ACTIVITY REPORT 2023/2024

The Autonomous Mine, a Vision for the Future: Truth or Reality?

MISA GROUP
MINING EXCELLENCE POLE













MISA GROUP
MINING EXCELLENCE POLE

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ACCORD

En partenariat avec

Québec



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We Offer You a Vision for the Future: The Autonomous Mine.

The utilization of operational data has opened a multitude of opportunities and innovations, marking the beginning of a new mining era. Since 2019, with the constant support of Quebec mining operators, we have explored this potential. The year 2023 was a decisive turning point with the advancement of the roadmap for our strategic project "Autonomous Mine Mission - 2030" and the Vortex Journey. The convergence of IoT, AI, and robotization is establishing new standards for efficiency, safety, and sustainability.

The Quebec mining industry possesses the knowledge and technologies to accelerate the automation of mining processes. Each innovation brings us closer to an autonomous and sustainable future. Let us join forces to transform this vision into reality.



Message FROM THE Chairman OF THE BOARD



Dear Members and Partners,

It is with immense pride that I present to you the 2023-2024 activity report of the Center of Excellence in Mining, MISA Group. This year, we have reached crucial milestones in our quest for innovation and transformation of the mining industry. Our vision, embodied by the Autonomous Mine, is becoming a reality due to our commitment to excellence.

The Vortex Journey and the strategic project Mission Autonomous Mine - 2030 demonstrate our ability to integrate IoT, AI, and robotization at the heart of operations, redefining efficiency, safety, and sustainability. The Expert Networks continue to play a central role in our success, strengthening collaboration and knowledge sharing within our community. Their growth testifies to our ability to connect experts to solve complex problems and generate innovative solutions, with the ambition to expand these networks beyond Quebec.

We are collaborating to advance industry issues with determination, while remaining true to our sustainable practices. Our partnerships have been essential in propelling these ambitious projects and positioning the MISA Group at the forefront of mining innovation.

I would like to thank each of you for your unwavering support, with a special mention for my colleagues on the Board of Directors. Your commitment is the foundation of our success and sustainability.

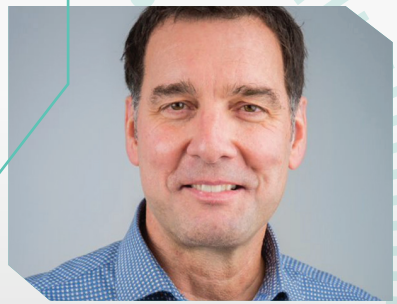
Together, we are progressing towards a future where autonomy and sustainability become tangible realities. I am convinced that we will continue on this path of innovation, paving the way for new advances in the mining sector.

Thank you for being part of this adventure.

Sincerely

François Vezina
Chairman of the Board

Message FROM THE General Manager



Dear Members and Partners,

I am pleased to present our 2023-2024 Activity Report. This year has been marked by significant advances and fruitful collaborations.

Our initiatives, such as the Vortex Journey and the Autonomous Mine Mission - 2030, have allowed us to continue our exploration of the concept of autonomy. I am particularly impressed by the commitment of Quebec's mining operators to our projects. This collaborative spirit is a major asset that highlights Quebec's mining engineering on an international scale.

The innovative SMEs in Quebec's mineral sector demonstrate an exceptional sense of innovation. More and more Quebec SMEs are investing heavily to occupy a global leadership position in the digital transition of mining operations.

The Autonomous Mine and the autonomization of mining processes will remain mobilizing priorities for the years to come. This is a unique opportunity to develop new knowledge and technologies that will become hallmarks of Quebec intellectual property, radiating through global mining hubs.

These initiatives are part of our commitment to sustainable management. We are working together to minimize environmental impact and maximize operational efficiency.

I would like to thank our members, partners, and collaborators for their determined and positive support. Together, we have accomplished great things, and we are ready to face future challenges with the same determination and innovation.

Thank you for being part of our journey and contributing to the success of the MISA Group.

Sincerely,

Alain Beauséjour
Chief Executive Officer of MISA Group

our BOARD OF DIRECTORS

RESOLUTELY INDUSTRIAL COMPOSITION



François Vézina
Chief Operating Officer
at Dumont Nickel



Martine Paradis
Vice President Engineering and Environment,
Nouveau Monde Graphite



Pierre-André Viens
Vice President Finance at
CMAC-Thyssen Mining Group



Guy Belletête
Vice President Strategic Affairs,
Institut de développement de produits



Alain Poirier
Executive Director, Quebec
Mineral Exploration Association



Francis Fournier
President and CEO, COREM



Karine Gauthier-Hétu
Director of Environment and Sustainable
Development at GCM Consultants Inc



Marc Lafontaine
Corporate Director Metallurgy,
Agnico Eagle Mines



Patrick Martel
Vice President Innovation, Technosub



Josée Méthot
President and CEO,
Quebec Mining Association



Annie Paré
Director – Communications, ArcelorMittal
Mining and Infrastructure Canada

OUR team



Alain Beauséjour
General Manager of the MISA Group



Maude Magne
Senior Project Manager - Mining innovation



Hachmi Ben Daly
Project Manager - Mining innovation



Médérique Mercier
Project Manager - Strategic Communication



Nadia Jennifer Ouedraogo
Project Manager - Mining innovation



Liam Forget
Project Manager - Mining innovation



Sarah Steinhauer
Project Manager - Mining innovation



Marie-Pier Loiselle
Executive Secretary

Mission

Work, on a business basis, to advance innovative equipment and services to ensure the sustainability, maximization of benefits, and influence of Quebec's mineral industry.

Vision

Develop a center of excellence in mineral exploration and mining that shines across global mining centers.

EGISTERED IN THE PROCESS OF ACCORD

ACCORD

En partenariat avec

Québec

NPO

Founded in 2007



Values

ETHICAL VALUE

ÉCOUTE

We value your ambitions and hopes through our active listening.

COMPETENCE VALUE

CRÉATIVITÉ

We make your projects unique by pushing the boundaries.

EXCELLENCE VALUE

ENGAGEMENT

We mobilize our talents, resources, and knowledge to lead the mining industry to greater heights.

IDENTITY VALUE

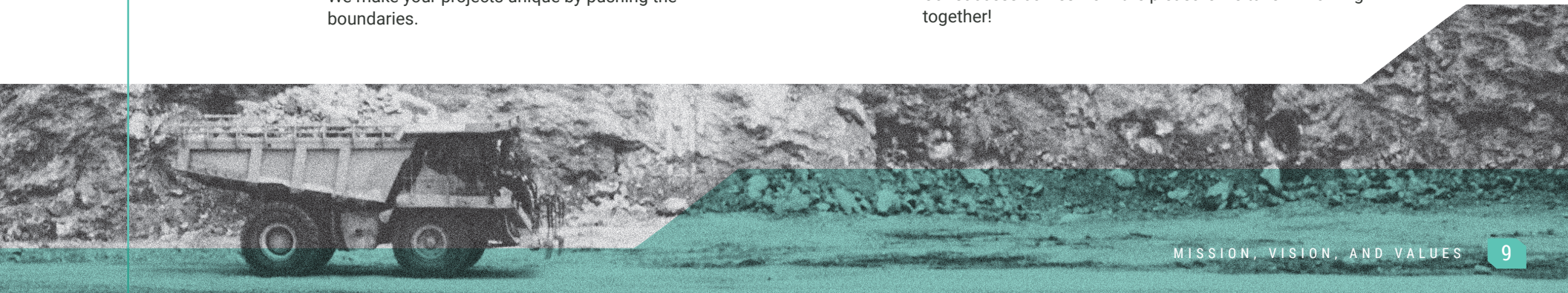
RESPECT

We build winning relationships by allowing the right to make mistakes, being genuine, caring, and open-minded.

RELATIONAL VALUE

COLLABORATION

Our success comes from the pleasure we take in working together!




EXPERT NETWORKS

EXPERT NETWORKS

The Community of Practice for Mining Operators

The MISA Group is proud to present its Expert Networks, an essential pillar that fosters collaboration and the adoption of best practices among mining operators. These networks bring together specialists from various fields, such as geoscience, drilling, ore processing, and digital technologies, to form a dynamic community dedicated to innovation and optimizing mining practices. Through this initiative, knowledge sharing, and expertise exchange propel the mining industry to new heights.



The MISA Group is proud to present its Expert Networks, an essential pillar that fosters collaboration and the adoption of best practices.

Number of meetings last year:

13

Number of active experts per network:

28	Environment Network
46	Extraction Network
72	Geoscience Drilling Network
16	Best Practices Network
37	Digital Network
28	Processing Network

Expert Network Related Services

Validation

Assessment of the relevance of potential innovation and collaborative projects. This service provides in-depth analyses and comprehensive market studies, aiming to maximize the commercial success of new technologies.

MineMap

Mapping of mining operations processes conducted over the past 10 years. Access to 330 mappings covering all aspects of mining operations.

Technology Showcase

Visibility on in-situ tests and progress of ongoing projects. Opportunities for in-situ testing and participation in ongoing projects.

Best Practice

Identification and dissemination of best practices in the mining industry, contributing to the safety, efficiency, and sustainability of mining practices.



Exploration and Extraction Companies Active within the Expert Networks




FONDERIE CHORNE
UNE COMPAGNIE GLENCORE
FURY GOLD MINES
GLENCORE
GOLD RESOURCE CORPORATION
GOLDCORP ÉLÉONORE
GOLD SHORE
EQUINOX GOLD
WINDFALL
HARMONY
Hecla QUÉBEC
IAMGOLD CORPORATION
IRON ORE COMPANY OF CANADA
LABYRINTH RESOURCES
LAKESHORE GOLD
LAURENTIA EXPLORATION
LAURION MINERAL EXPLORATION INC.
LES RESSOURCES TECTONIC
Lilium Mining
MAPLE GOLD MINES
MIDLAND EXPLORATION
Minas de San Nicolás
MINERAI DE FER QUÉBEC QUEBEC IRON ORE
MFE
OSISKO MINIÈRE OSISKO
NEMASKA LITHIUM
NEVADA GOLDMINES
newgold
NEWMONT GOLDCORP
NioBay METALS
Niobec Nb
NORTHERN GRAPHITE CORPORATION
NMG NOUVEAU MONDE GRAPHITE
O3 Mining
puma exploration
OSISKO DEVELOPMENT
PARAMOUNT GOLD Nevada
PROBE GOLD
Procon
Radisson MINING RESOURCES
BONTERRA
RESSOURCES CARTIER RESOURCES
Ressources MAXIMA
TROILUS
Ressources Utica
RioTinto
ROCKFALL
SAYONA
silverlake RESOURCES
SIRIOS
SL Exploration
SOQUEM
VIOR
WALLBRIDGE
WESDOME
WM Western Metallica
windsor SINCE 1893
RESSOURCES WINSOME RESOURCES
YAMANAGOLD



VORTEX JOURNEY

VORTEX JOURNEY

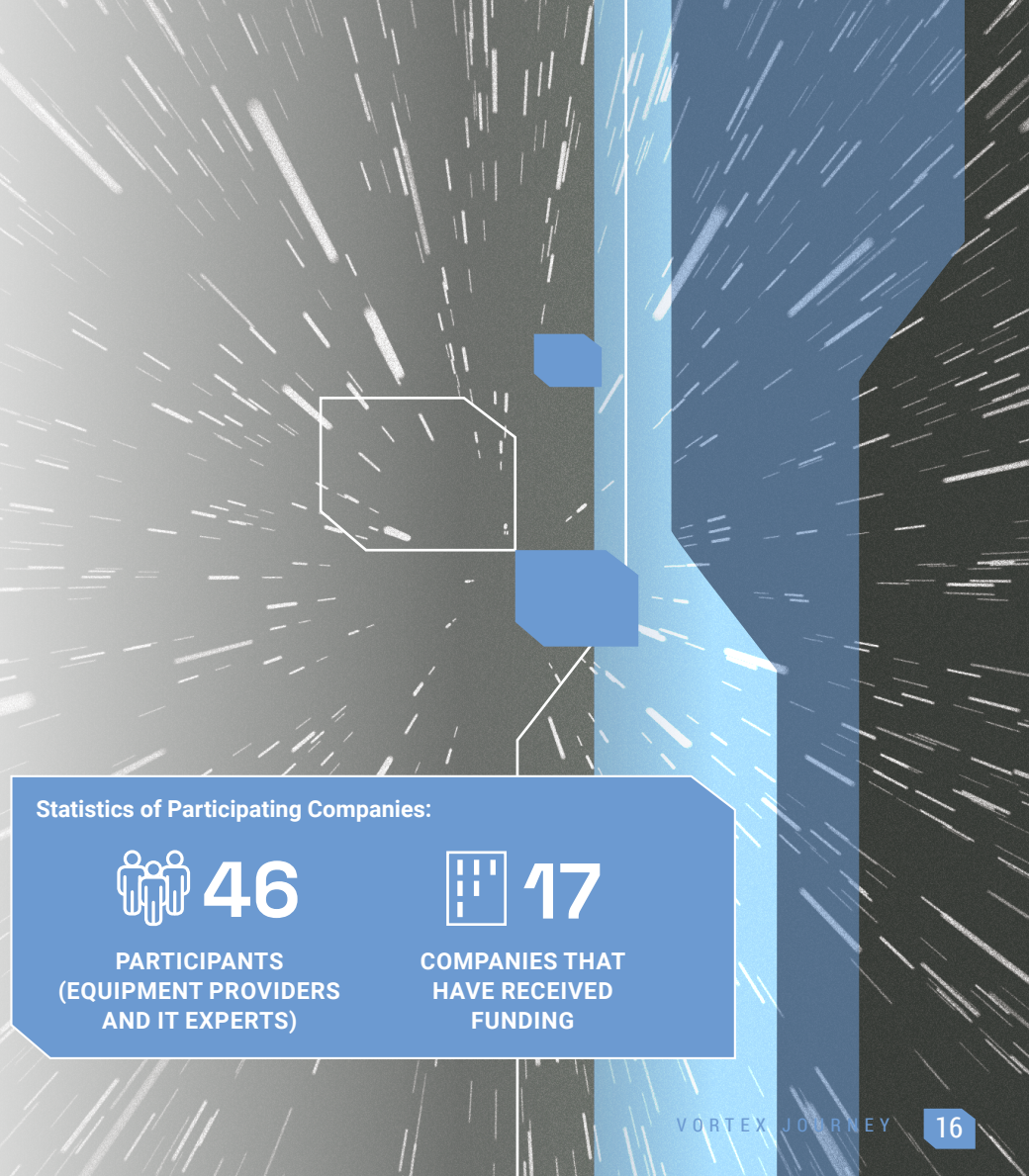
The Market Turbocharged Idea

INNOVATIVE PROJECT

The Vortex Journey summarizes our support offering for technological innovation, designed to transform innovative ideas into concrete and commercially viable solutions for the mining sector. This acceleration journey relies on expert collaboration to identify the best innovation opportunities and quickly achieve proof of concept through on-site testing.

Did You Say Turbocharged!?

Absolutely. In 2023, we focused our efforts on the IoT chapter of the Vortex Journey. In 24 months, we supported 20 connected object projects, with commercial deployment planned for 2025.



Statistics of Participating Companies:

46

PARTICIPANTS (EQUIPMENT PROVIDERS AND IT EXPERTS)

17

COMPANIES THAT HAVE RECEIVED FUNDING

Offered Services

Innovation Design

This service helps companies conceptualize and structure their innovation projects. Through a proven methodology, we support businesses in creating innovative solutions tailored to the specific needs of the mining sector.

Project Specifications

We provide detailed specifications for innovation projects, including cost analysis, necessary resources, and timelines. This service enables companies to effectively plan their projects and ensure their feasibility and profitability.

Milestone Management

This service ensures rigorous tracking of the various stages of the project, allowing for adherence to deadlines and set objectives. We assist companies in identifying key points in their projects and managing risks to ensure smooth and successful progress.

The Rolling Stone

A continuous mentoring service that offers personalized support with Expert Network in business strategy, ensuring the dissemination, adoption, and promotion of innovation projects arising from the Vortex Journey.

Vortex Community

This community facilitates partnerships between mining companies, technology providers, academic institutions, and government organizations to maximize the impacts and benefits of innovation projects stemming from the Vortex Journey.



2023-2024

Funded Companies

ABITIBI GEOPHYSICS
LithologIQ
ARA ROBOTIQUE
GEOPHYSICS GPR INTERNATIONAL INC.
NORDA STELO
ONX AUTOMATION
ARTIK
MÉTAL MARQUIS inc.
CADENCE consultants
HYPERFLO POMPES ET VENTILATEURS INDUSTRIELS
ARKYS
KPI MINING SOLUTIONS
ELEMISSION LIBS TECHNOLOGY
POINT.LAZ
G4 R&D
JUMINE
AiTera
Glacies Thermal Solutions
Geothentic
Technosub
ramo
2SWater
Symboticware

IT Experts

GCM CONSULTANTS
Baseline.
soralink
OPTIS
agileDSS
ROBEXCO
explor.ai
ARKYS
BGI
zenika
SPIRIA
VOXEL FARM
axceta
LYNKZ™
MTECH SOLUTIONS INC
Photon etc Un large spectre de solutions
INSTRUMENTATION GDD INC.
IVADO
NORTON ROSE FULBRIGHT
Eddyfi Technologies
CREAFORM
INNOVATION M2 DEVELOPMENT + MANUFACTURING
dcizif

TESTIMONIALS FROM PARTICIPANTS

JUMINE:

"The support from the MISA Group has been essential to our rapid development. Their expertise and network have accelerated our growth and strengthened our presence in the mining industry."

- Alex Thivierge, President and Chief Operating Officer

MÉTAL MARQUIS:

"The Vortex Journey helped us structure our approach more effectively and forge strategic partnerships."

- Patrick Perreault, President and CEO

BASELINE:

"Thanks to the Vortex Journey, we were able to implement large-scale projects using artificial intelligence."

- François-Alexandre Tremblay, Head of Innovation 4.0 and AI Expert

ARTIK:

"The support from the MISA Group has accelerated our product development and enhanced our ability to meet the specific needs of our clients."

- Francis Latulippe, CTO, Co-founder



The Vortex Journey is a springboard for innovative companies looking to transform ideas into commercial realities. With the support of the MISA Group, participants benefit from a network of experts, financial assistance, and opportunities for strategic partnerships, enabling them to navigate effectively through the complex ecosystem of the mining industry.


MARTINI METHOD

MÉTHODE MARTINI

The Technological Innovation Toolbox

The Martini Method of the MISA Group is an incisive ideation process that systematically explores the potential of a technological innovation project. Each step relies on a set of tools that quickly transform an idea into a concrete and commercially viable project.

What distinguishes the Martini Method is its ability to progressively and structurally explore all dimensions of innovation. At the end of the iterations, each criterion has been examined, resulting in a value proposition that minimizes technological and commercial risks.



The Dimensions are Explored Using the 7 Criteria of Innovation

JUSTIFY THE INNOVATION

1. **DISTINCTIVE**
   The benefit is exclusive or clearly distinguishes itself from the competition.
2. **SUPERIOR**
   The offering exceeds the performance of competing technologies or similar processes.

BUSINESS RELEVANCE

3. **PROFITABLE**
   Return on investment for the innovative company.
4. **PROTECTABLE**
   The distinctive aspect is difficult to copy and can be protected by intellectual property.

UNDERTSAND THE MARKET

5. **IMPORTANT**
   Provides a tangible benefit to a significant percentage of customers.
6. **COMMUNICABLE**
   The benefit must be easily understandable and explainable by the customer.
7. **AFFORDABLE**
   The customer must be able to afford the proposed benefit.



Martini Method Services

Web Platform

The Martini Method Web Platform is an interactive tool designed to support companies in their innovation journey. It centralizes resources, facilitates collaborative exchanges, and allows real-time tracking of each step in the innovation process. Through this platform, companies can efficiently structure their ideas, access strategic tools, and monitor the progress of their projects while ensuring smooth collaboration among stakeholders.

Facilitation and Training

The Martini Method's facilitation and training are designed to energize the innovation process within companies. Through interactive workshops and training sessions, participants acquire the necessary skills to make the best use of the proposed tools and methods. This practical and engaging approach not only strengthens knowledge but also stimulates creativity and collaboration, thus ensuring concrete results aligned with the company's innovation objectives.

The Martini Method is a true "living lab" with a clear strategic intent:

Each innovation criterion is explored through collaborative workshops based on both intuitive and systemic investigation strategies. Participants unleash their creative potential to formulate hypotheses, suggestions, and objections that enrich the value proposition.

Application and results:

With the Martini Method, companies can structure their innovation approach more effectively, leading to improved project definition, solution implementation, and adaptation of technologies to meet the requirements of the mining sector.


AUTONOMOUS MINE

AUTONOMOUS MINE

A Future That Rock!

STRATEGIC PROJECT

The MISA Group positions itself at the forefront of mining innovation with its Autonomous Mine initiative. This ambitious vision aims to transform traditional mining operations into autonomous and intelligent enterprises by integrating cutting-edge technologies to optimize efficiency, safety, and sustainability. The Autonomous Mine represents much more than a technological project; it signifies a true paradigm shift in the management and operation of mines, redefining the future of the mining industry.



The Vision of the Autonomous Mine

The vision of the Autonomous Mine, planned for 2030, is to position Quebec as a global leader in autonomous and intelligent mining. This initiative is based on four main strategic pillars, each aimed at transforming the mining industry by integrating advanced technologies, improving sustainability, and enhancing the overall competitiveness of the sector.



1 **Data Management and Storage:**

Optimize data valorization to improve mining operations.

2 **Decision Support Tools:**

Use digital twins and simulations to optimize operational processes.

3 **Intelligent Platform for Mining Process Valorization:**

Integrate advanced technologies for autonomous control of mining operations.

4 **Control of Autonomous Mining Operations:**

Develop autonomous control systems for daily mine operations.

Projects and Innovations

The Autonomous Mine encompasses a multitude of innovative projects integrating digital technologies into all facets of mining operations. These initiatives include data management, telemetry, proximity detection, and teleoperation, aiming to create connected mines where every aspect is optimized through surface control centers.

A key example is the use of LTE networks for real-time communication and monitoring of mining vehicles, enabling rapid and informed coordination and decision-making.

In summary, the Autonomous Mine represents a promising future for the mining industry, merging technological innovation and operational excellence. With a $23 million investment and close collaboration between industries and universities, this initiative aims to radically transform the Quebec mining sector, positioning Quebec as a global leader in the autonomous mining industry.



Number of collaborating universities:

8

Number of professors active in our collaborations:

10

Number of completed internships:

57


ALLIANCE

NEW PILLAR

Alliance

COLLABORATIVE PROJECT

The Alliance Program pillar of the MISA Group is an essential component of collaborative innovation within the mining industry. This program accelerates collaborative projects by bringing together key players, such as equipment manufacturers, IT experts, and innovative SMEs. The Alliance Program establishes a robust support structure, facilitating collaboration between these various actors to address complex challenges and meet the specific needs of the mining sector. This initiative enhances efficiency and innovation in the industry while fostering constructive collaboration among stakeholders.



Alliance Program Services

Integration

Coordination of the integration of various partners and technologies into a coherent project.

Collaborative Project Specifications

Development of detailed specifications for collaborative projects, taking into account specific objectives and constraints.

Collaborative Project Coordination

Management of coordination between various stakeholders to ensure smooth and efficient project execution.

Funding Agreement Management

Supervision of funding agreements, ensuring equitable and efficient allocation of financial resources

Benefits

Project Management

The MISA Group oversees the project management scope of the collaborative project, allowing participants to focus on deliverables

Strategic Partnerships

The MISA Group mobilizes experts to leverage scientific and technological expertise according to the specific requirements of the project.

Continuous Support

Participants benefit from support throughout the project execution by experts in innovation management, business strategies, and commercialization.

The collaborative project portfolio of the Alliance Program is also included in the programming of the MISA Group's Expert Networks to ensure the dissemination of results.

Number of ongoing projects

4

Number of projects successfully completed:

15

Number of leads:

3



THE 5 Pillars OF THE MISA Group



ALLIANCE
COLLABORATIVE PROJECTS

AUTONOMOUS MINE
STRATEGIC PROJECTS

VORTEX JOURNEY
INNOVATIVE PROJECTS

EXPERT NETWORKS
COMMUNITY OF MINING OPERATORS

MARTINI METHOD
TECHNOLOGICAL INNOVATION TOOLBOX



OPERATIONAL MANAGEMENT OF TECHNOLOGICAL INNOVATION

Ongoing Projects

In 2023-2024, MISA Group continues to position itself at the forefront of innovation in the mining sector. Our ongoing projects demonstrate our commitment to facilitating the adoption of cutting-edge technologies through strategic collaborations and robust support for innovative companies. In this annual report, we present an overview of the strategic initiatives shaping the future of the mining industry, focusing on innovation, sustainability, and collaboration.

Autonomous Mine Mission - 2030 (AMM-2030)

The Autonomous Mine Mission - 2030 project supports the mining sector in adopting 4.0 practices by rethinking business models and mastering Industry 4.0 technologies. Process mapping is key to understanding and implementing these transformations, and the project adapts BPMN standards to the mining context. Supported by academic and industrial partnerships, this project aims to make Quebec a global leader in integrated mining operations control centers.

Laboratory for Mining Operation Data Valorization

The Laboratory for Mining Operation Data Valorization aims to establish a mining control center in a university laboratory, bringing together experts, integrators, and mining companies. This laboratory, operational between 2024 and 2025, will enable the development and testing of innovative solutions, improving mining operations through advanced data exploitation. It will promote applied research and practical application of operational data.

Mine Builders Consortium

In April 2023, the Mine Builders Consortium defined its legal structure and value proposition based on three pillars: the Agile Mine, the Laboratory Mine, and the Showcase Mine. These infrastructures, managed by entrepreneurs, will allow testing of new technologies and accelerate the commercialization of innovative solutions. The consortium aims to demonstrate its ability to establish lasting business relationships with the local community and improve the acceptability of mining projects.

Vortex Community - Mining Technology Network

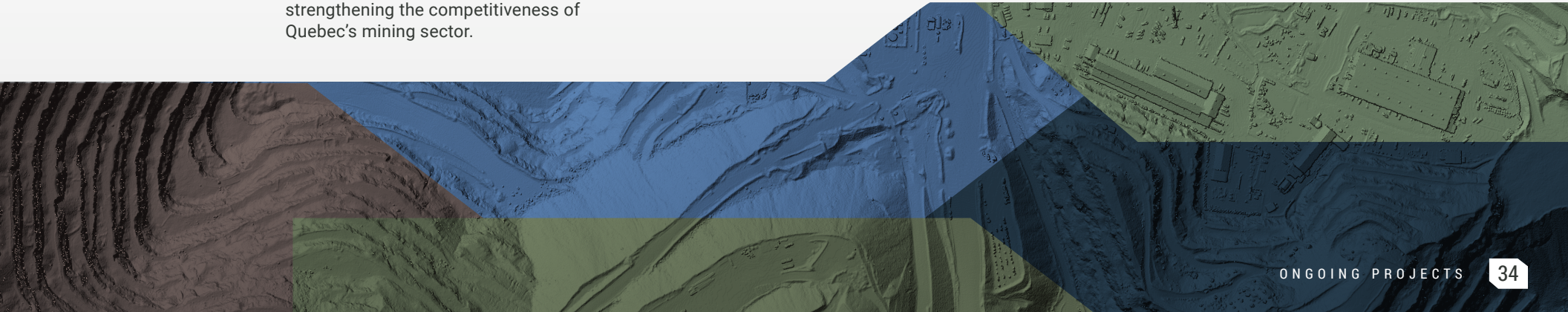
The project to create a mining technology network follows all our innovative projects that have passed the 6 stages of the Vortex Journey. The Vortex Community is a platform that centralizes our equipment manufacturers and their technology to promote them in Quebec. This community facilitates partnerships between mining companies, technology providers, academic institutions, and government organizations, focusing on market development, patent filing and specification of distribution networks. This community contributes to innovation and sustainable development, strengthening the competitiveness of Quebec's mining sector.

Intelligent and Autonomous Mining Institute (IAM)

The IAM Institute addresses emerging challenges in the fields of mineralogy, geology, mining engineering, metallurgy, and sustainable development. With a budget of $83 million, it supports the mining industry's transition towards digitization and automation of operations. The IAM Institute, a research and training center, aims to support innovation and strengthen partnerships between universities and industries.

Vortex Journey - IoT: Connected Business Solutions

The Vortex Journey is a $27 million investment program to accelerate the deployment of twenty connected business solutions developed in Quebec. By transforming the customer relationship with IoT-based performance measures, it aims to reduce operational costs and promote operational outsourcing. This program facilitates the introduction of innovative solutions in the mining sector.

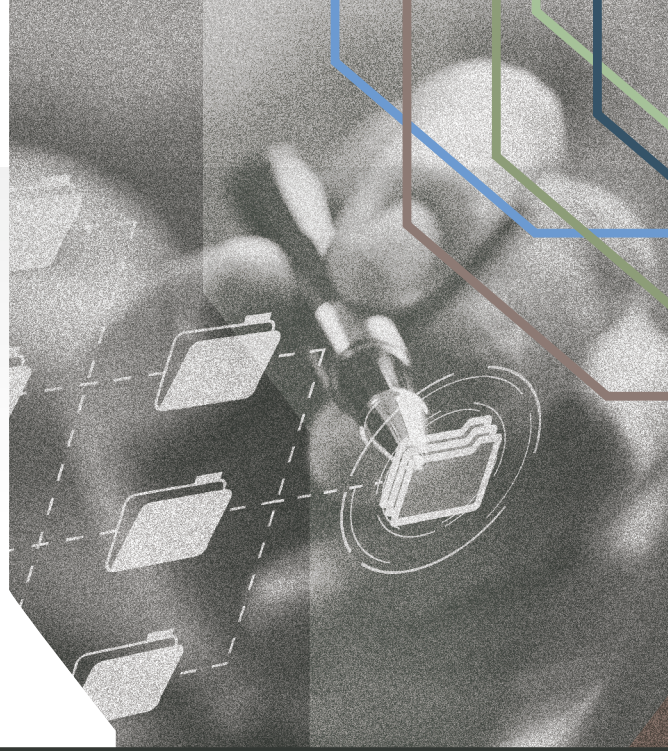


MineMap - Mapping of Mining Operations Processes

The project aims to model 330 mining processes and sub-processes on a cloud-based solution, covering levels 1 to 4. The first phase, planned for 2023, will be followed by a commercialization phase between 2024 and 2025. This project facilitates the understanding and optimization of mining processes, contributing to more efficient management of operations.

NRC Projects

The NRC Projects facilitate the digital transformation of mining companies by evaluating and validating technological innovation projects from Canadian SMEs. This platform accelerates the adoption of innovative technologies, contributing to the evolution towards Mining 4.0. By facilitating technology demonstrations funded by IRAP, the NRC project supports companies in their transition to more efficient and sustainable practices.



In conclusion, the ongoing projects at MISA Group demonstrate our dedication to promoting innovation and collaboration in the mining sector. From the Autonomous Mine Mission - 2030 to the creation of the IAM Institute, each initiative aims to strengthen the competitiveness and sustainability of Quebec's mining industry. We are confident that these projects will bring innovative and practical solutions to current challenges, while paving the way for a more autonomous and intelligent future for mining operations. We thank all our partners and collaborators for their continued support and commitment to a more promising mining future.





Collaborations

National Research Council Canada | Conseil national de recherches Canada

NRC

NATIONAL RESEARCH COUNCIL CANADA

MISA Group collaborates closely with scientific advisors from the National Research Council Canada to identify promising technologies and SMEs in the mining sector. This alliance enhances the technology watch conducted by MISA Group's Expert Networks and allows innovative SMEs to benefit from feedback and test benches to validate their concepts.

corem
Innovation en traitement de minerais
Innovation in mineral processing

COREM

In 2023, the MISA Group and COREM intensified their partnership to develop advanced technologies and sustainable solutions in the mining sector. Together, we conduct applied research projects aimed at optimizing ore extraction and processing while reducing environmental footprint. This constructive collaboration allows us to address current challenges in the mining industry and prepare for a more innovative future.

mitacs

MITACS

The partnership with MITACS has enabled the MISA Group to offer industrial internships to talented students. In 2023, we supervised 57 internships, providing an enriching professional experience and contributing to the advancement of innovative projects in the mining sector. These initiatives demonstrate our commitment to supporting the next generation of researchers and professionals.

UNIVERSITÉ LAVAL

MISA Group and Université Laval are collaborating to develop new technologies and sustainable practices in the mining sector. We have launched several applied research projects, combining the university's academic expertise with MISA Group's industrial experience. This cooperation allows us to address current challenges and prepare a more efficient and secure future for the mining industry.

48e NORD INTERNATIONAL

The collaboration with 48e Nord International optimizes the commercialization of projects from MISA Group's portfolio. Notably through the Vortex Journey, we align our service offerings to provide a continuum of support to innovative companies in Quebec's mineral sector, thus maximizing economic benefits.

POLYTECHNIQUE MONTRÉAL

MISA Group has collaborated with Polytechnique Montréal to implement the CREATE program, supporting the training and mentoring of young researchers. This five-year program, launched in 2023, involves teams of students and postdoctoral fellows, and aims to prepare the necessary skills for the future of Quebec's mining industry.

UQAT

UNIVERSITÉ DU QUÉBEC EN ABITIBI-TÉMISCAMINGUE

The collaboration between UQAT and MISA Group combines academic excellence with industrial technological solutions. Students benefit from practical experience, while the mining industry gains access to talent and innovations. This constructive collaboration promotes regional growth and develops a competitive workforce.



ÉTS MONTRÉAL

ÉCOLE DE TECHNOLOGIE SUPÉRIEURE

Our partnership with ÉTS Montréal focuses on developing cutting-edge technologies and sustainable practices. Together, we have initiated several applied research projects to improve the efficiency and safety of mining operations. This collaboration helps us address current challenges and prepare a more innovative future for the sector.

CEMI

CENTRE FOR EXCELLENCE IN MINING INNOVATION

The collaboration between MISA Group and CEMI focuses on developing advanced technologies and sustainable practices. Together, we have launched several applied research projects aimed at improving the efficiency and safety of mining operations, thus strengthening our ability to meet current and future industry challenges.

ACIM

MINING INNOVATION COMMERCIALIZATION ACCELERATOR NETWORK

MISA Group is an active member of the MICA Network, energizing the Canadian and Quebec mining sector. Our participation in MICA facilitates the creation of joint events and projects promoting innovation and growth. We have also promoted our autonomous mine approach to network members.

SASKATCHEWAN POLYTECHNIC

MISA Group collaborates with Saskatchewan Polytechnic to develop advanced technologies and sustainable solutions. Together, we conduct several applied research projects to improve the efficiency and safety of mining operations, thus preparing the industry for a more innovative and sustainable future.

MaRS DISCOVERY DISTRICT

In partnership with MaRS Discovery District, MISA Group focuses on developing advanced technologies and sustainable solutions. Together, we work on applied research projects to improve the efficiency and safety of mining operations. This collaboration helps us address current challenges and prepare a more innovative future for the sector.

INNOTECH ALBERTA

In 2023, MISA Group and InnoTech Alberta joined forces to develop advanced technologies and sustainable solutions in the mining sector. This collaboration allows us to conduct applied research projects aimed at improving the efficiency and safety of mining operations, while preparing the industry for a more sustainable future.

CNA

COLLEGE OF THE NORTH ATLANTIC

MISA Group and the College of the North Atlantic are collaborating to develop advanced technologies and sustainable solutions in the mining sector. Together, we are working on several applied research projects aimed at improving the efficiency and safety of mining operations. This constructive collaboration helps us address current and future challenges in the mining industry.

BRIMM

BRADSHAW RESEARCH INSTITUTE FOR MINERALS AND MINING

MISA Group and BRIMM are collaborating to develop advanced technologies and sustainable practices in the mining sector. Together, we are conducting several applied research projects to improve the efficiency and safety of mining operations, thus preparing a more innovative and sustainable future for the industry.

ZIM

ZONE D'INNOVATION MINIÈRE

MISA Group plays a crucial role as an incubator for the Zone Innovation Minière (ZIM) planned for 2024. We facilitate relationships between key players, thereby accelerating initiatives within the zone. By providing valuable access to resources and actively participating in the coordination committee, we strengthen our commitment to mining innovation in Quebec.



Highlights

NUMBER OF CLOSED PROJECTS:
21

EVENTS, TRAINING, AND CONFERENCES:
36

HOURS OF TRAINING PROVIDED:
80h

COLLABORATIONS:
19

PARTNER COMPANIES IN EXTRACTION AND EXPLORATION
106

PILLARS:
5

IN CONTACT WITH MORE THEN 250 INNOVATIVE SMES AND STARTUPS
250

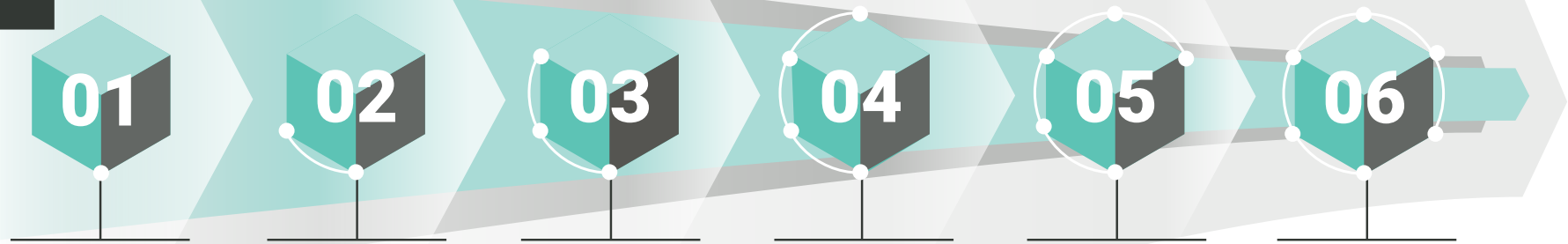
MORE THAN 230 ACTIVE EXPERTS IN OUR EXPERT NETWORKS
230

Project Portfolio

TOTAL NUMBER OF PROJECTS CLOSED 2023-2024:
35

Project progress by areas of expertise in the mineral development process

GEOSCIENCE AND DRILLING	ROCK EXTRACTION	ORE PROCESSING
10	2	5
DIGITAL	**MINING ENVIRONMENT**	**ENERGY MANAGEMENT**
29	6	3



OPPORTUNITIES	EVALUATIONS	ASSEMBLY	APPROVAL	ACTIVATION	CLOSED
05	09	05	00	29	10

128 Since the beginning of its portfolio management, the MISA Group has evaluated **128 initiatives** that did not demonstrate business relevance. This is important strategic feedback to align innovation investments towards the best opportunities.

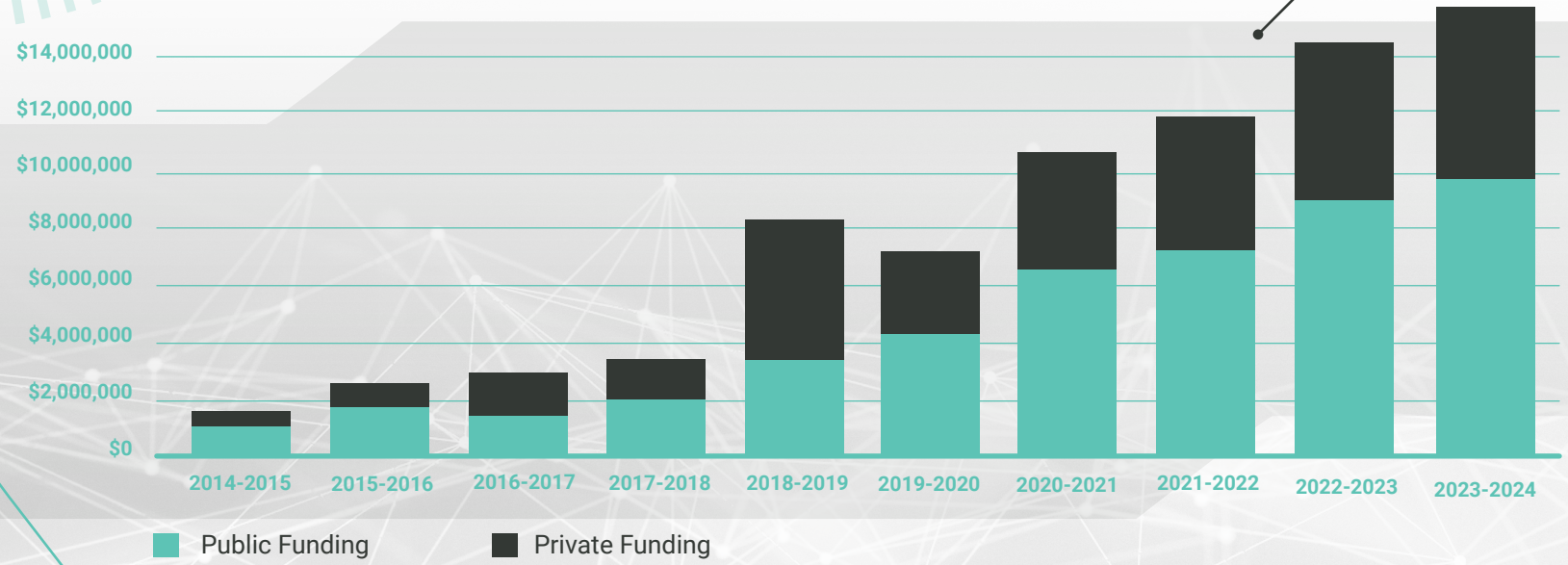
126 Since the beginning of its portfolio management, the MISA Group has successfully closed **126 initiatives**.

Investments
Mining Innovation

In contact with the Quebec and Canadian mining industry, the MISA Group supports a growing volume of investments in mining innovation from public and private financial support. The innovation projects and collaborative projects implemented during the 2023-2024 year mobilized $7.5M from various levels of government and $8.3M in private contributions from mining companies and innovative SMEs, generating $15.8M in technological innovation investment.

BUSINESS INVESTISSEMENTS SINCE 2014

$100M



Thank you TO OUR PARTNERS

Conclusion

In 2023, the **MISA GROUP** made significant progress in realizing our vision of the Autonomous Mine, where the future of mining becomes reality. With initiatives like the **Vortex Journey** and the **Autonomous Mine**, we are integrating IoT, AI, and automation to redefine efficiency, safety, and sustainability.

Our collaborations with academic and industrial partners, supported by **Expert Networks**, have enabled us to address industry challenges and drive innovation. Programs such as the **Martini Method** and **Alliance** transform innovative ideas into viable solutions.

The Autonomous Mine is now a tangible reality thanks to our collective efforts. Thank you to our members, partners, and collaborators for their support. Together, we are shaping the future of the mining industry towards greater autonomy and sustainability.

THANK YOU TO OUR FINANCIAL PARTNERS

ACCORD Québec MICA Mining Innovation Commercialization Accelerator ACIM Accélérateur de Commercialisation d'Innovation Minière

CONTACT INFORMATION

MISA Group Media Relations

Médérique Mercier
Strategic Communications
Project Manager

438.829.1444
mmercier@groupemisa.com
legroupemisa.com



MISA GROUP
MINING EXCELLENCE POLE

Your innovation, our mining evolution.