

REGULATIONS

Mining Start – M-START

CHAPTER I – ON THE PROGRAM

Article 1 - The **M-START** program is an initiative of **MINING HUB** and aims to build a direct channel of business and relationship between mining companies and applied innovation ventures (startups, academic projects and technology-based companies). The program seeks to connect such ventures to accredited mining companies to jointly develop solutions for challenges in the areas of operational efficiency, renewable energy sources, water management, tailings and residue management, safety: operational and OHS.

Sole Paragraph - The purpose of these Regulations is to define the rules and conditions for participation in the **M-START** program.

Article 2 - In order to seek innovative solutions in the mining sector, **M-START's** main objective is to prospect and select new projects and ventures ("**STARTUPS**") and support the development of their proofs of concept ("**POC**") along with one of the accredited mining companies.

Paragraph I: The mining companies accredited to participate in the program are: Anglo American, AngloGold, Arcelor Mittal, CBMM, Companhia Siderúrgica Nacional (CSN), Ferrous, Gerdau, Kinross, Mineração Usiminas, Nexa Resources, Samarco and Vale.

CHAPTER II – ON THE STAGES OF THE PROGRAM

Article 3 - M-START program main stages are presented and detailed in Table 1.

Table 1 – Main stages of the program.

Stage	Details
Application	STARTUPS must submit their projects through the online form available on the MINING HUB website.
Startup selection	The evaluation and selection of the proposals will be made by a board comprising the management team of the

	program and technicians of the mining companies, according to the rules established in this regulation.
Bootcamp	Immersion of startups aimed at direct access to the mining companies and management team of the program in order to understand the challenge, build and validate a joint work proposal to implement the POC.
Implementation	Period in which the startup will implement the POC in the mining company according to the work proposal defined in the Bootcamp.
Demoday	Event that celebrates the closing of the program cycle, in which the startups present the results of the POCs. It is common the presence of external public, especially investors and partners.
Roadshow	Business rounds between startups and the other mining companies of the program aimed at new partnerships and continuity of the project.

Sole Paragraph - The schedule of the main stages of the M-START program is available for consultation on the website www.mininghub.com.br

CHAPTER III – ON THE TOPICS FOR OPEN INNOVATION (CHALLENGES), MINING COMPANIES AND BUDGET FOR THE SOLUTIONS – PROOFS OF CONCEPT (POC)

Article 4 - The details of all the challenges prioritized by the mining companies is available on the program website www.mininghub.com.br

Article 5 - Regarding the topic "OPERATIONAL EFFICIENCY", the prioritized challenges, mining companies and budget available for validation of startups' POCs are presented in Table 2.

Table 2 - Safety: Prioritized challenges, mining companies and budget

THEME 1: OPERATIONAL EFFICIENCY		
TOPICS for Open Innovation (Challenges)	Mining Company	Budget Available (R\$)
1.1 Low cost Real-time material analysis	Arcelor Mittal	To be defined in

		the bootcamp stage
	Vale	Up to 300.000,00
1.2 Implements performance improvement	CBMM	Up to 100.000,00

1.1 - Low Cost Real-time Material Analysis

We are looking for innovative startups and projects offering alternatives for chemical analysis of ores in real time and at low cost.

The ores in question are transported either in bulk form, by conveyor belts, or through slurry pipeline (mixed in water).

The main objective is to optimize the sampling process, with consequent reduction in the number of **samplings** to be performed and **samples** to be sent to the laboratory on a daily basis.

In addition, the data from these online analyzes will be used in the implementation of expert systems, with the objective of controlling part of the ore treatment plant in an automatic and optimized way, seeking peak performance as well as increasing the efficiency of the production process.

It is important that the solution is able to quantify, in percentage terms, the chemical elements that make up the sample under analysis, especially in relation to the elements most important to the Hub's mining companies. One can also develop a solution that quantifies the minerals present in the sample (mineralogical composition) and, subsequently, from this composition, calculate the content of the chemical elements.

If your project is selected, you will have the opportunity to implement proof of concept of the solution at one of the Vale or Arcelor Mittal mining companies. The budget, when applicable, will be set in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

1.2 Implements performance improvement

We seek solutions to improve the performance of the implements (trucks, loaders, excavators, tractors, etc.) used by the mining companies participating in the hub. We believe that by reducing the weight of implements, combined with new designs and materials it will be possible to increase productivity, generating a number of benefits, such as: increased ore volume transported, reduced fuel consumption, tire wear, vehicles maintenance, among others.

Taking this into account, we created a system capable of identifying the ideal characteristics of the implements (weight and volumetric capacity), according to the specificities of each mining company (density, grain size, abrasiveness).

In case your project is selected, you will have the opportunity to implement the proof of concept of the solution at the CBMM mining company. The budget, when applicable, will be set in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

Article 6 - Regarding the theme "ALTERNATIVE ENERGY SOURCES", the prioritized challenges, mining companies and budget available for validation of startups' POCs are presented in Table 3.

Table 3 - Alternative energy sources: prioritized challenges, mining and budget

THEME 2: ALTERNATIVE ENERGY SOURCES		
Topics for Open Innovation (Challenges)	Mining Company	Budget Available (R\$)
2.1 Increase in energy efficiency of mining equipment	AngloGold	Up to 100.000,00
	Nexa Resources	Up to 100.000,00
2.2 Alternative sources of energy	CBMM	Up to 100.000,00
	CSN	0

2.1 Increase in energy efficiency of mining equipment

We are looking for startups and innovative projects providing alternatives to increase the energy efficiency of mining equipment, such as off-road trucks, operation equipment (loaders, excavators, tractors), drilling and support, taking into consideration their most consuming systems which can generate energy (air conditioning, brakes, exhaust, etc). In addition, we are looking for innovations that reduce noise, emission of pollutants, vibrations and improve the quality of work.

Among the options, potential opportunities are those that take advantage of the energy potential of the sources currently used and/or improve the efficiency of the equipment and/or propose new sources of energy or hybrid systems and/or reduce consumption. In addition, the solution may have a management bias, to improve logistics efficiency at the mining site and standardize economic driving behavior. Consideration should be given to both open-pit mine equipment and underground mines where there may be solutions to oxygenation and air exhaustion within the mine.

If your project is selected, you will have the opportunity to deploy the solution proof of concept at one of the AngloGold or Nexa Resources mining companies. The budget, when applicable, will be set in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

2.2 Alternative sources of energy

We look for innovative startups and projects that have alternatives for generating the energy needed in the operation of the company. The objective is to produce alternative energy in order to reduce the impact on the environment and that make the currently available technologies of proven efficiency accessible.

If your project is selected, you will have the opportunity to implement proof of concept of the solution at one of the CBMM or CSN mining companies. The budget, when applicable, will be set in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

Article 7 - Regarding the theme "WATER MANAGEMENT", the prioritized challenges, mining companies and budget available for validation of startups' POCs are presented in Table 4.

Table 4 - Water Management: Prioritized Challenges, Mining Companies and Budget

THEME 3: WATER MANAGEMENT		
Topics for Open Innovation (Challenges)	Mining Companies	Budget Available (R\$)
3.1 Water use data monitoring solutions	Ferrous	Up to 100.000,00
3.2 Real-time qualitative and quantitative water monitoring	Vale	To be defined in the bootcamp stage

3.1 Water use data monitoring solutions

We seek solutions that support us in monitoring data on the use of water in real time, aiming to increase the accuracy in the calculation of the water balance in an environment that is not fully automated. We also need to manage water consumption more efficiently in plants, in order to identify potential points of waste and adopt preventive measures.

We must also consider that the data should be collected in different areas of the operation, most of them in distant environments, often not automated, without power sources and difficult to communicate with. It is important that the proposed solution is able to interact across multiplatforms and is compatible with existing mining companies' structures.

If your project is selected, you will have the opportunity to implement the proof of concept of the solution at Ferrous mining company. The budget, when applicable, will be set in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

3.2 Real-time qualitative and quantitative water monitoring

We are looking for solutions to carry out qualitative and quantitative monitoring of water in real time in mining companies. We want the solution to propose:

- a) Ways of identifying, preventing and correcting water leakage points without stopping the operation of the plant, that is, the pipelines with water;
- b) Ways to monitor tailings flow (in pipes / ladders / gutters);
- c) Ways to measure the amount of water trapped in the tailings dam.
- (d) Real-time measurement methods (semi-quantitative methods) of the inorganic elements present in the water of the dam spillway. This solution must be robust enough to be field-ready and weather-prone;

If your project is selected, you will have the opportunity to implement the proof of concept of the solution at Vale mining company. Proof of Concept Budget (POC) will be defined in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

Article 8 – Regarding the topic "TAILINGS AND RESIDUE MANAGEMENT", the priority challenges, mining companies and budget available for validation of startups' POCs are presented in Table 5.

Table 5 - Tailings: priority challenges, mining companies and budget

THEME 4: TAILINGS AND RESIDUE MANAGEMENT		
Topics for Open Innovation (Challenges)	Mining Companies	Budget Available (R\$)
4.1. Tailings are useful - Use of tailings from mining companies to generate new products	Nexa Resources	Up to 100.000,00
	Samarco	0
4.2. Geotechnical control of tailings dumps and impoundments	Arcelor Mittal	To be defined in the bootcamp stage
	Mineração Usiminas	0

4.1. Tailings are useful

We seek startups and innovative projects that have alternatives for the sustainable destination and use of tailings and mining waste as raw material for other industries and processes. Based on the principles of circular economy, the objective is to find innovative projects that propose both the destination of the waste and proposals of business models that enable (in terms of logistics and structure) projects for the installation of industries of such an input, both the sterile waste as well as tailings and metallurgy.

For this open innovation topic, if your project is selected, there are two opportunities for the implementation of proof of concept, one with iron ore tailings from Samarco and another from zinc mining and metallurgy with Nexa Resources. The budget, when applicable, will be set in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

4.2. Geotechnical control of dumps and impoundments

We are looking for innovative startups and projects that have alternatives for the monitoring of geotechnical structures, such as mine slopes, sterile dumps, dewatered tailings and tailings impoundments.

The physical control parameters (field measurements) are, among others: slope angles, mass movement, humidity, pressure, water table level and pressure, etc. Currently there are solutions to this type of demand, but the goal is to find more efficient solutions in performance and operation at lower costs. The solution must take into account the weather and its condition variations present in the environment.

If your project is selected, you will have the opportunity to deploy proof of concept of the solution at one of the Arcelor Mittal or Mineração Usiminas mining companies. The budget, when applicable, will be set in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

Article 9 - Regarding the theme "SAFETY: OPERATIONAL AND OHS (Occupational and Health Safety), the priority challenges, mining companies and budget available for validation of startups' POCs are presented in Table 6.

Table 6 – Safety: Operational and OHS: priority challenges, mining companies and budget

THEME 5: SAFETY: OPERATIONAL AND OHS		
Topics for Open Innovation (Challenges)	Mining Companies	Budget Available (R\$)
5.1. Intelligent access	Anglo American	Up to 100.000,00
5.2. Inspection without exposure	Vale	Up to 60.000,00

5.1. Intelligent Access

We are looking for startups and innovative projects that develop an access control system to critical operational safety related activities through online monitoring able to provide quick answers.

Critical activities are those that require formal authorization before performed, such as: work at heights, confined space, energy and equipment blocking, load lifting, etc. The system should allow the execution of critical jobs only to those professionals who are fit, trained and authorized, through intelligent access to equipment and operating areas. The solution is required to have an interface with health systems (e.g., physical fitness and occupational health) and safety (e.g., clearance, mandatory PPE, access areas) and company training.

If your project is selected, you will have the opportunity to implement proof of concept of the solution at Anglo American. The budget, when applicable, will be set in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

5.2. Inspection without exposure

We look for startups and innovative projects that have alternatives to perform inspections of equipment and facilities which are carried out based on visual inspection and empiricism in which professionals can be exposed, in order to be able to visualize gaps in working equipment. The objective is to further increase

the level of safety of the professionals of this type of inspection in the processes of the mining companies and to improve the precision of the measurements by equipment that can identify, for example the actual gap. If your project is selected, you will have the opportunity to implement the proof of concept of the solution at the mining company Vale. The budget, when applicable, will be set in the bootcamp stage. Subsequently, the generated case can be replicated to the other mining companies in order to reach new customers.

Article 10 - The applicant, when filling in the submission form, must always indicate, in the specific field, the respective area, challenge and mining company with which they wish to validate the POC.

Paragraph I - The applicant who has a solution within one of the 5 (five) areas of the program, but does not meet the prioritized challenges, should when filling in the submission form, indicate the respective area and the challenge "OTHERS".

Paragraph II – Proposals not adhering to one of the 5 (five) program areas will not be able to participate in M-START, but will be able to register for future contact with the mining companies through *M-Start - Connect* program via www.mininghub.com.br

Paragraph III – The validation of the POC for a given challenge throughout the program will occur only between a STARTUP and one MINING COMPANY, and at the end of the implementation cycle the generated case will be shared with the other ones.

Paragraph IV – Each MINING COMPANY may be allocated in more than one challenge and therefore can work with more than one startup provided it happens in different challenges.

Article 11 - The disbursement of the resources available from the mining companies to validate the POCs of the startups will be agreed upon by means of a contract to be signed between the parties during the BOOTCAMP stage.

Paragraph I – Expenses related to participation in the M-Start program, including transportation, lodging and meals, may be reimbursed within

the total amount made available by the respective mining company to carry out the POC.

Paragraph II – The resources disbursement plan for POC and reimbursement of expenses will be developed by the startups and validated with the mining companies during the **BOOTCAMP** period.

Paragraph III – If a mining company does not have available resources to carry out the POC but even so the startup chooses to work with this company, it will not be possible to claim any future reimbursement or payment by the startup from the mining company in question.

CHAPTER IV – ON THE APPLICATION

Article 12 - The application process for a STARTUP starts with filling out and sending the form available on the **MINING HUB** website www.mininghub.com.br

. **Sole Paragraph** - The purpose of the form is to collect as much data as possible on the STARTUPS in order to ensure that there is sufficient information to analyze the proposals.

Article 13 - The project registration period for the first cycle of **M-START** is available for consultation on the website www.mininghub.com.br

Sole Paragraph – Registration is free and will occur exclusively through the **MINING HUB** website.

CHAPTER V – ON THE SELECTION

Article 14 - **STARTUPS** will be selected to develop solutions for the challenges presented by the mining companies based on great potential for growth, preferably with the capacity to validate the **POC** throughout the implementation phase which is 3 (three) months long, whose solution bears both a global scale and high technology profiles.

Article 15 - The analysis process of the startups' applications consists of the following steps:

(i) Analysis and pre-selection of STARTUPS, considering the "Eliminatory Criteria, as described in Article 16 - Chapter VI, below;

- (ii) Screening of the STARTUPS' proposals with the accredited MINING COMPANIES, according to the order of preference indicated by the startups;
- (iii) Online interviews which each mining company, for each challenge it proposes, will define up to three (3) startups for this stage and will select one of them to validate the POC.

Paragraph I – The number of startups selected for **M-START** will be decided exclusively by the organizers.

Paragraph II – The startups that are not selected for **M-START** may be invited to give a presentation in MINING HUB at the sole discretion of the organizers.

Article 16 - The result of the selection of the STARTUPS will be announced within a maximum period of 10 (ten) days after the closing of the applications, on the website of the program. This deadline may be extended by sole discretion of **MINING HUB**.

CHAPTER VI – ON THE SELECTION CRITERIA

Article 17 - The STARTUPS will be evaluated according to the following eliminatory criteria ("Eliminatory Criteria"):

- (i) As for Innovation - If the project is considered, by the evaluation board, without technological or business model innovation;
- (ii) As for proposed areas and challenges - If the project does not meet one of the 5 (five) areas and challenges proposed by the accredited mining companies mentioned in Chapter III;
- (iii) As for delivery of documents - If any of the necessary documents, mentioned in Annex I of this Regulation, are not presented for participation in the **M-START**, within a maximum of five (5) days after the disclosure of results, will be considered cause of immediate elimination;
- (iv) As for availability and attendance - If the startup does not have time availability or does not respect attendance during the program, which will be held in person at **MINING HUB's** and accredited mining companies'

headquarters, the startup can be eliminated from the program at any time by **MINING HUB**, being the eliminated startup itself the sole and exclusive responsible for any cost derived in this period.

Article 18 - The STARTUPS will be evaluated by the mining companies according to the classification criteria presented in Table 7.

Table 7 – Classifying criteria.

Criteria	Objective
Team	Evaluate the team's ability to develop the solution and leverage the business.
Technological Potential	Evaluate the effectiveness of the operation of the solution, its degree of maturity and the feasibility of its scale production.
Proposed solution	Evaluate if the solution (product / service) meets the demand(s) of the mining companies.
Business model	Evaluate if the business model is interesting and allows you to build a scalable and competitive business.
Cost of POC	Check the investment needed to develop proof of concept solution.
Potential impact	Assess the potential impact of the solution on mining companies (financial, social, environmental, etc.)

CHAPTER VII – ON THE DURATION OF THE M-START PROGRAM

Article 19 - The timeline of the main milestones of the **M-START** program is available on the MINING HUB website (www.mininghub.com.br)

Article 20 - Startups selected by the organizers in accordance with the terms and conditions of this regulation will participate in the **M-START BOOTCAMP** stage.

Paragraph I – The main objective of **BOOTCAMP** is to allow startups have direct access to the mining companies and the program

management team in order for them to understand the challenge and build a joint working proposal for **POC** implementation.

Paragraph II – At the end of the **BOOTCAMP**, it is expected that the startups and the mining companies will have validated the implementation plan of the POCs and signed the respective contract to begin the development of the projects.

Paragraph III – The period for implementation of the **POCs** will be 3 (three) months long and will end with an event called "Demoday", aiming at sharing the results achieved and identifying the synergy of the solution of the startups with the other accredited mining companies.

CHAPTER VIII – ON OBLIGATIONS AND RESPONSIBILITIES

Article 21 - These are the obligations of the Startups:

- (i). Comply with all provisions of these Regulations.
- (ii). Participate in the actions defined for each phase of **M-START**, as well as provide all necessary information and documents required in Annex I.
- (iii). Participate, obligatorily, in the events and initiatives organized by **M-START**, with at least 01 (one) legal representative of the startup.
- (iv). It will be necessary to present the documents described in Annex I to these Regulations for registration purposes of the startups selected for **BOOTCAMP**.
- (v) The startup when applying for this program declares that they do not use and do not have, directly or indirectly, in their productive chain, any slave labor or degrading work conditions; any workers submitted or forced to illegal conditions of domination of the employer, any work carried out by minors under 16 (sixteen) years old, as established in article 7, item XXXIII of the Federal Constitution, as well as not allowing any type of discrimination and respecting the freedom of association, under pain of being immediately eliminated by **MINING HUB** without any need to send prior notification, submitting the startup, in case of breach of this clause, to compensation for losses and damages caused and penalties provided by law.

(vi) The startup when applying for this program, declares, fully observance of Law 12.846/2013 ("Brazilian Anti-Corruption Law") and declares that it has knowledge of all the terms and definitions set forth in the Brazilian Anti-Corruption Law, which define as injurious act to promise, offer or give, directly or indirectly, an undue advantage to a public agent or the third person related to him, among others. In case of violation of the referred Law, the responsible parties will be responsible for any losses, damages or liabilities caused, in addition to the penalties provided by law.

CHAPTER IX - ON THE M-START PROGRAM TERMINATION

Article 22 - The relationship between **M-START** and **STARTUPS** will be considered terminated upon prior notification, in the following cases:

- Elimination in selection checkpoints;
- End of program term deadline;
- If there is an infringement of any clause of these Regulations;
- If the main features of **M-START** are significantly changed by the organizers and the startup do not conform to these changes;
- If the insolvency, bankruptcy or judicial reorganization of the startup and its members is verified;
- If temporary activity interruption of the startup is verified;
- At the initiative duly justified by the startup;
- At the initiative duly justified by the **MINING HUB**.

CHAPTER X – ON THE POSSIBLE BENEFITS FOR THE SELECTED STARTUPS

Article 23 - The following benefits may be made available to the startups selected for **BOOTCAMP AND IMPLEMENTATION**:

- Possibility of investment to develop projects along with mining companies to validate POCs;

- Access to infrastructure and teams of accredited mining companies;
- Coaching and mentoring with recognized professionals from the mining sector and startups;
- Exclusive access to the structure and benefits of the WeWork network;
- Joint work with the team of WeWork Labs and Neo Ventures;
- Methodology for the development of startups: training, technical visits, professionalization of management and growth;
- At the end of the program, and by its sole discretion, the mining companies, if considering it feasible for their business, may invest in the development of the solutions, as well as establish partnerships to seek funding, purchase or distribution of startups products and services.

Article 24 – A physical space will be made available during the **BOOTCAMP AND IMPLEMENTATION** stages, which should be exclusively used to carry out the activities provided for in these regulations.

Paragraph I – The physical space available must be used by the startups selected according to the rules of Wework, not being allowed the transfer of the right of use.

Paragraph II – The representatives are responsible for maintaining the space available, equipment and furniture in all common areas.

CHAPTER XI – GENERAL PROVISIONS

Article 25 - It is clear and established from now on that participation and / or selection in **M-START** does not constitute any kind of operating agreement, joint venture or association between the participating startup (selected or not), MINING HUB and the other parties involved in the program, in order to make it clear in these Regulations that the participating startup (selected or not) and the other parties involved in the program, are independent entities among themselves, that no provision of these Regulations or the program shall be interpreted as creating any corporate relationship , labor or taxation between

the Parties and that there is not now or there will not be solidarity or subsidiarity of any nature between the Parties.

Article 26 – It is clear and established from now on that participation in the program and an eventual signing of contract with the mining companies does not generate any kind of employment relationship. Every startup in the program agrees to exempt MINING HUB and the other parties from any liability in labor / social security claims that may be proposed by any of its employees and/or associates, as well as to bear all costs incurred in said claims, including but not limited to attorneys' fees.

Article 27 – It is clear and established from now on that the executing board may change these Regulations at any time if necessary, for the proper and regular progress of the Program established herein.

Article 28 – It is clear and established from now on, that in case there is any doubt regarding these Regulations, MINING HUB is ready and available to answer them.

ANNEX I

A. Registration documents for **Brazilian startups** in the **BOOTCAMP** stage:

- Certidões Negativas de Débito – CND (Negative Debit Certificates, follow the links below):

- Federal Taxes CND

(<http://www.receita.fazenda.gov.br/Aplicacoes/ATSPPO/Certidao/CndConjuntaInt/InformaNICertidao.asp?Tipo=1>)

- INSS CND (Social Security CND)
(<http://www010.dataprev.gov.br/cws/contexto/cnd/cnd.html>)
- FGTS CND (Severance Pay Indemnity Fund CND)
(<https://webp.caixa.gov.br/cidadao/Crf/FgeCfSCriteriosPesquisa.asp>)
- Sintegra (<http://www.sintegra.gov.br/>)
- Serasa (Whoever has no access, let us know by email)
- CNPJ card (National Registry of Legal Entities card)
(http://www.receita.fazenda.gov.br/PessoaJuridica/CNPJ/cnpjreva/Cnpjreva_Solicitacao.asp)
- Bank details for any payments on behalf of the startup;
- Updated Contract / Bylaws;
- Power of Attorney with the indication of the legal participant that will officially represent the startup in the program from application to full development;
- Term of Confidentiality;
- Image Use Authorization Term.

B. Documents for registration of **foreign startups** in the **BOOTCAMP** stage:

- Valid passport;
- Color photo 3x4 (ID-sized photo) (jpg);
- Entry visa issued by Brazilian Federal Police;
- Criminal background check (“Atestado de antecedentes criminais”, issued by Brazilian Civil Police);
- Employment in the company where you work;
- Certificate of professional registration in the country of origin.