



# HaaS User Manual v1.3

# Inhalt

<b>1</b>	<b>Introduction .....</b>	<b>3</b>
1.1	What is the HaaS? .....	3
1.2	Using the user manual .....	3
1.2.1	Structure .....	3
1.2.2	Formatting used.....	3
1.2.3	Notes .....	3
<b>2</b>	<b>Glossary.....</b>	<b>4</b>
<b>3</b>	<b>First steps in HaaS.....</b>	<b>6</b>
3.1	Login .....	6
3.2	Structure of the user interface .....	6
3.3	List views .....	6
<b>4</b>	<b>Dashboard .....</b>	<b>7</b>
4.1	Display dashboard.....	7
<b>5</b>	<b>Features for vehicle keepers .....</b>	<b>8</b>
5.1	Initial setup of OBUs.....	8
5.1.1	Create OBUs and request authentication keys.....	8
5.1.2	Create Subset-114 transport keys for OBUs .....	9
5.2	Manage authentication key requests .....	10
5.2.1	Status .....	11
5.2.2	Process .....	11
5.2.3	Display authentication key requests .....	11
5.2.4	Cancel key requests.....	12
5.3	Receive and download authentication keys .....	12
5.3.1	Notification about new authentication keys.....	12
5.3.2	Display authentication keys .....	12
5.3.3	Download authentication keys.....	13
5.4	Advanced OBU features.....	15
5.4.1	Display OBUs .....	15
5.4.2	Display OBU details.....	16
5.4.3	Edit OBU .....	17
5.4.4	Edit OBU target domains.....	18
5.4.5	Delete OBU .....	20
5.4.6	Set standard cost centre.....	20
5.4.7	Overwrite cost centre for all OBUs .....	21
5.5	Check Subset-114 response messages .....	22
5.5.1	Select messages to be imported and start import.....	22
5.5.2	Perform check .....	22
5.5.3	Results .....	23
5.6	Notification about deleted authentication keys.....	23

# 1 Introduction

## 1.1 What is the HaaS?

HaaS stands for *Home KMC as a Service*.

The service includes the provision of traction unit authentication keys (generally also referred to as ETCS keys) and associated data, content, services, technologies, systems and services that enable communication between the OBU and RBC on the traction unit side and are to be installed on the traction unit by the customer.

## 1.2 Using the user manual

### 1.2.1 Structure

In the first chapters of the user manual, you will find an overview of how the application works in general and how to get started with it.

The individual functions are then described in the form of application scenarios, focusing on *Vehicle Keeper* users.

### 1.2.2 Formatting used

References to interactive elements of the user interface (buttons, links) are displayed in **bold** - e.g. **Download**.

References to other elements (headings, tables, etc.) are shown in ***bold italics*** - e.g. ***Subset-114 transport key***.

Links within the user manual are marked with the  link symbol.

### 1.2.3 Notes

Notes to be emphasised are highlighted in one of the following two forms - examples:

The availability of the menu items depends on the role of the logged-in user.

When editing the ***target domains***, requests for authentication keys are automatically created or cancelled.

## 2 Glossary

Term	Meaning
Authentication key	Cryptographic key including metadata which serves as the basis for ETCS communication between the <i>OBU</i> and <i>RBC</i> .
Domain	Synonymous with <i>ETCS domain</i> .
ETCS domain	Here: synonymous with <i>KMC</i> .
ETCS entity	Generic term for <i>KMC</i> , <i>RBC</i> and <i>OBU</i> .
ETCS ID	Unique ID for identifying ETCS entities ( <i>KMCs</i> , <i>RBCs</i> , <i>OBUs</i> ).
ETCS Keys	Generic term for various keys in the ETCS environment. Instead, the terms <i>authentication key</i> and <i>transport key</i> are used throughout the user manual.
HaaS	Home KMC as a Service. <i>Vehicle KMC</i> operated by ÖBB as a service for <i>vehicle keepers</i> .
IAM	ÖBB authentication system used by the application. Authorisations are assigned in <i>M-AMA</i> .
Infra-KMC	<i>Infrastructure KMC</i> operated by ÖBB.
Infrastructure KMC	<i>KMC</i> , which takes the role of the Home KMC for certain <i>RBCs</i> .
Key Manager	ÖBB operations management employee responsible for key operations.
KMAC	Equivalent to <i>authentication key</i>
KMC	Key Management Centre Can take on the role of either a <i>vehicle KMC</i> (e.g. <i>HaaS</i> ) or an <i>infrastructure KMC</i> (e.g. ÖBB <i>Infra KMC</i> ).
M-AMA	ÖBB configuration tool for user authorisation management.
NID Engine	Unique ETCS identifier of an <i>OBU</i> . Here: In the context of <i>OBUs</i> , synonymous with <i>ETCS ID</i> .
OBU	On-board unit
Predefined Key	Special key used in <i>Subset-114</i> , which is used for certain operations instead of the <i>transport key</i> (e.g. for installing a transport key).
RBC	Radio Block Centre
RBC relation	Information about the <i>RBC</i> for which an <i>authentication key</i> is valid and the status of the key with regard to the <i>RBC</i> . An authentication key typically consists of several <i>RBC</i> relations.
SNUM	Serial number of a key Unique identification criterion in combination with the issuing <i>domain</i> .
Subset-038	Standard for offline transfer of <i>authentication keys</i> to other <i>KMCs</i> . Implemented version: 3.1.0
Subset-114	Standard for offline transmission of messages for installing, updating and deleting <i>authentication keys</i> in <i>OBUs</i> and <i>RBCs</i> . Implemented version: 1.1.0
Subset-137	Online interface for transferring <i>requests</i> from a <i>vehicle KMC</i> to an <i>infrastructure KMC</i> and <i>authentication keys</i> from an <i>infrastructure KMC</i> to a <i>vehicle KMC</i> . Implemented version: 1.0.0

Term	Meaning
Target domain	<i>Domain (or infrastructure KMC) from which an authentication key is to be or has been requested.</i>
Transport key	Key for securing the <i>authentication keys</i> contained in the messages. Used for <i>Subset-038</i> and <i>Subset-114</i> .
Type 1 OBU	A Type 1 <i>OBU</i> only supports a single <i>authentication key</i> , which is used for communication with all <i>RBCs</i> . The creation of this key is the responsibility of the <i>vehicle KMC</i> . The HaaS does not support type 1 <i>OBUs</i> .
Type 2 OBU	The standard <i>OBU</i> type that supports multiple <i>authentication keys</i> .
Vehicle KMC	<i>KMC</i> , which takes on the role of the Home <i>KMC</i> for certain <i>OBUs</i> .
Vehicle keeper	Railway undertaking, leasing company, etc., to which certain <i>OBUs</i> are assigned in the <i>KMC</i> .

### 3 First steps in HaaS

#### 3.1 Login

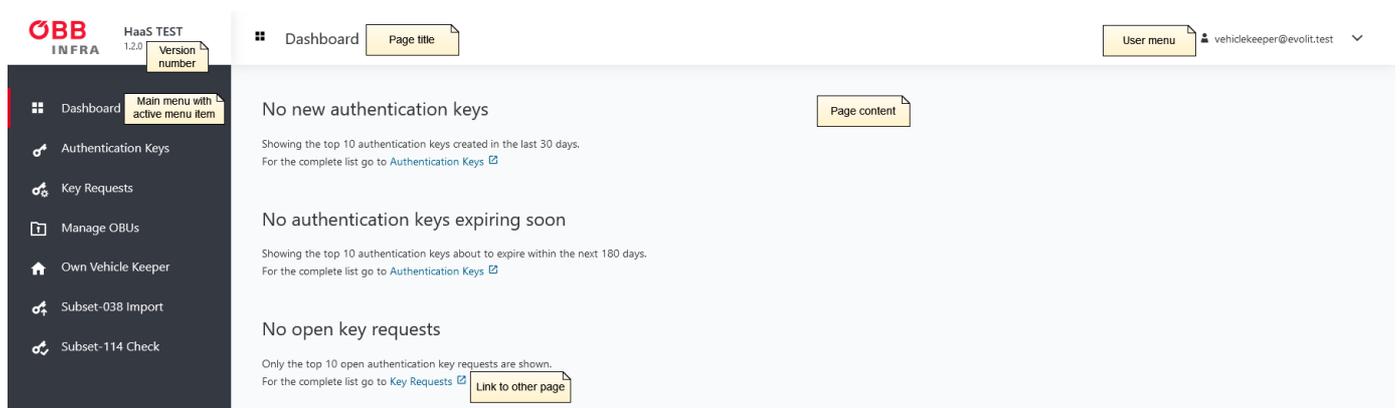
You can access the HaaS via the URL <https://haas.oebb.at>.

Login takes place via the ÖBB authentication system. Follow the steps described there to log in with your credentials.

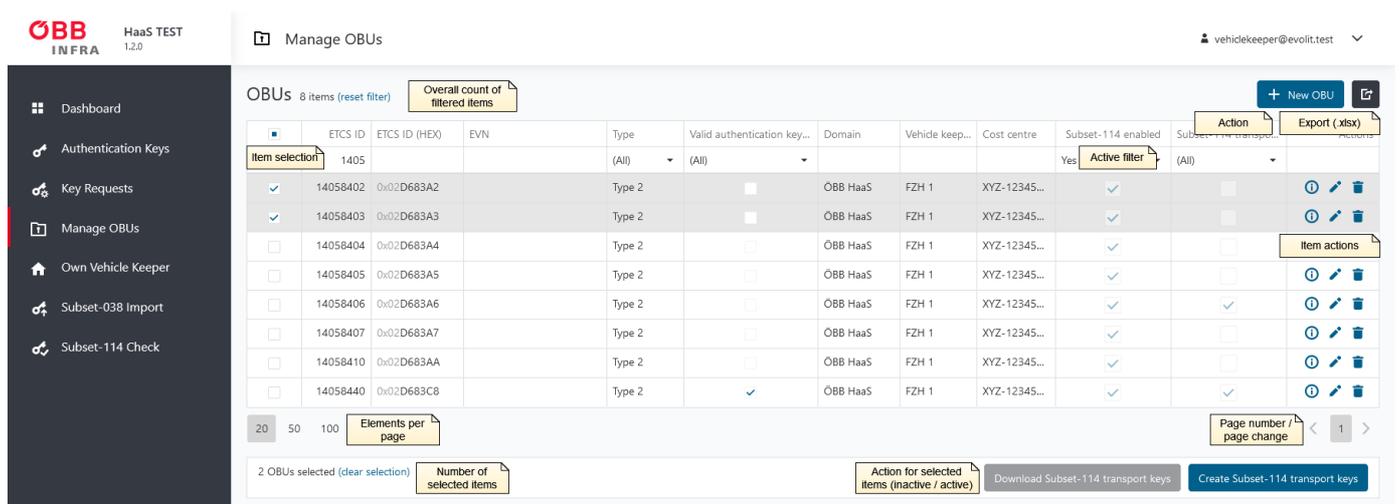
After logging in, the [Dashboard](#) is displayed.

To log out, please use the **Logout** entry in the *user menu*.

#### 3.2 Structure of the user interface



#### 3.3 List views



## 4 Dashboard

The dashboard is the page that is displayed immediately after logging in.

### 4.1 Display dashboard

You can access the dashboard at any time via the **Dashboard** menu item.

The dashboard displays three key pieces of information:

- New authentication keys from the last 30 days
- Authentication keys that are about to expire and for which there exists not yet a request for a follow-up key
- Open requests for which no authentication key has yet been received

The screenshot shows the HaaS dashboard interface. The top left corner displays the OBB INFRA logo and 'HaaS TEST 1.2.0'. The top right corner shows the user 'vehiclekeeper@evolit.test'. The left sidebar contains navigation items: Dashboard (highlighted), Authentication Keys, Key Requests, Manage OBUs, Own Vehicle Keeper, Subset-038 Import, and Subset-114 Check.

**2 new authentication keys**  
Showing the top 10 authentication keys created in the last 30 days.  
For the complete list go to [Authentication Keys](#)

EVN	ETCS ID	ETCS ID (HEX)	Key domain	SNUM	RBCs	Created at	Valid from	Valid to
14 05 8401 000-0	9	0x02000009	OBB INFRA	14	RBC A	14/10/2024 15:41:00	14/10/2024	14/02/2029
14 05 8402 000-0		0x02000008	OBB INFRA	12	RBC A	14/10/2024 15:34:00	14/10/2024	14/02/2029

**No authentication keys expiring soon**  
Showing the top 10 authentication keys about to expire within the next 180 days.  
For the complete list go to [Authentication Keys](#)

[Link to complete list](#)

**3 open key requests**  
Only the top 10 open authentication key requests are shown.  
For the complete list go to [Key Requests](#)

OBU ETCS ID	OBU ETCS ID ...	EVN	Vehicle keeper	Domain	Domain ET...	Domain ETCS L...	Status	Status info	Changed at
14058404	0x02D683A4		FZH 1	OBB INFRA	6291457	0x05600001	IN PROGRESS	Request successfully sent to OBB INF...	16/10/2024 15:19:03
14058403	0x02D683A3		FZH 1	OBB INFRA	6291457	0x05600001	IN PROGRESS	Request successfully sent to OBB INF...	16/10/2024 15:19:02
14058402	0x02D683A2		FZH 1	OBB INFRA	6291457	0x05600001	IN PROGRESS	Request successfully sent to OBB INF...	16/10/2024 15:19:02

The dashboard lists only show a few data records at a time. The link above each list takes you to the complete view of all data records, which is filtered according to the same criteria as the dashboard.

## 5 Features for vehicle keepers

### 5.1 Initial setup of OBUs

#### 5.1.1 Create OBUs and request authentication keys

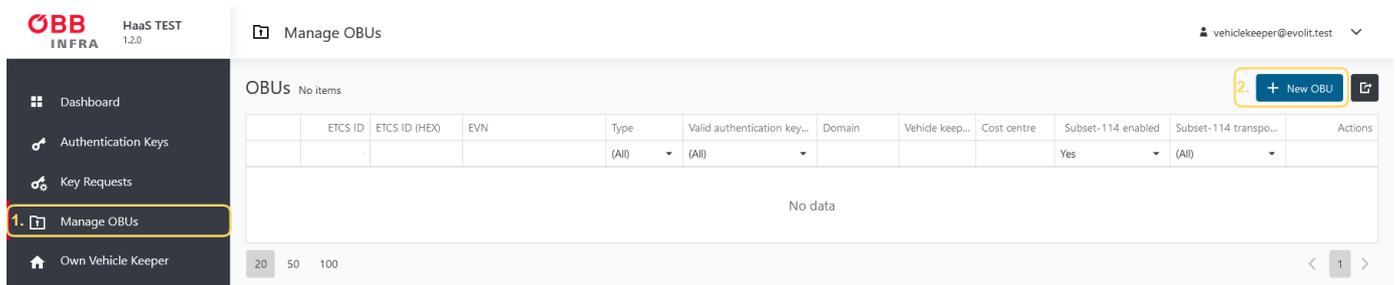
To be able to request authentication keys, the required OBUs must first be created.

This can be done conveniently for several OBUs in one step.

##### 5.1.1.1 Open the Create OBU page

Proceed as described below and as shown in the screenshot to get to the **Create OBU** page

- Select menu item **Manage OBUs**
- Select the action **+ New OBU** at the top right

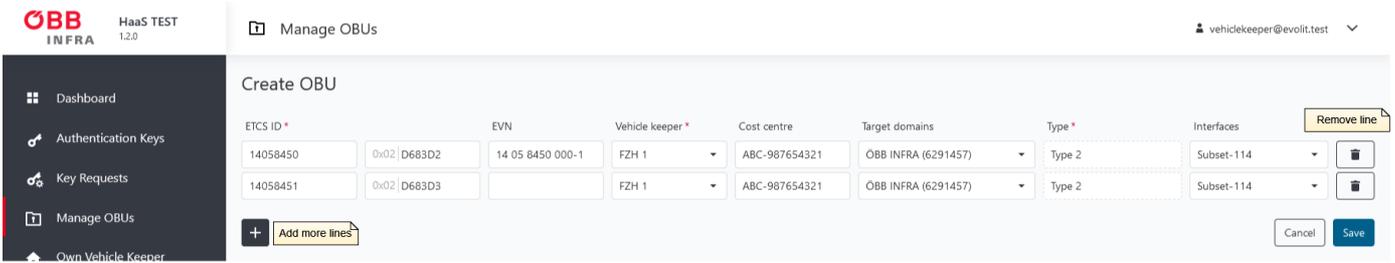


##### 5.1.1.2 Entering the OBU data

You can enter several OBUs at once on the **Create OBU** page.

The following data can/must be recorded for each OBU:

- **ETCS ID: NID engine of the OBU**  
The ETCS ID can be entered in both decimal notation (left column) and hexadecimal notation (right column). The same ETCS ID cannot be used more than once.
- **EVN: European Vehicle Number (optional)**  
The EVN must consist of 12 digits.
- **Vehicle keeper: OBU affiliation**  
As a *Vehicle Keeper* user your own vehicle keeper is predefined.
- **Cost centre**  
Depending on the vehicle keeper setting **Cost centre required**, optional or mandatory. Prefilled with the **default cost centre** specified for the vehicle keeper.
- **Target domains**  
Select here for which countries (or in detail for which infrastructure domains) an authentication key is to be requested.
- **Type**  
Purely informative; only type 2 OBUs are supported in the HaaS.
- **Interfaces**  
Subset-114 is automatically preselected as the interface for key distribution in the direction of the OBU.



When a new line is added, all data (except for the EVN) is copied from the previous line. The ETCS ID is increased by one.  
 Start with the lowest ETCS ID and enter the data for the first OBU as completely as possible before adding further lines.

5.1.1.3 Saving and creating the requests  
 After clicking on **Save**, the OBUs are created in the HaaS.

A request for authentication keys is created for each OBU for each selected target domain. For details, see chapter [Manage authentication key requests](#)

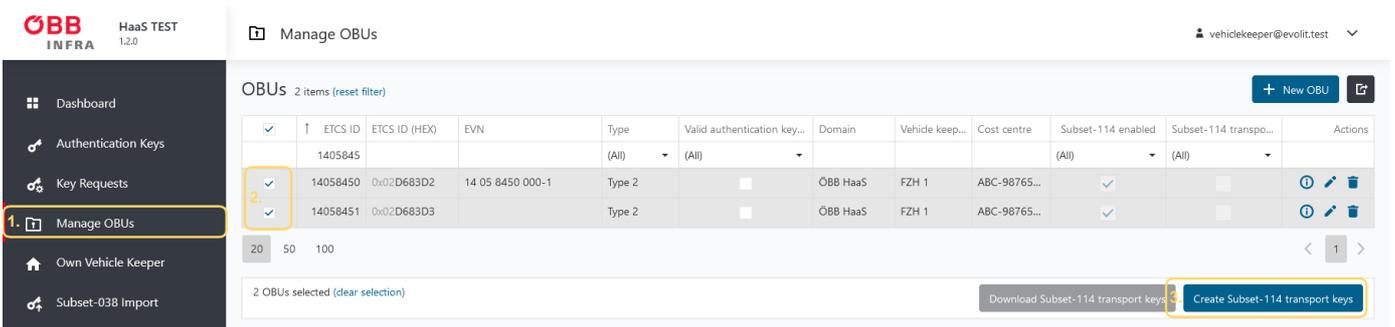
## 5.1.2 Create Subset-114 transport keys for OBUs

A corresponding transport key must be available so that authentication keys can later be loaded into an OBU using Subset-114 messages.

The steps for creating transport keys for multiple OBUs are described below.

5.1.2.1 Open the Create transport keys (KTRANS) page  
 Proceed as described below and as shown in the screenshot to get to the **Create Subset-114 transport key (KTRANS)** page

- Select menu item **Manage OBUs**
- Select one or more OBUs
- Select the action **Create Subset-114 transport keys** at the bottom right



5.1.2.2 Entering the transport key data  
 The validity period of the transport keys to be generated can be specified on the **Create Subset-114 transport key (KTRANS)** page.

The system automatically proposes a validity period of 50 years with today's date as the first day of validity.

Manage OBUs

Create Subset-114 transport key (KTRANS)

ETCS ID	EVN	Valid from *	Valid to *
14058450	0x02:D683D2 14 05 8450 000-1	16/10/2024	16/10/2074
14058451	0x02:D683D3	16/10/2024	16/10/2074

Cancel Save

### 5.1.2.3 Saving and downloading transport keys

After clicking on **Save**, the transport keys are generated and offered for download in the form of Subset-114 *INSTALL-TRANSPORT-KEY* messages.

Please confirm the security notice to proceed to the download.

Transport keys are sensitive data, as they are subsequently used to ensure the secure transmission of authentication keys.  
The Subset-114 messages used to install transport keys must be reliably deleted after use.

### 5.1.2.4 Subsequent download of the transport keys

Transport keys can be displayed in the [OBU details](#) and downloaded later again.

To download multiple transport keys at a later date, proceed as described below and as shown in the screenshots

- Select menu item **Manage OBUs**
- Select one or more OBUs
- Select the **Download Subset-114 transport keys** action at the bottom right
- Confirm the security notice to proceed to download

Manage OBUs

OBUs 2 items (reset filter)

	ETCS ID	ETCS ID (HEX)	EVN	Type	Valid authentication key...	Domain	Vehicle keep...	Cost centre	Subset-114 enabled	Subset-114 transpo...	Actions
<input checked="" type="checkbox"/>	1405845			(All)	(All)				(All)	(All)	
<input checked="" type="checkbox"/>	14058450	0x02:D683D2	14 05 8450 000-1	Type 2		ÖBB HaaS	FZH 1	ABC-98765...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<a href="#">Info</a> <a href="#">Edit</a> <a href="#">Delete</a>
<input checked="" type="checkbox"/>	14058451	0x02:D683D3		Type 2		ÖBB HaaS	FZH 1	ABC-98765...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<a href="#">Info</a> <a href="#">Edit</a> <a href="#">Delete</a>

20 50 100

2 OBUs selected (clear selection)

Download Subset-114 transport keys Create Subset-114 transport keys

Transport keys are sensitive data, as they are subsequently used to ensure the secure transmission of authentication keys.  
The Subset-114 messages used to install transport keys must be reliably deleted after use.

## 5.2 Manage authentication key requests

A request is used to obtain one or more authentication keys for an OBU from an infrastructure KMC.

The processing of a request, the application to the respective infrastructure KMCs and the provision of the authentication key is typically carried out by a *Key Manager*.

## 5.2.1 Status

Status	Description
NEW	The request has been created but processing has not started yet.
IN PROGRESS	The request was sent to the relevant infrastructure KMC.
COMPLETED	The request is complete. This means that at least one authentication key has been received from the relevant infrastructure KMC.
CANCELLED	The request was cancelled.

## 5.2.2 Process

### 5.2.2.1 Creating requests

Requests are created implicitly by adding target domains to the OBU when it is first created (see [Create OBUs and request authentication keys](#)) or by subsequently editing the OBU (see [Edit OBU](#)).

In addition, the system creates requests for follow-up keys for authentication keys that are about to expire. This happens automatically six months before a key expires.

There can only ever be one open request for the combination of OBU and domain.

### 5.2.2.2 Set in progress

If the infrastructure KMC is connected online to the HaaS via Subset-137, the application is made automatically immediately after creation and the status is immediately set to IN PROGRESS.

Otherwise, the request is manually set to IN PROGRESS by the *Key Manager* as soon as the authentication key has been requested from the relevant infrastructure KMC.

### 5.2.2.3 Complete

Requests can only be set to the status COMPLETED implicitly by the system.

This is done either by importing a Subset-038 message by a user (typically the *Key Manager*) or by receiving an authentication key from an infrastructure KMC connected online via Subset-137.

The trigger for completion is stored in the **Status info** field in the request.

When importing or receiving an authentication key, the system checks for the existence of an open request for the combination of OBU and transmitting domain and completes it.

If several authentication keys have been created for an OBU due to a request (for example, because the infrastructure KMC issues a separate authentication key for each RBC and OBU combination), importing/receiving further authentication keys has no effect and is also possible without an open request.

## 5.2.3 Display authentication key requests

You can access the list of requests via the menu item **Key Requests**.

The screenshot shows the 'Manage Key Requests' interface. The left sidebar contains navigation items: Dashboard, Authentication Keys, Key Requests (highlighted), Manage OBUs, and Own Vehicle Keeper. The main content area shows a table of key requests. The table has the following data:

	OBU ETCS ID	OBU ETCS ID...	EVN	Domain	Domain ET...	Domain ETCS I...	Status	Status info	Created by	Created at	Changed by	Changed at
<input type="checkbox"/>	1405845						NEW, IN ...		=		=	
<input type="checkbox"/>	14058451	0x02D683D3		ÖBB INFRA	6291457	0x05600001	IN PROGRESS	Request suc...	vehidekeep...	16/10/2024 15:30:05	SYSTEM	16/10/2024 15:31:00
<input type="checkbox"/>	14058450	0x02D683D2	14 05 8450 000-1	ÖBB INFRA	6291457	0x05600001	IN PROGRESS	Request suc...	vehidekeep...	16/10/2024 15:30:05	SYSTEM	16/10/2024 15:31:00

At the bottom of the table, there are pagination controls showing '20 50 100' and a page number '1'.

The list of requests is initially pre-filtered to the status NEW and IN PROGRESS. To also see completed and cancelled requests, please adjust the filter.

## 5.2.4 Cancel key requests

Requests can be cancelled manually by a *Vehicle Keeper* or *Key Manager*:

- Select menu item **Key Requests**
- Select one or more requests
- Select the **Cancel key requests** action at the bottom right
- Enter reason and click on **Confirm**

The screenshot shows the 'Manage Key Requests' interface. On the left is a navigation menu with 'Key Requests' selected. The main area shows a table with the following data:

OBU ETCS ID	OBU ETCS ID...	EVN	Domain	Domain ET...	Domain ETCS I...	Status	Status info	Created by	Created at	Changed by	Changed at
1405845						NEW, IN ...		=		=	
14058451	0x02D683D3		ÖBB INFRA	6291457	0x05600001	IN PROGRESS	Request suc...	vehidekeep...	16/10/2024 15:30:05	SYSTEM	16/10/2024 15:31:00
14058450	0x02D683D2	14 05 8450 000-1	ÖBB INFRA	6291457	0x05600001	IN PROGRESS	Request suc...	vehidekeep...	16/10/2024 15:30:05	SYSTEM	16/10/2024 15:31:00

At the bottom of the table, it says '1 key request selected (clear selection)'. A blue button labeled '3. Cancel key requests' is highlighted in the bottom right corner.

In addition, open requests are also implicitly cancelled by the system if the relevant domain is removed from the list of target domains in the OBU (see [Edit OBU](#)).

The reason for a cancellation can be seen in the **Status info** field.

Cancelling a request results in the domain in question being removed from the list of target domains at the OBU. No authentication keys will then be accepted from this domain.

To create a new request, add the domain to the target domains again (see [Edit OBU](#)).

## 5.3 Receive and download authentication keys

A *Key Manager* typically takes care of obtaining authentication keys so that no action is required by the *Vehicle Keeper*.

### 5.3.1 Notification about new authentication keys

Once a week, the system checks whether new authentication keys have been received for a vehicle keeper.

If there are new keys in GENERATED status - i.e. the key has not yet been downloaded - a notification is sent by e-mail to all users of the respective vehicle keeper.

The notification only contains authentication keys that have been added since the last notification and have not been downloaded in the meantime.

You should therefore pay attention to all emails or, if in doubt, regularly check the [Dashboard](#) for new keys.

### 5.3.2 Display authentication keys

#### 5.3.2.1 Status

The main status of an authentication key is called **OBU status** to avoid confusion with the installation status on the RBCs.

Status	Description
GENERATED	The key has been entered into the system but not yet downloaded.
DISTRIBUTION PENDING	<i>Reserved for later use.</i>
INSTALLED	The key has been downloaded. Provides no information as to whether the key has ever actually been installed on the OBU.
DELETION PENDING	<i>Reserved for later use.</i>
DELETED	The key has been deleted.

### 5.3.2.2 Display authentication keys

You can access the list of authentication keys via the **Authentication Keys** menu item.

The screenshot shows the 'Manage Authentication Keys' interface. The left sidebar contains navigation options: Dashboard, Authentication Keys (selected), Key Requests, Manage OBUs, Own Vehicle Keeper, and Subset-038 Import. The main content area shows a table of authentication keys with the following data:

	Vehicle keep...	EVN	ETCS ID	ETCS ID (HEX)	Key domain	SNUM	OBU status	RBCs	Created at	Valid from	Valid to	Subsequen...	Open requ...
<input type="checkbox"/>			140584	0x02D683C8	OBB INFRA	10049	GENERATED	RBC B	28/08/2024 11:06:51	26/08/2024	26/08/2029	(All)	(All)
<input type="checkbox"/>	FZH 1		14058440	0x02D683C8	OBB INFRA	10049	GENERATED	RBC B	28/08/2024 11:09:15	26/08/2024	26/08/2029	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	FZH 1		14058440	0x02D683C8	OBB INFRA	10049	GENERATED	RBC B	28/08/2024 11:12:34	26/08/2024	26/08/2029	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	FZH 1		14058440	0x02D683C8	OBB INFRA	10049	GENERATED	RBC B	28/08/2024 11:13:12	26/08/2024	26/08/2029	<input type="checkbox"/>	<input type="checkbox"/>

In this view, you will find all the authentication keys available in the system for your own vehicle keeper.

#### 5.3.2.2.1 Columns

Explanations for some selected columns:

- **Key domain**  
Infrastructure KMC from which the key was generated and received.
- **SNUM**  
Serial number of the key (unique within the key domain).
- **Subsequent key existent**  
Indicates whether a follow-up key exists for the combination of key domain and OBU with later validity.
- **Open requests existent**  
Indicates whether a key request exists for the combination of key domain and OBU to issue a follow-up key.  
For details, see [Manage authentication key requests](#).

The field **Subsequent key existent** does neither provide any information as to whether the validity of the subsequent key directly follows on from the current key nor whether the same RBC relations are contained in the subsequent key.

#### 5.3.2.2.2 Actions

You can [Download authentication keys](#) by selecting one or more lines.

## 5.3.3 Download authentication keys

The download of authentication keys in the form of Subset-114 messages for the OBUs can take place at the following locations:

- Immediately after the import of Subset-038 messages

- In the list of authentication keys
- In the detail view of an OBU

When downloading a non-deleted authentication key, its status is changed to INSTALLED.

### 5.3.3.1 Prerequisites and notes on the generated Subset-114 messages

The prerequisites for downloading Subset-114 Messages are:

- The Subset-114 interface of the OBU is activated (see [Edit OBU](#))
- The existence of a currently valid Subset-114 transport key

For information on creating a transport key, see [Create Subset-114 transport keys for OBUs](#).

The type of Subset-114 message generated depends on the status of the authentication key:

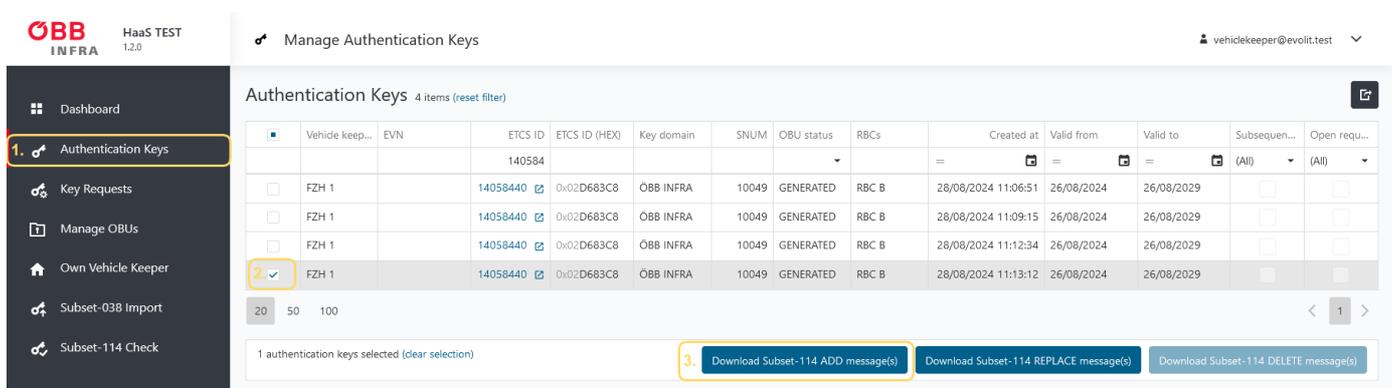
Status	Generated message(s)
GENERATED	ADD_AUTHENTICATION_KEY
INSTALLED	ADD_AUTHENTICATION_KEY or REPLACE_ETCS_ENTITIES (depending on the selection by the user)
DELETION PENDING	DELETE_KEY
DELETED	DELETE_KEY

The messages are offered for download in the form of a ZIP file. Within the ZIP file, there is a subfolder with the ETCS ID of the OBU for each OBU in accordance with the Subset-114 standard, which in turn contains the messages.

### 5.3.3.2 Download from the list of authentication keys

To download Subset-114 messages for multiple authentication keys, proceed as follows:

- Select menu item **Authentication Keys**
- Select one or more authentication keys
- Select the action **Download Subset-114 ADD message(s)** at the bottom right
- Save the ZIP file

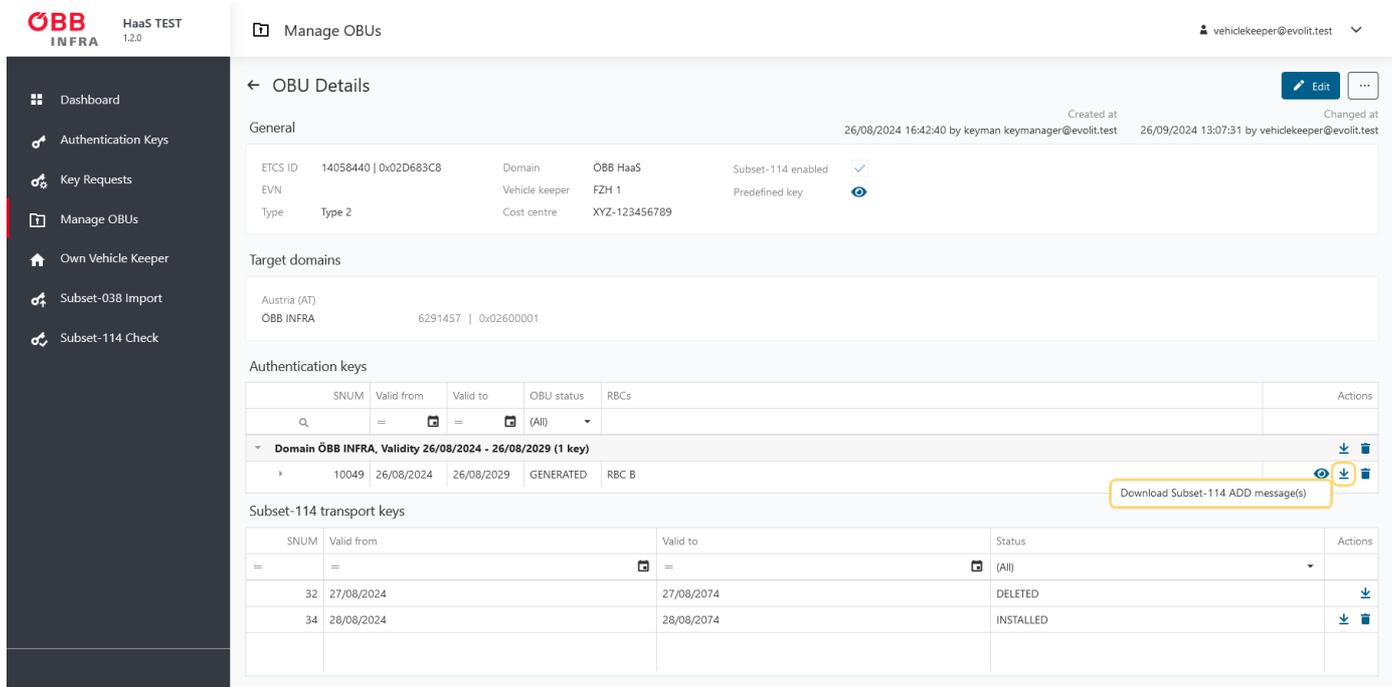


Only Subset-114 messages are generated for those authentication keys that fulfil the requirements. The download buttons are only active if at least one selected authentication key fulfils the requirements for the respective Subset-114 message.

5.3.3.3 Download from the OBU detail view

To download Subset-114 messages from the detail view, proceed as follows:

- Open the [OBU Details](#) page
- Open the Download menu for the desired entry in the **Authentication keys** list
- Select **Download Subset-114 ADD message(s)**



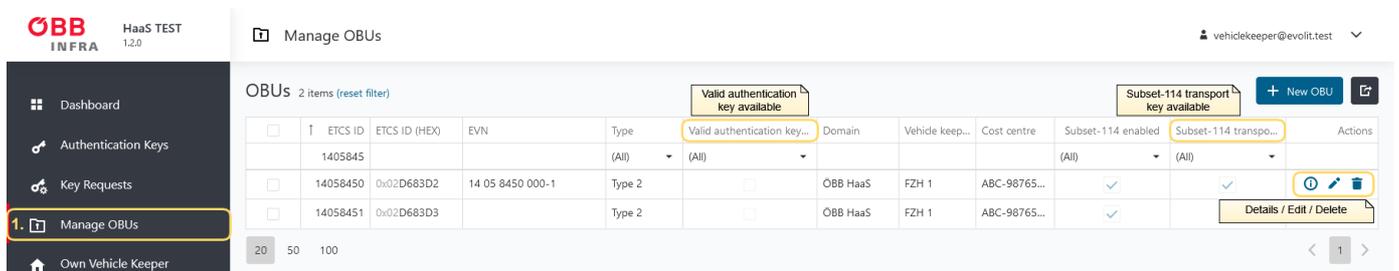
## 5.4 Advanced OBU features

### 5.4.1 Display OBUs

#### 5.4.1.1 Display list

You can access the list of OBUs via the **Manage OBUs** menu item.

General information on the functions of the list view can be found at [First steps in HaaS](#).



#### 5.4.1.2 Columns

In addition to the basic data of an OBU (for a description, see [Create OBUs and request authentication keys](#)), you will find the following important columns in the list:

- **Valid authentication key available**  
Indicates whether an authentication key exists for the OBU that is valid at the current time and has not been deleted.

- **Subset-114 transport key available**  
Indicates whether a transport key exists for the OBU that is valid at the current time and has not been deleted.

### 5.4.1.3 Actions

The following actions are available for each OBU:

- [Details](#)
- [Edit](#)
- [Delete](#)

## 5.4.2 Display OBU details

You can access the OBU detail view via [Display OBUs](#) and in many other places by clicking on the OBU ETCS ID.

In this view you will find all the information available in the system for an OBU, including all authentication keys and Subset-114 transport keys.

The screenshot displays the 'Manage OBUs' interface for 'OBU Details'. The left sidebar contains navigation options: Dashboard, Authentication Keys, Key Requests, Manage OBUs (selected), Own Vehicle Keeper, Subset-038 Import, and Subset-114 Check. The main content area is titled 'OBU Details' and includes the following sections:

- General:** ETCS ID (14058440 | 0x02D683C8), Domain (ÖBB HaaS), EVN, Type (Type 2), Vehicle keeper (FZH 1), Cost centre (XYZ-123456789), Subnet-114 enabled (checked), and Predefined key (selected). It also shows creation and change timestamps.
- Target domains:** Austria (AT) ÖBB INFRA with ID 6291457 | 0x02600001.
- Authentication keys:** A table listing keys with columns for SNUM, Valid from, Valid to, OBU status, RBCs, and Actions. A summary row indicates 'Domain ÖBB INFRA, Validity 26/08/2024 - 26/08/2029 (2 keys)'. Two keys are listed: one DELETED and one INSTALLED.
- Subset-114 transport keys:** A table with columns for SNUM, Valid from, Valid to, Status, and Actions. One key is listed as INSTALLED.

### 5.4.2.1 General

The first block contains all the basic data of the OBU.

For a description of the fields, see [Create OBUs and request authentication keys](#).

Some of the basic data can be changed using [Edit OBU](#).

### 5.4.2.2 Target domains

List of infrastructure domains in which the OBU is intended to be used, grouped by country.

By selecting the target domains, you control for which domains authentication keys are requested and from which domains authentication keys are accepted for the OBU.

The target domains can be changed using [Edit OBU](#).

### 5.4.2.3 Authentication keys

The list of authentication keys contains all authentication keys of the OBU that are known to the HaaS. This includes currently valid, expired, deleted and future valid keys of various domains.

The authentication keys are grouped by issuing domain and validity period. This makes it easier to maintain an overview if infrastructure domains issuing a separate key for each RBC.

Detailed information on the columns:

- **SNUM**  
Serial number of the authentication key. Unique within the issuing domain.
- **Valid from**  
First day of validity of the authentication key. This date is implicitly to be understood as 00:00 UTC on the specified day, i.e. the entire day is within the validity period.
- **Valid until**  
Last day of validity of the authentication key. This date is implicitly to be understood as 00:00 UTC on the following day, i.e. the entire day is within the validity period.
- **OBU status**  
For details on the meanings of the statuses, see [Display authentication keys](#).
- **RBCs**  
Designation of the RBCs for which this authentication key is valid according to the issuing domain. Information on the RBCs, such as the ETCS ID, is visible by expanding the table row.

The following actions can be performed for a single authentication key or for a group of authentication keys:

- **Plain text display**  
A dialogue for displaying the key in plain text format (hexadecimal coding) is shown. This action is only available for individual keys.
- **Download**  
If the OBU status is GENERATED, this is changed to INSTALLED. For subsequent downloads, you can choose between downloading Subset-114 ADD and REPLACE messages. DELETE messages can be downloaded instead for keys with the status DELETED.
- **Delete**  
The status is changed to DELETED.

If a valid Subset-114 transport key is available, corresponding Subset-114 messages are generated during download and deletion. For details, see [Download authentication keys](#).

#### 5.4.2.4 Subset-114 transport keys

The list of Subset-114 transport keys contains all currently valid, already expired or deleted and future valid keys.

Detailed information on the columns:

- **SNUM**  
Serial number of the transport key. Unique within the HaaS.
- **Valid from**  
First day of validity of the transport key. This date is implicitly to be understood as 00:00 UTC on the specified day, i.e. the entire day is within the validity period.
- **Valid until**  
Last day of validity of the transport key. This date is implicitly to be understood as 00:00 UTC on the following day, i.e. the entire day is within the validity period.
- **Status**  
Can be INSTALLED or DELETED.

A new transport key can be created via the menu item **Create Subset-114 transport key** in the extra menu.

The following actions can be performed for a transport key:

- **Download**  
Depending on the status, either an INSTALL\_TRANSPORT\_KEY or DELETE\_KEY message is generated.
- **Delete**  
The status is changed to DELETED and the DELETE\_KEY message is offered for download.

### 5.4.3 Edit OBU

To edit OBUs, use the edit action in [Display OBUs](#) or the [OBU details view](#).

**Manage OBUs**

**Edit OBU**

**General**

ETCS ID \* 14058450 0x02 D683D2

EVN 14 05 8450 000-1

Interfaces Subset-114

Predefined key \* [Masked]

Vehicle keeper \* FZH 1

Cost centre \* ABC-987654321

Domain \* ÖBB HaaS

Type \* Type 2

**Target domains**

Target domains ÖBB INFRA (6291457)

Warning: Changes to the target domains result in creation or cancellation of authentication key requests!

Save Cancel

#### 5.4.3.1 Modifying basic data

You can change the following data in the **General** block:

- **EVN: European Vehicle Number (optional)**  
The EVN must consist of 12 digits.
- **Interfaces**  
Subset-114 is automatically preselected as the interface for key distribution in the direction of the OBU.
- **Predefined Key**  
If a key other than the standard Subset-114 Predefined Key is used in the OBU, it can be configured here.
- **Vehicle keeper: OBU affiliation**  
As a *Vehicle Keeper* user your own vehicle keeper is predefined.
- **Cost centre**  
Optional cost centre (provided by ÖBB Infra).

Changing the ETCS ID is not possible retrospectively and requires the [creation of a new OBU](#).

## 5.4.4 Edit OBU target domains

### 5.4.4.1 General information about target domains

The target domains are used to control for which countries (or in detail for which infrastructure domains) authentication keys are requested.

Adding additional target domains automatically results in the creation of a new key request.

When target domains are removed, any open requests (request with the status NEW and IN PROGRESS) are cancelled.

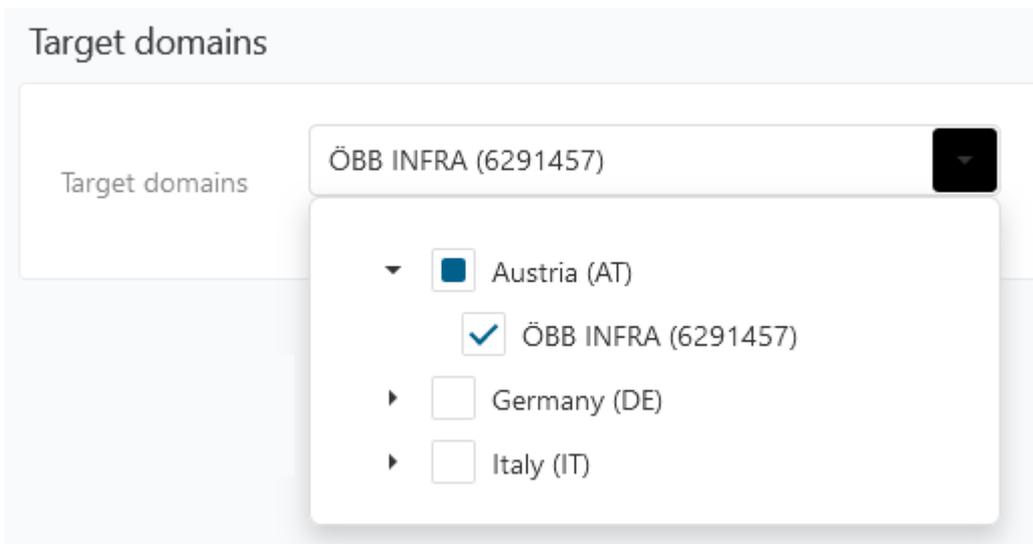
For details on requirements, see [Manage authentication key requests](#).

Authentication keys are only accepted by the HaaS if the corresponding target domain has been selected for the OBU.

When editing the **target domains**, requests for authentication keys are automatically created or cancelled.

### 5.4.4.2 Changing target domains of a single OBU

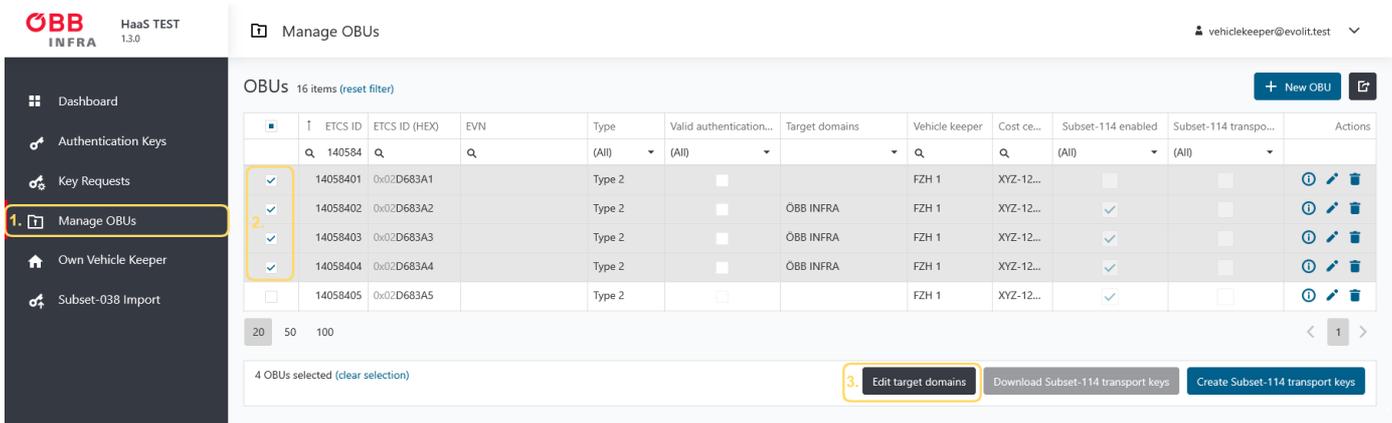
Editing of target domains of a single OBU is done within [Edit OBU](#) in the respective area:



### 5.4.4.3 Changing target domains of multiple OBUs

To change target domains of multiple OBUs, proceed as follows:

- Select menu item **Manage OBUs**
- Select one or more OBUs
- Select the action **Edit target domains** from the bottom right
- Perform the changes and click **Save**



Manage OBUs

Edit target domains

Warning: Changes to the target domains result in creation or cancellation of authentication key requests!

ETCS ID	EVN	Vehicle keeper	Target domains	Actions
14058401	0x02 D683A1	FZH 1	ÖBB INFRA (6291457)	Apply to all
14058402	0x02 D683A2	FZH 1	<input checked="" type="checkbox"/> Austria (AT) <input type="checkbox"/> Germany (DE) <input type="checkbox"/> Italy (IT)	Apply to all
14058403	0x02 D683A3	FZH 1	ÖBB INFRA (6291457)	Apply to all
14058404	0x02 D683A4	FZH 1	ÖBB INFRA (6291457)	Apply to all

1 OBUs were changed

## 5.4.5 Delete OBU

OBUs can be removed from the system using the delete action in [Display OBUs](#).

To delete an OBU, you must ensure that

- all authentication keys and transport keys of the OBU are deleted (see [Display OBU details](#))
- open key requests are cancelled (see [Manage authentication key requests](#))

After clicking on the **delete** button, the action must be confirmed:

Delete OBU

Do you really want to delete this OBU?

ETCS ID            14058412  
 ETCS ID (HEX)   0x02D683AC  
 EVN                14 05 8412 000-1

## 5.4.6 Set standard cost centre

The default cost centre is used to pre-fill the **cost centre** field when creating new OBUs.

However, if you want to change the cost centre for all existing OBUs, use the function [Overwrite cost centre for all OBUs](#), for individual OBUs [Edit OBU](#).

### 5.4.6.1 Open Edit Vehicle Keeper page

Proceed as described below and as shown in the screenshot to get to the **Edit Vehicle Keeper** page

- Select **Own Vehicle Keeper** in the menu item
- Click on **Edit**

Dashboard

Authentication Keys

Key Requests

Manage OBUs

1. Own Vehicle Keeper

Manage Vehicle Keepers

vehiclekeeper@evollit.test

← Vehicle Keeper Details

2. Edit

General

Created at 07/02/2024 14:49:54 by admin admin@evollit.test

Changed at 26/09/2024 12:53:52 by keyman keymanager@evollit.test

Name FZH 1

IAM ID (Company ID)

Cost centre required ✓

Standard cost centre ABC-987564321

#### 5.4.6.2 Set standard cost centre

Enter the standard cost centre and click **Save**.

The new value will be used from now on when creating new OBUs.

Dashboard

Authentication Keys

Key Requests

Manage OBUs

Own Vehicle Keeper

Subset-038 Import

Manage Vehicle Keepers

vehiclekeeper@evollit.test

Edit Vehicle Keeper

General

Name FZH 1

Cost centre required ✓

Standard cost centre XYZ-123456789

Save Cancel

### 5.4.7 Overwrite cost centre for all OBUs

If the cost centre for all OBUs of a vehicle keeper changes, this function can be used to change the **cost centre** field for all OBUs in one step.

However, if you only want to change the cost centre for individual OBUs, use the function [Edit OBU](#).

#### 5.4.7.1 Open the Overwrite cost centre for OBUs dialogue

Proceed as described below and as shown in the screenshot to access the **Overwrite cost centre for OBUs** dialogue

- Select menu item **Own Vehicle Keeper**
- Select the action **Set cost centre for OBUs** in the menu

Dashboard

Authentication Keys

Key Requests

Manage OBUs

1. Own Vehicle Keeper

Manage Vehicle Keepers

vehiclekeeper@evollit.test

← Vehicle Keeper Details

2. Set cost centre for OBUs

General

Created at 07/02/2024 14:49:54 by admin admin@evollit.test

Changed at 26/09/2024 12:53:52 by keyman keymanager@evollit.test

Name FZH 1

IAM ID (Company ID)

Cost centre required ✓

Standard cost centre ABC-987564321

#### 5.4.7.2 Set new cost centre

Enter the new cost centre and click on **Save**.

The cost centre is overwritten with the new value for all OBUs of the vehicle keeper.

## Overwrite cost centre for OBUs

ⓘ Warning, this action overwrites the existing cost centres on all OBUs of vehicle keeper "FZH 1"!

Cost centre \*

XYZ-123456789

Cancel
Save

## 5.5 Check Subset-114 response messages

Subset-114 requires that OBUs return the result of key operations in the form of response messages. These response messages can be read by the HaaS to check for errors.

### 5.5.1 Select messages to be imported and start import

To start the import, proceed as described below and as shown in the screenshot

- Select menu item **Subset-114 Check**
- **Select files** or drag & drop them into the marked area
- Click on **Start upload**

You can import one or more Subset-114 response messages in one process. The messages can have any file extension or none at all. ZIP files are also supported, whereby only files with the extension *.rsp* and *.rxl* within the ZIP file (also in subfolders) are considered Subset-114 response message.

### 5.5.2 Perform check

After clicking on **Start upload**, all uploaded files are checked for valid Subset-114 response messages.

Messages are considered valid under the following conditions:

- The message type is RESPONSE\_NOTIF
- The sender must be an OBU known in the HaaS (Subset-114 field Sender ETCS-ID-EXP)
- The receiver must be the HaaS (Subset-114 field Receiver ETCS-ID-EXP)

The valid Subset-114 messages are then analysed and the result is displayed.

The check of the Subset-114 response messages does not trigger any action in the HaaS, but only serves informative purposes in order to recognise any processing errors on the part of the OBU. This means that no data changes, such as status changes or similar, take place.

### 5.5.3 Results

After the analysis, both a summary and a list with detailed information on each message are displayed. If successful, the number of successful response messages should correspond to the number of Subset-114 messages processed on the OBUs.

Incorrect results must be investigated, as this means that a Subset-114 message has not been successfully processed by the OBU. This may mean that an authentication key has not been installed and therefore cannot be used.

**Summary**

Number of files:	5
Number of Subset-114 messages:	5
Number of ignored files:	0
Number of ignored Subset-114 messages:	0
Number of Subset-114 notifications:	5
Number of Subset-114 notifications with result OK:	1
Number of Subset-114 notifications with result Error:	4

**Checked Messages**

Message	ETCS ID	ETCS ID (hex)	Result	Status code	Status description	Additional information
resultcode_003.rsp	13767	0x020035C7	Error	3	Authentication algorithm not implemented	
resultcode_006.rsp	13767	0x020035C7	Error	6	Key not known	
resultcode_005.rsp	13767	0x020035C7	Error	5	Decryption algorithm not implemented	
resultcode_004.rsp	13767	0x020035C7	Error	4	Transport key not found	
resultcode_001.rsp	13767	0x020035C7	OK	1	Request received successfully	

## 5.6 Notification about deleted authentication keys

The system continuously informs you of any deleted, not yet expired authentication keys. This check takes place every few minutes.

This notification is sent to you as *Vehicle Keeper* user as well as to all *Key Managers* and *Administrators*.

If an authentication key has been deleted unexpectedly, please be sure to contact the relevant departments. The cancellation may have been carried out by the issuing infrastructure KMC. It must be assumed that the key has already been removed from the RBCs and that the affected OBU therefore can no longer run on the respective ETCS lines!