

Market consultation

Exploration of possibilities for Compact Automatic Secure Bicycle Parking Systems at railway stations

Robotised valet bicycle parking



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1 Valet bicycle parking with a robot

At an increasing number of railway stations, existing bicycle parking solutions are increasingly difficult to fit into the available space. As automation might be a solution, a project is underway to investigate whether, how and under which conditions Compact Automatic Secure Bicycle Parking (CASBPS) would be possible. We invite you to contribute to this exploratory process.

1.1 Reason

ProRail B.V. is responsible for the Dutch railway network: construction, maintenance, management and safety. Its employees ensure that every day, 24/7, 1,200,000 passengers reach their destinations. ProRail works on the accessibility of the Netherlands by ensuring an optimal railway network, but also by constructing and maintaining bicycle parking facilities. For an increasing number of passengers, the combination of bicycle and train offers an attractive alternative to the car. In terms of sustainability and quality of life, facilitating bicycle parking is preferable to an uncontrolled growth of parked bicycles or increased car use. Due to increasing pressure on space from both bicycle parking itself and other demands, other solutions must be sought.

At an increasing number of railway stations the lack of available space for additional parking capacity is therefore a bottleneck. What is the issue?

- More and more space is needed for ever larger ground-level bicycle parking; at what point do indoor and/or stacked solutions come into consideration? And can we accommodate these solutions in a customer-friendly way within the available space?
- Space shortage due to the space demand of bicycle parking itself and of other functions. This is especially true for large railway stations if another large bicycle parking is required. Can e.g. empty spaces in or under existing buildings be used?
- Enable paid/secure bicycle parking at locations where there is currently no self-service bicycle parking or staffed bicycle parking, as demand is too low.
- Local authorities want to reduce the number of cars on the street, but in the urban centre surrounding railway stations this increasingly involves bicycles as well.

1.2 Stakeholders and interfaces

At this moment the following stakeholders have been identified:

Name Stakeholder	Responsibility	Role/influence
Municipalities	Enforcement of wrongly parked bicycles, publicly accessible bicycle parking	Co-financing publicly accessible bicycle parking
ProRail	Infra manager of rail system and transfer systems at railway stations and implementer of the bicycle parking programme of the Ministry of Infrastructure and the Environment.	Intended client for the construction and maintenance of indoor bicycle parking.
NS	Operator of secure bicycle parking for train passengers and facilitation of good chain facilities to support the train journey.	Operator of secure bicycle parking (unstaffed self-service or staffed), transporter of passenger trains.

1.3 Ambitions

ProRail embraces the future of rail. This also includes a smooth bike-train journey, i.e. good bicycle parking. ProRail continuously improves the availability of bicycle parking. And does so in a sustainable way. Where possible, we work according to the principles of circularity.

1.4 Scope

The aim of the parties involved is to provide an alternative to conventional solutions such as single and double layer racks at ground level and indoor bicycle parking, and possibly also to bicycle lockers at ground level.

In the tables below the basic and key requirements for CASBPS are listed. The basic requirements describe what we want to achieve with the solution. The key requirements indicate what the solution must satisfy in any case.

Table 1: Basic requirements

ID	Title	Description	Explanation	Initiator
1.1	Providing bicycle parking	Provide bicycle parking for all passengers coming to the railway station by bicycle, close to the railway station in a manner that is fast, comfortable, visible and (socially) safe	CASBPS must in any case provide bicycle parking in such a way that it is visible, socially and physically safe and can be realised close to railway stations.	ProRail
1.2	Bicycle parking	Being able to offer secure and flexible bicycle parking	The current offer to passengers at stations that are too small for self-service bicycle parking or secure parking is lacking. Currently at such stations we are unable to offer a secure bicycle parking space that can be rented for a day.	NS
1.3	Compact parking	Provide a compact bicycle parking solution, with more bicycles per m2 than double layer bicycle parking at ground level	If CASBPS is less compact than (or as compact as) conventional solution(s), the added value is limited.	ProRail
1.4	Using empty spaces	Make it possible to use empty spaces that are not suitable for access by passengers	CASBPS must provide a solution suitable for such locations.	ProRail
1.5	Scalability	The system must allow for modular expansion	The solution must be deployable for about 50 to 100 spaces or more.	ProRail
1.6	Tidy streetscape	The system must make for a less cluttered streetscape.		
1.7	Reliability	The system must offer a high degree of (technical) reliability.	Low number of malfunctions, quickly	

			resolved. Preferably return to simpler system in case of failure (as failsafe option so people can always access their bicycles). The level of reliability is something we would like to look into with you	
1.8	Fits within domains	In terms of appearance, CASBPS fits in with the station area. CASBPS is not an attention-grabbing facility that distracts attention from the railway station, but it is visible and recognisable as bicycle parking. Recognisability can also be achieved by means of signs. Signage is beyond the scope of this invitation to tender.	CASBPS has been implemented in such a way that it fits in with the station policy of ProRail and Spoorbouwmeester. In its various manifestations, CASBPS must fit within the environment domain, close to the travel domain. See www.spoorbeeld.nl .	

Table 2: Key requirements

ID	Title	Description	Explanation
2.1	Parking speed	The system must have an operational speed that is acceptable to passengers.	A faster system is better. We define this as the number of bicycles per 10 minutes.
2.2	Space usage	The system must use a maximum of 0.5 m2 (and 1 m3) of space per bicycle (including all necessary extra space for the facility).	When measuring the required surface area, any empty spaces, corridors, reception area and similar space to be allocated to the bicycle parking must be included.
2.3	Suitable for all regular bicycles	The system must be suitable for all regular bicycles and if possible it must be suitable for bicycles with crates and/or child seats.	To be tested against 'standard bicycle' FietsParkeur (see Appendix 1 or https://www.cyklos.se/wp-content/uploads/2018/07/FietsParKeur-broschyr-eng.pdf). The ability to park other outdoor model bicycles is a plus point.
2.4	Ease of use	The system must work logically and simply for customers.	

1.5 Identifying problems or dilemmas

Ground level solutions require a lot of space and indoor bicycle parking is very expensive. We are therefore looking for a third solution. Automation could possibly help to provide a compact affordable option between the current supply of ground level and indoor parking. However, automation is also more vulnerable to malfunction than the existing "low-tech" solutions of racks with retractable top racks and a building where you can just take your bike inside as a passenger.

1.6 Proposed method of contracting

1.6.1 Pilot

ProRail intends to further explore the possibilities for CASBPS by carrying out a pilot. The project team is thinking of a pilot in which ProRail makes an (own) location available or else selects a location in consultation with, for example, a municipality and/or NS. The focus of the pilot will be to test an automatic parking system, to measure its use and to gauge the experiences of cyclists.

1.6.2 Method of tendering

ProRail first wants to hold a market consultation and choose a tendering method that suits the demand on the basis of the insights obtained. It is therefore possible that ProRail will ultimately decide not to further implement CASBPS solutions. In that case there will be no call for tender for CASBPS bicycle parking systems. This can happen if the pilot does not produce the desired results.

1.7 Target group

We especially ask manufacturers and suppliers of CASBPS solutions to participate in this market consultation. In addition, we would like to come into contact with parties who are able to carry out (parts of) the maintenance, whether or not including or excluding the delivery.

2 Questions

ProRail is keen to discuss with the market how a proper call for tender can be organised for the scope and challenges outlined above. ProRail will devote attention to the following themes.

2.1 Existing solutions

1. Do you have existing CASBPS solutions? If so, can you provide an explanation of this system and how it works?
2. Where has/are the existing solution(s) applied? And what were the experiences with this? Do you have any references?
3. How and under what conditions is your existing solution possible? In other words, are adjustments needed within the context of the top requirements described in Chapter 1.4?
4. Can you describe how your existing system meets each of the requirements listed (Chapter 1.4) and what adjustments you consider possible and feasible to your system to meet these requirements (if the requirements are not yet met)?
5. How many m2 does your solution use for how many bicycle parking spaces, measured at ground level?
6. The system must offer a high degree of (technical) reliability. What level of reliability do you consider realistic? See basic requirement 7.

2.2 Preconditions

1. In your opinion, what are the preconditions that the intended invitation to the pilot must meet to make the rollout of the CASBPS a success?
2. And what, in your opinion, are preconditions that the intended subsequent call for tenders must fulfil to make the rollout of the CASBPS a success?
3. What, in your opinion, are the preconditions that the intended invitation must meet to ensure the successful rollout of CASBPS if ProRail were to opt for a combination of a pilot and a call for tenders for the rollout?

2.3 Applicability

1. Can your solution be realised standalone on a plot in a railway station area?
2. Can your solution be implemented in an existing space in a building in a station area?
3. Can your solution be modularly expanded to provide more bicycle parking spaces? If so, what does it mean for the speed of the system (how fast can a passenger retrieve his/her bicycle)?

2.4 Financing

1. Can you give a global cost estimate for the solution offered?

2.5 General

1. Which questions/subjects/risks/opportunities do you find important but are not included in this chapter? Why do you think these questions/topics/risks/opportunities are important?
2. May we approach you for an individual interview?
 - a. Please state your contact details (name, telephone, email address) and whether you wish to conduct this interview in Dutch or in English.

- b. By responding positively, you indicate that you are available for a possible interview in the period mentioned in section 3.3.

3 Market consultation procedure

3.1 We are eager to hear your ideas!

In preparation of an intended call for tenders for a CASBPS solution, ProRail wishes to gain more insight into the market and into existing options, current innovations and the feasibility of (the rollout of) a compact automatic secure bicycle parking solution.

We expect this market consultation to provide us with a picture of the available suppliers, insight into the developments taking place in the market and insight into the extent to which solutions are available or can be introduced that can meet our functional specifications as described in the basic and key requirements (see Chapter 1.4).

3.2 Procedure

This market consultation has been published on TenderNed and elsewhere as an open market consultation. This means that all parties in the market have the opportunity to participate.

The market consultation consists of two steps:

1. Written: answering the questions in Chapter 2.
2. Individual interviews with (some of) the market parties that responded.

First, you will be asked to submit the attached questionnaire by email before the date stated in section 3.3.

ProRail will then analyse the responses and on the basis of this analysis can determine whether it wishes to schedule a follow-up consultation with all or some of the parties. One of the purposes of these meetings is to gain a better understanding of the proposed solutions and how they could contribute to the achievement of the ambitions. The market parties can also explain their specific systems during the consultation. ProRail strives for a good distribution of market parties (sector, country of origin, etc.) when determining the parties with whom it will hold a follow-up consultation. Whether or not a follow-up consultation is held will never result in an advantage or disadvantageous position in a possible pilot and/or tendering procedure as a result of this market consultation.

A report will be drawn up of each individual interview and submitted to the participating party for approval. ProRail will subsequently prepare one integral (anonymised) report of all interviews in which the most important conclusions from the written reactions and the interviews are recorded.

In any event, no competitively sensitive information will be shared in this report. If a market party is of the opinion that competition-sensitive information is involved, it must inform ProRail of this and ProRail will determine whether it shares this conclusion.

This document will then be sent in draft form to all the participants in the consultation round, with the request that they review it and pass any comments on to ProRail. After all participants have been given the opportunity to comment, the document will be finalised by ProRail.

The definitive document will be added to the tender dossier of a future pilot and/or tendering procedure for information purposes. Where ProRail considers it possible and useful, the conclusions will be implemented in the tender dossier and/or the tendering procedure.

3.3 Planning

Date	Activity
31 January 2022	Publication / invitation to market consultation by ProRail
9 February 2022	Deadline for submitting questions to ProRail regarding the information provided
23 February 2022	ProRail provides answers to questions and, if necessary, amended documentation
2 March 2022	Final date for submitting the answers from market parties to the questions in Chapter 2.
March 2022	Individual consultations
End of March 2022	Send draft report to market consultation participants
End of April 2022	Send definitive report to market consultation participants

3.4 Contact

For questions about this market consultation and to register, please contact;
Lisa Markenstein-Hijman, Tender Manager Asset Management
Lisa.Markenstein@prorail.nl

3.5 Register now!

If you are enthusiastic about our project and interested in discussing it with us or expressing your opinion, please register by email before the date mentioned in section 3.3.
You are requested to include your contact details (name, telephone, email address).

3.6 Open and honest

Participation in the market consultation is entirely non-binding and will not lead to any preferential treatment in the event of a tendering procedure. Similarly, not participating in the market consultation will not lead to exclusion from or a more disadvantageous position in any pilot and/or tendering procedure.

By participating in this market consultation, you agree that the information provided by you may be used by ProRail in (preparing) the tendering procedure. ProRail will respect the confidentiality of commercial statistical data provided by you.

ProRail attaches great value to a transparent process. It is not the intention to favour the market parties participating in the market consultation or to put 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 will be added to the tender dossier.

Any costs for participating in this market consultation will not be reimbursed.