Market consultation document

In preparation of the proposed tender
'Living Lab for Digitalisation of Inland Ports'

Colophon

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Information	inkoopcentrum-iv@rws.nl
Executed by	Wiemla Oppentocht
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Content

1. Introduction

1.1 Motivation
The objective of this market consultation is to explore the strategy of the innovative program digitalisation of inland ports.

The digitalisation of inland ports program is part of the BO MIRT GoederenverVoerCorridor programme (GVC). This is a partnership between the Ministry of Infrastructure and Water Management, the Port of Rotterdam Authority (HBR), the provinces of Limburg, Noord-Brabant, Zuid-Holland, Gelderland and Rijkswaterstaat, hereinafter referred to as GVC partners. The Port of Twente and the Port of Amsterdam Authority (HBA) are also participating in this process. Rijkswaterstaat (RWS) acts as lead partner on behalf of this partnership.

In the second half of 2024, discussions and workshops with commercial market parties took place in which we as RWS indicated that we wanted to organize a living lab 'digitalization of shore power' to achieve further standardization. Rijkswaterstaat and the GVC partners assign great importance to fair competition and creating a level playing field for all parties involved and to the opinion of market parties. We want to involve the market early and actively before the strategic decision-making is completed.

a) The phases of the inland port digitalisation program are as follows:
   Exploration on shore power (completed)
b) Market consultation (this phase is described in this document)
c) Living lab inland port digitalisation with a number of tracks with a number of selected market parties
d) If successful, scaling up to operational use

1.2 Current situation and desired future situation to be investigated
The current approach to introducing digitalisation for inland shipping is fragmented, characterised by incomplete information, has relatively high transaction costs and in some cases a 'vendor lock-in' because each inland port requires its own unique service provision, while inland port services such as shore power and collection of port fees should be uniform.

The Digitalisation of Inland Ports project tests the concept of federated data sharing as a solution to change the current situation and to test an alternative data ecosystem and trust framework. This fits within EU policy such as the Data Governance Act and EU Data Act. In the Netherlands, RWS follows the frameworks of the intergovernmental data strategy (IBDS) in which federated data sharing is a focal point.

After the market consultation phase, various tracks are foreseen that should lead to a future desired situation. These tracks include:
1a) A living lab for federated data sharing for the inland port and berth facilities, which is tested in track 2
1b) The design and establishment of an inland port association
2a-1) Services with regard to shore power
2a-2) Realization of a standard data format and/or protocol for communication with the shore power cabinet
2b) Services with regard to collection of port fees and berth reservation
3) Pilots outside
4) Upscaling to exploitation + transition

In track 3, the technical feasibility of the proposed data sharing solutions is tested and the results from track 2 are validated. Track 4 concerns the operationalization of the future data ecosystem and/or transition of current facilities.

Rijkswaterstaat currently has approximately 100 shore power cabinets along the waterway, where power is provided free of charge. The RWS project ‘Roll-out of shore

power at national berths' is working together with this project Digitisation of inland ports to work towards a national roll-out of smart and standardised shore power cabinets through innovation and standardisation. This RWS project 'Roll-out of shore power at national berths' is not part of the scope of this market consultation.

1.2 Aim of the market consultation

RWS has published this Market Consultation Document on TenderNed with the aim of reaching as many market parties as possible, to interest and encourage them to help seek solutions.

With this Market Consultation, RWS aims:

a) to gather insight into the feasibility of the project and the conditions under which the tender can be executed;
b) to gather input for the purchasing/tender strategy and the contract documents;
c) to involve the market in an early stadium of the project in order to make sure our demand aligns with the current market situation;
d) to identify which parties are interested and able to take part in the tender;

RWS wishes to emphasize that this market consultation is not part of the tendering procedure and that no rights may be derived from this document.

Any insights gained from the market consultation will be used by RWS (wherever relevant) in preparing the tendering procedure and the tendering documents. RWS reserves the right to not (fully) make use of these insights

The market consultation also aims to verify:

- whether the assignment is feasible and the set boundary conditions are realistic,
- whether private parties are interested and have the possibilities to carry out the assignment,
- how the ideas of RWS can be incorporated into future market developments, services and parties, to what extent functional or technical specifications should be made and which standards may be relevant,
- whether there is sufficient capacity in the market,
- what, according to the participants, should be done to motivate skippers to use the facilities as much as possible.
- whether there are innovative solutions to a problem,
- whether there are alternative solutions that fall within the frameworks and boundary conditions set out above (intergovernmental data strategy, federal data sharing, possible European expansion and/or connection),
- whether there are sufficient qualified contractors/suppliers in the market, or whether the market wants to meet the set requirements.

1.3 Corporate Social Responsibility

Sustainability (people/planet/prosperity) is one of the boundary conditions within the project. The objectives of the central government include:

1. is climate neutral in 2030;
2. is good for 50% less primary raw material use in 2030 and fully circular in 2050;
3. stimulates innovations by being a launching customer.

Rijkswaterstaat aims, in line with the national objectives in 2030, to work Climate Neutral and Circular. With the rollout of shore power facilities, RWS contributes significantly to reducing the use of a diesel generator. This results in less odor and noise nuisance and less nitrogen and CO2 emissions.

	THEMES "AMBITIEWEB"	IMPACT AREAS (NON-EXHAUSTIVE)
	1. Energy and Climate	• Energy consumption in the production process • Energy consumption during usage phase • Logistics and sustainable transport • CO_2 emissions and reduction • Sustainable energy generation
	2. Materials, Resources and Circular Economy	• Origin of used materials (e.g., recycled content) • Design for repairability and dismantlability • Responsible processing at end-of-life • (Processing of) packaging material
	3. Environment	• Use of harmful/toxic substances for the living environment • Optimizing water use • Impact on living environment from e.g. mining • Air pollution and emissions of SOx and NOx
	4. Well-being and Health	• Use of harmful/toxic substances for the user • Noise pollution for the user • Radiation
	5. Social Aspects	• Employment of people with a distance to the labor market • Labor participation • Social entrepreneurship
	6. Labor Aspects in the Supply Chain and SMEs	• International Social Conditions • Working conditions in production countries • Reducing child labor • Avoiding conflict minerals

Table 1 Themes Ambitieweb IV

RWS asks market parties how they can contribute to the sustainability ambition of the government and/or Rijkswaterstaat. RWS emphasizes that this Market Consultation is not part of the tender and no rights can be derived from it.

RWS uses insights obtained from the Market Consultation (where relevant) in the preparation of the tender(s) and the tender documents. RWS reserves the right not to use these insights or not to use them in full.

1.3 Target group of the Market consultation

The primary target group of this Market Consultation are those market parties that have experience with or knowledge of:

- Design, realization and operation of inland port/berth facilities such as:
  - shore power
  - collection of port fees
  - berth reservation
  - waste
  - drinking water
  - invoicing
- Shore power box suppliers or controller providers
- Maintenance parties for these facilities
- Software suppliers for user support/invoicing/apps for skippers/ship owners and planners and/or monitoring systems for facilities
- Setting up and managing a trust framework and federated data ecosystems, or setting up and managing digital identities and authorization registers

After the market consultation, RWS will determine how the intended tender will be filled in. Among other things, the estimate, size and complexity of the assignment and the findings from the market consultation will be taking into account.

1.4 Main outline of the Market Consultation

There are two parts to the market consultation. The first part is a written question and-answer (Q&A) session. In the second part, RWS will invite participants to verbally explain in-depth questions. Any interested market party that believes that it can contribute to the market survey, is requested to submit answers to the questions in this market survey in writing. In response to the reactions submitted, RWS has the option of inviting the parties to a one-on-one session to provide an additional explanation to their responses.

Chapter 3 describes the method and strategy of the Market Consultation in detail.

1.5 About Rijkswaterstaat
RWS is the implementing organization that manages and develops the national infrastructure networks in a sustainable manner on behalf of the Minister and State Secretary for Infrastructure and Water Management (I&W). RWS is working on the smooth functioning and safe flow of traffic, on a safe, clean and user-oriented national waterway system, and on protecting our country from flooding. To achieve this, RWS manages the national roads network (5,695 km), the national navigable waterways network (1,686 km canals, rivers and 6,165 km of waterways in open water), as well as the national waterway system (65,250 km2). The RWS Central Information Services (RWS CIV) is one of the national organisational units of RWS. RWS CIV takes care of the collection, management and supply of data, as well as ICT management and development.

More information about RWS and RWS CIV is available on the website www.rijkswaterstaat.nl.

In this market consultation, Rijkswaterstaat acts as lead partner on behalf of the relevant GVC partners/inland ports.

1.6 Policy

Vision
In the current Market Vision, the emphasis shifts to 'Together with the market'. This does not mean that RWS will outsource less to the market, but that there is more attention for the fact that RWS, as client and its chain partners, are jointly responsible for rolling out standardised, interoperable facilities, among other things.

Social task
The social task of RWS is challenging. Sustainability and living environment, new forms of mobility and rapid developments in information technology and data management are changing the role of RWS as network manager. In addition, these developments are making the role of RWS as a public service provider increasingly important. This requires putting the users of its networks and the living environment first. In the coming years, RWS will focus on connecting information provision and wants to work together with its partners based on expertise and trust.

Together with you
RWS would like to work with you as a market party and partner to find a responsible and manageable roadmap for the digitalisation of inland ports. A roadmap in which mutual ambitions, but also feasibility and realisation are brought together.

RWS strives to centrally coordinate and direct the clarity in what and how it communicates with the market about this.

To this end, RWS has various instruments at its disposal, such as this market consultation, but also the many (project-related) contact moments with individual groups of market parties, (sector) representatives and other platforms.

All players in the chain have an influence on the functioning of the IT sector and take the responsibility that comes with it. To this end, we sit down together at the table early and often. Early market approach is one of the instruments to optimally utilise the knowledge, expertise and creativity of the market. In this way, we analyse together the task that RWS faces, we look for the best solution and we determine which form of tender and the ultimately intended collaboration is most suitable.

Rijkswaterstaat Enterprise architecture
The information and data architecture described in the RWS Enterprise architecture provides clear guidelines for our program. The first focus point concerns the use of FAIR as a basis for the Data architecture principles and digital collaboration through data ecosystems. Both aspects are addressed in this project, with federated data sharing being specifically addressed.

Federated data sharing was set up to easily share data without human intervention, or machine-to-machine. In this process, the data remains at the source as much as possible, where it can be retrieved automatically and with authorization. A consequence of this is that we must learn to trust the data of others in order to be able to do our work.

Our approach based on FAIR data will help us deal with this. With the FAIR data methodology, data becomes Findable, Accessible, Interoperable and Reusable. In recent years, we have gained experience with the FAIR methodology within projects and programs and expanded this across the company for all data. This creates the most complete picture possible of what data we have, where it is located and how it is used. FAIR is a methodology and not a standard. We use the Linked Data standards to support this methodology. These standards ensure easy reuse of data by people and machines. RWS will use Linked Data.

2. Scope

Within the inland port digitalisation program, various sub-projects are being carried out, including shore power, collection of port fees, berth management and the establishment of the organisation belonging to the inland port digitalisation trust framework. These tracks are explicitly carried out in conjunction, with frequent coordination between the project teams. In concrete terms, this means regular joint consultation moments, integral decision-making and joint development of protocols and standards, so that optimum synergy is created between the sub-projects.

The scope and duration of the work may still change depending on the final project description. The primary scope concerns the establishment of a data ecosystem for shore power facilities, which is suitable for other applications such as collection of port fees and berth management. This must also be applicable in collaboration for other waterway managers and inland ports. By means of this market consultation, RWS and the GVC partners want to establish a solution that meets the following ten design objectives:

1. Separation of Concerns: all roles and related data are strictly separated and based on a strict 'need-to-know'.
2. Data owners have control over their data.
3. Data subjects whose personal data will be processed have no concerns regarding the security and privacy of their personal data.
4. Users can use one and the same means of identification to purchase shore power anywhere of their choice
5. No Vendor lock-in: every port and every skipper can work with every IT supplier or service provider.
6. Open market: The threshold for new players/suppliers to participate must be low.
7. Open Management: a federation of collaborating inland ports with a good governance structure guarantees that every IT facility (for example a shore power cabinet) can be used by every supplier and can be maintained by every maintenance party.
8. The system is suitable in a broader sense: both to other countries and to other roles/services (such as berth management or the collection of port fees).
9. The port (or the person who has the rights) can gain insight into the use and performance of services and facilities
10. Realizing public data services with locations, features and the availability of facilities in Europe

The objective is to develop a safe, trusted and open data ecosystem that is standardized and scalable with sufficient competitive opportunities for market parties.

The living lab focuses not only on testing theoretical models, but also explicitly on developing concrete practical examples and scenarios. This approach should provide market parties with insight into the practical application, benefits and added value of the proposed trust framework.

The following tracks are provided in phase c of the program, the living lab:

Track 1A) Living Lab federated data sharing
Actually gaining experience and learning how federated data sharing works in a living lab for shore power. In this track, RWS, together with the Basic Data Infrastructure (BDI), ensures a living lab environment. The project team determines the rules based on the design objectives. In particular, the technical operation of the Identity provider (IDP) and the authorization register (AR) are tested here with the aim of learning. The intended result is an open source Minimum Viable Product (MVP) and an evaluation report. Questions that are at least addressed are whether RWS wants to have 1 or more Identity providers and how scaling up and collaboration with other tracks should be arranged. A compensation yet to be determined will be provided for this. The realization of the geofence functionality is also part of this track. RWS ensures the joint input of

the fellow waterway managers and inland ports. This Living lab is also used for tracks 1B) and 2).

Track 1B) Design, establishment of "Trust framework for digitalisation of inland ports".

Within the digitalisation of inland ports program, the 'digitalisation of inland ports trust framework to be set up plays a central role as a governance organisation. This track will actively monitor and safeguard the trust framework, standardisation and data governance. We therefore expect market parties to make an active contribution to and participate within this governance framework.

In this track, a number of issues will be investigated that are prerequisites for the follow-up:
o digital trust
o standardised definitions and protocols for data sharing
o independent authorisation, governance agreements regarding data ownership and data sharing
o legal form of the neutral manager of the trust framework
o First-line helpdesk (Q&A digitalisation of inland ports)
o Guidelines for maintenance and management
o Onboarding new parties, offboarding, transition

The track aims at setting up the organisation of the digitalisation of inland ports trust framework aims to make clear agreements on governance, authorisation structures and standardised protocols. The concrete minimum outcomes we aim for here are a clear and workable governance model, an accepted authorization process and widely supported protocols for data sharing and collaboration.

Track 2A-1) Setting up the shore power process
This track specifically looks at the shore power process.
Considering:

- Customer journey of the skipper (app, use, invoicing)
- Customer journey of the shore power provider (registration and identification, monitoring, P*Q, invoicing)
- Determining the market and service model
- Required AR policies and IDP requirements
- identification of non-happy events and error handling Shore power
- Realizing a Proof-of-Value/concept setup within the Living lab mentioned under track 1A

It is expected to require a number of market parties, as well as representatives of skippers and ports (at least RWS, HBR, HBA, port of Twente, Brabant ports, Blueports). Working method to be determined.

Intended result of this track: Operational Concept Document (OCD) with proposed market and service model, demarcations, definition of interfaces and functional requirements. Input for specifications requirements of shore power providers for service providers.

Track 2A-2) Shore power cabinet controller and data (model)

In this track we draw up requirements for the required data based on the functional need for shore power and to conduct a study of various data protocols and shore power cabinet controllers based on this. Objectives are:

- The primary objective of the subproject Shore power cabinet controller is to demonstrate that the shore power cabinet controller and the shore power cabinet proxy functionality can function within the total framework as outlined in the main project 'Living Lab Digitalization of shore power'.
- A working demonstration shore power cabinet ('show-case') is available.
- Some shore power cabinets in the field are equipped with a shore power cabinet controller from this subproject (see track 3)
- A set of requirements and documents is available that can be used in future tenders from Port Authorities for projects with shore power cabinets, shore power cabinet proxies and technical management.

Initially, this project will be tackled by drawing up an OCD, concept framework, data model and research into the use of the various protocols (desk work by the project team). Rijkswaterstaat can choose to have this tested by market parties later.

Track 2B) setting up the process for collecting port fees and berth management

This track specifically examines the processes of collecting port fees and berth management:

- Customer journey of the skipper (registration - arrival - stay - departure)
- Customer journey of the harbour master (reservation, determining P*Q, invoicing)
- Basic architecture (Required AR policies and IDP requirements)
- Application of geofence functionality for collecting port fees and possibly other applications
- Interfaces for federated data sharing for apps and port management systems
- Determination of market and service model of the intended service providers
- Realisation of Proof-of-Value/concept setup within the Living lab

This is expected to require a number of market parties, as well as representatives of skippers and ports. Working method and recording to be determined.

Track 3) pilots outside
Pilots are planned at multiple ports and berths.

Track 4) scaling up, transition and exploitation
After this, the roll-out of facilities and digital services at berths and in inland ports will start, as well as the conversion of existing facilities. The individual inland ports and waterway managers determine the tender strategy and the transition path themselves. The objective is to provide the input for growing towards an (inter)national data ecosystem and the establishment of the organisation belonging to the trust framework for digitalisation of inland ports through tracks 1-3.

3. Consultation process

3.1 Procedure
This market consultation will be structured as described below.

1) The market consultation will start by publishing this document containing the questions from RWS on TenderNed. The questionnaire is intended to provide RWS with an overview of relevant available options on the market.

2) RWS will organize an information meeting to remove any ambiguities regarding this document and the accompanying questionnaire and to provide further explanation

about the "how and why" of this market consultation. You can submit questions before this meeting, which RWS may answer during the meeting.

3) Any interested market party that believes it can contribute to the market consultation is requested to submit the answers to the questions from this market consultation by e-mail: inkoopcentrum-iv@rws.nl (with regard to W. Oppentocht) before the deadline and time stated in paragraph 3.1.1.

4) RWS will keep the option open to invite parties to provide additional oral explanations of their answers on a one-on-one basis based on the submitted responses. RWS will contact these parties and make an appointment in consultation.

5) RWS will analyse the answers and the discussions and will draw up a final report of this analysis, in which RWS will clearly state how the original ideas and/or starting points have been adjusted as a result of the market consultation.

The market consultation will be completed in Q2 2025

3.1.1 Planning

RWS uses the following planning:

Activity	Date and time
Publish Market Consultation Document	29 April 2025
Deadline for registering and submitting questions for the information meeting	12 May 2025
Information meeting for Market Parties	16 May 2025 10:00-11:00
Deadline for asking questions about this Market Consultation Document	23 May 12:00
Publish Note of Information	28 May 12:00
Deadline for submitting completed questionnaire	6 June 12:00
Dates for any individual explanatory discussions	9 June- 13 June (online)
Completion and publication of final report	20 June 2025

Interested parties cannot derive any rights from the above schedule. RWS reserves the right to change the schedule. The above schedule is therefore indicative, whereby the greatest possible care is taken to adhere to the schedule.

3.1.2 Questions regarding the Market Consultation document

Market parties have the opportunity to ask questions about unclear formulations in the Market Consultation Document with the aim of transparent and unambiguous communication. If parties have questions about the Market Consultation Document, they can submit them by e-mail: inkoopcentrum-iv@rws.nl (with regard to W. Oppentocht) before the "Last date for submitting questions about the Market Consultation Document" mentioned in paragraph 3.1.1. RWS answers the (anonymised) questions from market parties in a Memorandum of Information that is published on TenderNed.

3.1.3 Information meeting

RWS is organizing an information meeting to remove any ambiguities regarding the questionnaire and to provide further explanation of the "how and why" of this Market Consultation. RWS is organising an information meeting on 16 May 2025 10:00-11:00in the Schemerhorn meeting room of the <RWS location at Derde Werelddreef 1

in Delft>. Registration and submission of questions for the information meeting is possible until 12 May 2025 by e-mail to inkoopcentrum-iv@rws.nl (with regard to W. Oppentocht). A maximum of 2 persons per company can register. Please state the company name and the names of the persons who will be attending the information meeting. People need to identify themselves at the RWS location.

3.1.4 Submitting the questionnaire

Any interested market party that believes it can contribute to the Market Consultation is requested to submit the answers to the questionnaire in Chapter 4 of this Market Consultation Document by e-mail: inkoopcentrum-iv@rws.nl (with regard to W. Oppentocht) before the "Deadline for submitting the completed questionnaire" mentioned in paragraph 3.1.1.

3.1.5 Oral clarifications of the submitted answers

RWS would like to keep the option open – with reference to the submitted reactions – to invite parties to verbally provide additional clarifications to their answers via a (digital) meeting. RWS will contact these parties and, in consultation, plan a half day in the period mentioned in paragraph 3.1.1 "Dates for any additional discussions".

3.1.6 Finalization of het Market consultation and publication of results

Finalization of the Market Consultation will take place in the period mentioned in paragraph 3.1.1 RWS will finalize the Market Consultation by publicly disclosing a report of the Market Consultation on TenderNed. The report will include, in the opinion of the project team, the main conclusions of the Market Consultation. In connection with this report, RWS explicitly points out the following:

1. The report will be publicly disclosed. Market parties authorize RWS to use their responses and other information and/or data provided by them as input for this report.
2. The information will be included in the report anonymously. The report will, however, mention the participating market parties.
3. The report will contain the conclusions as formulated by RWS. The contents of the report will not be shared in draft with participating market parties. The report will, however, state that it is the representation of the project team and that this is not necessarily endorsed by the participating market parties.

RWS will make it clear in the tender documents how the original ideas and/or questions have been adjusted or completed in response to the Market Consultation and will include the main conclusions in this.

3.2 Confidentiality

RWS will not publicly disclose the responses submitted and the discussion reports. RWS will only show this information to employees and consultants directly involved in the Market Consultation and/or in the call for tenders, unless RWS is required to make further disclosures on grounds of statutory regulations. RWS is, however, entitled to use the information provided for the purpose of drawing up the tender documents. RWS will not include specific references to participants nor commercially sensitive information in the tender documents.

3.3 Other provisions regarding the Market consultation

The Market Consultation does not form part of the call for tenders. In order not to place Market Consultation participants in a privileged position, RWS will publicly disclose the results of the Market Consultation in the tender documents. In addition, all information shared by RWS during the Market Consultation will form part of the tender documents.

In the call for tenders, no distinction is made between parties that have and parties who have not participated in the Market Consultation.

Information in this Market Consultation may differ from information that is provided later (in the context of a call for tenders or other procurement procedure). No rights can be derived from the information provided in the context of the Market Consultation. The information is indicative and merely intended to improve the quality of the Market Consultation. If this information is contradictory to information that is provided later (in the context of a call for tenders or other procurement procedure), the latter will prevail.

RWS does not award any compensation to participants of the Market Consultation.

4. Questions

RWS asks these questions on behalf of the partners of the digitalisation inland ports programme.

Questions regarding the interest in the tracks for 'living lab' (1 & 2)	
A1	*What could be reasons for you to participate or not to participate in the tender procedure and the proposed working method?*
A2	*What kind of experience should RWS include as selection criteria and/or suitability requirements in the tender process for the living lab? Can you motivate these selection criteria?*
A3	*Which tender procedure do you think is best suited to phase c), the living lab?*

Questions regarding the content of the living lab	
B1	*What kind of services should be considered in the living lab?*
B2	*Which issues should at least be addressed in the living lab?*
B3	*Which tracks of the living lab or in the operational phase are you interested in?*
B4	*What (alternative or innovative) solutions do you see to achieve the design objectives?*

Questions regarding effective collaboration	
C1	*What characteristics and conditions make a client ideal for you, so that RWS can create an effective collaboration?*
C2	*What contribution do you want to make to the living lab and how much time do you think you will need at least to actively contribute?*

Questions regarding interest in phase c and d, the phases after the living lab	
D1	*What experience can you bring to the transition from a living lab or existing facilities to a new trust framework for digitalisation of inland ports?*

Corporate Social Responsibility Questions	
D1	*How can you contribute to the sustainability ambition of the government? See table 1*
D2	*Which themes would you recommend asking for in a potential tender and why?*
D3	*What are the biggest challenges in realizing these themes/goals?*

Other questions	
F1	*Do you have any other ideas, suggestions or comments, or do you see any risks or challenges for RWS with regard to the proposed tender?*