

# Ticket vending machines: AI and enhanced usability

This is a translation – for the original challenge description, contacts and submission got to:

<https://www.ioeb-innovationsplattform.at/challenges/detail/fahrkarten-am-automaten-mit-intelligenz-und-hoher-usability/>



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 Federal Ministry  
Republic of Austria  
Digital and  
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 Federal Ministry  
Republic of Austria  
Transport, Innovation  
and Technology

In cooperation with

  
BUNDESBESCHAFFUNG

## Challenge Sponsor

ÖBB-Personenverkehrs AG



## Point of Departure

Even in times of increasing online purchases, ticket vending machines remain hallmarks of our stations, guaranteeing customer-friendly sales. The ÖBB ticket vending machines currently deployed at railway stations throughout Austria have been around in their current form for 15 years.

The new generation, which will be put out to tender shortly, will also serve for a similar period of time. Although ÖBB-Personenverkehr AG is retrofitting one or the other component during ongoing operations, the following nevertheless applies: what is planned today will determine what customers can expect from vending machines until the year 2035.

Planning is therefore a responsible task in which ÖBB-Personenverkehr AG wants to rely on more than its own intelligence and feedback from users. In the course of this IÖB Challenge, an exchange with companies will therefore take place in order to ensure that their innovative products can be taken into consideration when designing the new generation of ticket vending machines.

At present, you interact with the ticket vending machine by entering information via the touch screen while selecting your ticket: This is also envisioned for the new generation of ticket vending machines – but it should be supplemented by intuitive and innovative usability concepts as well as intelligent support by the device.

## Main Question

What features make ticket vending machines intelligent and offer users new ways to buy their tickets (quickly and securely)?

## Desired situation

The following scenarios could occur at the station with the right products, services and innovative vendors: A young man is about to take his first trip with ÖBB. He arrives at the station, immediately sees the ticket vending machine and starts using it. The machine recognises that the young man is still inexperienced and offers him the help of a (digital) assistant.

BETTER YET: A family with two children takes the train to their favourite skiing area. At the station, the mother goes over to the ticket vending machine. As she is carrying two pairs of skis and three shoes in her hands, she chooses the “hands-free” mode of operation. She greets the machine. The machine greets her. The woman tells the machine where she wants to go, answers its question about the number and type of tickets, pays and receives her tickets. Thanks to the alternative control options, she did not need or only barely needed the keyboard on the touch screen.

LET'S TAKE IT UP ANOTHER NOTCH: The intelligent machine not only returned the greeting, but immediately displayed the route and tickets that seemed most plausible to it as suggested options. Why? Because the woman had already bought tickets the previous weekend at a similar time, perhaps brought them along with or because the machine even recognises the person reliably (e.g. voice, face, other characteristics or identification media). Because the majority of other passengers are currently booking similar routes. Because the next possible departure time makes that likely. Because the dialect matches a certain destination. Because – the machine is simply intelligent.

ANOTHER SCENARIO: For the sale of e.g. bonus cards or services, the machine can use its features and capabilities for authentication purposes if so desired. This means it can reliably recognise persons and identity card data and therefore check identities and authorisations completely automatically.

THE FOLLOWING GENERAL CONDITIONS SHOULD BE TAKEN INTO CONSIDERATION:

- The duration of a ticket purchase should be shortened as much as possible
- At the station, there are many different background noises to consider for voice output and input.
- Data protection is essential.
- It is not intended to replace the ticketing software. It may, however, be supplemented via add-ons.

The ÖBB ticketing software is a web application that accesses local Java components (e.g. Hafas, Offer) and works on any browser. For the current machines, a JVM interface to the components integrated into the machine is used. The architecture is designed in such a way that a wide variety of applications and components can be connected using a bridge (independent ÖBB component for each hardware manufacturer).

### **Call for proposals**

Do you have an interesting (partial) solution? Are you currently developing one? Are you an expert? Then enter a submission!

Click "Submit Solution" and have the following ready:

- A title image
- A meaningful description  
How could the new functions be implemented together with you? In particular, also provide further information relating to the evaluation criteria (e.g. non-binding cost estimate). Use any available reference projects for illustration purposes.
- A brief summary of the value added
- For any information that you cannot disclose publicly, there is a special field for "Confidential information". Only the moderator and the jury can see what you enter into this field. The number of characters is limited – the Innovation Dialogue will offer you the opportunity to provide further details. P.S.: Don't worry, the jury members are committed to confidentiality.
- Optional: Upload a file  
(e.g. existing product brochures or illustrations that supplement – but do not replace!

– your description)

NOTE: With this Challenge, we are currently in the market exploration phase. Therefore, the following is not yet necessary for participation, in order to attract interest: concepts which are completely new or have been specially developed for this Challenge, detailed technical designs or feasibility studies. Please be concise (as a guideline: a maximum of five A4 pages or ten presentation slides in total).

### **Benefits of the Challenge and further course of the project**

With this Challenge, ÖBB Personenverkehr AG will gain an overview of possible solutions and potential partners.

For companies, this means: By participating in the Challenge, you will be on the radar of the public-sector client. Even after the Challenge has ended, your submission will remain visible to other interested parties as your virtual calling card. You are putting yourself in a good position for further public procurement projects. You may draw the attention of cooperation partners.

Those companies, whose solutions stand out in a particularly positive way with regard to the specific evaluation criteria, will be invited to a subsequent Innovation Dialogue by the jury made up of in-house experts. If you are among these winners, you will have the opportunity to present your solution during a market discussion with ÖBB. You will exchange ideas directly with those responsible for the project.

As a submitting company, please keep 2 September free for the Innovation Dialogue in Vienna.

The Challenge and the Innovation Dialogue create sensitivity and understanding regarding suitable innovations on the part of the public-sector client. This is important, as it allows the public-sector client to take innovative approaches into account in subsequent purchasing projects under the Federal Procurement Act following the market exploration phase.

Depending on the results, the further project plan provides for the following:

The current machines are to be replaced. A possible (near-term) tender is therefore currently planned, depending on the results obtained during the Challenge.

### **Your Questions**

Contact the moderator or post your question about the Challenge. Our moderators will check, research and publish your question together with the answer. This way, all potential participants are certain to receive the same information.

## How to submit a solution/idea

Go to the challenge page. Click on the button "Idee einreichen" on the right side of the page.

- Beschreibung  
Post a meaningful description (make references to the description of the challenge and evaluation criteria on the right side of the challenge page)
- Mehrwert  
Highlight the benefits of your solution.
- Titelbild  
Upload a picture to be displayed on the landing page of the challenge.
- Kooperationspartner  
If you are handing in a joint contribution with other companies, this is where you make sure they are represented with logos and names.
- Dateien & Infos  
If necessary in addition to the descriptions above: add pdf-files (e.g. existing product brochures). But: Keep your contribution manageable for the jury.
- Vertrauliche Infos  
If necessary, place a confidential information for the jury, the sponsor and moderator (e.g. indication of approximate price range). All other parts of the contribution will be public.

## Contact Information

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