of the classes of warrants following the consummation of the Merger. However, share amounts underlying the warrants and related exercise price disclosed below do not reflect the application of the Exchange Ratio, which is necessary to determine the number of shares of WaveDancer Common Stock which the holder would be entitled to receive as a result of the Merger.

July 2022 Warrants

On July 5, 2022, Firefly issued to certain holders warrants to purchase up to an aggregate of 185,149 shares of Common Stock (the "July 2022 Warrants"). The July 2022 Warrants have an exercise price of $3.00 per share (subject to adjustment in accordance with the terms of the July 2022 Warrants), are exercisable immediately upon issuance and expire on July 4, 2025, on 4:30 p.m. (Toronto time).

August 2022 Warrant

On August 15, 2022, Firefly issued to a certain holder a warrant to purchase up to 13,333 shares of Common Stock (the "August 2022 Warrant"). The August 2022 Warrant has an exercise price $3.00 per share (subject to adjustment in accordance with the terms of the August 2022 Warrant), is exercisable immediately upon issuance and expires on August 15, 2025, at 4:30 p.m. (Toronto time).

February 2023 Amended and Restated Warrants

On February 17, 2023, Firefly issued to a certain holder certain amended and restated warrants, initially issued to such holder on November 8, 2021 (the "February 2023 A&R Warrants"), to reflect the 1-for-750 reverse stock split effectuated on November 23, 2022 by Firefly (the "2022 Reverse Stock Split") and to adjust the exercise price therein in accordance with the terms of the February 2023 A&R Warrants, among others. The February 2023 A&R Warrants are exercisable for up to an aggregate of 43,333 and 80,000 shares of Common Stock, respectively, each at an exercise price of $0.00473 per share (subject to adjustment in accordance with the terms of the February 2023 A&R Warrants) and expire on February 17, 2026.

Amended and Restated Tranche A Warrants

On March 1, 2023, Firefly issued to a certain holders the amended and restated tranche A warrants (the "Tranche A Warrants"), initially granted to such holders on February 2, 2022, to reflect the 2022 Reverse Stock Split and to adjust the exercise price therein in accordance with the terms of the Tranche A Warrants, among others. The Tranche A Warrants are exercisable for up to an aggregate of 526,749 shares of Common Stock at an exercise price of (x) $0.001 in the event that on or after July 5, 2022, Firefly issues warrants, options and/or convertible debt in exchange for aggregate proceeds of at least $5,000,000 within 18 months thereafter or aggregate proceeds of at least $10,000,000 within three years thereafter, (y) $0.001 in the event that after July 5, 2022, all or substantially all of Firefly's assets are sold, Firefly completes an initial public offering, including but not limited to by way of a reverse transaction takeover or via other similar "Sale of the Company" event, or (z) the per share purchase price resulting from the division of $20,000,000 by the total number of duly authorized, validly issued and fully paid and non-assessable shares of Common Stock of Firefly then outstanding on a fully diluted basis. The Tranche A Warrants are fully vested upon issuance, are exercisable immediately upon issuance and expire on July 5, 2025.

Series A Warrants

On July 15, 2023, Firefly issued to certain holders the Series A warrants to purchase up to an aggregate of 6,048,476 shares of Common Stock (the "Series A Warrants"). The Series A Warrants have an exercise price of CAD$0.01 per share (subject to adjustment from time to time in accordance with the terms of the Series A Warrants) and expire on June 15, 2028, at on 4:30 p.m. (Toronto time). The Series A Warrants are additionally subject to certain vesting events, with the shares of Common Stock issuable upon the exercise of the Series A Warrants vesting, if Firefly is then publicly traded, in two equal installments upon the market capitalization of the Common Stock reaching $100,000,000 and $200,000,000 respectively, each for a period of three consecutive trading days.

Series C Warrants

Between October 17, 2023 and December 21, 2023, the Company issued to certain holders Series C warrants to purchase up to an aggregate of 1,538,132 shares of Common Stock (the "Series C Warrants"). The Series C Warrants have an exercise price of $2.56 per share (subject to adjustment from time to time in accordance with the terms of the Series C Warrant), is exercisable immediately upon issuance and expires at 4:30 p.m. (New York time) three years following the initial date of issuance.

2024 Pre-Funded Warrants and Warrants

The Warrants are exercisable immediately upon issuance at an exercise price of $0.71 per share and expire five years from the date of issuance.

The Pre-Funded Warrants were offered in the Private Placement in lieu of shares of Common Stock, and provide that the holder may not exercise any portion of a Pre-Funded Warrant to the extent that immediately prior to or after giving effect to such exercise the holder would own more than 4.99% (or, at the election of the holder, 9.99%) of our outstanding Common Stock immediately following the consummation of the Private Placement. Each Pre-Funded Warrant is exercisable for one share of Common Stock at an exercise price of $0.0001 per share. The Pre-Funded Warrants are immediately exercisable upon issuance and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full.

A holder (together with its affiliates) of the Warrants or Pre-Funded Warrants, as the case may be, may not exercise any portion of the Warrants or Pre-Funded Warrants, as applicable, to the extent that the holder would own more than 4.99% (or, at the holder's option upon issuance, 9.99%) of our outstanding Common Stock immediately after exercise, as such percentage ownership is determined in accordance with the terms of the Warrants or Pre-Funded Warrants, as applicable. In lieu of making the cash payment otherwise contemplated to be made to us upon exercise of a Warrant, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of our Common Stock determined according to a formula set forth in the Warrants, provided that such cashless exercise shall only be permitted if, at the time of such exercise, there is no effective registration statement registering the resale of shares of our Common Stock underlying the Warrants or if the prospectus contained in such registration statement is not available for the resale of shares of our Common Stock underlying the Warrants by the Warrant holder.

In lieu of making the cash payment otherwise contemplated to be made to us upon exercise of a Pre-Funded Warrant in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of our Common Stock determined according to a formula set forth in the Pre-Funded Warrants.

Options

At the effective time of the Merger, we assumed all of Private Firefly's rights and obligations under the stock options granted pursuant to the Firefly 2007 Incentive Plan and the Firefly 2023 Incentive Plan that are outstanding immediately prior to the effective time of the merger, and such options shall become exercisable for shares of our Common Stock. The number of shares of Common Stock that may be purchased pursuant to such stock options and the exercise price for such stock options shall be adjusted to reflect the Exchange Ratio as set forth in the Merger Agreement.

Following the consummation of the Merger, we have 532,011 options outstanding.

Anti-takeover Provisions

Delaware Law

We are subject to Section 203 of the DGCL. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a "business combination" with any "interested stockholder" for three years following the date that the person became an interested stockholder, unless either the interested stockholder attained such status with the approval of the board of directors, the business combination is approved by the board of directors and stockholders in a prescribed manner or the interested stockholder acquired at least 85% of combined company's outstanding voting stock in the transaction in which it became an interested stockholder. A "business combination" includes, among other things, a merger or consolidation involving combined company and the "interested stockholder" and the sale of more than 10% of combined company's assets. In general, an "interested stockholder" is any entity or person beneficially owning 15% or more of combined company's outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person. The restrictions contained in Section 203 are not applicable to any of combined company's existing stockholders that owned 15% or more of combined company's outstanding voting stock upon the closing of combined company's initial public offering.

Potential Effects of Authorized but Unissued Stock

We have shares of Common Stock and preferred stock available for future issuance without stockholder approval. We may utilize these additional shares for a variety of corporate purposes, including future public offerings to raise additional capital, to facilitate corporate acquisitions or payment as a dividend on the capital stock.

The existence of unissued and unreserved Common Stock and Preferred Stock may enable our Board to issue shares to persons friendly to current management or to issue Preferred Stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, our Board has the discretion to determine designations, rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences of each series of Preferred Stock, all to the fullest extent permissible under the DGCL and subject to any limitations set forth in the Charter. The purpose of authorizing the Board to issue Preferred Stock and to determine the rights and preferences applicable to such Preferred Stock is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of Preferred Stock, while providing desirable flexibility in connection with possible financings, acquisitions and other corporate purposes, could have the effect of making it more difficult for a third-party to acquire, or could discourage a third-party from acquiring, a majority of our outstanding voting stock.

Classified Board of Directors

Pursuant to the Charter, our Board is divided into three classes serving three-year terms, with one class being elected each year by a plurality of the votes cast by the stockholders entitled to vote on the election.

Amendment of Certificate of Incorporation or Bylaws

DGCL Law provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or bylaws, unless a corporation's certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Pursuant to Bylaws, the affirmative vote of the holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of our capital stock entitled to vote thereon, voting together as a single class, will be required to amend or repeal or to adopt any provisions inconsistent with any of the provisions of the Bylaws.

Limitations of Director Liability and Indemnification of Directors, Officers and Employees

Delaware Law

Section 145 of the DGCL permits indemnification of directors, officers, agents and controlling persons of a corporation under certain conditions and subject to certain limitations. Section 145 empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was a director, officer or agent of the corporation or another enterprise if serving at our request. Depending on the character of the proceeding, a corporation may indemnify against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding if the person indemnified acted in good faith and in a manner he or she reasonably believed to be in or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. In the case of an action by or in the right of the corporation, no indemnification may be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine that despite the adjudication of liability such person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper. Section 145 further provides that to the extent a present or former director or officer of a corporation has been successful in the defense of any action, suit or proceeding referred to above or in the defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

Amended and Restated Certificate of Incorporation

Pursuant to the Charter, we will indemnify to the fullest extent permitted by the DGCL as it presently exists or may hereafter be amended (but, in the case of any such amendment, only to the extent that such amendment permits the us to provide broader indemnification rights than such law permitted to us to provide prior to such amendment), any person who was or is made or is threatened to be made a party or is otherwise involved in a proceeding (as defined in the Charter), by reason of the fact that he or she is or was a director or executive officer ("executive officer" has the meaning defined in Rule 3b-7 promulgated under the Exchange Act), or while serving as our director or executive officer, is or was serving at our request as a director, executive officer, other officer, employee or agent of another corporation, partnership, trust, employee benefit plan or other enterprise, whether the basis of such proceeding is alleged action in an official capacity as a director or executive officer or in any other capacity while serving as a director or executive officer, against all expense, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid in settlement) reasonably incurred or suffered by such person in connection therewith; provided, however, that we will not be required to indemnify or advance expenses to any director or executive officer in connection with any proceeding (or part thereof) initiated by such person unless (i) the proceeding (or part thereof) was authorized by the board of directors or (ii) the proceeding (or part thereof) is initiated to enforce rights to indemnification or advancement of expenses as provided in the Charter or is a compulsory counterclaim brought by such person.

Forum Selection

Our Charter provides that unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if and only if the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, any state court located within the State of Delaware or, if and only if all such state courts lack subject matter jurisdiction, the federal district court for the District of Delaware) and any appellate court therefrom shall be the sole and exclusive forum for the following claims or causes of action under Delaware statutory or common law: (A) any derivative claim or cause of action brought on behalf of the Company; (B) any claim or cause of action for breach of a fiduciary duty owed by any current or former director, officer or other employee or stockholder of the Company, to the Company or the Company's stockholders; (C) any claim or cause of action against the Company or any current or former director, officer or other employee of the Company, arising out of or pursuant to any provision of the DGCL, the Charter or the Bylaws; (D) any claim or cause of action seeking to interpret, apply, enforce or determine the validity of the Amended and Restated Certificate of Incorporation or the Amended and Restated Bylaws (including any right, obligation, or remedy thereunder); (E) any claim or cause of action as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware; and (F) any claim or cause of action against the Corporation or any current or former director, officer or other employee of the Corporation, governed by the internal-affairs doctrine or otherwise related to the Corporation's internal affairs, in all cases to the fullest extent permitted by applicable law and subject to the court having personal jurisdiction over the indispensable parties named as defendants. The foregoing shall not apply to claims or causes of action brought to enforce a duty or liability created by the Securities Act or the Exchange Act, or any other claim for which the federal courts have exclusive jurisdiction.

While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our certificate of incorporation and bylaws. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions. These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find either exclusive forum provision in our certificate of incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could harm our business.

Transfer Agent and Registrar

The transfer agent for our Common Stock is Issuer Direct Corporation, One Glenwood Ave, Suite 1001, Raleigh, NC 27603.

Listing of Common Stock

Our Common Stock is listed on Nasdaq under the symbol "AIFF."

BENEFICIAL OWNERSHIP OF SECURITIES

The following table sets forth information regarding the beneficial ownership of shares of Common Stock as of December 2, 2024:

- each person known by us to be the beneficial owner of more than 5% of our Common Stock;
- each of our current named executive officers and directors; and
- all our executive officers and directors as a group.

Beneficial ownership is determined according to the rules of the SEC, which generally provide that a person has beneficial ownership of a security if he, she, or it possesses sole or shared voting or investment power over that security, including options and warrants that are currently exercisable or exercisable within 60 days. The applicable percentage ownership shown below is based on 8,503,365 shares of Common Stock issued and outstanding as of November 15, 2024. Unless otherwise indicated, the address of each individual below is 1100 Military Road, Kenmore, NY 14217. Unless otherwise indicated, we believe that all persons named in the table have sole voting and investment power with respect to all shares of Common Stock beneficially owned by them.

Name of Beneficial Owner	Number of Shares of Common Stock Beneficially Owned	% of Ownership
Five Percent Holders		
Windsor Private Capital LP(1)	1,631,272	16.37%
Nomis Bay Ltd (2)	1,054,118	10.58%
Roxy Capital Corporation(3)	691,217	6.94%
BPY Limited(4)	592,942	5.95%
RJL18 Capital Canada LP(5)	499,785	5.01%
Directors and Named Executive Officers		
David DeCaprio(6)	4,743	*
Gil Issachar(7)	85,260	*
Greg Lipschitz(8)	432,688	4.34%
Arun Menawat(9)	135,121	1.36%
Jon Olsen(10)	121,456	1.22%
Brian Posner	0	0%
Stella Vnook	0	0%
Paul Krzywicki(11)	3,266	*
Samer Kaba(12)	2,235	*
Stephen Purcell	0	0%
All Directors and Executive Officers of the Company as a Group (10 persons)	**795,426**	**7.98%**

* Represents beneficial ownership of less than 1%.

(1) Consists of 1,705,751 shares of Common Stock pursuant to the Schedule 13D filed jointly by WPC Management Services, Inc. WPC GP I Inc., Windsor Private Capital LP ("Windsor"), Jordan Kupinsky, HJRK Holdings, Inc., Rocco Marcello, and John Cundari on August 21, 2024. Jordan Kupinsky, Rocco Marcello and John Cundari jointly exercise voting and dispositive power over the shares held by Windsor Capital Private LP. As such, Messrs. Kupinsky, Marcello and Cundari may be deemed to be the beneficial owner of all shares of Common Stock held by Windsor.

(2) Consists of 204,292 shares of Common Stock, 322,767 prefunded warrants and 527,059 warrants with an exercise price of $6.83. Jason Jagessar exercises voting and dispositive power over the shares held by Nomis Bay Ltd. As such, Mr. Jagessar may be deemed to be the beneficial owner of all shares of Common Stock held by Nomis Bay Ltd.

(3) Consists of 690,072 shares of Common Stock pursuant to the Schedule 13G filed on August 21, 2024. Eric Lazer exercises sole voting and dispositive power over the shares held by Roxy Capital Corp ("Roxy"). As such, Mr. Lazer may be deemed to be the beneficial owner of all shares of Common Stock held by Roxy.

(4) Consists of 114,915 shares of Common Stock, 181,556 prefunded warrants and 296,471 warrants with an exercise price of $6.83. Jason Jagessar exercises voting and dispositive power over the shares held by BPY Limited. As such, Mr. Jagessar may be deemed to be the beneficial owner of all shares of Common Stock held by BPY Limited.

(5) Consists of 499,369 shares of Common Stock pursuant to the Schedule 13G filed on August 12, 2024. Dean Lazer exercises sole voting and dispositive power over the shares held by RJL 18 Capital Canada LP ("RJL18"). As such, Mr. Lazer may be deemed to be the beneficial owner of all shares of Common Stock held by RJL18.

(6) Consists of shares underlying options to purchase up to 4,743 shares of Common Stock that are currently exercisable or exercisable within 60 days of November 15, 2024.

(7) Consist of (1) 33,480 shares of Common Stock held by Mr. Issachar and (2) underlying options to purchase up to 51,780 shares of Common Stock that are currently exercisable or exercisable within 60 days of November 15, 2024.

(8) Consists of (1) 294,498 shares of Common Stock and (2) up to 2,460 shares of Common Stock that are currently exercisable or exercisable within 60 days of November 15, 2024, underlying certain warrants, and (3) up to 19,883 shares of Common Stock that are currently exercisable or exercisable within 60 days of November 15, 2024, underlying certain stock options held by Bower Four Capital Corp., an entity in which Mr. Lipschitz is the sole stockholder.

(9) Consists of 323,234 shares of Common Stock

(10) Consists of (1) 31,655 shares of Common Stock held by Mr. Olsen, (2) 29,645 shares of Common Stock held by Slate Water Ltd., an entity controlled by Mr. Olsen, and (3) up to 49,574 shares of Common Stock that are currently exercisable or exercisable within 60 days of November 15, 2024, underlying certain stock options.

(11) Consists of 3,266 shares of Common Stock that are currently exercisable or exercisable within 60 days of November 15, 2024, underlying certain stock options.

(12) Consists of 2,235 shares of Common Stock that are currently exercisable or exercisable within 60 days of November 15, 2024, underlying certain stock options.

SELLING SECURITYHOLDERS

This prospectus relates to the resale by the selling securityholders from time to time of up to an aggregate of 2,559,645 shares of Common Stock, consisting of (A) 670,985 shares of Common Stock, which include: (i) 209,613 shares of Common Stock issued upon the conversion of certain shares of Series C Preferred Stock, issued to the investors in the Series C Financing and (ii) 461,372 shares of Common Stock previously issued by Private Firefly after the Effectiveness Date; (B)(i) 319,207 shares of Common Stock issued to the PIPE Investors, (ii) up to 504,323 shares of common stock issuable upon the exercise of the pre-funded warrants issued to the PIPE Investors, and (iii) up to 823,530 shares of common stock issuable upon the exercise of the private placement warrants issued to the PIPE Investors; (C) up to 168,071 shares of common stock issuable upon the exercise of the Series C Warrants issued and sold as part of the Series C Units; (D) up to 61,866 shares of Common Stock issuable upon the exercise of the Series D Warrants; and (E) up to 11,663 shares of Common Stock issuable upon the exercise of the Broker Warrants.

The selling securityholders may from time to time offer and sell any or all of the Common Stock set forth below pursuant to this prospectus and any accompanying prospectus supplement. As used in this prospectus, the term "selling securityholders" includes the persons listed in the table below, together with any additional selling securityholder listed in a subsequent amendment to this prospectus, and their pledgees, donees, transferees, assignees, successors, designees and others who later come to hold any of the selling securityholders' interests in the Common Stock other than through a public sale.

Except as set forth in the footnotes below, the following table sets forth information known to us as of November 15, 2024, regarding each selling securityholder's beneficial ownership of Common Stock (including shares of Common Stock issuable upon exercise of the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants being offered by the selling securityholders. The table below lists the selling securityholders and other information regarding the beneficial ownership of the shares of Common Stock by each of the selling securityholders. The second column lists the number of shares of Common Stock beneficially owned by each selling securityholder, based on its ownership of the shares of Common Stock, Series C Preferred Stock, the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants, as of November 15, 2024, assuming the exercise of the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants held by the selling securityholders on that date, without taking into account beneficial ownership limitations on conversions or exercises. The third column lists the shares of Common Stock being offered by this prospectus by the selling securityholders. The fourth and fifth columns assume the sale of all of the shares offered by the selling securityholders pursuant to this prospectus.

The applicable percentage ownership of Common Stock is based on 8,503,365 shares of Common Stock outstanding as of November 15, 2024. Information with respect to shares of Common Stock owned beneficially after the offering assumes the sale of all of the shares of Common Stock (including shares of Common Stock issuable upon exercise of the Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants and the Broker Warrants by such selling securityholders. The selling securityholders may offer and sell some, all or none of their shares of Common Stock.

We have determined beneficial ownership in accordance with the rules of the SEC, which generally provide that a person has beneficial ownership of a security if he, she or it possesses sole or shared voting or investment power over that security or the right to acquire such power within 60 days of November 15, 2024. Except as indicated in the footnotes below, we believe, based on the information furnished to us, that the selling securityholders have sole voting and investment power with respect to all shares of common stock and other securities that they beneficially own, subject to applicable community property laws. Except as otherwise described below, based on the information provided to us by the selling securityholders, no selling securityholder is a broker-dealer or an affiliate of a broker dealer.

Except as described in this section and in the section titled "*Certain Relationships and Related Person Transactions*" in this prospectus, none of the selling securityholders have had any material relationship with us or any of our affiliates within the past three years.

Under the terms of the Pre-Funded Warrants and the Warrants, a selling securityholders may not exercise such warrants, respectively, to the extent such conversion or exercise, as applicable, would cause such Selling Securityholder, together with its affiliates and attribution parties, to beneficially own a number of shares of Common Stock which would exceed 4.99% or 9.99%, as applicable, of our then outstanding Common Stock following such conversion or exercise, excluding for purposes of such determination shares of Common Stock issuable upon the exercise of the Pre-Funded Warrants or the Warrants, respectively, that have not been converted and exercised. The number of shares in the second and fourth columns reflect this limitation. The selling securityholders may sell all, some or none of their shares in this offering. See "*Plan of Distribution*."

	Shares of Common Stock			
Name of Selling Securityholder	**Number of Shares of Common Stock Beneficially Owned Prior to Offering(1)**	**Maximum Number of Shares of Common Stock to be sold Pursuant to this Prospectus**	**Number of Shares of Common Stock Beneficially Owned After Offering**	**Percentage of Common Stock Beneficially Owned After Offering**
2123611 ALBERTA LTD.(2)	28,075	28,075	0	0%
Alex Spiro(3)	44,688	44,688	0	0%
BMO Nesbitt Burns ITF: Velev Capital Manager Inc.(4)	358,665	358,665	0	0%
BPY Limited(5)	592,942	592,942	0	0%
Gentlemens's Investment Club(6)	133	133	0	0%
Gutterman Consulting Partners Inc.(7)	5,200	5,200	0	0%
HJRK HOLDINGS INC.(8)	68,761	68,761	0	0%
Jason Dubraski(9)	8,216	8,216	0	0%
Kaif Lalani(10)	13,871	13,871	0	0%
Mykobite Solutions Inc.(11)	111,118	111,118	0	0%
National Bank Financial INC ITF: Mr. Karl Cheong A/C 2RON1FA(12)	5,149	5,149	0	0%
Nomis Bay Ltd.(13)	1,054,118	1,054,118	0	0%
OCI Inc.(14)	33,336	33,336	0	0%
Offir Laufer(15)	1,560	1,560	0	0%
Raphael Cundari(16)	173,117	173,117	0	0%
Tehila Stern(17)	1,560	1,560	0	0%
RJL18 Capital Canada LP(18)	30,933	30,933	0	0%
Roxy Capital Corporation(19)	30,933	30,933	0	0%
A. Ben-Tzvi, Adv. - Legal & Management Services Co (20)	10,588	10,588	0	0%
Wellington-Altus Private Wealth Inc.(21)	4,163	4,163	0	0%
B Riley Securities, Inc.(22)	7,500	7,500	0	0%

(1) This table and the information in the notes below are based upon information supplied by the Selling Securityholders and upon 8,503,365 shares of Common Stock issued and outstanding as of November 15, 2024 (prior to any deemed issuance of any shares issuable upon the exercise of any Pre-Funded Warrants, the Warrants, the Series C Warrants, the Series D Warrants or the Broker Warrants). Except as expressly noted in the footnotes below, beneficial ownership has been determined in accordance with Rule 13d-3 under the Exchange Act and so includes securities each person has a right to acquire within 60 days of November 15, 2024.

(2) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 28,075 shares of Common Stock.

(3) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 44,688 shares of Common Stock.

(4) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of (i) up to 196,163 shares of Common Stock issued upon conversion of shares of Series C Preferred Stock upon the consummation of the Merger and (ii) up to 162,502 shares of Common Stock issuable upon exercise of Series C Warrants.

(5) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 114,915 shares of Common Stock, (ii) up to 181,556 shares of Common Stock issuable upon exercise of the Pre-Funded Warrants, and (iii) up to 296,471 shares of Common Stock issuable upon the exercise of the Warrants.

(6) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 133 shares of Common Stock.

(7) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 5,200 shares of Common Stock.

(8) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 68,761 shares of Common Stock.

(9) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 8,216 shares of Common Stock.

(10) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of (i) up to 9,809 shares of Common Stock issued upon the conversion of shares of Series C Preferred Stock upon the consummation of the Merger and (ii) up to 4,062 shares of Common Stock issuable upon exercise of Series C Warrants.

(11) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 111,118 shares of Common Stock.
(12) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of (i) up to 3,641 shares of Common Stock issued upon conversion of shares of Series C Preferred Stock upon the consummation of the Merger and (ii) up to 1,508 shares of Common Stock issuable upon exercise of Series C Warrants.
(13) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 204,292 shares of Common Stock, (ii) up to 322,767 shares of Common Stock issuable upon exercise of the Pre-Funded Warrants, and (iii) up to 527,059 shares of Common Stock issuable upon the exercise of the Warrants.
(14) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 33,336 shares of Common Stock.
(15) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 1,560 shares of Common Stock.
(16) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 173,117 shares of Common Stock.
(17) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 1,560 shares of Common Stock.
(18) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of up to 30,933 shares of Common Stock issuable upon the Series D Warrants.
(19) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of up to 30,933 shares of Common Stock issuable upon the Series D Warrants.
(20) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of 10,588 shares of Common Stock issued in connection with prior legal services rendered.
(21) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of up to 4,163 shares of Common Stock issuable upon the exercise of the Broker Warrants.
(22) Maximum number of shares of Common Stock to be sold pursuant to this prospectus consist of up to 7,500 shares of Common Stock issuable upon the exercise of the Broker Warrants.

CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

For purposes of this section, references to "WaveDancer" refer to the former WaveDancer, prior to the consummation of the Merger.

Transactions Involving the Selling Securityholders

Private Placement

As discussed elsewhere in this prospectus, on July 26, 2024, prior to the consummation of the Merger, we entered into a securities purchase agreement with certain institutional investors, pursuant to which we agreed to issue and sell an aggregate of (i) 319,207 PIPE Shares (or 7,918,552 Shares and/or Pre-Funded Warrants in lieu thereof prior to adjustment for the Exchange Ratio), (ii) Pre-Funded Warrants to purchase up to 504,323 shares of our Common Stock, and (iii) Warrants to purchase up to 823,530 shares of Common Stock in the Private Placement (or Warrants to purchase up to 7,918,552 shares of Common Stock prior to adjustment for the Exchange Ratio). The purchase price of each PIPE Share and accompanying Warrant was $4.25 (0.442 prior to the adjustment for the Exchange Ratio) and the purchase price of each Pre-Funded Warrant and accompanying Warrant was $4.249 (0.4419 prior to the adjustment for the Exchange Ratio). The Private Placement closed on August 12, 2024, substantially contemporaneously with the consummation of the Merger. The aggregate gross proceeds from the transaction were approximately $3.5 million, before deducting estimated offering expenses payable by us.

Series C Financing

Between October 17, 2023, and June 30, 2024, we raised an aggregate of $3,039,000 from a private placement of 2,374,219 Series C units (the "Series C Units"), which such Series C Units were comprised of shares of Series C Preferred Stock and warrants to purchase up to 2,374,665 shares of Common Stock, which were sold at a combined purchase price of $1.28 per Series C Unit. Each warrant has an exercise price of $2.56 per share (subject to adjustment from time to time in accordance with the terms thereof), is exercisable immediately upon issuance and expires at 4:30 p.m. (New York time) three years following the initial date of issuance.

WaveDancer Related Party Transactions

The following is a summary of transactions since January 1, 2022, to which WaveDancer has been a party, in which the amount involved exceeded or will exceed the lesser of $120,000 or 1% of the average of WaveDancer' s total assets as of the end of the last two completed fiscal years and in which any of the expected directors, executive officers or holders of more than 5% of capital stock of the continuing company, or an affiliate or immediate family member thereof, had or will have a direct or indirect material interest. The transactions described below occurred prior to the consummation of the Merger.

WaveDancer believes the terms obtained or consideration that WaveDancer paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that would be paid or received, as applicable, in arm's-length transactions.

In connection with a private placement of its shares, in August 2022, WaveDancer sold 157,256 shares of its common stock at a price of $12.00 per share to 16 accredited investors. The investors included G. James Benoit, Jr., Chairman and Chief Executive Officer, who purchased 50,000 shares at an aggregate price of $600,000, James C. DiPaula, director, who purchased 20,834 shares at an aggregate price of $250,000, and William C. Pickle, director, who purchased 4,167 shares at an aggregate price of $50,000.

On September 29, 2023, WaveDancer sold 35,000 shares of common stock to G. James Benoit, Jr., Chairman and Chief Executive Officer, at a price of $5.00 per share in a private placement offering from which it raised aggregate gross proceeds of $175,000.

Mr. Benoit is the principal stockholder of Wavetop, which purchased Tellenger in connection with the Merger for $1.5 million.

Firefly Related Party Transactions

Other than as described in the section " *Management- Board Leadership Structure- Director Independence*" as related to the Lipschitz Agreement (as defined herein), since January 1, 2022, there were no transactions with executive officers, directors or their immediate family members which were in an amount in excess of $120,000, and in which any of the expected directors, executive officers or holders of more than 5% of capital stock of the continuing company, or an affiliate or immediate family member thereof, had or will have a direct or indirect material interest.

Other Transactions

Indemnification Agreements

In connection with the Merger, on the Closing Date, we entered into indemnification agreements (each, an "Indemnification Agreement" and collectively, the "Indemnification Agreements") with each of our directors and executive officers. The Indemnification Agreements provide for indemnification and advancement by us of certain expenses and costs relating to claims, suits, or proceedings arising from service to us or, at our request, service to other entities to the fullest extent permitted by applicable law.

Compensation Matters

We have entered into employment agreements with certain of our executive officers. For a description of agreements with our named executive officers, see the section titled " *Executive Compensation- Executive Compensation Arrangements*" included elsewhere in this prospectus.

We have granted equity awards to certain of our executive officers. For a description of equity awards granted to our named executive officers, see the section titled "*Executive Compensation*" included elsewhere in this prospectus.

Related Party Transactions Policy

Pursuant to the Charter of the Audit Committee, the Audit Committee has adopted a written related person transaction policy that sets forth the following policies and procedures for the review and approval or ratification of related person transactions. Pursuant to such policy, the Audit Committee shall review and approve, prior to our entry into any such transactions, all transactions in which we are or will be a participant, which would be reportable by us under Item 404 of Regulation S-K promulgated under the Securities Act as a result of any of the following persons having or expected to have a direct or indirect material interest (a "Related Person Transaction"):

- executive officers;
- members of the Board;
- beneficial holders of more than 5% of our securities;
- immediate family members of any of the foregoing persons, with such immediate family members defined as any child, stepchild, parent, stepparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, and any person (other than a tenant or an employee) sharing the household with the executive officer, director or 5% beneficial owner; and
- any other persons whom the Board determines may be considered to be related persons as defined by Item 404 of Regulation S-K promulgated under the Securities Act.

In reviewing and approving such transactions, the Audit Committee shall obtain, or shall direct management to obtain on its behalf, all information that the Audit Committee believes to be relevant and important to a review of the transaction prior to its approval. Following receipt of the necessary information, a discussion shall be held of the relevant factors if deemed to be necessary by the Audit Committee prior to approval. If a discussion is not deemed to be necessary, approval may be given by written consent of the Audit Committee. This approval authority may also be delegated to the Chairperson of the Audit Committee in some circumstances. No Related Person Transaction shall be entered into prior to the completion of these procedures.

The Audit Committee or the Chairperson of the Audit Committee, as the case may be, shall approve only those Related Person Transactions that are determined to be in, or not inconsistent with, our and our stockholders' best interests, taking into account all available facts and circumstances as the Audit Committee or the Chairperson determines in good faith to be necessary in accordance with principles of Delaware law generally applicable to directors of a Delaware corporation. No member of the Audit Committee shall participate in any review, consideration or approval of any Related Person Transaction with respect to which the member or any of his or her immediate family members has an interest.

The Audit Committee shall adopt any further policies and procedures relating to the approval of Related Person Transactions that it deems necessary or advisable from time to time.

MATERIAL U.S. FEDERAL TAX CONSIDERATIONS FOR HOLDERS OF COMMON STOCK

The following discussion is a summary of the material U.S. federal income tax consequences relating to the purchase, ownership, and disposition of our Common Stock but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local, or non-U.S. tax laws are not discussed. This discussion is based on the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the IRS, in each case in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a holder of our Common Stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership, and disposition of our Common Stock or the exercise of our warrants.

This discussion is limited to holders that hold our Common Stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a holder's particular circumstances, including the impact of the Medicare contribution tax on net investment income and the alternative minimum tax. In addition, it does not address consequences relevant to holders subject to special rules, including, without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- persons holding our securities as part of a hedge, straddle, or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies, and other financial institutions;
- brokers, dealers, or traders in securities;
- "controlled foreign corporations," "passive foreign investment companies," and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our Common Stock under the constructive sale provisions of the Code;
- persons who hold or receive our Common Stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- tax-qualified retirement plans; and
- "qualified foreign pension funds" as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds.

If an entity treated as a partnership for U.S. federal income tax purposes holds our Common Stock, the tax treatment of an owner in such an entity will depend on the status of the owner, the activities of such entity, and certain determinations made at the owner level. Accordingly, entities treated as partnerships for U.S. federal income tax purposes holding our Common Stock and the owners in such entities should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP, AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL, OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

U.S. Holders

For purposes of this discussion, a "U.S. Holder" is any beneficial owner of our Common Stock that is for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity taxable as a corporation) created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (1) is subject to the primary supervision of a U.S. court and the control of one or more "United States persons" (within the meaning of Section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Taxation of Distributions. If we make distributions of cash or property on our Common Stock, the gross amount of distributions made with respect to the Common Stock generally will be includible in a U.S. Holder's gross income, in accordance with such U.S. Holder's method of accounting for U.S. federal income tax purposes, as dividend income to the extent that such distributions are paid out of our current or accumulated earnings and profits as determined under U.S. federal income tax principles. Dividends will be taxable to a corporate U.S. Holder at regular corporate tax rates, and a portion of such dividends (either 50%, 65% or 100%, depending upon the corporate U.S. Holder's ownership of the Company) will generally be eligible for the dividends received deduction if the requisite holding period is satisfied. Distributions in excess of our current or accumulated earnings and profits generally will be applied against and reduce the U.S. Holder's basis in its Common Stock (but not below zero) and, to the extent in excess of such basis, will be treated as gain from the sale or exchange of such Common Stock, as described under "- Gain or Loss on Sale, Taxable Exchange, or Other Taxable Disposition of Common Stock" below.

With respect to non-corporate U.S. Holders and with certain exceptions, dividends may be "qualified dividend income," which is taxed at the lower applicable long-term capital gain rate provided that the U.S. Holder satisfies certain holding period requirements and the U.S. Holder is not under an obligation to make related payments with respect to positions in substantially similar or related property. If the holding period requirements are not satisfied, then non-corporate U.S. Holders may be subject to tax on such dividends at regular ordinary income tax rates instead of the preferential rate that applies to qualified dividend income.

Gain or Loss on Sale, Taxable Exchange, or Other Taxable Disposition of Common Stock. Upon a sale or other taxable disposition of our Common Stock, a U.S. Holder generally will recognize capital gain or loss. Generally, the amount of such gain or loss is equal to the difference between (i) the sum of the amount of cash and the fair market value of any property received in such disposition and (ii) the U.S. Holder's adjusted tax basis in its Common Stock so disposed of. A U.S. Holder's adjusted tax basis in its Common Stock generally will equal the U.S. Holder's adjusted cost less, in the case of a share of Common Stock, any prior distributions treated as a return of capital. In the case of any shares of Common Stock originally acquired as part of an investment unit, the acquisition cost for the shares of Common Stock that were part of such unit would equal an allocable portion of the acquisition cost of the unit based on the relative fair market values of the components of the unit at the time of acquisition.

Any such capital gain or loss generally will be long-term capital gain or loss if the U.S. Holder's holding period for the Common Stock so disposed of exceeds one year. If the holding period requirements are not satisfied, any gain on a sale or taxable disposition of the Common Stock would be subject to short-term capital gain treatment and would be taxed at regular ordinary income tax rates. Long-term capital gain recognized by non-corporate U.S. Holders will be eligible to be taxed at reduced rates. The deductibility of capital losses is subject to limitations.

Information Reporting and Backup Withholding. Distributions with respect to the Common Stock to a U.S. Holder, regardless of whether such distributions constitute dividends, and proceeds from the sale, exchange or redemption of the Common Stock by a U.S. Holder generally are subject to information reporting to the IRS and possible U.S. backup withholding, unless the U.S. Holder is an exempt recipient. Backup withholding may apply to such payments if a U.S. Holder fails to furnish a correct taxpayer identification number, a certification of exempt status or has been notified by the IRS that it is subject to backup withholding (and such notification has not been withdrawn).

Non-U.S. Holders

For purposes of this discussion, a "Non-U.S. Holder" is any beneficial owner of our Common Stock that is for U.S. federal income tax purposes:

- a non-resident alien individual;
- a foreign corporation; or
- a foreign estate or trust.

Taxation of Distributions. If we do make distributions of cash or property on our Common Stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder's adjusted tax basis in its Common Stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under "- Gain or Loss on Sale, Taxable Exchange, or Other Taxable Disposition of Common Stock."

Subject to the discussion below on effectively connected income, dividends paid to a Non-U.S. Holder will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States, the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular rates, subject to an applicable treaty that provides otherwise. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Gain or Loss on Sale, Taxable Exchange, or other Taxable Disposition of Common Stock. A Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our Common Stock unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our Common Stock constitutes a U.S. real property interest ("USRPI") by reason of our status as a U.S. real property holding corporation ("USRPHC") for U.S. federal income tax purposes.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

A Non-U.S. Holder described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on gain realized upon the sale or other taxable disposition of our Common Stock, which may be offset by U.S. source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States).

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends, however, on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition of our Common Stock by a Non-U.S. Holder will not be subject to U.S. federal income tax if our Common Stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market and such Non-U.S. Holder owned, actually and constructively, 5% or less of our Common Stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period.

Non-U.S. Holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding. Payments of dividends on our Common Stock will not be subject to backup withholding, provided the applicable withholding agent does not have actual knowledge or reason to know the holder is a United States person and the holder either certifies its non-U.S. status, such as by

furnishing a valid IRS Form W-8BEN, W-8BEN-E, or W-8ECI, or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in connection with any distributions on our Common Stock paid to the Non-U.S. Holder, regardless of whether such distributions constitute dividends or whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our Common Stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such holder is a United States person or the holder otherwise establishes an exemption. Proceeds of a disposition of our Common Stock conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts. Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act ("FATCA")) on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on our Common Stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in clause (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our Common Stock.

PLAN OF DISTRIBUTION

We are registering the resale by the selling securityholders or their permitted transferees of up to an aggregate of 2,559,645 shares of Common Stock, consisting of (A) 670,985 shares of Common Stock, which include: (i) 209,613 shares of Common Stock issued upon the conversion of certain shares of Series C Preferred Stock, issued to the investors in the Series C Financing and (ii) 461,372 shares of Common Stock previously issued by Private Firefly after the Effectiveness Date; (B)(i) 319,207 shares of Common Stock issued to PIPE Investors, (ii) up to 504,323 shares of common stock issuable upon the exercise of the pre-funded warrants issued to PIPE Investors, and (iii) up to 823,530 shares of common stock issuable upon the exercise of the private placement warrants issued to the PIPE Investors; (C) up to 168,071 shares of common stock issuable upon the exercise of the Series C Warrants issued and sold as part of the Series C Units; (D) up to 61,866 shares of Common Stock issuable upon the exercise of the Series D Warrants; and (E) up to 11,663 shares of Common Stock issuable upon the exercise of the Broker Warrants.

We will not receive any proceeds from the sale of shares of Common Stock by the selling securityholders. We expect to receive only nominal proceeds from the exercise of any Part A-2 Warrants for cash. The aggregate proceeds to the selling securityholders will be the purchase price of the securities less any discounts and commissions borne by the selling securityholders.

The shares of Common Stock beneficially owned by the selling securityholders covered by this prospectus may be offered and sold from time to time by the selling securityholders. The term "selling securityholders" includes donees, pledgees, transferees or other successors in interest selling securities received after the date of this prospectus from a selling securityholder as a gift, pledge, partnership distribution or other transfer. The selling securityholders will act independently of us in making decisions with respect to the timing, manner and size of each sale by the selling securityholders. Such sales may be made on one or more exchanges or in the over-the-counter market or otherwise, at prices and under terms then prevailing or at prices related to the then current market price or in negotiated transactions. The selling securityholders may sell their shares of Common Stock by one or more of, or a combination of, the following methods to the extent applicable:

- purchases by a broker-dealer as principal and resale by such broker-dealer for its own account pursuant to this prospectus;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- block trades in which the broker-dealer so engaged will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- an over-the-counter distribution in accordance with the rules of the Nasdaq Stock Market LLC;
- through trading plans entered into by a selling securityholder pursuant to Rule 10b5-1 under the Exchange Act, that are in place at the time of an offering pursuant to this prospectus and any applicable prospectus supplement hereto that provide for periodic sales of their Securities on the basis of parameters described in such trading plans;
- to or through underwriters or broker-dealers;
- in privately negotiated transactions;
- in options transactions;
- through a combination of any of the above methods of sale; or
- any other method permitted pursuant to applicable law.

In addition, a selling securityholder that is an entity may elect to make a pro rata in-kind distribution of shares of Common Stock to its members, partners or stockholders pursuant to the registration statement of which this prospectus is a part by delivering a prospectus with a plan of distribution. Such members, partners or stockholders would thereby receive freely tradeable securities pursuant to the distribution through a registration statement. To the extent a distributee is an affiliate of us (or to the extent otherwise required by law), we may, at our option, file a prospectus supplement in order to permit the distributees to use the prospectus to resell the securities acquired in the distribution.

In addition, any shares of Common Stock that qualify for sale pursuant to Rule 144 may be sold under Rule 144 rather than pursuant to this prospectus.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. In connection with distributions of the Common Stock or otherwise, the selling securityholders may enter into hedging transactions with broker-dealers or other financial institutions. In connection with such transactions,

broker-dealers or other financial institutions may engage in short sales Common Stock in the course of hedging transactions, and broker-dealers or other financial institutions may engage in short sales Common Stock in the course of hedging the positions they assume with selling securityholders. The selling securityholders may also sell Common Stock short and redeliver the Common Stock to close out such short positions. The selling securityholders may also enter into option or other transactions with broker-dealers or other financial institutions which require the delivery to such broker-dealer or other financial institution of Common Stock offered by this prospectus, which shares of Common Stock such broker- dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). The selling securityholders may also pledge Securities to a broker-dealer or other financial institution, and, upon a default, such broker-dealer or other financial institution may effect sales of the pledged Securities pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The selling securityholders may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell Securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by any selling securityholder or borrowed from any selling securityholder or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from any selling securityholder in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement (or a post-effective amendment). In addition, any selling securityholder may otherwise loan or pledge Securities to a financial institution or other third party that in turn may sell the Securities short using this prospectus. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

In effecting sales, broker-dealers or agents engaged by the selling securityholders may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts or concessions from the selling securityholders in amounts to be negotiated immediately prior to the sale.

In order to comply with the securities laws of certain states, if applicable, the Securities must be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the Securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

We have advised the selling securityholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of Securities in the market and to the activities of each selling securityholder and its affiliates. In addition, we will make copies of this prospectus available to the selling securityholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling securityholders may indemnify any broker-dealer that participates in transactions involving the sale of the Securities against certain liabilities, including liabilities arising under the Securities Act.

At the time a particular offer of Securities is made, if required, a prospectus supplement will be distributed that will set forth the number of Securities being offered and the terms of the offering, including the name of any underwriter, dealer or agent, the purchase price paid by any underwriter, any discount, commission and other item constituting compensation, any discount, commission or concession allowed or reallowed or paid to any dealer, and the proposed selling price to the public. We know of no existing arrangements between the selling securityholders or any other stockholder, broker, dealer, underwriter or agent relating to the sale or distribution of the Securities offered by this prospectus.

We are required to pay all fees and expenses incident to the registration of shares of our Common Stock to be offered and sold pursuant to this prospectus, which we expect to be approximately $81,316.65.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan or distribution.

LEGAL MATTERS

The validity of the securities offered hereby will be passed upon for us by Haynes and Boone, LLP.

EXPERTS

The financial statements of Firefly Neuroscience, Inc. as of December 31, 2023 and 2022 included in this prospectus and registration statement have been audited by Turner, Stone & Company LLP, independent registered public accounting firm, as set forth in their report thereon appearing elsewhere herein (which includes an explanatory paragraph about the existence of substantial doubt concerning our ability to continue as a going concern), and are included in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. We have also filed a registration statement on Form S-1, including exhibits, under the Securities Act with respect to the shares of Common Stock offered by this prospectus. This prospectus is part of the registration statement, but does not contain all of the information included in the registration statement or the exhibits. Our SEC filings are available to the public on the internet at a website maintained by the SEC located at *http://www.sec.gov*.

Our website address is *www.fireflyneuro.com*. Through our website, we make available, free of charge, the following documents as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC, including our Annual Reports on Form 10-K; our proxy statements for our annual and special stockholder meetings; our Quarterly Reports on Form 10-Q; our Current Reports on Form 8-K; Forms 3, 4, and 5 and Schedules 13D with respect to our securities filed on behalf of our directors and our executive officers; and amendments to those documents. The information contained on, or that may be accessed through, our website is not a part of, and is not incorporated into, this prospectus.

UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL INFORMATION

On November 15, 2023, WaveDancer, Inc. (“WaveDancer”) and its wholly owned subsidiary, FFN Merger Sub, Inc. (“FFN”), entered into an Agreement and Plan of Merger (as amended by that certain Amendment No. 1, dated as of January 12, 2024, and that certain Amendment No. 2, dated as of June 17, 2024, “Merger Agreement”) with Firefly Neuroscience 2023, Inc. ("Private Firefly"). In accordance with the Merger Agreement, FFN merged with and into Private Firefly, with Private Firefly surviving as a wholly owned subsidiary of WaveDancer. On August 12, 2024, (i) pursuant to the Amended and Restated Certificate of Incorporation of WaveDancer, Inc., WaveDancer changed its name to Firefly Neuroscience, Inc., and (ii) pursuant to an amendment to its Certificate of Incorporation Firefly, Private Firefly changed its name to Firefly Neuroscience 2023, Inc. and (iii) Private Firefly and FFN filed the Certificate of Merger with the State of Delaware (the “Merger”). On August 12, 2024, prior to the consummation of the Merger, WaveDancer effectuated a 1-for-3 reverse stock split of its common stock (the “Reverse Stock Split”). On August 12, 2024, the Merger closed.

In connection with the Merger Agreement, WaveDancer entered into a Stock Purchase Agreement (“Tellenger Sale Transaction”) with Wavetop Solutions, Inc. (“Wavetop”), a company owned and controlled by WaveDancer’s chief executive officer, to sell all the outstanding shares of Tellenger Inc. (“Tellenger”) to Wavetop. Tellenger is the company through which WaveDancer operated its day-to-day business.

The following unaudited pro forma condensed combined financial information present the combination of the financial information of Private Firefly and WaveDancer, adjusted to give effect to the Merger. The unaudited pro forma condensed combined financial information has been prepared in accordance with Article 11 of Regulation S-X, Pro Forma Financial Information, as amended by the final rule, Release No. 33-10786 “Amendments to Financial Disclosures about Acquired and Disposed Business”.

The unaudited pro forma condensed combined statements of operations for the year ended December 31, 2023 combine the historical consolidated statements of operations of Private Firefly for the year ended December 31, 2023 and the historical consolidated statements of operations of WaveDancer for the year ended December 31, 2023, respectively, on a pro forma basis as if the Merger had been consummated on January 1, 2023, the beginning of the earliest period presented.

The merged company filed its Quarterly Report on Form 10-Q on November 14, 2024. The consolidated balance sheets as at September 30, 2024 and statements of comprehensive loss for the nine months ended September 30, 2024 filed in Form 10-Q reflect the Merger. Given WaveDancer has wound down its corporate operations and sold its operating business, Tellenger, the statement of comprehensive loss filed in the Quarterly Report Form 10-Q is equivalent to what it would have been if the Merger had occurred on January 1, 2024.

The unaudited pro forma condensed combined financial information was derived from and should be read in conjunction with the following historical financial statements and the accompanying notes:

- WaveDancer’s audited consolidated financial statements and accompanying notes as of and for the year ended December 31, 2023, as contained in the Form 10-K filed on March 20, 2024 with the U.S. Securities and Exchange Commission (SEC).
- Private Firefly’s audited financial statement as of and for the years ended December 31, 2023.
- The other information contained in or incorporated by reference into this filing

Unaudited Pro Forma Condensed Combined Statement of Operations
For the Year Ended December 31, 2023
(Amounts expressed in United States dollars, except for number of shares)

		Pro forma adjustments							
	Wave Dancer As reported	Wind-down of WaveDancer Corporate	Notes	Tellenger Sale Transaction	Notes	Wave Dancer Pro-forma basis subtotal	Private Firefly Neuroscience Firefly As reported	Merger Adjustments	Notes	Pro Forma Combined FS
Revenue	$ 7,981,975	-	(b)	$ (7,981,975)	(c)	-	$ 498,000	-		$ 498,000
Cost of revenue	5,367,678	(1,000)	(b)	(5,366,678)	(c)	-	-	-		-
Gross profit	$ 2,614,297	$ 1,000		$ (2,615,297)		-	$ 498,000	-		$ 498,000
Operating expenses										
Sales and marketing	2,233	(1,793)	(b)	(440)	(c)	-	639,000	-		639,000
General and administrative	5,622,663	(4,232,547)	(b)	(1,390,116)	(c)	-	2,196,000	387,343	(a)	3,772,891
	-	-		-		-	-	410,000	(d)	-
	-	-		-		-	-	779,548	(e)	-
Depreciation and amortization	217,236	(15,791)	(b)	(201,445)	(c)	-	-	-		-
Research and development	-	-		-		-	741,000	-		741,000
Total operating expenses	$ 5,842,132	$ (4,250,131)		$ (1,592,001)		-	$ 3,576,000	$ 1,576,891		$ 5,152,891
Loss from operations	$ (3,227,835)	$ 4,251,131		$ (1,023,296)		-	$ (3,078,000)	$ (1,576,891)		$ (4,654,891)
Other income (expense)										
Interest expense, net	(103,256)	103,229	(b)	27	(c)	-	(18,000)	-		(18,000)
Gain on sale of equity investment and settlement of contingent consideration payable	382,525	(382,525)	(b)	-		-	-	-		-
Gain on litigation settlement	1,442,468	(1,442,468)	(b)	-		-	-	-		-
Unrealized gain on foreign exchange	-	-		-		-	37,000	-		37,000
Other income (expense)	10,596	(10,749)	(b)	153	(c)	-	457,000	-		457,000
Total other income (expense)	$ 1,732,333	$ (1,732,513)		$ 180		-	$ 476,000	-		$ 476,000
Loss from continuing operations before income taxes and equity in net loss of affiliate	$ (1,495,502)	$ 2,518,618		$ (1,023,116)		-	$ (2,602,000)	$ (1,576,891)		$ (4,178,891)
Income tax (benefit) expense	(42,585)	307,733	(b)	(265,148)	(c)	-	1,000	-		1,000
Net loss from continuing operations before equity in net loss of affiliate	$ (1,452,917)	$ 2,210,885		$ (757,968)		-	$ (2,603,000)	$ (1,576,891)		$ (4,179,891)
Equity in net loss of affiliate	(245,525)	245,525		-		-	-	-		-
Net loss	$ (1,698,442)	2,456,410		(757,968)		-	(2,603,000)	(1,576,891)		(4,179,891)
Basic and diluted weighted average common stock outstanding	649,590									6,499,748663
Basic and diluted loss per share	(2.61)									(0.64)

See accompanying notes to the unaudited pro forma condensed combined financial information

NOTES TO THE UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL INFORMATION

(Amounts expressed in United States dollars, except for number of shares)

Note 1. Basis of Presentation

The Merger was treated as a reverse recapitalization, whereby Private Firefly was deemed to be the accounting acquirer, and the historical financial statement of Private Firefly became the historical financial statement of WaveDancer (renamed Firefly Neuroscience, Inc.) upon the closing of the Merger. Under this method of accounting, WaveDancer was treated as the acquiree and Private Firefly is treated as the acquirer for financial reporting purposes.

Accordingly, for accounting purposes, the Merger was treated as the equivalent of Private Firefly issuing stock for the net assets of WaveDancer, accompanied by a recapitalization. The net assets of WaveDancer were stated at carrying values, with no goodwill or other intangible assets recorded.

The unaudited pro forma condensed combined statements of operations for the year ended December 31, 2023 present pro forma effect of the Merger as if it had been completed on January 1, 2023. These periods are presented on the basis of Private Firefly being the accounting acquirer.

For the purposes of the unaudited pro forma condensed combined financial information, the accounting policies of WaveDancer and Private Firefly are aligned with no differences. Accordingly, no effect has been provided for the pro forma adjustments described in notes to the unaudited pro forma condensed combined financial information.

The unaudited pro forma condensed combined financial information should be read in conjunction with:

- WaveDancer's audited consolidated financial statements and accompanying notes as of and for the year ended December 31, 2023, as contained in the Form 10-K filed on March 20, 2024 with the U.S. Securities and Exchange Commission (SEC).
- Private
- Firefly's audited financial statement as of and for the years ended December 31, 2023.

Basic and Diluted Weighted Average Common Shares Outstanding

	Year Ended December 31, 2023
Private Firefly outstanding number of shares reported on audited financial statements	49,948,710
Exchange Ratio	0.1040
Shares of common stock issued in exchange for Private Firefly shares of common stock	5,194,749
Estimated additional shares to be issued relating to concurrent transactions disclosed within notes 2(d), 2(f)	655,409
Weighted average common stock outstanding of WaveDancer reported on Form 10-K and adjusted 1-for-3 reverse stock split	649,590
Pro forma weighted average common stock outstanding	6,499,748

Note 2. Pro Forma Adjustments - Unaudited Pro Forma Condensed Statement of Operations for the Year Ended December 31, 2023

a. Reflects an adjustment of $387,343 in transaction cost relating to the Merger such as adviser fees, legal and accounting expenses.

b. Reflects reversal of WaveDancer's corporate net expenses incurred during the year ended December 31, 2023 amounting to $2,456,410 that would not be incurred from the Merger date. These costs include reversal of gain on litigation settlement, sale of equity investment and settlement of contingent consideration receivable, the equity in the net loss of affiliate, and other income.

c. Reflects reversal of transactions related to Tellenger that was transferred to Wavetop as part of the Tellenger Sale Transaction amounting to a net income of $757,968.

d. Reflects the restricted share units issuance to two officers of the Company under the Company's restricted share units plan amounting to $410,000. Upon the consummation of the Merger, the restricted share units vested and the Company issued 59,264 shares of common stock.

e. Reflects the issuance of 335,728 options by the Company in prior periods that partially vested upon Merger, resulting in $779,548 of expense. The fair value of the options is estimated based on the Black-Scholes option-pricing model. Key assumptions include the share price of $6.91, risk free rate of 3.82%, 0% dividend yield, expected volatility of 86.50%, and expected life of 3.91 years.

f. Private Firefly's Series C Preferred Stock had a mandatory conversion that was triggered upon the consummation of the Merger. Pursuant to the terms of Series C Preferred Stock, all issued and outstanding shares of the Series C Preferred Stock converted into 596,145 shares of common stock upon consummation of the Merger. This has been reflected in the pro forma weighted average common shares outstanding.

INDEX TO FINANCIAL STATEMENTS

FIREFLY NEUROSCIENCE, INC.

CONDENSED CONSOLIDATED BALANCE SHEETS
AS OF SEPTEMBER 30, 2024 AND DECEMBER 31, 2023
(IN THOUSANDS, EXCEPT SHARE DATA)

	September 30, 2024 (Unaudited)	December 31, 2023
ASSETS		
Current assets		
Cash	$ 1,230	$ 2,143
Other receivables	86	84
Prepaid expenses	1,349	28
Total current assets	2,665	2,255
Non current assets		
Prepaid expenses	1,465	-
Equipment, net	72	-
Intangible assets, net	1,109	386
Total non current assets	2,646	386
TOTAL ASSETS	$ 5,311	$ 2,641
LIABILITIES		
Current liabilities		
Trade payables	$ 1,382	$ 630
Accrued liabilities	1,153	1,902
Total current liabilities	2,535	2,532
TOTAL LIABILITIES	2,535	2,532
COMMITMENTS AND CONTINGENCIES (Note 9)		
SHAREHOLDERS' EQUITY (DEFICIT)		
Preferred shares, $0.0001 par value: 1,000,000 stock authorized - 2024; 3,120,000 stock authorized - 2023; nil and 1,676,165 issued and outstanding at September 30, 2024 and December 31, 2023, respectively	-	-
Common shares, $0.0001 par value: 100,000,000 stock authorized; 8,476,202 and 3,678,550 issued and outstanding at September 30, 2024 and December 31, 2023, respectively	1	-
Additional Paid-in Capital	86,074	76,733
Accumulated deficit	(83,299)	(76,624)
TOTAL SHAREHOLDERS' EQUITY	2,776	109
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 5,311	$ 2,641

The accompanying notes are an integral part of these condensed consolidated financial statements.

FIREFLY NEUROSCIENCE, INC.

UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
FOR THE THREE AND NINE MONTHS ENDED SEPTEMBER 30, 2024 AND 2023
(IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)

	Three months ended September 30,		Nine months ended September 30,	
	2024	2023	2024	2023
REVENUE	$ 33	$ 23	$ 55	$ 479
OPERATING EXPENSES:				
Research and development expenses	878	392	1,517	712
Selling and marketing expenses	431	95	973	399
General and administration expenses	2,992	183	4,183	879
TOTAL OPERATING EXPENSES	4,301	670	6,673	1,990
OPERATING LOSS	(4,268)	(647)	(6,618)	(1,511)
OTHER INCOME (EXPENSE)				
Interest and bank fees	(24)	(3)	(36)	(13)
Unrealized gain (loss) on foreign exchange	(2)	-	1	-
Other (expense), net	5	-	(22)	(2)
LOSS BEFORE INCOME TAX	(4,289)	(650)	(6,675)	(1,526)
Income tax provision	-	-	-	-
NET LOSS AND COMPREHENSIVE LOSS	$ (4,289)	$ (650)	$ (6,675)	$ (1,526)
BASIC AND DILUTED LOSS PER SHARE	$ (0.61)	$ (0.18)	$ (1.15)	$ (0.49)
WEIGHTED AVERAGE NUMBER OF SHARES OF COMMON STOCK OUTSTANDING, BASIC AND DILUTED	7,080,897	3,678,906	5,828,054	3,083,214

The accompanying notes are an integral part of these condensed consolidated financial statements.

FIREFLY NEUROSCIENCE, INC.

UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY (DEFICIT)
SEPTEMBER 30, 2024 AND 2023
(IN THOUSANDS, EXCEPT SHARE DATA)

	Preferred stock			Common stock					
	Number of shares	Number of shares to be issued	Amount	Number of shares	Number of shares to be issued	Amount	Additional paid-in capital	Accumulated deficit	Total Shareholder's equity (deficit)
BALANCE AT DECEMBER 31, 2023	1,676,165	(1,516,199)	$ -	3,678,550	1,516,199	$ -	$ 76,733	$ (76,624)	$ 109
Series B Preferred Stock conversion	(1,516,199)	1,516,199	-	1,516,199	(1,516,199)	-	-	-	-
Series C Preferred Stock Units offering	86,953	-	-	-	-	-	945	-	945
Share exchange: former shareholders of WaveDancer	-	-	-	802,142	-	1	(205)		(205)
Series C Preferred Stock Conversion	(246,919)	-	-	596,145	-	-	-	-	-
Private Placement Net of Issuance Costs	-	-	-	319,207	-	-	3,448	-	3,448
Shares Issued for Debt	-	-	-	10,588	-	-	39	-	39
Shares Issued for Future Settlement of Debt	-	-	-	45,344	-	-	-	-	-
Shares Issues for Consulting Services	-	-	-	22,344	-	-	209	-	209
Shares Issued for Prepaid Services	-	-	-	433,360	-	-	2,440	-	2,440
Shares Issued – Stock Options, Warrants and RSU Exercises	-	-	-	494,438	-	-	32	-	32
Share-based compensation expense	-	-	-	-	-	-	2,433	-	2,433
Unvested shares issued to directors	-	-	-	557,885	-	-	-	-	-
Net loss	-	-	-	-	-	-	-	(6,675)	(6,675)
BALANCE AT SEPTEMBER 30, 2024	-	-	$ -	8,476,202	-	$ 1	86,074	$ (83,299)	$ 2,776
BALANCE AT DECEMBER 31, 2022	-	-	$ -	265,485	-	$ -	$ 71,795	$ (74,021)	$ (2,226)
Common Stock Private Placement	-	-	-	3,383,784	-		133		133
Series B Preferred Stock offering	-	1,251,706	-	-	-	-	2,214	-	2,214
Units Offering	-	12,187	-	-	-	-	150	-	150
Share-based compensation expense	-	-	-	29,636	-	-	227	-	227
Net loss	-	-	-	-	-	-	-	(1,526)	(1,526)
BALANCE AT SEPTEMBER 30, 2023	-	1,263,893	$ -	295,121	3,383,784	$ -	$ 74,519	$ (75,547)	$ (1,028)

	Preferred stock			Common stock					
	Number of shares	Number of shares to be issued	Amount	Number of shares	Number of shares to be issued	Amount	Additional paid-in capital	Accumulated deficit	Total Shareholder's equity (deficit)
BALANCE AT JUNE 30, 2024	**246,919**	**-**	**$ -**	**5,194,749**	**-**	**$ -**	**$ 77,795**	**$ (79,010)**	**$ (1,215)**
Share Exchange: former shareholders of WaveDancer	**-**	**-**	**-**	**802,142**	**-**	**1**	**(205)**		**(205)**
Series C Preferred Stock Conversion	**(246,919)**	**-**	**-**	**596,145**	**-**	**-**	**-**	**-**	**-**
Private Placement Net of Issuance Costs	**-**	**-**	**-**	**319,207**	**-**	**-**	**3,448**	**-**	**3,448**
Shares Issued for Debt	**-**	**-**	**-**	**10,588**	**-**	**-**	**39**	**-**	**39**
Shares Issued for Future Settlement of Debt	**-**	**-**	**-**	**45,344**	**-**	**-**	**-**	**-**	**-**
Shares Issues for Consulting Services	**-**	**-**	**-**	**22,344**	**-**	**-**	**209**	**-**	**209**
Shares Issued for Prepaid Services	**-**	**-**	**-**	**433,360**	**-**	**-**	**2,440**	**-**	**2,440**
Shares Issued – Stock Options, Warrants and RSU Exercises	**-**	**-**	**-**	**494,438**	**-**	**-**	**32**	**-**	**32**
Share-based compensation expense	**-**	**-**	**-**	**-**	**-**	**-**	**2,316**	**-**	**2,316**
Unvested shares issued to directors				**557,885**					
Net loss	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**(4,289)**	**(4,289)**
BALANCE AT SEPTEMBER 30, 2024	**-**	**-**	**$ -**	**8,476,202**	**-**	**$ 1**	**86,074**	**$ (83,299)**	**$ 2,776**
BALANCE AT JUNE 30, 2023	**-**	**613,385**	**$ -**	**295,121**	**3,383,784**	**$ -**	**$ 73,168**	**$ (74,897)**	**$ (1,729)**
Series B Preferred Stock offering	**-**	**638,321**	**-**	**-**	**-**	**-**	**1,122**	**-**	**1,122**
Series C Preferred Stock Units offering	**-**	**12,187**	**-**	**-**	**-**	**-**	**150**	**-**	**150**
Share-based compensation expense	**-**	**-**	**-**	**-**	**-**	**-**	**79**	**-**	**79**
Net loss	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**(650)**	**(650)**
BALANCE AT SEPTEMBER 30, 2023	**-**	**1,263,893**	**$ -**	**295,121**	**3,383,784**	**$ -**	**$ 74,519**	**$ (75,547)**	**$ (1,028)**

The accompanying notes are an integral part of these condensed consolidated financial statements.

NOTE 1: BUSINESS DESCRIPTION

Overview

Firefly Neuroscience, Inc. (formerly WaveDancer, Inc.), a Delaware corporation, and its wholly owned subsidiaries Firefly Neuroscience2023, Inc., a Delaware corporation (formerly known as Firefly Neuroscience, Inc.), Firefly Neuroscience Ltd., an Israeli corporation (formerly known as Elminda Ltd.), Elminda 2022 Inc., a Delaware corporation (formerly known as Elminda Inc.), Firefly Neuroscience Canada Inc., a Canadian corporation, and Elminda Canada Inc., a Canadian corporation (collectively, the "Company"), are engaged in the development, marketing and distribution of medical devices and technology allowing high resolution visualization and evaluation of the complex neuro-physiological interconnections of the human brain.

Firefly Neuroscience Ltd. was initially incorporated and commenced its operations as a development company in2006 under the laws of the State of Israel, and in May 2014, initiated its marketing and distribution activity in the United States through Elminda2022 Inc.

In July 2014, the U.S. Food and Drug Administration ("FDA") cleared Firefly Neuroscience Ltd.'s Brain Network Analytics ("BNA" ™) product for marketing in the USA. On September 11, 2014, the Company received the Conformity European ("CE") approval for BNA™ allowing its use in the European Union.

On November 15, 2023, WaveDancer, Inc. ("WaveDancer") and its wholly owned subsidiary, FFN Merger Sub, Inc. ("FFN"), entered into an Agreement and Plan of Merger (as amended by that certain Amendment No. 1, dated as of January 12, 2024, and that certain Amendment No. 2, dated as of June 17, 2024, "Merger Agreement") with Firefly Neuroscience 2023, Inc. ("Private Firefly"). In accordance with the Merger Agreement, FFN merged with and into Private Firefly, with Private Firefly surviving as a wholly owned subsidiary of WaveDancer. On August 12, 2024, (i) pursuant to the Amended and Restated Certificate of Incorporation of WaveDancer, Inc., WaveDancer changed its name to Firefly Neuroscience, Inc., and (ii) pursuant to an amendment to its Certificate of Incorporation Firefly, Private Firefly changed its name to Firefly Neuroscience 2023, Inc. and (iii) Private Firefly and FFN filed the Certificate of Merger with the State of Delaware (the "Merger"). OnAugust 12, 2024, the Merger closed (the "Closing" and such date, the "Closing Date").

At the effective time of the Merger, each holder of outstanding shares of Private Firefly's common stock, par value $0.00001 per share (the "Private Firefly Common Stock") received the number of shares of common stock, par value $0.0001 per share, of the Company (the "New Firefly Common Stock") equal to the number of shares of Private Firefly Common Stock such stockholders held multiplied by the exchange ratio (the "Exchange Ratio") of 0.1040. Additionally, upon at the effective time of the Merger: (i) each outstanding option to purchase Private Firefly Common Stock that was not exercised prior to the Closing was assumed by the Company subject to certain terms contained in the Merger Agreement and became an option to purchase shares of New Firefly Common Stock, subject to adjustment to give effect to the Exchange Ratio, (ii) each outstanding Private Firefly restricted share unit outstanding immediately prior to the Closing vested pursuant to the terms thereof, and (iii) each outstanding warrant to purchase shares of Private Firefly Common Stock that was not exercised prior to the Closing was assumed by the Company, subject to certain terms contained in the Merger Agreement.

While WaveDancer was the legal acquirer of Private Firefly in the Merger, the Merger is treated as a reverse recapitalization under Generally Acceptance Accounting Principles in the United States of America ("U.S. GAAP"), whereby Private Firefly is deemed to be the accounting acquirer, WaveDancer was deemed to be the accounting acquiree and the historical financial statement of Private Firefly was carried forward for financial reporting purpose upon the closing of the merger. Accordingly, for accounting purposes, the Merger was treated as the equivalent of Private Firefly issuing stock for the net assets of WaveDancer, accompanied by a recapitalization. The net assets of WaveDancer were stated at carrying values, with no goodwill or other intangible assets recorded.

The combined entity operates under the name Firefly Neuroscience, Inc., and onAugust 13, 2024, the Company began trading on the Nasdaq Capital Market (NASDAQ Ticker Symbol: AIFF).

Immediately following the closing of the Merger, on August 12, 2024, there were 7,472,555 shares of the New Firefly Common Stock outstanding. In accordance with guidance applicable to these circumstances, the equity structure has been recast in all comparative periods up to the Closing to reflect the equity structure of the legal acquirer, WaveDancer. The shares and corresponding capital amounts and losses per share, prior to the Merger, have been retroactively restated based on shares reflecting the exchange ratio established in the Merger.

NOTE 2: GOING CONCERN

As of September 30, 2024, the Company had an accumulated deficit of $83,299 (December 31, 2023: $76,624) and negative cash flow from operating activities for thenine months ended September 30, 2024, of $4,937 (September 30, 2023: $1,662). Further, the Company has recurring losses with minimal revenue from operations. While the Company is attempting to raise funds for commercialization, its monthly cash requirements during the nine months ended September 30, 2024, have been met through issuance of shares to new and existing stockholders. These conditions raise substantial doubt about the Company's ability to continue as a going concern. Therefore, the Company may be unable to realize its assets and discharge its liabilities in normal course of business. To strengthen the Company's liquidity in the foreseeable future, the Company has taken the following measures:

(i) negotiating further funding with existing and new investors to raise additional capital;
(ii) taking various cost control measures to reduce the operational cash burn; and
(iii) commercializing product to generate recurring sales.

Management of the Company has a reasonable expectation that the Company can continue raising additional equity capital to continue in operational existence for the foreseeable future. Ability to raise additional funds will depend on, among other factors, financial, economic and market conditions, many of which are outside of our control and there can be no assurance that we will be able to obtain additional funding on satisfactory terms or at all.

NOTE 3: BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. GAAP. The results reported in these unaudited condensed consolidated financial statements should not be regarded as necessarily indicative of results thatmay be expected for any subsequent period or for the entire period. These unaudited condensed consolidated financial statements and notes thereto should be read in conjunction with the Company's annual audited consolidated financial statements for the year ended December 31, 2023 and the notes thereto included in the Company's Form 8-K filed with the SEC on August 12, 2024. Certain information and footnote disclosures normally included in the audited consolidated financial statements prepared in accordance with U.S. GAAP have been condensed or omitted in the accompanying unaudited condensed consolidated financial statements. All amounts are disclosed in thousands, except share and per share amounts. The accompanying unaudited condensed consolidated financial statements contain all adjustments, consisting only of normal recurring adjustments, except as otherwise indicated, necessary for a fair statement of its consolidated financial position, results of operations, and cash flows of the Company for all periods presented.

Principles of consolidation

These unaudited consolidated financial statements include the financial information of the Company and its subsidiaries. The Company consolidates legal entities in which it holds a controlling financial interest. The Company has a two-tier consolidation model: one focused on voting rights (the voting interest model) and thesecond focused on a qualitative analysis of power over significant activities and exposure to potentially significant losses or benefits (the variable interest model). All entities are first evaluated to determine whether they are variable interest entities ("VIE"). If an entity is determined not to be a VIE, it is assessed on the basis of voting and other decision-making rights under the voting interest model. The accounts of the subsidiaries are prepared for the same reporting period using consistent accounting policies. All intercompany balances and transactions were eliminated on consolidation.

The consolidated assets, liabilities, and results of operations prior to the Merger are those of Private Firefly. In accordance with guidance applicable to these circumstances, the equity structure has been recast in all comparative periods up to the Closing to reflect the equity structure of the legal acquirer, WaveDancer. The shares and corresponding capital amounts and losses per share, prior to the Merger, have been retroactively restated based on shares reflecting the exchange ratio established in the Merger.

Use of estimates in the preparation of consolidated financial statements

The preparation of unaudited condensed consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and reported amounts of revenues and expenses during the reported periods. Actual results could differ from those estimates.

Significant accounting policies

The following significant accounting policies should be read in conjunction with the Company's annual audited consolidated financial statements for the year ended December 31, 2023, significant accounting policies and the notes therein.

i) Equipment
Equipment is stated at cost less accumulated depreciation. Depreciation and amortization are calculated using the straight-line method over the estimated useful lives of the assets. The Company uses an estimated useful life of four years for medical equipment.

ii) Share based payments
For fully vested, nonforfeitable equity instruments that are granted at the date the Company enters into an agreement for goods or services with a nonemployee, the Company's recognizes the fair value of the equity instruments on the grant date. The corresponding cost is recognized as an immediate expense or a prepaid asset and expensed over the service period depending on the specific facts and circumstances of the agreement with the nonemployee.

Impact of recently issued accounting standards

The Company has evaluated issued Accounting Standards Updates not yet adopted and believes the adoption of these standards will not have a material impact on its condensed consolidated financial statements.

NOTE 4: THE MERGER

On August 12, 2024, Private Firefly consummated the Merger. The Merger was treated as a reverse recapitalization, whereby Private Firefly was deemed to be the accounting acquirer, and the historical financial statement of Private Firefly became the historical financial statement of WaveDancer (renamed Firefly Neuroscience, Inc.) upon the closing of the Merger. Under this method of accounting, WaveDancer was treated as the acquiree and Private Firefly is treated as the acquirer for financial reporting purposes.

Accordingly, for accounting purposes, the Merger was treated as the equivalent of Private Firefly issuing stock for the net assets of WaveDancer, accompanied by a recapitalization. The net assets of WaveDancer were stated at carrying values, with no goodwill or other intangible assets recorded.

The following table reconciles the elements of the Merger to the consolidated statements of changes in shareholders' equity for the nine months period ended September 30, 2024:

	Recapitalization
Cash	$ 75
Prepaid expenses	62
Equipment	12
Non-cash net working capital assumed from WaveDancer	(354)
Effect of the Merger, net of transaction costs	(205)

The following table details the number of shares of common stock issued following the consummation of the Merger:

	Number of Shares
Shares of common stock owned by WaveDancer's pre-Merger shareholders	802,142
Shares of common stock issued in exchange for Private Firefly shares of common stock	6,670,413
Total shares of common stock outstanding immediately after Merger	7,472,555

In addition to the shares of common stock, WaveDancer's shareholders retained:

- 113,522 employee stock options;
- warrants exercisable for up to 76,098 shares of common stock of the combined entity.

The consolidated assets, liabilities, and results of operations prior to the Merger are those of Private Firefly In accordance with guidance applicable to these circumstances, the equity structure has been recast in all comparative periods up to the Closing to reflect the equity structure of the legal acquirer, WaveDancer. The shares and corresponding capital amounts and losses per share, prior to the Merger, have been retroactively restated based on shares reflecting the Exchange Ratio of 0.1040 established in the Merger.

NOTE 5: PREPAID EXPENSES

Detail of prepaid expenses balance is as follows:

	September 30, 2024	December 31, 2023
Shares issued for prepaid services	$ 603	$ -
Prepaid expenses	746	28
Total (current)	$ 1,349	$ 28
Shares issued for prepaid services	$ 1,465	$ -
Total (non-current)	$ 1,465	$ -

The Company entered into four standalone strategic investment agreements. Pursuant to these agreements, the Company agreed to issue433,360 of shares of common stock in exchange for $2,925 of service credits that are to be consumed in future over athree-year period. Refer Note10.a for further details.

NOTE 6: EQUIPMENT

Equipment balance is as follows:

	September 30, 2024	December 31, 2023
Medical equipment, cost	$ 80	$ -
Less – accumulated depreciation	(8)	-
Equipment, net	$ 72	$ -

NOTE 7: INTANGIBLE ASSETS

The following tables summarize the composition of intangible assets as of September 30, 2024:

	September 30, 2024			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Life
Unamortized intangible assets				
BNA software	$ 1,109	$ -	$ 1,109	-
Total intangible assets	$ 1,109	$ -	$ 1,109	-

The BNA software enhancement project is in progress and amortization will begin once the project is substantially complete and the software is ready for its intended purpose. The software enhancement project is expected to be completed by the end of 2025 and have a useful life of five years.

NOTE 8: LIABILITY FOR EMPLOYEE RIGHTS UPON RETIREMENT

Israeli labor law requires payment of severance pay upon dismissal of an employee or upon termination of employment in certain circumstances. Pursuant to Section 14 of the Israeli Severance Pay Law, 1963, all of the Company's employees are entitled to monthly deposits, at a rate of 8.33% of their monthly salary, made in their name with insurance companies. Payments made in accordance with Section 14 relieve the Company from any future severance payments with respect to those employees. In accordance with the Israeli Severance Pay Law, 1963, severance payments, which are included in salary and employee benefits, were $10 and $35 for the three and nine months ended September 30, 2024, respectively, and $6 and $22 for the three and nine months ended September 30, 2023, respectively.

NOTE 9: COMMITMENTS AND CONTINGENCIES

a. Royalty Commitment - Israeli Innovation Authority ("IIA")

The Company is committed to pay royalties to the State of Israel, through the Israel Innovation Authority ("IIA"), on proceeds from sales of products in which the IIA participated by way of grants for research and development. No grants were received in 2024 or 2023. Under the terms of the prior IIA grant agreements, the principal value of financial assistance received along with annual interest based on London Inter-Bank Offered Rate ("LIBOR") is repayable in form of royalties at 3.0% of BNA™ sales. Since the elimination of LIBOR, the Secured Overnight Financing Rate ("SOFR") subsequently replaced LIBOR as a reference rate of interest for IIA grant agreements. In the case of lack of commercial feasibility of the project that was financed using the grant, the Company is not obligated to pay any royalty. The Company cannot reasonably determine the outcome of the commercialization of the technology and considers the liability to be contingent upon generation of sales, hence no liability has been recognized as of September 30, 2024, and December 31, 2023. The contingent liability amounts to $5,702 (estimated) and $5,625 for September 30, 2024, and December 31, 2023 respectively.

Sale of the technology developed utilizing the grants from IIA is restricted and is subject to IIA's approval.

b. Legal Proceedings

The Company is subject to various claims, complaints and legal actions in the normal course of business from time to time. After consulting with counsel, the Company is not aware of any currently pending litigation for which it believes the outcome could have a material adverse effect on its operations or financial position.

NOTE 10: EQUITY

a. Shares

On August 29, 2023, The Company offered up to 812,500 units (the "Series C Units"), with each Series C Unit consisting of one share of Series C Preferred Stock (the "Series C Preferred Stock") and one warrant to purchase one share of common stock (the "Series C warrants"), at a combined purchase price of $12.31 per Series C Unit (the "Series C Offering").

During the nine months period ended September 30, 2024, the Company issued 86,953 Series C Units and received aggregate gross proceeds of $1,070. The Company incurred $125 of costs associated with the issuance and issued broker warrants to purchase up to 4,163 shares of common stock to the associated broker in connection with the Series C Offering. The shares of Series C Preferred Stock issued are equity classified instruments and are recorded as equity. Each Series C Warrant entitles the purchasers to acquire one share of common stock at an exercise price of $24.62 per share for a period of three years from the date of issuance. See Note 10: Equity – b. Warrants. The conversion price of the Series C Preferred Stock was amended contemporaneously with the consummation of the Merger. As of August 12, 2024, the mandatory conversion feature of the Series C Preferred Stock was triggered upon the consummation of the Merger. Pursuant to the terms of Series C Preferred Stock, all issued and outstanding shares of the Series C Preferred Stock converted into 596,145 shares of common stock upon consummation of the Merger.

As of December 31, 2023, the mandatory conversion feature of the Series B Preferred Stock (the "Series B Preferred Stock") was triggered, as the proceeds from the Series C Offering exceeded $1,000. As per the terms of Series B Preferred Stock, all preferred shares were converted into one share of common stock. During the period ended September 30, 2024, 1,516,199 of shares of Series B Preferred Stock converted into 1,516,199 shares of common stock.

On July 26, 2024, the Company entered into a private placement transaction (the "PIPE"), pursuant to which the Company agreed to issue and sell (i) 319,207 shares of common stock and (ii) pre-funded warrants (the "Pre-Funded Warrants") to purchase up to 504,324 shares of common stock, and (iii) warrants (the "PIPE Warrants") to purchase up to 823,529 shares of common stock (as adjusted for the Exchange Ratio). The purchase price of each share of common stock and accompanying PIPE Warrant was $4.25 and the purchase price of each Pre-Funded Warrant and accompanying PIPE Warrant was $4.249. The PIPE closed on August 12, 2024, contemporaneously with the consummation of the Merger. The aggregate gross proceeds from the PIPE were approximately $3,500. The Company incurred $52 of costs associated with the issuance.

On July 27, 2024, the Company entered into four standalone strategic investment agreements. One of the service providers is owned by a director of the Company (Note 12). Pursuant to the strategic investment agreements, the Company agreed to issue 433,360 of shares of common stock. The shares are fully vested upon issuance and have been valued at $2,440. These shares were subject to regulatory lock-up restrictions. Of these shares, 140,749 are subject to a 12-month lock-up restriction and 292,611 shares are subject to a 6-month lock-up restriction. The restriction is a characteristic of the security, and therefore considered in the fair value measurements. The shares were measured at fair value, considering the effect of the post-vesting restrictions via accounting for discount for lack of marketability ("DLOM"), determined by Finnerty model. The shares were issued on August 12, 2024, contemporaneously with the consummation of the Merger. Pursuant to the terms of the strategic investment agreements, the service providers granted the Company $2,925 of service credits to perform business consulting and software development services that are to be consumed in future over a three-year period. Service credits were recognized as prepaid expenses in accordance with ASC 718. See Note 5 - Prepaid Expenses.

On August 12, 2024, the Company issued 45,344 shares of common stock with the intention to settle accrued liabilities. As the Company did not reach a contractual agreement to settle the outstanding amount, the Company recognized a note receivable as contra-equity in return for shares of common stock issued.

On August 12, 2024, pursuant to the terms of the Consulting Agreement (as defined below) the Company issued 22,344 shares of common stock. These shares are subject to a 6-month lock-up restriction. The restriction is a characteristic of the security, and therefore considered in the fair value measurements. The shares were measured at fair value, considering the effect of the post-vesting restrictions via accounting for DLOM, determined by Finnerty model. The shares were fully vested upon issuance and were valued at $129. See Note 10: Equity – f. Consulting Agreement

On August 12, 2024, pursuant to the terms of the restricted share units (the "RSUs"), all issued and outstanding RSUs of the Company vested and the Company issued 59,264 shares of common stock and recognized $410 of share-based compensation expense. See Note 10: Equity - j. Restricted Share Units

On August 26, 2024, the Company issued 75,375 shares of common to WaveDancer's pre-Merger shareholders for stockholders of the assumed convertible instruments of WaveDancer. See Note 4 - The Merger.

On September 9, 2024, the Company issued 10,588 shares of common stock with a fair value of $39 as a payment in settlement of the outstanding amounts due to its service provider. As a result of the transaction, management settled $45 of accrued liabilities. The Company realized $6 gain on extinguishment of liabilities.

On September 19, 2024, certain warrant holders of Tranche A warrants (the "Tranche A warrants"), Series A warrants (the "Series A warrants") and, Series D warrants (the "Series D warrants") exercised such warrants to purchase 435,174 shares of common stock for proceeds of $32 for the Company.

On September 27, 2024, the Company issued 557,885 shares of common stock to its Executive Chairman, pursuant to the terms of the employment agreement by and between the Company and its Executive Chairman. The shares granted are subject to vesting conditions having been valued at $1,674 using a grant date price of $3.00 per share. Under the terms of the restricted stock agreement by and between the Company and its Executive Chairman, one-half of the shares shall vest on each of the 6 and 12-month anniversaries of the grant date, provided that the Executive Chairman has not incurred a termination of service prior to the applicable vesting date. As of September 30, 2024, the vesting conditions were not met.

b. Warrants

The following table summarizes the Company's warrant activity for the nine months ended September 30, 2024:

	Number of Warrants	Weighted Average Exercise Price	Weighted Average Remaining Life
Outstanding warrants, January 1, 2024	193,433	$ 23.46	2.74
Series C Warrants (Note 10.a)	86,820	24.62	
Broker warrants for Series C Offering (Note 10.a)	4,163	12.31	
PIPE Warrants (Note 10.a)	823,529	6.83	
WaveDancer legacy warrants (Note 4)	76,098	94.69	
Outstanding warrants, September 30, 2024	1,184,043	$ 16.51	4.06

For the nine months period ended September 30, 2024, warrants to purchase up to 86,820 shares of common stock were issued pursuant to Series C Offering. Each Series C Warrant entitles the holder to acquire one share of common stock at a price of $24.62 per share for a period of three years from the date of issuance. In connection with the Series C Offering, the Company issued broker warrants to the associated broker to purchase up to 4,163 shares of common stock at an exercise price of $12.31 per share for a period of three years from the date of issuance. The warrants were determined to be a freestanding equity instrument.

On August 12, 2024, PIPE Warrants to purchase up to 823,529 shares of common stock were issued. Each PIPE Warrant entitles the holder to acquire one share of common stock at an exercise price of $6.83 per share for a period of five years from the date of issuance. The PIPE Warrants were determined to be a freestanding equity instrument. See Note 10: Equity - a. Shares.

On August 12, 2024, the Company assumed warrants to issue up to 76,098 shares of common stock upon consummation of the Merger. See Note 4 - The Merger.

c. Warrants exercisable for little or no consideration

Warrants exercisable for little or no consideration are fully vested warrants that allows the holders to acquire a specified number of the issuer's shares at a nominal exercise price. The following table summarizes the Company's penny warrant activity for the nine months ended September 30, 2024:

	Number of Warrants	Weighted Average Remaining Life
Outstanding warrants, January 1, 2024	54,782	1.51
Pre-funded warrants (Note 10.a)	504,324	
Series A warrants (Note 10.d)	629,039	
Series D warrants (Note 10.e)	92,798	
Consulting agreement warrants (Note 10.f)	44,932	
Exercised	(435,169)	
Outstanding warrants, September 30, 2024	890,706	3.48

On July 26, 2024, the Company entered into the PIPE and 504,324 Pre-Funded Warrants were issued. Each Pre-Funded Warrant entitles the holder to acquire one share of common stock at a price of $0.001 per share for a period of five years from the date of issue. Pre-Funded Warrants will expire when exercised in full. The Pre-Funded Warrants were determined to be an equity instrument.

On September 19, 2024, certain warrant holders of Tranche A warrants exercised their warrants to purchase an aggregate of 13,852 shares of common stock.

d. Series A warrants

On June 15, 2023, the Company granted Series A warrants to purchase up to an aggregate 629,039 shares of common stock to certain investors at a nominal exercise price for a period of five years from the issuance date. The exercisability of the Series A warrants was contingent upon meeting certain market capitalization or occurrence of a liquidity event. Upon the consummation of the Merger on August 12, 2024, the Series A warrants became fully vested. The Series A warrants were determined to be an equity instrument. The Company determined the fair value of the Series A warrants to be nominal based on the stock price established at grant date. On September 19, 2024, certain warrant holders of Series A warrants exercised their Series A warrants to purchase an aggregate of 359,451 shares of common stock.

e. Series D warrants

On June 7, 2024, the Company issued Series D warrants to purchase up to an aggregate 92,799 shares of common stock to certain investors at a nominal exercise price for a period of five years from the issuance date. The exercisability of the Series D warrants was contingent upon meeting certain market capitalization or the occurrence of a liquidity event. Upon the consummation of the Merger on August 12, 2024, the Series D warrants became fully vested. The Series D warrants were determined to be an equity instrument. The Company determined the fair value of the Series D warrants of $610 based on a stock price established on the grant date. On September 19, 2024, certain warrant holders of Series D warrants exercised their Series D warrants to purchase an aggregate of 61,866 shares of common stock.

f. Consulting agreement

On March 15, 2024, the Company entered into a consulting agreement (the "Consulting Agreement") with a certain consultant of the company. Under the Consulting Agreement, the consultant will provide consulting services in return for Series A performance warrants (the "Series A performance warrants") to purchase up to 44,932 shares of common stock and 20,313 shares of common stock issued immediately upon execution of the agreement, and24,375 shares of common stock to be issued in12 equal installments at the end of each calendar month.

The Series A performance warrants are exercisable for nominal exercise price and expire onJune 15, 2028. The exercisability of the Series A performance warrants was contingent upon meeting certain market capitalization or the occurrence of a liquidity event. Upon the consummation of the Merger on August 12, 2024, the Series A performance warrants became fully vested. The Company determined the fair value of the Series A performance warrants of $80 based on a stock price established on the grant date.

As of September 30, 2024, the Company issued 22,344 shares of common stock pursuant to the Consulting Agreement. The shares are fully vested upon issuance and have been valued at $129.

g. Employees stock option plan

A summary of option activity under the Company's equity incentive plan as ofSeptember 30, 2024, and changes during the period then ended is presented below.

	Number of Stock Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding Options, December 31, 2023	134,333	$ 20.77	6.18	$ -
Options granted	335,728	5.18	-	-
WaveDancer options	113,522	82.25	-	-
Outstanding Options, September 30, 2024	583,583	$ 23.77	3.43	$ -

The share-based compensation expense related to options for thethree and nine months ended September 30, 2024, was $1,296 and $1,413, respectively, and $78 and $226 for the three and nine months ended September 30, 2023, respectively. The fair value of options granted for thenine months ended September 30, 2024 and 2023, was $1,600 and $nil, respectively. The intrinsic value of the options outstanding as ofSeptember 30, 2024, is $nil (December 31, 2023: $nil).

The fair value of each option award is estimated on the date of grant using a Black Scholes pricing option valuation model that uses the assumptions noted in the following table.

	2024
Stock price	$6.91
Risk free rate	3.75% - 3.82%
Dividend yield	0%
Expected volatility	86.50% - 87.60%
Expected term (in years)	3.91 - 4.93

A summary of the Company’s nonvested options as ofSeptember 30, 2024, and changes during the nine months period ended, is presented below.

	Number of Stock Options	Weighted Average Grant-Date Fair Value
Non-Vested Options, December 31, 2023	90,988	$ 4.77
Options granted	335,728	4.77
Options vested	(185,704)	4.94
Non-Vested Options, September 30, 2024	241,012	$ 4.63

As of September 30, 2024, there was $621 of total unrecognized compensation cost related to nonvested options granted under the Plan.

On August 12, 2024, the Company assumed 113,522 stock options upon the consummation of the Merger. See Note4 - The Merger. None of WaveDancer’s employees continued employment with the Company or provided employment services post-Merger. Consequently, these stock options are subject to cancellation as the employment with WaveDancer was effectively terminated.

h. Management options 2024

On April 2, 2024, the Company issued stock options to its officers to purchase up to an aggregate of 19,344 shares of common stock at an exercise price of $5.18 with a term of five years, where the exercise price is equal to a 25% discount to the issue price of Private Firefly's equity securities in an initial public offering (an "IPO Transaction"), that results in the Company's shares of common stock being listed on the Nasdaq Stock Market or another recognized securities exchange or traded on the over-the-counter market. Options to purchase up to 11,024 shares of common stock shall vest in 36 equal installments at the end of each calendar month over a period of three years beginning March 1, 2024. Options to purchase up to 8,320 shares of common stock shall vest in 36 equal installments at the end of each calendar month over a period of three years beginning on the date of the Merger. The vesting of management options was contingent upon the occurrence of a liquidity event. Upon the consummation of the Merger on August 12, 2024, the options were considered granted in accordance with ASC 718. The exercise price was determined to be $5.18 per share. The Company determined the fair value of the options of $99 using the Black-Scholes pricing model. The Company used graded-vesting method for the recognition of share-based compensation related to these management options.

i. Management options 2023

On July 8, 2023, the Company issued stock options to its employees, officers, directors and consultants to purchase up to an aggregate of 327,421 shares of common stock at an exercise price of $5.18 with a term of five years, where the exercise price is equal to a 25% discount to the issue price of the Company's equity securities in an initial public offering , that results in the Company's shares of common stock being listed on the Nasdaq Stock Market or another recognized securities exchange or traded on the over-the-counter market. Options to purchase up to 37,709 shares of common stock shall vest immediately with the remaining options vesting in 36 equal installments at the end of each calendar month over a period of three years from July 8, 2023. The vesting of management options was contingent upon the occurrence of a liquidity event. Upon the consummation of the Merger on August 12, 2024, the options were considered granted in accordance with ASC 718. The exercise price was determined to be $5.18 per share. 11,037 options were forfeited before the Merger. The Company determined the fair value of the options of $1,501 using the Black-Scholes pricing model. The Company used graded-vesting method for the recognition of share-based compensation related to management options.

j. Restricted share units ("RSUs")

On July 8, 2023, the Company granted RSUs to certain management and directors. The vesting of the RSUs was contingent upon a liquidity event that results in the Company's shares of common stock being listed on the Nasdaq Stock Market or another recognized securities exchange or traded on the over-the-counter market.

Upon the consummation of the Merger on August 12, 2024, the RSUs vested and the Company issued 59,264 shares of common stock and recognized $410 of share-based compensation expense.

The following table presents share-based compensation expense by instrument type:

	Three months ended September 30,		Nine months ended September 30,	
	2024	2023	2024	2023
Employees stock options	$ 1,296	$ 78	$ 1,413	$ 226
Restricted share units	410	-	410	-
Series D warrants	610	-	610	-
Total	$ 2,316	$ 78	$ 2,433	$ 226

NOTE 11: BASIC AND DILUTED NET LOSS PER SHARE

Basic net loss per common share is computed by dividing net loss attributable to holders of common stock by the weighted average number of shares of common stock outstanding during the period. Weighted average number of shares of common stock outstanding during the period computation includes shares of common stock to be contractually issued as of the period end date and warrants exercisable for little or no consideration in relation to the share price. Shares of common stock that were issued and are subject to vesting conditions are not considered outstanding during the requisite service period. The determination of whether shares of common stock that were issued in return for a note receivable are considered outstanding depends on whether the entity has the ability and intent to cancel the shares if the note receivable is not repaid.

Diluted net loss per common share is computed by giving effect to all potential dilutive shares of common stock that were outstanding during the period when the effect is dilutive. As at September 30, 2024, potential dilutive shares of common stock consist of shares issuable upon exercise of stock options and warrantsNo adjustments have been made to the weighted average outstanding shares of common stock figures for the nine months ended September 30, 2024, or 2023, as the assumed conversion would be anti-dilutive.

NOTE 12: RELATED PARTY TRANSACTIONS

The Company incurred $173 and $418 in officers' consulting fees recorded in general and administration expenses for thethree and nine months ended September 30, 2024, respectively and $27 and $250 for the three and nine months ended September 30, 2023, respectively.

On June 7, 2024, the Company issued Series D warrants to purchase up to an aggregate92,799 shares of common stock to certain investors at a nominal exercise price for a period of five years from the issuance date (Note 10: Equity - e. Series D warrants). 30,933 of Series D warrants were granted to a company wholly owned byone of the Company's directors. The fair value of the warrants was $203. On September 19, 2024, the director exercised the warrants to purchase30,933 shares of common stock.

On July 27, 2024, the Company entered into a strategic investment agreement with a company wholly owned byone of the Company's directors. Pursuant to agreement, the Company agreed to issue 140,749 shares of common stock. The shares were issued onAugust 12, 2024. The shares were fully vested upon issuance and were valued at $745. Pursuant to the terms of the agreement, the Company was issued $950 of service credits that are to be consumed in future over athree-year period. As of the period ended September 30, 2024, $677 of related prepaid expenses were outstanding.

On August 8, 2024, the Company completed the closing of a $209 secured promissory notes with its related parties. The promissory notes were issued with a discount of $11 and the Company received gross proceeds of $198. The promissory notes had an annual interest rate of18% to be paid monthly. The principal amount of $209 matured and become due and payable on August 23, 2024. Promissory notes were paid in full on the maturity date.

On August 12, 2024, all issued and outstanding RSUs vested and the Company issued59,264 shares of common stock to related parties and recognized $410 of share-based compensation expense. See Note 10: Equity – j. Restricted Share Units.

As at September 30, 2024, $175 (2023: $175) of loans were outstanding and included in trade payables. These notes, provided by a former director, are non-interest bearing with no stated terms of repayment.

NOTE 13: REVENUE, NET

	Three months ended September 30,		Nine months ended September 30,	
	2024	2023	2024	2023
Type of goods and services				
Service	$ 21	$ 3	$ 28	$ 459
Rentals	12	20	27	-
Other miscellaneous products	-	-	-	20
Total	$ 33	$ 23	$ 55	$ 479
Timing of recognition of revenue				
Point in time	21	-	28	-
Over time	12	23	27	479
Total	$ 33	$ 23	$ 55	$ 479

NOTE 14: RESEARCH AND DEVELOPMENT EXPENSES

	Three months ended September 30,		Nine months ended September 30,	
	2024	2023	2024	2023
Salary and employee benefits	$ 711	$ 317	$ 1,154	$ 571
Consultants and subcontractors	100	25	177	48
Depreciation	4	-	8	-
Clinical trials	-	-	-	19
Expenses - other	63	50	178	74
Total	$ 878	$ 392	$ 1,517	$ 712

NOTE 15: SELLING AND MARKETING EXPENSES

	Three months ended September 30,		Nine months ended September 30,	
	2024	2023	2024	2023
Salary and employee benefits	$ 247	$ 91	$ 594	$ 380
Professional fees	140	1	282	6
Travel	18	2	64	12
Other	26	1	33	1
Total	$ 431	$ 95	$ 973	$ 399

NOTE 16: GENERAL AND ADMINISTRATION EXPENSES

	Three months ended September 30,		Nine months ended September 30,	
	2024	2023	2024	2023
Salary and employee benefits	$ 1,225	$ (37)	$ 1,486	$ 282
Professional fees	1,609	212	2,431	458
Rent and maintenance	2	7	8	72
Travel expenses	26	-	57	25
Other	130	1	201	42
Total	$ 2,992	$ 183	$ 4,183	$ 879

Report of Independent Registered Public Accounting Firm

Board of Directors and Shareholders
Firefly Neuroscience, Inc.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Firefly Neuroscience, Inc. as of December 31, 2023 and 2022, and the related consolidated statements of operations and comprehensive loss, changes in shareholders' equity (deficit), and cash flows for each of the two years in the period ended December 31, 2023, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of Firefly Neuroscience, Inc. as of December 31, 2023 and 2022, and the consolidated results of its operations and its cash flows for each of the two years in the period ended December 31, 2023, in conformity with accounting principles generally accepted in the United States of America.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the entity will continue as a going concern. As discussed in Note 2 of the notes to consolidated financial statements, the entity has suffered recurring losses from operations and negative cash flow from operating activities that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the entity's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to Firefly Neuroscience, Inc. in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Firefly Neuroscience, Inc. is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Turner, Stone & Company, L.L.P.

We have served as Firefly Neuroscience, Inc.'s auditor since 2023.

Dallas, Texas
May 22, 2024

Turner, Stone & Company, L.L.P.
Accountants and Consultants

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FIREFLY NEUROSCIENCE, INC.
CONSOLIDATED BALANCE SHEETS
AS OF DECEMBER 31, 2023 AND 2022
(IN THOUSANDS, EXCEPT SHARE DATA)

	December 31, 2023	2022
ASSETS		
Current assets		
Cash	$ 2,143	$ 58
Other receivables	84	19
Prepaid expenses	28	6
Total current assets	**2,255**	**83**
Non current assets		
Long term deposits	-	52
Intangible assets, net	386	-
Total non current assets	**386**	**52**
TOTAL ASSETS	**$ 2,641**	**$ 135**
LIABILITIES		
Current liabilities		
Trade payables	$ 455	$ 420
Related party payable	175	177
Accrued liabilities	1,902	855
Deferred revenue	-	909
Total current liabilities	**2,532**	**2,361**
TOTAL LIABILITIES	**2,532**	**2,361**
COMMITMENTS AND CONTINGENCIES (Note 10)		
SHAREHOLDERS' EQUITY (DEFICIT)		
Preferred shares, $0.00001 par value: 30,000,000 shares authorized at December 31, 2023 and 2022;16,116,957 and no shares issued and outstanding at December 31, 2023 and 2022, respectively	-	-
Common shares, $0.00001 par value: 2,470,000,000 shares authorized at December 31, 2023 and 2022; 35,369,877 and 2,552,744 issued and outstanding at December 31, 2023 and 2022, respectively	-	-
Additional paid-in capital	76,733	71,795
Accumulated deficit	(76,624)	(74,021)
TOTAL SHAREHOLDERS' EQUITY (DEFICIT)	**109**	**(2,226)**
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	**$ 2,641**	**$ 135**

The accompanying notes are an integral part of these consolidated financial statements.

FIREFLY NEUROSCIENCE, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
FOR THE YEARS ENDED DECEMBER 31, 2023 AND 2022
(IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)

	Year ended December 31 2023	2022
REVENUE	$ 498	$ -
OPERATING EXPENSES:		
Research and development expenses	741	1,299
Selling and marketing expenses	639	524
General and administration expenses	2,196	1,542
Impairment loss on equipment	-	79
TOTAL OPERATING EXPENSES	**3,576**	**3,444**
OPERATING LOSS	**(3,078)**	**(3,444)**
OTHER INCOME (EXPENSE)		
Interest, bank fees and loan fees	(18)	(440)
Unrealized gain (loss) on foreign exchange	37	(134)
Loss on extinguishment of debt	-	(59)
Other income (expenses)	457	173
LOSS BEFORE INCOME TAX	**(2,602)**	**(3,904)**
Income tax provision	(1)	-
NET LOSS AND COMPREHENSIVE LOSS	**$ (2,603)**	**$ (3,904)**
BASIC AND DILUTED LOSS PER SHARE	**$ (0.08)**	**$ (2.83)**
WEIGHTED AVERAGE NUMBER OF SHARES OF COMMON STOCK OUTSTANDING, BASIC AND DILUTED	**31,089,132**	**1,380,051**

The accompanying notes are an integral part of these consolidated financial statements.

FIREFLY NEUROSCIENCE, INC.
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY (DEFICIT)
FOR THE YEARS ENDED DECEMBER 31, 2023 AND 2022
(IN THOUSANDS, EXCEPT SHARE DATA)

	Preferred stock			Common stock					
	Number of Shares	Number of shares to be issued	Amount	Number of shares	Number of shares to be issued	Amount	Additional paid-in capital	Accumulated deficit	Total Shareholder's equity (deficit)
BALANCE AT DECEMBER 31, 2021	**816,229,456**	**-**	**$ 2,429**	**1,508**	**-**	**$ -**	**$ 61,888**	**$ (67,331)**	**$ (3,014)**
Series A Preferred Stock issued	10,000,000	-	3	-	-	-	37	-	40
Converted shares of common stock	(826,229,456)	-	(2,432)	1,101,764	-		2,432	-	-
Shares of common stock issued	-	-	-	51,282	-	-	250	-	250
Debt conversion	-	-	-	1,394,475	-	-	4,021	-	4,021
Warrants issued	-	-	-	-	-	-	321	-	321
Share-based compensation expense	-	-	-	-	-	-	60	-	60
Stock dividend paid	-	-	-	3,715	-	-	2,786	(2,786)	-
Net loss	-	-	-	-	-	-	-	(3,904)	(3,904)
BALANCE AT DECEMBER 31, 2022	**-**	**-**	**$ -**	**2,552,744**	**-**	**$ -**	**$ 71,795**	**$ (74,021)**	**$ (2,226)**
Common Stock Private Placement	-	-	-	32,536,386	-	-	133	-	133
Series B Preferred Stock offering	14,578,833	(14,578,833)	-	-	14,578,833	-	2,608	-	2,608
Series C Preferred Stock Units offering	1,538,134	-	-	-	-	-	1,902	-	1,902
Share-based expense	-	-	-	284,964	-	-	295	-	295
Share repurchase	-	-	-	(4,217)	-	-	-	-	-
Net loss	-	-	-	-	-	-	-	(2,603)	(2,603)
BALANCE AT DECEMBER 31, 2023	**16,116,967**	**(14,578,833)**	**$ -**	**35,369,877**	**14,578,833**	**$ -**	**$ 76,733**	**$ (76,624)**	**$ 109**

The accompanying notes are an integral part of these consolidated financial statements.

FIREFLY NEUROSCIENCE, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2023 AND 2022
(IN THOUSANDS)

	Year Ended December 31, 2023	2022
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (2,603)	$ (3,904)
Adjustments to reconcile net loss to net cash used in operating activities		
Depreciation and amortization	-	14
Net gain from sale of equipment	-	(87)
Share-based expense	295	60
Non-cash interest on convertible debt	-	460
Loss on extinguishment of debt	-	59
Changes in non-cash operating assets and liabilities:		
Change in other receivables	(65)	27
Change in prepaid expenses	(22)	3
Change in long term deposits	52	9
Change in trade payables	35	(80)
Change in related party payable	(2)	-
Change in accrued liabilities	1,047	97
Change in deferred revenue	(909)	450
Net cash used in operating activities	**(2,172)**	**(2,892)**
CASH FLOWS FROM INVESTING ACTIVITIES:		
Proceeds from sale of equipment	-	262
Product enhancement – intangible assets	(386)	-
Net cash provided by (used in) investing activities	**(386)**	**262**
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from sale of convertible debt	-	1,745
Proceeds from sale of shares	4,643	290
Net cash provided by financing activities	**4,643**	**2,035**
INCREASE (DECREASE) IN CASH	**2,085**	**(595)**
BALANCE OF CASH AT THE BEGINNING OF YEAR	**58**	**653**
BALANCE OF CASH AT THE END OF YEAR	**2,143**	**58**
Supplemental cash flow information		
Cash paid for interest	-	-
Cash paid for income taxes	-	-
Debt converted to equity	-	(4,021)

The accompanying notes are an integral part of these consolidated financial statements.

NOTE 1: BUSINESS DESCRIPTION

Nature of organization and business

Firefly Neuroscience, Inc. (the "Company") and its wholly owned subsidiaries Firefly Neuroscience Ltd. (formerly known as Elminda Ltd.), Elminda 2022 Inc., a Delaware corporation (formerly known as Elminda Inc.). and Elminda Canada Inc., a Canadian corporation, are engaged in the development, marketing and distribution of medical devices and technology allowing high resolution visualization and evaluation of the complex neuro-physiological interconnections of the human brain.

Firefly Neuroscience Ltd. was initially incorporated and commenced its operations as a development company in 2006 under the laws of the State of Israel, and in May 2014, initiated its USA marketing and distribution activity through Elminda 2022 Inc.

In July 2014, the U.S. Food and Drug Administration ("FDA") cleared Firefly Neuroscience Ltd. Brain Network Analytics' (BNA™) product for marketing in the USA. On September 11, 2014, the Company received the Conformity European ("CE") approval for BNA™ allowing use in Europe.

Reorganization

Name change and corporate restructure

Elminda Inc. was incorporated in the State of Delaware on April 21, 2022.

On July 5, 2022, Elminda Ltd. became a subsidiary of Elminda Inc. via a share exchange agreement wherein Elminda Inc. issued shares to shareholders of Elminda Ltd. against shares of Elminda Ltd. (the "Flip Transaction").

On September 15, 2022 and October 24, 2022 management changed the name from Elminda Inc. and Elminda Ltd. to Firefly Neuroscience Inc. and Firefly Neuroscience Ltd., respectively.

Shareholder Restructuring

On January 27, 2022, holders of shares of outstanding Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock, Series D Preferred Stock, and Series E Preferred Stock of Firefly Neuroscience Ltd. voted to convert their shares of preferred stock into shares of common stock of Firefly Neuroscience Ltd. Upon completion of the transaction, Firefly Neuroscience Ltd. had 1,085,605 shares of common stock and 3,198,421 shares of Series A Preferred Stock outstanding.

On May 24, 2022, holders of the majority of shares of common stock of Firefly Neuroscience Ltd. voted to exchange their shares on a 1-1 basis for shares in the Company.

In connection with the Flip Transaction, on July 5, 2022, (a) Firefly Neuroscience, Inc. became an issuer of (i) 1,085,605 common shares, (ii) 3,198,421 Series A preferred shares and (c) 3,715 shares of common share dividends. The original shareholders of Firefly Neuroscience Ltd. remained in control of the new group and the Company.

On November 23, 2022, the Company completed a reverse share split on a ratio of 1:750. These consolidated financial statements and all financial notes referencing shares of common stock, stock dividends, stock options and their associated prices have been retroactively adjusted as to show the effect of the 1:750 reverse stock split.

Merger agreement

On November 16, 2023, WaveDancer, Inc. ("WaveDancer") (NASDAQ: WAVD) announced that it has entered into a definitive merger agreement (the "Merger Agreement") with the Company, to combine the companies in an all-stock transaction. The combined company will focus on continuing to develop and commercialize the Company's Artificial Intelligence driven BNA™ platform, which was previously cleared by the FDA. Upon closing, the combined company is expected to operate under the name Firefly Neuroscience, Inc., and trade on the Nasdaq Capital Market.

Under the terms of the Merger Agreement, each share of the Company's shares of common stock issued and outstanding will be converted into common shares of WaveDancer based on a fixed exchange ratio, with any resulting fractional shares to be rounded to the nearest whole share. At the effective time of the merger, securityholders of Firefly will own approximately 92% of the combined company and securityholders of WaveDancer will own approximately 8% of the combined company, on a fully diluted basis. WaveDancer's ownership may increase if it raises capital in excess of the minimum detailed in the Merger Agreement. The closing of the transaction is subject to customary closing conditions, including the effectiveness of the registration statement on Form S-4 to be filed by WaveDancer, and the receipt of required shareholder approvals from the Company's and WaveDancer shareholders. Following the merger, WaveDancer, Inc. will be renamed "Firefly Neuroscience, Inc." and the corporate headquarters will be located in Toronto, Ontario. The transaction is expected to be completed in 2024.

Israeli/Palestinian conflict

On October 7, 2023, an armed Israeli/Palestinian conflict broke out. As the Israeli/Palestinian conflict in Gaza develops, it could have an adverse impact on regional and global markets. While our operations are not directly impacted by these events, the duration of hostilities, imposition of sanctions and related events (including cyberattacks), among others, cannot be predicted. As a result, those events present uncertainty and risk. To date, conflict in Gaza has not had a material impact on the Company's business.

NOTE 2: GOING CONCERN

As of December 31, 2023, the Company had an accumulated deficit of $76,624 (December 31, 2022: $74,021) and negative cash flow from operating activities for the year ended December 31, 2023 of $2,172 (for the year ended December 31, 2022: $2,892). Further, the Company has recurring losses with minimal revenue from operations. While the Company is attempting to raise funds for commercialization, its monthly cash requirements during the year ended December 31, 2023 have been met through issuance of shares to new and existing shareholders. These conditions raise substantial doubt about the Company's ability to continue as a going concern for a period of twelve months from the date these consolidated financial statements were issued. Therefore, the Companymay be unable to realize its assets and discharge its liabilities in normal course of business. To strengthen the Company's liquidity in the foreseeable future, the Company has taken the following measures:

(i) Negotiating further funding with existing and new investors to raise additional capital;
(ii) Taking various cost control measures to reduce the operational cash burn; and
(iii) Commercializing product to generate recurring sales.

Management of the Company has a reasonable expectation that the Company can continue raising additional equity capital to continue in operational existence for the foreseeable future.

NOTE 3: BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with Generally Acceptance Accounting Principles in the United States of America ("U.S. GAAP").

a. Principles of consolidation

These consolidated financial statements include the financial information of the Company and its subsidiaries. The Company consolidates legal entities in which it holds a controlling financial interest. The Company has a two-tier consolidation model: one focused on voting rights (the voting interest model) and thesecond focused on a qualitative analysis of power over significant activities and exposure to potentially significant losses or benefits (the variable interest model). All entities are first evaluated to determine whether they are variable interest entities ("VIE"). If an entity is determined not to be a VIE, it is assessed on the basis of voting and other decision-making rights under the voting interest model. The accounts of the subsidiaries are prepared for the same reporting period using consistent accounting policies. All intercompany balances and transactions were eliminated on consolidation.

b. Revision of Prior Period Financial Statements

In connection with the preparation of the consolidated financial statements for year endedDecember 31, 2023, we identified an immaterial error related to certain general and administration and research and development expenses in the consolidated financial statements for year ended December 31, 2022. In accordance with SAB No. 99, "Materiality," and SAB No. 108, "Considering the Effects of Prior Year Misstatements when Quantifying Misstatements in Current Year Financial Statements," we evaluated the error and determined that the related impact was not material to our consolidated financial statements for any prior annual or interim period, but that correcting the cumulative impact of the error would be significant to our results of operations for the year ended December 31, 2023. Accordingly, we have revised previously reported financial information for such immaterial error. A summary of revisions to certain previously reported financial information presented herein for comparative purposes is included in Note 20.

c. Use of estimates in the preparation of consolidated financial statements

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and reported amounts of revenues and expenses during the reported periods. Actual results could differ from those estimates.

i) Share based payments
In calculating share-based compensation expense, key estimates are used such as, the stock price of the Company, the rate of forfeiture of options granted, the expected life of the option, the volatility of the Company's stock price, and the risk-free interest rate.

ii) Warrants
In calculating the fair value of warrants issued, the Company includes key estimates such as the stock price of the Company, the expected life of the warrant, the volatility of the Company's stock price, and the risk-free interest rate.

d. Functional currency and foreign currency translations

The currency of the primary economic environment in which the operations of the Company is conducted is the U.S. dollar ("$" or "Dollar"). All of the Company's revenues and finance are denominated in U.S dollars. The reporting and the functional currency of the Company is the U.S Dollar.

The dollar figures are determined as follows: transactions and balances originally denominated in dollars are presented at their original amounts. Balances in non-dollar currencies are translated into dollars using historical and current exchange rates for non-monetary and monetary balances, respectively.

e. Fair value measurement

The Company uses a three-tier fair value hierarchy to classify and disclose all assets and liabilities measured at fair value on a recurring basis, as well as assets and liabilities measured at fair value on a non-recurring basis, in periods subsequent to their initial measurement. The hierarchy requires the Company to use observable inputs when available, and to minimize the use of unobservable inputs, when determining fair value. The three tiers are defined as follows:

- Level 1—Observable inputs that reflect quoted market prices (unadjusted) for identical assets or liabilities in active markets;
- Level 2—Observable inputs other than quoted prices in active markets that are observable either directly or indirectly in the marketplace for identical or similar assets and liabilities; and
- Level 3—Unobservable inputs that are supported by little or no market data, which require the Company to develop its own assumptions.

Fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or a liability. The carrying amounts of cash and equivalents, accounts receivable, other receivables, long-term deposits, trade payables, balances to and from related party and convertible notes approximate their fair value due to the short-term maturity of such instruments. It is management's opinion that the Company is not exposed to any significant market or credit risks arising from these financial instruments.

f. Fair value of financial instruments

Cash, other receivables, trade payables, related party payable and accrued liabilities are carried at amortized cost, which management believes approximates their respective fair value due to the short-term nature of these instruments.

g. Related party

Parties are related if one party has the ability, directly or indirectly, to control the other party or exercise significant influence over the other party in making financial and operating decisions. Parties are also considered to be related if they are subject to common control or common significant influence, and related parties may be individuals or corporate entities. A transaction is a related party transaction when there is a transfer of resources or obligations between related parties. The Company has disclosed its transactions with related parties.

h. Cash

The Company considers all highly liquid investments, which include short-term bank deposits that are not restricted as to withdrawal or use and the period to maturity of which did not exceed three months at time of investment, to be cash.

i. Other receivables

Other receivables are recorded at net realizable value, which includes an allowance for expected credit losses. The allowance for expected credit losses ("allowance for doubtful receivables") is based on the Company's assessment of collectability of customer accounts. The Company regularly reviews the allowance by considering factors such as historical experience, credit quality, the age of the accounts receivable balances, and current economic conditions that may affect a customer's ability to pay.

j. Contingent liabilities

Certain conditions may exist as of the date the consolidated financial statements are issued, that may result in a loss to the Company but that will only be resolved whenone or more future events occur or fail to occur. Such losses are disclosed as contingent liabilities if it is not both probable and reasonably estimable. The Company's management assesses such contingent liabilities and estimated legal fees, if any. Such assessment inherently involves an exercise of judgment. In assessing loss contingencies related to legal proceedings that are pending against the Company or unasserted claims that may result in such proceedings, the Company's management evaluates the perceived merits of any legal proceedings or unasserted claims as well as the perceived merits of the amount of relief sought or expected to be sought.

k. Warrants

The Company accounts for the warrants as either equity-classified or liability-classified instruments based on an assessment of the specific terms of the warrants and the applicable authoritative guidance in Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 480, "Distinguishing Liabilities from Equity" ("ASC 480") ASC 815, "Derivatives and Hedging" ("ASC 815"), and ASC 718, "Compensation—Stock Compensation" ("ASC 718"). The assessment considers whether they are freestanding financial instruments pursuant to ASC 480, meet the definition of a liability pursuant to ASC 480 or meet all of the requirements for equity classification under ASC 815, including whether the warrants are indexed to the Company's own shares of common stock and whether the holders of the warrants could potentially require "net cash settlement" in a circumstance outside of the Company's control, among other conditions for equity classification. This assessment, which requires the use of professional judgment, is conducted at the time of issuance of the warrants and as of each subsequent reporting date while the warrants are outstanding. For issued or modified warrants and that meet all of the criteria for equity classification, such warrants are required to be recorded as a component of additional paid-in capital at the time of issuance. For issued or modified warrants that do not meet all the criteria for equity classification, such warrants are required to be recorded at their initial fair value on the date of issuance, and each balance sheet date thereafter. Changes in the estimated fair value of liability-classified warrants are recognized as a non-cash gain or loss on the statements of operations.

l. Stock options

The Company grants stock options to certain employees and directors through an established stock option plan. All stock option grants or changes to existing grants, are subject to board of directors' approval. For employees and directors, the fair value of the award is measured on the grant date. For non-employees, as per ASC 718, remeasurement is not required. The fair value amount is then recognized over the period during which services are required to be provided in exchange for the award, usually the vesting period. Determining the appropriate fair value model and the related assumptions requires judgment. During the year ended December 31, 2023 and 2022, the fair value of each option grant was estimated using a Black-Scholes option-pricing model.

m. Revenue recognition

Revenue is recognized in accordance with ASC 606, "Revenue from Contracts with Customers" ("ASC 606"). The Company performs the following five steps:

(i) identify the contract(s) with a customer,

(ii) identify the performance obligations in the contract,

(iii) determine the transaction price,

(iv) allocate the transaction price to the performance obligations in the contract, and

(v) recognize revenue when (or as) the entity satisfies a performance obligation.

The Company applies this five-step model to arrangements that meet the definition of a contract under ASC 606, including when it is probable that the entity will collect the consideration it is entitled to in exchange for the goods or services it transfers to the customer. At contract inception, once the contract is determined to be within the scope of ASC 606, the Company evaluates the goods or services promised within each contract, related performance obligation and assesses whether each promised good or service is distinct. The Company recognizes as revenue, the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied at a point in time.

The Company's revenues are measured based on the consideration specified in the contract with each customer, net of any sales incentives and taxes collected from customers that are remitted to government authorities. For multiple-element arrangements, revenue is allocated to each performance obligation based on its relative standalone selling price. Standalone selling prices are based on observable prices at which the Company separately sells the products or services. The Company regularly reviews standalone selling prices and updates these estimates, as necessary.

n. Deferred revenue

Deferred revenue consists of payments received from customers in advance of satisfying a performance obligation identified in accordance with ASC 606. The change in the deferred revenue balance for the years ended December 31, 2023, and 2022 was driven by payments from customers in advance of satisfying the performance obligations, offset by revenue recognized as performance obligations were completed.

o. Research and development expenses

Research and development expenses are expensed as incurred and consist primarily of personnel, facilities, equipment and supplies related to the Company's research and development activities.

p. Software development costs

The Company capitalizes the cost of developing internal-use software, consisting primarily of personnel, facilities, equipment and supplies and third parties who devote time to their respective projects. Internal-use software costs are capitalized during the application development stage – when the research stage is complete, and management has committed to a project to develop software that will be used for its intended purpose. Any costs incurred during subsequent efforts to significantly upgrade and enhance the functionality of the software are also capitalized. Capitalized software costs are included in intangible assets, net on the consolidated balance sheets. Amortization of internal-use software costs are recorded on a straight-line basis over their estimated useful life and begin once the project is substantially complete and the software is ready for its intended purpose.

q. Income taxes

Income taxes are accounted for using the asset/liability method. Under this method, deferred tax assets and liabilities are determined based on differences between financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that are expected to be in effect when the differences are expected to reverse. In estimating future tax consequences, all expected future events are considered other than enactment of changes in the tax law or rates.

The Company adopted ASC 740 "Income Taxes" ("ASC 740"), which addresses the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the consolidated financial statements. Under ASC 740, the Company may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position.

r. Leases

At the inception of the contract, the Company assesses whether the contract contains a lease in accordance with ASU 2016-02, "Leases" ("ASC 842"). The Company determines whether an arrangement is a lease by establishing if the contract conveys the right to control the use of an identified asset, for a period of time in exchange for consideration. Leases are classified either as operating lease or finance lease. The Company elects not to apply the recognition requirements of ASC 842 to short-term leases. Short term leases are contracts that have a lease term of 12 months or less and does not include an option to purchase the underlying asset that the lessee is reasonably certain to exercise. The Company does not have any lease with a lease term longer than 12 months.

s. Employee benefits

Short-term employee benefits are benefits for which full settlement is expected withintwelve months of the end of the financial year in which the members of staff rendered the corresponding services. These benefits include, paid annual leave, paid sick leave, health and governmental social security contributions which are expensed as the services are rendered. A liability for a cash bonus or plan profit-sharing is recognized when the Company has a legal or implied obligation to make such payments because of past services rendered by a member of staff, and it is possible to make a reasonable estimate of the amount.

For post-employment the Company has a defined contribution plan pursuant to section 14 to the Israeli Severance Compensation Act, 1963 under which the Company pays fixed contributions and will have no legal or constructive obligation to pay further contributions if the fund doesnot hold enough to pay all employee benefits relating to employee service in the current and prior periods. Contributions to the defined contribution plan in respect of severance or retirement pay are recognized as an expense when contributed monthly, concurrently with performance of the employee's services.

t. Segment reporting

Operating segments are defined as components of an enterprise engaging in business activities for which discrete financial information is available and regularly reviewed by the chief operating decision maker in deciding how to allocate resources and in assessing performance. The Company operates and manages its business as one operating segment.

u. Geographic areas

The Company has operations in Canada, the United States of America and Israel. The revenues and non-current assets of the Company are generated and located in the following locations:

Geographic areas	Revenue 2023	Revenue 2022	Non-current assets 2023	Non-current assets 2022
Canada	-	-	-	-
United States of America	478	-	-	-
Israel	20	-	386	52

v. Recent accounting pronouncements

In December 2023, the FASB issued Accounting Standards Update ("ASU")2023-09 "Income Taxes (Topics 740): Improvements to Income Tax Disclosures" to expand the disclosure requirements for income taxes, specifically related to the rate reconciliation and income taxes paid. ASU 2023-09 is effective for annual periods beginning January 1, 2025, with early adoption permitted. The Company hasnot adopted this standard early and is currently evaluating the potential effect that the updated standard will have on its consolidated financial statements disclosures.

In November 2023, the FASB issued ASU 2023-07, "Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures" which expands annual and interim disclosure requirements for reportable segments, primarily through enhanced disclosures about significant segment expenses.

The expanded annual disclosures are effective for the Company's year endingDecember 31, 2024, and the expanded interim disclosures are effective in 2025 and will be applied retrospectively to all prior periods presented.

The Company is currently evaluating the impact that ASU2023-07 will have on its consolidated financial statements.

NOTE 4: OTHER RECEIVABLES

Detail of other receivables balance is as follows:

	December 31	
	2023	2022
Other receivables	$ 196	$ 131
Allowance for doubtful receivables	(112)	(112)
Total	**$ 84**	$ 19

NOTE 5: LONG TERM DEPOSITS

Long term deposits consisted of rental deposits for month-to-month shared office lease. The balances as ofDecember 31, 2023 and 2022 were $nil and $52, respectively.

NOTE 6: INTANGIBLE ASSETS

The following tables summarize the composition of intangible assets as ofDecember 31, 2023:

	December 31, 2023			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Life
Unamortized intangible assets				
BNA software	$ 386	**$ -**	$ 386	n/a
Total intangible assets	**$ 386**	**$ -**	**$ 386**	

The BNA software enhancement project is in progress and amortization will begin once the project is substantially complete and the software is ready for its intended purpose. The software is expected to be completed by Q3 2024 and have a useful life of five years.

There were no intangible assets as of December 31, 2022.

NOTE 7: CONVERTIBLE NOTES

Windsor Private Capital Ltd. Partnership ("WPC") and Origa Two Holdings Inc ("Origa")

On February 2, 2022, Origa and the Company signed a Side Letter in order to raise additional funds of $1,000 which were to be provided to the Company, as part of the original debt that was issued in 2021. The maturity date of the debentures was also extended toDecember 31, 2022. Two tranches of warrants (Tranche A and B) were also issued (Note 11.d). This amendment and issuance of warrants resulted in the extinguishment of the original debt, and recognition of the amended debt and warrants at their fair value of $1,886 and $478, respectively. The Company recorded a loss on extinguishment of $576 within other income (expense) in the accompanying consolidated statement of operations and comprehensive loss for the year ended December 31, 2022.

On July 4, 2022, the board of directors of the Company agreed to amend the conversion price on the convertible debt from a price of $7.5 to $3 per share. Additionally, Tranche A warrants' exercise price was amended, the Tranche B warrants were cancelled (Note 11.d) and the expiration date of all remaining warrants were amended to 3 years from the date of amendment. This resulted in the debt being extinguished, and recognition of the amended convertible debt and Tranche A warrants at $ 2,936 and $551 respectively. The Company recognized a gain on extinguishment of $509 within other income (expense) in the accompanying consolidated statement of operations and comprehensive loss for the year ended December 31, 2022.

Phyto IV Convertible debt issuance

On May 4, 2022, the Company issued a convertible debenture to Phyto IV LP. The principal amount of the note was $150 and the interest on the note accrued at a fixed rate 10% per annum. The interest on the note is accrued semi-annually and shall be payable on the maturity date, calculated on the basis of actual days elapsed. The interest is not payable in cash but added to the principal amount semi-annually on June 30 and December 31 of each year. The loan had a maturity date of one year from issuance with an option to extend maturity by one more year for a 1.5% fee of the then outstanding principal. The notes were convertible at a price of $7.5 per share. The conversion price for the convertible debt was also subject to adjustments resulting from subdivision, consolidation or any stock securities issuance by the way of stock dividend or other distribution. These adjustments were standard anti-dilution adjustments to compensate the warrant holders for any such event such that their rights were on par with other shareholders.

On July 4, 2022, the board of directors agreed to amend the conversion price on the convertible debt and reduce it from a price of $7.5 to $3. This resulted in a fair value change of the conversion option, which resulted in the debt being extinguished resulting in a gain on modification of $8.

On September 30, 2022, the convertible debt including accrued interest was converted to 51,792 reverse stock split adjusted shares of common stock of the Company.

Convertible debt issued to various investors

On July 4, 2022, the Company signed a memorandum of understanding with Origa and WPC to raise funds. As part of the memorandum of understanding, between July 4, 2022, and August 16, 2022, the Company issued convertible debt along with warrants to 13 individual investors on identical terms. The raise resulted in a total issuance of $555. Interest is accrued at a fixed rate of 10% per annum. The interest on the note is accrued semi-annually and shall be payable on the maturity date, calculated based on actual days elapsed. The interest is not payable in cash but added to the principal amount semi-annually on June 30 and December 31 of each year.

Each loan matures after two calendar years from the date of issue and had an option to extend the maturity date by one year at a fee of 1.5% of the then outstanding principal. The notes are also convertible into the common stock of the Company at any time at the option of the holder at a price of $3 per share. The conversion price for the convertible debt was subject to adjustments resulting from subdivision, consolidation or any stock securities issuance by the way of stock dividend or other distribution. These adjustments were standard anti-dilution adjustments to compensate the warrant holders for any such event such that their rights were on par with other shareholders.

On September 30, 2022, the convertible debt including accrued interest was converted to 188,734 shares of common stock of the Company. The share number has been adjusted to reflect the reverse stock split number of shares, which occurred on November 23, 2022.

Conversion option added to director loans

On July 4, 2022, the board of directors added a conversion option to certain directors' loan which were interest-free and payable upon demand. During 2022, the loans were converted to 106,612 shares of common stock.

No convertible debt remained outstanding as of December 31, 2023 and 2022, except for the non-interest bearing director's loan payable on demand (Refer to Note 13).

NOTE 8: DEFERRED REVENUE

In February 2019, the Company executed a $2,500 development and consulting agreement with R.I. Mind Group Ltd. The Company's scope involved creating and developing BNA™ Biomarkers, the Database Infrastructure and the Delivery System (collectively, the "Work Products"), as well as consulting and advising on the development of Work Products or on the proper use of the Work Products. In accordance with the agreement, the Company received an advance of $500 against which the parties agreed to offset invoices amounting to $41.

In August 2022, the Company executed a Memorandum of Understanding ("MoU") with Pasithea Clinics Inc. to enter into an agreement with respect to the marketing and commercialization of the BNA™ System. The Company received an advance of $300. The advance was recognized as deferred revenue in 2022.

In November 2022, the Company executed an additional MoU with Pasithea Clinics Inc. to enter into an agreement with respect to the marketing and commercialization of BNA™ System. The Company received an advance of $150 to offset certain subsequent invoices. The advance was recognized as deferred revenue in 2022.

During the year ended December 31, 2023, the Company determined that it satisfied its performance obligation under both MoUs with Pasithea and recognized $450 of revenue.

Additionally, on February 24, 2023, the agreement with R.I. Mind Group Ltd. expired in accordance with its terms, and, as of December 31, 2023, there are no amounts owed by the Company to R.I. Mind Group Ltd. As the Company did not carry any activity for the purposes of the agreement, the Company recognized $459 of other income.

	December 31	
	2023	2022
Pasithea Clinics Inc.	$ -	$ 450
R.I. Mind Group Ltd	$ -	$ 459
	$ -	$ 909

NOTE 9: LIABILITY FOR EMPLOYEE RIGHTS UPON RETIREMENT

Israeli labor law requires payment of severance pay upon dismissal of an employee or upon termination of employment in certain circumstances. Pursuant to Section 14 of the Israeli Severance Compensation Act, 1963, all the Company's employees are entitled to monthly deposits, at a rate of 8.33% of their monthly salary, made in their name with insurance companies. Payments made in accordance with Section 14 relieve the Company from any future severance payments in respect of those employees. In accordance with the Israeli Severance Compensation Act, payments for 2023 and 2022 were $33 and $51, respectively, which are included in salary and employee benefits within research and development expenses (Note 15).

NOTE 10: COMMITMENTS AND CONTINGENCIES

a. Royalty Commitment - Israeli Innovation Authority ("IIA")

The Company is committed to pay royalties to the State of Israel, through the IIA, on proceeds from sales of products which the IIA participated by way of grants for research and development. No grants were received in 2023 or 2022. Under the terms of the prior IIA grant agreements, the principal value of financial assistance received along with annual interest based on London Inter-Bank Offered Rate ("LIBOR") is repayable in form of royalties based on 3.0% of BNA™ sales. Since the elimination of LIBOR, the Secured Overnight Financing Rate ("SOFR") subsequently replaced LIBOR as a reference rate of interest for IIA grant agreements. In the case of lack of commercial feasibility of the project that was financed using the grant, the Company is not obligated to pay any royalty. The Company cannot reasonably determine the outcome of the commercialization of the technology and considers the liability to be contingent upon generation of sales, hence no liability has been recognized as of December 31, 2023 and 2022. The contingent liability amounts to $5,625 and $5,576 for 2023 and 2022 respectively.

Sale of the technology developed utilizing the grants from IIA is restricted and is subject to IIA's approval.

NOTE 11: EQUITY

a. Shares

On August 17, 2022, the Company closed a securities purchase agreement for the sale of10 million Series A Preferred Stock for gross proceeds of $40. This agreement also entitled the subscriber to 13,333 warrants to purchase shares of common stock of the Company.

On September 15, 2022, the Company closed a securities purchase agreement for the sale of51,282 consolidation adjusted shares of common stock at a consolidation adjusted price of $4.87 per share for aggregate gross proceeds of $250.

On February 16, 2023, the Company sold 32,536,386 shares of common stock at a price per share of $0.0041. The Company received aggregate gross proceeds from the offering of $133.

On February 23, 2023, the Company offered up to 10,799,136 shares of Series B Preferred Stock at $0.1852 per share. On March 15, 2023, the Company increased the offering to up to 14,578,833 shares of Series B Preferred Stock, with the increase being subsequently approved by the board of directors onNovember 15, 2023. As of December 31, 2023, the Company received aggregate gross proceeds from the offering of $2,700. The Company incurred $92 of costs associated with the issuance. Series B Preferred Stock issued are equity classified instruments and are recorded as equity. As of December 31, 2023, 14,578,833 Series B Preferred Stock were subscribed and issued.

On May 1, 2023, the Company granted 284,964 shares of common stock to a related party as a payment for consulting services provided. The shares awarded are under the scope of ASC 718 and were accounted for as equity-classified awards. The shares were measured at fair value on the grant date at $0.0041 per share.

On August 29, 2023, the Company offered up to 7,812,500 units, each unit consisting of one share of Series C Preferred Stock and warrant to purchase one share of common stock, at a combined purchase price of $1.28 per unit. As of December 31, 2023, the Company issued 1,538,134 units and received aggregate gross proceeds of $1,969. The Company incurred $67 of costs associated with the issuance. Series C Preferred Stock issued are equity classified instruments and are recorded as equity. Each warrant entitles the purchasers to acquire one share of common stock at a price of $2.56 per share for a period of three years from the date of issue.

On October 16, 2023, 4,217 shares of common stock were repurchased for a nominal amount and cancelled by the Company.

As of December 31, 2023, mandatory conversion feature of Series B Preferred Stock was triggered, as the proceeds from Series C Preferred Stock Units offering exceeded $1,000. As per the terms of Series B Preferred Stock, all preferred shares were supposed to be automatically converted into one share of common stock. As of December 31, 2023, the 14,578,833 shares of common stock were not issued from an administrative perspective but were considered substantially issued from an accounting perspective.

As of December 31, 2023 and 2022, the Company had the following number of authorized and issued shares:

	December 31			
	2023	2022	2023	2022
	Number of authorized shares	Number of authorized shares	Number of issued shares	Number of issued shares
Shares of common stock	2,470,000,000	2,470,000,000	35,369,877	2,552,744
Series A Preferred Stock			-	-
Series B Preferred Stock	30,000,000	30,000,000	14,578,833	-
Series C Preferred Stock			1,538,134	-

As of December 31, 2023 and 2022, the total number of shares of all classes the Company is authorized to issue is2,500,000,000 shares, consisting of 2,470,000,000 shares of common stock and 30,000,000 preferred shared of all classes.

b. Rights attached to shares

The shares of common stock confer upon their holders' voting rights and the right to participate in shareholders' meetings, the right to share, on a per share pro rata basis, in Bonus Shares or Distributions (as defined in the Company's Certificate of Incorporation) as may be declared by the board of directors and approved by the shareholders, if required (out of funds legally available therefore), and the right to a share in excess assets upon liquidation of the Company – all as set forth in the Company's Certificate of Incorporation and in the Company's Shareholders' Agreement.

The preferred shares confer upon their holders voting rights and the right to participate in shareholders' meetings, the right to share, on a per share pro rata basis, in Bonus Shares or Distributions (as defined in the Company's Certificate of Incorporation) as may be declared by the board of directors and approved by the shareholders, if required (out of funds legally available therefore), on an "as converted" basis, and the right to a share in excess assets upon liquidation of the Company in preference to the shares of common stock. The shares have discretionary dividends and do not have a redemption date.

The Series C Preferred Stock rank, as to the payment of dividends and the distribution of assets upon liquidation, dissolution or winding up of the Company: (a) senior to the shares of common stock, (b) junior to the Series B Preferred Stock, which Series B Preferred Stock include mandatory conversion provisions in the event the Company issues and sells equity securities to investors in an equity financing with total gross proceeds of not less than $1,000 with at least a pre-money valuation of the Company of $18,000, and (c) on parity with all other classes and series of the Company's preferred shares.

Series B Preferred Stock

Optional Conversion

Each share of Series B Preferred Stock is convertible, at the option of the holder thereof, at any time after the date of issuance of such shares into such number of fully paid and nonassessable shares of common stock as is determined by dividing the original issue price of such shares by the conversion price (subject to any adjustments as set forth in the Certificate of Designations of Series B Preferred Stock "Series B Certificate of Designations"), which conversion price shall initially be equal to the original issue price.

Mandatory Conversion

Upon (a) the closing of the sale of shares of common stock to the public in a public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended (the "Securities Act") (or a qualified offering statement under Regulation A under the Securities Act; (b) the date that the Company or a successor to the Company (including, without limitation by way of acquisition of all or substantially all of the Company's assets) becomes an issuer with a class of securities registered under Section 12 or subject to Section 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and is subject to the periodic and current reporting requirements of Section 13 or 15(d) of the Exchange Act or is required to file reports under Regulation A of the Securities Act; (c) the issuance and sale by the Company of its equity securities to investors in an equity financing with total gross proceeds to the Company of not less than $1,000 with at least a minimum pre-money valuation of the Company of $18,000, or (d) the date and time, or the occurrence of an event, by vote or written consent of the holders of at least a majority of the outstanding shares of Series B Preferred Stock, voting as a single class on an as-converted basis, all outstanding shares of Series B Preferred Stock shall automatically be converted into shares of common stock at the applicable ratio set forth in the Series B Certificate of Designations.

Series C Preferred Stock

Optional Conversion

Each share of Series C Preferred Stock is convertible, at the option of the holder thereof, at any time after the date of issuance of such shares into such number of fully paid and nonassessable shares of common stock as is determined by dividing the original issue price of such shares by the conversion price (subject to any adjustments as set forth in the Certificate of Designations of Series C Preferred Stock, the "Series C Certificate of Designations"), which conversion price shall initially be equal to the original issue price.

Mandatory Conversion

Upon (a) the closing of the sale of shares of common stock to the public in a public offering pursuant to an effective registration statement under the Securities Act or a qualified offering statement under Regulation A of the Securities Act, as amended); (b) the date that the Company or a successor to the Corporation (including, without limitation, by way of acquisition of all or substantially all of the Corporation's assets, merger, or any other business combination) becomes an issuer with a class of securities registered under Section 12 or subject to Section 15(d) of the Exchange Act and is subject to the periodic and current reporting requirements of the Exchange Act or is required to file reports under Regulation A of the Securities Act; (c) the issuance and sale by the Company of its equity securities to investors in an equity financing with total gross proceeds to the Company of not less than $2,000 with at least a minimum pre-money valuation of the Company of $65,000, or (d) the date and time, or the occurrence of an event, specified by vote or written consent of at least a majority of the outstanding shares of Series C Preferred Stock at the time of such vote or consent, voting as a single class on an as-converted basis, all outstanding shares of Series C Preferred Stock shall automatically be converted into shares of common stock at the applicable ratio described in Series C Certificate of Designations.

d. Warrants

During 2022, part of the modification of the WPC convertible (Note 7), the Company issued 526,749 stock split adjusted Tranche A and 262,051 stock split adjusted Tranche B warrants. The features of the warrants were as below:

Tranche A:

- Exercise price: (1) $0.75 – If funds of a minimum of $15,000 are raised, (2) $0.75 – If the sale of a company, IPO or RTO is completed or the (3) purchase price per share resulting from dividing $50,000 by the total number of valid issued ordinary shares outstanding.
- Maturity/Expiration date: (a) if no IPO – one year after the delivery date of the 2021 audited financial statements (b) if IPO – then one year after the date of such IPO.

Tranche B:

- Purchase price per share resulting from dividing $150,000 by the total number of valid issued ordinary shares outstanding.
- Maturity/Expiration date: (a) if no IPO – one year after the delivery date of the 2021 audited financial statements (b) if IPO – then five years after the date of such IPO.

On July 4, 2022, as part of the Senior Lender's Memo, the conversion price of the Tranche A warrant was amended to: (1) $0.75 – If after July 5, 2022 funds of a minimum of $5,000 are raised 18 months and $10,000 in total in the three years thereafter, (2) $0.75 – after the recapitalization date, if the sale of a company, IPO or RTO is completed or (3) the purchase price per share resulting from dividing $20,000 by the total number of valid issued ordinary shares outstanding. The Tranche B warrants were cancelled.

As part of the convertible debt issuance to various investors between July 4, 2022, and August 16, 2022, the Company issued 198,482 consolidation adjusted warrants concurrent with the convertible debt and preferred shares. The warrants were exercisable into one share of common stock of the Company per warrant at a price of $3. The warrants had a maturity date of three years.

On February 17, 2023, warrants to purchase up to 123,333 shares of common stock, issued to WPC in 2021, were modified pursuant to antidilution provision in the warrant agreement, triggered by common stock private placement on February 16, 2023. As a result of the modification, exercise price of the warrants was reduced to $0.00473 per share and the expiry date was extended to be three years from the modification date. The warrants were determined to be a freestanding equity instrument. Under ASC 815, the effect of a modification was nominal and was recorded as an equity issuance costs.

On August 29, 2023, the Company offered up to 7,812,500 units, comprised of Series C Preferred Stock and warrants to purchase up to 7,812,500 shares of common stock, which were sold at a combined purchase price of $1.28 per unit. Each warrant entitles the holder to acquire one share of common stock at a price of $2.56 per share for a period of three years from the date of issue. The warrants were determined to be a freestanding equity instrument. As of December 31, 2023, 759,863 warrants were issued. Additionally, as of December 31, 2023, 781,250 warrants were not issued from an administrative perspective, but were considered substantially issued from an accounting perspective.

	Number of Warrants		Weighted Average Exercise Price	Weighted Average Remaining Life
Outstanding warrants, January 1, 2022	**123,333**	**$**	**7.50**	**0.85**
Warrants issued pursuant to issue of convertible debt and preferred shares to individual investors	198,482		3.00	
Warrants issued pursuant to modification of convertible debt	526,749		0.75	
Outstanding warrants, December 31, 2022	**848,564**	**$**	**2.26**	**2.50**
Warrants issued pursuant to units offering	1,538,113		2.56	
Outstanding warrants, December 31, 2023	**2,386,677**	**$**	**2.07**	**2.46**

The warrants and prices have been changed to reflect the reverse stock split of 1:750, which occurred on November 23, 2022.

e. Series A warrants

On June 15, 2023, the Company granted Series A warrants to purchase up to an aggregate 6,048,456 shares of common stock to certain investors at an exercise price of $0.01 Canadian dollars per share for a period of five years from the issuance date. The exercisability of the warrants is contingent upon meeting market capitalization goals and the occurrence of a liquidity event. Since warrants are contingent on the occurrence of a liquidity event which is not probable for the purposes of ASC 718, no compensation cost would be recognized related to warrants until the occurrence of a liquidity event.

f. Employees stock option plan

In 2010, the Company's board of directors approved an employee and service provider's stock option plan. On July 8, 2023, the board of directors approved new equity incentive plan (the "Plan"). The Plan permits the grant of options, share appreciation rights ("SARs"), restricted share units ("RSUs"), deferred share units ("DSUs") and performance share units ("PSUs"). In respect of options, the aggregate number of shares of common stock issuable under the Plan shall not exceed twelve percent of the issued and outstanding shares of common stock at any point in time. In respect of SARs, RSUs, DSUs and PSUs: (i) the maximum aggregate number of shares of common stock issuable under this Plan in respect of SARs, RSUs, DSUs and PSUs shall not exceed ten percent of the issued and outstanding shares of common stock as of July 8, 2023; (ii) the total number of SARs, RSUs, DSUs and PSUs issuable to any participant under this Plan shall not exceed one percent of the issued and outstanding shares of common stock at the time of the award.

The fair value of each option award is estimated on the date of grant using a Black Scholes option valuation model that uses the assumptions noted in the following table.

	2023	2022
Risk free rate	4.35%	4.5%
Dividend yield	0%	0%
Expected volatility	86%	86%
Expected term (in years)	3	3
Expected life (in years)	5	5

A summary of option activity under the Plan as of December 31, 2023, and changes during the year then ended is presented below.

	Number of Stock Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding Options, December 31, 2022	**495,746**	**$ 4.70**	**6.90**	**$ -**
Options granted	795,916	0.58		
Outstanding Options, December 31, 2023	**1,291,662**	**$ 2.16**	**6.18**	**$ -**

The share-based compensation expense related to options for December 31, 2023 was $295 (2022: $60). The fair value of options granted for the year ended December 31, 2023 was nominal (2022: $692). The intrinsic value of the options outstanding is $nil (2022: $nil).

A summary of the Company's non-vested options as of December 31, 2023, and changes during the year ended December 31, 2023, is presented below.

	Number of Stock Options	Weighted Average Grant-Date Fair Value
Non-Vested Options, December 31, 2022	**325,853**	**$ 2.20**
Options granted	795,916	0.00
Options vested	(246,883)	1.15
Non-Vested Options, December 31, 2023	**874,886**	**$ 0.50**

As of December 31, 2023, there was $434 of total unrecognized compensation cost related to nonvested options granted under the Plan.

The options and exercise prices have been changed to reflect the reverse stock split of 1:750, which occurred on November 23, 2022.

g. Management options

On July 8, 2023, the Company granted stock options to its employees, officers, directors and consultants to purchase an aggregate of 3,148,288 shares of common stock at an exercise price with a term of five years, where the exercise price is equal to a 25% discount to the issue price of the Company's equity securities in an initial public offering (an "IPO Transaction"), that results in the Company's shares of common stock being listed on the Nasdaq Stock Market or another recognized securities exchange or traded on the over-the-counter market. Options to purchase up to 362,584 shares of common stock shall vest immediately with the remaining options vesting in 36 equal installments at the end of each calendar month over a period of three years from the date of grant. The vesting of management options is contingent upon the occurrence of an IPO Transaction. Since options are contingent on the occurrence of a liquidity event which is not probable for the purposes of ASC 718, no compensation cost would be recognized related to options until the occurrence of a liquidity event.

h. Restricted share units

On July 8, 2023, the Company granted RSUs to certain management and directors. The vesting of the RSUs is contingent upon a transaction that results in the Company's shares of common stock being listed on the Nasdaq Stock Market or another recognized securities exchange or traded on the over-the-counter market. When vested, the RSUs represent the right to be issued the number shares of common stock that is equal to the number of RSUs granted. Since RSUs are contingent on the occurrence of a liquidity event which is not probable for the purposes of ASC718, no compensation cost related to RSUs is recognized until the occurrence of a liquidity event.

NOTE 12: BASIC AND DILUTED NET LOSS PER SHARE

Basic net loss per common share is computed by dividing net loss attributable to holders of common stock by the weighted average number of shares of common stock outstanding during the period. Weighted average number of shares of common stock outstanding during the period computation includes shares of common stock to be contractually issued as of the period end date. Diluted net loss per common share is computed by giving effect to all potential dilutive shares of common stock that were outstanding during the period when the effect is dilutive. Potential dilutive shares of common stock consist of shares issuable upon conversion of preferred shares, exercise of stock options, restricted stock units, and warrants. No adjustments have been made to the weighted average outstanding shares of common stock figures for the years ended December 31, 2023 or 2022, as the assumed conversion of preferred shares, exercise of outstanding options, warrants and restricted stock units would be anti-dilutive.

NOTE 13: RELATED PARTY TRANSACTIONS

During the year ended December 31, 2022, $320 of notes payable to directors were converted to106,612 shares of common stock (Note7).

As of the year ended December 31, 2023, $175 (2022: $175) of director loans were still outstanding. These notes donot bear any interest and are payable on demand. The remaining related party payables of $nil (2022: $2) relate to services payable to a related party of the Company. These payables donot bear any interest and are payable on demand.

The Company incurred $222 and $420 in officers' consulting fees recorded in general administration expenses on consolidated statements of operations for the years ended December 31, 2023 and 2022, respectively. At December 31, 2023 and 2022, $106 and $56, respectively remained outstanding and were accrued by the Company, and are included in accrued liabilities in the accompanying balance sheets.

On May 1, 2023, the Company issued 284,964 shares of common stock to a related party as a payment for consulting services provided.

On July 8, 2023, the Company granted options to its employees, officers, directors and consultants to purchase an aggregate of3,148,288 shares of common stock in the capital of the Company (Note 11.g), 2,776,861 of these options were granted to related parties.No compensation cost is recognized related to options until the occurrence of a liquidity event.

NOTE 14: REVENUE

	December 31	
	2023	**2022**
Type of goods and services		
Service	$ 498	$ -
Total	**$ 498**	**$ -**
Timing of recognition of revenue		
Over time	$ 498	$ -
Total	**$ 498**	**$ -**

NOTE 15: RESEARCH AND DEVELOPMENT EXPENSES

	December 31	
	2023	**2022**
Salary and employee benefits	$ 527	$ 944
Consultants and subcontractors	99	152
Depreciation and amortization	-	14
Clinical trials	3	60
Expenses - other	112	129
	741	1,299
Less – grants received	-	-
Total	**$ 741**	$ 1,299

NOTE 16: SELLING AND MARKETING EXPENSES

	December 31	
	2023	**2022**
Salary and employee benefits	$ 611	$ 432
Professional fees	6	27
Travel	21	51
Other	1	14
Total	**$ 639**	$ 524

NOTE 17: GENERAL AND ADMINISTRATION EXPENSES

	December 31	
	2023	**2022**
Salary and employee benefits	$ 512	$ 418
Professional fees	1,252	724
Rent and maintenance	91	233
Travel expenses	56	72
Bad debts	1	(2)
Other	284	97
Total	**$ 2,196**	$ 1,542

NOTE 18: OTHER (INCOME) / EXPENSE

	December 31	
	2023	**2022**
Interest, bank fees and loan fees	$ 18	$ 440
Unrealized (gain) loss on foreign exchange	(37)	134
Loss on extinguishment of debt	-	59
Gain on sale of equipment	-	(166)
Other	(457)	(7)
Total	**$ (476)**	$ 460

In February 2022, the Company sold equipment for $262 resulting in a gain on sale of $166.

On February 24, 2023, the agreement with R.I. Mind Group Ltd. expired in accordance with its terms, and, as of December 31, 2023, there are no amounts owed by the Company to R.I. Mind Group Ltd. As the Company did not carry any activity for the purposes of the agreement, the Company recognized $459 of other income (Note 8).

NOTE 19: INCOME TAX

The total provision for income taxes differs from the amount which would be computed by applying the US income tax rate to loss before income taxes. The reasons for these differences are as follows:

	December 31	
	2023	**2022**
Statutory income tax rate	27.60%	28.51%
Statutory income tax recovery	$ (718)	$ (1,113)
Increase (decrease) in income taxes		
Non-deductible option expenses	135	19
Taxable capital gain on sale of investment and equipment	-	-
Difference in foreign tax rates	30	200
US state tax	1	(1)
Change in valuation allowance	553	895
Income tax expense (recovery)	$ 1	$ -

The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax basis of assets and liabilities and certain carry-forward balances.

The primary components of the deferred tax assets and liabilities are as follows, for the periods indicated below:

	December 2023	2022
	$	$
Deferred tax assets		
Non-capital loss carry-forwards from Canada	-	1
Non-capital loss carry-forwards from US	1,418	1,576
Non-capital loss carry-forwards from Israel	15,449	17,479
Stock option	95	17
R&D expenditures	236	424
Reserves and others	127	-
	17,325	19,497
Valuation Allowances for deferred tax assets	(17,325)	(19,497)
Net deferred tax assets	-	-

The net deferred tax assets have been offset by a valuation allowance because it isnot more likely than not the Company will realize the benefit of these deferred tax assets. The Company did not recognize any tax benefits as of December 31, 2023 and December 31, 2022.

At December 31, 2023, the Company's Canadian, US, and Israeli non-capital income tax losses, the benefit of which hasnot been recognized on the consolidated financial statements, expire as follows:

	Canada	US	Israel
2034	$ -	$ 501	$ -
2035	-	1,767	-
2036	-	2,872	-
2037	-	-	-
2038	-	-	-
2039	-	-	-
2040	-	-	-
2041	-	-	-
2042	2	-	-
Indefinite	-	1,293	67,170
	$ 2	$ 6,433	$ 67,170

At December 31, 2023, the Company had a cumulative carry-forward pool of Israeli Research and Development expenditures in the amount of $889 (2022: $1,823) which will be amortized within the next three years.

The Company files unconsolidated federal income tax returns domestically and in foreign jurisdictions. The Company has open tax years from 2018 to 2023 with tax jurisdictions including Canada, U.S, and Israel. These open years contain certain matters that could be subject to differing interpretations of applicable tax laws and regulations, as they relate to amount, timing, or inclusion of revenues and expenses.

NOTE 20: REVISION OF PRIOR PERIOD FINANCIAL STATEMENTS

During 2023, management of the Company became aware of certain errors in the recording of expenses within research and development and general and administrative expenses in the consolidated statement of operations and comprehensive loss for the year ended December 31, 2022. Revisions of these amounts are reflected in the following tables.

Revised Consolidated Balance Sheet

	As of December 31, 2022		
	As reported	Adjustment	As revised
Accrued liabilities	740	115	855
Total current liabilities	2,246	115	2,361
Total liabilities	2,246	115	2,361
Accumulated deficit	(73,906)	(115)	(74,021)
Total shareholders' deficit	(2,111)	(115)	(2,226)

Revised Consolidated Statements of Operations and Comprehensive Loss

	For the year ended December 31, 2022		
	As reported	Adjustment	As revised
Research and development expenses	1,272	27	1,299
General and administration expenses	1,454	88	1,542
Total operating expenses	3,329	115	3,444
Loss before Income Tax	(3,789)	(115)	(3,904)
Net Loss and Comprehensive Loss	(3,789)	(115)	(3,904)

Revised Consolidated Statement of Cash Flows

	For the year ended December 31, 2022		
	As reported	Adjustment	As revised
Net loss	(3,789)	(115)	(3,904)
Change in accrued liabilities	(18)	115	97
Net cash used in operating activities	(2,892)	-	(2,892)

NOTE 21: SUBSEQUENT EVENTS

The subsequent events below are major events or transactions that occurred after the period ended December 31, 2023, but before the issuance of these consolidated financial statements. The below events occurred between January 1, 2024 and May 22, 2024:

On January 12, 2024, the Merger Agreement was amended to update certain terms of the original agreement dated November 15, 2023. The updates include changes to clarify that the effective time of the Merger Agreement shall be prior to or simultaneous with certain transaction to be carried out by WaveDancer, treatment of the Company's warrants at the effective time and deletion of certain closing obligations.

On February 28, 2024, the Company issued 820,312 units and received aggregate gross proceeds of $1,050. Each unit consisting of one share of Series C Preferred Stock and warrant to purchase one share of common stock, at a combined purchase price of $1.28 per unit. Each warrant entitles the purchasers to acquire one share of common stock at a price of $2.56 per share for a period of three years from the date of issue.

FIREFLY NEUROSCIENCE, INC.

990,192 Shares of Common Stock

Up to 504,323 Shares of Common Stock Underlying Pre-Funded Warrants

Up to 823,530 Shares of Common Stock Underlying Private Placement Warrants

Up to 168,071 Shares of Common Stock Underlying Series C Warrants

Up to 61,866 Shares of Common Stock Underlying Series D Warrants

Up to 11,663 Shares of Common Stock Underlying Broker Warrants

PROSPECTUS

PART II: INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated expenses to be borne by the registrant in connection with the registration of the common shares being registered hereby.

Securities and Exchange Commission registration fee	$	1,316.65
Accounting fees and expenses		20,000
Legal fees and expenses		50,000
Financial printing and miscellaneous expenses		10,000
Total	$	81,316.65

Item 14. Indemnification of Directors and Officers.

Subsection (a) of Section 145 of the General Corporation Law of the State of Delaware (the "DGCL") empowers a corporation to indemnify any person who was or is a party or who is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful.

Subsection (b) of Section 145 empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Section 145 further provides that to the extent a director or officer of a corporation has been successful on the merits or otherwise in the defense of any action, suit or proceeding referred to in subsections (a) and (b) of Section 145, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith; that indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and the indemnification provided for by Section 145 shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of such person's heirs, executors and administrators. Section 145 also empowers the corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of his status as such, whether or not the corporation would have the power to indemnify such person against such liabilities under Section 145.

Section 102(b)(7) of the DGCL provides that a corporation's certificate of incorporation may contain a provision eliminating or limiting the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, provided that such provision shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit.

Additionally, our Charter limits the liability of our directors to the fullest extent permitted by the DGCL, and our Bylaws provide that we will indemnify them to the fullest extent permitted by such law. We have entered into and expects to continue to enter into agreements to indemnify our directors, executive officers and other employees as determined by our board of directors. Under the terms of such indemnification agreements, we are required to indemnify each of our directors and officers, to the fullest extent permitted by the laws of the state of Delaware, if the basis of the indemnitee's involvement was by reason of the fact that the indemnitee is or was our director or officer or was serving at our request in an official capacity for another entity. We must indemnify our officers and directors against all reasonable fees, expenses, charges and other costs of any type or nature whatsoever, including any and all expenses and obligations paid or incurred in connection with investigating, defending, being a witness in, participating in (including on appeal), or preparing to defend, be a witness or participate in any completed, actual, pending or threatened action, suit, claim or proceeding, whether civil, criminal, administrative or investigative, or establishing or enforcing a right to indemnification under the indemnification agreement. The indemnification agreements also require us, if so requested, to advance all reasonable fees, expenses, charges and other costs that such director or officer incurred, provided that such person will return any such advance if it is ultimately determined that such person is not entitled to indemnification by us. Any claims for indemnification by our directors and officers may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.

Item 15. Recent Sales of Unregistered Securities.

Set forth below is information regarding all securities issued by us without registration under the Securities Act in the past three years. For purposes of this section, references to "WaveDancer" mean WaveDancer, Inc., the predecessor company prior to the consummation of the Merger and references to "Firefly" mean Firefly Neuroscience, Inc. prior to the consummation of the Merger, except as related to the sections entitled "Series C Financing" and "July 2024 Private Placement," which refer to Firefly Neuroscience, Inc. following the consummation of the Merger.

The share and per share figures below do not reflect the 1-for-3 reverse stock split of WaveDancer, Inc., consummated in connection with the Merger on August 12, 2024.

Sales of Unregistered Securities by WaveDancer, Inc.

December 2021 Private Placement and Series A Warrants

On December 10, 2021, WaveDancer sold 328,987 shares of its common stock at a price of $30.40 per share to several investors. For each five shares purchased, purchasers were issued a warrant granting such purchasers the right to purchase one share of common stock of WaveDancer at a price of $45.00 per share, with the warrants exercisable on January 1, 2023, and expiring on December 31, 2026.

August 2022 Private Placement

In August 2022, WaveDancer sold 157,256 shares of its common stock to certain investors in a private placement at a price of $12.00 per share to 16 accredited investors for aggregate gross proceeds of approximately $1,887,072.

September 2023 Private Placement

On September 29, 2023, WaveDancer sold 35,000 shares of common stock to certain investors in a private placement at a price of $5.00 per share for aggregate gross proceeds of $175,000.

Sales of Unregistered Securities by Firefly Neuroscience., Inc.

July 2022 Private Placement

On July 5, 2022, Firefly issued to certain holders warrants to purchase up to an aggregate of 171,806 shares of common stock (the "July 2022 Warrants"). The July 2022 Warrants have an exercise price of $3.00 per share (subject to adjustment in accordance with the terms thereof), are exercisable immediately upon issuance and expire on July 4, 2025, on 4:30 p.m. (Toronto time).

August 2022 Private Placement

On August 15, 2022, Firefly issued to a certain holder a warrant to purchase up to 13,333 shares of common stock (the "August 2022 Warrant"). The August 2022 Warrant has an exercise price $3.00 per share (subject to adjustment in accordance with the terms thereof), is exercisable immediately upon issuance and expires on August 15, 2025, at 4:30 p.m. (Toronto time).

February 2023 Amended and Restated Warrants

On February 17, 2023, Firefly issued to a certain holder certain amended and restated warrants, initially issued to such holder on November 8, 2021 (the "February 2023 A&R Warrants"), to reflect the 1-for-750 reverse stock split effectuated on November 23, 2022 by Firefly (the "2022 Reverse Stock Split") and to adjust the exercise price therein in accordance with the terms of the February 2023 A&R Warrants, among others. The February 2023 A&R Warrants are exercisable for up to an aggregate of 43,333 and 80,000 shares of common stock, respectively, each at an exercise price of $0.00473 per share (subject to adjustment in accordance with the terms of the February 2023 A&R Warrants) and expire on February 17, 2026.

Amended and Restated Tranche A Warrants

On March 1, 2023, Firefly issued to a certain holders the amended and restated tranche A warrants (the "Tranche A Warrants"), initially granted to such holders on February 2, 2022, to reflect the 2022 Reverse Stock Split, and to adjust the exercise price therein in accordance with the terms of the Tranche A Warrants, among others. The Tranche A Warrants are exercisable for up to an aggregate of 526,749 shares of common stock at an exercise price of (x) $0.001 in the event that on or after July 5, 2022, Firefly issues warrants, options and/or convertible debt in exchange for aggregate proceeds of at least $5,000,000 within 18 months thereafter or aggregate proceeds of at least $10,000,000 within three years thereafter, (y) $0.001 in the event that after July 5, 2022, all or substantially all of Firefly's assets are sold, Firefly completes an initial public offering, including but not limited to by way of a reverse transaction takeover or via other similar "Sale of the Company" event, or (z) the per share purchase price resulting from the division of $20,000,000 by the total number of duly authorized, validly issued and fully paid and non-assessable shares of common stock of Firefly then outstanding on a fully diluted basis. The Tranche A Warrants are fully vested upon issuance, are exercisable immediately upon issuance and expire on July 5, 2025.

Series A Warrants

On July 15, 2023, Firefly issued to certain holders the Series A warrants to purchase up to an aggregate of 6,048,476 shares of common stock (the "Series A Warrants"). The Series A Warrants have an exercise price of CAD$0.01 per share (subject to adjustment from time to time in accordance with the terms of the Series A Warrants) and expire on June 15, 2028, at on 4:30 p.m. (Toronto time). The Series A Warrants are additionally subject to certain vesting events, with the shares of common stock issuable upon the exercise of the Series A Warrants vesting, if Firefly is then publicly traded, in two equal installments upon the market capitalization of the common stock reaching $100,000,000 and $200,000,000 respectively, each for a period of three consecutive trading days.

Series C Financing

Between October 17, 2023, and June 30, 2024, Firefly raised an aggregate of $3,039,000 from a private placement of 2,374,219 Series C units (the "Series C Units"), which such Series C Units were comprised of shares of Series C Preferred Stock and the Series C Warrants to purchase up to 2,374,665 shares of Common Stock, which were sold at a combined purchase price of $1.28 per Series C Unit. Each Series C Warrant has an exercise price of $2.56 per share (subject to adjustment from time to time in accordance with the terms thereof), is exercisable immediately upon issuance and expires at 4:30 p.m. (New York time) three years following the initial date of issuance.

Series D Warrants

In connection with prior consulting services rendered prior to the consummation of the Merger, on September 19, 2024, Firefly issued certain Series D Warrants to purchase up to 30,933 shares of Common Stock at an exercise price of $0.104 (which such exercise price and warrant shares reflect the application of the Exchange Ratio). The Series D Warrants are exercisable immediately upon issuance, subject to the vesting terms described in such Series D Warrants and are exercisable until 4:30 p.m. (Toronto time) on July 15, 2029.

Broker Warrants

In connection with prior consulting services rendered prior to the consummation of the Merger, Firefly issued certain Broker Warrants to purchase up to an aggregate of 11,663 shares of Common Stock at an exercise price of $5.98 (which such exercise price and warrant shares reflect the application of the Exchange Ratio). The Broker Warrants are exercisable immediately upon issuance and are exercisable for a term of five years following August 12, 2024.

Legal Services

As compensation for certain legal services rendered in 2024, Firefly issued to A. Ben-Tzvi, Adv. - Legal & Management Services Co. 10,588 shares of Common Stock.

July 2024 Private Placement

On July 26, 2024, prior to the consummation of the Merger, we entered into a securities purchase agreement with certain institutional investors, pursuant to which we agreed to issue and sell an aggregate of (i) 319,207 PIPE Shares (or 7,918,552 Shares and/or Pre-Funded Warrants in lieu thereof prior to adjustment for the Exchange Ratio), (ii) Pre-Funded Warrants to purchase up to 504,323 shares of our Common Stock, and (iii) Warrants to purchase up to 823,530 shares of Common Stock in the Private Placement (or Warrants to purchase up to 7,918,552 shares of Common Stock prior to adjustment for the Exchange Ratio). The purchase price of each PIPE Share and accompanying Warrant was $4.25 (0.442 prior to the adjustment for the Exchange Ratio) and the purchase price of each Pre-Funded Warrant and accompanying Warrant was $4.249 (0.4419 prior to the adjustment for the Exchange Ratio). The Private Placement closed on August 12, 2024, substantially contemporaneously with the consummation of the Merger. The aggregate gross proceeds from the transaction were approximately $3.5 million, before deducting estimated offering expenses payable by us.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions or any public offering. Each of the recipients of securities in any transaction exempt from registration either received or had adequate access, through employment, business or other relationships, to information about WaveDancer and Firefly, as applicable. The sales of these securities were made without any general solicitation or advertising. The sales and issuances of these securities were undertaken in reliance upon the exemption from the registration requirements of the Securities Act, pursuant to Section 4(a)(2) thereof and Regulation D promulgated thereunder.

Item 16. Exhibits and Financial Statement Schedules.

The exhibits listed below are filed as part of this registration statement.

Exhibit	Description
2.1†§	Agreement and Plan of Merger, dated November 15, 2023, by and among WaveDancer, Inc., FFN Merger Sub, Inc., and Firefly Neuroscience, Inc. (incorporated herein by reference to Annex A-1 to the Company's registration statement on Form S-4/A, filed with the SEC on February 2, 2024).
2.2	Amendment No. 1 to Agreement and Plan of Merger, dated January 12, 2024, by and among by and among WaveDancer, Inc., FFN Merger Sub, Inc., and Firefly Neuroscience, Inc. (incorporated herein by reference to Annex A-2 to the Company's registration statement on Form S-4/A, filed with the SEC on February 2, 2024).
2.3	Amendment No. 2 to Agreement and Plan of Merger, dated June 17, 2024, by and among by and among WaveDancer, Inc., FFN Merger Sub, Inc., and Firefly Neuroscience, Inc. (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed with the SEC on June 21, 2024).
2.4	Stock Purchase Agreement between Registrant and Wavetop Solutions, Inc., dated November 15, 202 (incorporated herein by reference to Annex F to the Company's registration statement on Form S-4/A, filed with the SEC on February 2, 2024).
3.1	Amended and Restated Certificate of Incorporation of Firefly Neuroscience, Inc (incorporated herein by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, filed with the SEC on August 12, 2024).
3.2	Amended and Restated Bylaws of Firefly Neuroscience, Inc. (incorporated herein by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K, filed with the SEC on August 12, 2024).
4.1***	Form of Series C Warrant.
4.2	Form of Warrant (incorporated herein by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K, filed with the SEC on July 29, 2024).
4.3	Form of Pre-Funded Warrant (incorporated herein by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K, filed with the SEC on July 29, 2024).
4.4***	Form of Series D Warrant
4.5***	Form of Broker Warrant
5.1**	Opinion of Haynes and Boone, LLP.
10.1#	2006 Stock Incentive Plan (incorporated herein by reference to Annex A to the Company's proxy statement on Schedule 14A filed with the SEC on April 19, 2006).
10.2#	2016 Stock Incentive Plan (incorporated herein by reference to Annex A to the Company's proxy statement on Schedule 14A filed with the SEC on April 11, 2016).
10.3#	2021 Stock Incentive Plan (incorporated herein by reference to Annex 4 to the Company's proxy statement on Schedule 14A filed with the SEC on October 26, 2021).
10.4#	Elminda Ltd. Share Option Plan (incorporated herein by reference to Annex 10.12 to the Company's registration statement on Form S-4/A, filed with the SEC on February 2, 2024).
10.5#	Firefly Neuroscience, Inc. 2024 Long-Term Incentive Plan (incorporated herein by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K, filed with the SEC on August 12, 2024).

10.6#	Form of Nonqualified Stock Option Agreement (incorporated herein by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K, filed with the SEC on August 12, 2024).
10.7#	Form of Incentive Stock Option Agreement (incorporated herein by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K, filed with the SEC on August 12, 2024).
10.8	Form of Indemnification Agreement (incorporated herein by reference to Exhibit 10.8 to the Company's Current Report on Form 8-K, filed with the SEC on August 12, 2024).
10.9	Common Stock Purchase Agreement by and between WaveDancer, Inc. and B. Riley Principal Capital II, LLC dated July 8, 2022 (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on July 11, 2022).
10.10	Registration Rights Agreement by and between the Registrant and B. Riley Principal Capital II, LLC dated July 8, 2022 (incorporated herein by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, filed with the SEC on July 11, 2022).
10.11+	Securities Purchase Agreement, dated as of July 26, 2024, by and among the Company and the investors signatory thereto (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on July 29, 2024)
10.12#	Employment Agreement, dated as of August 19, 2024, by and between Firefly Neuroscience, Inc. and David Johnson (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on August 20, 2024)
16.1	Letter from Turner, Stone & Company LLP to the Securities and Exchange Commission dated October 31, 2024 (incorporated herein by reference to Exhibit 16.1 to the Company's Current Report on Form 8-K, filed with the SEC on November 1, 2024).
21.1	List of Subsidiaries (incorporated herein by reference to Exhibit 21.1 to the Registrant's Current Report on Form 8-K filed on August 12, 2024).
23.1*	Consent of Turner, Stone & Company, L.L.P., independent registered public accounting firm.
23.2**	Consent of Haynes and Boone, LLP (included in Exhibit 5.1).
24.1***	Power of Attorney
101.INS*	Inline XBRL Instance Document.
101.SCH*	Inline XBRL Taxonomy Extension Schema Document.
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104*	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).
107***	Filing Fee Table

* Filed herewith.
** To be filed by amendment.
***Previously filed.
† Certain of the exhibits or schedules to this exhibit have been omitted in accordance with Item 601(a)(5) of Regulation S-K. The Company agrees to furnish a copy of all omitted exhibits and schedules to the SEC upon its request.
# Management contract or compensatory plan or arrangement.
§ Portions of this exhibit have been redacted in compliance with Regulation S-K Item 601(a)(6).

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

(1) to file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement: (i) to include any prospectus required by Section 10(a)(3) of the Securities Act; (ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and (iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; *provided*, *however*, that paragraphs (i), (ii) and (iii) do not apply if the registration statement is on Form S-1 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement;

(2) that, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof;

(3) to remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering;

(4) that, for the purpose of determining liability under the Securities Act to any purchaser:

Each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided*, *however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use; and

(5) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers, and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer, or controlling person of the registrant in the successful defense of any action, suit, or proceeding) is asserted by such director, officer, or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant has duly caused this Amendment No. 1 to the registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Kenmore, State of New York, on December 3, 2024.

FIREFLY NEUROSCIENCE, INC.
By: */s/ Jon Olsen*
Jon Olsen
Chief Executive Officer and
Chairman of the Board of Directors

Pursuant to the requirements of the Securities Act, this Amendment No. 1 to the registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	*Title*	*Date*
/s/ Jon Olsen Jon Olsen	Chief Executive Officer and Director (Principal Executive Officer)	December 3, 2024
/s/ Paul Krzywicki Paul Krzywicki	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	December 3, 2024
/s/ Greg Lipschitz Greg Lipschitz	Executive Chairman	December 3, 2024
* David DiCaprio	Director	December 3, 2024
* Arun Menawat	Director	December 3, 2024
* Brian Posner	Director	December 3, 2024
* Stella Vnook	Director	December 3. 2024
By: */s/ Jon Olsen* Jon Olsen	Attorney-in-Fact	December 3, 2024

Exhibit 23.1

Your Vision Our Focus

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the use of our report in this Registration Statement on Form S-1 (Amendment No. 1) (the "Registration Statement") our report dated May 22, 2024, relating to the financial statements of FIREFLY NEUROSCIENCE, INC.(the "Company") as of and for the years ended December 31, 2023, and 2022, which includes an explanatory paragraph relating to the Company's ability to continue as a going concern.

We also consent to the reference to our firm under the heading "Experts" in such Registration Statement.

/s/ Turner, Stone & Company, L.L.P.

Dallas, Texas
December 3, 2024

Turner, Stone & Company, L.L.P.
Accountants and Consultants

12700 Park Central Drive, Suite 1400
Dallas, Texas 75251
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INTERNATIONAL ASSOCIATION OF ACCOUNTANTS AND AUDITORS