



Request for Consultation

**Nederlandse Spoorwegen (NS)
(Dutch Railways)**

RFID-tags

Utrecht, 11th of October 2019



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1. Introduction

The Nederlandse Spoorwegen (Dutch Railways/"NS") intends to start a tender to acquire RFID-tags for cyclists.

This document contains:

- Background of NS and the need for RFID tags;
- Aim of the market dialogue;
- Process of the market dialogue;
- Available information;
- Planning;
- Exchange of information, conclusion of the market dialogue and the continuation;
- Specific questions to operators in the market (Appendix A);

The aim of this document is to give interested parties insights into the market dialogue. The main purpose is to offer information as complete as possible to interested parties as to come to an optimal exchange of insights.

2. Background information

1. Background NS

For participating in the Request for Consultation, it is important, that you take note of NS as an organization and its related activities. For the background of NS and its business units, please consult www.ns.nl.

2. Background regarding the need for RFID tags

Cyclists park their bike at bike parks, either because they prefer to do so, or because it is not allowed to park outside. More and more these locations require a registration for parking your bike. NS calls this "checking in/out your bike". The process of checking in and checking out can be greatly enhanced when the bike is tagged with a RFID tag.

Context and learnings

When using a tag, a cyclist can enter or leave a bike park without pulling an identification card (e.g. "OV-chipkaart"¹); the bike (including the tag) is recognized and identified at the gate. NS performed a pre-pilot in order to research the effects of this technology. This research concludes that the cyclists highly appreciate the seamless check-in and -out when using a tag, mounted on the bike.

NS tested various access gates that can be used to check-in or -out using an OV-chipkaart, an EMV banking card (everybody in Netherlands has at least one) and a RFID tag. Cyclist have a profound preference for the RFID tag.

Interoperability

NS also knows that most cyclist do not only visit one bike park, but may park at multiple locations which are distributed across, for example, a particular city. Those bike parks may be operated by various operators in a city or region. This fact could imply that cyclists would need more than one tag. From a customer point of view, that is not an user friendly idea. NS has set up a cooperation of operators (i.e. Municipality of Amsterdam and Utrecht), who jointly adopt a single tag per bike to access bike parks. This cooperation consist of a set up bilateral agreements of the technical, operational and data side of the tag. It requires the tags to be interoperable amongst the different operators which are



¹ Mifare contactless chipcard for public transport in the Netherlands



taking part in the cooperation. There is also a strong wish that there is no central system required for making the tag interoperable.



Figuur 1 Self Service Storage (incl. check in/out gates) installed at a train station.

Parking fees

Operators may offer cyclist a subscription for a bike park, but also welcome cyclist without. Cyclist without a subscription pay when they leave the bike park. In many bike parks, the first 24 hours are free of charge. Each operator will use a Park Management System that manages the park duration and fees to pay. A subscription may be bought online and will be valid for a certain period of time. Again, from a cyclist point of view, it is very much appreciated that the same tag can be used for subsequent subscriptions, even if the tag is already mounted. With a tag already mounted, it should be possible to connect the online bought subscription to the tag.

Bike types & supervising

Fees differ from each other, depending on the type of bike. E.g. cargo bikes take much more space and will have a different tariff. The tags need to enable this fee differentiation; the tags need to enable supervisors to make sure that the right fee regime is applicable for the bike parked. NS found out that the easiest way to enable supervisors checking the fee regime is by applying a different color, for each bike type, to the tags.

Begin and end of use

Various operators may have different onboarding processes. In some cases the tag can be obtained at a bike park, and the supervisor will mount it on the bike. In other cases the cyclist buys the tag online, and receives it by mail, or collects one at a bike park. In these cases the tag must be mounted by the user. It is of course relevant that the task to mount the tag to the bike is a simple one, where the quality of the result should be good enough to hold the tag in rain and wind.

The end of use also needs to be taken care of. In case the cyclist wants to end the use of a tag, cyclist should be able to remove the tag easily. Of course, NS does not want any damage to the bike as a result. The mounting, use and demounting of the tag should not cause any damage to the frame or varnish.

Theft and fraud

When "loaded" with a subscription, the tag may be seen as a valuable item. Other cyclist could fancy removing a tag with a subscription from someone's bike and mounting it to their own bike. The seized cyclist will report the theft. To suppress the opportunity of theft, NS wants to be able to block a subscription in the Park Management System. However, reallocating a tag can also be an opportunity for the owner of a bike. But still unwanted by NS. For that reason, NS also wants the tag to break whenever removed from a bike.

As a valuable item, people may start looking into ways to manipulate the ID broadcasted by a tag, or create self-made tags that simulate a real Bike Parking Tag. This way there could be more identical tags, each gaining the same service. Of course NS wants this risk to be reasonable low compared to the value gained by it (access to bike parking).



Privacy

Last but not least, NS has to comply to all privacy regulations in Europe and the Netherlands, and want the tag and tag infrastructure to be fully GDPR compliant.

Standards

To adopt all of the above learnings, we have specified a standard for the Tag Data Structure, and a standard/requirement for the technical and physical design of the Tag. Both standards/requirements are attached.

3. Principles of the procurement law

Within the framework of the market dialogue as during the actual tender the principles of non-discrimination, transparency, objectivity, and equality shall be observed. This includes that in the resulting tender documentation all information, that was given to third parties during the market dialogue will be disclosed to the participating candidates at that time. The principles regarding confidentiality can be found in paragraph 4.5.

3. Market dialogue

1. Definition

A market dialogue enables the purchasing organization to collect knowledge and experience of market parties and use them during the process of a purchasing or tender process.

In practice this means that NS will use the knowledge and skills of market parties to benchmark her own ideas and intended purchasing strategies before the start of the tender itself. The aim is to improve the quality of the tender.

2. Purpose of the market dialogue

NS utilizes the market dialogue to examine the possibilities available in the field of RFID tags in conformity with NS's requirements. Or the possibilities in development in this field. NS would like to collect and use the knowledge and skills of the interested parties to:

- Determine the scope of an eventual tender;
- Test the feasibility and conditions of the project.

3. Execution of the market dialogue

NS has decided to combine a written and (optionally) spoken consultation (e.g. a conference call). NS invites interested parties to first respond by writing before a possible conference call takes place.

4. Planning market dialogue

Hereby the planning of the market dialogue:

Date	Action
Friday 11 th of October 2019	Start market dialogue.
Monday 21 st of October (till 12:00 pm)	Deadline for asking questions regarding this RfC.
Wednesday 23 rd of October 2019	NS responds to the questions of participating parties.
Friday 1 st of November 2019 (till 12:00 pm)	Input received from participating parties.
To be determined	(optional) Dialogue with parties.



Duration dialogue and Q&A: 1 hour.

5. Completion

The feedback of the participating market parties will be processed in the program of requirements of the actual tender.

6. Requested information

We would like to request you to fill out the questions and clarifications in the "Form for the market dialogue". At the same time we would like to ask you to propose suggestions related to vision (future developments) or any other topics you find noteworthy within the framework of this project.

4. Administrative Conditions

1. Information Exchange

All communication regarding this RfC should be directed to the assigned contact persons of NS for this project. NS prefers communication by e-mail. Please send your queries and input to:

NS Procurement

Att. of: Mr. S. Westrik
E-mail: Stenn.westrik@ns.nl
Telephone: +31 6 12 65 90 71

Please make sure to start the subject-field of your e-mails with the reference:

"RfC RFID-tags – [name of your company]"

2. Cost reimbursement

Participating parties will not be given a financial reimbursement for made costs. Participating in this market dialogue is fully without obligation.

Participating parties cannot claim a preferential treatment in a possible tender procedure by participating in this market dialogue.

Finally parties cannot derive any rights by participating in this market dialogue.

3. Reservations

This market dialogue document is written within the framework of the market dialogue concerning the inquiry into insights of RFID tags. This document cannot be regarded as an invitation to register for the tender to which the market dialogue is a preliminary or any other tender. NS reserves the right to:

- Alter the way, as described in this document, the tender in question or any other tender is executed or;
- To discontinue the market dialogue and/or the tender temporarily or indefinitely.

By participating in the market dialogue the participating party agrees to the administrative conditions within this market dialogue document.

4. Intellectual property

Besides exceptions by law, no content of this market dialogue document may be copied or multiplied without explicit written consent by the organization (other than in light of the aim of this document) by means of print, photocopy, microfilm or by any other means.



5. Confidentiality

All communications between NS and participants concerning this market dialogue will be conducted electronically through E-mail. All information provided will be treated confidentially. The information provided in this market dialogue document and potential additional information shall remain absolutely confidential and may only be shared with those employees of the participating parties that for the purpose of the market dialogue in question need to know.

NS will treat feedback given on this market dialogue document and/or during and concerning the following tender given by the participating parties with the same confidentiality. This information will only be shared with employees and advisers that are involved with the market dialogue and/or the following tender(s). Unless NS is obligated by law to further publication. Information submitted by participants will be used as input for the eventual drafting of tender documents.

6. Format of the Consultation

NS has chosen for an open form of consultation. This means that all interested parties may attend and provide relevant input.

7. Your Response

NS desires your consultation and input regarding the questions formulated in Appendix A and the (concept) requirements in Appendix C.

Please make sure to use the template in Appendix B and Appendix C (column E), attached to this document, to provide us with the required input.



Appendix A – RfC Questions

A. General Company Information

NS is interested in how the market is organized and on which industries the market focuses. To get an objective view, NS asks questions about company details and project references. We want to develop an objective view without bias, despite that the questions could seem suggestive.

Company detail

Contact information and an impression of the kind of businesses in the market.

A	Questions
1.	Company Name
2.	Contact person (name and contact details)
3.	Address of the representative
4.	Headquarters address
5.	Website
6.	Company's overall business scope and strategy
7.	Number of employees in total
8.	Which industry/industries are you mainly focused on?

References

NS wants to know what kind about experiences regarding the development of RFID tags are currently available in the market and at what maturity levels these solutions are in their product life cycle. Please provide an overview of related and relevant projects undertaken by your company in the recent past. Please include the following aspects in an orderly fashion.

A	Questions
1.	Do you have experience with tenders?
2.	Can you describe a reference in which you developed RFID tags in iterations (e.g. concept, proof of concept, prototype, production ready product)?
3.	With which industry/industries do you have significant experience(s) in the field of RFID tags? What type of experience(s) are these?

B. Key Questions

NS invites you to share your vision or thoughts on the most important criteria for the (European) Tender.

B	Questions
	Context: Within this project the following criteria are identified by which the suggested solutions are valued. These criteria are not quantified yet: • Delivery time ; • Purchase costs; • Reliability and maintainability;
1.	Do you recognize other criteria that may be important to value the proposed solutions?

C. Your solution

NS wants to know about your proposed solution.

C	Questions
1.	How do you proof and ensure a high level of accuracy in your proposed solution?
2.	What resources does NS has to be in place in order to fit with your proposed solution?



3.	What is the minimum order quantity when ordering RFID-tags?
4.	Do you have an estimate of the list price of your solution?
5.	Which requirements (Appendix C) are mainly critical for your company in order to design and produce the RFID-tag?
6.	Which adjustments to the RFID-tag specifications do you propose (see Appendix C)?
7.	What risks do you foresee when various parties accept the RFID-tags as an ID (and may have different RFID-readers) and various parties issue the RFID-tags and may issue tags from different manufacturers, given that all parties comply to the requirements attached?
8.	How would you describe the quality of your proposed solution? And, to what extent does your quality fits our need?

D. Timelines

1.	What phase of maturity is the proposed solution in? Idea, concept design, prototype, ready for production, or operational in different environment.
2.	What phases do you identify in this process?
3.	What is timespan you need to develop your solution towards a final design ready for production?
4.	What is the leadtime between ordering and delivery of 10.000 pieces the solution?
5.	What is the leadtime between ordering and delivery of 100.0000 pieces of your solution?
6.	What is the leadtime between ordering and delivery of 200.000 pieces of your solution?
7.	What is the leadtime for subsequently/additional orders
8.	In case there are any restrictions in order to achieve this lead-time, please share them.

E. Interest

This section is meant to find out if your company is interested on participating on a possible NS tender procedure.

D	Questions
1.	Would you be interested in participating in the European Tender, in case NS chooses to start a European Tender?
2.	What condition do you, as a company, impose on the European Tender in order to participate?



Appendix B – Response Sheets

Below you can answer all RfC questions as mentioned in appendix A. We would highly appreciate that you not only answer with Yes/No but also provide the rationale behind and your opinion and alternatives where applicable.

A. General Information

Company Detail

A	Answer
1. Company Name	
2. Contact person (name and contact details)	
3. Address of the representative	
4. Headquarters address	
5. Website	
6. Company's overall business scope and strategy	
7. Number of employees	
8. Focus on following industries	

References

1. Experience with European Tenders	
2. References	
3. Field of expertise	

B. Key Questions

B	Answer
1. Criteria for solution	



C. Your Solution

C	Answer
1. Accuracy	
2. Resources	
3. Order quantity	
4. List price	
5. Requirements	
6. Adjustments	
7. Risks	
8. Quality	

D. Timelines

D	Answer
1. Phase of maturity	A) Idea B) Concept design C) Prototype D) Ready for production E) Operational in different environments
2. Phases	
3. Timespan	
4. Lead-time 10.000	
5. Lead-time 100.000	
6. Lead-time 200.000	
7. Lead-time additional orders	
8. Limiting factors production	



E. Interest

E	Answer
1. Interested in participating in possible Tender	
2. Conditions imposed by you	



Appendix C – Concept requirements

See attachment: (Excel document) **Dutch Railways - RFID_tags - RfC - (concept) Requirements**

Please fill in your feedback in column E.