

Call for Solution

OPT4RAIL

Rules of the initiative

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1. Introduction

These Rules and Regulations govern the procedures for the participation, selection and execution of the "OPT4RAIL" Initiative (hereinafter the "Initiative") organised and managed by FS SpA, at the express requirement of RFI company of the FS Group, with the support of the economic operator LVenture Group SpA.

The subject matter of the Initiative is the challenge described in Article 2.1 and shall be structured in Call4Startup mode. This Initiative is open to all those who meet the inclusion criteria set out in Article 2.2 below.

For all matters not governed by these Rules, the Terms & Conditions of use of the FSInnoStation website, available at this [link](#), apply to the Initiative.

2. Description of the initiative

2.1. Subject of the initiative

OPT4RAIL is a call4solution organised and managed by FS SpA, at the express requirement of RFI company of the FS Group, with the support of the economic operator LVenture Group SpA with the objective of identifying and developing optimization (ideally automation) solutions capable of supporting the digitization of circulation and operations management (e.g. shunting movements to and from rail yards) in the most complex railway junction stations from a logistical and decision-making perspective, both under normal traffic conditions and when critical events occur (e.g., infrastructure or train failures or other abnormalities). The solution sought is aimed at streamlining the circulation and operations management process by taking into account the constraints and characteristics of the facility itself (configuration of the station's rail plan with related structural aspects and functional technical features such as e.g., condition tables, scheduled timetable and real-time conditions of train traffic, business rules, etc.).

The call will last for 7 weeks, from August 10 to September 28 2023. The proposed solutions will be evaluated by a 5-member jury composed of both FS SpA staff and group realities and the economic operator.

At the end of the selection, the solutions that will be evaluated as most responsive to RFI's needs will have the opportunity to access a co-design and experimentation path aimed at outlining a customized solution to be validated in the RFI context.

Specifically, the OPT4RAIL call4solution is aimed at Startups and Innovative SMEs that present products, solutions and expertise aimed at optimizing and automating traffic management in large facilities that could include:

- the development of a Digital Twin of the plant that allows the most accurate simulation of its operation and the railway timetable;
- the development of algorithms based on Neural Networks (e.g., Machine Learning), Artificial Intelligence Operations Research, and other Advanced Computing solutions (e.g., quantum computing, etc.) that support the human operator in identifying the strategic

optimum when unforeseen events (traffic abnormalities) occur or that can support optimal management and traffic planning under normal conditions;

- The implementation of platforms for data collection and processing (e.g. IoT Analytics, Big Data and Advanced Analytics, Real-Time Analytics, ...) to support the supervision, monitoring, regulation and management of circulation and operations on the large station railway yard.

For the proposed solutions, the following aspects are of particular interest:

- Higher Digital Readiness Level for previous applications in similar or related contexts (1 - definition of basic principles, 2 - verification of potential and expected performance, 3 - theoretical model with interdisciplinary background, 4 - definition of interactions between solution components, 5 - prototype testing of solution components, 6 - prototype of integrated solution, 7 - confirmation of operation of the final solution, 8 - confirmation of usability of the final solution, 9 - application of the solution on a large scale);
- Shortest response time (time of provision of the optimal solution after each update of traffic conditions) to approach the "real time" condition;
- Maximum number of variables that can be represented in the problem;
- Interoperability and modularity of the solution with RFI field systems and other IT systems in use or planned;
- Ability to update and recalibrate the algorithm or solution automatically downstream of the acquisition of new historical traffic management data.

2.2. Target of the initiative

The OPT4RAIL Initiative is aimed at Innovative Companies located in Italy or abroad.

2.3. Stages and schedule of the initiative

The Initiative will start on 08/10/2023, end on 09/28/2023 and consist of three distinct phases, according to the following:

Phase 1 – Call for Solution: during this phase, the Innovative Companies will have the opportunity to submit - through the completion and transmission of the submission form (Application for Participation) the information required for the evaluation of the respective Innovative Solutions (hereafter simply Innovative Solutions) they intend to propose. The start of Phase 1 will coincide with the launch of the Initiative on 08/10/2023 and will end at 3:00 p.m. on 09/28/2023. After that date, it will no longer be possible to participate in the Initiative. All communication channels of the FS Group (social, web, etc.) as well as the communication channels of the Economic Operator will be used for the launch. The challenge and related privacy policy, can be found online at Innostation information ([link Innovation Initiatives](#)).

Details on how to participate are provided in Articles 3 and 3.1 below.

Phase 2 – Valuation: During this phase, the Submissions sent by Users will be evaluated by a Jury composed of 5 (five) expert members, distributed as follows:

- 4 (four) members appointed by FS SpA and Subsidiaries, internal to those companies
- 1 (one) member appointed by the economic operator

Phase 2 will end approximately 2 (two) weeks after the end of Phase 1.

Evaluations will be conducted according to the criteria expressed in Article 3.3 below. Participants selected through this Phase 2 will enter the subsequent Phase 3.

Fase 3 – Selection of the innovative solutions:

Phase 3 will coincide with the end of Phase 2 and will consist of the final selection of Innovative Companies (maximum 3) admitted to the Selection Day. The selected companies may have the opportunity to access a co-design and/or experimentation path aimed at deepening the innovative solution.

FS and/or its interested subsidiaries, in compliance with and under the conditions provided by the applicable regulations in force, reserve the right to entrust the winner(s) with the carrying out of the subsequent stages of development and implementation of the Innovative Solution, provided that they possess the relevant subjective requirements and technical-professional and economic capacity required for this purpose. The winners therefore undertake to negotiate in accordance with principles of good faith and fairness any proposals for collaboration by FS SpA related to the Innovative Proposals awarded.

The Initiative is not subject to the regulations provided for by Presidential Decree No. 430/2001 as it does not constitute a competition or prize operation, having as its object the presentation of Innovative Solutions or studies in the commercial or industrial sphere with the awarding of prizes representing the recognition of merit, falling, therefore, within the cases of exclusion under Article 6, letter a) of the D.P.R.

3. Rules of participation, grounds for exclusion and evaluation

Upon participation, at the same time as submitting the submission form on the Innostation platform, the User unconditionally accepts the contents of these Rules. Failure to comply, in part or in full, with the Regulations will result in exclusion from this Initiative and loss of any right to any awards.

Recipients of the Initiative, at the time of participation, must identify a contact person with the necessary powers of representation, who will be the User responsible for the innovative solution inserted in the Platform and for communications with FS SpA and the Economic Operator (LVenture Group S.p.A.).

It is allowed, for each participating User as a contact person of an Innovative Startup/SME, to submit only one innovative solution.

A cause for exclusion from the Initiative is the submission of applications (submission forms):

- a) by individuals who:
 - do not meet the requirements set forth in Article 2.2 above;
 - against whom it has been established that there have been serious violations of obligations relating to the payment of taxes and taxes or social security contributions;
 - against whom it has been ascertained that they have committed serious violations of safety regulations and any other obligations arising from labor relations, as well as of legal obligations relating to environmental, social and labor issues;
 - they are in a state of bankruptcy or composition with creditors or proceedings for the declaration of one of these situations are pending against them;
 - who do not meet the requirements of good standing¹;
 - have engaged in violations of the principles of the FS Group's Code of Ethics and/or Anti-Corruption Policy and/or the Organization, Management and Control Model pursuant to Legislative Decree No. 231/2001 of FS;
- b) that have been received after the deadline stipulated in Article 2.3 above;
- c) containing statements, submissions and/or documents containing partially or totally false and/or incorrect information;
- d) contrary to the rules established by these Rules and/or the Terms & Conditions of Use of the FS InnoStation website;
- e) in violation of intellectual or industrial property rights of third parties.

FS reserves the right to carry out the necessary verifications, both during the course of the Initiative and at its conclusion, regarding compliance with the specified conditions, with respect to each individual Participating User and to exclude him/her from the Initiative and/or to revoke the prizes awarded, if it emerges that the Participating User and/or the winners have not complied with even one of the aforementioned requirements.

To this end, FS will ask the individuals concerned to transmit, within 5 calendar days of the FS request:

¹ *In particular, it should be noted that FS will carry out reputational investigations in order to assess the presence of the above mentioned requirements for the Winners of the Phase and/or of the Initiative. In particular, by way of example and without limitation, with regard to the requirements of honourableness, FS shall consider as an obstacle to the selection – on a self-regulatory basis and in compliance with the principles set out in the Code of Ethics, Model 231 and the internal provisions governing the negotiation activities of the owner companies - the occurrence of the grounds for exclusion, by way of analogy, set out in Art. 80, para. 1, of Legislative Decree no. 50/2016, and may draw elements of assessment - in compliance with the regulations in force on the protection of personal data - from the performance of the aforementioned reputational surveys

- the Informational Questionnaire, duly completed, set out in Annex 2 to these Regulations;
- copy of the Chamber of Commerce certificate extracted from the relevant Register of Companies (or equivalent document in case of foreign startup);
- DURC (or equivalent document in case of foreign startup);
- copy of the financial statements, duly approved, for the last 3 fiscal years (if available), or, alternatively, other document attesting to the competitors' financial reliability.

It should be noted that the conviction by final judgment or criminal decree of conviction that has become irrevocable for one of the offenses referred to in Art. 94, co. 1, of Legislative Decree no. 36/2023 does not constitute a cause of impediment to participation in the Initiative, when such offenses have been decriminalized, or declared extinct after the conviction, or in case of revocation of the same conviction, or when rehabilitation has taken place or, in cases of conviction to a perpetual accessory penalty, when this has been declared extinct pursuant to Article 179, seventh paragraph, of the Penal Code. Individuals interested in availing themselves of these grounds for exemption from exclusion from the Initiative are required to submit evidence of the above circumstances to FS.

Conviction by final judgment or criminal decree that has become irrevocable for one of the crimes referred to in Article 94, co. 1, of Legislative Decree No. 36/2023 constitutes a cause of impediment to participation in the Initiative when it concerns even only one of the following subjects:

- a) the individual submitting the Innovative Solution on behalf of a corporation, if different from the figures below;
- b) in case of a sole proprietorship, the owner, the technical director (if any);
- c) in the case of a general partnership, the partners, the technical director (if any);
- d) in case of limited partnership, the general partners, the technical director (if any);
- e) if it is another type of company or a consortium, the directors or alternatively the members of the management board with power of representation; the technical director (if any); the sole shareholder, or the majority shareholder.

Should the results of the verifications reveal elements potentially hindering to the selection, FS will establish a cross-examination with the subject(s) concerned in order to acquire elements useful for the full assessment of the circumstances detected for the purposes of the possible exclusion of the participating User from the Initiative.

3.1. How to attend

Participation in the Initiative is free of charge and is formalized through the following two steps:

- a) Creation of personal account on the FS InnoStation website to access the detailed content of the Initiative ([link](#)).

Each User guarantees that the information provided upon registration is true and correct. Should FS SpA ascertain that the information provided when creating the personal account is not true, it may order the exclusion of the User and, consequently, of the proposed Innovative Solution.

- b) Submission of the information requested through the completion and transmission of the submission form (application for participation). Each User, in the name and on behalf of the represented Innovative Company, declares - through the acceptance of the conditions of participation and performance of the Initiative, lent by ticking the "I confirm" box, present in the aforementioned submission form - the absence of conflicts of interest with respect to FS and the Economic Operator, as well as that he/she does not incur the grounds for exclusion referred to in Article 3 of these Regulations and that he/she holds the ownership - or the related rights of use - of any Intellectual Property involved in the proposed Innovative Solution.

3.2. User commitment

The User, except in case of major force, upon participation agrees to:

- ensure participation in all events, if any, during all phases of the Initiative described in Article 2.3 above.
- In case of a winning User of the Initiative, ensure participation in the PoC pathway and related events, if any, during the entire phase of the Program.

The User also undertakes to inform FS SpA, - by sending a written communication to the following email address openinnovation@fsitaliane.it - about any previous and/or ongoing relationship, on the part of the user, the partners and directors of the startup/SME with FS SpA itself or with one of the companies controlled by or affiliated with the FS Group, and/or the Economic Operator (Lventure Group S.p.A.), even if related to activities and/or projects unrelated to this Initiative. Such communication must take place no later than the closing date of Phase 1 - Call for Solution, indicated in Article 2.3 above.

3.3. Evaluation criteria and selection of innovative startups/SMEs

It is the intention of the Jury to select Innovative Solutions that are ready to market and have a TRL level of 5 or higher.

For each Innovative Solution submitted, the members of the Jury will make an unquestionable evaluation, guaranteeing impartiality and equal treatment, based on the criteria in Annex 1.

Each aspect being evaluated must be made explicit in the material to be attached to the Innovative Solution proposal submitted to the InnoStation platform. Each criterion will be evaluated by expressing a preference on a numerical scale, as indicated in Annex 1.

The Innovative Proposals selected may be a maximum of 3 (three) and will be those of the Users who, on behalf of their respective Innovative Companies, will have obtained the highest score resulting from the arithmetic average between the evaluations expressed by each member of the Jury.

The Jury reserves the right not to select any winner, in case none of the evaluated Innovative Proposals obtains an adequate evaluation for the object of the challenge.

4. Limitation of liability

FS SpA assumes no responsibility for technical, hardware or software malfunctions, interruptions of network connections, failed, incorrect, inaccurate, incomplete, illegible, damaged, lost, delayed, misdirected or intercepted registrations of Users, or for registrations of Users that, for whatever reason, have not been received, electronic, or other communications that have been delayed, or for other technical problems related to the registration and uploading of content under this Initiative.

FS SpA will therefore exclude any form of reimbursement and compensation, whether in part or in full, relating to any damage to property and/or persons caused by Users participating in the Initiative, or by third parties, during the course of the various Phases of the Initiative.

Users participating in the Initiative agree that, in the event of changes in the rules for the management of the Covid-19 pandemic and the consequent containment measures adopted and adoptable, the manner in which this Initiative is carried out may change.

5. Warranty, indemnities and liability

Participants in this Initiative, warrant that the content submitted:

- does not contain material that is unlawful, prohibited by law, or contrary to the terms of this Initiative;
- does not contain material in violation of the rights, positions or claims of third parties (with reference to copyright and industrial property law and other applicable laws or regulations);
- is freely and legitimately usable in accordance with the provisions of this Initiative, insofar as the participating User - as a representative of an Innovative Startup/SME is the owner of the rights to use the same, or insofar as he/she has acquired the availability of the same from all entitled parties, having taken care of the full fulfillment and/or satisfaction of the rights, including those of an economic nature, due to the authors of the content and/or

works from which such content is derived and/or extracted, or to other entitled parties, or due for the use of related rights in accordance with the law.

The Users who participate in the Initiative declare that they are aware of the responsibilities, including criminal ones, in which they will incur in the event of untruthfulness within the contents of the projects they deliver and/or in the event of false declarations regarding the requirements they possess for the purpose of participation in this Initiative, indemnifying as of now FS SpA from any claims by third parties.

6. Confidentiality and intellectual property

All parties involved, in each phase of activity envisaged by this Initiative and also after its conclusion, will guarantee the confidentiality of the information related to the Contributions sent by the Users.

With regard to the individual Innovative Solution proposed by each Innovative Company, all intellectual and industrial property rights relating to the same will remain the property of the Innovative Company that submitted it, with the right for FS SpA itself or one of the subsidiaries or affiliates of the FS Group, as well as the Economic Operator (LVenture Group SpA), to access the Innovative Proposals themselves to enable the management of the entire Initiative, including the activities included in the Evaluation Phase.

Regarding the proposed Innovative Solution, the Innovative Company also accepts the following conditions:

- a. shall make explicit any industrial and/or intellectual property rights protecting the proposed Innovative Solution;
- b. for the protection of the Innovative Solution, the Innovative Company shall independently provide and rely on appropriate legal protections and safeguards for the Innovative Solution through patents, trademarks, copyrights and registrations with the relevant authorities;
- c. any additional information transmitted by the Innovative Company to the Company may be protected in each case by subsequent confidentiality agreements to be signed between the parties;
- d. where the Innovative Solution should be of interest to FS and/or its Subsidiary(ies) and the latter deems it necessary to enter into a collaboration with the Innovative Company for the development and/or implementation of the Innovative Solution, the Innovative Company and FS and/or its Subsidiary(ies) will agree on the regulation of the intellectual and industrial property rights arising from such development and/or implementation, including the possible commercial exploitation of the same, i.e. the payment of fair compensation.

7. Variations for the initiative regulations

The participating Innovative Company, by entering the Innovative Solution in the Platform, agrees that at any time FS SpA may make any changes to the rules of the Initiative. By way of example,

changes may relate to the duration, start and/or end of the Phases, cancellation or other specifics of the Initiative, except for the requirements for participation in the Initiative.

FS SpA will communicate all changes through the FS InnoStation website, in the space dedicated to the specific Initiative ([link](#)). Such variations will become binding following their publication.

8. Applicable law and jurisdiction

The application of these Regulations of the Initiative shall be governed by Italian law.

Any dispute in any case concerning these Regulations (including those regarding the application, interpretation, effectiveness of the same) shall be deferred to the exclusive jurisdiction of the Court of Rome.

Any requests for clarification regarding these Regulations may be sent to:

openinnovation@fsitaliane.it.

Attached 1

CHALLENGE EVALUTATION CRITERIA

A) Assessment of business attractiveness – Max 100 points for each evaluator

[1] Innovation Creation of Value Entrepreneurship

Scoring will take into account innovation potential, attractiveness of the target market, impact on the quality of life of the stakeholders involved and/or from an environmental perspective.

score
5
10
15
20
25

[2] Service/Product design and development, attention to customers, Customer experience, market validation

Scoring will take into account the submitted business model, maturity of the proposed marketing strategy, and usability testing, product/service attractiveness to validate the value proposition, Pocs and Pivots performed.

score
5
10
15
20
25

[3] Intellectual property, patents

Scoring will take into account the ownership, robustness, extent, and financial sustainability of the proposal.

score
5
10
15
20
25

[4] Financial promise

Scoring will take into account the clarity, consistency, credibility and financial performance of the proposed solution.

score
5
10
15
20

25

B) Evaluation of Feasibility - Max 100 points for each evaluator

[5] Current financial capability

Scoring will take into account the startup's proposed financial performance (including negative results) as well as the team's ability to manage financial control tools and whether or not the people on the team have invested equity in the project.

score
4
8
12
16
20

[6] Business Strategy: objectives, planning, business management

Scoring will take into account work organization, roles, responsibilities, team experience, development roadmap and use of monitoring tools.

score
4
8
12
16
20

[7] Balance of competences

Scoring will take into account the balance and variety in terms of skills of the team.

score
4
8
12
16
20

[8] Partnerships

Scoring will take into account existing partnerships, concrete and potential networking capacity.

score
4
8
12
16
20

[9] Technological Solution Maturity

The scoring for Technological Solution Maturity will be:

score
2
4
6
8
10
12
14
16
20

C) Compliance evaluation - Max 100 points for each evaluator

[10] Conformity to the objectives of the call

Scoring will take into account the responsiveness of the proposed technological solution to the need expressed in the call for solution (paragraph 2.1 "Subject of the initiative" of the Regulations)

score
20
40
60
80
100

Challenge evaluation method

The ranking will be compiled as the algebraic sum of the averages, normalized to 100, of the scores given by the jury for each evaluation group A, B and C.