

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

FORM S-3

REGISTRATION STATEMENT *UNDER THE SECURITIES ACT OF 1933*

SPECTRAL AI, INC.
(Exact name of registrant as specified in its charter)

Delaware

95-4484725

(State or other jurisdiction of
incorporation or organization)

(I.R.S. Employer
Identification Number)

2515 McKinney Avenue, Suite 1000
Dallas, TX 75201
972-499-4934

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

Vincent S. Capone
Chief Financial Officer and General Counsel
2515 McKinney Avenue, Suite 1000
Dallas, TX 75201
(972) 499-4934

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

Copies of all communications, including communications sent to agent for service, should be sent to:

Herbert F. Kozlov Esq.
Lynwood E. Reinhardt, Esq.
Reed Smith LLP
599 Lexington Avenue
New York, New York 10022-7650
(212) 521-5400

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

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, other than securities offered only in connection with dividend or interest reinvestment plans, 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 registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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 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 the registration statement shall become effective on such date as the Commission acting pursuant to said section 8(a), may determine.





Up to 1,000,000 shares of Common Stock

This prospectus relates to the resale from time to time by the selling stockholders named in this prospectus or their permitted transferees (the “selling stockholders”) of up to 1,000,000 shares of our common stock, par value \$0.0001 (“common stock”), issuable upon the conversion of the convertible promissory note issued pursuant to a Promissory Note, dated March 19, 2024, as amended on October 1, 2024, by and between us and an accredited investor (the “Promissory Note”). See “Summary; Convertible Note” for more information. We are registering the resale of the common stock as required by the registration rights included in the Promissory Note, as amended.

We will not receive any proceeds from the sale of the common stock by the selling stockholders pursuant to this prospectus.

The selling stockholders may offer, sell or distribute all or a portion of the securities hereby registered publicly or through private transactions at prevailing market prices or at negotiated prices. We are required to pay certain costs, expenses and fees in connection with the registration of these securities, including with regard to compliance with state securities or “blue sky” laws. The selling stockholders will bear all commissions and discounts, if any, attributable to their sale of shares of common stock. See the section titled “Plan of Distribution.”

You should carefully read this prospectus and the applicable prospectus supplement as well as the documents incorporated or deemed to be incorporated by reference in this prospectus before you purchase any of the securities offered hereby. You should also read the documents we refer to in the “Where You Can Find More Information” section of this prospectus for information on us and our financial statements.

Our common stock is listed on The Nasdaq Capital Market (the “Nasdaq”) under the symbol “MDAI.” On November 19, 2024, the last reported sale price of our common stock was \$1.13 per share as reported on the Nasdaq. We recommend that you obtain current market quotations for our common stock prior to making an investment decision.

We are an “emerging growth company” and a “smaller reporting company” under applicable federal securities laws and will be subject to reduced reporting requirements. This prospectus complies with the requirements that apply to an issuer that is an emerging growth company.

You should carefully read this prospectus, any prospectus supplement relating to any specific offering of securities, and all information incorporated by reference herein and therein.

Investing in our securities involves a high degree of risk. These risks are discussed in this prospectus under “Risk Factors” beginning on page 4 and in the documents incorporated by reference in this prospectus.

Neither the Securities and Exchange Commission (the “SEC”) nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2024



TABLE OF CONTENTS

	Page
<u>About This Prospectus</u>	ii
<u>Cautionary Statement Regarding Forward-Looking Statements</u>	iii
<u>About Spectral AI, Inc.</u>	1
<u>Risk Factors</u>	4
<u>Use of Proceeds</u>	5
<u>Description of Capital Stock</u>	6
<u>Selling Stockholders</u>	9
<u>Plan of Distribution</u>	10
<u>Legal Matters</u>	12
<u>Experts</u>	12
<u>Where You Can Find More Information</u>	12
<u>Incorporation of Documents by Reference</u>	13

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC using a “shelf” registration process. Under this shelf process, the selling stockholders may, from time to time, offer and sell up to 1,000,000 shares of common stock as described in this prospectus in one or more offerings.

To the extent required under applicable law in connection with a particular offering of such securities by the selling stockholders, we or the selling stockholders will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering. To the extent permitted under applicable law, we and the selling stockholders may also authorize one or more free writing prospectuses that may contain material information relating to these offerings. Any such prospectus supplement or free writing prospectus may also add, update or change information contained in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable.

Neither we nor the selling stockholders have authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus, any applicable prospectus supplement or any applicable free writing prospectuses prepared by or on behalf of us or to which we have referred you. Neither we nor the selling stockholders take any responsibility for, nor provide any assurance as to the reliability of, any other information that others may give you. Neither we nor the selling stockholders will make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted.

You should read the entire prospectus and any prospectus supplement and any related issuer free writing prospectus, as well as the documents incorporated by reference into this prospectus or any prospectus supplement or any related issuer free writing prospectus, together with the additional information described under “Where You Can Find More Information,” before making an investment decision. You should also carefully consider, among other things, the matters discussed in the section entitled “Risk Factors” herein. Neither the delivery of this prospectus or any prospectus supplement or any issuer free writing prospectus nor any sale made hereunder shall under any circumstances imply that the information contained or incorporated by reference herein or in any prospectus supplement or issuer free writing prospectus is correct as of any date subsequent to the date hereof or of such prospectus supplement or issuer free writing prospectus, as applicable. You should assume that the information appearing in this prospectus, any prospectus supplement or any document incorporated by reference is accurate only as of the date of the applicable documents, regardless of the time of delivery of this prospectus or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus incorporates by reference, and any prospectus supplement or free writing prospectus may contain and incorporate by reference, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, neither we nor the selling stockholders guarantee the accuracy or completeness of this information and neither we nor the selling stockholders have independently verified this information. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus, any prospectus supplement or any applicable free writing prospectus may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “Risk Factors” contained in this prospectus, any applicable prospectus supplement and any applicable free writing prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

This prospectus contains forward-looking statements that are subject to a number of risks and uncertainties, many of which are beyond our control. See “Risk Factors” and “Cautionary Statement Regarding Forward Looking Statements” appearing in this prospectus and in the documents we file with the SEC that are incorporated by reference into this prospectus.

CAUTIONARY STATEMENT REGARDING FORWARD LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but are not always, made through the use of words or phrases such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would,” and similar expressions, or the negative of these terms, or similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties which could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus, and in particular those factors referenced in the section entitled “Risk Factors.”

The forward-looking statements contained in this prospectus are based on our current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond our control) or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to, the following risks, uncertainties and other factors:

- We have incurred significant losses since inception and may not be able to achieve significant revenues or profitability.
- We are devoting substantially all of our efforts towards research and development of our DeepView System.
- We depend on government funding, which if lost or reduced, could have a material adverse effect on our research and development activities and our ability to commercialize our DeepView technology. Our largest contract is with the Biomedical Advanced Research and Development Authority (“BARDA”) and is the largest single source of revenue for us. Our BARDA contract is not guaranteed to be completed or extended.
- The regulatory review process is expensive, time-consuming, and uncertain and we may be unable to obtain clearance, approval, De Novo classification, or certification for our DeepView technology.
- We are highly dependent on our senior management, directors and key personnel, and our business could be harmed if we are unable to attract and retain personnel necessary for our success.
- We may experience significant delays in completing clinical trials, which could prevent or significantly delay our targeted product launch timeframe and impair our viability and business plan.
- New legislation and regulations and legislative and regulatory reforms may make it more difficult and costly for us to obtain regulatory clearance, approval, De Novo classification, or certification of our DeepView System, or to manufacture, market and distribute our device after clearance, approval, or classification is obtained.
- Disruptions at the FDA and foreign regulatory agencies caused by funding shortages or global health concerns could hinder their ability to hire and retain key leadership and other personnel, or otherwise prevent new products and services from being developed or commercialized in a timely manner, which could negatively impact our business.

- The ongoing labor shortage may limit our ability or the investigators' ability to find and retain medical staff that are needed to conduct the clinical studies.
- Modifications to our DeepView System may require new clearances, approvals, De Novo classifications, certifications, or new or amended certifications, and may require us to cease marketing or to recall the modified device until clearances, approvals, De Novo classifications, or the relevant certifications are obtained.
- Quality problems and product liability claims could lead to recalls or safety alerts, reputational harm, adverse verdicts or costly settlements, and could have a material adverse effect on our business, results of operations, financial condition, and cash flows.
- We must comply with anti-kickback, fraud and abuse, false claims, transparency, and other healthcare laws and regulations.
- If our manufacturers fail to comply with the regulatory quality system regulations or any applicable equivalent regulations, our proposed operations could be interrupted, and our operating results would suffer.
- Actual or perceived failure to comply with data protection, privacy and security laws, regulations, standards and other requirements could negatively affect our business, financial condition or results of operations.
- As the regulatory framework for AI technology evolves, our business, financial condition and results of operation may be adversely affected.
- If we are unable to establish sales, marketing and distribution capabilities either on our own or in collaboration with third parties, we may not be successful in commercializing our DeepView System, if approved.
- We may not be able to achieve or maintain satisfactory pricing and margins for our DeepView technology.
- We will depend upon third-party suppliers, including contract manufacturers and single and sole source suppliers, making us vulnerable to supply shortages and price fluctuations that could negatively affect our business, financial condition and results of operations.
- We may encounter difficulties in managing our growth, which could disrupt our operations.
- The use of artificial intelligence, including machine learning, in our analytics platforms may result in reputational harm or liability.
- Product liability suits, whether or not meritorious, could be brought against us due to an alleged defective product or for the misuse of our DeepView System. These suits could result in expensive and time-consuming litigation, payment of substantial damages, and an increase in our insurance rates.
- The success of our algorithms depends on our significant repository of proprietary data.

- Changes in patent law or its interpretation could diminish the value of patents in general, thereby impairing our ability to protect our existing and future products.
- Our patent rights and other intellectual property may be subject to priority, ownership or inventorship disputes, interferences, and similar proceedings and we may not be able to enforce our intellectual property rights throughout the world.
- Nasdaq may delist our securities from trading on its exchange, which could limit investors' ability to make transactions in our securities and subject us to additional trading restrictions.
- We will incur increased costs as a result of operating as a public company, and the Company's management will be required to devote substantial time to new compliance and investor relations initiatives.
- The price of our common stock may be volatile.
- Changes in laws, regulations or rules, or a failure to comply with any laws, regulations or rules, may adversely affect our business, investments and results of operations.
- If we fail to maintain proper and effective internal controls over financial reporting, our ability to produce accurate and timely financial statements could be impaired, investors may lose confidence in our financial reporting and the trading price of our common stock may decline.
- Certain existing stockholders purchased, or may purchase, securities in the Company at a price below the current trading price of such securities and may experience a positive rate of return based on the current trading price. Future investors in the Company may not experience a similar rate of return.
- Warrants may become exercisable for common stock, which would increase the number of shares eligible for resale in the public market and result in dilution to our stockholders.

We have included important factors in the cautionary statements included in this prospectus and the documents we incorporate by reference herein and therein, particularly in the "Risk Factors" section of our Annual Report on Form 10-K for the fiscal year ended December 31, 2023 and in the "Risk Factors" section of our Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2024, that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. No forward-looking statement is a guarantee of future performance.

You should read this prospectus, the applicable prospectus supplement, any related free-writing prospectus, and the documents incorporated by reference herein and therein completely and with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect. The forward-looking statements contained or incorporated by reference in this prospectus or any prospectus supplement herein and therein represent our views as of the date of this prospectus are expressly qualified in their entirety by this cautionary statement. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

ABOUT SPECTRAL AI, INC.

Unless the context otherwise requires, references to the “Company,” “Spectral,” “we,” “us,” “our” and similar terms refer to Spectral AI, Inc. and its subsidiaries.

Overview

We are an AI company focused on predictive medical diagnostics. Our DeepView System uses proprietary AI algorithms to distinguish between fully damaged, partially damaged and healthy human tissue characters invisible to the naked eye, at the initial time point of wound presentation. The DeepView System delivers a binary prediction on the wounds capacity to heal or not-heal by a specified time point in the future. Our DeepView System’s output is specifically engineered to assist the physician in making a more accurate, timely and informed decision regarding the treatment of the patient’s wounds. Our focus from 2013 through 2021 was on the burn indication. In 2022, we expanded our focus to include the DFU indication.

Spectral AI is devoting substantially all of its efforts towards research and development of its DeepView[®] Wound Imaging System, currently focused on burn wounds and diabetic foot ulcer (“DFU”) indications, specifically engineered to allow physicians to make a more accurate, timely and informed decision for treatment options. The Company has not generated any product revenue to date. The Company currently generates revenue from contract development and research services by providing such services to governmental agencies, primarily to the Biomedical Advanced Research and Development Authority (“BARDA”) and under a contract with the Medical Technology Enterprise Consortium (“MTEC”).

In September 2023, the Company executed its third contract with BARDA for a multi-year Project BioShield (“PBS”) contract, valued at up to approximately \$150.0 million (the “PBS BARDA Contract”). This multi-year contract includes an initial award of nearly \$54.9 million to support the clinical validation and FDA clearance of DeepView[®] for commercial development and distribution purposes. The Company completed the second contract with BARDA, referred to as BARDA Burn II, which was signed in July 2019 and completed in November 2023. Under this contract, the Company furthered the DeepView System design, developed the AI algorithm, and took steps to obtain FDA approval.

In April 2023, the Company received a \$4.0 million grant from MTEC for a project that is expected to be completed by April 2025 (the “MTEC Agreement”). The MTEC Agreement is for the development of a handheld version of the DeepView System which is to be used to support military battlefield burn evaluation. The project has three phases, beginning with planning, design and testing; followed by development, design modification and buildout of the handheld device; and then the manufacturing of the handheld device. In September 2024, the Company received an additional \$800,000 from MTEC for the further development of the handheld device.

On March 7, 2024, the Company formed a new wholly-owned subsidiary, Spectral IP, Inc., a Delaware corporation (“Spectral IP”), to be utilized to advance artificial intelligence intellectual property with a specific emphasis on healthcare.

Convertible Note

On March 19, 2024, Spectral IP entered into a promissory note with SIM Tech Licensing, LLC, an affiliate of the Company (“SIM Tech”), in the principal amount of \$1,000,000 (the “Promissory Note”). The Promissory Note accrued interest at 8% per annum, and was payable upon the earliest to occur of (a) March 18, 2025, (b) a Liquidation Event (as such term is defined in the Promissory Note) or upon an Event of Default (as such term is defined in the Promissory Note).

On August 28, 2024, SIM Tech assigned the Promissory Note to IP Protocol, LLC (“IP Protocol”), an affiliated entity through common ownership, in which IP Protocol received all of the rights of SIM Tech with respect to the Promissory Note. On October 1, 2024, the Promissory Note was amended to (i) reduce the annual interest rate from 8% to 4%, (ii) extend the term of the Promissory Note through the second anniversary of the issuance date, March 18, 2026, (iii) include a conversion feature at the option of either IP Protocol or the Company to convert the then outstanding principal and accrued but unpaid interest into shares of the Company at any time (into such number of shares calculated by taking a five percent (5.00%) discount to the closing price of the Company’s common stock on the day prior to the date of notice to the Company of the exercise of the conversion right) and at maturity, respectively, and (iv) provide for registration rights of any shares of the Company issued in satisfaction of the outstanding obligations.

IP Protocol or the Company has the right to provide notice (the “Notice”) to the other party, to convert the outstanding principal and accrued but unpaid interest (the “Total Outstanding Obligations”) into shares of the Company calculated by dividing the conversion amount of the Total Outstanding Obligations by the “Share Price.” The Share Price shall equal that number calculated by taking a five percent (5.0%) discount to the closing price of common stock of the Company on the day prior to the date the Notice is delivered to the Company.

Corporate Information

Spectral AI, Inc., a Delaware corporation formerly known as Rosecliff Acquisition Corp I (“Rosecliff”) was formed as a blank check company on November 17, 2020. The Company was formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or similar business combination with one or more businesses.

On September 11, 2023, the Company consummated a business combination (the “Business Combination”), pursuant to the business combination agreement dated April 11, 2023 by and among the Company, Ghost Merger Sub I, a Delaware Corporation, Ghost Merger Sub II, a Delaware corporation and Spectral MD Holdings, Ltd., a Delaware corporation incorporated on March 9, 2009 and headquartered in Dallas, Texas (“Legacy Spectral”). Upon closing of the Business Combination (the “Closing”), in sequential order: (a) Ghost Merger Sub I merged with and into the Legacy Spectral, with Legacy Spectral continuing as the surviving company as a wholly owned subsidiary of the Company (the “Spectral Merger”) and then, (b) Legacy Spectral merged with and into Ghost Merger Sub II (renamed Spectral MD Holdings LLC) (the “SPAC Merger”, together with the Spectral Merger (the “Business Combination”)), with Ghost Merger Sub II surviving the SPAC Merger as a direct wholly-owned subsidiary of the Company. Upon the Closing, the Company changed its name from Rosecliff to Spectral AI, Inc.

In conjunction with the Business Combination, the Company cancelled the redeemable warrants that it issued to Rosecliff Acquisition Sponsor I LLC, a Delaware limited liability company (the “Sponsor”), in a private placement in connection with the Company’s initial public offering on February 17, 2021 (the “Initial Public Offering”) at Closing, but the 8,433,333 redeemable warrants issued to the public in the Initial Public Offering (the “Public Warrants”) remain outstanding.

Prior to the Business Combination, Rosecliff had 280,485 shares of Class A common stock, par value \$0.0001 per share, issued and outstanding and held by public shareholders (the “Public Shares”) and 6,325,000 shares of Class B common stock, par value \$0.0001 per share, issued and outstanding and held by the Sponsor (the “Sponsor Shares”). Upon the Closing, 5,445,000 of the Sponsor Shares were forfeited, in accordance with a letter agreement with the Sponsor, and the remaining 880,000 Sponsor Shares and 280,485 Public Shares, no longer designated Class A and Class B, were included in shares of the Company’s common stock, par value \$0.0001 per share (the “Company Common Stock”).

Prior to the Business Combination, Legacy Spectral’s shares of common stock, par value \$0.001 per share (“Legacy Spectral Common Stock”) were listed on the AIM market on the London Stock Exchange (delisted on September 7, 2023). In September 2023, prior to the Closing, Legacy Spectral issued 7,679,198 shares of Legacy Spectral Common Stock to certain investors in a private placement, in exchange for \$3.4 million (the “Equity Raise”). Upon the Closing, all of Legacy Spectral’s issued and outstanding 145,380,871 shares of Legacy Spectral Common Stock, including the shares from the Equity Raise, were exchanged for 14,094,450 shares of Company Common Stock at an exchange ratio of 10.31 (the “Exchange Ratio”), meaning that the Company issued one share of Company Common Stock in exchange for 10.31 shares of Legacy Spectral Common Stock.

On September 12, 2023, the Company began trading the Company Common Stock and the Public Warrants on the Nasdaq under the symbols “MDAI” and “MDAIW”, respectively. Prior to the Business Combination, the Company’s shares of Company Common Stock and Public Warrants were listed on the Nasdaq under the symbols “RCLF” and “RCLFW”, respectively.

Implications of Being an Emerging Growth Company and Smaller Reporting Company

We are an emerging growth company, as defined in the JOBS Act. The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This provision allows an emerging growth company to delay the adoption of some accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period under the JOBS Act for the adoption of certain accounting standards until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply more promptly with new or revised accounting pronouncements as of public company effective dates.

In addition, as an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- being permitted to present only two years of audited consolidated financial statements in addition to any required unaudited interim consolidated financial statements, with correspondingly reduced disclosure in the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in this prospectus;
- an exception from compliance with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended;
- reduced disclosure about our executive compensation arrangements in our periodic reports, proxy statements and registration statements;
- exemptions from the requirements of holding non-binding advisory votes on executive compensation or golden parachute arrangements; and

We may take advantage of these provisions until the last day of the fiscal year ending after the fifth anniversary of the Company’s initial public offering or such earlier time that we no longer qualify as an emerging growth company. We will cease to qualify as an emerging growth company on the date that is the earliest of: (i) December 31, 2026; (ii) the last day of the fiscal year in which we have more than \$1.235 billion in total annual gross revenues; (iii) the date on which we are deemed to be a “large accelerated filer” under the rules of the SEC, which means the market value of our common stock that is held by non-affiliates exceeds \$700.0 million as of the prior June 30th and we have been a public company for at least 12 months and have filed one annual report on Form 10-K; or (iv) the date on which we have issued more than \$1.0 billion of non-convertible debt over the prior three-year period. We may choose to take advantage of some but not all of these reduced reporting burdens. Accordingly, the information contained herein may be different than you might obtain from other public companies in which you hold equity interests.

We are also a “smaller reporting company.” If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited consolidated financial statements in our Annual Report and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Recent Developments

In September 2024, we received a letter with a draft Particulars of a Complaint from Stifel Nicolaus Europe Limited (“Stifel”) in which Stifel contends that the Company owes Stifel approximately \$2,550,000 pursuant to a previous engagement letter entered into with Stifel on November 15, 2021 (the “Engagement Letter”). Stifel alleges that the Engagement Letter entitles them to a percentage of the value of the Company’s Business Combination with Rosecliff. The Company further believes that we have substantial factual, legal and contractual defenses to the claims presented and will vigorously contest the claims, if ultimately brought. The Company also believes it has meritorious claims it is entitled to assert against Stifel and one or more of its representatives. However, the results of litigation are inherently unpredictable and the possibility exists that the ultimate resolution of this matter could result in a material effect on our financial position, results of operations or liquidity.

RISK FACTORS

Investing in our securities involves a high degree of risk. In addition to the other information contained in this prospectus and in the documents we incorporate by reference, you should carefully consider the specific factors discussed under the heading “Risk Factors” in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under Item 1A, “Risk Factors,” in our most recent Annual Report on Form 10-K or any updates in our Quarterly Reports on Form 10-Q, together with all other information appearing in or incorporated by reference into this prospectus or the applicable prospectus supplement, before deciding whether to purchase any securities being offered. The risks and uncertainties discussed in the foregoing are not the only ones facing us. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks occur, our business, business prospects, financial condition or results of operations could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section above entitled “Cautionary Statement Regarding Forward-Looking Statements.”

USE OF PROCEEDS

All of the shares of common stock offered by the selling stockholders pursuant to this prospectus will be sold by the selling stockholders for their respective accounts. We will not receive any of the proceeds from these sales.

The selling stockholders will pay any underwriting fees, discounts, selling commissions, stock transfer taxes and certain legal expenses incurred by such selling stockholders in disposing of their shares of common stock and we will bear all other costs, fees and expenses incurred in effecting the registration of such securities covered by this prospectus, including, without limitation, all registration and filing fees, Nasdaq listing fees and fees and expenses of our counsel and our independent registered public accountants.

DESCRIPTION OF CAPITAL STOCK

The following description sets forth certain material terms and provisions of our securities that we may offer under this prospectus but is not complete. This description also summarizes relevant provisions of Delaware General Corporation Law (the “DGCL”). The following summary does not purport to be complete and is subject to, and is qualified in its entirety by reference to, the applicable provisions of the DGCL, our Charter and our Bylaws, copies of which are incorporated by reference as an exhibit to our Annual Report on Form 10-K. In addition, you should be aware that the summary below does not give full effect to the terms of the provisions of statutory or common law, and we encourage you to read our Charter, our Bylaws, and the applicable provisions of Delaware law for additional information.

The Charter authorizes the issuance of 81,000,000 shares of capital stock of the Company, consisting of (i) 80,000,000 shares of common stock, and (ii) 1,000,000 shares of preferred stock, par value \$0.0001 per share (the “preferred stock”). As of November 19, 2024, there were 19,508,073 shares of our common stock issued and outstanding and no shares of preferred stock issued and outstanding. The authorized and unissued shares of common stock and the authorized and undesignated shares of preferred stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange on which our securities may be listed. Unless approval of our stockholders is so required, our board of directors does not intend to seek stockholder approval for the issuance and sale of our common stock or preferred stock.

Common Stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and have no cumulative voting rights. Holders of our common stock are entitled to receive ratably dividends as may be declared by our board of directors out of funds legally available for that purpose, subject to any preferential dividend or other rights of any then outstanding preferred stock. We have never paid cash dividends on our common stock and do not anticipate paying any cash dividends in the foreseeable future but intend to retain our capital resources for reinvestment in our business. Any future disposition of dividends will be at the discretion of our board of directors and will depend upon, among other things, our future earnings, operating and financial condition, capital requirements, and other factors.

Holders of our common stock do not have preemptive or conversion rights or other subscription rights. On the liquidation, dissolution, distribution of assets or winding up of the Company, each holder of common stock will be entitled, pro rata on a per share basis, to all assets of the Company of whatever kind available for distribution to the holders of common stock, subject to the designations, preferences, limitations, restrictions and relative rights of any preferred stock then outstanding. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

Holders of common stock are entitled to cast one vote per share of common stock on all matters to be voted on by stockholders. Holders of common stock will vote together as a single class, and an action will be approved by stockholders if the number of votes cast in favor of the action exceeds the number of votes cast in opposition to the action, while directors will be elected by a plurality of the votes cast. Holders of common stock are not entitled to cumulate their votes in the election of directors. When a quorum is present at any meeting, any matter other than the election of directors to be voted upon by the stockholders at such meeting will be decided by a majority vote of the holders of shares of capital stock present or represented at the meeting and voting affirmatively or negatively on such matter. At all meetings of stockholders for the election of directors at which a quorum is present, a plurality of the votes cast will be sufficient to elect such directors.

Anti-Takeover Effects of Certain Provisions of the DGCL, our Charter and Bylaws

Section 203 of the DGCL affords us certain protections, such as prohibiting us from engaging in any business combination with any stockholder for a period of three years following the time that such stockholder (the “interested stockholder”) came to own at least 15% of our outstanding voting stock (the “acquisition”), except if:

- our board of directors approved the acquisition prior to its consummation;

- the interested stockholder owned at least 85% of the outstanding voting stock upon consummation of the acquisition; or
- the business combination is approved by our board of directors, and by a two-thirds vote of the other stockholders in a meeting.

Generally, a “business combination” includes any merger, consolidation, asset or stock sale, or certain other transactions resulting in a financial benefit to the interested stockholder. Subject to certain exceptions, an “interested stockholder” is a person who, together with that person’s affiliates and associates, owns, or within the previous three years owned, 15% or more of our voting stock.

Under certain circumstances, these anti-takeover provisions will make it more difficult for a person who would be an “interested stockholder” to effect various business combinations with us for a three-year period. This may encourage companies interested in acquiring us to negotiate in advance with our board of directors because the stockholder approval requirement would be avoided if our board of directors approves the acquisition that results in the stockholder becoming an interested stockholder.

This may also have the effect of preventing changes in our board of directors and may make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Exclusive Forum

The 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 (the “Chancery Court”) shall be the sole and exclusive forum for any stockholder (including a beneficial owner) to bring: (i) any derivative action or proceeding brought on the Company’s behalf; (ii) any action, suit or proceeding asserting a claim of breach of fiduciary duty owed by any current or former director, officer or other employee, agent or stockholder of the Company to the Company or its stockholders; (iii) any action, suit or proceeding asserting a claim against the Company, its current or former directors, officers, or employees, agents or stockholders arising pursuant to any provision of the DGCL, the Charter or the Bylaws or (iv) any action, suit or proceeding asserting a claim against the Company, its current or former directors, officers, or employees, agents or stockholders governed by the internal affairs doctrine, and, if such action is filed in a court other than the Chancery Court (a “Foreign Action”) by any stockholder (including any beneficial owner), to the fullest extent permitted by law, such stockholder shall be deemed to have consented to (a) the personal jurisdiction of the Chancery Court in connection with any action brought in any such court; and (b) having service of process made upon such stockholder in any such action by service upon such stockholder’s counsel in the Foreign Action as agent for such stockholder.

The exclusive forum provision set forth above does not apply to, and does not preclude or contract the scope of, either (i) exclusive federal jurisdiction pursuant to Section 27 of the Securities and Exchange Act for claims seeking to enforce any liability or duty created by the Securities and Exchange Act or the rules and regulations thereunder, or any other claim for which the U.S. federal courts have exclusive jurisdiction, or (ii) concurrent jurisdiction under Section 22 of the Securities Act for federal and state courts over all claims seeking to enforce any liability or duty created by the Securities Act or the rules and regulations thereunder.

Potential Effects of Authorized but Unissued Stock

The Charter provides that certain shares of authorized but unissued common stock and preferred stock will be available for future issuances without stockholder approval and could be utilized for a variety of corporate purposes, including future public offerings, to raise additional capital, or to facilitate acquisitions. The existence of authorized but unissued and unreserved common stock and preferred stock could make more difficult or discourage an attempt to obtain control of the Company by means of a proxy contest, tender offer, merger, or otherwise.

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

The DGCL authorizes corporations to limit or eliminate the personal liability of directors or officers of corporations and their stockholders for monetary damages for breaches of directors' or officers' fiduciary duties, subject to certain exceptions. The Charter includes a provision that eliminates the personal liability of directors or officers for monetary damages for any breach of fiduciary duty as a director or officer 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.

The Bylaws provide that the Company must indemnify and hold harmless the directors and officers of the Company to the fullest extent authorized by the DGCL. The Company may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Company, or is or was serving at the request of the Company as a director, officer, employee or agent of another corporation, partnership, joint venture, trust enterprise or non-profit entity against any liability asserted against him or her and incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the Company would have the power to indemnify him or her against such liability under the provisions of the DGCL.

The limitation of liability, advancement and indemnification provisions in the Charter and Bylaws may discourage stockholders from bringing lawsuits against directors or officers for breach of their fiduciary duties. These provisions also may have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit the Company and its stockholders. In addition, your investment may be adversely affected to the extent the Company pays the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

Listing

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

Transfer Agent and Registrar

The Transfer Agent and Registrar for our common stock is Continental Stock Transfer & Trust Company.

SELLING STOCKHOLDERS

This prospectus relates to the resale from time to time of an aggregate of up to 1,000,000 shares of our common stock issuable upon conversion of the Promissory Note, as described under “Prospectus Summary; Convertible Note.” The selling stockholders may from time to time offer and sell any or all of the shares of common stock set forth below pursuant to this prospectus and any accompanying prospectus supplement. When we refer to the “selling stockholders” in this prospectus, we mean the persons listed in the table below, and the donees, pledgees, transferees, assignees, designees, distributees or other successors-in-interest who later come to hold any of the selling stockholders’ interest in the common stock other than through a public sale.

The following table sets forth, as of the date of this prospectus, the names of the selling stockholders, certain beneficial ownership information with respect to the selling stockholders, and the aggregate number of shares of common stock that the selling stockholders may offer pursuant to this prospectus. This table was prepared based on information provided to us by the selling stockholders, and it is possible that certain of such selling stockholders may have sold, transferred or otherwise disposed of some or all of the securities shown below subsequent to the date as of which they provided such information.

Beneficial ownership is determined according to the rules of the SEC, which generally provide that a person has beneficial ownership of a security if such person possesses sole or shared voting or investment power over that security. Under those rules, beneficial ownership includes securities that the individual or entity has the right to acquire, such as through the conversion of convertible notes, within 60 days following a specified date. The inclusion of any shares of common stock in this table does not constitute an admission of beneficial ownership for any selling stockholders named below.

Unless otherwise noted, the address for each beneficial owner listed below is c/o Spectral AI, Inc., 2515 McKinney Avenue, Suite 1000, Dallas, Texas 75201.

Name of Selling Shareholder	Shares of Common Stock Beneficially Owned Prior to the Offering		Maximum Number of Shares Being Offered	Shares of Common Stock Beneficially Owned After the Offering	
	Number	Percentage		Number	Percentage
IP Protocol, LLC ⁽¹⁾	1,000,000	4.88%	1,000,000	1,000,000	4.88%

(1) IP Protocol, LLC is the direct holder of these shares. Peter Benz is the managing member and has voting and investment power over the reported shares offered hereby. The address of the selling stockholder is 4843 Three Oaks Blvd., Sarasota, FL 34233. Pursuant to the Promissory Note, as amended, IP Protocol has the right to provide Notice to the Company to convert the outstanding principal and accrued but unpaid interest under the Promissory Note into shares of common stock the Company at any time.

We cannot advise you as to whether the selling stockholders will in fact sell any or all of the shares of common stock covered by this prospectus.

Selling stockholder information for each additional selling stockholders, if any, will be set forth by prospectus supplement to the extent required prior to the time of any offer or sale of such selling stockholder’s shares pursuant to this prospectus. To the extent permitted by law, a prospectus supplement may add, update, substitute, or change the information contained in this prospectus, including the identity of each selling stockholders and the number of shares of common stock registered on its behalf. A selling stockholders may sell or otherwise transfer all, some or none of such shares of common stock in this offering. See “Plan of Distribution.”

Other than as described above or elsewhere in this prospectus or the documents incorporated by reference herein, none of the selling stockholders has any material relationship with us or any of our predecessors or affiliates.

PLAN OF DISTRIBUTION

The selling stockholders, which, as used herein, includes donees, pledgees, transferees, assignees, designees, distributees or other successors-in-interest selling shares of our common stock or interests in our common stock received after the date of this prospectus from the selling stockholders as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer, distribute or otherwise dispose of certain of their shares of common stock or interests in our common stock on any stock exchange, market or trading facility on which shares of our common stock, as applicable, are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of their shares of common stock or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- one or more underwritten offerings;
- block trades in which the broker-dealer will attempt to sell the shares of common stock as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its own account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- distributions to their members, partners or shareholders;
- short sales effected after the date of the registration statement of which this prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- in market transactions, including transactions on a national securities exchange or quotations service or over-the-counter market;
- directly to one or more purchasers;
- through agents;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares of common stock at a stipulated price per share;
- through loans or pledges of the shares, including to a broker-dealer or an affiliate thereof;
- any other method permitted pursuant to applicable law; and
- a combination of any such methods of sale.

The selling stockholders may, from time to time, pledge or grant a security interest in some shares of our common stock owned by them and, if a selling stockholders defaults in the performance of its secured obligations, the pledgees or secured parties may offer and sell such shares of common stock, as applicable, from time to time, under this prospectus, or under an amendment or supplement to this prospectus amending the list of the selling stockholders to include the pledgee, transferee or other successors in interest as the selling stockholders under this prospectus. The selling stockholders also may transfer shares of our common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of shares of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of our common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge shares of our common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities that require the delivery to such broker-dealer or other financial institution of shares of our common stock offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the selling stockholders from the sale of shares of our common stock offered by them will be the purchase price of such shares of our common stock less discounts or commissions, if any. The selling stockholders reserve the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of shares of our common stock to be made directly or through agents. We will not receive any of the proceeds from any offering by the selling stockholders.

The selling stockholders also may in the future resell a portion of our common stock in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule, or pursuant to other available exemptions from the registration requirements of the Securities Act.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of shares of our common stock or interests therein may be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of shares of our common stock may be underwriting discounts and commissions under the Securities Act. If any selling stockholders is an “underwriter” within the meaning of Section 2(a)(11) of the Securities Act, then the selling stockholders will be subject to the prospectus delivery requirements of the Securities Act. Underwriters and their controlling persons, dealers and agents may be entitled, under agreements entered into with us and the selling stockholders, to indemnification against and contribution toward specific civil liabilities, including liabilities under the Securities Act.

To the extent required, at the time a particular offer is made, the number of shares of our common stock being offered and the terms of the offering, including the name of any underwriter, dealer or agent, the respective purchase prices and public offering prices, and any applicable discounts, commissions, concessions or other compensation with respect to such offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

To facilitate the offering of shares of our common stock offered by the selling stockholders, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock. This may include over-allotments or short sales, which involve the sale by persons participating in the offering of more shares of common stock than were sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of our common stock by bidding for or purchasing shares of common stock in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if shares of common stock sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of our common stock at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

Under the Promissory Note, we have agreed to indemnify the selling stockholders party thereto against certain liabilities that they may incur in connection with the sale of the securities registered hereunder, including liabilities under the Securities Act, and to contribute to payments that the selling stockholders may be required to make with respect thereto. In addition, we and the selling stockholders may agree to indemnify any underwriter, broker-dealer or agent against certain liabilities related to the selling of the securities, including liabilities arising under the Securities Act.

Under the Promissory Note, we have agreed to maintain the effectiveness of this registration statement until all securities registered pursuant thereto have been sold under this registration statement or Rule 144 under the Securities Act, are no longer outstanding, or otherwise cease to constitute registrable securities under the terms of such agreement. In addition, we have agreed to pay all expenses in connection with this offering, other than underwriting fees, discounts, selling commissions, stock transfer taxes and certain legal expenses. The selling stockholders will pay, on a pro rata basis, any underwriting fees, discounts, selling commissions, stock transfer taxes and certain legal expenses relating to the offering. Unless otherwise set forth in a prospectus supplement, the selling stockholders will receive all the net proceeds from the resale of shares of our common stock.

A selling stockholder that is an entity may elect to make an in-kind distribution of common stock to its members, partners or shareholders pursuant to the registration statement of which this prospectus is a part by delivering a prospectus. To the extent that such members, partners or shareholders are not affiliates of ours, such members, partners or shareholders would thereby receive freely tradable shares of common stock pursuant to the distribution through this registration statement.

We have agreed 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.

LEGAL MATTERS

Unless otherwise specified in the applicable prospectus supplement, the validity of the securities offered by this prospectus will be passed upon for us by Reed Smith LLP. If legal matters in connection with offerings made by this prospectus are passed on by counsel for the underwriters, dealers or agents, if any, that counsel will be named in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of Spectral AI, Inc. as of December 31, 2023 and 2022 and for each of the years in the two-year period ended December 31, 2023, have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Exchange Act, and in accordance therewith file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains an internet website at www.sec.gov that contains periodic and current reports, proxy and information statements and other information regarding registrants that are filed electronically with the SEC.

These documents are also available, free of charge, through the Investors section of our website, which is located at <https://investors.spectral-ai.com/>.

We have filed with the SEC a registration statement under the Securities Act of 1933, as amended, relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement for free at www.sec.gov. The registration statement and the documents referred to below under “Incorporation of Documents by Reference” are also available on our website, <https://investors.spectral-ai.com/>. The reference to our website in this prospectus is an inactive textual reference only and is not a hyperlink. The contents of our website are not part of this prospectus, and you should not consider the contents of our website in making an investment decision with respect to our securities.

We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” the information we have filed with it, which means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is an important part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We specifically are incorporating by reference the following documents filed with the SEC (excluding those portions of any Current Report on Form 8-K that are furnished and not deemed “filed” pursuant to the General Instructions of Form 8-K):

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2023, filed with the SEC on March 29, 2024;
- our Quarterly Report on [Form 10-Q](#) for the fiscal quarter ended March 31, 2024, filed with the SEC on May 9, 2024, Quarterly Report on [Form 10-Q](#) for the fiscal quarter ended June 30, 2024, filed with the SEC on August 12, 2024, and Quarterly Report on [Form 10-Q](#) for the fiscal quarter ended September 30, 2024, filed with the SEC on November 6, 2024;
- our Current Reports on Form 8-K filed with the SEC on [February 2, 2024](#), [February 5, 2024](#), [February 12, 2024](#), [February 13, 2024](#), [February 22, 2024](#), [March 1, 2024](#), [March 22, 2024](#), [March 29, 2024](#), [April 1, 2024](#), [April 2, 2024](#), [May 16, 2024](#), [June 5, 2024](#), [June 24, 2024](#), [July 15, 2024](#), [August 13, 2024](#) and [October 15, 2024](#) (other than any portions thereof deemed furnished and not filed);
- our Definitive Proxy Statement on [Schedule 14A](#), filed with the SEC on April 4, 2024 (but only with respect to information required by Part III of our Annual Report on Form 10-K for the year ended December 31, 2023, which information updated and superseded information included in Part III of our Annual Report on Form 10-K for the year ended December 31, 2023); and
- the description of our common stock contained in our [Form 10-K](#), filed with the Commission on March 29, 2024, and any amendment or report filed with the Commission for purposes of updating such description.

All reports and definitive proxy or information statements subsequently filed after the date of this initial registration statement and prior to effectiveness of this registration statement by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, but excluding information furnished to, rather than filed with, the SEC, shall be deemed to be incorporated by reference herein and to be a part hereof from the date such documents are filed.

Any statement contained herein or in any document incorporated or deemed to be incorporated by reference shall be deemed to be modified or superseded for purposes of the registration statement of which this prospectus forms a part to the extent that a statement contained in any other subsequently filed document which also is or is deemed to be incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of the registration statement of which this prospectus forms a part, except as so modified or superseded.

You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

We will provide without charge to each person to whom a copy of this prospectus is delivered, upon written or oral request, a copy of any or all of the information that has been incorporated by reference in this prospectus but not delivered with this prospectus (other than an exhibit to these filings, unless we have specifically incorporated that exhibit by reference in this prospectus). Any such request should be addressed to us at:

Spectral AI, Inc.
Attn: Vincent S. Capone, Esq.
Chief Financial Officer & General Counsel
2515 McKinney Ave, Suite 1000
Dallas, TX 75201
972-499-4934

You may also access the documents incorporated by reference in this prospectus through our website at <https://investors.spectral-ai.com/>. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated costs and expenses payable by the registrant expected to be incurred in connection with the issuance and distribution of the securities being registered hereby (other than underwriting discounts and commissions). All of such expenses are estimates, except for the SEC registration fee.

	Amount to be Paid
SEC registration fee	\$ 165.35
Printing fees and expenses	*
Transfer agent and registrar fees	*
Accounting fees and expenses	*
Legal fees and expenses	*
Miscellaneous ⁽¹⁾	*
Total	\$ *

* These fees are calculated based on the securities offered and the number of issuances and accordingly cannot be estimated at this time.

(1) Pursuant to the Promissory Note, the Company will pay the registration expenses, which are generally the fees and expenses associated with the registration and sale of the offered shares by the selling stockholders, except underwriting fees, discounts or commissions, any out-of-pocket expenses (other than fees and expenses incurred in connection with complying with state securities or blue sky laws) of the selling stockholders or the fees and disbursements of any underwriter.

Item 15. Indemnification of Directors and Officers.

Section 102 of the DGCL permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our Charter provides that no director of the Registrant shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the DGCL prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall 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 Delaware Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Delaware Court of Chancery or such other court shall deem proper.

Our Charter provides that we will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an “Indemnitee”), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our Charter provides that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys’ fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances.

We have entered into indemnification agreements with each of our directors and officers. These indemnification agreements may require us, among other things, to indemnify our directors and officers for some expenses, including attorneys’ fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of his or her service as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

In any underwriting agreement we enter into in connection with the sale of Common Stock being registered hereby, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us within the meaning of the Securities Act against certain liabilities.

Item 16. Exhibits.

(a) Exhibits.

Exhibit Number	Description of Document
2.1**	Business Combination Agreement, by and among Rosecliff Acquisition Corp I, Merger Sub I, Merger Sub II and Spectral MD Holdings, Ltd., dated as of April 11, 2023 (incorporated by reference to Annex A of the Registration Statement on Form S-4 (File No. 333-271566)).
3.1**	Second Amended and Restated Certificate of Incorporation of Spectral AI, Inc. (incorporated by reference to the Company’s Current Report on Form 8-K, filed with the SEC on September 15, 2023).
3.2**	Amended and Restated Bylaws of Spectral AI, Inc. (incorporated by reference to the Company’s Current Report on Form 8-K, filed with the SEC on September 15, 2023).
4.1**	Description of Securities (incorporated by reference to the Registrant’s Annual Report on Form 10-K filed on March 31, 2022).
4.2*	Spectral IP, Inc. Promissory Note and Spectral AI guarantee, dated March 19, 2024
4.3*	Amendment to Spectral IP, Inc. Promissory Note, dated October 1, 2024
5.1*	Opinion of Reed Smith LLP
23.1*	Consent of KPMG, LLP, independent registered public accounting firm
23.2*	Consent of Reed Smith LLP (included in Exhibit 5.1)
24.1*	Power of Attorney (included in Part II of this Registration Statement)
107*	Filing Fee Table

* Filed herewith.

** Previously filed.

Item 17. Undertakings.

(a) 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 of 1933;

(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) (§ 230.424(b) of this chapter) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Filing Fee Tables" or "Calculation of Registration Fee" table, as applicable, 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 (1)(i), (1)(ii) and (1)(iii) do not apply if 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 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 of 1933, 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 of 1933 to any purchaser:

(i) If the registrant is relying on Rule 430B (§230.430B of this chapter):

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *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 effective date, 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 effective date.

(ii) If the registrant is subject to Rule 430C, 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.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability of the registrant under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement 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.

(c) 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 Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act 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.

(d) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b) (1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus 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.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Dallas, State of Texas, on November 20, 2024.

Spectral AI, Inc.

By: /s/ J. Michael DiMaio

Name: J. Michael DiMaio

Title: Chairman (Principal Executive Officer)

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Vincent Capone, with full power to act alone and without the others, his true and lawful attorney-in-fact, with full power of substitution, and with the authority to execute in the name of each such person, any and all amendments (including without limitation, post-effective amendments) to this registration statement on Form S-3, to sign any and all additional registration statements relating to the same offering of securities as this registration statement that are filed pursuant to Rule 462(b) of the Securities Act of 1933, and to file such registration statements with the Securities and Exchange Commission, together with any exhibits thereto and other documents therewith, necessary or advisable to enable the registrant to comply with the Securities Act of 1933, and any rules, regulations and requirements of the Securities and Exchange Commission in respect thereof, which amendments may make such other changes in the registration statement as the aforesaid attorney-in-fact executing the same deems appropriate.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ J. Michael DiMaio</u> J. Michael DiMaio	Chairman (Principal Executive Officer)	November 20, 2024
<u>/s/ Vincent S. Capone</u> Vincent S. Capone	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	November 20, 2024
<u>/s/ Richard Cotton</u> Richard Cotton	Director	November 20, 2024
<u>/s/ Martin Mellish</u> Martin Mellish	Director	November 20, 2024
<u>/s/ Deepak Sadagopan</u> Deepak Sadagopan	Director	November 20, 2024
<u>/s/ Marion Snyder</u> Marion Snyder	Director	November 20, 2024
<u>/s/ Erich Spangenberg</u> Erich Spangenberg	Director	November 20, 2024

THIS NOTE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR ANY APPLICABLE STATE SECURITIES LAWS. THIS NOTE MAY NOT BE OFFERED, SOLD, OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED EXCEPT PURSUANT TO (A) A REGISTRATION STATEMENT WITH RESPECT TO SUCH NOTE WHICH IS EFFECTIVE UNDER SUCH ACT, (B) RULE 144 UNDER SUCH ACT, OR (C) ANY OTHER EXEMPTION FROM REGISTRATION UNDER SUCH ACT RELATING TO THE DISPOSITION OF SECURITIES. IN THE CASE OF TRANSFERS OR OTHER DISPOSITIONS MADE OTHERWISE THAN PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER SUCH ACT, THE HOLDER SHALL, AT THE COMPANY'S REQUEST AND AT THE COMPANY'S EXPENSE, PROVIDE AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED.

SPECTRAL IP, INC.

PROMISSORY NOTE

Date: March 18, 2024

Principal Amount: \$1,000,000

Spectral IP, Inc., a Delaware corporation (the "Company"), for value received, hereby promises to pay to SIM Tech Licensing, LLC, a Delaware limited liability company (the "Holder"), the sum of One Million Dollars (\$1,000,000) (the "Principal Amount") together with interest as calculated below, upon the earliest to occur of (a) (i) March __, 2025 or (ii) a Liquidation Event, or (b) when declared due and payable by Holder subsequent to the occurrence of an Event of Default (each, a "Maturity Event"). A "Liquidation Event" means any liquidation, dissolution or winding up of the Company, whether voluntary or involuntary, as well as (x) any sale, merger, consolidation or conversion of the Company to, into or with another company (except one in which the holders of capital stock of the Company immediately prior to such sale, merger or consolidation continue to hold at least a majority of the voting power of the capital stock of the surviving company), (y) any sale, license, lease or transfer of all or substantially all of the assets of the Company, or (z) the consummation of a spin-off of the Company whereby Spectral AI, Inc., a Delaware corporation and the current owner of all of the shares of the Company ("Parent"), distributes shares of the Company to Parent's shareholders.

1. **Interest and Payment.** This Note shall bear interest from the date of this Note on the unpaid Principal Amount at a rate equal to eight percent (8%) per annum (the "Interest Rate"), computed on the basis of the actual number of days elapsed and a year of 365 days. Interest on the unpaid principal balance of this Note shall be due and payable on the outstanding Principal Amount upon a Maturity Event. In addition, the Company agrees to pay the additional interest specified in Section 5 upon the occurrence and during the continuation of any Event of Default. Payment of the Principal Amount and interest on this Note shall be made in lawful money of the United States of America by wire transfer to a bank account of a US bank designated by Holder.

2. **Prepayment.** The Company may, without premium or penalty, at any time and from time to time, prepay all or any portion of the outstanding Principal Amount due and owing under this Note, provided that each such prepayment is accompanied by accrued interest on the Principal Amount prepaid calculated to the date of such prepayment.

3. **Senior Status.** This Note shall rank senior in right of payment to (a) all classes and series of capital stock of the Company now existing or hereafter issued, (b) all existing indebtedness of the Company, and (c) all future indebtedness of the Company. No payment on any such existing or future indebtedness shall be made until this Note has been paid in full. The Company shall execute a security agreement (the "Security Agreement" together with this Note the "Transaction Documents") to secure the amounts owed under this Note.

4. **Default.** The term "Event of Default" means, wherever used herein, any of the following events (whatever the reason for such event and whether such event shall be voluntary or involuntary or effected by operation of law or pursuant to any judgment, decree or order of any court, or any order, rule or regulation of any administrative or governmental body):

(a) any default in the payment of (A) the Principal Amount or interest of this Note or (B) or other amounts owing to a Holder on this Note, as and when the same shall become due and payable;

(b) the Company shall fail to observe or perform any other covenant or agreement contained in this Note;

(c) a default or event of default (subject to any grace or cure period provided in the applicable agreement, document or instrument) shall occur under (A) any of the Transaction Documents, including but not limited to failure to strictly comply with the provisions of the Transaction Documents, or (B) any other material agreement, lease, document or instrument to which Company or any affiliate is obligated (and not covered by clause (vi) below), which in the case of subsection (B) would reasonably be expected to have a material adverse effect;

(d) any material representation or warranty made in this Note, any other Transaction Documents, any written statement pursuant hereto or thereto or any other report, financial statement or certificate made or delivered to the Holder shall be untrue or incorrect in any material respect as of the date when made or deemed made;

(e) Company or any affiliate shall default on any of its obligations under any mortgage, credit agreement or other facility, indenture agreement, factoring agreement or other instrument under which there may be issued, or by which there may be secured or evidenced, any indebtedness for borrowed money or money due under any long term leasing or factoring arrangement that (a) involve obligations greater than \$100,000 in the aggregate, whether such indebtedness now exists or shall hereafter be created, and (b) results in such indebtedness becoming or being declared due and payable prior to the date on which it would otherwise become due and payable;

(f) any material provision of any Transaction Document shall at any time for any reason (other than pursuant to the express terms thereof) cease to be valid and binding on or enforceable against the Company, or the validity or enforceability thereof shall be contested by Company, or a proceeding shall be commenced by Company or any governmental authority having jurisdiction over Company or Holder, seeking to establish the invalidity or unenforceability thereof, or Company shall deny in writing that it has any liability or obligation purported to be created under any Transaction Document;

(g) any monetary judgment, writ or similar final process shall be entered or filed against Company, any affiliate or any of their respective property or other assets for more than \$50,000, and such judgment, writ or similar final process shall remain unvacated, unbonded or unstayed for a period of forty-five (45) calendar days;

(h) any dissolution, liquidation or winding up by Company or a material affiliate of a substantial portion of their business;

(i) cessation of operations by Company or a material affiliate;

(j) the failure by Company or any material affiliate to maintain any material intellectual property rights, personal, real property, equipment, leases or other assets which are necessary to conduct its business (whether now or in the future) and such breach is not cured with twenty (20) days after written notice to the Company from the Holder;

(k) (i) Borrower or any affiliate thereof commences a case or other proceeding under any bankruptcy, reorganization, arrangement, adjustment of debt, relief of debtors, dissolution, insolvency or liquidation or similar law of any jurisdiction relating to Borrower or any affiliate thereof, (ii) there is commenced against Borrower or any affiliate thereof any such case or proceeding that is not dismissed within 60 days after commencement, (iii) Borrower or any affiliate thereof is adjudicated insolvent or bankrupt or any order of relief or other order approving any such case or proceeding is entered, (iv) Borrower or any affiliate thereof suffers any appointment of any custodian or the like for it or any substantial part of its property that is not discharged or stayed within 60 calendar days after such appointment, (v) Borrower or any affiliate thereof makes a general assignment for the benefit of creditors, (vi) Borrower or any affiliate thereof calls a meeting of its creditors with a view to arranging a composition, adjustment or restructuring of its debts or (vii) Borrower or any affiliate thereof, by any act or failure to act, expressly indicates its consent to, approval of or acquiescence in any of the foregoing or takes any corporate or other action for the purpose of effecting any of the foregoing; or

(l) default by the Company of a material term, covenant, warranty or undertaking of any other agreement to which the Company and Holder are parties.

5. Remedies. Upon the occurrence of an Event of Default, and so long as such Event of Default continues, the entire balance of the Principal Amount together with all accrued and unpaid interest shall bear interest at the rate of twenty percent (20%) per annum, and the Holder may exercise its rights and remedies set forth in Section 4 or any other remedies available at law or in equity. No delay or omission on the part of the Holder in exercising any right under this Note will operate as a waiver of such right.

6. Exchange of Note. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Note, and in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form and substance to the Company or, in the case of mutilation, on surrender and cancellation of the mutilated Note, the Company at its expense shall execute and deliver, in lieu of this Note, a new Note of the same form and amount.

7. Representations and Warranties. The Company hereby represents and warrants that (a) the issuance of this Note has been duly authorized and approved by all necessary corporate action on the part of the Company and its stockholders, (b) this Note has been duly and validly issued and is free of preemptive rights, (c) all consents required for the issuance and delivery of this Note have been obtained, and this Note is not in conflict with any charter documents of the Company, and (d) the execution and delivery of this Note and the other Transaction Documents to which the Company is a party have been duly executed and delivered by the Company and, assuming the execution and delivery hereof and acceptance thereof by the Holder, will constitute the legal, valid and binding obligations of the Company, enforceable against the Company in accordance with its terms.

8. **No Stockholder Rights.** This Note shall not confer upon the Holder or any other person the right to vote, to receive dividends or other distributions, to consent or to receive notice as a shareholder in respect of any meeting of shareholders, or any other rights whatsoever as a shareholder of the Company.

9. **Amendment.** All amendments to this Note require the written consent of the Company and the Holder.

10. **Waiver.** The Company hereby waives diligence, presentment, protest and demand, notice of protest, notice of dishonor, notice of nonpayment and any and all other notices and demands in connection with the delivery, acceptance, performance, default or enforcement of this Note. The Company further waives, to the full extent permitted by law, the right to plead any and all statutes of limitations as a defense to any demand on this Note.

11. **Signatures.** If this Note bears the signatures of an individual who was an officer of the Company at the time of signing and such signatures shall bind the Company.

12. **Transfers.** This Note may be transferred at any time in the sole discretion of the Holder.

13. **Notices.** All notices or other communications under this Note shall be given in accordance with the Notice provision of the Security Agreement.

14. **Attorney's Fees.** If an Event of Default occurs, the Company shall pay all costs of enforcement and collection, including without limitation, fees and expenses of counsel, whether or not any action or proceeding is brought to enforce the provisions hereof.

15. **Governing Law.** This Note shall be construed, interpreted and governed by the laws of the State of Delaware, without regard to its conflicts-of-law provisions. Any action to enforce this Note shall be brought solely in the state and federal courts located in the State of Delaware.

16. **Successors and Assigns.** This Note shall be a binding obligation of the successors and assigns of the Company.

17. **Headings.** All headings used herein are used for convenience only and shall not be used to construe or interpret this Note.

[Signature Page Follows]

In witness whereof, the Company has caused this Note to be executed by a duly authorized officer, this 18th day of March 2024.

SPECTRAL IP, INC.

By: /s/ Peter M. Carlson

Name: Peter M. Carlson

Title: Chief Financial Officer

Parent Guarantee

Spectral AI, Inc., the parent company of the Company (the “Guarantor”), hereby guarantees to the Holder (this “Guaranty”) the full, prompt and unconditional payment when due (whether at the Maturity Date, by acceleration or otherwise), and the performance, of all liabilities, agreements and other obligations of the Company to the Holder contained in the Transaction Documents (all the foregoing, collectively, the “Obligations”). This Guaranty is an absolute, unconditional and continuing guaranty of the full and punctual payment and performance of the Obligations and not of their collectability only and is in no way conditioned upon any requirement that the Holder first attempt to collect or require the performance of any of the Obligations from the Company or resort to any security or other means of obtaining their payment. Should the Company default in the payment or performance of any of the Obligations, the obligations of the Guarantor hereunder shall become immediately due and payable to the Holder, without demand or notice of any nature, all of which are expressly waived by the Guarantor. The liability of the Guarantor hereunder shall be limited to the amount of the Obligations due to the Holder.

SPECTRAL AI, INC.

By: /s/ Peter M. Carlson

Name: Peter M. Carlson

Title: Chief Executive Officer

**Amendment To
Promissory Note**

This Amendment (this “**Amendment**”) shall be effective as of October 1, 2024, by and between Spectral IP, Inc. a Delaware corporation (the “**Company**”), Spectral AI, Inc., a Delaware corporation (the “**Parent**” or “**Guarantor**”) and IP Protocol, LLC, a Wyoming limited liability company (“**Assignee**”) as assignee of that certain Promissory Note dated as of March 18, 2024 by and between the Company and SIM Tech Licensing, LLC, a Delaware limited liability company (the “**Note**”) for the purpose of amending the Note as of the date hereof. Capitalized terms used but not defined herein shall have the meaning ascribed to such term in the Note.

RECITALS:

WHEREAS, pursuant to Note, the Company is obligated to repay One Million Dollars (\$1,000,000) plus all accrued and unpaid interest to the Assignee on or before the occurrence of a Maturity Event; and

WHEREAS, the parties to this Amendment desire to amend and restate certain provisions in the Note and to include a conversion and registration right as part of this Amendment.

NOW, THEREFORE, in consideration of the representations, covenants and agreements contained herein, and certain other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company, Parent and Assignee, intending to be legally bound, hereby agree as follows:

AGREEMENT:

1. **Amendments to Note.**

The introductory paragraph shall extend the term from one year to two years and be amended and restated in its entirety as set forth below:

“Spectral IP, Inc., a Delaware corporation (the “Company”), for value received, hereby promises to pay to SIM Tech Licensing, LLC, a Delaware limited liability company (the “Holder”), the sum of One Million Dollars (\$1,000,000) (the “Principal Amount”) together with interest as calculated below, upon the earliest to occur of (a) (i) March 18, 2026 or (ii) a Liquidation Event, or (b) when declared due and payable by Holder subsequent to the occurrence of an Event of Default (each, a “Maturity Event”). A “Liquidation Event” means any liquidation, dissolution or winding up of the Company, whether voluntary or involuntary, as well as (x) any sale, merger, consolidation or conversion of the Company to, into or with another company (except one in which the holders of capital stock of the Company immediately prior to such sale, merger or consolidation continue to hold at least a majority of the voting power of the capital stock of the surviving company), (y) any sale, license, lease or transfer of all or substantially all of the assets of the Company, or (z) the consummation of a spin-off of the Company whereby Spectral AI, Inc., a Delaware corporation and the current owner of all of the shares of the Company (“Parent”), distributes shares of the Company to Parent’s shareholders.”

Section 1 of the Note shall reduce the interest rate from eight percent to four percent and be amended and restated in its entirety as set forth below:

“1. **Interest and Payment.** This Note shall bear interest from the date of this Note on the unpaid Principal Amount at a simple interest rate equal to four percent (4.00%) per annum (the “Interest Rate”), computed on the basis of the actual number of days elapsed and a year of 365 days. Interest on the unpaid principal balance of this Note shall be due and payable on the outstanding Principal Amount upon a Maturity Event. In addition, the Company agrees to pay the additional interest specified in Section 5 upon the occurrence and during the continuation of any Event of Default. Payment of the Principal Amount and interest on this Note shall be made in lawful money of the United States of America by wire transfer to a bank account of a US bank designated by Holder.”

Section 8 of the Note shall include a conversion right for the Holder and the Company and shall be amended and restated in its entirety as set forth below:

“8. **Stockholder Rights; Conversion Rights.** This Note shall not confer upon the Holder or any other person the right to vote, to receive dividends or other distributions, to consent or to receive notice as a shareholder in respect of any meeting of shareholders, or any other rights whatsoever as a shareholder of the Company.

The Holder may convert any and all amounts of accrued and unpaid interest and the Principal Amount due and owing pursuant to this Note into shares of the Guarantor. The conversion of the accrued and unpaid interest and the Principal Amount of this Note (the “Total Outstanding Obligations”) into shares of common stock of the Guarantor shall be calculated by dividing the conversion amount of the Total Outstanding Obligations by the Share Price. For purposes of this Note, the “Share Price” shall equal that number calculated by taking a five percent (5.00%) discount to the closing price of the Guarantor’s common stock on the day prior to the date of notice to the Company of Holder’s exercise of its conversion right. If the Holder decides to exercise a part of its conversion right for some, but not all, of the Total Outstanding Obligations, the Company, at its expense, shall execute and deliver, in lieu of this Note, a new Note of the same form and such lesser Principal Amount.

At a Maturity Event, in lieu of paying cash for the Total Outstanding Obligations, the Company may elect to convert all of the Total Outstanding Obligations into shares of the Guarantor at the Share Price for the five trading days prior to the date of the Maturity Event.”

A new Section 18 shall be added to the Note which shall be stated in its entirety as follows:

“18. **Conversion Limitation.** Notwithstanding the foregoing and for avoidance of doubt, to comply with the rules of the NASADQ, Company shall not effect any conversion of this Note, and a Holder shall not have the right to convert any portion of this NASADQ, to the extent that after giving effect to such issuance after conversion as set forth on the applicable notice such Holder or any of its affiliates would result in the issuance of an aggregate amount of common stock in excess of 19.99% of the shares of common stock outstanding prior to the date hereof. In the event the Company is prohibited from issuing shares of common stock as a result of the previous sentence, such occurrence shall be an Event of Default under the Note.”

2. **RRA.** The Company and Assignee shall enter into the registration rights agreement annexed hereto as Exhibit A.

3. **Incorporation by Reference**. The terms of the Note are hereby incorporated by reference into this Amendment. Except as expressly set forth herein, the provisions of the Note are not amended and remain in full force and effect.

4. **Assignment/Amendment/Waiver**. This Amendment and the Note constitute the entire agreement among the Company, Parent and Assignee with respect to the matters referred to herein and therein, and no other arrangement, understanding or agreement, verbal or otherwise, shall be binding upon the parties hereto. This Amendment may not be assigned by any of the parties hereto, and may not be amended or modified, except by the written consent of the parties hereto. No failure or delay on the part of any party hereto in exercising any right, power or remedy hereunder shall operate as a waiver thereof.

5. **Counterparts**. This Amendment may be executed in multiple counterparts, each of which shall be deemed to be an original, and all of such counterparts shall constitute one document. To facilitate execution of this Amendment, the parties hereto may execute and exchange, by electronic mail PDF, counterparts of the signature pages. Signature pages may be detached from the counterparts and attached to a single copy of this Amendment to physically form one document. The parties hereto consent and agree that this Amendment may be signed and/or transmitted by facsimile, e-mail of a .pdf document or using electronic signature technology (e.g., via DocuSign or similar electronic signature technology), and that such signed electronic record shall be valid and as effective to bind the party so signing as a paper copy bearing such party's handwritten signature. The parties further consent and agree that (a) to the extent a party signs this Amendment using electronic signature technology, by clicking "SIGN", such party is signing this Amendment electronically, and (b) the electronic signatures appearing on this Amendment shall be treated, for purposes of validity, enforceability and admissibility, the same as handwritten signatures.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of October 1, 2024.

COMPANY:

Spectral IP, Inc.

a Delaware corporation

By: /s/ Peter M. Carlson

Name: Peter Carlson

Title: Board Member

PARENT:

Spectral AI, Inc.

a Delaware corporation

By: /s/ Peter M. Carlson

Name: Peter Carlson

Title: Chief Executive Officer

ASSIGNEE:

IP Protocol, LLC

By: /s/ Chris Benz

Name: Chris Benz

Title: Mgr.



Reed Smith LLP
599 Lexington Avenue
New York, NY 10022-7650
+1 212 521 5400
Fax +1 212 521 5450
reedsmith.com

November 20, 2024

Spectral AI, Inc.
2515 McKinney Avenue, Suite 1000
Dallas, Texas 75201

Ladies and Gentlemen:

We have acted as counsel to Spectral AI, Inc., a Delaware corporation (the “**Company**”), in connection with the preparation and filing by the Company with the Securities and Exchange Commission (the “**Commission**”) of a registration statement on Form S-3 (the “**Registration Statement**”) and the related prospectus filed with the Registration Statement (the “**Prospectus**”), covering the registration of up to 1,000,000 shares of common stock, \$0.0001 par value per share, of the Company (the “**Common Stock**”) issuable upon the conversion of the convertible promissory note issued in a private placement pursuant to a Promissory Note, dated March 19, 2024, as amended on October 1, 2024, by and between the Company and an accredited investor (the “**Promissory Note**”). The Company is registering the resale of the Common Stock as required by the registration rights included in the Promissory Note, as amended.

This opinion letter is being furnished in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act.

We have reviewed originals or copies of (a) the Registration Statement, (b) the Promissory Note (c) the Company’s Second Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws; and together with the Registration Statement and the Promissory Note, the “**Transaction Documents**”, and such other corporate records, agreements and documents of the Company, certificates or comparable documents of public officials and officers of the Company and have made such other investigations as we have deemed necessary as a basis for the opinions set forth below.

In rendering the opinion set forth below, we have assumed:

- a) the genuineness of all signatures;
- b) the legal capacity of natural persons;
- c) the authenticity of all documents submitted to us as originals; and
- d) the conformity to original documents of all documents submitted to us as duplicates or conformed copies; and
- e) as to matters of fact, the truthfulness of the representations and warranties made or to be made (as applicable) by the parties to the Transaction Documents and the truthfulness of the representations made in certificates or comparable documents of public officials and officers of the Company.

We have not independently established the validity of the foregoing assumptions.

Based upon the foregoing, and subject to the qualifications, assumptions and limitations stated herein, we are of the opinion that the shares of Common Stock have been duly authorized and, when issued and delivered upon conversion of the Promissory Note in accordance with the terms of the Promissory Note, will be validly issued, fully paid and nonassessable.

The opinions stated herein are subject to the qualifications that we express no opinion as to the applicability of, compliance with, or effect of (i) public policy considerations which may limit the rights of parties to obtain certain remedies, (ii) any provision waiving the right to object to venue in any court; and (iii) any agreement to submit to the jurisdiction of any federal court.

Our opinion is limited to the General Corporation Law of the State of Delaware and the laws of the State of New York (the “**Opined-on Law**”) and we do not express any opinion herein concerning any other law. We advise you that issues addressed by this letter may be governed in whole or in part by other laws, but we express no opinion as to whether any relevant difference exists between the laws upon which our opinions are based and any other laws which may actually govern. This opinion letter speaks only as of its date.

We hereby consent to the filing of this opinion letter as Exhibit 5.1 to the Registration Statement and to the use of our name under the caption “Legal Matters” in the prospectus forming part of the Registration Statement and any amendments thereto. In giving such consent, we do not hereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act, and the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ REED SMITH LLP

Reed Smith LLP



KPMG LLP
Suite 1400
2323 Ross Avenue
Dallas, TX 75201-2721

Consent of Independent Registered Public Accounting Firm

We consent to the use of our report dated March 29, 2024, with respect to the consolidated financial statements of Spectral AI, Inc., incorporated herein by reference, and to the reference to our firm under the heading "Experts" in the prospectus.

KPMG LLP

Dallas, Texas
November 20, 2024

Calculation of Filing Fee Tables

Form S-3
(Form Type)

Spectral AI, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered(1)	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Common Stock	457(c)	1,000,000	N/A	\$ 1,080,000	\$ 0.00015310	\$ 165.35 ⁽⁴⁾
Total Offering Amounts					\$ 1,080,000		\$ 165.35
Total Fee Offsets							—
Net Fee Due							\$ 165.35

- (1) In accordance with Rule 416 under the Securities Act of 1933, as amended, this registration statement shall be deemed to cover an indeterminate number of additional securities to be offered or issued from stock splits, stock dividends or similar transactions.
- (2) Represents up to 1,000,000 shares of common stock issuable in connection with the conversion of the Promissory Note.
- (3) Estimated solely for the purpose of calculating the registration fee, based on the average of the high and low prices of the Common Stock on the Nasdaq Stock Market LLC (“Nasdaq”) on November 19, 2024 (\$1.13 per share), in accordance with Rule 457(c) of the Securities Act.
- (4) Calculated pursuant to Rule 457 of the Securities Act by multiplying the proposed maximum aggregate offering price of securities to be registered by 0.00015310.