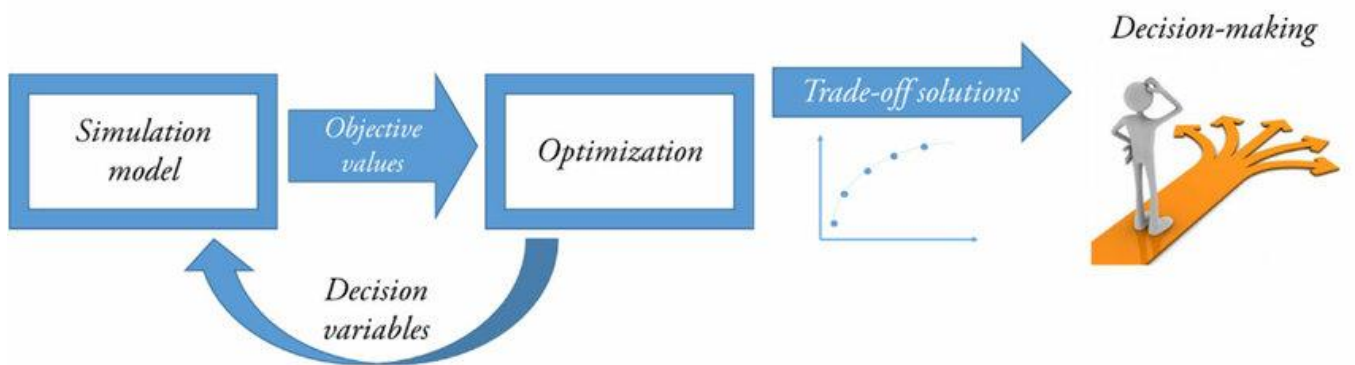


Market consultation ProRail

Netanalyses

Insight into usefulness and necessity through simulations



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1 Insight into usefulness and necessity through simulations

In order to expand the infrastructure and make it more suitable for an increasing transport demand, taking into account grid congestion, vehicles with different power profiles, the changing climatic conditions and expansions of the train service such as the High-Frequency Rail Programme, ProRail wants to be able to carry out network analyses in-house. The aim is to be able to quickly and accurately determine where and which changes in the traction energy supply must be made in order to meet the task.

A service or product that ProRail can use to quickly and adequately make the calculations for its network. Easy to use, independent of third parties and flexible to be able to process our existing models and to adapt models. Can you help us?

1.1 ProRail and the traction energy supply

ProRail B.V. is responsible for the railway network of the Netherlands: construction, maintenance, management and safety. Employees ensure that every day, 24/7, 1,200,000 passengers and 100,000 tons of goods arrive at their destination, with 6550 trains over more than 7000 kilometers of track. The railway network is rightfully the beating heart of mobile Netherlands.

ProRail works on the accessibility of the Netherlands by ensuring an optimal rail network.

We distribute the capacity on the track, regulate all train traffic, build and manage stations and Lay new track. ProRail also maintains existing infrastructure such as tracks, switches, signals and level crossings.

An important part of our network is the traction energy supply. The main rail network has 1500VDC as catenary voltage. The HSL, Havenspoorlijn and Betuweroute have 25kV AC as overhead line voltage. In order to maintain, improve and expand the energy supply, ProRail to be able to carry out the analyses for the loads of its energy supplies (grid analyses) in-house. In order to be able to respond more quickly and efficiently to the increasing demand for transport and the influx of modern equipment.

1.2 Ambitions

In addition to calculating our grid loads quickly and accurately, ProRail wants to automatically process the realised timetable with rolling stock and the measured values (current, voltage) from the substations in the model in order to achieve more accurate results and predictions.

1.3 Needs

1.3.1 Initial needs

A simulation platform that contains a model of the electrical infrastructure in different configurations. In it, we recognize the current composition, temporary composition and future configurations. In order to correctly calculate the load on the traction network, it must be possible to use the equipment used with its various parameters.

The simulation should provide answers to the questions as expressed in OVS00012 part 4 version 009. Validation of the package will preferably take place on the basis of EN 50641.

The basic models:

Infra data:

To make unambiguous, consistent and simple use of our available track data, [Welcome to the OTL - OTL](#), where track data, signalling data and data from the course of the overhead line can be read into the service or product via the IMX data format.

Equipment:

The data of the rolling stock can be supplied via RailMI V3.3 Rolling Stock format (<https://www.railmi.org/>) or a variant thereof (adapted to the ProRail applications)

Timetable:

For the timetable, an export from the planning program is used in accordance with the RailMI V3 TTS format.

Energy supply:

The missing data (such as a Substation) is recognized and can easily be filled in (graphically) with an easy-to-create and manage OTL EV systems in accordance with ProRail's IMX and OTL system.

For the grid analysis, it is required that the user of the package can make graphical changes to the model (using the OTL and IMSpoor), after which the effects on the energy supply can be calculated.

The completed graphically composed EV configurations, as they are currently present in the infrastructure, can be exported to the OTL model in order to capture the basic model.

Temporary models:

In addition to calculating the traction grid based on the basic models, the desire is to be able to easily create a variant of specific EV objects or equipment. These specific models must be managed separately as a variant, belonging to a specific analysis.

It must be possible to decouple the simulation in order to be able to consider sub-areas for temporary situations or studies into possible solutions.

The effect of equipment length and type can lead to not all solutions in the infrastructure being effective. To prevent this, the simulation package will have to be able to perform an automatic variable analysis based on entered boundaries. A second application is simulating until the infrastructure becomes overloaded in order to be able to determine the maximum equipment deployment and/or timetable on (part of) the network.

The system must be able to calculate different infrastructure solutions as variables in order to be able to make a balanced infrastructure adjustment based on the outcome parameters. The wish is that different variants are calculated in the same simulation.

The platform must be scalable so that intensive simulations can be carried out when the computing power is available.

1.3.2 Future needs

In the future, it is desirable to use measured consumption, currents and voltages with a known timetable and equipment deployment to improve the model or the calculation method.

Connecting other consumers such as stations and charging facilities gives a different load. In the future, ProRail wants to be able to assess the effects for construction on manufacturability and influence on its core task.

In addition to the consumers, generators under own or third party management will also be possible. ProRail also wants to have a clear view of the effects of connected generation in the future, before construction is carried out.

1.4 Points of attention

Because ProRail aims to provide information to different user groups with different needs, ease of use and an intuitive interface are important on the one hand, and an accurate representation of reality on the other. The different approaches from timetable, infrastructure or availability of energy also require different interface approaches.

Since the infrastructure is always in motion and can also consist of a multitude of (regional) temporary situations, baseline management will be an important aspect.

The connection between the timetable, mechanical infrastructure and planning tools with the various protocols will be an important factor in being able to implement successfully.

1.5 Analysis

The scope of the analysis, such as rural, track sections, stations or yards as well as the properties to be analyzed can be easily selected. Frequently used analyses and/or scopes can be saved per user and easily selected.

The analysis results can easily be ordered by main group such as route (corridor) catenary temperature, substation, rail earth voltage, thermal load where subgroups are possible. In addition to the classification by groups and subgroups, the results can be sorted.

Results can be exported in .pdf, Excel and .xml format.

Labour-intensive operations for model management and processing the grid analysis results are not desirable. Making network analyses is intuitive and can be achieved without extensive training.

1.6 Intended method of contracting

1.6.1 Division into contracts

Depending on the results of the market consultation, a possible contract form will be determined.

1.6.2 Method of tendering

Depending on the results of the market consultation, the acquisition strategy will be determined. This can be a (European) tender or other acquisition strategy.

2 Questions

2.1 General Company Information

1. We would like to receive information about your organization that includes at least the following information:
 - a. Name of the organization;
 - b. Address of the organization;
 - c. Contact information (name, position, email, and phone number);
 - d. Turnover for 2025 in €
(concerns turnover related to this type of product);
 - e. Number of employees;
 - f. Number of employees in the Netherlands who focus specifically on this type of product as referred to in this market consultation;
 - g. If your organisation is part of a holding company:
 - o Name of the holding organization;
 - o Turnover in € of the holding organisation;
2. How does your organisation implement Corporate Social Responsibility (CSR)?
3. To what extent and in what way does your organisation have relevant experience in offering the supply, management and maintenance of installations/assets in the railway sector?

2.2 Strategy, vision and development

4. What is the long-term vision of your company?
5. Is there a clear strategy for innovation and growth?
6. Is there collaboration with knowledge institutions?

2.3 Dealing with standards

7. Can your package handle RailML?
8. Can your package be verified against EN-50641?
9. Can your package meet all the requirements set in OVS00012-4?

2.4 Market consultation

10. What trends and technological developments do you see in your sector that are relevant to this assignment?
11. What preconditions do you think are essential to successfully carry out the assignment?
12. Are there any aspects of your offer that are confidential and how do you handle confidential information in the context of a public tender?

2.5 Needs analysis

13. Can you provide the simulation tool you want?
 - a. What do you need to develop specifically for ProRail?
 - b. What is not possible or only at high additional costs to develop our wishes?
 - c. In your view, what should be added to the scope?

d. What, in your view, should be left out of the scope?

14. Are there things in the needs that are not possible in your opinion or only at very high costs?

15. Are the identified future needs already possible?

2.6 Models and model management

16. How would you implement the design management?

17. How would you implement the design management?

18. What is your proposal for making the EV models ?

19. In your opinion, should the model management be integrated with the calculation module or should model creation and management be separate from the calculation module?

20. Does the creation of the EV model based on OTL and IMX need to be integrated with model management or the grid analysis module?

21. In your opinion, what is the best strategy for creating the EV model online (in the cloud) or locally?

22. In your opinion: how can the design management best be set up?

23. What is the most suitable way to make the EV models?

24. In your opinion, should the model management be integrated with the calculation module or should model creation and management be separate from the calculation module?

2.7 Maintenance, maintenance and lifecycle

The acquisition of a product or service also provides a management and maintenance of the product or service. For the following questions, we invite you to give your vision on management and maintenance of the software.

25. In your opinion, should the requested software be open source?

26. In your opinion, should the software be purchased as a package or as a service?

27. In your opinion, should the software be invested as a service with the supplier?

28. What advantages do you see if the product is and hosted within the ProRail ICT environment?

29. What disadvantages do you see if the product is hosted within ProRail's ICT environment?

30. In your view, what should the manufacturer's product support consist of?

31. In your view, what are the pros and cons of developing and maintaining it in-house?

32. In your view, what are the advantages and disadvantages of product support by a supplier and after training in maintenance and management by ProRail (hybrid support)?

2.8 Training and use

A product or service with all the desired functionalities required for the user and key user training. ProRail invites you to share your vision with regard to training and use with us.

30. In your view, what help and tutorials should the software itself offer?

31. In your opinion, what should be the minimum training for the users, given by the supplier?

32. How should the required training be implemented? Think of e-learning, in-house training, etc.

2.9 In conclusion

It is quite possible that ProRail has overlooked important issues in this market consultation, in your view. We invite you to share these matters with us.

3 Market consultation procedure

3.1 We are looking for your ideas!

ProRail expects this market consultation to gain a picture of the available suppliers and the developments taking place in the market, as well as the extent to which solutions are available that can meet our current and future needs.

3.2 Procedure

This market consultation has been published on (among others) TenderNed as an open market consultation. This means that all parties in the market are given the opportunity to participate.

The market consultation consists of two steps:

1. Written: answering the questions (see chapter 2);
2. Individual interviews with (some of) the market parties that responded.

First of all, you are asked to submit the attached questionnaire by e-mail before the date mentioned in paragraph 3.3.

ProRail will then analyse the responses and based on this, ProRail can decide to schedule a follow-up meeting with all or part of the parties. If ProRail has any questions or needs further explanation regarding your answers, you will be invited for an individual interview in Utrecht.

A report will be made of each individual conversation that will be submitted to the participating party for approval. ProRail will then make one integral (anonymised) report (final report) of all conversations in which the most important conclusions from the written responses and the conversations are recorded. In any case, **no** competition-sensitive information will be shared in this report. The final report will be published on TenderNed. Where ProRail deems it possible and useful, the conclusions will be included in the file of a possible tendering procedure or other acquisition strategy.

3.3 Planning

Date	Activity
August 18 2026	Publication and invitation to participate in market consultation by ProRail
October 1 2026	Deadline for submitting the answers to the questions in Chapter 2. Submit replies to bart-jan.debeer@prorail.nl .
October 22 2026	Invite participants to individual calls
November 5 2026	Individual interviews in Utrecht
November 23 2026	Sending draft reports to participants individual conversations

December 10 2026	Receipt of reactions and comments on individual reports
December 17 2026	Publication of final report on market consultation on TenderNed

3.4 Contact

For questions about and registration for this market consultation, please contact:

Bart-Jan de Beer

bart-jan.debeer@prorail.nl

06-42310014

3.5 Open and honest

Participating in the market consultation is entirely voluntary and will not lead to any privileges in a tender. Similarly, not participating in the market consultation will not lead to exclusion from a possible tender.

By participating in this market consultation, you agree that the information you provide may be used by ProRail in (the preparation of) the tender. Commercial (numerical) information provided by you will be treated confidentially by ProRail.

ProRail attaches great importance to a transparent process. It is not the intention to favour participating market parties in the market consultation or to place non-participating parties at a disadvantage. From this perspective, all relevant information resulting from the market consultation will be made available to all potential tenderers upon publication of the tender or added to the tender dossier.

Any costs for participation in this marketconsultation will not be reimbursed.

3.6 Attachments

- OVS00012 part 4 version 009.