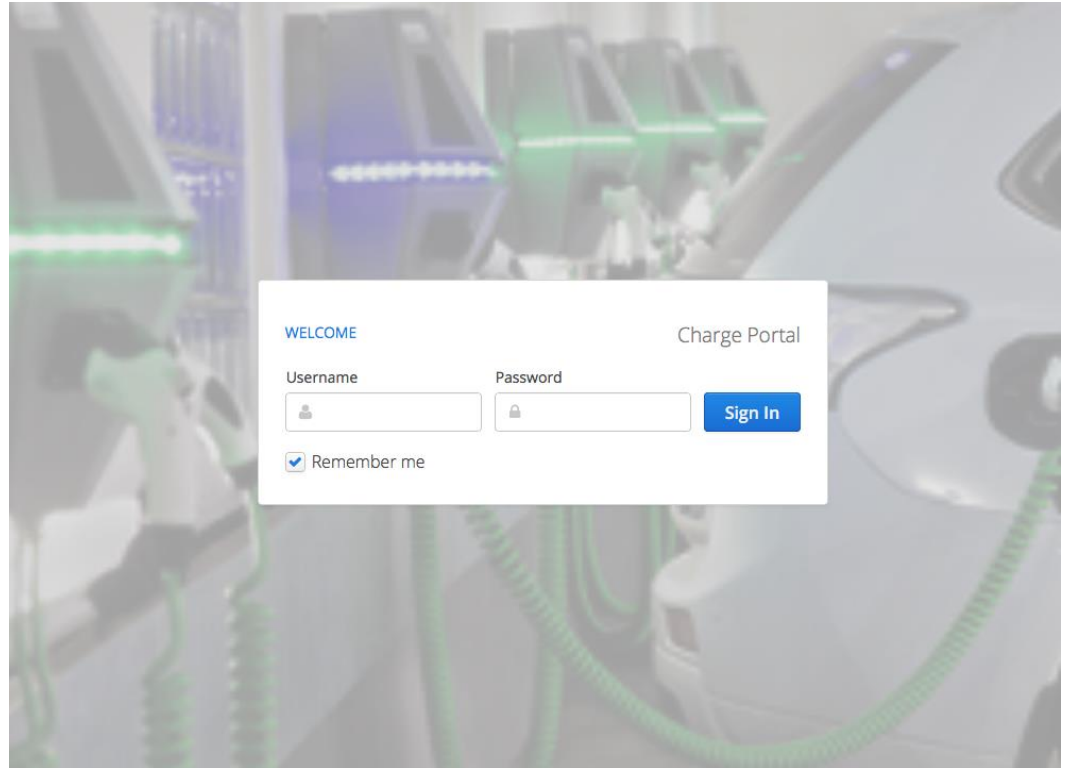


CTEK

E-MOBILITY

Charge Portal - Charge Management System -



User Manual



E-MOBILITY

User manual – Charge Portal

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Notes

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Table of content

- **Introduction**..... 1
- **Get started**..... 1
- **Architecture**..... 2
 - Network view.....2
 - Portal users3
- **User roles**..... 4
 - Administrator4
 - Site administrator4
 - EV User.....4
 - Support User4
- **Administration**..... 5
 - Login6
 - Overview panel.....7
 - Navigation.....8
 - Diagrams9
 - Statistics10
 - User Provisioning.....12
 - Alarms.....14
 - Configuration15
 - System Level.....15
 - Site Level.....18
 - Floor Level20
 - Charging station Level22
 - Outlet Level.....26

Introduction

Charge Portal is a modern portal for administration charging stations, user of charging stations and statistics related to charging.

Welcome to Charge Portal. Charge Portal is a web-based portal containing application related to all actors in EV charging.

Get started

Access to Charge Portal requires:

1. A computer with internet access with installed internet browser (Late versions of Firefox, Internet Explorer, Chrome and Safari are supported).
2. CTEK E-Mobility shall provide:
 - URL to portal: <https://<companyname>.oamportal.com>
 - Username and password for logging in to the portal. Username is always an email address and the password shall be at least 8 characters long and contain a combination of numbers and letters.

Architecture

Charge Portal is designed so that the user roles determine what functionality is provided.

All information about charging stations, EV charging services and EV charging users are configured and stored in Charge Portal.

Network view

The flowing figure shows how users and charging stations communicates over Internet to Charge Portal.

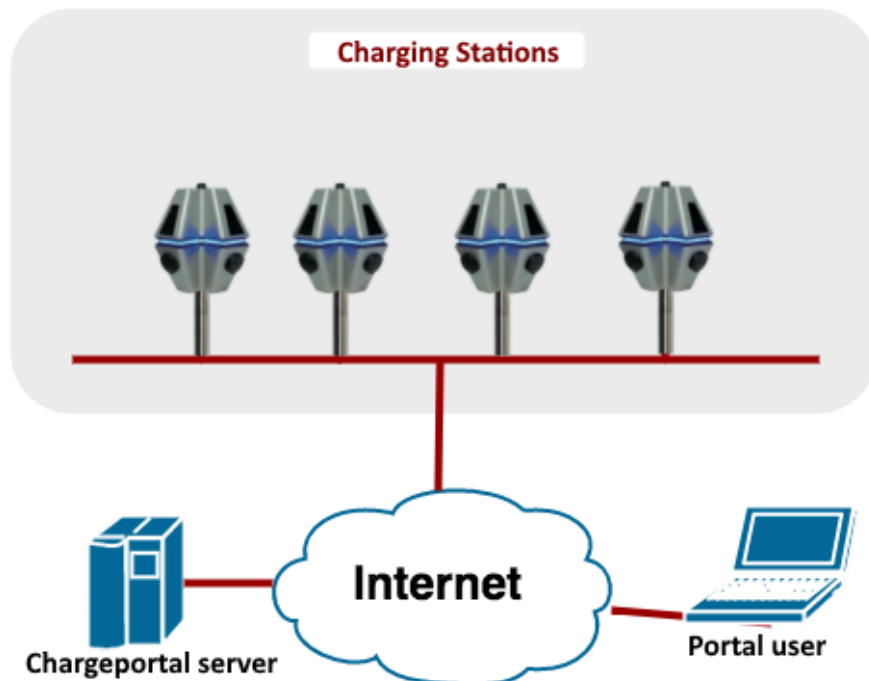


Figure 1 Network view

Note

CTEK E-Mobility is running daily backups of the database connected to Charge Portal minimizing data loss in case of server crash,

Portal users

There are four user roles in Charge Portal. Each role has access to specific information required for the role.

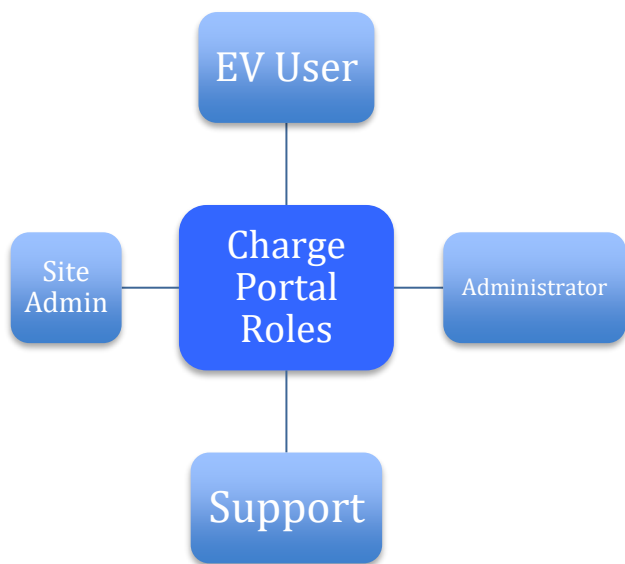


Figure 2 Portal user roles

Note

Only administrator can create users

User roles

In the following chapter are the different user roles described.

Administrator

As administrator are charging stations, users, services and statistics handled in the system. The administrator has full permission.

See chapter 4 for more info about administration.

Site administrator

A site administrator has permission to view and configure for given site.

The information displayed for site administrators are limited to the site. Implying only charging stations users and statistics related to the site is visible.

EV User

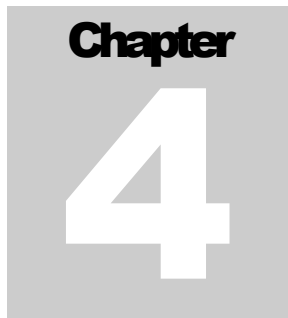
As EV User is information related to your charging displayed.

An EV User is identified by a mobile app or an RFID tag before. Based on the identification before charging is information displayed for the EV user account. Information about all charging sessions is shown for the user.

Support User

A support user gets access to configuration and supervision functions of the portal.

A logged in support user has the permission to configure and update software on a charging station.



Administration

In this chapter is the different web pages of Charge Portal explained

Note

You need to log in as administrator to have access to the information shown in this chapter.

Note

The screenshots shown in the document may vary a bit compared to what is shown on your web browser due to different theming.

CHARGE PORTAL

Login

CTEK E-Mobility will provide you with the log in information for the administrator account. You need *URL*, *username* and *password* to log in to Charge Portal.

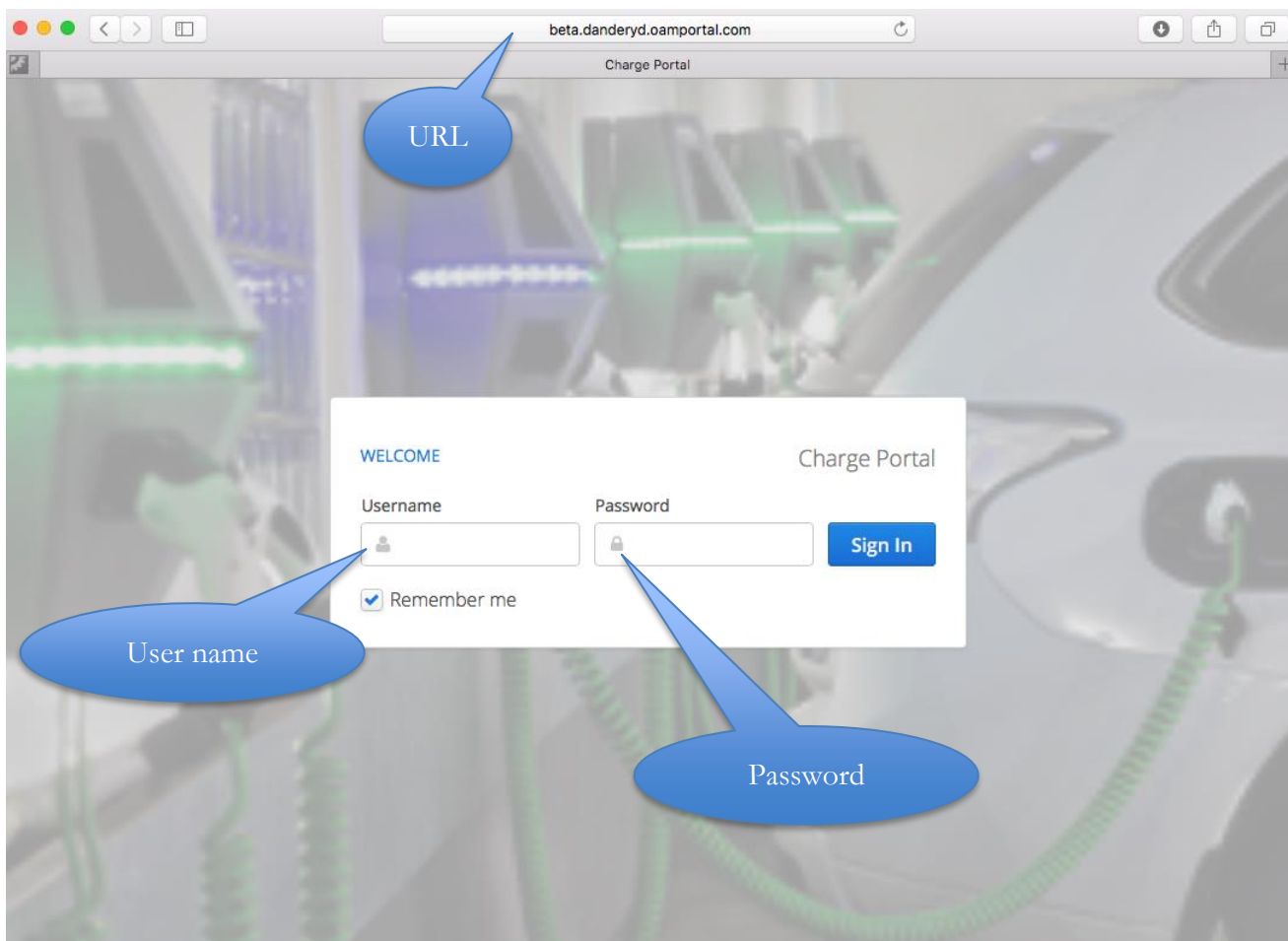


Figure 3 Login page

CHARGE PORTAL

Overview panel

A successful log in attempt will direct you to the dashboard page. You navigate to desired function group by clicking on the menu to the left. You select node of interest in the navigator menu to the left. Information to the right is adapted based on the node selected.

Four windows are shown in the dashboard panel. You can select the windows you want to view under user settings.

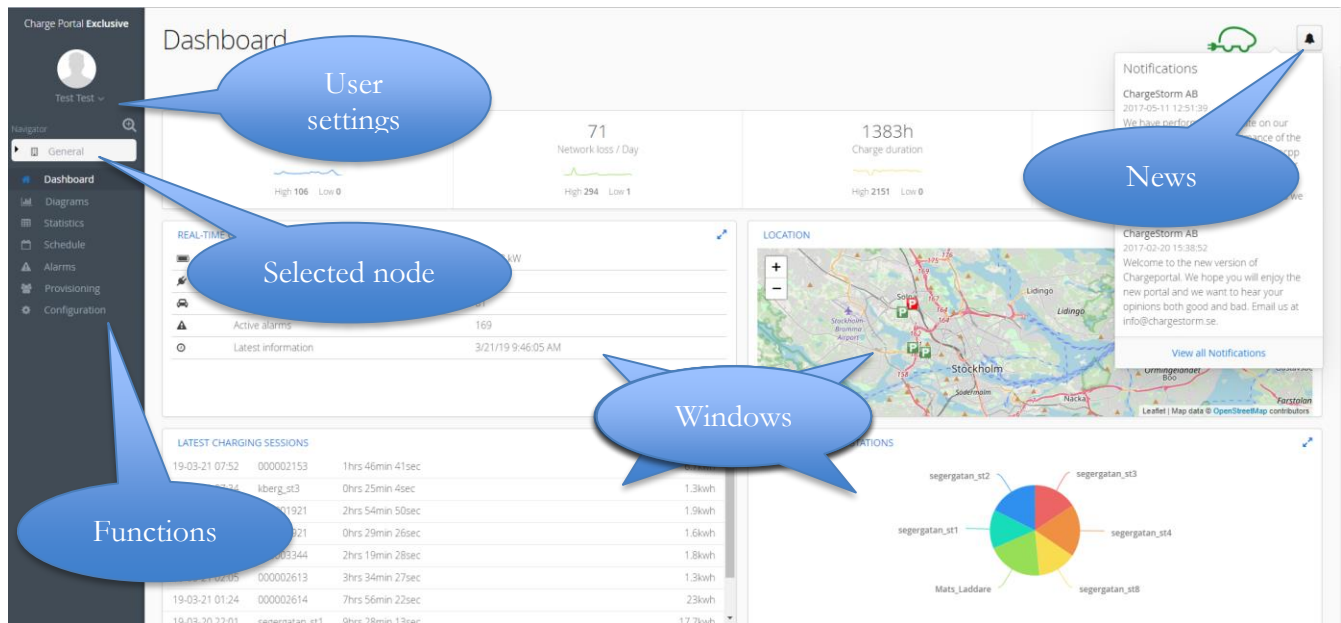


Figure 4 Dashboard page

Charge Portal news are shown when clicking on the news button. User name and password can be changed under user settings.

Navigation

You need to understand the navigator function in order to easily find information about a given charging station. The tree component "Navigator" aggregates information in four levels; system, site, floor and charging station. For each level exist different configuration parameters. The information shown adapts depending on selected level in the navigator. Black text indicate is available, idling, and online, blue text indicate charging is occurring, red text indicates fault and grey transparent text indicate it has not become online.

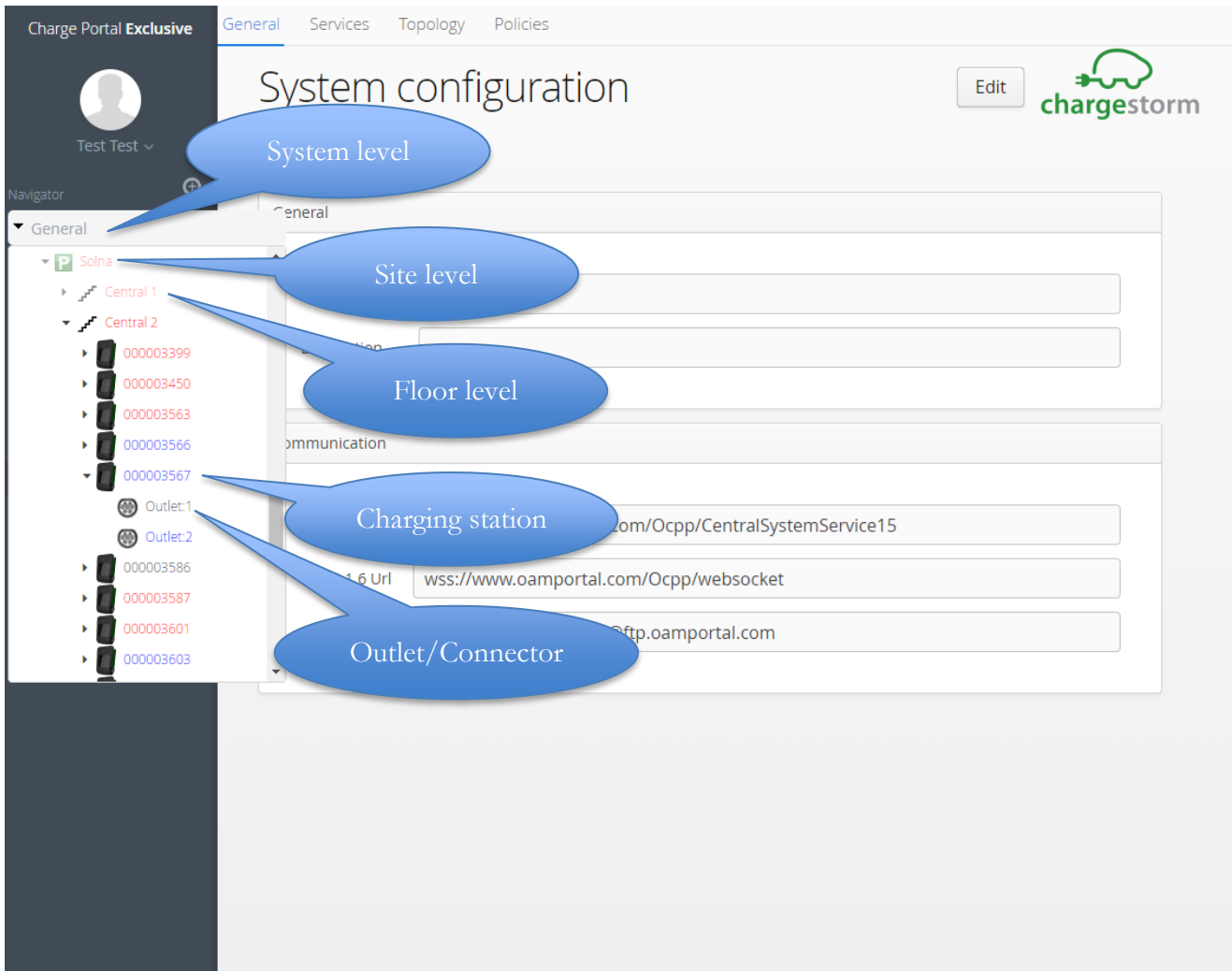


Figure 5 Navigation

Diagrams

For the menu choice *Diagram* is charging statistics shown as diagrams. You can select between in predefined number of diagrams in the menu and also adjust the time line on the bottom part of the diagram.

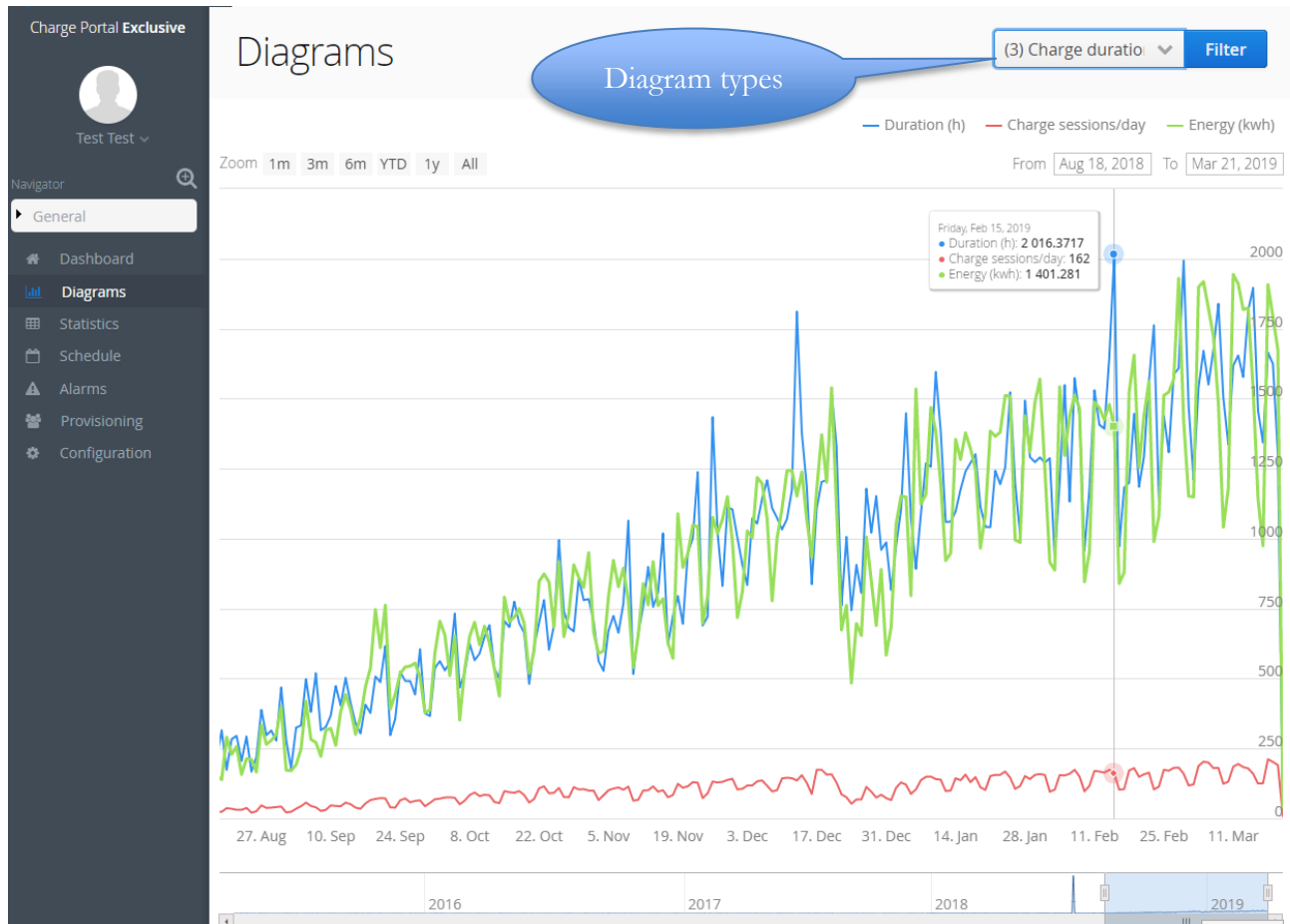
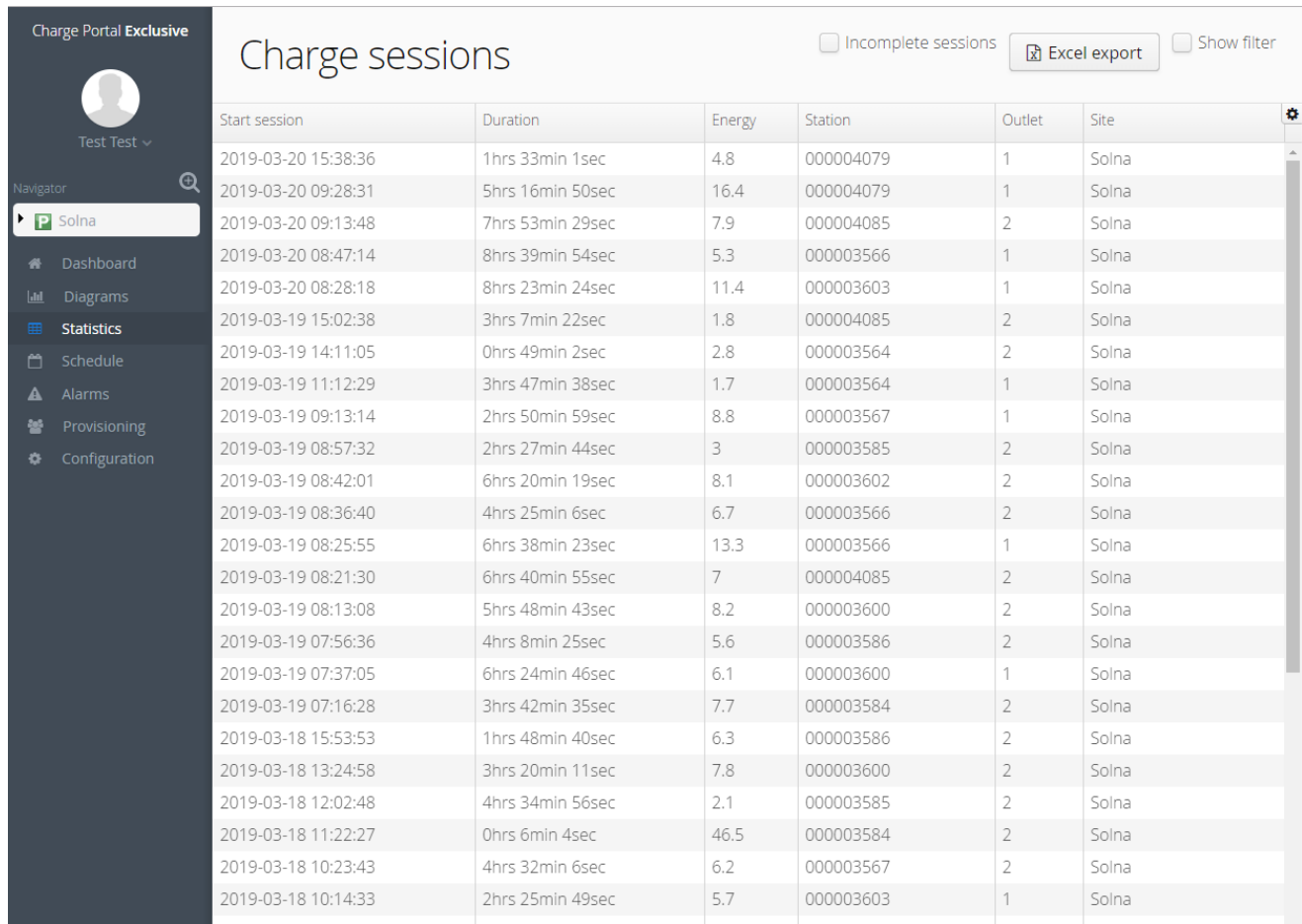


Figure 6 Diagram page

CHARGE PORTAL

Statistics

In the statistics menu is a full-size table shown containing statistics per charging session. You can filter on any column and export the filtered result to an Excel file. By right-clicking on a charging session and selecting *Show* is all information about a charging session presented in a new window. Example below is showing charging session for the specified site via the navigator.



Start session	Duration	Energy	Station	Outlet	Site
2019-03-20 15:38:36	1hrs 33min 1sec	4.8	00004079	1	Solna
2019-03-20 09:28:31	5hrs 16min 50sec	16.4	00004079	1	Solna
2019-03-20 09:13:48	7hrs 53min 29sec	7.9	00004085	2	Solna
2019-03-20 08:47:14	8hrs 39min 54sec	5.3	00003566	1	Solna
2019-03-20 08:28:18	8hrs 23min 24sec	11.4	00003603	1	Solna
2019-03-19 15:02:38	3hrs 7min 22sec	1.8	00004085	2	Solna
2019-03-19 14:11:05	0hrs 49min 2sec	2.8	00003564	2	Solna
2019-03-19 11:12:29	3hrs 47min 38sec	1.7	00003564	1	Solna
2019-03-19 09:13:14	2hrs 50min 59sec	8.8	00003567	1	Solna
2019-03-19 08:57:32	2hrs 27min 44sec	3	00003585	2	Solna
2019-03-19 08:42:01	6hrs 20min 19sec	8.1	00003602	2	Solna
2019-03-19 08:36:40	4hrs 25min 6sec	6.7	00003566	2	Solna
2019-03-19 08:25:55	6hrs 38min 23sec	13.3	00003566	1	Solna
2019-03-19 08:21:30	6hrs 40min 55sec	7	00004085	2	Solna
2019-03-19 08:13:08	5hrs 48min 43sec	8.2	00003600	2	Solna
2019-03-19 07:56:36	4hrs 8min 25sec	5.6	00003586	2	Solna
2019-03-19 07:37:05	6hrs 24min 46sec	6.1	00003600	1	Solna
2019-03-19 07:16:28	3hrs 42min 35sec	7.7	00003584	2	Solna
2019-03-18 15:53:53	1hrs 48min 40sec	6.3	00003586	2	Solna
2019-03-18 13:24:58	3hrs 20min 11sec	7.8	00003600	2	Solna
2019-03-18 12:02:48	4hrs 34min 56sec	2.1	00003585	2	Solna
2019-03-18 11:22:27	0hrs 6min 4sec	46.5	00003584	2	Solna
2019-03-18 10:23:43	4hrs 32min 6sec	6.2	00003567	2	Solna
2019-03-18 10:14:33	2hrs 25min 49sec	5.7	00003603	1	Solna

Figure 7 Statistics page

Note

Export function to Excel has a limit of 64 000 lines.

CHARGE PORTAL

For each charging session is the following information stored.

Parameter	Explanation
Start time	Time when charging started in format <yyyymm-dd hh:mm:ss.s>
Duration	Length of charging session
End time	Time when charging ended (cable disconnected from car) <yyyymm-dd hh:mm:ss.s>
Node Identity	Unique identity for charging station
Site	Site name for which charging took place
Energy	Energy for charging session in kwh
Charging station	Name of charging station
Authentication	Applied authenticated method for charging. <ul style="list-style-type: none">• Anonymous (0) – Unknown user. No authentication• RFID(1) – RFID tag applied and approved by system before charging.
Session identity	A unique identity for a charging session
Outlet Id	The number of the outlet used for. A charging station can have up to. Four outlets/connectors numbered 1 - 4
Server log date	Date when Charge Portal received the information of the charging session in format <yyyymm-dd hh:mm:ss.s>
Email	Email for the user of the charging session (if known). Note email is not known for anonymous charging.
Energy meter value	Energy meter value in kwh.

User Provisioning

In user provisioning is the administration of user accounts done. You create, edit and delete user by right clicking in the table to the right side.

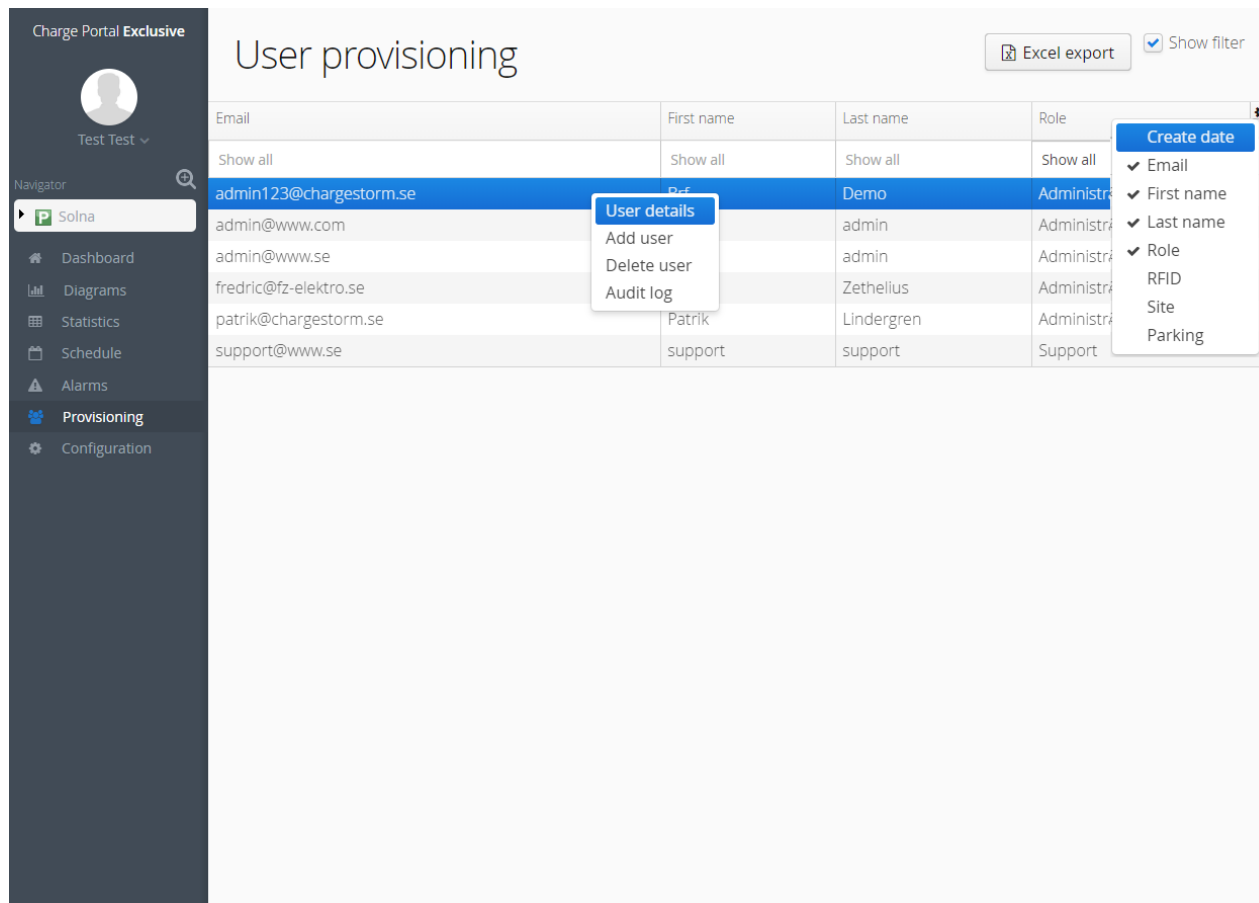


Figure 8 User provisioning page

CHARGE PORTAL

ADD EV USER

Right click in table and select "Add User", select role 'EV user' to create an EV user account. The following parameter must then be set for an EV User:

- **First name** – First name of new user
- **Last name** – Last name of new user
- **Email** – Email of new user. The email must be unique.
- **Password** – password for the new user
- **RFID** – RFID identity that will be associated with user account. RFID code is preferably entered in decimal format. Leave blank if RFID is not in use.

ADD ADMINISTRATOR

When adding an administrator must the following parameter be configured:

- **First name** – First name of new user
- **Last name** – Last name of new user
- **Email** – Email of new user. The email must be unique.
- **Password** – password for the new user
- **Email at alarm** – Select this if the user shall receive an email every 24h with active alarms in system.

ADD SITE ADMINISTRATOR

When adding a site administrator must the following parameter be configured:

- **First name** – First name of new user
- **Last name** – Last name of new user
- **Email** – Email of new user. The email must be unique.
- **Password** – password for the new user
- **Email at alarm** – Select this if the user shall receive an email every 24h with active alarms in system.
- **Site** – Site for which the new user shall have access too

CHARGE PORTAL

Alarms

In the service menu are alarm information displayed. Active alarms, Alarm history and Event log are three different tables that can be shown. The table content can be exported to an Excel file.

Charge Portal Exclusive

Test Test

Export to excel

chargestorm

Alarm status

Active alarms			
Create date	Node name	Description	Clear
2019-03-21 02:51:46	000003239 Connector: 1	Failure to control power switch.	[Clear]
2019-03-20 19:23:12	Forsbacka2766234 Connector: 1	Connector lock failure	[Clear]
2019-03-20 16:00:23	000003369	No network contact	[Clear]
2019-03-20 15:13:30	000004082 Connector: 1	Failure to read power meter.	[Clear]
2019-03-20 15:13:30	000004082 Connector: 2	Failure to read power meter.	[Clear]
2019-03-20 12:10:24	ctek_station1 IntSol	No network contact	[Clear]
2019-03-20 11:00:25	000004418	No network contact	[Clear]
2019-03-19 18:30:25	000003900	No network contact	[Clear]
2019-03-19 18:14:24	000003900 Connector: 1	Over current protection device has tripped	[Clear]
2019-03-19 16:14:09	000003399 Connector: 1	Failure to read power meter.	[Clear]
Alarm history			
Event log			

Figur 9 Active alarm

The following table list supported alarms.

Alarm	Explanation
Not registered	The charging station has never registered to Charge Portal. No communication
Hardware fault	The charging station has faulty hardware
Configuration fault hardware	Charging station software and hardware mismatch
Fuse	Fuse has blown
Temperature	Temperature alarm
No network	No connection between Charge Portal and charging station

Configuration

Configuration is the most complex part of the Charge Portal and will change appearance depending on what level the user has chosen in the navigator. This document will now show and describe the configuration menu option for every navigator-level.

SYSTEM LEVEL

At the system level is general information, third party services and node topology configured. Configuration menu alternative is primarily used for adding/editing and deleting charging stations in the system.

General

The following figure shows the configurable parameters on system level. System name, description and server addresses are the parameters. The FTP-server is used for saving log files uploaded from charging stations and for

storing software images for charging stations. CTEK E-Mobility standard ftp-server is <https://logs.portal@ftp.oamportal.com>.

OCPP1.5 is based on SOAP(**Simple Object Access Protocol**).

Address to OCPP1.5-server is <https://<companyname>.oamportal.com/Ocpp/CentralSystemService15> where companyname is your portal instance name. For example is the company name "fastcars" is the url: <https://fastcars.oamportal.com/Ocpp/CentralSystemService15>

OCPP1.6 is based on websockets and REST (**Representational State Transfer**).

Address to OCPP1.6-server is <wss://<companyname>.oamportal.com/Ocpp/websocket>

The screenshot shows the 'System configuration' page in the Charge Portal. The page has a sidebar with a 'Configuration' menu item highlighted. The main content area is divided into 'General' and 'Communication' sections. The 'General' section contains fields for 'System name' (value: General) and 'Description'. The 'Communication' section contains fields for 'OCPP 1.5 Url' (value: http://www.oamportal.com/Ocpp/CentralSystemService15), 'OCPP 1.6 Url' (value: wss://www.oamportal.com/Ocpp/websocket), and 'FTP Server' (value: ftp://anonymous:none@ftp.oamportal.com). Blue callout bubbles with arrows point to these fields, with labels: 'System name', 'Description', 'OCPP1.5-server address', 'OCPP1.6-server address', and 'FTP-server address'. The 'chargestorm' logo is visible in the top right corner of the page.

Figure 10 Navigations

Topology

New sites, floors and nodes (charging stations and grid controllers) are created at the *topology tab*. Use "Create" and "Remove" buttons to create or remove nodes. To be able to create a floor must the parent site first be selected.

Accordingly, to create charging stations, i.e. a site or floor must first be selected.

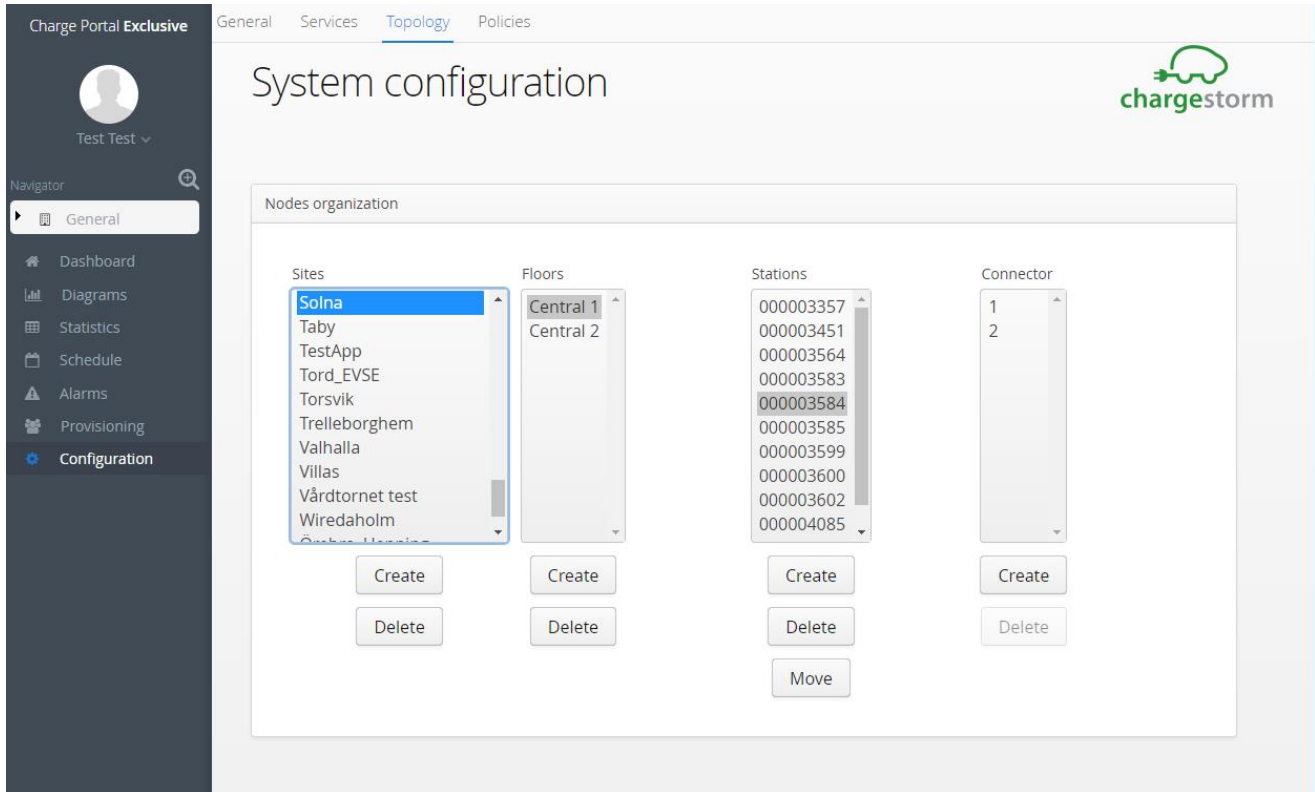


Figure 11 Topology



Notes

It is not possible to delete nodes that have leaves (sub-nodes) without first deleting the sub-nodes.

Services

Active third-party services are shown in the *service tab*. Only CTEK E-Mobility can activate new services. Example of services are; Nobil/Laddinfra(map service) and Easypark(payment service). Information about how to configure these services are provided by CTEK E-Mobility. By selecting service in the table is information presented about the service under *Service Information*.

The screenshot shows the 'Charge Portal Exclusive' interface with the 'Services' tab selected. The main heading is 'System services' with an 'Edit' button and the 'chargestorm' logo. A table titled 'Active services' lists three services. The 'Easypark payment' service is highlighted in blue. Below the table is a 'Service information' section with four input fields: 'Service provider' (Easypark payment), 'Description' (Mobile app payment service), 'Service URL' (https://evc.easyparksystem.net/charge-storm/notify), and 'Secret' (tokens=123123124). A sidebar on the left contains a user profile for 'Test Test' and a navigation menu with options like Dashboard, Diagrams, Statistics, Schedule, Alarms, Provisioning, and Configuration.

Service	Provider	Description
uppladdning.nu	HY01	BRF Vålbehaget
	NOBIL	Nobil Map Service
	Easypark payment	Mobile app payment service

Service information

Service provider:

Description:

Service URL:

Secret:

Figure 12 Services

SITE LEVEL

Site configuration is divided into general and location specific information.

General

On the *General- tab* is the basic information like name and identification of the specified site.

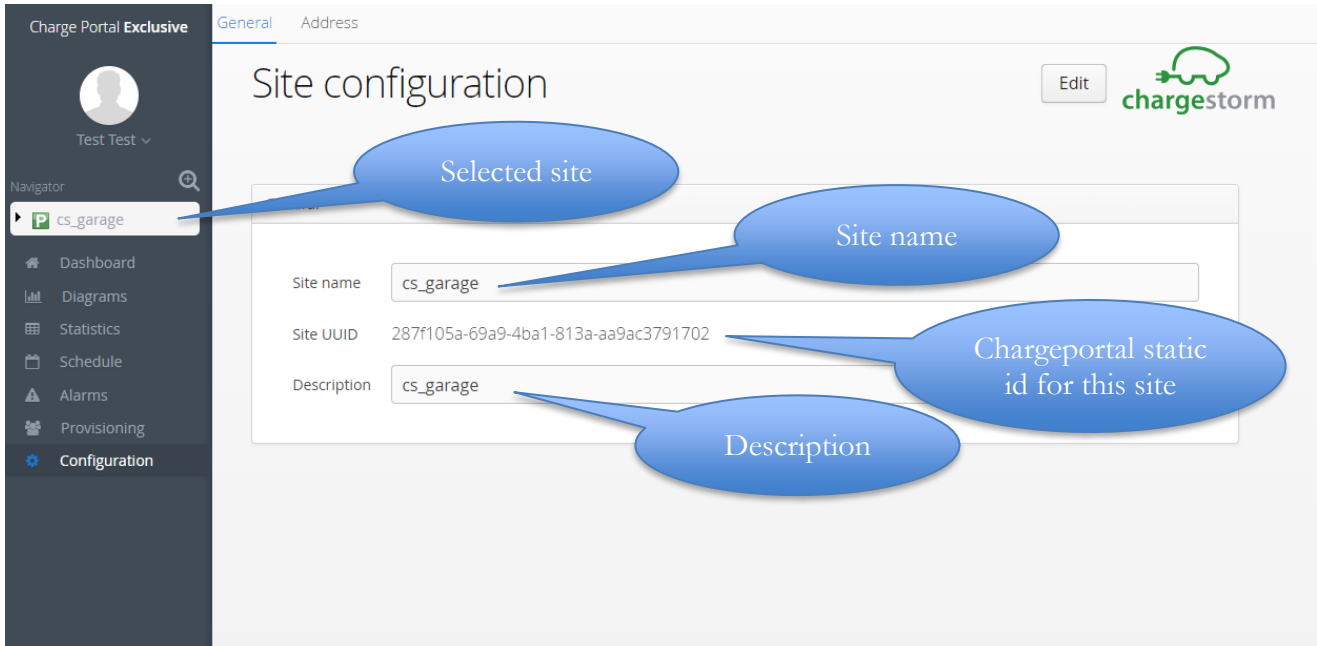


Figure 13 General site parameters

Address

On the *Address-tab* is the location selected by either entering the address in the text fields or by clicking on the right location on the map.

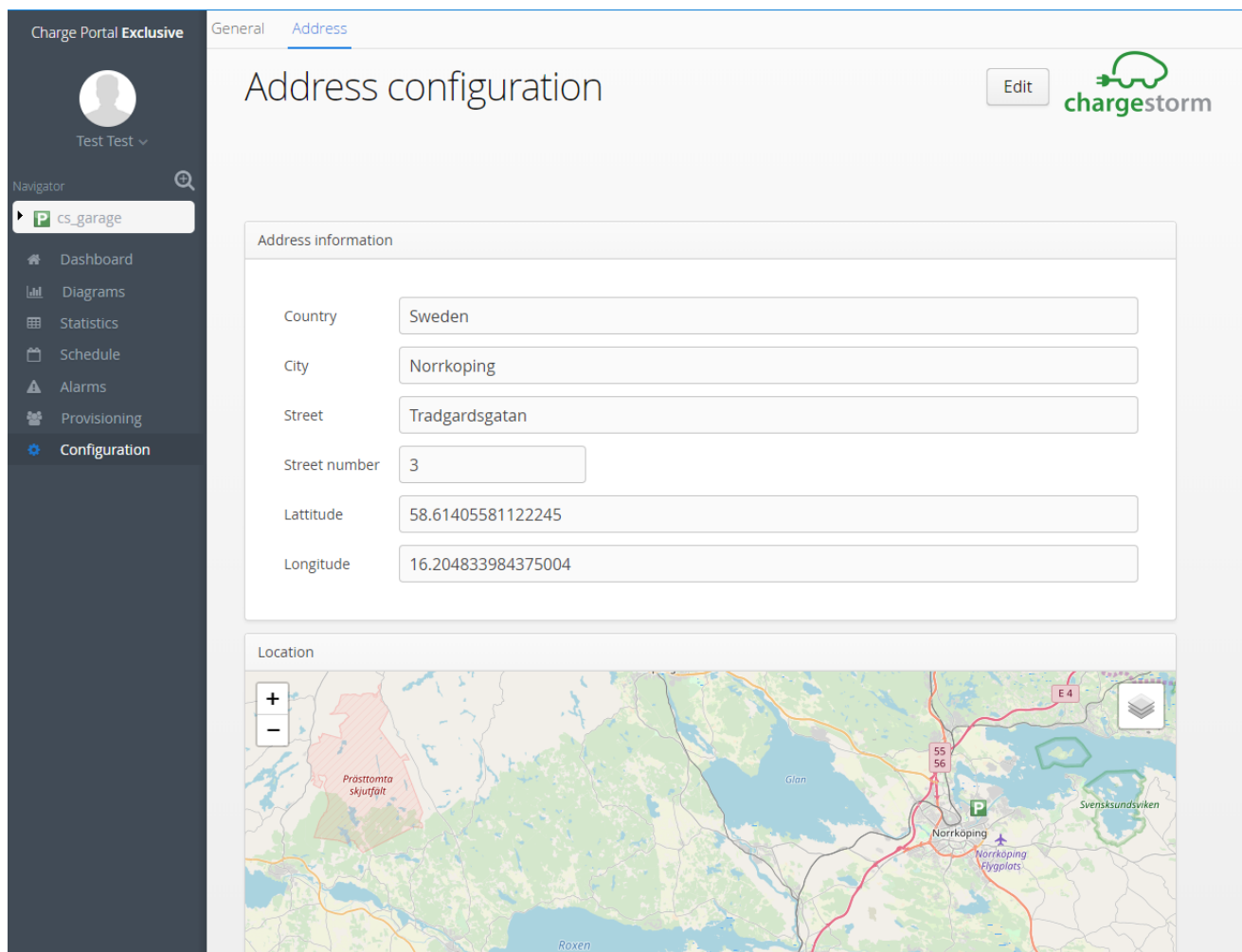


Figure 14 General site location

FLOOR LEVEL

At floor level is configuration divided into general information and the positioning of the stations.

General

At the general tab is the name of the floor plan configured and it is possible to upload the map of the floor (in jpg-format with max size of 2Mbyte). If a parking map is missing can the charging station be placed directly on the site level.

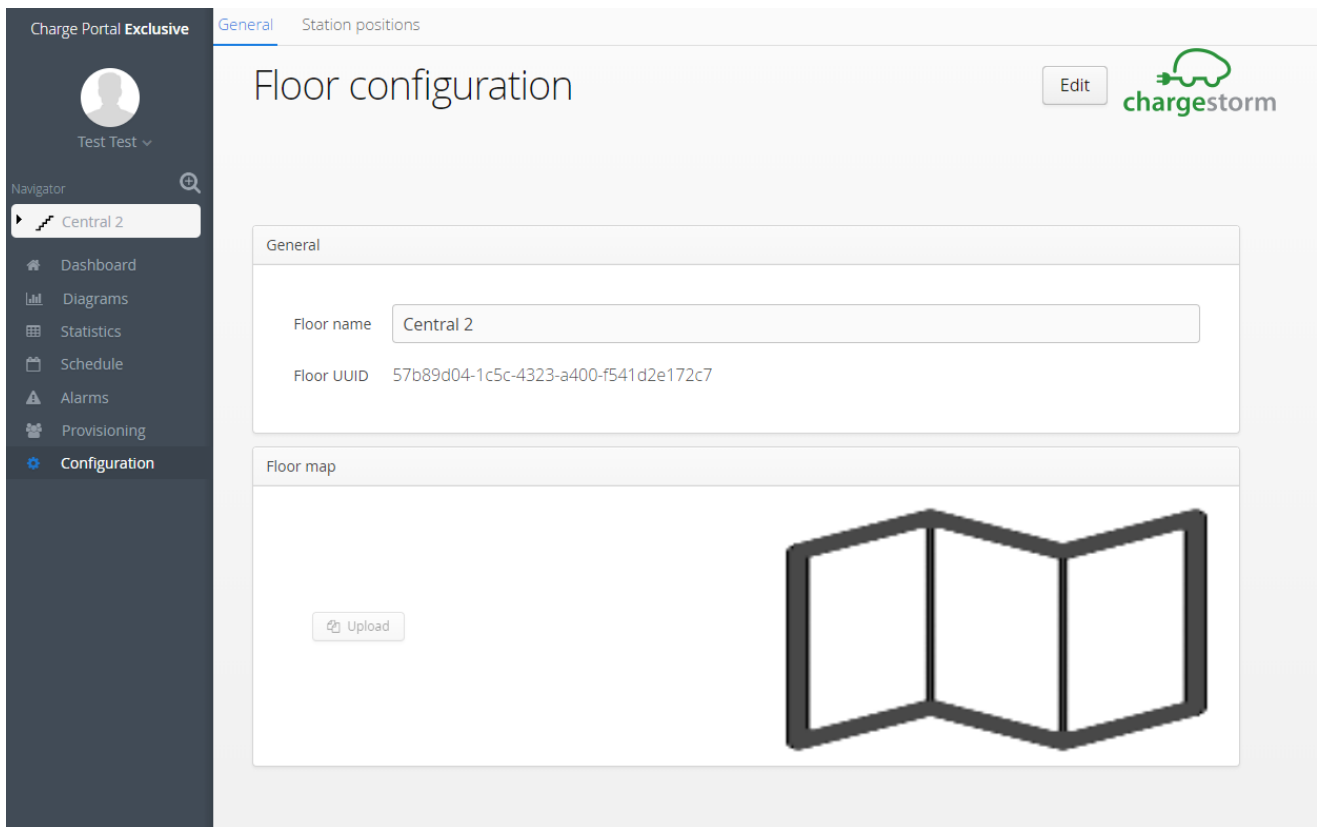


Figure 15 General Charging station map parameters

Charging station position

At the *Charging station position* are charging stations moved to correct position in the parking map. Green icons imply that charging station is available, ready for charging. Red icons indicate fault while blue icons states that charging station is in use.

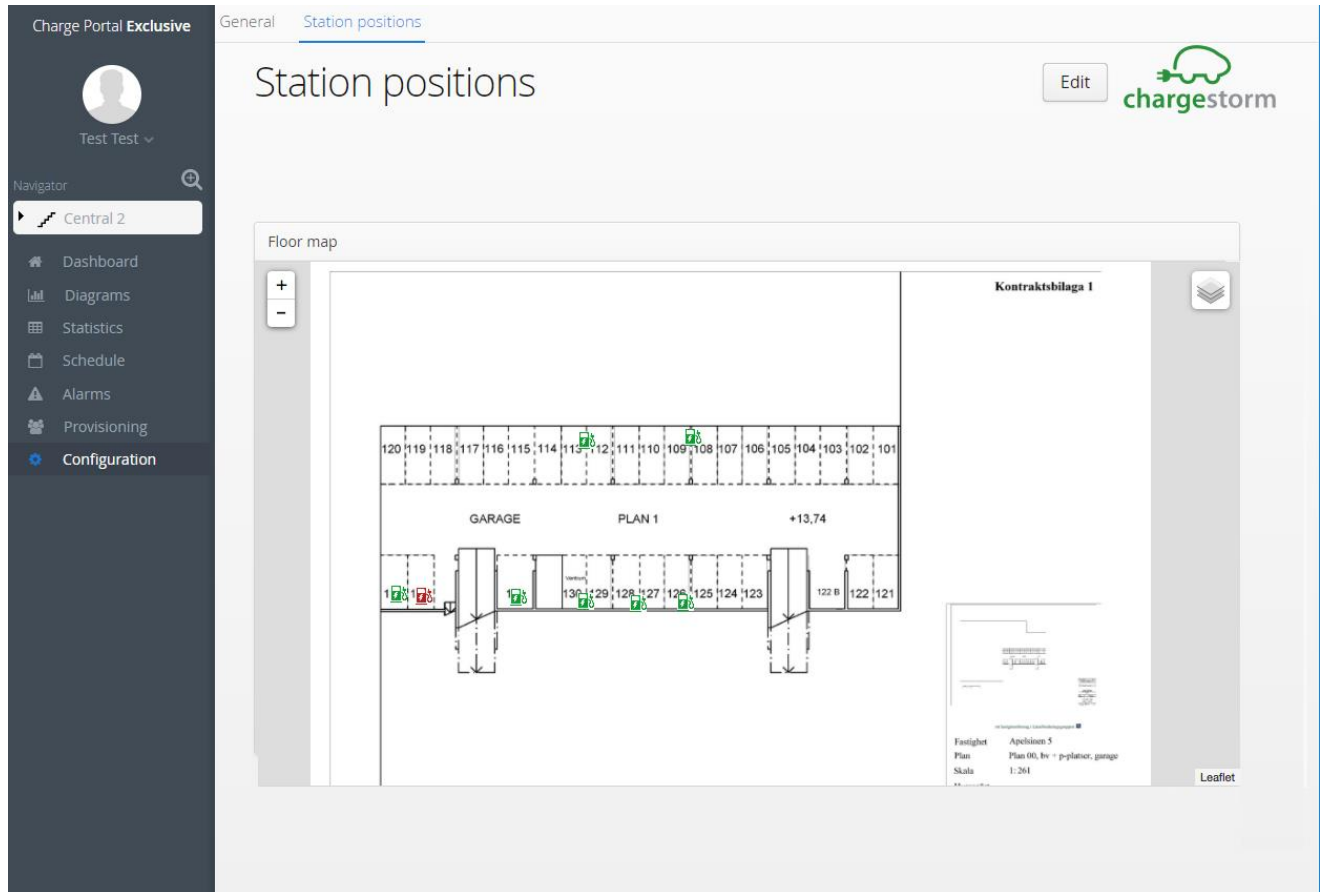


Figure 16 Charging station position

CHARGING STATION LEVEL

At charging station level is configuration divided into general, address, control and OCPP-configuration.

General

At the general-tab is the logical name, description and ChargeboxId of a charging station configured. The ChargeboxId is used for pairing the physical charging station with the logical charging station entity in the portal. It is

important that the naming is identical in both charging station and portal. The communication will not work in case the naming in the systems differ.

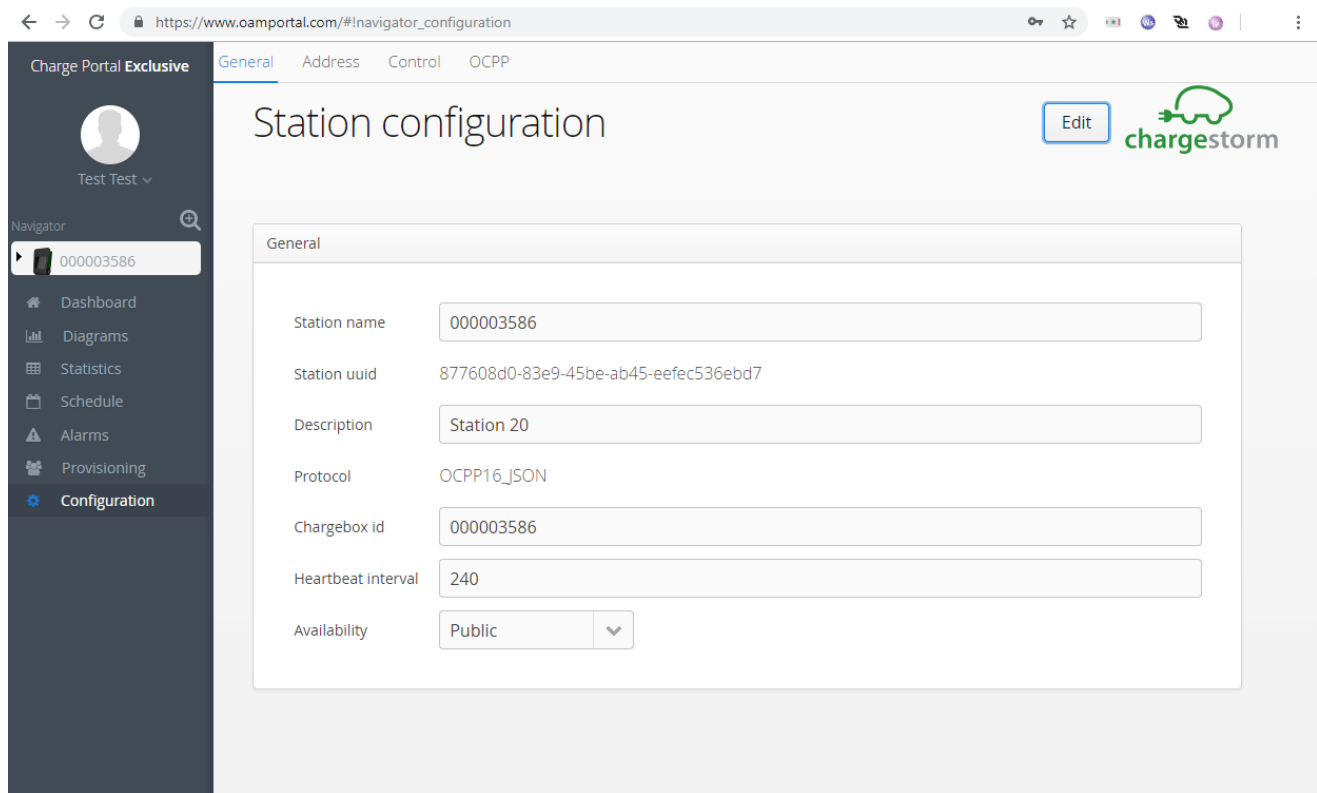


Figure 17 General

Address

At the address tab you can edit the charging station position if it does not belong to a floor.

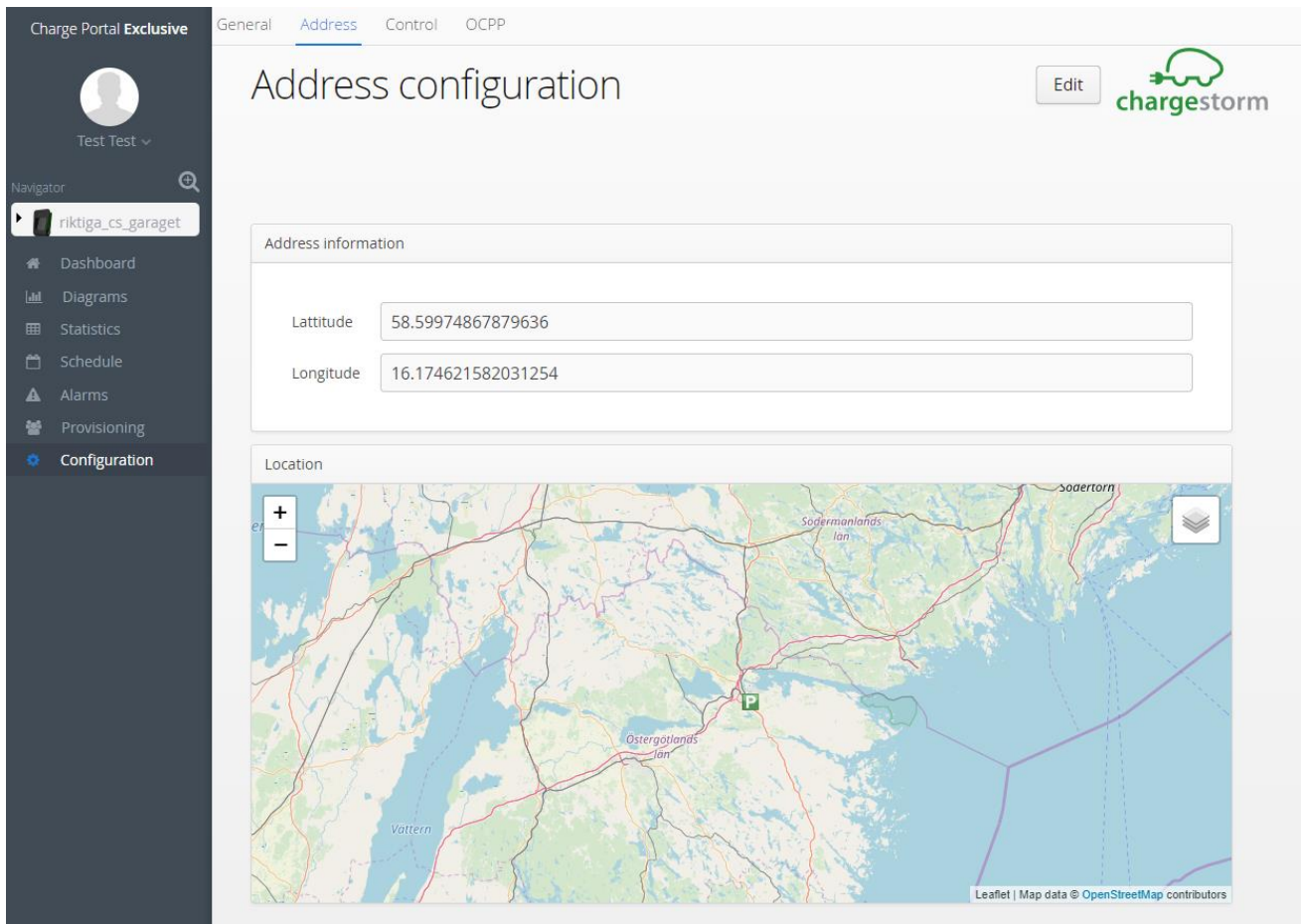


Figure 18 Address for charging station

Control

From the control-tab is the charging station remotely controlled. Functions like reboot, software update, download of RFID tags are part of the functionality. Another important function is the ability to remotely to start

or stop charging for a given connector. A connector is either an EV outlet or a charging cable with gun depending on how the charging station is equipped.

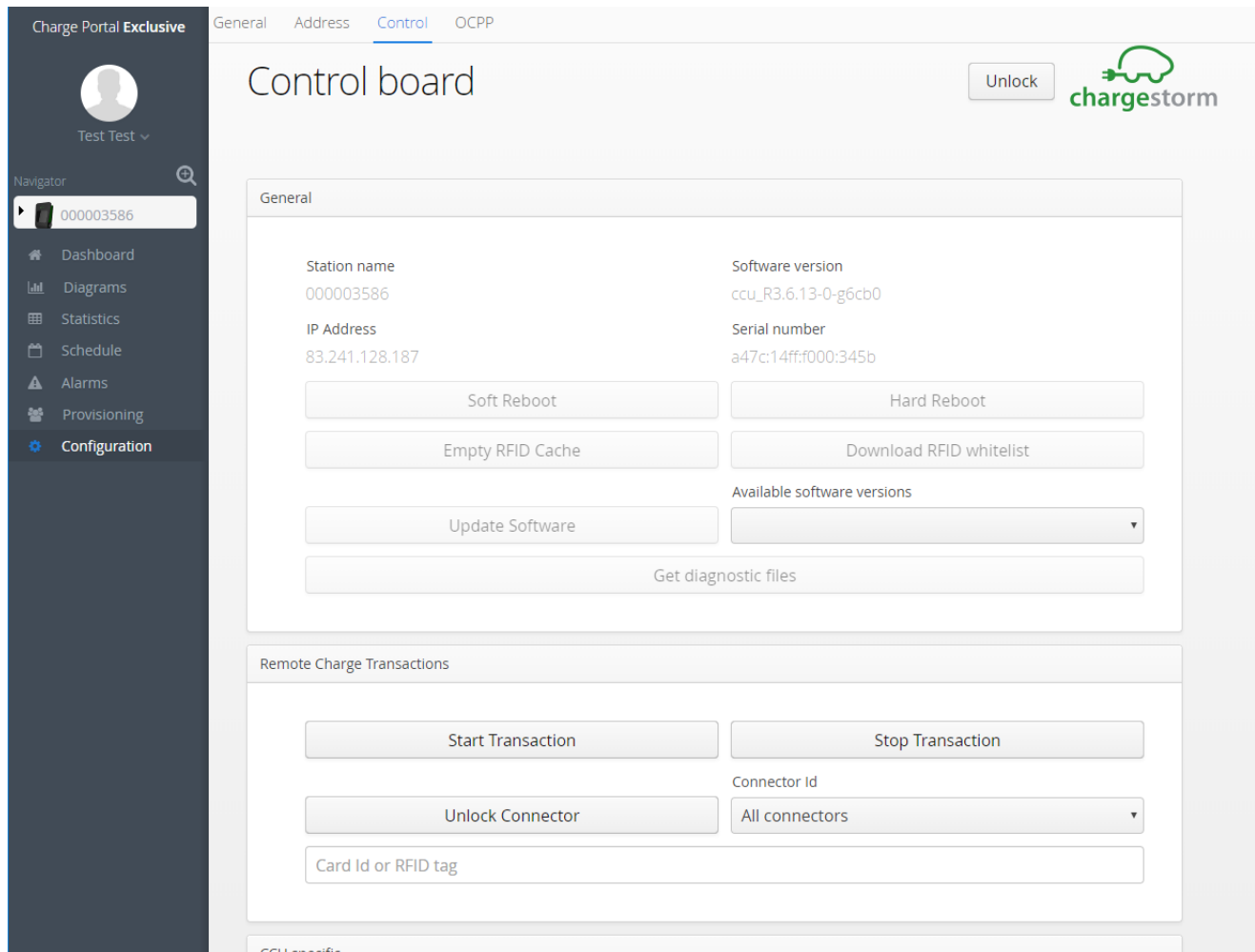


Figure 19 Control board

OCPP Configuration

The OCPP-tab contains a table over all configurable parameters for a given charging station. OCPP is the communication protocol that enables the configuration of the charging station from Charge Portal. First time a charging station connects to Charge Portal are the parameters uploaded by default. For future updates of the charging station parameter settings must the "upload"-button be pressed. Be careful when changing the parameter settings of a charging station. Incorrect usage may result in lost network communication or that the charging station is malfunctioning.

Parameter	Value	Edit
AuthCacheLifeTime	2592000	Save
AuthorizationCacheEnabled	1	Save
chargeboxidentity	000003586	Save
ChargingStationModel	EVA	
ChargingStationVendor	ChargeStorm AB	
ClockAlignedDataInterval	0	Save
ConnectionTimeOut	180	Save
debug/soap	0	Save
development/mobilenetworkinfo	0	Save
endpoint	wss://www.oamportal.com/Ocpp/websocket	Save
FirmwareVersion	ccu_R3.6.13-0-g6cb0	

Figure 20 OCPP-Configuration

Notes

Charging stations must support communication protocol OCPP v1.5 or OCPP v1.6 in order to work with Charge Portal.

OUTLET LEVEL

Outlet level has only one tab called *General*.

General

The general-tab for an outlet is containing basic configuration, like what type it is and what mode it has. But also, configuration for external ids for external services that is active within Charge Portal.

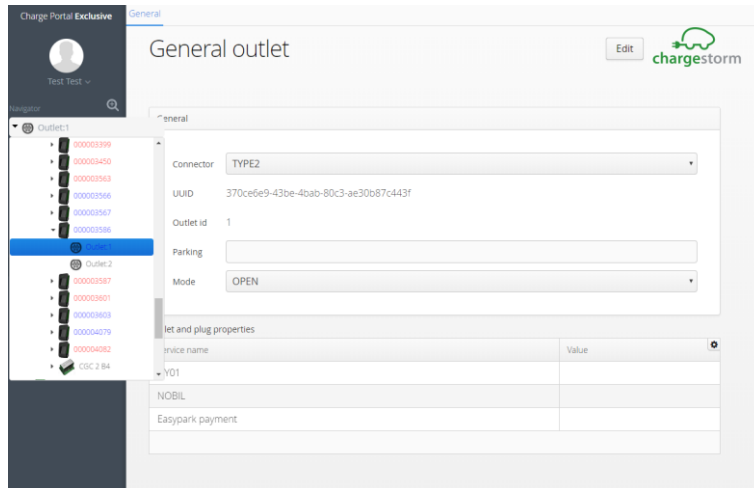


Figure 21 General outlet

Parameter	Explanation
Connector	What type of outlet it is.
UUID	The unique id the outlet has within Charge portal. This is used for external services to remotely start and stop the charging of the outlet.
Outlet id	Charging station internal numbering of the outlets.
Parking	This field is used for further description or identification if needed
Mode	How the outlet should behave. OPEN means anybody can charge. RFID means authorization is needed to charge.
Outlet and plug properties table	Containing the active service within Charge Portal. Value column should contain the id or value it has at the respectively service side.