

**QUANTUM eMOTION CORP.**

**Management's Discussion and Analysis**

**Year ended December 31, 2023**

**May 1, 2024**

The following management's discussion and analysis ("MD&A") of the financial position and results of the operations and cash flows of Quantum eMotion Corp. (the "Company", "QeM" or "Quantum") constitutes management's review of the factors that affected the Company's financial and operating performance for the year ended December 31, 2023 compared to the year ended December 31, 2022 as of May 1, 2024.

The following analysis should be read in conjunction with our audited financial statements ("financial statements") and the accompanying notes for the year ended December 31, 2023. The financial statements for the year ended December 31, 2023, including comparative figures, have been prepared in Canadian dollars, in accordance with the IFRS Accounting Standards ("IFRS") as issued by the International Accounting Standards Board. Our Audit Committee reviewed this MD&A and our Board of Directors approved it on May 1, 2024 before it was filed.

Further information regarding the Company and its operations are filed electronically on the System for Electronic Document Analysis and Retrieval + ("SEDAR+") in Canada and can be obtained from [www.sedarplus.ca](http://www.sedarplus.ca).

### **1.1 FORWARD LOOKING STATEMENTS**

The sections of this MD&A on the Company's strategy and action plan, its intellectual properties, development and financial reporting reflecting management's current expectations contain "forward-looking statements." Such statements should be understood in context, particularly statements that reflect the Company's opinions, estimates and expectations about future events or results. Such forward-looking statements are subject to certain factors and involve some risks and uncertainties. There can be no assurance that such statements will prove to be accurate. Factors that could cause future results, activities and events to differ materially from those expressed or implied by such forward-looking statements include, but not limited to, securing future financing inclusive of exercise of stock options and warrants, possibility or not to obtain the patent, time required to obtain such patent, risks inherent in the hi-tech industry, and the time it will take for the industry to be ready to move to quantic solutions. These risks and uncertainties are described in this MD&A and also the annual information form filed on SEDAR+.

### **1.2 INCORPORATION, NATURE OF OPERATIONS AND GOING CONCERN**

Quantum eMotion Corp. was incorporated under the *Business Corporations Act* of Ontario on July 19, 2007.

The head office, principal address and records office of the Company are located at 2300 Alfred Nobel, Montreal, Qc, H4S 2A4. The Company is a developer of a new generation of cryptographic solutions pursuant to the acquisition of intellectual property (See 1.7).

The business of technology involves a high degree of risk and there can be no assurance that projects under research and development will proceed through to achieve commercialization. Risks related to the value of the Company's intangible assets, completing proof of concept studies, protecting intellectual property rights, the ability of the Company to raise additional financing, and risks inherent to new technologies, such as risk of obsolescence, slow adoption and competing technological advances. Changes in future conditions could require material impairment of assets.

The financial statements have been prepared in accordance with IFRS on a going concern basis, which contemplates that the Company will be able to realize its assets and discharge its liabilities in the normal course of business. For the year ended December 31, 2023, the Company incurred a net loss of \$2,386,775 (2022 - \$2,804,570) and had negative cash flows from operations of \$2,081,622 (2022 - \$1,617,810). In addition, the Company had accumulated deficit of \$13,159,685 as at December 31, 2023.

**1.2 INCORPORATION, NATURE OF OPERATIONS AND GOING CONCERN (cont'd)**

The Company does not expect to generate revenue from product sales unless and until it successfully completes development of its cryptographic solutions, which may take a number of years and is subject to significant uncertainty.

Management expects that the working capital<sup>1</sup> of \$1,067,242 (current assets in excess of current liabilities) available to the Company at December 31, 2023, combined with the financing completed subsequent to year-end, may not provide the Company with adequate funding to meet its short-term obligations for the next 12 months and to meet the timelines of its research and development programs and pay its overhead and administrative costs

The Company expects to incur significant development and commercialization expenses related to product development sales, marketing and distribution. As a result, the Company will need additional financing in the future to support its continuing operations. Until such time that it can generate significant revenue from product sales, if ever, the Company expects to finance its operations through a combination of public or private equity or debt financings or other sources.

On March 20, 2024, the Company successfully completed a non-brokered private placement, issuing 15,000,000 units at \$0.05 each, generating gross proceeds of \$750,000. Each unit includes one common share and one warrant of the Corporation. The warrants allow holders to purchase additional common shares at \$0.15 each within 12 months from the close of the placement. Given the company's history with similar transactions, Management expects that the majority of these warrants will be exercised prior to their expiration date, hence prior to March 20, 2025, which could result in additional financing up to 2,250,000\$. Moreover, the company's collaborative R&D project with the ETS has received a significant support from the Natural Sciences and Engineering Research Council of Canada ("NSERC") which will reduce its net R&D cost resulting in the re-allocation of financial resources to support other initiatives.

While the Company has been successful in securing financing in the past, raising additional funds is dependent on a number of factors outside the Company's control, and as such there is no assurance that it will be able to do so in the future. The ability of the Company to meet its commitments and discharge its liabilities as they become due and become profitable is dependent on the completion of the development of its technology and its commercial production, and on its ability to raise additional funding to finance these activities. The conditions mentioned above indicate the existence of a material uncertainty that may cast a significant doubt as to the Company's ability to continue as a going concern.

The financial statements do not reflect the adjustments to the carrying values of assets and liabilities that would be necessary if the Company were unable to realize its assets or discharge its obligations in anything other than the ordinary course of operations.

**1.3 SENIOR MANAGEMENT CHANGES**

N/A

---

<sup>1</sup> This is a non-GAAP financial measure or ratio. Management believes that working capital, in addition to other conventional financial measures prepared in accordance with IFRS, provides information that is helpful to understand the financial condition of the Company. The objective of using working capital is to present readers with a view of the Company from management's perspective by interpreting the material trends and activities that affect the short-term liquidity and financial position of the Company, including its ability to discharge its short-term liabilities as they come due.

---

## **1.4 COMPANY OVERVIEW AND STRATEGY**

### **RESEARCH AND DEVELOPMENT ACTIVITIES**

The primary management objective has been to strengthen the Company in the following three sectors of activities:

#### **Technology**

Our primary objective is to make our cryptographic solutions technology accessible as rapidly as possible to potential clients and partners, secure its effectiveness and ensure that the intellectual property is well protected. In order to stay focused on this objective, we are working closely with our partners to maximize the potential and security of our technology. The Company is developing complementary metal-oxide semiconductor (“CMOS”) implementations with l'École de Technologie Supérieure (“ETS”) to ensure greater competitiveness.

On June 1, 2023, the company announced the introduction of Entropy as a Service (EaaS) through their QxEAAS system, enhancing data security. EaaS offers on-demand randomness, vital for cryptography. Using QRNG2, which employs quantum electron tunneling, truly unpredictable random numbers are generated. This system reinforces QeM's Sentry-Q cryptography platform against cyberattacks. EaaS distributes secure keys and strings with patented quantum-based entropy sources. Rigorous tests, like NIST Statistical Test Suite, validate the quality of generated entropy. The integration of EaaS and QeM's cryptography library, with NIST-approved quantum-safe primitives, ensures cutting-edge security for data communication and authentication.

On January 10, 2024, QeM launched Quantum eHealth Inc., a subsidiary focused on healthcare applications for its advanced cybersecurity technology. By spinning off its Digital Healthcare Cybersecurity Activities into this new entity, QeM aims to capitalize on the growing digital healthcare security market. Quantum eHealth Inc. will hold an exclusive license to use QeM's intellectual property in the healthcare sector. Meanwhile, QeM will continue developing and marketing various iterations of its Quantum Random Number Generator (QRNG) across other sectors, including financial services, blockchain, military, IoT, and more.

On February 21, 2024, QeM announced a breakthrough in developing its first Quantum Random Number Generator (QRNG) on a chip, a significant advancement in quantum communication technology. This development compactly integrates QRNG into a single chip, potentially less than 1 cm<sup>2</sup>, revolutionizing quantum-based security designs. This innovation allows the sale of design cores, enabling IC vendors like TI, Intel, and IBM to embed QRNG functionality directly into their products, expanding the reach and impact of quantum security technologies.

On March 18, 2024, QeM announced a strategic partnership with the Platform for Digital and Quantum Innovation (PINQ<sup>2</sup>), an NPO established by the Ministry of Economy, Innovation and Energy of Quebec and Université de Sherbrooke. This collaboration aims to enhance the resilience of QeM's security platform against advanced threats, including simulated quantum computer attacks using IBM's Qiskit platform. PINQ<sup>2</sup>, the exclusive operator of Canada's first 127-qubit IBM Quantum System One at IBM Bromont, will work with QeM to rigorously test and evaluate their Kyber algorithm and Quantum Random Number Generator (QRNG). This project will assess the security system's performance under simulated adversarial conditions, focusing on identifying strengths, weaknesses, and vulnerabilities, and ensuring alignment with strategic goals. The partnership leverages simulation tools like Qiskit to execute quantum attack simulations, thoroughly testing the security solution's robustness.

### 1.4 **COMPANY OVERVIEW AND STRATEGY (cont'd)**

#### **RESEARCH AND DEVELOPMENT ACTIVITIES (cont'd)**

On March 28, 2024, QeM announced that the project "Quantum random number generation for highly secure cryptography applications" will receive a \$1.2 million grant from the Alliance Quantum program, managed by NSERC. Led by ÉTS in partnership with QeM, the project under Professor Ghyslain Gagnon, with co-grantee Prof. K. Zhang and contributors like Prof. B. Reulet from Université de Sherbrooke, focuses on developing scalable QRNG technologies. These innovations aim to bolster secure communications, integrate into IoT devices, and enhance security in DeFi ecosystems. The collaboration seeks to address challenges in QRNG commercialization, focusing on reducing energy consumption while leveraging quantum tunneling encryption for top-tier security.

On April 8, 2024, CSR5 GLOBAL Inc. and QeM announced a landmark partnership aimed at redefining the landscape of cybersecurity. This strategic alliance positions QeM as the exclusive provider of cutting-edge, post-quantum cryptography and cloud-based security solutions to CSR5, marking a significant leap forward in our shared commitment to reducing risk through enhanced response, resilience, and recovery capabilities. Through this partnership, QeM's state-of-the-art technology will become a cornerstone of CSR5's comprehensive security solutions, designed to tackle the challenges of today's digital age head-on.

#### **Patents**

As of today, the Company owns two patent families which have been filed in several countries, and which have led to the issuance of several patents.

The first patent family stems from work performed at Sherbrooke University, by the team of Professor Bertrand Reulet, and was acquired by the Company.

As the Company required its patent to pass the introduction level with potential clients, it was then decided to work with the Company's patent agent to assess the patentability of our technology. The Company received the final report that indicates that it should continue the National/Regional Phase as planned. By doing the legwork at the stage of the patentability report, the Company was able to respond rapidly to objections which were raised at the national/regional level, such as objections raised by the European Patent Office ("EPO") examiner. The general scope of the first patent family is related to the use of a monitored flow of electrons across a quantum tunnelling barrier as a quantum random signal source which is then used to produce random numbers.

The second patent family stems from work performed internally by the family and generally concerns technology which was developed to eliminate non-quantum noise from the quantum signal and therefore allow ensuring that the random numbers are purely random and entirely based on quantum processes.

In October 2021, the Company filed for a patent application covering a minimalistic circuit which utilizes the computer's hardware to both power an on-chip quantum entropy source and turn the resulting entropy signal into random numbers of quantum origin on the go. The product will eventually be a plug-and-play ultraportable QRNG module that provides easy-to-use hardware protection for consumer electronics.

On June 19, 2022, Brazil became the latest major country to indicate its willingness to grant the METHOD FOR GENERATING RANDOM NUMBERS AND ASSOCIATED RANDOM NUMBER GENERATOR patent. Ongoing efforts are being made to ensure that all relevant jurisdictions are covered as the patents and our patent strategy is core to the success of the company.

**1.4 COMPANY OVERVIEW AND STRATEGY (cont'd)**

**RESEARCH AND DEVELOPMENT ACTIVITIES (cont'd)**

On April 12, 2023, Quantum announced the recent patent application for a new method to operate a Blockchain Wallet that benefits from the protection provided by the QeM Quantum Random Number Generator (QRNG2). The market for hardware wallets has grown significantly in recent years due to the increasing demand for secure cryptocurrency storage solutions. According to a recent report by Markets and Markets, the global hardware wallet market is expected to grow from \$1.0 billion in 2020 to \$1.9 billion by 2025, at a compound annual growth rate (CAGR) of 13.5% during the forecast period. The growth of the hardware wallet market can be attributed to several factors, including the continuous adoption of cryptocurrencies after their recent volatility. QeM Quantum crypto-Wallet will eventually be considered one of the safest ways to store and manage cryptocurrencies, and they will become indispensable for anyone who wants to keep their digital assets highly secure.

On April 18, 2024, QeM announced the filing of a PCT patent application for an innovative method to operate Blockchain Wallet, leveraging the impenetrable security provided by the QeM Quantum Random Number Generator (QRNG2).

**1.4 COMPANY OVERVIEW AND STRATEGY (cont'd)**

**RESEARCH AND DEVELOPMENT ACTIVITIES (cont'd)**

**Patents (cont'd)**

<b>Status of patents</b>	
<b><i>First Patent Family:</i></b> <b>Method for generating random numbers and associated random number generator</b>	
<b>Country</b>	<b>Status</b>
United States	Two patents were granted in the United States, including a first one granted on August 7, 2018 and a second granted on October 8, 2019.
Russia	Patent granted
European Patent Office	EPO granted the patent on February 19, 2020. The European Patent has been validated in a number of countries: Germany, Spain, Finland, France, Great-Britain, Italy and the Netherlands.
Thailand, India	Patent pending
Australia	Patent granted
China	Patent granted
Brazil	Patent granted
Canada	Patent granted
Republic of Korea	Patent granted
<b><i>Second Patent Family:</i></b> <b>Method and system for generating a random bit sample</b>	
<b>Country</b>	<b>Status</b>
European Patent Office	EPO granted the patent on October 23, 2019. The European Patent has been validated in Germany, Spain, United Kingdom, Finland, France, Italy, Sweden and the Netherlands.
United States	Two patents were granted.
Brazil, Canada, China, India, Japan, South Korea, Thailand	Patent pending
Australia, Russia, Indonesia	Granted
<b><i>Third Patent Family:</i></b> <b>System and Method for Generating a Random Number, and circuit for communicating an analog random signal</b>	
<b>Country</b>	<b>Status</b>
Patent Cooperation Treaty	Rights reserved in all PCT member states until May 2024

**1.4 COMPANY OVERVIEW AND STRATEGY (cont'd)**

**BUSINESS DEVELOPMENT ACTIVITIES**

**Market**

Since 2016, the Company focused its resources in developing its key IP position to align a successful venture in the emerging Quantum Random Number Generator (“QNRG”) market. The National Institute of Standards and Technology Post Quantum Cryptography Standards Committee is still working on related protocols, and we believe to have the right attributes to fulfill the future requirements for target markets.

In April 2021, the Company received a third-party valuation that concluded that the assessment of management on its target market was credible. The Company keeps a very tight monitoring on all news pertaining to the Quantum environment, and has, amongst other initiatives, joined the Quantum Alliance established by Hudson Institute to ensure a clear presence in the quantum ecosystem. Moreover, the CEO of the Company is now a valued panelist on the subject, bringing actionable intelligence in the Company with the newly established networks, both local and international.

The Company specifically intends to target the highly valued medical devices and Healthcare Services industries while ensuring its technology is also relevant and applicable to others, such as Datacenters, Blockchain technologies, Financial Services, Cloud-Based IT Security Infrastructure, Classified Government Networks and Communication Systems, Secure Device Keying (IOT, Automotive, Consumer Electronics) and Quantum computing and the gaming industry.

In June 2022 the Company joined the Canadian Association of Defense and Security Industries and attended the CANSEC trade show. The attendance confirmed the relevance of the company’s technology, and the company will actively follow up for potential collaboration with key players of the industry. QeM will attend CANSEC 2024 trade show with a lineup of meetings to explore partnerships and product development specific to the military vertical which is now deemed mature for our technology and current stage of development.

QeM will continue to focus its healthcare market development in collaboration with Greybox. Several initiatives in mental health and cardiology involving the introduction of digitalized medicine requiring very high level of communications security will be the main points of effort for the coming year.

**HIGHLIGHTS**

For the year ended December 31, 2023, the Company incurred a net loss and comprehensive loss of \$2,386,775 compared to a net loss and comprehensive loss of \$2,804,570 in 2022.

As at December 31, 2023, the Company had a net working capital (current assets in excess of current liabilities) of \$1,107,242 compared to a net working capital of \$3,286,177 as at December 31, 2022.

1.5 **SELECTED PERIODIC INFORMATION**

	Year ended December 31		
	2023	2022	2021
	\$	\$	\$
Net loss and comprehensive loss	<b>(2,386,775)</b>	(2,804,570)	(1,562,648)
Basic and diluted loss per share	<b>(0.018)</b>	(0.021)	(0.015)
			Balance as at
	<b>December 31, 2023</b>	December 31, 2022	
	\$	\$	
Cash	<b>315,626</b>	2,594,051	
Total assets	<b>1,645,749</b>	4,037,934	
Total liabilities	<b>226,811</b>	377,754	
Equity	<b>1,418,938</b>	3,660,180	

**1.6 INTELLECTUAL PROPERTY**

The carrying amount of the intellectual property consists of:

	<b>Licenses</b>	<b>Rights on royalties</b>	<b>Total</b>
	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>Cost</b>			
December 31, 2022	446,112	-	446,112
Additions	-	350,000	350,000
	<b>446,112</b>	<b>350,000</b>	<b>796,112</b>
<b>Accumulated amortization, impairment and loss on derecognition</b>			
December 31, 2022	72,109	-	72,109
Amortization	22,307	-	22,307
Impairment	-	350,000	350,000
	<b>94,416</b>	<b>350,000</b>	<b>444,416</b>
<b>Net book value</b>			
<b>December 31, 2023</b>	<b>351,696</b>	<b>-</b>	<b>351,696</b>

On August 3, 2016, the Company entered into an intellectual assignment agreement (“IP agreement”) with Société de commercialisation des produits de la recherche appliquée SOCPRA Sciences et Génie S.E.C. (“SOCPRA”) and its investors. Until the expiry of the last patent rights, which is expected in May 2035, the Company will pay to SOCPRA a royalty of 5% calculated on the net sales price of products sold by the Company.

The Company may have an option to buy back the royalties in the future at terms and conditions to be agreed upon by both parties.

On February 4, 2023, the Company entered into a commercial and technical agreement with a third party. As part of the agreement, the third party will award a contract to the Company for the development of the Sentry-Q technology. Moreover, the Company will receive royalties on all sales completed by the third party in which the Company’s technology will be used.

Rights on royalties are not amortized as they have an indefinite life and are subject to an annual impairment test.

The Company performed its annual impairment test for its rights on royalties intangible asset through the assessment of the recoverable amount of the asset.

The recoverable amount of the asset was determined based on the higher of its value-in-use and fair value less costs of disposal. The value-in-use, which was determined to be of an approximately equal amount with the fair value less costs of disposal, was determined using discounted cash flow model, taking into consideration management’s best estimates of future royalty revenues and discount rates.

The Company determined that the recoverable amount of the rights on royalties intangible asset using a discount rate of 50% was approximately nil and therefore recognized an impairment charge of \$350,000. The recoverable amount reflects the Company’s inability to demonstrate, in the foreseeable future, that the asset will generate future royalty revenues, primarily due to the third party’s delays in securing contracts. The uncertainties surrounding the deployment and initial sales of its product, in a context of a market which is not readily responsive and of financial difficulties increase the risks of the third party generating future sales.

1.7 **SELECTED FINANCIAL INFORMATION AND OPERATING RESULTS**

	Year ended December 31	
	2023	2022
	\$	\$
<b>Expenses</b>		
Research and development	577,108	271,804
General and administrative	1,142,557	1,210,154
Marketing	229,008	146,218
Share-based payments	145,533	541,991
Impairment of intangible assets	350,000	-
Loss on derecognition of intangible assets	-	568,580
<b>Other items</b>		
Amortization	22,307	22,305
Net financial expense (income)	(59,738)	43,518
<b>Net loss and comprehensive loss for the year</b>	<b>2,386,775</b>	<b>2,804,570</b>
<b>Basic and diluted loss per share</b>	<b>0.018</b>	<b>0.021</b>
<b>Weighted average number of common shares outstanding</b>	<b>135,502,838</b>	<b>134,474,811</b>

The net loss and comprehensive loss for the year ended December 31, 2023 decreased to \$2,386,775 from a net loss and comprehensive loss of \$2,804,570 in 2022. The variance is explained mainly by the decrease in share-based payments of \$396,458, the decrease of loss on derecognition of intangible assets of \$568,580, the decrease of net financial costs of \$103,256, offset by an increase in research and development of \$285,304 and an impairment of intangible assets of \$350,000.

<b>Three months ended December 31</b>		
	<b>2023</b>	2022
	<b>\$</b>	\$
<b>Expenses</b>		
Research and development	<b>129,019</b>	129,018
General and administrative	<b>252,771</b>	289,018
Marketing	<b>48,260</b>	17,407
Share-based payments	<b>44,831</b>	128,261
Impairment of intangible assets	<b>350,000</b>	-
Loss on derecognition of intangible assets	-	568,580
<b>Other items</b>		
Amortization	<b>5,624</b>	5,622
Net financial expense (income)	<b>(81,923)</b>	171,198
<b>Net loss and comprehensive loss for the period</b>	<b>792,952</b>	1,053,971
<b>Basic and diluted loss per share</b>	<b>0,006</b>	0.008
<b>Weighted average number of common shares outstanding</b>	<b>135,502,838</b>	<b>135,502,838</b>

The net loss and comprehensive loss for the three months period ended December 31, 2023 decreased to \$792,952 from a net loss and comprehensive loss of \$1,053,971 in 2022. The variance is explained mainly by the decrease in share-based payments of \$86,430, the decrease of loss on derecognition of intangible assets of \$568,580, the decrease of net financial costs of \$253,121, offset by an increase in an impairment of intangible assets of \$350,000.

**1.8 SUMMARY OF QUARTERLY RESULTS**

The following table sets forth selected quarterly financial information for each of the twelve most recently completed quarters.

<b>Three-month period ended</b>	<b>Net loss and comprehensive loss for the period</b>	<b>Basic and diluted loss per share</b>
	\$	\$
<b>December 31, 2023</b>	<b>(792,952)</b>	<b>(0.006)</b>
<b>September 30, 2023</b>	<b>(556,376)</b>	<b>(0.004)</b>
<b>June 30, 2023</b>	<b>(532,956)</b>	<b>(0.004)</b>
<b>March 31, 2023</b>	<b>(504,492)</b>	<b>(0.004)</b>
December 31, 2022	(1,053,975)	(0.008)
September 30, 2022	(517,750)	(0.004)
June 30, 2022	(541,048)	(0.004)
March 31, 2022	(691,801)	(0.005)
December 31, 2021	(270,993)	(0.002)
September 30, 2021	(441,798)	(0.004)
June 30, 2021	(411,733)	(0.004)
March 31, 2021	(438,124)	(0.005)

**1.9 LIQUIDITY**

As at December 31, 2023, the Company had a net working capital (current assets in excess of current liabilities) of \$1,107,242 compared to a net working capital of \$3,286,177 in December 31, 2022.

**1.10 CASH FLOWS**

For the year ended December 31, 2023:

The Company's operating activities used \$2,081,622 for the year ended December 31, 2023, compared to \$1,617,810 in 2022. The increase of \$463,812 in cash flow used is mainly related to changes in non-cash working capital items.

The Company's investing activities used \$196,803 for the year ended December 31, 2023, compared to \$21,031 used in 2022. The increase in cash flow used is related to the addition to intangible assets of \$350,000, offset by a net decrease in investments of \$153,197.

The Company's financing activities are nil for the year ended December 31, 2023, compared to \$3,211,340 in 2022. There were no cash flows generated given that no warrants were exercised during the current year.

For the three months period ended December 31, 2023:

The Company's operating activities used \$615,806 for the three months period ended December 31, 2023, compared to \$297,807 in 2022. The increase of \$317,999 in cash flow used is mainly related to changes in non-cash working capital items.

The Company's investing activities used \$194,245 for the three months period ended December 31, 2023, compared to \$168 used in 2022. The increase in cash flow used is related to a net increase in investments of \$194,245.

**1.11 STOCK OPTIONS**

	December 31, 2023		December 31, 2022	
	Number of options	Weighted average exercise price	Number of options	Weighted average exercise price
		\$		\$
Balance outstanding, beginning of year	10,930,000	0.12	10,930,000	0.13
Granted	1,350,000	0.08	1,100,000	0.15
Exercised	-	-	(250,000)	0.10
Expired	(4,000,000)	0.08	(850,000)	0.20
Forfeited	(300,000)	0.08	-	-
Balance outstanding, end of year	7,980,000	0.15	10,930,000	0.12
Balance exercisable, end of year	4,481,875	0.16	8,329,375	0.11

The weighted average remaining contractual life for options outstanding at December 31, 2023 is 2.22.

Share-based compensation recognized under this plan amounted to \$145,533 for the year ended December 31, 2023 and relates to officers, employees and consultants mainly related to general and administrative expenses.

The Company's share options outstanding and exercisable options are as follows:

Expiry date	Exercise price	December 31, 2023	
		Outstanding	Exercisable
	\$		
February 2, 2024	0.14	2,500,000	2,500,000
September 12, 2024	0.12	250,000	250,000
March 31, 2025	0.10	150,000	150,000
March 31, 2025	0.12	50,000	50,000
March 31, 2025	0.18	650,000	446,875
September 30, 2025	0.15	150,000	150,000
October 25, 2025	0.24	80,000	35,000
March 31, 2026	0.08	300,000	-
April 21, 2026	0.24	500,000	500,000
June 30, 2026	0.10	300,000	-
January 26, 2028	0.14	500,000	125,000
March 12, 2028	0.215	500,000	125,000
August 23, 2028	0.265	500,000	250,000
March 16, 2028	0.10	50,000	-
July 21, 2028	0.07	500,000	-
February 14, 2029	0.225	500,000	-
45 days post departure from the Company	0.07	500,000	100,000
		<b>7,980,000</b>	<b>4,481,875</b>

**1.12 OFF-BALANCE SHEET ARRANGEMENTS**

The Company does not have any off-balance sheet arrangements.

**1.13 FINANCIAL INSTRUMENTS**

All financial instruments are recognized when the Company becomes a party to the contractual provisions of the financial instrument and are initially measured at fair value plus transaction costs, except for financial assets and financial liabilities carried at fair value through profit or loss, which are measured initially at fair value. Financial assets are derecognized when the contractual right to the cash flows from the financial assets expire, or when the financial asset and all substantial risks and rewards are transferred. Refer to Note 11 of the annual financial statements for the year ended December 31, 2023 for additional information on the Company's financial instruments.

**1.14 FINANCIAL RISK MANAGEMENT**

In the normal course of operations, the Company is exposed to various financial risks. Refer to Note 11 of the annual financial statements for the year ended December 31, 2023 for additional information on the Company's main financial risks.

**1.15 MANAGEMENT OF CAPITAL**

The capital structure of the Company consists of equity attributable to common shareholders, comprising issued share capital, reserves and deficit. The Company's objectives when managing capital are to: (i) preserve capital; (ii) obtain the best available net return; and (iii) maintain liquidity.

The Company manages the capital structure and makes adjustments to it in light of changes in economic conditions and the risk characteristics of the underlying assets. To maintain or adjust the capital structure, the Company may attempt to issue new shares. There were no changes to the Company's approach to capital management during the year ended December 31, 2023.

The Company is not subject to externally imposed capital requirements.

**1.16 RELATED PARTY TRANSACTIONS**

The Company's related parties include companies owned by key management. The Company paid Management fees to key management through their management companies as follows:

Management fees of \$60,000 to LVR Capital (December 31, 2022 - \$58,500), a company owned by the Chief Financial Officer. As at December 31, 2023, nil (December 31, 2022 – nil) was due to that company.

Management fees of \$300,000 to Aurakle Research (December 31, 2022 - \$460,000), a company owned by the Chief Executive Officer. As at December 31, 2023, nil (December 31, 2022 – nil) was due to that company.

Management fees of \$30,000 and other fees of \$39,305 to Baystream Corporation (December 31, 2022 - \$30,000), a company owned by a Director. As at December 31, 2023, nil (December 31, 2022 – nil) was due to that company.

Management fees of \$28,719 to Red River Solutions and I4C Realty LLC (December 31, 2022 – \$22,496), companies owned by a Director. As at December 31, 2023, nil (December 31, 2022 – nil) was due to that company.

Management fees of \$30,000 to a Director (December 31, 2022 – \$37,500). As at December 31, 2023, nil (December 31, 2022 – nil) was due to that company.

Management fees of \$30,000 to SLT Solutions (December 31, 2022 – \$26,250), a company owned by a Director. As at December 31, 2023, nil (December 31, 2022 – nil) was due to that company.

Research and development of \$347,036 to Fileglobal (December 31, 2022 – \$98,326), a company owned by a Director. As at December 31, 2023, nil (December 31, 2022 – nil) was due to that company.

**Transactions with key management**

The key management of the Company are the members of senior management and the Board. The remuneration and other expenses for the year of key management (including the amounts above) is as follows:

<b>Year ended December 31</b>	<b>2023</b>	<b>2022</b>
	<b>\$</b>	<b>\$</b>
Research and development	<b>347,036</b>	98,362
Share-based payments	<b>72,311</b>	356,168
General and administrative:		
Management fees	<b>478,719</b>	634,746
Other fees	<b>39,305</b>	-
	<b>937,371</b>	1,089,240

**1.17 CRITICAL ACCOUNTING ESTIMATE AND JUDGEMENTS**

The critical accounting estimates and judgements are described in Note 2 of the annual financial statements for the year ended December 31, 2023.

**1.18 CHANGES IN MATERIAL ACCOUNTING POLICIES**

The accounting policies used are those described in the Company's annual financial statements in Note 3 for the year ended December 31, 2023 and are the same policies as those applied in 2022 annual financial statements unless otherwise stated.

**1.19 OTHER**

Disclosure of Outstanding Securities as at May 1, 2024.

Outstanding common shares: **150,502,838**  
Outstanding options: **7,980,000**  
Outstanding share purchase warrants: **15,000,000**

(s) Francis Bellido, Chief Executive Officer

(s) Marc Rousseau, Chief Financial Officer

Montreal (Quebec), May 1, 2024