

User Guide

Connected Urban Transport

User Guide





© Ericsson AB 2019-2021.

All rights reserved. The information in this document is the property of Ericsson. Except as specifically authorized in writing by Ericsson, the receiver of this document shall keep the information contained herein confidential and shall protect the same in whole or in part from disclosure and dissemination to third parties. Disclosure and disseminations to the receiver's employees shall only be made on a strict need to know basis. The information in this document is subject to change without notice and Ericsson assumes no liability for any error or damage of any kind resulting from use of the information.



Table of Contents

1	Introduction.....	8
1.1	Target Audience.....	8
1.2	Purpose and Scope	8
1.3	Revision History.....	8
2	CUT Overview	11
2.1	Software as Service (SaaS).....	11
2.2	CUT Solution Context.....	11
3	CUT GUI Users, Logon and Permissions	13
3.1	General.....	13
3.2	Organizational Users – On-boarding and Logon	14
3.3	Non-Organizational Users – On-boarding and Logon	15
3.4	Permissions	16
4	CUT GUI - Overview.....	17
4.1	CUT Supported Web Browsers	18
4.1.1	Multi-Monitor Support.....	18
4.2	Language Support	18
4.3	User Settings Overview	18
4.3.1	Dependencies	18
4.4	CUT GUI Features	20
4.4.1	Navigation Bar and Map View	20
4.4.1.1	Map View	20
4.4.1.2	Navigation Bar - Medium and Large Screens	21
4.4.1.3	Small Screen Navigation Bar.....	22
4.4.2	Layers.....	22
4.4.3	Entity Tree	24
4.4.4	Cards.....	24
4.4.4.1	Card Dock.....	25
4.4.5	Window Layout.....	26
4.5	Services.....	27
4.6	Commonly Used Icons	28
4.6.1	Device Icons.....	28
4.6.1.1	Connection Status.....	28
4.6.1.2	Traffic Signal Controller Lane Icons.....	31
4.6.2	User-Placed Icons	35
4.6.3	Zoom Levels.....	36
4.6.4	Layer Control Icons.....	37
5	CUT GUI - Map View.....	39
5.1	Leaflet	39
5.2	Map Style	40
5.3	Map Data Layers	41
5.3.1	Shape Files	41
5.4	Device Layers.....	43
5.5	Filters Layers.....	43
5.6	Groups Layers.....	43
5.7	Map Pin Layers.....	44



5.8	Favorite Layers	44
5.9	Window Layout.....	44
6	CUT GUI - Map View Settings.....	45
6.1	General.....	45
6.2	Zoom Levels.....	45
6.3	Window Layout Settings	46
6.3.1	Initial Window Layout.....	46
6.3.2	Select Window Layout.....	46
6.3.3	Save New Window Layout.....	47
6.3.4	Save Changes to Existing Window Layout.....	47
6.3.4.1	Save Current View	48
6.3.4.2	Save Window Layout at Logout.....	48
6.3.5	Deleting Window Layout.....	50
6.3.5.1	Delete View	50
6.3.5.2	Manage Views.....	51
6.4	Layer Control Overview.....	52
6.4.1	Medium/Large Window.....	53
6.4.2	Layer Control: Small Window	54
6.5	Layer Control: Devices	55
6.5.1	Select Device Layer.....	55
6.5.2	Deselect Device Layers or Device Types.....	56
6.5.3	Search for Device Type Layer.....	57
6.5.4	Add/Edit/Delete Device Layer	57
6.6	Layer Control: Filters	58
6.6.1	Deselect/Select Filters	58
6.6.1.1	Deselect/Select Filters by Layer	59
6.6.1.2	Deselect/Select Filters by Layer Group Name	60
6.7	Layer Control: Map Data.....	61
6.7.1	Select Map Data Layers	61
6.7.1.1	Selecting Map Style	61
6.7.1.2	Selecting Map Layer	62
6.7.1.3	Selecting Shape File	63
6.7.2	Add Map Data Layer	65
6.7.2.1	Add Map Style	65
6.7.2.2	Add Shape File	68
6.7.2.3	Add ESRI Feature Layer or ESRI Dynamic Map Service	69
6.7.3	Edit Map Data Layer	74
6.7.4	Delete Map Data Layer.....	75
6.8	Layer Control: Groups	76
6.8.1	Select Entity Group	76
6.8.1.1	View Entities within Entity Group.....	76
6.8.2	Add Entity Group	78
6.8.2.1	Launch New Entity Group Card	78
6.8.2.2	Add New Entity Group - Basic Parameters.....	82
6.8.2.3	Add New Entity Group - Entity Selection- Option 1.....	84
6.8.2.4	Add New Entity Group - Entity Selection- Option 2.....	85
6.8.3	Edit Entity Group	89
6.8.4	Delete Entity Group	91
6.8.5	Measurements History for Groups.....	92



6.9	Layer Control: Map Pins.....	93
6.9.1	General.....	93
6.9.2	Select Map Pin.....	93
6.9.3	Add Map Pin.....	94
6.9.3.1	Add Map Pin - Option 1.....	95
6.9.3.2	Add Map Pin - Option 2	96
6.9.3.3	Add Map Pin - Required Parameters and Save	97
6.9.4	Edit/Delete Map Pin from Layer Control	99
6.9.5	Edit/Delete Map Pin from Map View	100
6.9.5.1	Edit/Delete Map Pin from Details Card.....	101
6.10	Favorite Layer Settings	102
6.11	Set Layer Visibility by Zoom Level.....	103
7	CUT GUI - Entities in Map View.....	105
7.1	General.....	105
7.2	Entity Search.....	106
7.3	Connection Status.....	106
7.4	Edit/Delete Entity.....	107
7.5	Select Entity	108
7.5.1	Entity Submenu	108
7.5.1.1	Entity Submenu Actions Card	109
7.6	Details Card - General.....	110
7.6.1	InterApplicationId.....	114
7.6.2	PTZ Controls for Cameras	115
7.7	Details Card - Notes and Attachments.....	117
7.7.1	Add Note for Entity or Entity Type.....	117
7.7.2	Edit Note for Entity or Entity Type.....	118
7.7.3	Add Attachment for Entity	119
7.7.4	Delete Device with Attachment.....	120
7.7.5	Set Attachment as Main Entity Image	122
7.7.5.1	Enlarge Entity Image	123
7.7.6	Manage, Copy, Edit and View All Attachments.....	124
7.7.6.1	Copy Attachment for Entity - <i>Select from entity card.</i>	125
7.7.6.2	Copy Attachment for Entity - <i>Select from Map</i>	127
7.8	Details Card - Rules	128
7.8.1	General.....	128
7.8.2	View All Rules.....	128
7.8.2.1	View/Edit/Delete Rule	129
7.8.3	Add Rule	130
7.8.3.1	Add Simple Rule.....	130
7.8.3.2	Add Advanced Rule	133
7.8.4	Notifications.....	137
7.9	Details Card – Measurements History.....	139
8	CUT Menu: Tools: Entities.....	142
8.1	Launch Entities Card	142
8.1.1	Entities Card on Medium/Large Window.....	143
8.1.1.1	View Entities	143
8.1.1.2	Entity Search.....	144
8.1.2	Entities Card on Small Window	144



8.2	Add Entity/Entity Group	145
8.2.1	Small Browser Window	145
8.2.2	Add Entity	145
8.2.3	Add Entity Group Using Map View	146
8.2.4	Add Entity Group Using Entity Tree	147
8.2.5	Edit/Delete Entity or Entity Group.....	149
9	CUT Menu: Tools: Manage Action Macros.....	150
10	CUT Menu: Settings: Manage Layer Display	153
11	CUT Menu: Alarms: Alarms	154
11.1	Visible and Audible Alarm	156
11.2	View Active Alarms.....	157
11.3	View Alarm History	160
12	CUT Menu: Settings: Manage Users	161
12.1	General.....	161
12.1.1	Organization Administrator.....	161
12.2	Manage Users Card.....	162
12.2.1	Users Tab	162
12.2.2	User Groups Tab	163
12.2.3	Roles Tab	164
12.3	Add User/User Group/Role	165
12.3.1	Add Role	165
12.3.2	Add User Group.....	167
12.3.3	Add Organization User	167
12.4	View/Edit and Delete.....	169
12.4.1	View/Edit	169
12.4.2	Delete	170
13	CUT Menu: Services.....	171
13.1	General.....	171
13.1.1	Single Sign On (SSO).....	171
13.2	Select Service.....	172
13.3	Schedule Actions and Macros.....	172
14	CUT Menu: Help	176
14.1	Contact Us	176
14.2	User Guides	177
14.3	Wiki	178
14.3.1	Manage Wiki Topic	179
14.3.2	Add Wiki Article	181
14.3.3	Edit or Delete Wiki Article	182
15	CUT Menu: Organization	183
15.1	Assign Permissions	186
16	User Tracking	188
17	Terminology.....	193



17.1	Abbreviations	193
18	References.....	194



1 Introduction

The Connected Urban Transport (CUT) User Guide shows how to configure and navigate the CUT Graphical User Interface (GUI) to accomplish traffic management tasks.

1.1 Target Audience

The CUT User Guide is written for both the end User and the User Administrator of an Organization (called *Organization Administrator* in this document). Note that the Administrator Role performs User Management and someone with this Administrator Role is also a User of the System.

1.2 Purpose and Scope

This document provides a guide to CUT GUI. GUI features are introduced and their use explained. Details are provided on User navigation and tasks, as needed.

Note that as CUT matures, instruction details will be expanded in subsequent revisions of this document.

1.3 Revision History

Revision	Date	Author	Comments
A	2018-05-22	Fei Wang Z	First Fixed Revision
B	2018-06-15	Sarah King	Revised following External Review for Phase 1
C	2018-12-19	Sarah King	Updated Rules and Entity on Map view
D	2019-03-20	Sarah King	Total refresh due to overall GUI and Entity Card changes correlating to increment R2A: <ul style="list-style-type: none"> • Addition of Chapter 7 • Rework of figures and general text
E	2019-05-29	Natalia Bocharova	Updated sections 4.6.1.1 – new design of statuses; 4.6.1.2 - Pedestrian detector icons and signals added; 7.7.5.1; 10.1; 13.4. New Sections added: 6.2.1; 9.1.



Revision	Date	Author	Comments
F	2019-09-17	Natalia Bocharova	<p>Sections 6.2.1 "PZT Controls for Cameras", 4.4.2 "Layers", 6.9.5 "Edit/Delete Map Pin from Map View" are updated with new figures.</p> <p>Section 8.2.4 is updated with a new procedure of adding a new entity group</p> <p>Sections 10 "Manage Layer Display" and 11.1 "Visible and audible alarm" are added.</p> <p>A "Caution" sign is added throughout the whole document. Added info about additional layers supported in section 5.3.</p> <p>Section "Set Layer Visibility by Zoom level" is added.</p> <p>Added Figure 16 and the description. Added reference to table 2 in section 7.3.</p> <p>Section 6.2.1 PZT Controls for Cameras is updated. Updated figures according to Sentence case rule.</p> <p>Section "Developer Tools – APIs" is deleted as it is not valid. Updated figures in sections <i>Select Window Layout</i> and <i>Save New Window Layout</i>.</p> <p>Added new paragraph about layer display settings for traffic controllers in section <i>Set Layer Visibility by Zoom Level</i>.</p>
G	2020-01-01	Natalia Bocharova	<p>Section "Schedule Actions and Macros" is added.</p> <p>Sections "View Active Alarms" and "Set Layer Visibility by Zoom Level" are updated.</p> <p>Section "Traffic Signal Controller lane Icons" is updated with operational status values.</p> <p>Section "Launch New Entity Group Card" is updated with info about creating a group with devices belonging to many groups; creating a group with many devices using a polygon method.</p> <p>Figures 15, 16, 17, 96-98, 112 are updated as well as figures related to "Intersection related icons".</p> <p>Added a note about max. allowed size for the attachment in section "Add Shape File".</p> <p>Sections 5.2, 5.3 are updated.</p> <p>Sections 6.8.5, 7.9, 15, 15.1 are added.</p>
H	2020-06-04	Natalia Bocharova	<p>Sections 7.8.4 "Notifications", 7.6.1 "InterApplicatioID" are updated.</p> <p>Section 16 "User Tracking" is added.</p> <p>Figure 116 and Figure 145 are updated. Note before Figure 145 is added.</p>



Revision	Date	Author	Comments
J	2021-01-29	Natalia Bocharova	<p>Figures 15, 17, 41, 48, 96, 99-101, 152 (and the note before it), 156, 160, 178, 179 are updated.</p> <p>Figures 42, 43, 53 are added with the description.</p> <p>Table 1 is updated.</p> <p>Sections 4.1, 4.4.2 are updated.</p> <p>Section 7.7.4 "Delete Device with Attachment" is added.</p>
K	2022-02-08	Natalia Bocharova	<p>Figures 16, 18, 19, 43, 73, 122 are updated.</p> <p>LRM notion is added.</p> <p>Correction in Section 4.6.1.2.</p> <p>In section 7.5.1.1, added info about video-wall screens.</p> <p>Figures 3, 124 are added.</p> <p>Added information about failed login in Section 3.2.</p>



2

CUT Overview

Connected Urban Transport (CUT) allows transport authorities to manage separate infrastructure asset groups from one centralized viewpoint.

Each infrastructure group produces its own, siloed data and requires its own tasks.

CUT allows co-ordination across infrastructure groups by providing an overlay on top of these separate data silos and linking the data in real-time.

This supports workflow automation and provides intelligent insights across disparate applications and regional boundaries.

Existing asset applications (software) can be easily integrated with the CUT interfaces, refer to References [1] and [2]. The CUT also provides an open interface to ensure seamless integration with future asset applications, without vendor lock-in.

Example infrastructure asset groups that may be coordinated centrally from CUT are traffic signal controllers, cameras, school flashers, digital message signs as well as related assets such as streetlights, bus traffic management systems and parking applications. CUT provides I2X (Infrastructure to anything).

2.1

Software as Service (SaaS)

CUT is a hosted, Software-as-a-Service (SaaS) solution. As such, features and GUI icons undergo continuous improvements as part of the continuous integration (CI) and continuous deployment (CD) cycle. New features and icons may be added without prior notice. Following the SaaS model, the latest version of the CUT software is hosted in a cloud environment.

2.2

CUT Solution Context

This section provides the broader context for the CUT Solution.

Transportation is an integral part of our society. Over the last decade, the transportation landscape has evolved tremendously:

- Navigation systems have moved from personal GPS devices to built-in dashboards in vehicles to provide real-time traffic information.
- The deployment of 3/4G and prevalence of smartphones gave travelers connectivity continuously, allowing access to online apps which provide traffic information, route planning, parking information, speed camera warning, and so on.
- The emergence of ride sharing services such as Uber, Lyft, GreenWheels, and so on disrupts the traditional transportation industry.



Despite the massive changes, cities and transportation authorities continue to struggle with the operational responsibilities of the existing infrastructures, and anticipating and planning for future technology evolution and infrastructure expansions. Cities and transport authorities have become the owner of many different systems, delivered by many different suppliers over time. These systems are often delivered end-to-end, with their own hardware and software management system. Exchange of data across systems is lacking, thus making it difficult for transport authorities to manage the infrastructure in an efficient and effective manner.

As new systems and processes are introduced by cities and transportation authorities, the CUT solution will continue to evolve to support the need to share real-time information and to improve reliability and efficiency in a multi-modal transportation network.



3

CUT GUI Users, Logon and Permissions

3.1

General

In line with the CUT Data Model, refer to Reference [4], Users of the CUT solution belong to an Organization (legal Entity). An Organization is created during CUT deployment for a customer in a process called On-boarding. Designated CUT Users are then assigned to the Organization.

Note that Organization On-boarding of Users is distinct from Service On-boarding. Service On-boarding is described in Section 4.5.

Users in an Organization are allocated a specific Role which allows them access to certain data and tasks via the CUT Dashboard GUI. Users in an Organization may be allocated to a User Group. Roles may be assigned to User Groups as well as to individual Users. Any User with the correct permission can perform any task. An Organization usually creates a User Administrator Role to handle User Management tasks such as assigning Users, Roles and User Groups. User Management including Role and User Group creation is covered in Section 12.

CUT features are designed with Role-based access control to enable data sharing between departments in an Organization as well as between Organizations.

CUT is based on User-centered design methodology and mimics the work flow in a typical Organization.

CUT Users are classified as follows:

1. **Organizational Users:** Users that belong to an Organization with its own identity management, will authenticate towards the Organization's identity store (for example, Azure Active Directory). CUT provides integration with the Organization's existing Azure Active Directory (AAD), which allows Users to use their existing Username and password to log into CUT.

Note: CUT does not handle any password management as it is orchestrated by the Organization's AAD.

2. **Non-Organizational Users:** Users that are not explicitly part of an Organization and its identity store may still be granted access to an Organization's asset data. Such Users may be, for example, external consultants to a specific CUT Organization and have access to that Organization's data.

The following sections detail the sign-in experience for each type of User.



3.2

Organizational Users – On-boarding and Logon

Organizational Users are provisioned in AAD of the Organization. CUT integrates with the Organization's AAD as part of the Organization On-boarding process. When Organizational Users are already authenticated in the Organization's Azure environment (for example, through Office 365®), they do not need to enter their credentials again to log into CUT.

The typical sign-in flow is as follows:

1. User launches CUT GUI landing page from preferred web browser via provided URL. See Section 4.1 for guidance on supported browsers.
2. If the User is already logged into the Organization's AAD (for example, through Office 365), the User will be directed to the Welcome screen (a few redirects will occur in the browser URL field).

Note: In advance of being shown the Welcome screen, the User may be asked to accept a Legal statement confirming they are Authorized to use CUT GUI.

If the User has not signed into the Organization's AAD, he/she will be taken to the Microsoft AAD sign-in page for the Organization, where the User will enter the Organization email address and password, in the form of <Username>@<Domain>. An example login page is shown below.

Note: In advance of being shown the Welcome screen, the User may be asked to accept a Legal statement confirming they are Authorized to use CUT GUI.

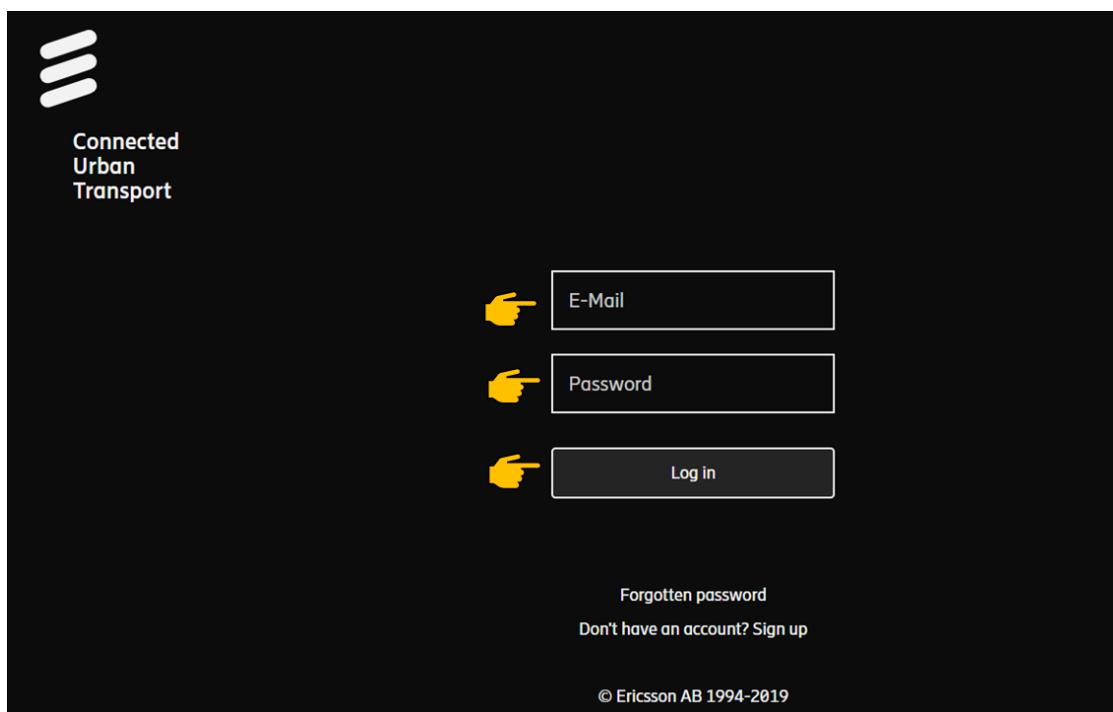


Figure 1 CUT Login Screen - Example Screenshot



3. The User is signed into CUT GUI. The User's name is shown at the top right of the CUT GUI navigation bar, see Figure 2.



Figure 2 CUT User Name in Navigation Bar - Example Screenshot

Upon login, the User is notified (non-intrusive) about the number of failed logins for the same user ID. If there are no unsuccessful logins after the last successful login, then the field for failed logins is not displayed. Information includes the date and time of the last unsuccessful authentication, see Figure 3.

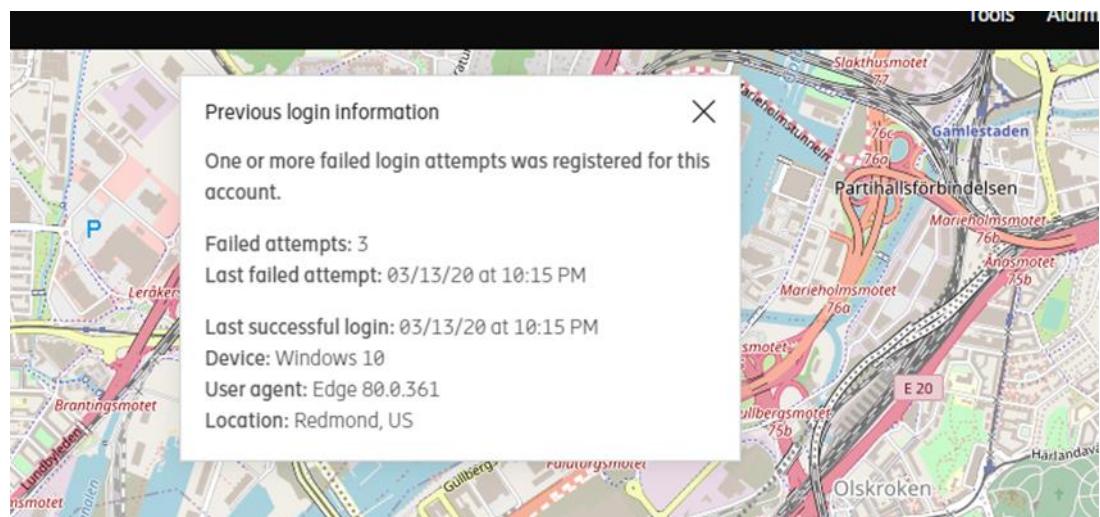


Figure 3 Display Information on Failed Login - Example Screenshot

3.3

Non-Organizational Users – On-boarding and Logon

A Non-Organizational User is on-boarded by sending a CUT access request to the Administrator of a specific Organization. When the request has been approved, the Non-Organizational User is On-boarded, by Ericsson, to the Ericsson CUT AAD rather than the AAD of the Organization.

The Non-Organizational User will receive a login email address and the initial password. The sign in procedure is the same as described in Section 3.2 except that the User authenticates to Ericsson's AAD first, then a multi-factor authentication will occur, for example, a phone call will be placed to the User provided phone number.



3.4

Permissions

This User Guide describes the features of CUT that are accessible through CUT GUI. However, if a User has not been granted permission for certain actions then these options will not be visible in their GUI.

Permissions are assigned to specific Roles within an Organization and a User may be assigned several Roles. Permissions are additive, meaning that they allow a User to perform a task but never specify a restriction. Thus, if a User has a number of Roles, all the permissions associated with all these Roles are available to the User, all the time. If the User does not have a Role with permissions to, for example, Manage Users or view specific Transportation assets, then these options will not be visible.



4

CUT GUI - Overview

CUT GUI is the main interface for Users to access the CUT functions. CUT GUI has a User-centric design. Information is structured into logical units and uses clear icons and color choices for clean and concise User views. Users of the CUT system access CUT GUI through a web browser.

Figure 4 shows an example of a typical CUT GUI screenshot.

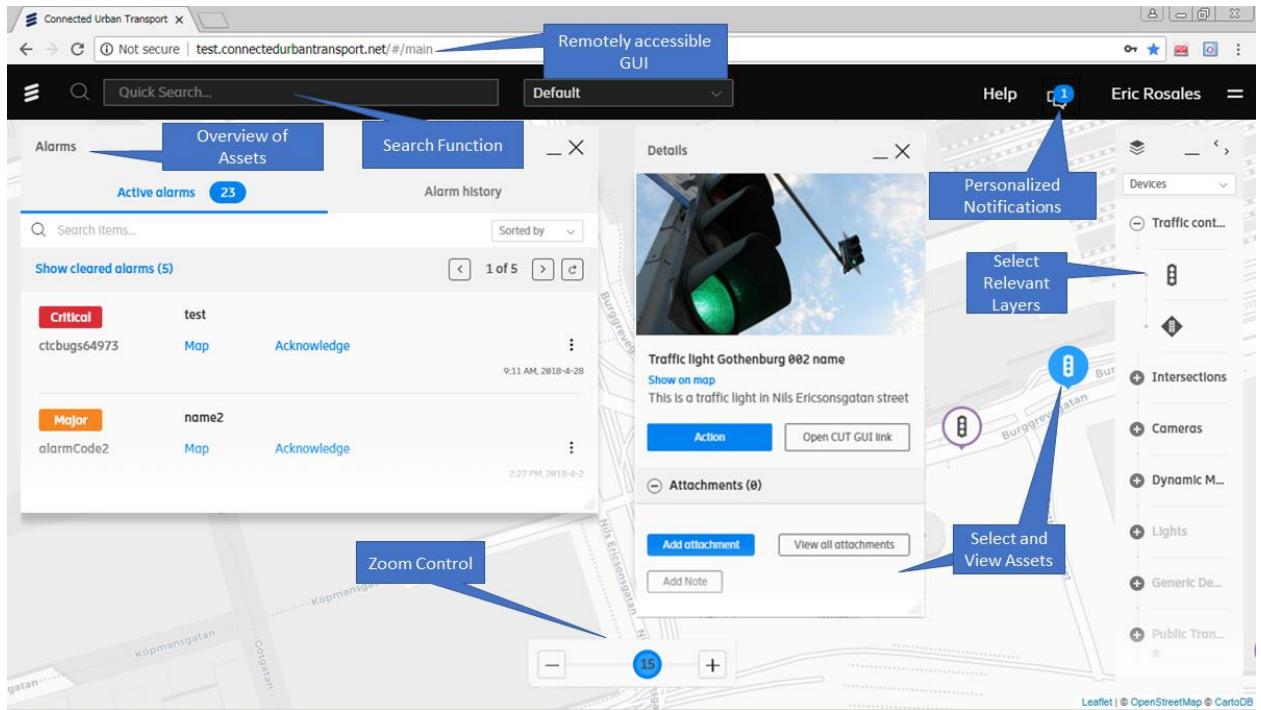


Figure 4 CUT GUI - Example Screenshot

CUT GUI functions available to a User are dependent on the permissions associated with their assigned Role(s). Users may thus have access to some or all of CUT GUI functions. The CUT GUI functions are:

- To provide a centralized view (through a geographical map) of multiple transport assets originating from different suppliers.
- To provide visualization of Alarms.
- To enable real-time Rule execution across Device Types and Applications.
- To provide detailed view of asset (device) data.
- To provide Application Linking. Direct links to asset-specific (non-CUT) software applications (referred to as Services in this document) such as to a Traffic Management System for traffic signal controllers are available for Authorized Users. The User retains the centralized view of all assets from CUT while launching asset-specific applications.
- To provide a customized view for individual Users, based on their Role or personal settings.
- User Management.



4.1

CUT Supported Web Browsers

CUT is a browser-based solution. It does not require any plug-in or extension to be installed in the browser. Support is provided for the latest browser version for each of the following:

Browser	iOS ¹	Android	Windows ²
Google Chrome		✓	✓
Microsoft Edge			✓
Safari	✓		

1. Phone or tablet
2. Laptop or desktop

Table 1 CUT Supported Browser and Platforms

4.1.1

Multi-Monitor Support

Transportation management staff often work with a multi-screen setup. The User can view CUT GUI in this setup:

- By stretching the browser window to span multiple screens, or
- By logging on to multiple browser windows, detaching web browser tabs into separate screens, if the underlying OS supports it.

4.2

Language Support

CUT GUI provides English language support by default. Additional languages are provided through optional add-on license. For other language support, contact Ericsson.

4.3

User Settings Overview

CUT GUI Settings are properties defined by a User to personalize the look and feel of CUT GUI. Examples of User Settings include the Window layout, placement of cards, location of the map center, zoom levels, and so on.

Settings can also be defined at the Organization or Role level as well as User level. Organization and Role settings can only be updated by Authorized Users (Users with the relevant permissions). User settings can only be updated by the User. Users may access any User-based, Role-based or Organization-based saved preferences from the View selector in the navigation bar (see Section 4.4.5 for more details).

4.3.1

Dependencies

The following dependencies must be noted:



- User settings are stored persistently. The default User settings will be loaded on subsequent login.
- Upon removal of a User from CUT, all User settings are purged.
- Upon removal of a Role from CUT, all settings belonging to the role are purged. If an Organization Administrator attempts to delete a role when users are still assigned to that role, they will receive an error message.



4.4

CUT GUI Features

This section introduces the main CUT GUI Features. All the GUI Features are designed to help the User tailor their view of the CUT GUI in the manner that is most effective for them.

4.4.1

Navigation Bar and Map View

CUT GUI is composed of two main parts, the navigation bar and Map view. The Map view provides the visual display of transportation assets on a graphical map and the navigation bar provides access to the CUT GUI Menu in a ribbon style across the top of the GUI screen.

Together, they create a Dashboard for the User, from where they can launch applications and position the CUT GUI functional windows (called 'Cards').

4.4.1.1

Map View

The Map view provides the background to the User view of the GUI and is a representation of a geographical area.

The Map view consists of a Map style (Basemap) which may then be overlaid with further layers. When in the Map view, Entities that the User has permission to view are represented by icons on the Basemap. Filters may also be applied to the Map view that allow the User to only display certain devices for which they have permission to view, such as only devices with a Critical alarm.

The Map view, Map style, Layers and Settings are described further in Section 5 and Section 6.



4.4.1.2

Navigation Bar - Medium and Large Screens

The navigation bar, see Figure 5, is located at the top of the CUT GUI screen. It consists of the following features, accessible from left to right

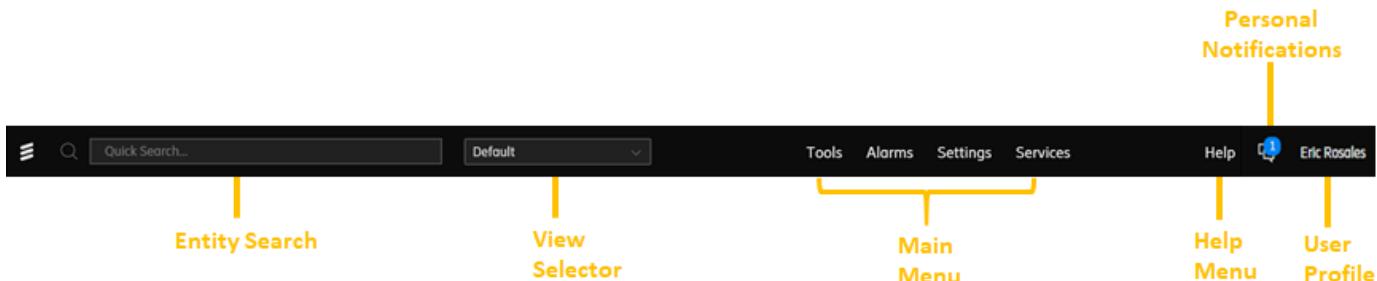


Figure 5 Navigation Bar - Example Screenshot

- a. **Entity search:** Search for specific Entities (Devices or Map pins)
- b. **View selector:** CUT allows the User to customize the GUI Window layout according to preference. The customized Window layout can then be saved with a descriptive name and accessed from the View selector via a drop-down menu. Multiple Window layouts may be saved in this way.
- c. **Main menu:** The Main menu refers to the group of primary CUT functional options. These are displayed in the navigation bar and are Tools (Section 8), Alarms (Section 9), Settings (Section 12) and Services (Section 13).
- d. **Help menu:** The help menu allows User to quickly access CUT solution documentation as well as a Wiki-style troubleshooting guide. The Wiki guide allows Organization Users with the proper permission to create, manage and maintain up-to-date procedures, in the form of written articles, for the Organization. The Help menu option is discussed in Section 13.3.
- e. **Notifications:** Any Notifications for the User are indicated in a blue circle between the Help and User profile on the navigation bar. Notifications arise when a pre-defined Rule is triggered and the defined action is that a Notification must be sent to the User. Rules and Notifications are discussed in Section 7.8.
- f. **User profile:** The name of the logged-in User is displayed. Clicking on the pull-down arrow allows the User log out of the session.



4.4.1.3

Small Screen Navigation Bar

On a smaller screen or a small window on a laptop, the navigation bar appears differently. Figure 6 illustrates how to access the CUT Main menu from such a smaller screen/window.

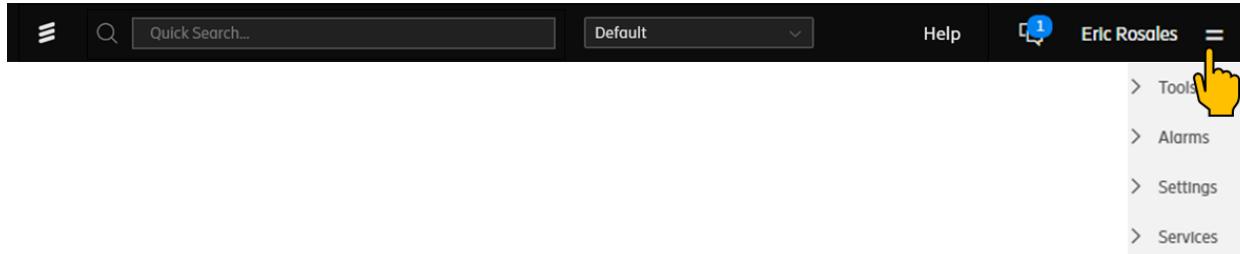


Figure 6 Navigation Bar for Smaller Screens/Windows - Example Screenshot

4.4.2

Layers

CUT GUI allows the User to overlay the Basemap with multiple layers of further information, enriching the overall User experience. A Layer can be defined as a graphical representation of a collection of Entities (points, lines or area features) that are of the same type. Layers are enabled and disabled by the User from the Layer control feature which acts as a 'Table of Contents' for GUI.

CUT GUI supports adding an unlimited number of layers. Adding layers can add information and enrich the user's experience. However, displaying a significant number of layers at the same time may impact performance. The layer display performance is heavily dependent upon the device type (PC/laptop/tablet/phone configuration and OS) of a user, and the browser given rendering is handled on the local desktop. In addition, end user experience is dependent on a layer type, complexity and number of layers displayed.

CUT GUI supports configuring layers from other providers (ESRI, OpenWeatherMaps, and so on). The end user may add highly complex layers impacting overall performance. In general, the level of detail (or, for example, number and/or type of assets) in each layer may impact performance. For example, over 50 layers can be overlaid on top of each other and will not have a significant impact on performance if layer complexity is small; however, 5 demanding layers may cause a decrease in performance. If degradation is noticed, the performance impact can be reduced by the following:

- Disabling layer(s),
- Filtering out devices in device layers,
- Changing the level of detail.

The use of layer control is described in Section 6.

The CUT Layer types are as follows:

- Map data layers



Each Map layer provides a further level of detail such as buildings or waterways.

- Device layers

A Device layer represents a group of connected assets of the same type. An example Device layer would be all Traffic controllers from the same supplier, for a given area.

- Filters layers

Filters layers apply a filter to all the Devices that a User has permission to view. Filters 'Alarm severity' and 'Entity (Device) status' may be applied, in which case only Entities meeting the Filter criteria will be displayed.

- Groups layers

A User may create their own group of unrelated Entities such as Traffic controllers and School flashers and Map pins for a particular area.

- Map pins layers

Map pins represent a User-defined point of interest that is then placed on the Map with one of many Map pin icons.

In addition, the User has an option to add views to a "Favorite" layer. The Favorite layer, if used, will always be shown. Layers are discussed further from Section 6.4 to Section 6.10.

The User is able to move the layers in Layer control. To do it, the User clicks on the dots to the right, and then drags the layer to its new position, see Figure 7.

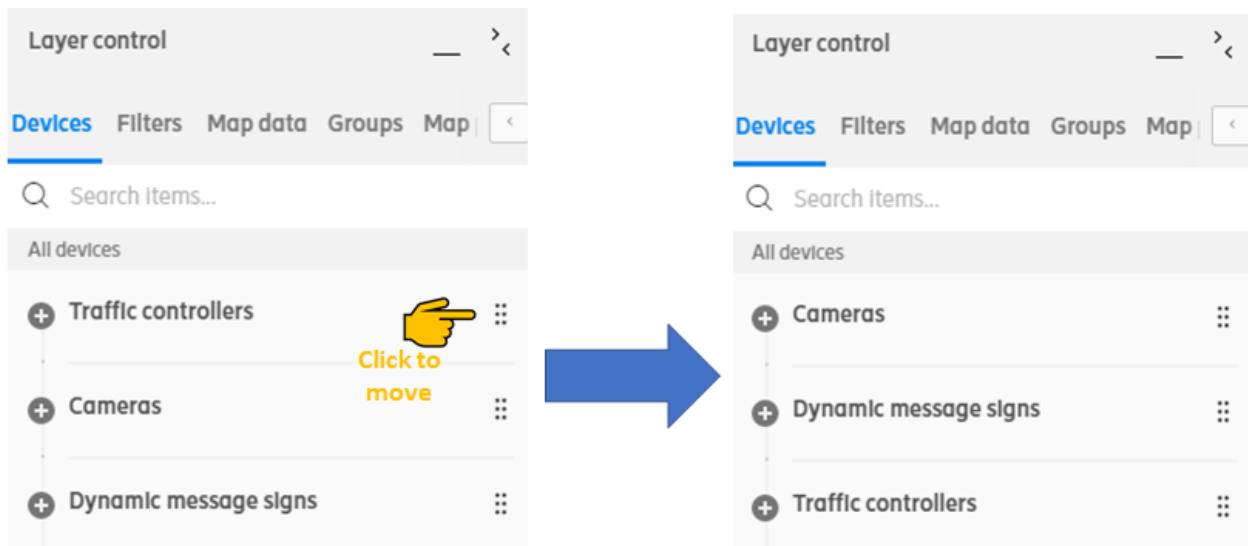


Figure 7 Move Layer Control - Example Screenshot



4.4.3

Entity Tree

The Entity tree provides the CUT User with an alternative presentation than CUT Layer presentation. The Entity tree view provides a tabular view of CUT Entities. Entities are Devices or other User-defined objects that are distinctly represented by icons on the Map view such as Map pins.

The Entity tree mirrors the Layer presentation in that it presents a tabular view of the Map data elements (Basemaps and so on.) as well as true Entities (which are represented by icons) and User groups.

The Entity tree is accessed via the **Entities** feature from **Tools** in the Main menu, Section 8.

4.4.4

Cards

When a User chooses a CUT function from the GUI Main menu, the function opens within the browser window in a 'Card'. A Card may be loosely described as being a 'new window'. When a User clicks on an Entity on the Map view, the Details for that Entity likewise open in an *Entity details* card.

The User can open more than one card at a time and rearrange them to create a personalized dashboard view. Cards can be moved and resized. Users can save the personalized Card layout as part of an overall personalized view (Windows layout). The personalized Windows layout is then accessible from the View selector.

A typical CUT function Card layout is shown below, with additional texts to describe the GUI elements. Note that the Scroll bar is hidden when the pointer is not directly over it.

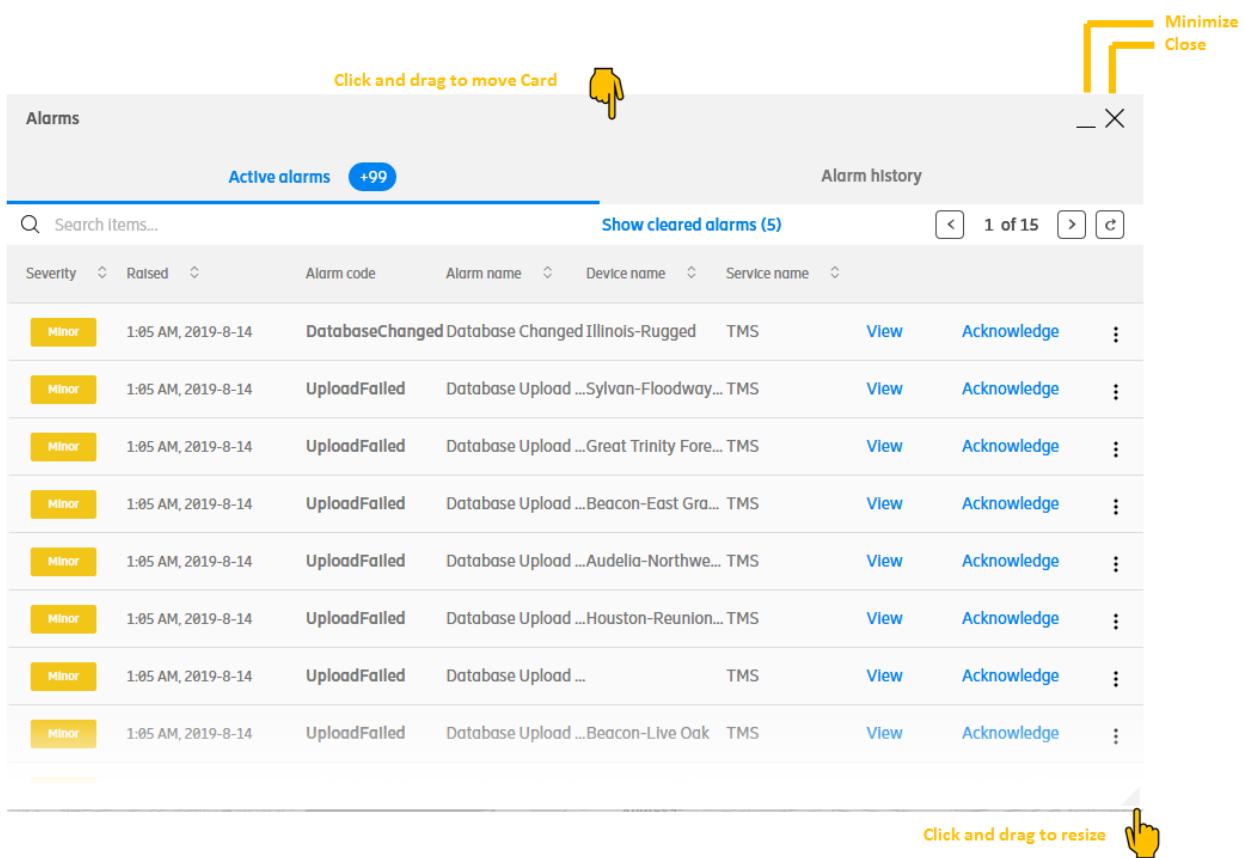


Figure 8 CUT Card View - Example Screenshot

Each new card that is opened appears on the left-hand side of the browser. Cards that are already open then move to the right.

4.4.4.1 Card Dock

When a new card is opened and the browser screen is already filled with Cards, the *New card* will appear on the left and the right-most card will be placed in the CUT Card dock.

If the User minimizes any open card, it will automatically be placed in the CUT Card dock.

Figure 9 shows an example of the CUT Card dock with three minimized cards.

To delete the Card dock, pop out or delete all the cards that are stored in the dock.

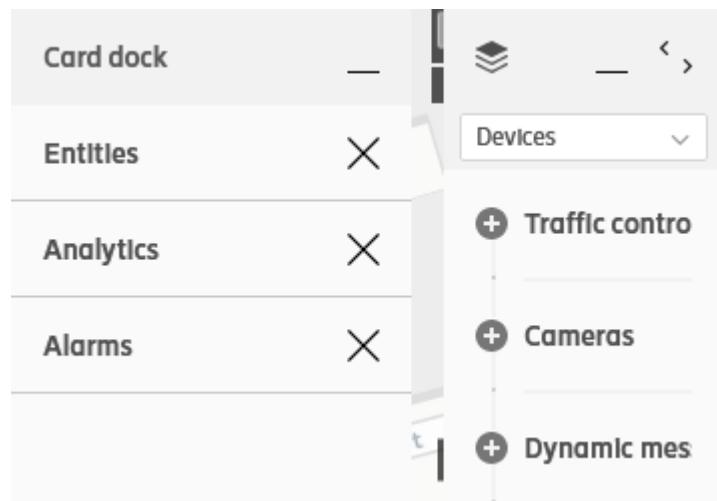


Figure 9 CUT Card Dock - Example Screenshot

If the Card dock itself is minimized then it will appear as below in CUT GUI, beside CUT Layer control.

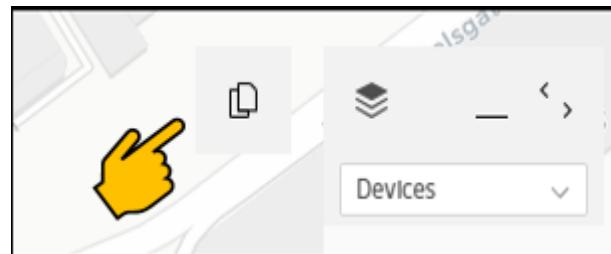


Figure 10 CUT Card Dock Minimized - Example Screenshot

4.4.5 Window Layout

The Window layout feature allows the User to save multiple, layered views for on-demand use. The User arranges the Map view to their preferences and then saves this preferred Map view as a specific Window layout.

For each layer, zoom levels can be configured. This will allow information to be shown optimally. CUT supports at least 10 zoom levels to optimize User experience.

Layer display properties may be saved and reused as a User's Window layout. Saved Window layouts are accessible from the View selector in the navigation bar. Multiple Window layouts may be saved by both the User and the Organization Administrator. Window layouts saved by the Organization Administrator will be accessible to Users with the Role that was associated with the Window layout at creation.

How to save a Window layout is described in Section 6.3.



4.5 Services

A Service is a software application created and maintained by a 3rd Party, external to CUT. Typically, Services are applications that control devices for an Organization. An example is an application that is designed to govern certain Traffic signal controllers.

A key CUT feature is the ability to link to the Service. This is achieved by allowing Authorized Users to:

- Launch Service Applications from within the CUT GUI.
- Set up rules based on available Service events and execute actions or actions sets.

A Service is owned by an Organization and the Organization dictates which Roles shall access the Service through CUT GUI. Only Authorized Users may access the Services.

Devices belonging to a Service are synchronized with CUT when the Service is integrated with CUT. The integration of a Service is referred to as Service On-boarding. Service On-boarding may take place during or after the overall Organization On-boarding, depending on the needs of the Organization.

Note: CUT may trigger the Service Applications but it does not govern the Applications themselves. Users must have a good understanding of the Service Applications and behavior.



4.6

Commonly Used Icons

To optimize User experience, CUT GUI uses graphical icons to represent assets managed by or integrated with the CUT solution. First time Users must become familiar with the commonly used icons before starting to manage the assets in CUT.

4.6.1

Device Icons

The following icons are used to represent devices on the CUT GUI, see Figure 11.

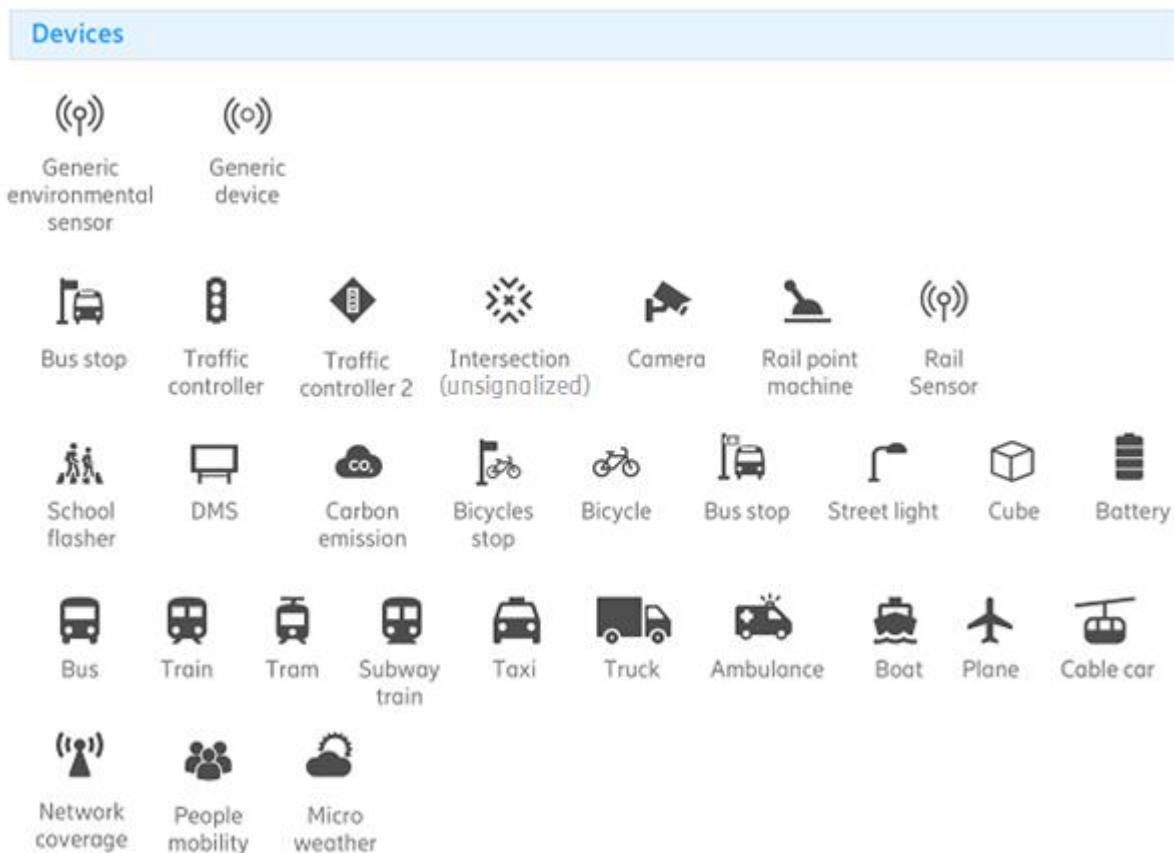


Figure 11 CUT Device Icons - Example Screenshot

4.6.1.1

Connection Status

Connection status appears when hovering over the device icon. If there is no connection to a given device, the device icon is greyed out. The selected device is highlighted in blue, see Figure 12.



Figure 12 CUT Connection Status - Example Screenshot

When hovering over a “separate” icon, a mini card showing the Status of the device and any alarms, is shown, see Figure 13. On low zoom levels, a mini map is included, to give a more accurate understanding of the device’s position (and in some cases also its type). Clicking on the device name in the mini card will open the standard device card.

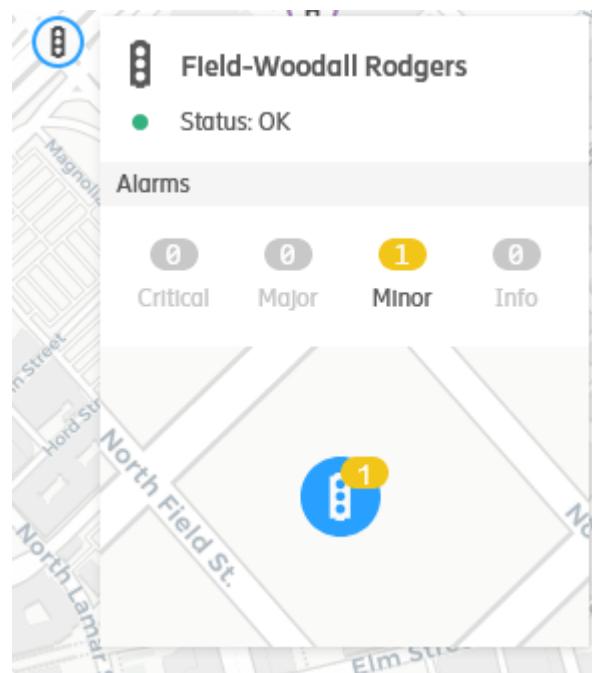


Figure 13 Mini Card with Device Status and Alarms – Example Screenshot

When hovering over an icon, which is totally or partly overlapping other icons, the User can click right / left arrows to step through the devices, see Figure 14.

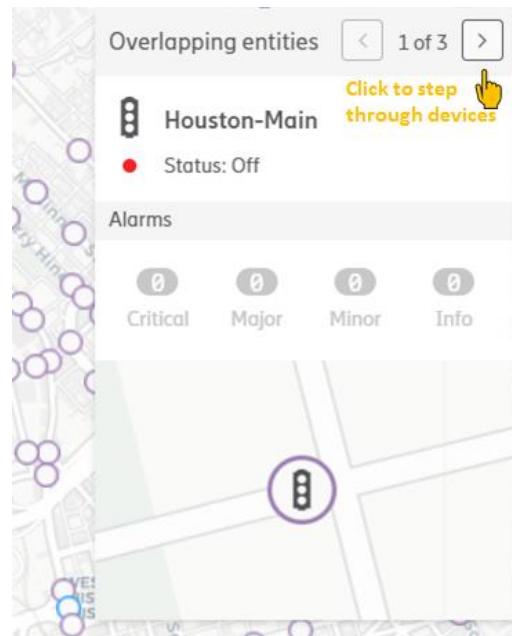


Figure 14 Overlapping Entities - Example Screenshot

When hovering over a device on a high zoom level, the map part does not provide any additional information, and is not shown in the mini card, see Figure 15.

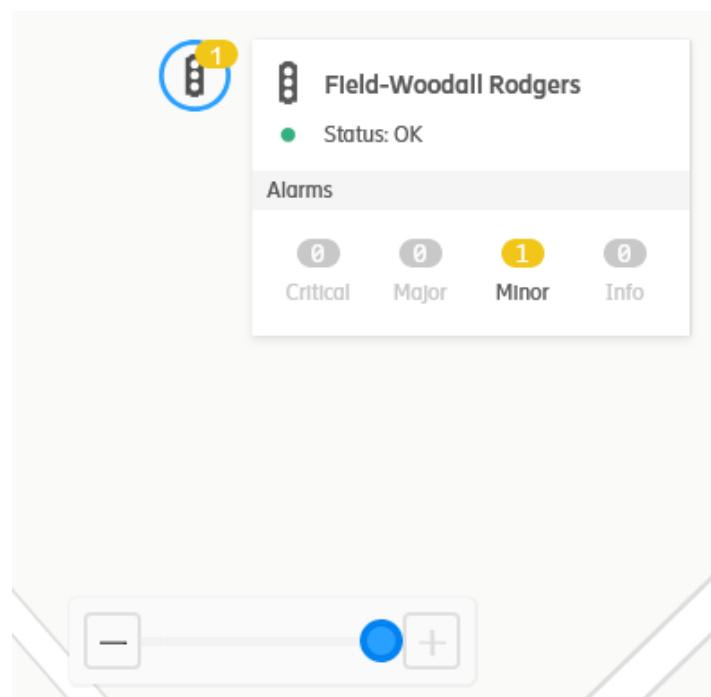


Figure 15 Device Status on High Zoom Level - Example Screenshot



4.6.1.2

Traffic Signal Controller Lane Icons

At the lowest zoom levels (see Section 7.1), the individual lanes of an intersection (Traffic signal controller) are displayed, with the latest signal information. The lane numbers refer to underlying signal groups (phase or overlap) that are retrieved from the Southbound system. The lane icons are illustrated in Figure 16.

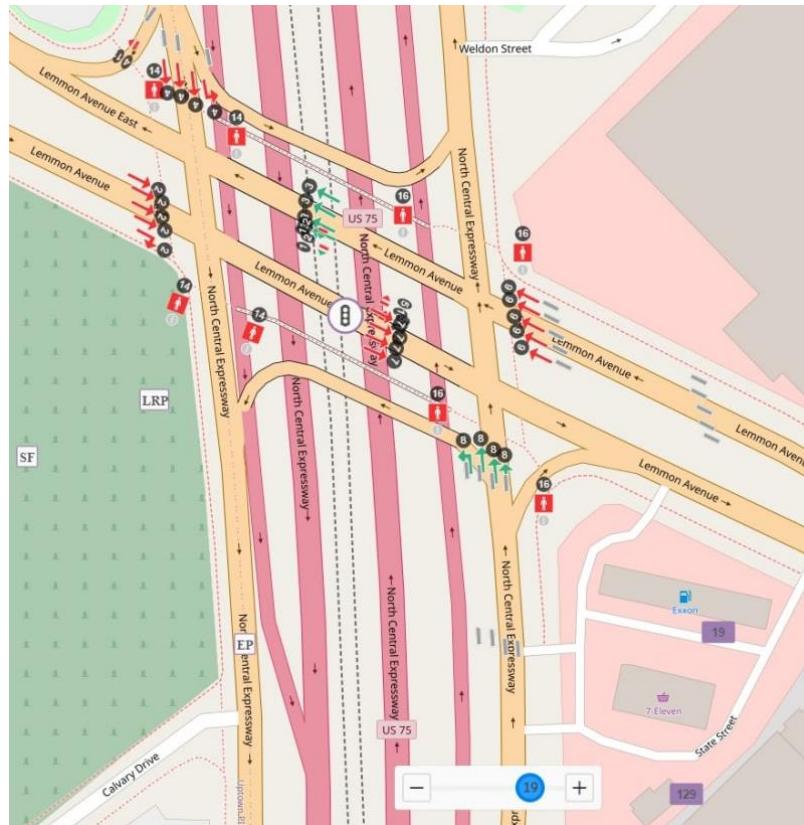


Figure 16 CUT Intersection Lanes - Example Screenshot

To see the intersection in a simplified view, the User must right-click the device and select *Open intersection on map* option, see Figure 17. The lanes will be colored green, or yellow, or red when the controller is active. The simplified lanes for the intersection are used on zoom level 16 and 17.



Figure 17 Simplified Lanes for Intersection Graphic - Example Screenshot

Intersection related icons are shown in Figure 18.



Figure 18 Intersection Related Icons - Example Screenshot

Where:

- Grey: Signal is not active.
- Purple: Signal is active.

The single character icons are used on zoom levels where space does not allow larger two-character icons.

Meanings:

- EP: Emergency preempt
- SF: Special functions
- LRP: Light Rail Preempt
- UDO: User-defined objects
- ●/●: Vehicle detector

When the User hovers the mouse cursor over the UDO icon, its value appears on top of the icon, see Figure 19.

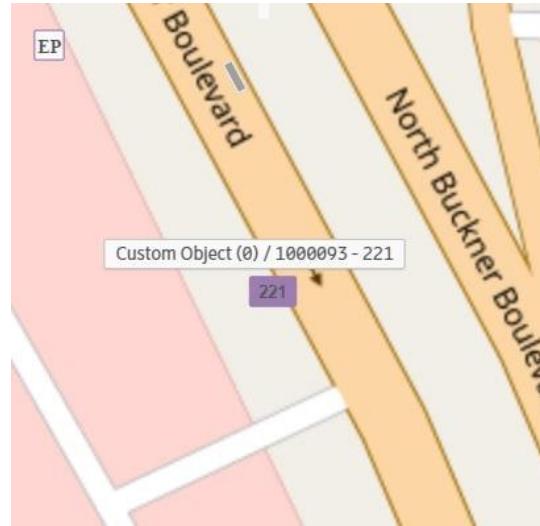


Figure 19 UDO Icon with Its Value

Signal preemption allows emergency vehicles and trains/trams to disrupt a normal signal cycle to proceed through the intersection more quickly and under safer conditions.

Pedestrian signals and detectors (it means if a pedestrian has pushed the button) are also supported. Figure 20 shows pedestrian signal icons.



Pedestrian icon for "walk" state



Pedestrian icon for "don'twalk" state



Pedestrian icon for "don't walk/flashing" state



Default pedestrian icon when a state information is not available

Figure 20 Pedestrian Signal Icons - Example Screenshot

Pedestrian detector icons are shown in Figure 21. Green detector icons mean that they are active.

Grey detector icons mean that they are not active (not pushed by a User).

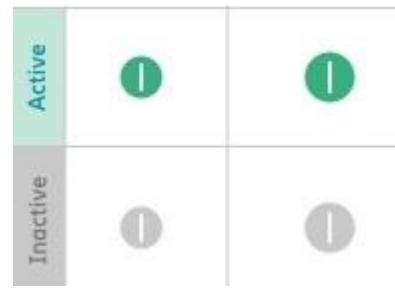


Figure 21 Pedestrian Detector Icons - Example Screenshot

Light Rail Maneuver (LRM) signals are shown in Figure 22, where:

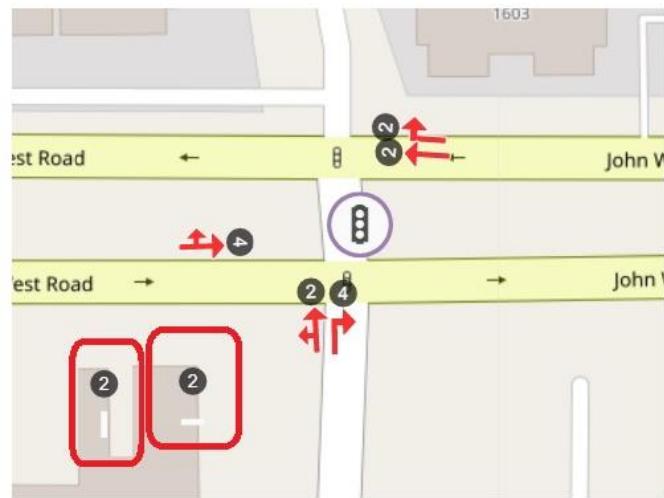


Figure 22 LRM Signals - Example Screenshot

I : means "Go"

_ : means "Stop"

Number 2 in Figure 22 is Light Rail Maneuver Phase/Overlap number, the number associated with a particular LRM.

Devices can have the following status values:

- Unknown
- Coordinated
- Free
- Transition
- Preempted
- Bad plan
- Flash
- Disabled
- Failed

The actual value is shown on the Device card of a Traffic signal controller, see Figure 23.



The screenshot shows a mobile application interface for a device named 'Flora-Olive'. At the top, there's a blue header bar with the device name and standard navigation icons. Below the header, the screen is divided into sections:

- Details:** Contains device specifications like maxViewDeviceNumber (2955), maxViewMake (Intelight), maxViewModel (MaxTime), maxViewType (5), maxViewVersion (1.7/1.8), and model (17/1.8). Buttons for 'Entity type notes' and 'Entity notes' are at the bottom.
- Sensors:** Shows CTC Status (10), Operational status (Transition), and a yellow hand icon indicating a traffic signal pattern (1).
- Attachments (0):** A section for adding attachments with a 'Add attachment' button and a 'View all attachments' link.

Figure 23 Operational Status - Example Screenshot

4.6.2

User-Placed Icons

Additional icons are provided to mark User-placed objects, referred to as 'Map pins'. Map pins, see Figure 24, are not related to a connected, underlying device but may be added, as needed, to represent a geographical place of interest. At creation, the User may decide to use any of the provided icons to represent the object. In all cases, the icon has a brown outline which differentiates it from the purple, connected devices.

Placement of Map pins is described in Section 6.9.3.

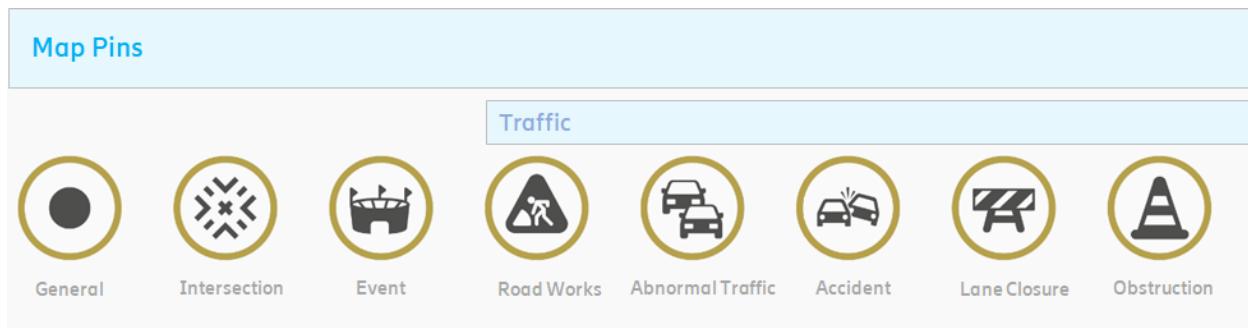


Figure 24 CUT User-Placed Icons - Example Screenshot



4.6.3

Zoom Levels

Depending on the Zoom level, the presentation of the Entity icons changes.

Entities may show as clustered, depending on the distance between Entities and the density of the Entities at the Zoom level. This means that instead of the individual Entities, a circle is displayed, indicating the number of clustered Entities. By clicking on the circle, the User may zoom in further. The User may continue to click until the zoom level shows the individual Entity/Entities.

Alarms are likewise displayed according to the zoom level selected by the User. If there is an Alarm raised on a device and the zoom level is such that Entities (connected Devices and unconnected Map pins) are clustered, an alarm badge is shown on the cluster icon. The number in the alarm badge indicates the number of uncleared alarms. The color of the alarm badge indicates the severity of the alarm. When there are multiple alarms active, the color represents the highest severity alarm. At lower zoom levels, the entire Device icon is colored to match the Alarm severity of the Alarm raised for the Device.

Figure 25 illustrates how Entities are depicted depending on the zoom level. How to change the zoom level is described in Section 6.2. Real examples of selected zoom levels are shown in Section 7.1.



	Clusters with alarms	Clusters on hover		
Details Level 01	Critical alarm Major alarm Minor alarm Info alarm	25		
Details Level 02	Entities with alarms Critical alarm Major alarm Minor alarm Info alarm	Overlapping or exactly at the same place Critical alarm Major alarm Minor alarm Info alarm	Entities on map Device Map pins: map event and default map pin Hover Selected device Device hidden in layer control/list Device with no connection	Entities on map exactly at the same place Devices
Details Level 03	Entities with alarms Critical alarm Major alarm Minor alarm Info alarm	Overlapping or exactly at the same place Critical alarm Major alarm Minor alarm Info alarm	Entities on map Device Map pins: map event and default map pin Hover Selected device Device hidden in layer control/list Device with no connection	Overlapping or exactly at the same place Devices
Details Level 04	Entities with alarms Critical alarm Major alarm Minor alarm Info alarm	Entities with alarms exactly at the same place Critical alarm Major alarm Minor alarm Info alarm	Entities on map Device Map pins: map event and default map pin Hover Selected device Device hidden in layer control/list Device with no connection	Entities on map exactly at the same place Devices

Figure 25 Entity Icons per Zoom Level- Example Screenshot

4.6.4 Layer Control Icons

Some common GUI icons are used in Layer control, Cards and the Entity tree. Figure 26 shows the purpose of the icons. Favorite filled indicates that the User has selected a layer to be a Favorite layer, thus filling the star.

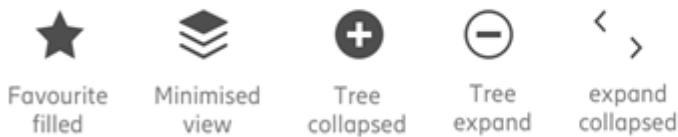
**Extra icons**

Figure 26 CUT Layer Control Icons - Example Screenshot



5

CUT GUI - Map View

This section describes the User Map view at a high level. Steps describing how to configure the Map view are found in Section 6.

The CUT Map view is the main interface for Users to visualize Devices, access Device status and view details. The Map view consists of a Map style (also called Basemap or 'Tile') plus additional layers. Additional layers overlay the Basemap with additional data to enrich the view. Figure 27 illustrates the concept.

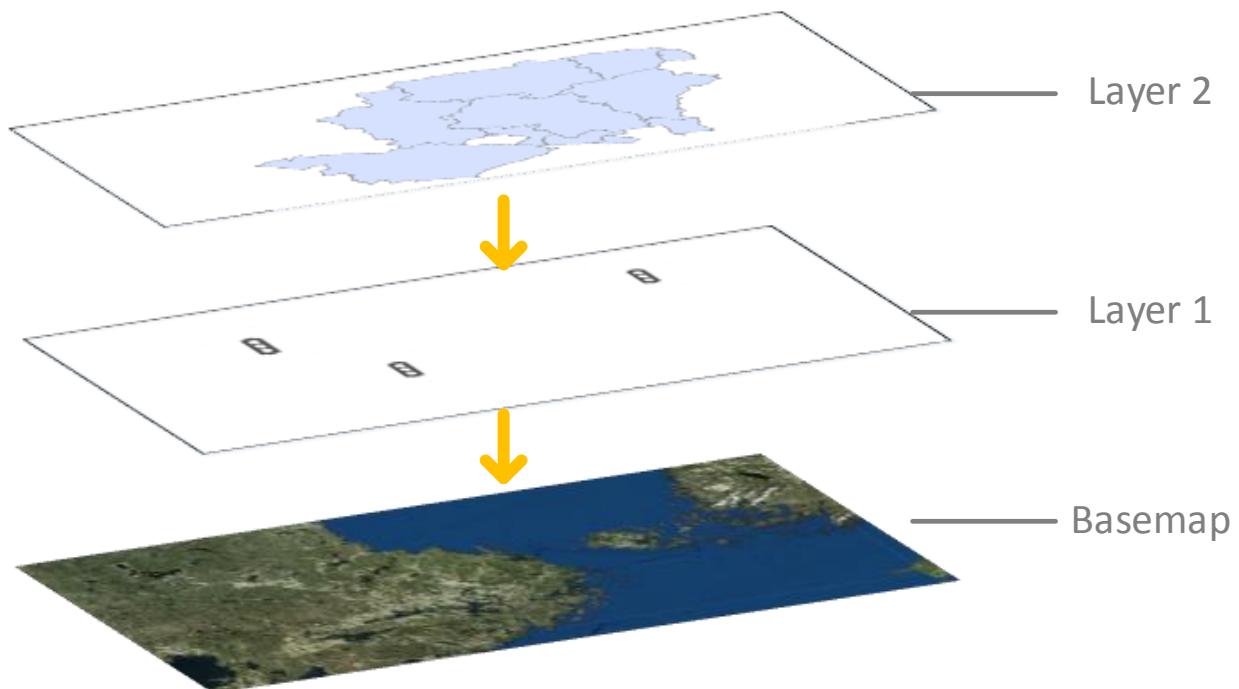


Figure 27 Map View Consists of Basemap and Layers

5.1

Leaflet

CUT uses Leaflet, which is an abstract framework for creating interactive maps. Leaflet ensures that the Map style (Basemap) and other Layers are overlaid correctly to create an aligned Map view for the User, as well as handling features for interacting such as zoom.

Unlike some Map engines, Leaflet does not, itself, provide graphical data. Thus, Leaflet is agnostic with regard to the sources of Map tiles, provided they are compliant to some basics.



5.2

Map Style

A Map style (Basemap) is a defined set of symbols and map elements that dictate how the map data is displayed and placed on a map. Two different Map styles of the same part of a map illustrate the concept, see Figure 28.

Setting a Map style is described in Section 6.7.1.1.

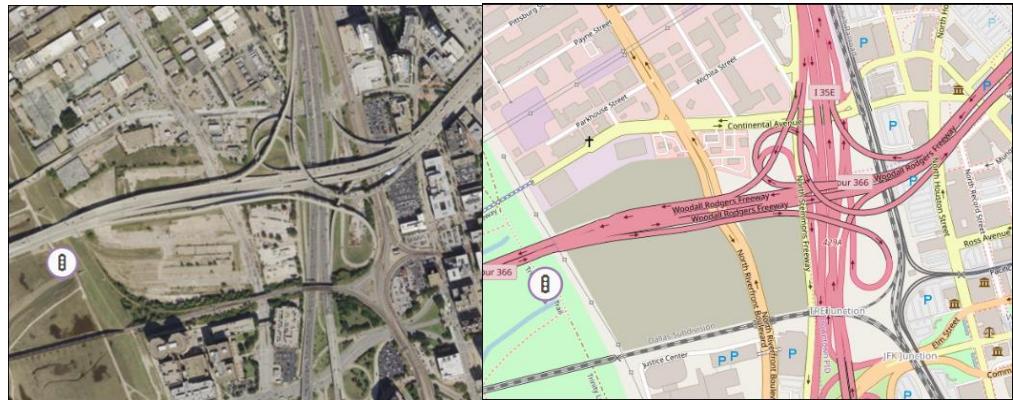


Figure 28 Different Map Styles of Same Area - Example Screenshot

Through Leaflet, CUT supports Map styles (Basemaps) from the following providers, out-of-the-box (no further licenses required):

- OpenStreetMap

Additionally, CUT can be integrated, by configuration, with other Map engines that do provide own Basemaps. The following are supported but licenses are required:

- ESRI Basemaps
 - [CartoDB \(raster\)](#)
 - HERE Basemaps
 - Tom Tom Basemaps

Note: CUT is compatible with Microsoft Bing Maps, but requires additional licenses. CUT supports only the Bing Basemap. Additional Bing Map layers lack support for Leaflet and thus are not interoperable with CUT at this time.



5.3

Map Data Layers

Map data layers work to help Users quickly produce an effective screen layout. Map data layers contain the available Map styles and layers from external GIS map sources. This includes ESRI feature layers, dynamic map or tiled map or Leaflet plugins.

Map data layers are external to CUT and are accessed by use of a specified URL. The information provided by the URL is then overlaid on the Basemap, if the Map layer provider supports the leaflet.

Supported Map data layer formats with appropriate license when required, include the following:

- ESRI [feature layer](#),
- ESRI [dynamic map layer](#) or [tiled map layer](#),
- Web Map Service (WMS) layer,
- Open Weather Map layer.

Note: There can be different providers that expose these layers. Some layers may require license, some are public. An ESRI license must be provided by the customer. Organizations that use CUT can even have their own ESRI server exposing some layers.

Example ESRI Map layers include street maps, streams and lakes, general terrain, political boundaries, maintenance districts or aerial photography images.

Authorized Users may configure the external GIS map sources in the CUT GUI. The resulting layer will then be automatically imported into CUT and shown as a Map data layer, once validated. The User can enable one Map style, one Shape file (see below) and multiple Map layers.

Setting Map layers is described in Section 6.7.

5.3.1

Shape Files

CUT supports the import of Shape files in .zip format and displaying them as a Shape layer. Shape files contain geospatial vector data for points, lines, and polygons and associated data attributes to represent a number of geographical features. For example, streams and lakes, political boundaries and maintenance districts may be included in a Shape file. Authorized Users such as an Organization Administrator can manage the Shape files available for the Organization.

Figure 29 shows an example of a Shape file in use. This Shape file shows city limit boundaries. This particular example is most effective when the Map view is zoomed out.

Note: Shape files are not accessed by URL.

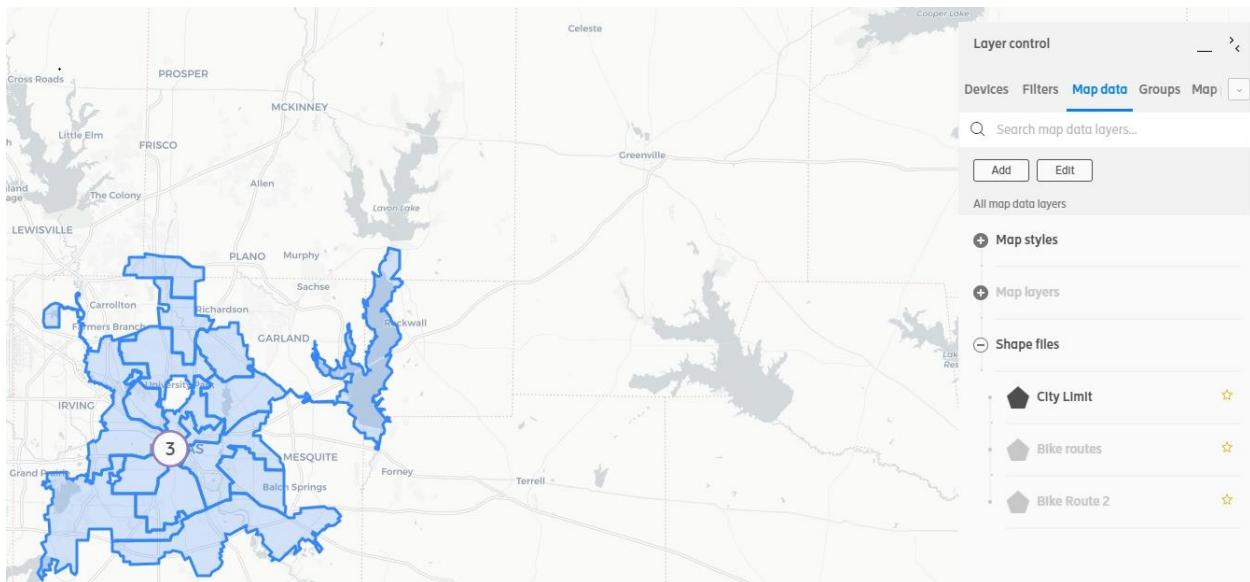


Figure 29 Display Shape File - Example Screenshot



5.4

Device Layers

Devices of the same Device type from the same Service are grouped together in a Device layer. For example, CUT supports integration with various Traffic signal controllers via partner applications. All Traffic signal controllers with the same Device type are typically part of the same layer. Note that Device layers are added by Ericsson at Service On-boarding.

Settings for Device layers are described in Section 6.5.

5.5

Filters Layers

Filters layers apply a filter to all the devices that a User has permission to view. Filters 'Alarm severity' and 'Entity (Device) status' may be applied, to only display Devices that meet the filter criteria.

Within Alarm severity, the User may select to view only Devices with Alarm status 'Critical', 'Major', 'Minor' and/or 'Info' (informational alarm). Devices within each Alarm status may be viewed as a single layer.

Within Entity status, the User may select to view Entities (Devices) that have only the status 'OK', 'Error', 'Off', 'Unavailable' and/or 'Unknown'. Devices that fall into each Entity status are grouped together in a single layer.

It should be noted that if the Filter 'Alarm severity' is selected, only Devices with an active alarm shall be shown.

Note: The Filter 'Alarm severity' is applied to the Map view by default. To view all Devices, the User must deselect the Filters layer. Whether Filters are applied by default or not is set by system configuration.

Settings for Filters layers are described in Section 6.6.

5.6

Groups Layers

Sometimes, traffic operators may be tasked to focus on specific corridors or arterials. To facilitate this, CUT allows the User to create User-defined groups. For example, a User interested in main corridor #1 can create a User-defined group by selecting all the traffic signal controllers, cameras and traffic message signs along the corridor. User-placed objects (Map pins) may also be included. The User-defined group is accessible as a Group layer.

Settings for Groups layers are described in Section 6.8.



5.7

Map Pin Layers

A Map pin represents a point of interest to the User. Unlike a Device, the Map pin has no status and does not produce alarms or notifications. Authorized Users can create a User-defined Map pin anywhere on the map. Users may select to use any of the Map pin icons shown in Section 4.6.2.

Additional information can be attached to the User-defined Map pin as an Attachment. At creation, a Map pin becomes visible to all Users with permissions to view Map pins. Map pin icons are categorized into eight layers, covering General, Intersection, Event and Traffic-related Map pins. The eight layers are illustrated and detailed in Section 6.9.1.

Map pin layer settings are described in Section 6.8.5 and placement of a Map pin is described in Section 6.9.3.

5.8

Favorite Layers

Users may need to access certain Layers more often than others. CUT allows the User to set these Layers as additions to the User preference 'Favorite layer'. The Favorite layer consists of all layers that the User has marked as Favorite. The Favorite layer for the User will always be displayed.

Group layers cannot be added as Favorites. Map pin layers may be added as Favorites, however. How to mark Layers as part of the Favorite layer is described in Section 6.10.

5.9

Window Layout

This feature allows Users to save their current CUT GUI view, consisting of whichever Map style, Map layers, Device layers and Cards the User has put together. Everything is saved collectively into a Window layout, under a User-specified name. For example, if a User creates a view of a specific geographical area and includes the Traffic controller layers and street cameras, this view can be saved as a Window layout to be viewed as needed, for example, every morning or once a week.

Multiple Window layouts may be saved, allowing a User to quickly examine whatever assets are needed, in whatever geographical location, without the need to build up the layers from scratch, every time.

Window layouts may be created on the User level by all Users. Users with the correct permissions may also create Window layouts that are accessible for all Users within the Organization or all Users with a given Role. How to save a view as a Window layout is described in Section 6.3.



6

CUT GUI - Map View Settings

6.1

General

Authorized Users may configure the external Map style (Basemap) source in the CUT GUI. All Users can enable one Map style, one Shape file and multiple Map layers, for a personalized view.

Through use of Layers, the CUT GUI supports a high level of User customization. Services that are integrated with CUT, such as a traffic management system, video management system or school flashers are displayed in different layers. Devices are grouped into layers based on their Device type. CUT does not impose a limit on the number of layers that can be enabled on the GUI. However, there may be a performance and User experience impact if too many layers or too many assets per layer are displayed.

When a User has configured their Map view according to their needs, they can save the view as a Window layout. Multiple Window layouts may be saved. How to save a Window layout is covered in Section 6.3.

Note: As standard in the CUT GUI, the User will only be shown assets for which they have the appropriate Role permissions.

6.2

Zoom Levels

Zoom levels can be adjusted by sliding the zoom control bar in Map view. For desktops or laptops, Users can use the slider of the zoom control or the scroll wheel on a mouse.

For touchscreen devices, the zoom control bar is hidden. Instead, Users can use the two-finger movement to zoom in and out on the map.

As zoom levels increase, the amount of information available will increase.

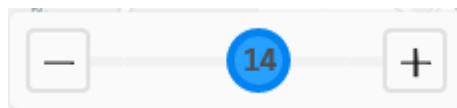


Figure 30 Zoom Control - Example Screenshot



6.3

Window Layout Settings

Window layouts are used to enable the User to store the CUT Map view in a configuration they prefer. The User may configure and store multiple Map views as multiple Window layouts. The User also has access to one or more Window layouts that have been created for their assigned Role(s) by another User with appropriate permissions.

This section describes how a User may save or edit a Window layout that they have created.

The User may access saved Window Layouts through the View selector drop-down menu in the navigation bar (Section 4.4.1.2).

6.3.1

Initial Window Layout

At initial login, the User is presented with an initial Window layout. This is the Window layout as set by the User's Administrator and will be either the default Window layout for the Organization or the Window layout that belongs to the Role assigned to the User. If the User has been assigned multiple Roles, then the Window layout displayed will be that of the first Window layout in terms of alphabetical order.

The User may then alter the Window layout and save the changes as their personal Window layout. Only Authorized Users may alter the Window layout for specific Roles or for the Organization.

Instructions on saving a new Window layout are described in Section 6.3.3.

Instructions on saving changes to an existing Window layout are described in Section 6.3.4.

6.3.2

Select Window Layout

Users may select a previously saved Window layout by clicking on the View selector (drop-down menu) in the navigation bar. Window layouts available to the User are listed and the User may select any one to view at a time.

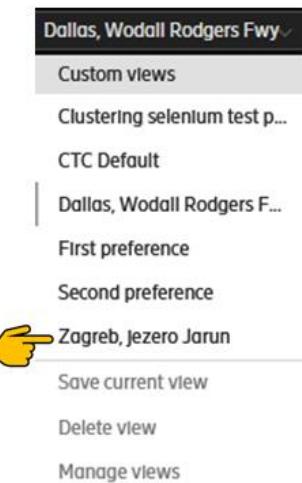


Figure 31 CUT View Selector - Example Screenshot



6.3.3

Save New Window Layout

Window layouts may be created and saved by any User, for personal use. Authorized Users may also create and save Window Layouts on behalf of a Role or the entire Organization.

First, the User must organize their Map view so that it reflects the desired layout to be saved. This may include opening cards, deselecting certain devices and so on. When ready, the User then scrolls down to the bottom of the list of available Window layouts in the View selector and clicks on **Save current view** (Step 1 in Figure 32). Then the User must select whether the Window layout is for personal use (*My self* in the **Save for** drop-down menu or for the Organization or Role (Step 2 in Figure 32). The User then types in a **Name** for the Window layout (Step 3 in Figure 32) and then clicks **Save** to save (Step 4 in Figure 32). The successful save is acknowledged by a pop-up message. After a successful save, the new Window layout is then accessible from the drop-down list of Window layouts from the View selector.

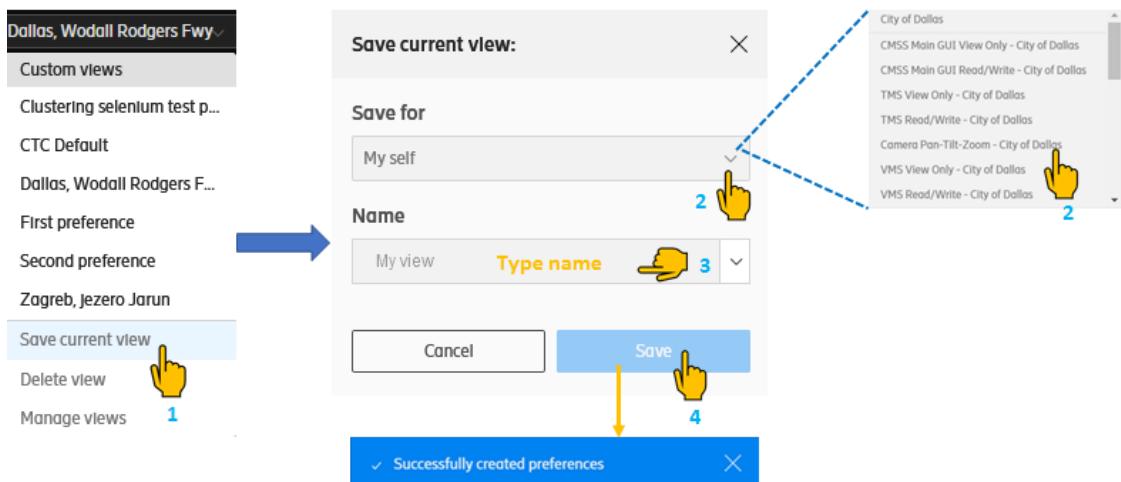


Figure 32 Saving New CUT Window Layout - Example Screenshots

6.3.4

Save Changes to Existing Window Layout

The User may save changes to a Window layout by selecting *Save current view* from the bottom of the drop-down View selector menu. This is described in Section 6.3.4.1, below.

Additionally, the User may save the current view to any Window layout when they explicitly logout of CUT GUI. This method is described in Section 6.3.4.2.

Note: If the Window layout is available to multiple Users (those of an assigned Role, perhaps) then changes made by the Authorized User to the Window layout will be visible to all Users of that Window layout when they next login or refresh their screen.



6.3.4.1 Save Current View

To update an existing Window layout, the Authorized User selects the Window layout to be altered (see Section 6.3.2) and makes the required changes by opening/closing Cards, (de)selecting devices and so on. When ready, the User then scrolls down to the bottom of the list of available Window layouts in the View selector and clicks **Save current view** (Step 1 in Figure 33). Then the User selects the name of the Window layout to be changed via the drop-down menu (Step 2 in Figure 33). The User then clicks **Save** to save (Step 3 in Figure 33). A pop-up message will ask the User to confirm they want to change the existing layout. To change the layout, the User clicks the **Overwrite** button (Step 4 in Figure 33) and the successful save is acknowledged by a pop-up message.

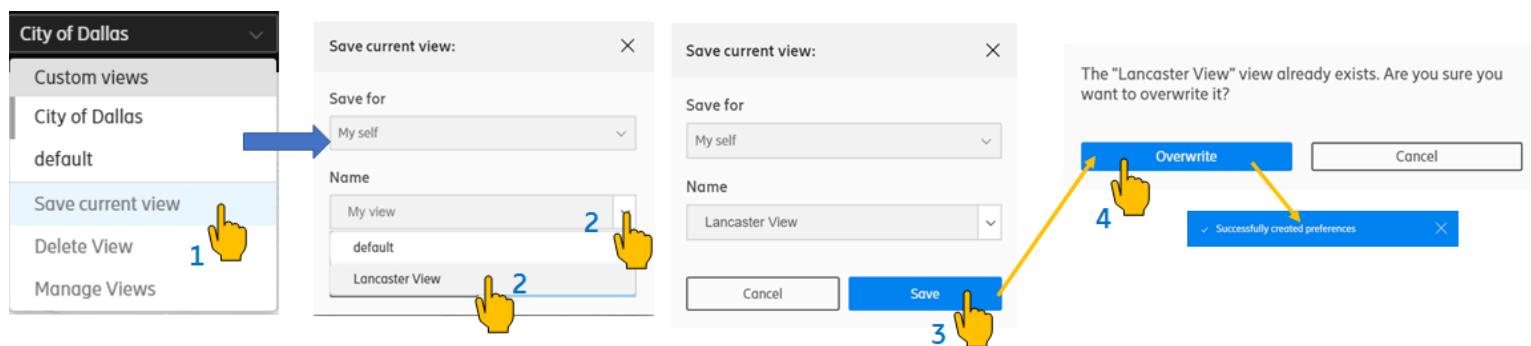


Figure 33 Saving changes to Existing Window Layout - Example Screenshot

6.3.4.2 Save Window Layout at Logout

The User selects the *Log out* option from the drop-down menu that appears when they click on their name in the CUT GUI navigation bar (Step 1 in Figure 34). A pop-up message prompts the User to save the current Window layout. To save the current Window layout, the User must select an existing Window layout from the drop-down menu in the pop-up message (Step 2 in Figure 34). The User then clicks **Save** button to save (Step 3 in Figure 34). The successful save is acknowledged by a brief pop-up message before the User is logged out.

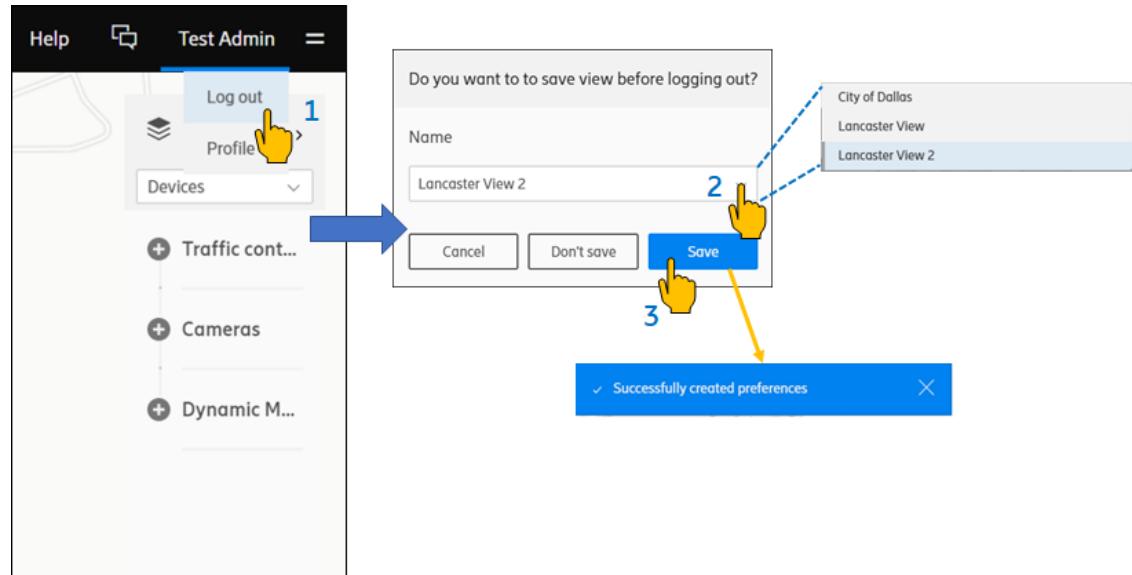


Figure 34 Saving Changes to Existing Window Layout at Logout - Example Screenshot



6.3.5

Deleting Window Layout

A Window layout may be deleted by either selecting *Manage views* in the drop-down menu from the View selector, or by selecting *Delete view*. Both options for deleting a Window layout are described in the sections below.

Note that it is irrelevant which Window layout the User is in at the time.

Note: Deletion of a Window layout will affect all Users with access to the Window layout. At the next login, Users will no longer be able to use the Window layout.

6.3.5.1

Delete View

To Delete a Window layout, the Authorized User scrolls down to the bottom of the list of available Window layouts in the View selector and clicks on **Delete view** (Step 1 in Figure 35). Then the User must select the Window layout for deletion from the list of Window layouts from the drop-down menu (Step 2 in Figure 35). The User then clicks the **Delete** button (Step 3 in Figure 35). A confirmation question pops-up and the User clicks **Yes** to confirm the deletion (Step 4 in Figure 35). A further pop-up message, indicating success is then shown.

Note: Deletion of a Window layout will affect all Users with access to the Window layout. At the next login, Users will no longer be able to use the Window layout.

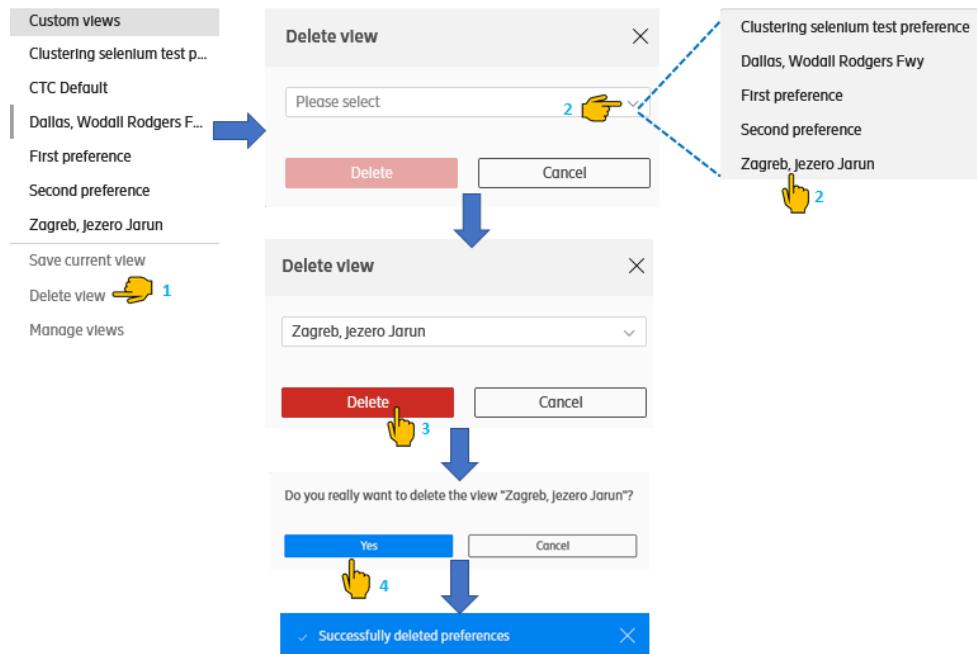


Figure 35 CUT View Selector Showing Deletion of Window Layout - Example Screenshot



6.3.5.2

Manage Views

To Delete a Window layout, the Authorized User scrolls down to the bottom of the list of available Window layouts in the View selector and clicks on **Manage views** (Step 1 in Figure 36). Then the User must select the Window layout for deletion from the list of Window layouts shown by clicking the check box beside the relevant list entry. A tick mark then appears in the box, which is colored blue (Step 2 in Figure 36). The User then clicks the **Delete** button (Step 3 in Figure 36). A confirmation question pops-up and the User clicks **Yes** to confirm the deletion (Step 4 in Figure 36). A pop-up message, indicating success is then shown.

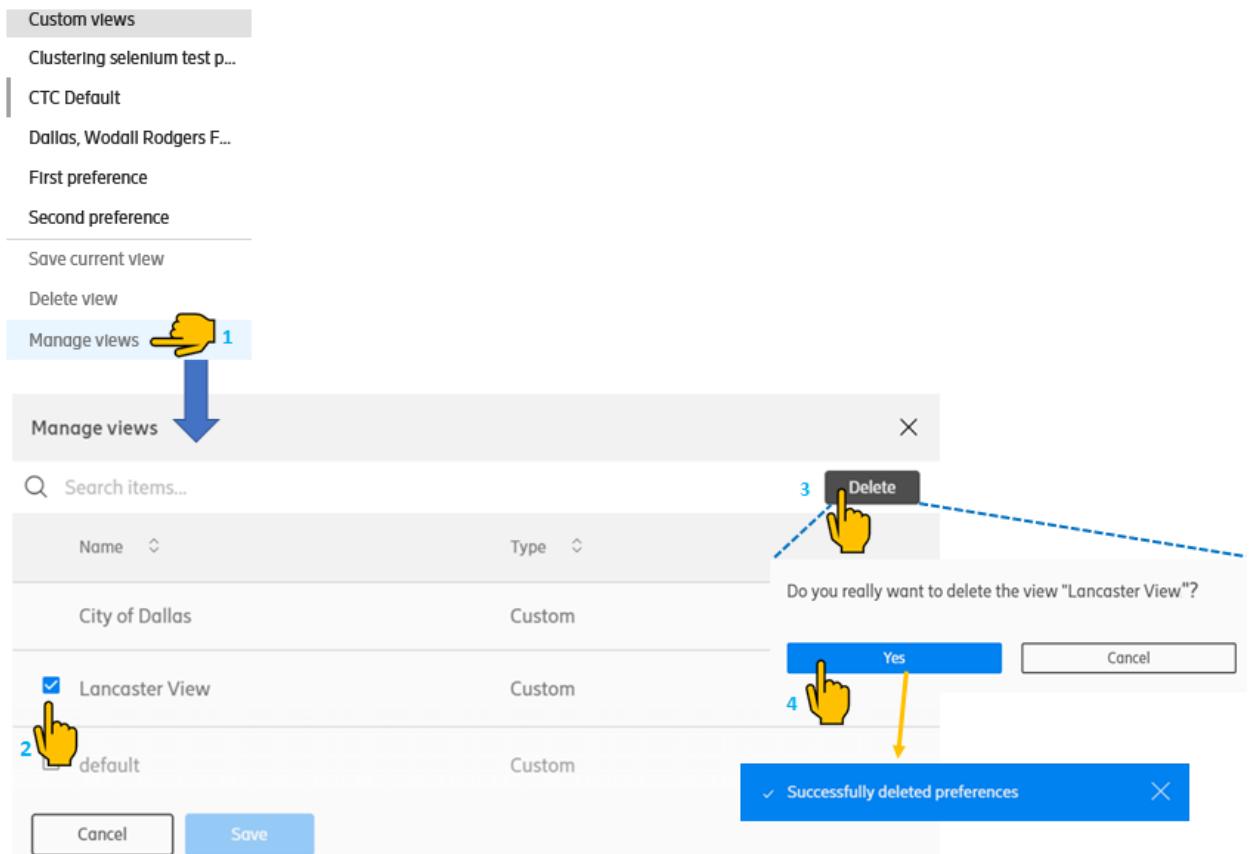


Figure 36 CUT View Selector Showing Deletion of Window Layout - Example Screenshot



6.4

Layer Control Overview

Layer Control provides access to all Layers available to the User and acts as a sort of 'Table of Contents' for the User to navigate the GUI display. Layer control is displayed automatically on the righthand side of CUT GUI at sign-in.

Note that the User experience is slightly different between small screens (by mobile or simply a small browser window) versus large screen (browser window maximized on a desktop). The Layer control may be shown as (or set by the User to) Minimized, Collapsed or Expanded. The differences are illustrated in Figure 37.

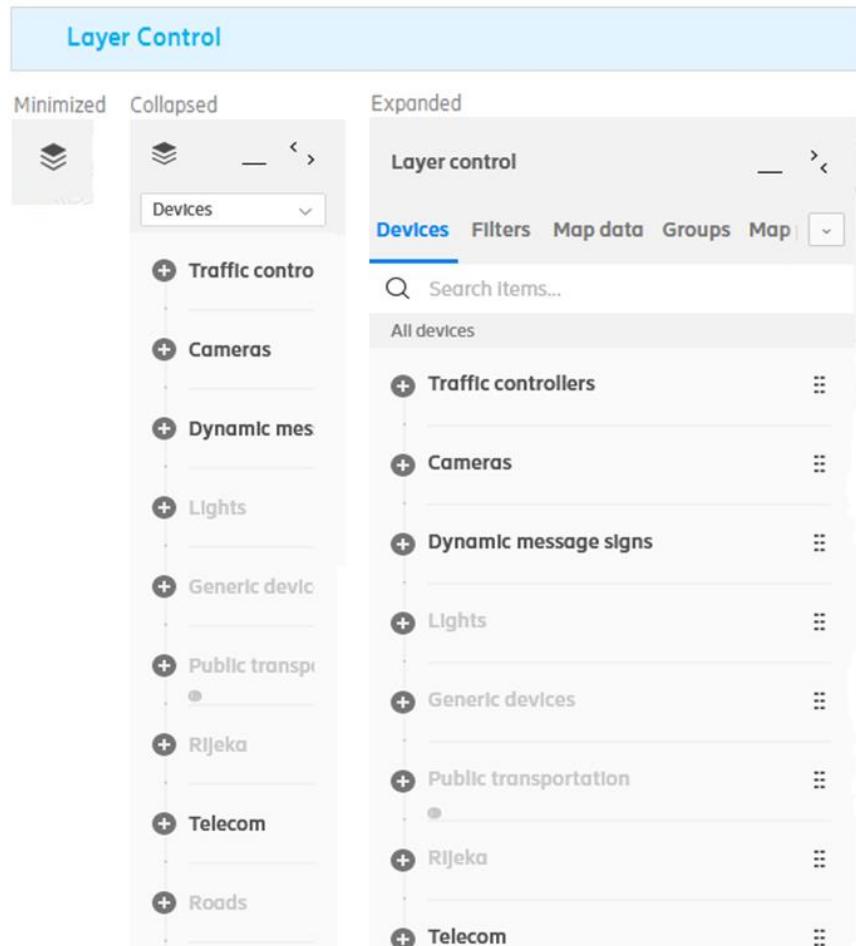


Figure 37 Layer Control States in CUT GUI - Example Screenshots

When in collapsed state, the Layer domains may be accessed by the drop-down menu. When expanded, the Layer domains are displayed across the top of the Layer control card and may be selected by clicking on the Domain name text.

In expanded state, the selected Layer domain name appears **blue**, as shown in the figure above. Besides, the User can move the items in the list, if needed.

Available Layer domains are:



- Devices: Layers that contain device assets supported by CUT
- Filters: Layers that display all connected Entities (Devices) for which a User has permission, filtered by Alarm severity and/or Entity status. Applying Filters limits the number of Devices that are displayed to only those which meet the selected Filter layer criteria, such as Devices with a Critical alarm.
- Map data: Layers from external sources, grouped under categories 'Map layers', 'Shape layers', 'Map styles' and so on. One Shape layer, one Map style layer and multiple Map layers may be applied to the Basemap at a time.
- Groups: Layers representing User-defined groups. Each User-defined group is a separate layer. One Group layer can be viewed at a time.
- Map pins: Layers representing User-defined Map pins (points of interest on the map) that are represented by various Map pin icons.

When a Layer domain is selected, the associated Layers are shown in a column. Layers may be selected (appear bold in type) or deselected (are pale grey) by clicking on the relevant Layer in the Layer domain column. Selected layers are then shown in the GUI Map view, overlaid on the Basemap.

6.4.1 Medium/Large Window

Layer control on a medium or large browser window will be shown as the collapsed version by default. The User can choose to Minimize, Expand or Collapse the Layer Control, as needed.

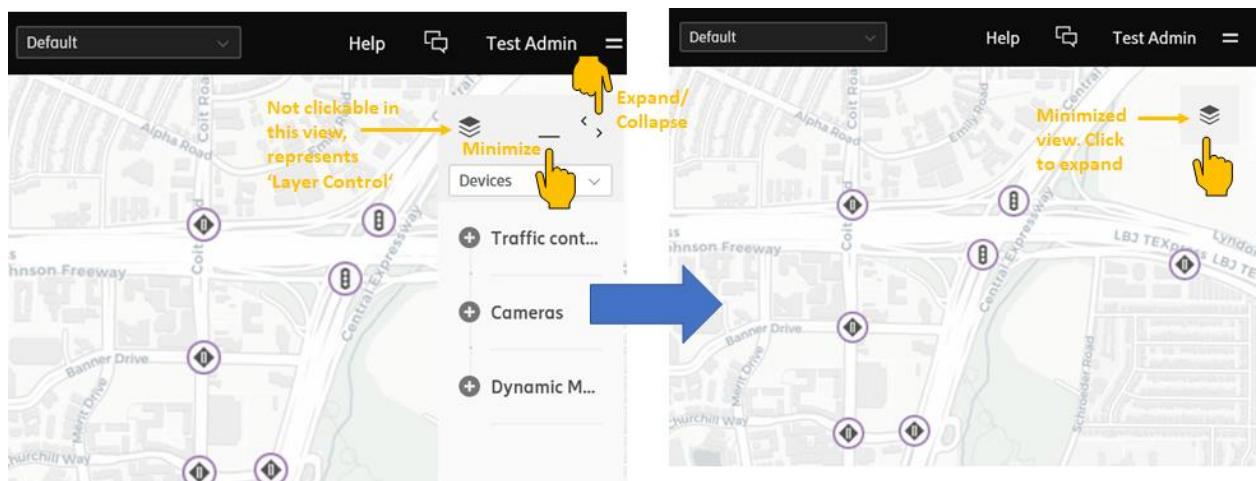


Figure 38 Layer Control: Medium/Large Screen - Example Screenshot



6.4.2

Layer Control: Small Window

Layer control on a small window is minimized by default. Once the User taps on the layer control icon, a collapsed layer control view will be visible, see Figure 39.

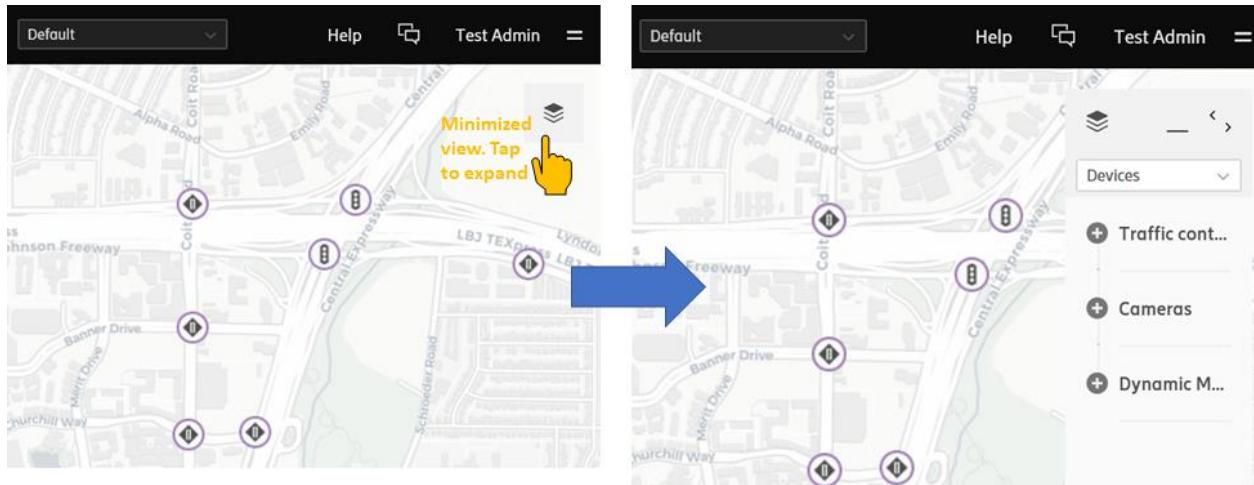


Figure 39 Layer Control: Small Screen - Example Screenshot



6.5

Layer Control: Devices

Device Layers are described in Section 5.4.

6.5.1

Select Device Layer

Within the Layer domain ‘Devices’, Authorized Users may select which Device layers they wish to view. Device layers that are available to the User are selected (are shown in bold font) by default. The User may deselect any available Layers at any time. Device layers are grouped into Device Types in CUT GUI, to allow for easier navigation.

Note: Individual Devices cannot be selected directly from Layer control. To select an individual Device, see Section 7.5.

To view Device layers, the Authorized User clicks the Layer domain **Devices** from Layer control. The Device types available to view are then listed in a column. The User may then view the individual Device layers by clicking on the icon beside any Device type in the list. The figure below illustrates the concept. In the first screen in Figure 40, Device categories ‘Traffic controllers’, ‘Intersections’, ‘Cameras’ and ‘Dynamic message signs’ are shown as available layers. Note that as they are in bold font they are also selected and should thus all be viewable on the User’s Map view. The second screen shows an example of the same Device Categories, now expanded to show the different, individual Device type layers.

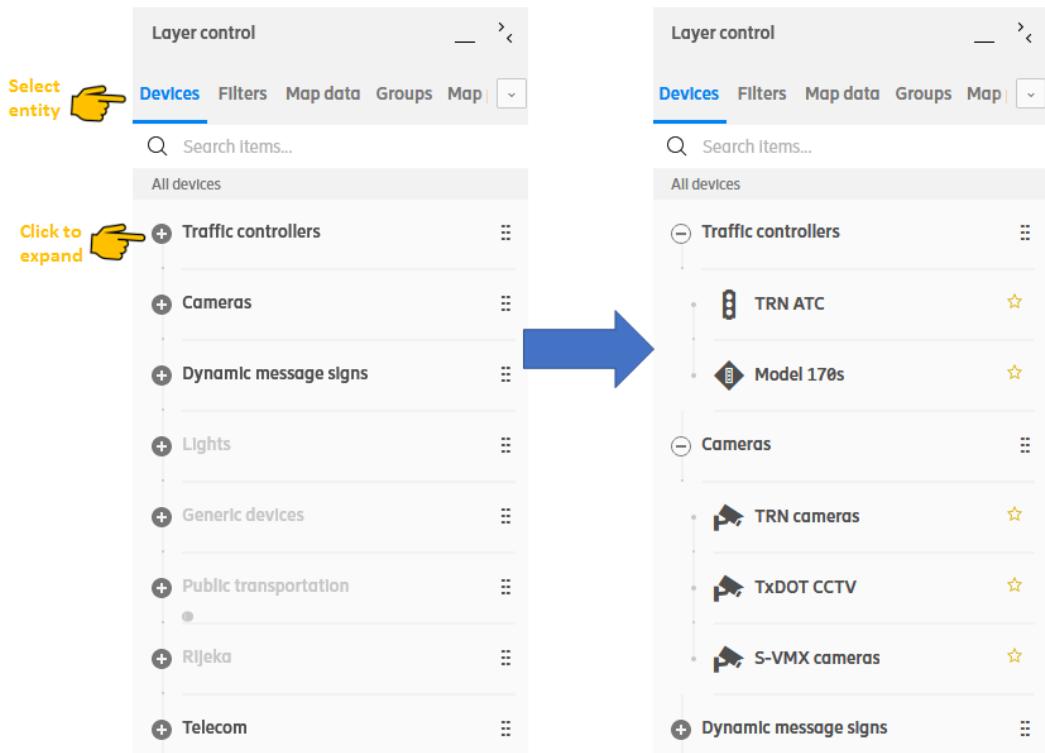


Figure 40 Viewing Device Layers – Example Screenshot



6.5.2

Deselect Device Layers or Device Types

To deselect any Device type layer, the User simply clicks on the Layer in the expanded list (see Figure 41). The Layer name will then appear in pale font and the deselection shall reflect immediately in the User's Map view as the associated devices disappear.

An entire Device category may be deselected in the same manner. Instead of expanding the Device category, the User may click on the Device category name for the deselection to occur.

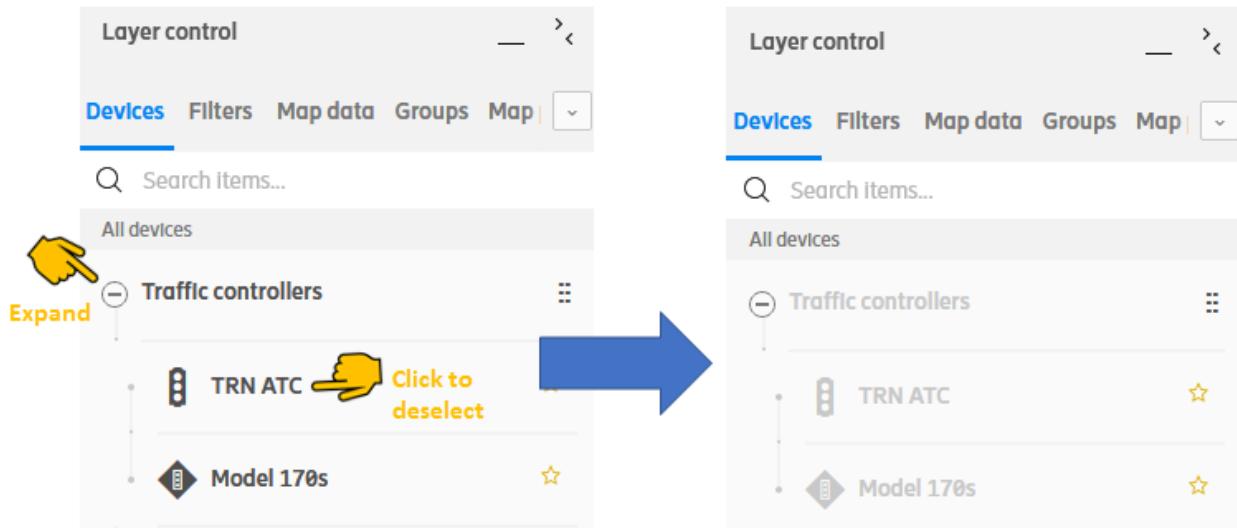


Figure 41 Device Type Deselection - Example Screenshot



6.5.3

Search for Device Type Layer

It is possible to search for specific Device types when in the Devices domain in Layer control. The User types text into the Search field (see Figure 42) and matches appear below the search field as the User types. Each match also indicates to which Device category the device is associated.

Note that search results are matched according to the User's permissions so only Device Types which the User is authorized to view are returned. The Search is not case-sensitive.

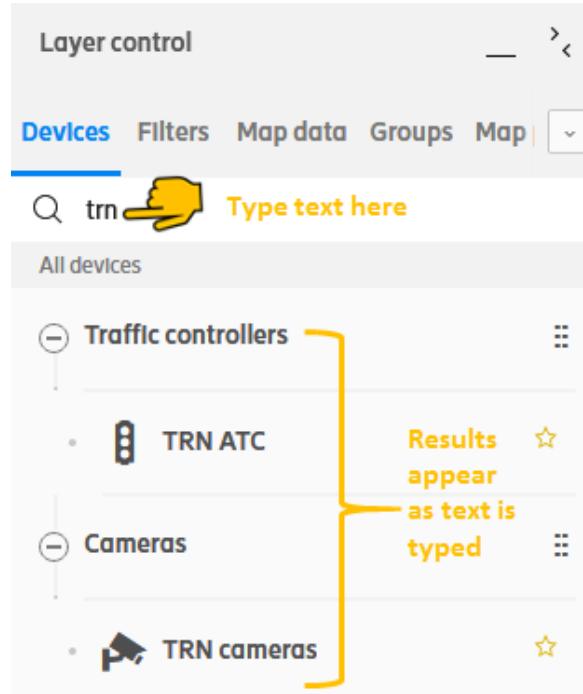


Figure 42 Search for Device Type Layers - Example Screenshot

6.5.4

Add/Edit/Delete Device Layer

Addition or Deletion of a Device layer is performed by Ericsson during Service On-boarding. Contact Ericsson if such tasks are required.



6.6

Layer Control: Filters

Filter layers are described in Section 5.5.

Note: The Filter **Alarm severity** is applied to the Map view by default. To view all Devices, the User must deselect the **Alarm severity** Filters layer. Whether filters are applied by default or not is set by system configuration.

By default, **Alarm severity** filters are switched off.

6.6.1

Deselect>Select Filters

To select or deselect a Filter, the User clicks on the desired Filter layer name in the list under the Filters domain or the User may click on the Filters layers group names **Alarm severity** or **Entity status** to select/deselect all Filter layers within that group. Applied Filters appear in bold font. Deselected Filters appear in pale font. Selection or deselection of Filters is reflected immediately in the User's Map view.

Selection and deselection of Filters are illustrated in the sections below.



6.6.1.1 Deselect>Select Filters by Layer

The figure below shows how the User may expand all the Filter layers within the Filter groups (Step 1 in Figure 43) and then deselect any currently selected Filter layers (Step 2 in Figure 43) to remove them. To deselect Filter layers that are currently selected, the User clicks on the selected Filter layers. If the Filter layer in a Filter group is not selected, it is grey in colour.

The numbers in rectangles that are to the right of alarms display the total number of entities in a dashboard format so users can have high level overview on the entire situation under their control. When a filter is applied, the total count of entities and alarms adjusts according to filtered entities. This also allows users to see the total count of the following on the Layer Control Filter tab:

- Alarms per severity, for devices visible on the map.
- Devices for statuses (entity status and operational status), for devices visible on the map.

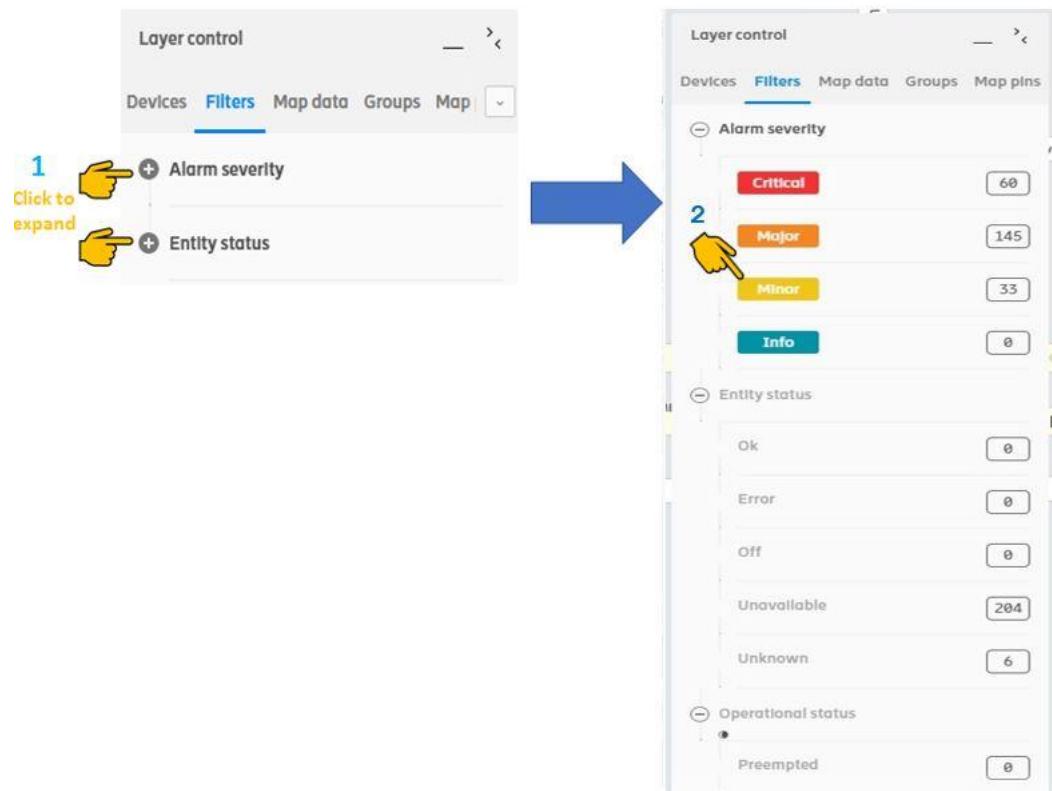


Figure 43 Deselect>Select Filters by Layer - Example Screenshot



The following notifications can be displayed after changing filter settings, or just after logging in if the conditions are met, see Figure 44 and Figure 45.

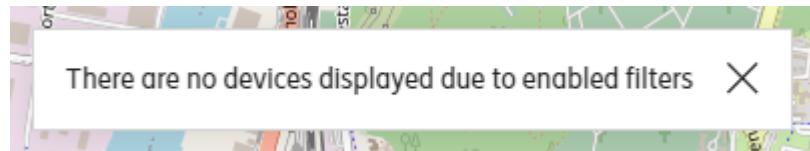


Figure 44 Notification Message after Changing Filter Settings - Example Screenshot

The notification above is shown when all devices have been filtered out due to applied filters, including the filters by device type.

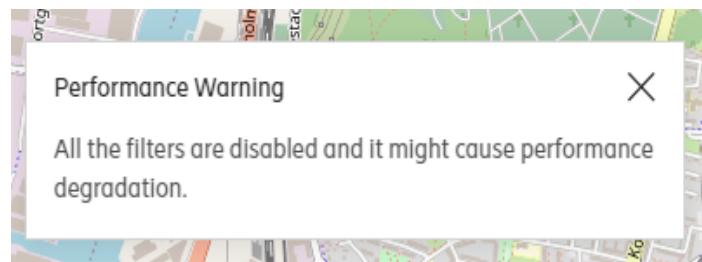


Figure 45 Performance Warning - Example Screenshot

The notification above is shown if all filters are disabled and all device types are shown.

6.6.1.2 Deselect>Select Filters by Layer Group Name

It is also possible to select or deselect all Filters layers within the groups **Alarm severity** or **Entity status** by clicking on the Layer group name. This is shown in Figure 46.

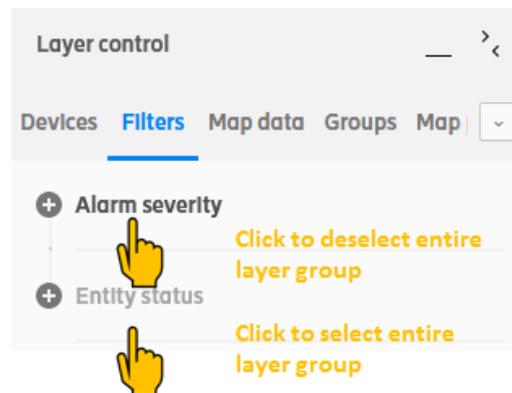


Figure 46 Deselect>Select Filters by Layer Group Name - Example Screenshot



6.7

Layer Control: Map Data

Within the Layer domain 'Map data' all Users may select a Map style. Users may additionally select which Map layers and which Shape file they would like to add to their personalized Map view.

Authorized Users may Edit and Delete the various Map data layers. The sections below describe how Map data layers may be viewed, edited or deleted.

6.7.1

Select Map Data Layers

From Layer control, the User clicks the Layer domain **Map data**. The Map data layers available to view are shown to the User when they click on the icon beside Map styles, Map layers or Shape files. Figure 47 illustrates the concept.

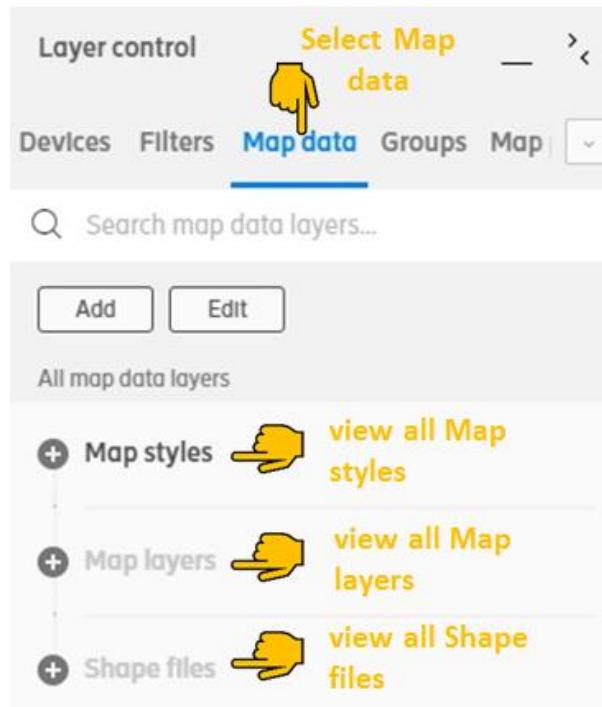


Figure 47 Map Data Layer Navigation - Example Screenshot

6.7.1.1

Selecting Map Style

Selection of a Map style is applicable to all Users. The User may select just one Map style at a time.

When in **Layer control > Map data**, the User selects the icon beside **Map styles** as shown in Figure 47. The available Map styles are listed in a column. The Map style in use (selected) appears in the list in bold font and the other, available (deselected) Map styles are shown in pale font. The User then selects the preferred Map style from the list. The selection is reflected immediately.

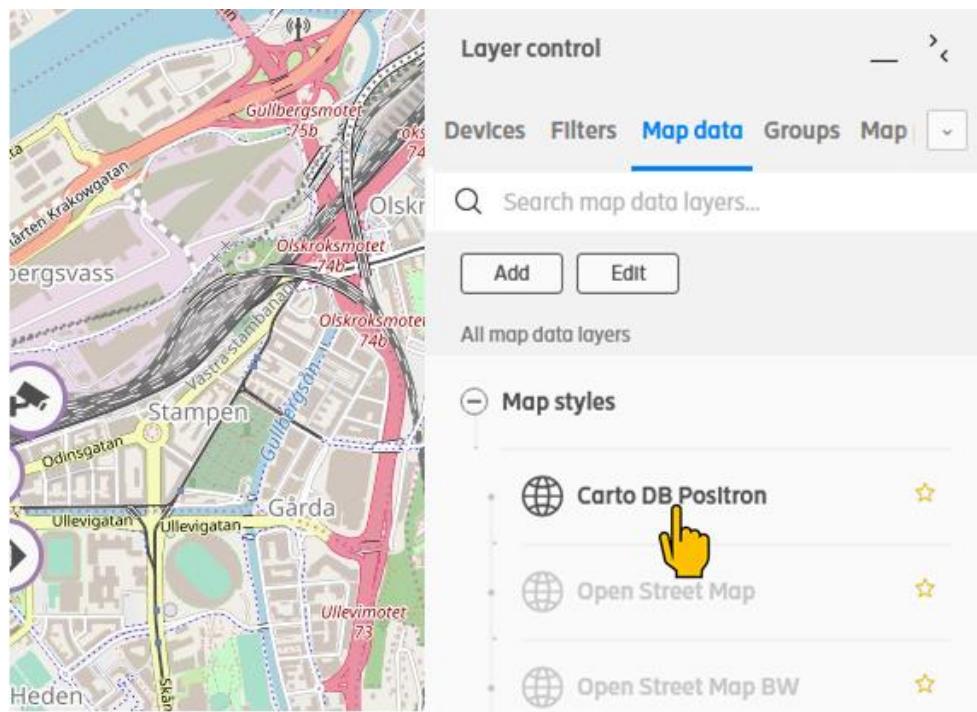


Figure 48 Map Style Selection - Example Screenshot

In case the map server is unreachable, the map layer is automatically disabled and the User is informed about it by a displayed notification, see Figure 49.

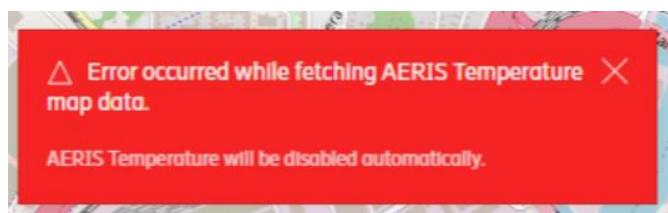


Figure 49 Map Layer is Automatically Disabled - Example Screenshot

6.7.1.2 Selecting Map Layer

Selection of Map layers is applicable to all Users. The User may select many Map layers to be displayed at a time.

When in **Layer control > Map data**, the User selects the icon beside **Map layers** as shown in Figure 47. The available Map layers are then listed in a column. The Map layers in use (selected) appear in the list in bold font and the other, available (deselected) Map layers are shown in pale font. The User then selects the required Map layer from the list. The selection is added immediately to the User's Map view. Figure 50 shows Map layer selection in CUT GUI.

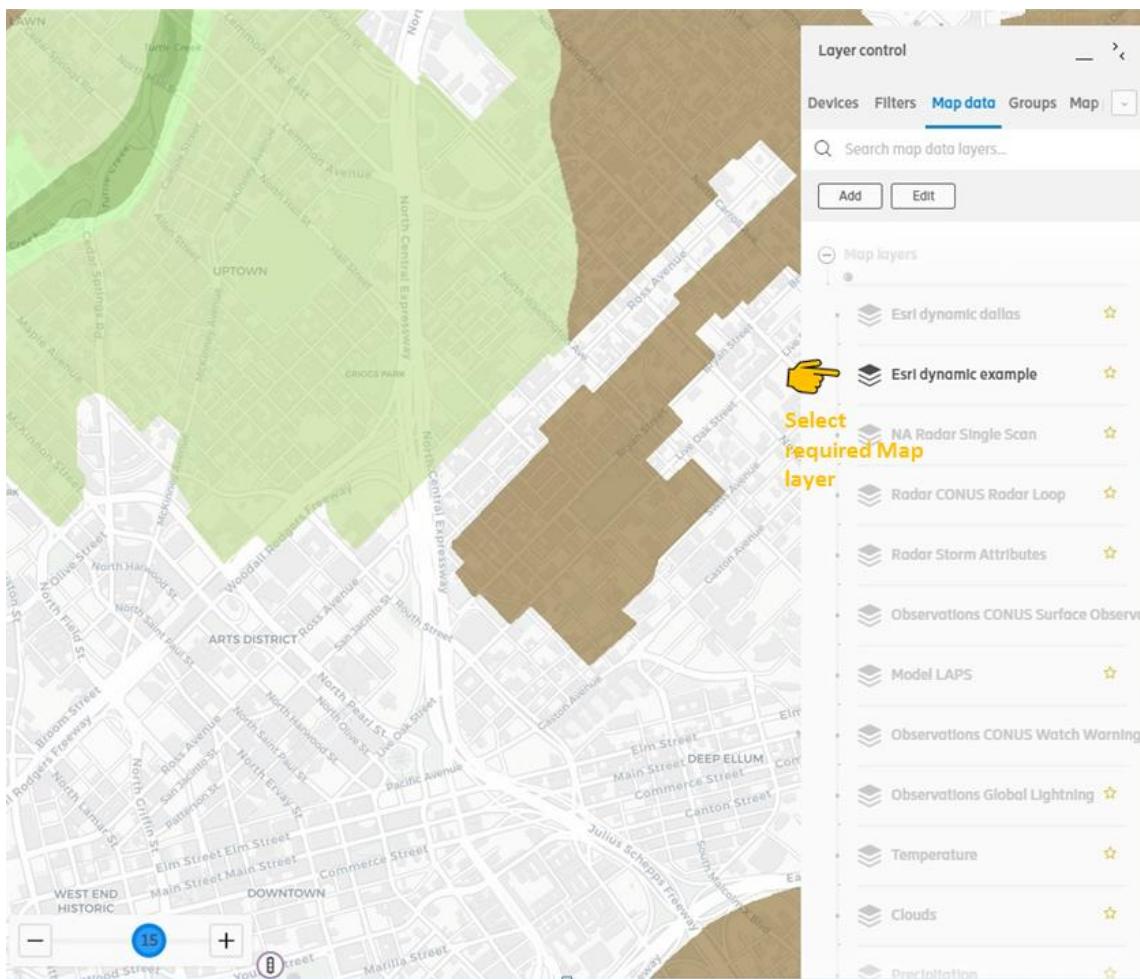


Figure 50 Map Layer Selection - Example Screenshot

6.7.1.3

Selecting Shape File

Selection of a Shape file is applicable to all Users. The User may select just one Shape file at a time. This is to ensure that the CUT GUI performance remains optimal. If multiple Shape files are required, it is recommended that one or more Shape files are converted to ESRI map layers (which will then be accessible by URLs). They may then all be added and viewed as Map layers. Contact your Organization ESRI contact for your Organization if you wish to convert a Shape file to an ESRI map layer.

When in **Layer control > Map data**, the User selects the icon beside **Shape files** as shown in Figure 47. The available Shape files are listed in a column. Any Shape file that is in use (selected) appears in the list in bold font and the other, available (deselected) Shape files are shown in pale font. The User then selects the preferred Shape file from the list. The selection is reflected immediately and any Shape file that was in use becomes immediately deselected. Figure 51 shows Shape file selection in CUT GUI.

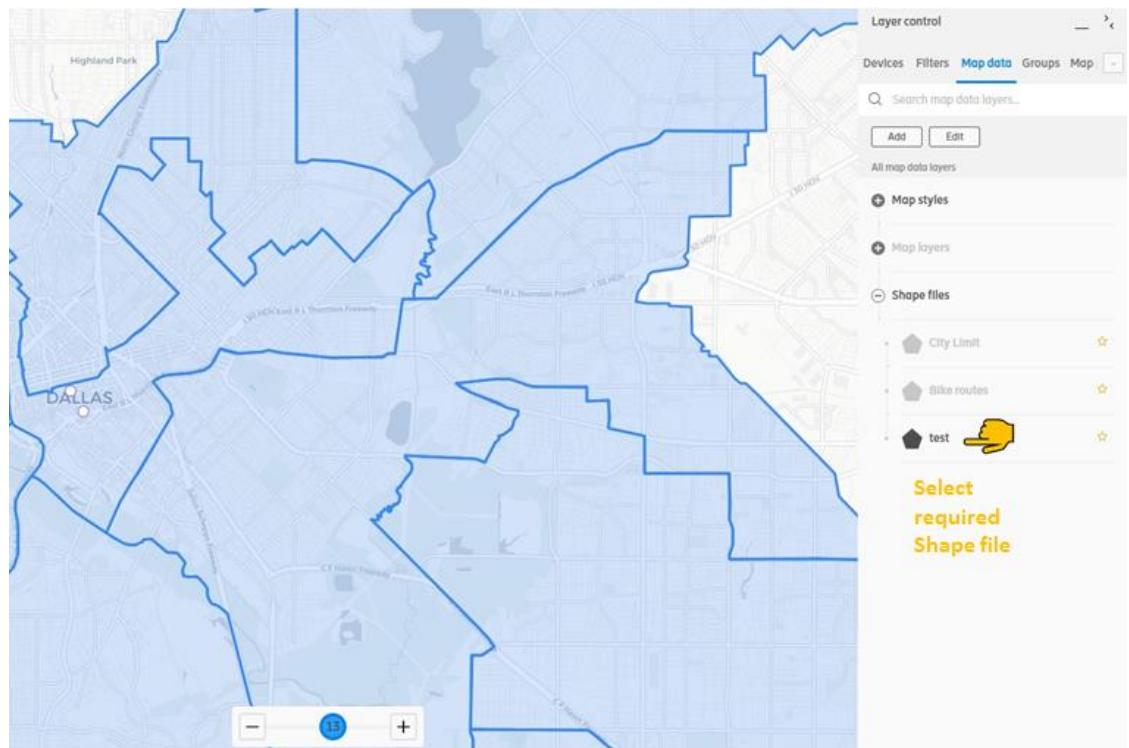


Figure 51 Shape File Selection - Example Screenshot



6.7.2

Add Map Data Layer

Authorized Users for an Organization can add any supported Map data layer. The first steps are the same for all Map data layers and are described below. Subsequent sections detail the different parameters required by the different Map data layers.

From Layer control, see Figure 52, the User clicks the Layer domain **Map data** (Step 1 in the figure below) and then clicks **Add** (Step 2 in the figure below).

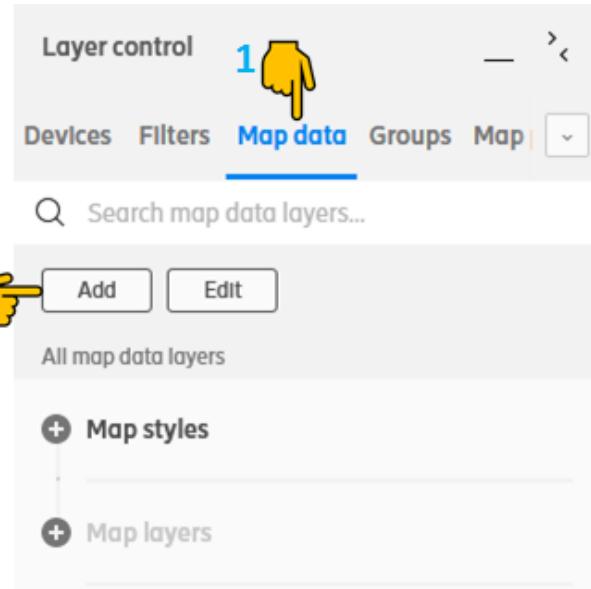


Figure 52 Add Map Data - Example Screenshot

This opens the *Add map data layer* card. The User selects the Map data layer type to add from a drop-down menu and the required parameters then appear. Map style is the default Layer type to add in the drop-down menu (see the next section for details) so the parameters that are first shown relate to Map style. By changing the Map data layer type in the drop-down menu, the parameters required for that type are shown automatically. Each type is detailed in the sections below.

6.7.2.1

Add Map Style

The Authorized User ensures that **Map style** is selected from the drop-down menu (Step 1 in Figure 53) and then fills in the required fields (Step 2 in Figure 53). The required parameters are described below the figure.

Note that when a map style has been identified (Step 1 Figure 53), then it cannot be edited once the layer has been created and saved.



Add map data layer

Map style **1**

Select map style

Name

Description

URL

Attribution **2** Fill in parameters

Subdomains

License key

Max native zoom **3**

Save

Figure 53 Add Map Style - Example Screenshot

The parameters required to add a Map style are as follows:

- Name
Mandatory text field. The name of the Map style that is displayed to Users in the CUT GUI
Example value: *ESRI World Imagery*
- Description
Optional text field. A description of the Map style.
- URL
Mandatory text field. The web address where the Map style is to be fetched from
Example value:



`//{s}.tile.openstreetmap.de/tiles/osmde/{z}/{x}/{y}.png`

➤ **Attribution**

Optional but recommended text field. Attribution is the credit given to the Map style (Basemap) owner, that is displayed in the bottom, right-hand corner of the Map view.

Example value:

`© OpenStreetMap`

➤ **Subdomains**

Optional text field. Sourced from the Basemap provider, if required.

Example value 1: `abcd`

Example value 2: `mt0 mt1 mt2 mt3`

➤ **License key**

Optional text field. The Value is sourced from the Basemap provider.

➤ **Max native zoom**

Optional numeric field. Represents the maximum zoom level supported by the Map style. Sourced from the Basemap provider.

Example value: 19

Finally, the User clicks '**Save**' to save the Map style (Step 3 in the figure above). In case the map server is not reachable, the notification is displayed and the User is prompted with yes/no dialog to still save this layer, see Figure 54.

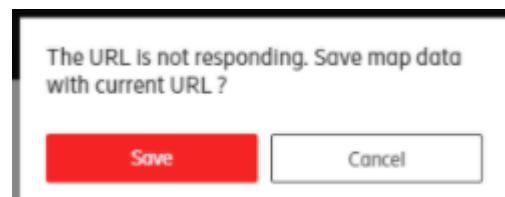


Figure 54 Notification about Server is not Reachable - Example Screenshot



6.7.2.2 Add Shape File

The Authorized User ensures that **Shape file** is selected from the drop-down menu (Step 1 in Figure 55) and then fills in the required fields (Step 2 in Figure 55). The required parameters are described below the figure.

The screenshot shows a 'Add map data layer' dialog box. At the top, there is a dropdown menu labeled 'Shape file' with the option 'Select required Shape file' highlighted by a yellow box and a hand cursor icon. Below the dropdown are two text input fields: 'Name' and 'Description'. A yellow bracket labeled 'Fill in parameters' points to both fields. To the left of the 'Description' field is another 'Shape file' dropdown with the same 'Select required Shape file' option highlighted. Below these fields is a file upload section with a 'Choose file' button and a placeholder 'No file chosen (e.g. abc.zip)'. A yellow box labeled 'Upload required Shape file' points to the 'Choose file' button. At the bottom right are two buttons: a blue 'Save' button with a hand cursor icon and a white 'Cancel' button.

Figure 55 Add Shape File - Example Screenshot

The required input to add a Shape file are as follows:

- Name
Mandatory text field. The name of the Shape file that is displayed to Users in the CUT GUI.
Example value: *Dallas Councils*
- Description
Optional text field. A description of the Shape file.

The User then must upload the Shape file by clicking on the **Choose file** button (Step 3 in Figure 55). This opens a window whereby the locally stored Shape file can be located and then uploaded. Note that the allowed size for the attachment is 5MB. Otherwise, the User receives the error message. Addition of a file is **Mandatory**.

Note: The Shape file must be imported in .zip archive format. The term "shape file" actually refers to a collection of files stored in the same directory. The expected content in the .zip file is as follows:



*Example.zip/
streets.shp
streets.shx
streets.dbf*

The .shp, .shx and .dbf are **Mandatory** files for inclusion within the .zip file. Other optional file extensions (.prj, .sbn, etc.) may also be included.

Finally, the User clicks the **Save** button to save the Shape file (Step 4 in Figure 55). Notification of uploading and then success or failure is then displayed to the User.

6.7.2.3

Add ESRI Feature Layer or ESRI Dynamic Map Service

ESRI feature layers and ESRI dynamic map services that are added to CUT GUI will be displayed as Map layers in the Map data layers domain.

Note: CUT currently only supports addition of ESRI layers as Map layers.

The Authorized User ensures that **ESRI feature** or **ESRI dynamic** is selected from the drop-down menu (Step 1 in Figure 56, showing ESRI feature) and then fills in the required fields (Step 2 in Figure 56). The required parameters are described below the figure and are the same for ESRI feature layers as for ESRI dynamic map services.

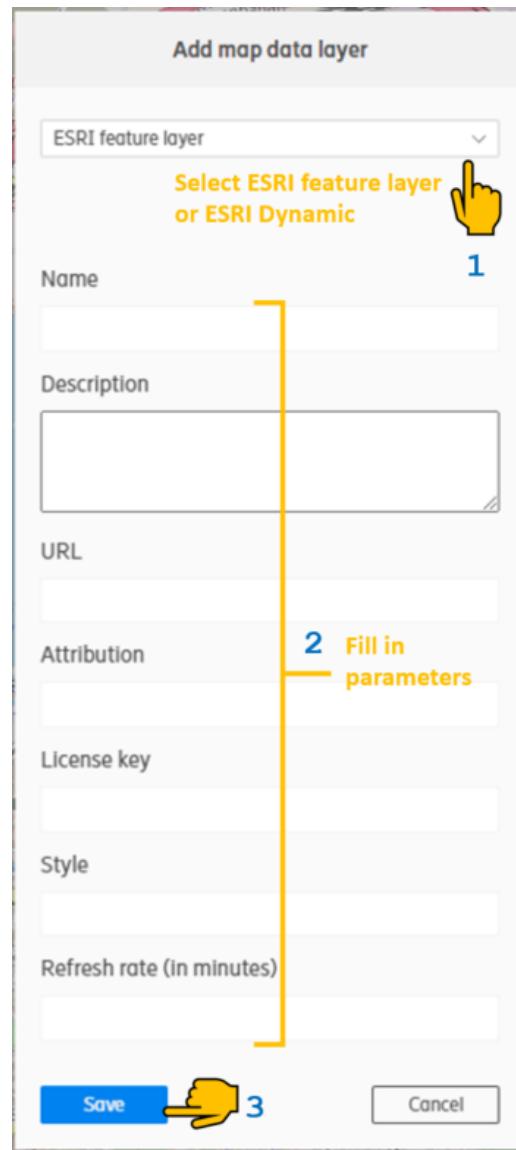


Figure 56 Add ESRI Feature or ESRI Dynamic - Example Screenshot

The parameters required to add an ESRI feature or ESRI dynamic are as follows:

- Name
Mandatory text field. The name of the Map style that is displayed to Users in CUT GUI.
Example value: *ESRI Dynamic Dallas*
- Description
Optional text field. A description of the Map style.
- URL
Optional text field. The web address where the Map style is to be fetched from.
Example value:

<http://gis.dallascityhall.com/wwwgis/rest/services/BaseMap/Ortho2015/MapServer>



➤ Attribution

Optional but recommended text field. Attribution is the credit given to the Map layer owner that is displayed in the bottom, right-hand corner of the Map view. Attribution is concatenated when stacking multiple layers.

Example value:

© ESRI feature layer

➤ License key

Optional text field. The Value is sourced from the Basemap provider.

➤ Style

Optional field. Refers to color and/or opacity of the layer display. Must be in JSON format. Color must be a string and opacity must be numeric, in the range 0 (totally transparent) to 1 (fully opaque).

Example value 1:

{“color”: “red”, “opacity”: 0.5}

Example value 2:

{“opacity”:“0.9”}

Finally, the User clicks the **Save** button to save the ESRI feature layer or Dynamic map service (Step 3 in Figure 56).

When a User wants to add a Map layer that requires authentication for its use, it is obligatory that the User first obtain a token from the provider (via the ArcGIS/ESRI page), and then include it in the layer path. The User must include the token in the URL, see Figure 57.

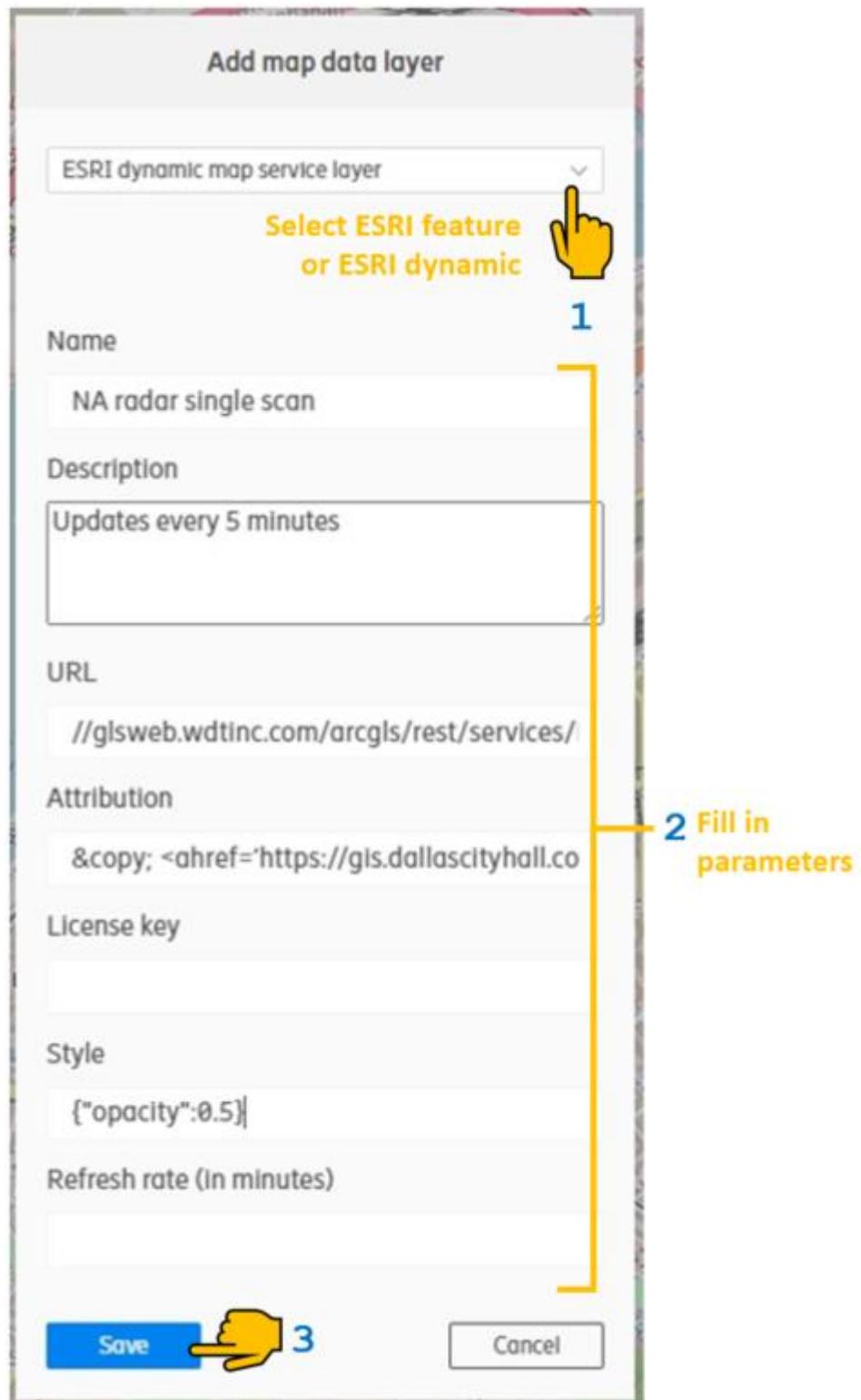


Figure 57 Edit ESRI Feature or ESRI Dynamic - Example Screenshot



Caution

Modifying the URL or License key fields for an existing Layer can break the generation of the Layer. The User must ensure the Token or License key is correct to ensure proper generation.

Note: The format of the URL string must be as follows:

`(do_not_protocol_ie_http_at_the_beginning:) //<server>/?token=<token>`

For example:

`//gisweb.wdtinc.com/arcgis/rest/services/Radar/CONUS_Radar_Loop/MapServer/?token=M-NKBW6J--TX1IE2NXZD4fhvbeEPbM8Qd_MLO_9TGdvXO8-VZLJvXHHHVRLPeEK`

If the ESRI service contains multiple layers the User wants to add, each layer must be edited separately to include the URL with token. The token is typically the same for all layers they provide.



6.7.3 Edit Map Data Layer

Authorized Users may edit a Map data layer. This section describes the process. Note that the process is similar for all Map data layer groups. The example used below applies to editing a Map style but the User should follow the same steps for other Map data layer groups.

Note: Only one Map data layer item may be edited at a time.

From Layer control, the User clicks the Layer domain **Map data** (Step 1 in the figure below) and then clicks **Edit** (Step 2 in the figure below).

The User then clicks the icon in order to expand the layers below the relevant Map data layer group that they wish to edit. In this example, **Map styles** is expanded (Step 3 in the figure below) and the full list of available Map styles is displayed. The User clicks on the small check box that now appears beside the Map style that they wish to edit (Step 4 in the figure below). The check box turns blue and displays a tick mark.

Note: Although the Map style being edited is deselected (name appears in pale font, meaning it is not displayed on the User's current Map view), this does not prevent it from being edited.

Then the User clicks on the **Edit item** button (Step 5 in the figure below) which will appear black to Authorized Users when the mouse is placed over it.

An Edit map data layer card is displayed, showing the current parameter settings for the item chosen for editing. Parameters may then be altered and saved, in accordance with the parameter list description in Section 6.7.2.

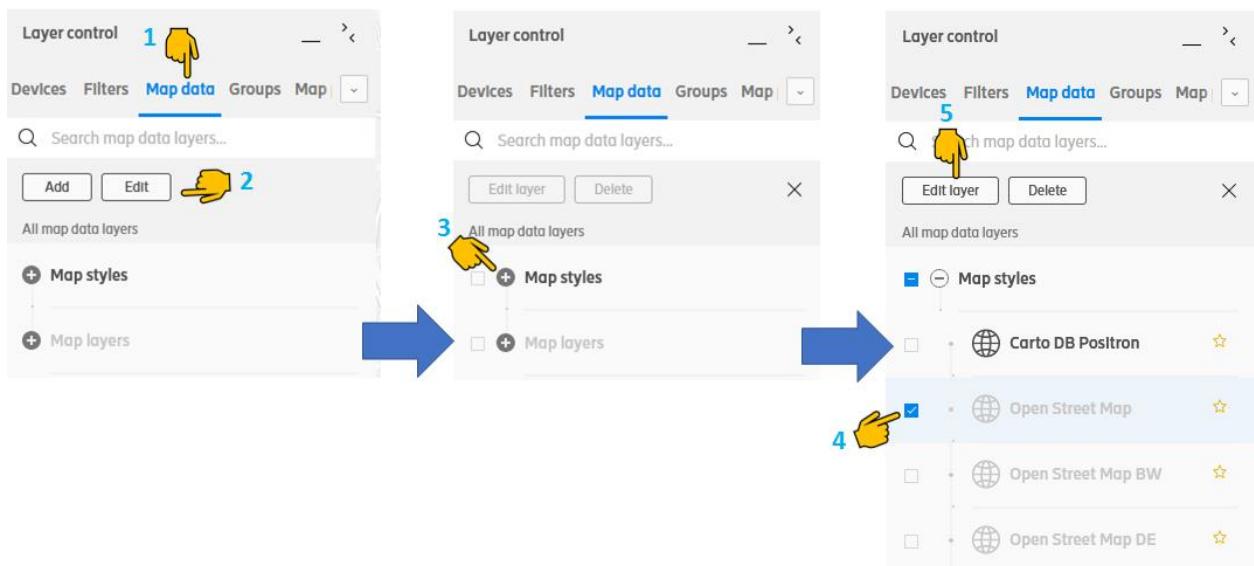


Figure 58 Edit Map Data - Example Screenshots



6.7.4

Delete Map Data Layer

Authorized Users may delete a Map data layer. This section describes the process. Note that the process is similar for all Map data layer groups. The example used below applies to deleting a Map style but the User should follow the same steps for other Map data layer groups.

Note: If a Map data layer is deleted, Users using the layer are not affected until their login times out or they actively log out.

From Layer control, the User clicks the Layer domain **Map data** (Step 1 in the figure below) and then clicks **Edit** (Step 2 in the figure below). The User then clicks the **+** icon in order to expand the layers below the relevant Map data layer group that they wish to delete.

In this example, Map styles is expanded (Step 3 in the figure below) and the full list of available Map styles is displayed. The User clicks on the small check box that now appears beside the Map style that they wish to delete (Step 4 in the figure below). The check box turns blue and displays a tick mark. The User then clicks on the **Delete** button (Step 5 in the figure below) which will appear black to Authorized Users when the mouse is placed over it.

An confirmation message pops-up to request the User to verify that the selected Map data layer item should be deleted. To confirm, the User clicks **OK** (Step 6 in the figure below).

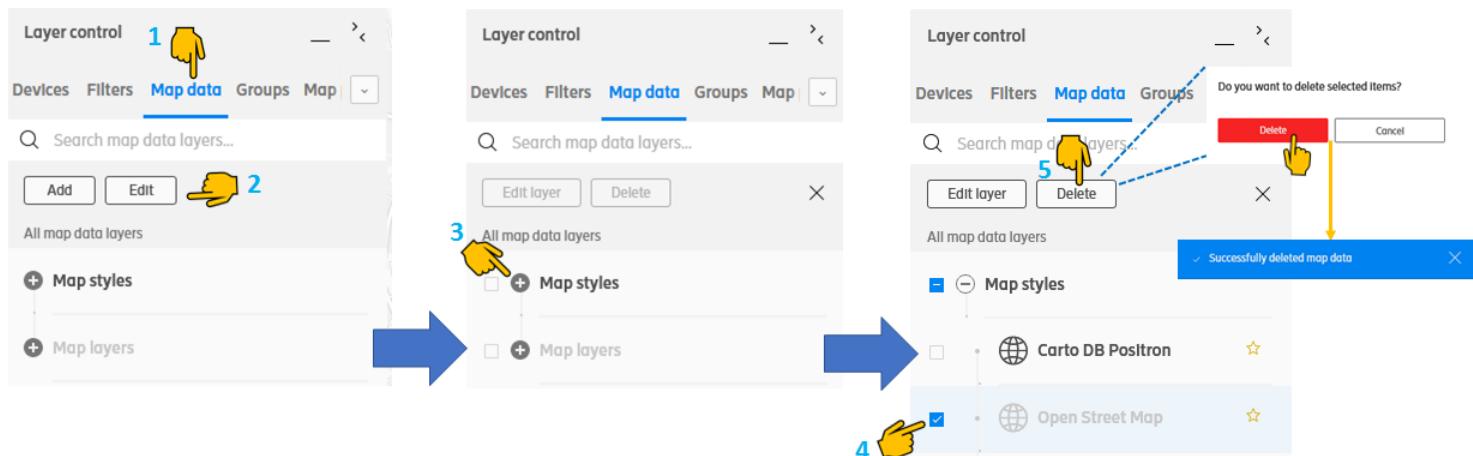


Figure 59 Delete Map Data - Example Screenshot



6.8

Layer Control: Groups

Groups layers are described in Section 5.6. Note that a Group is a group of entities that a User has created themselves or that Authorized Users have created, for Users of a particular Role. An Entity group is comprised of related or unrelated entities (Devices or Map pins).

6.8.1

Select Entity Group

From Layer control, the User clicks the Layer domain **Groups**. The Entity groups available to view are shown to the User in a list. To view a particular Group on the Map view, the User selects the specific Group in the list. The selection is reflected immediately as the Map view jumps to the Group in the Map view. The figure below illustrates the selection of Layer domain groups and the selection of Entity group 'group 1'.

Note: Only one Entity group may be selected at a time. Groups may not be added to Favorites, see Section 6.10.

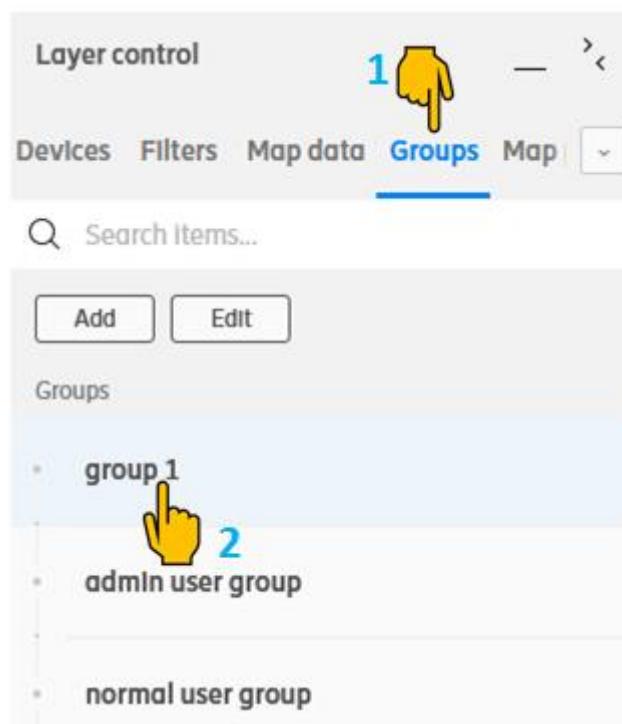


Figure 60 Select Device Group to View - Example Screenshot

6.8.1.1

View Entities within Entity Group

When an Entity group is selected, the Map view will highlight all the related Entities in the Entity group. The Entities will be colored blue. This is shown in Figure 61.

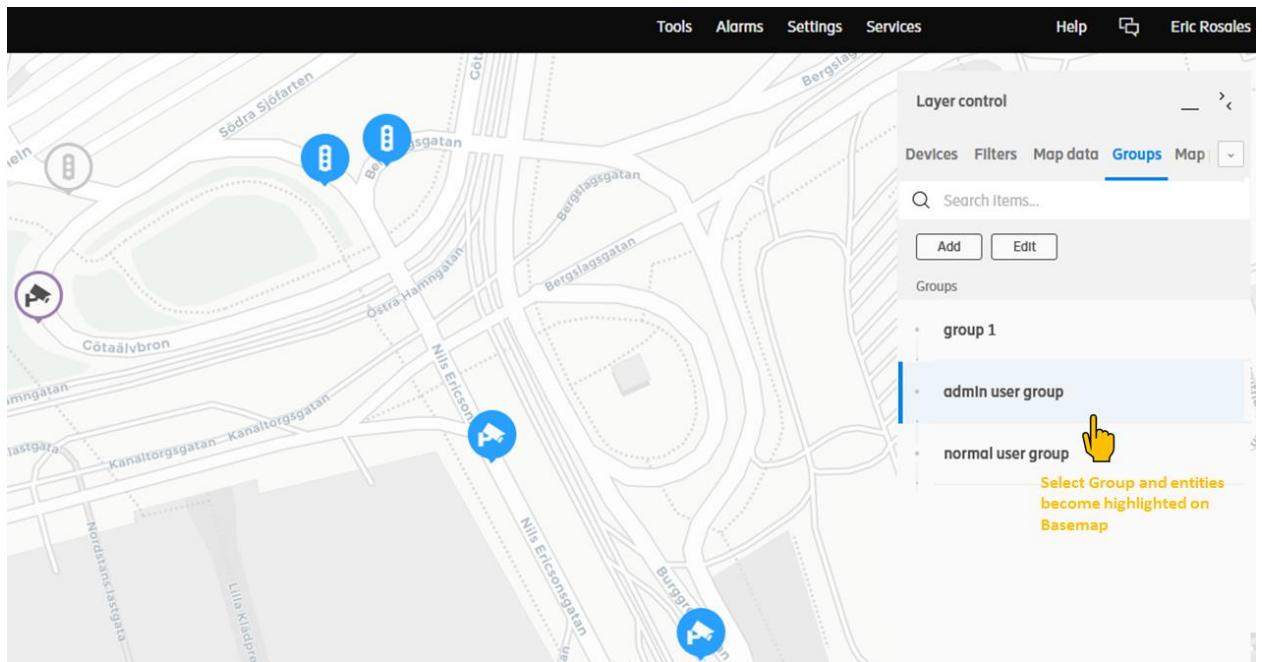


Figure 61 View Entity Group on Map - Example Screenshot

Individual Entities may be clicked on in the Map view and the Entity *Details* card will appear. To view the Entities that are part of the Group, in a list from Layer control, the User may follow the Steps 1 to 4 in Section 6.8.3, Edit an Entity group. The Edit function is described in Section 6.8.3. Alternatively, the Entities which make up a Group may be viewed in a list using the Entities card, see Section 8.1.1.1.



6.8.2

Add Entity Group

Note: It is also possible to add an Entity group through **Tools > Entities** from the main CUT navigation bar. To see how to launch the *New entity group* card from **Tools > Entities**, see Section 8.2.

6.8.2.1

Launch New Entity Group Card

To launch the *New entity group* card from within Layer control, the User first clicks on the **Groups** domain (Step 1 in Figure 62) and then clicks **Add** (Step 2 in Figure 62). Once the *New entity group* card is launched, there are two options available to create the group from Map view. The options are described in Section 6.8.2.3 and Section 6.8.2.4. The basic parameters for creating a new Entity group are described in Section 6.8.2.2.

Note: There is a third option for creating a *New entity group* and that is using the Entity tree, which is available under the CUT Menu option **Tools > Entities**. This third method is described in Section 8.2.4.

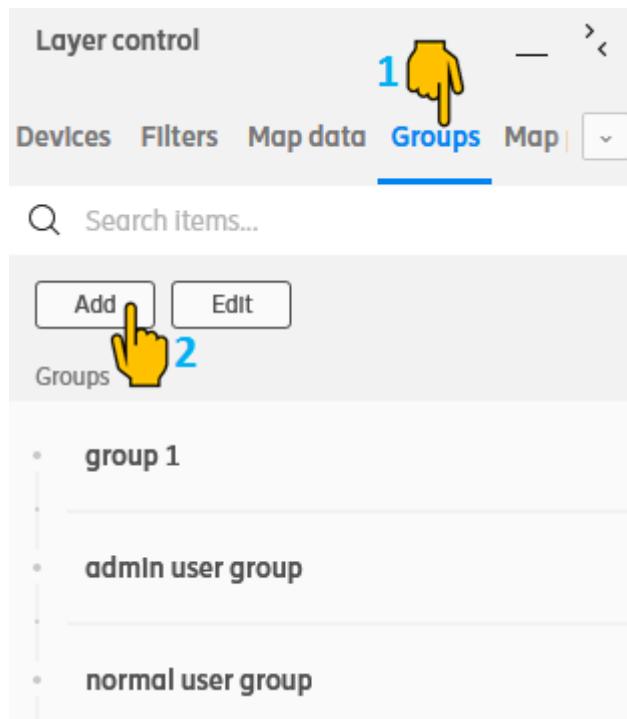


Figure 62 Launch New Entity Group Card from Layer Control - Example Screenshot

When a group is created, CUT checks if any of the selected devices, which should be in the group, already belongs to other group(s). If it is true, these group(s) will be highlighted with a blue border. For example, the User creates "group 2" and wants to add a device that already belongs to "group 1". This is shown on the mini map, see Figure 63.

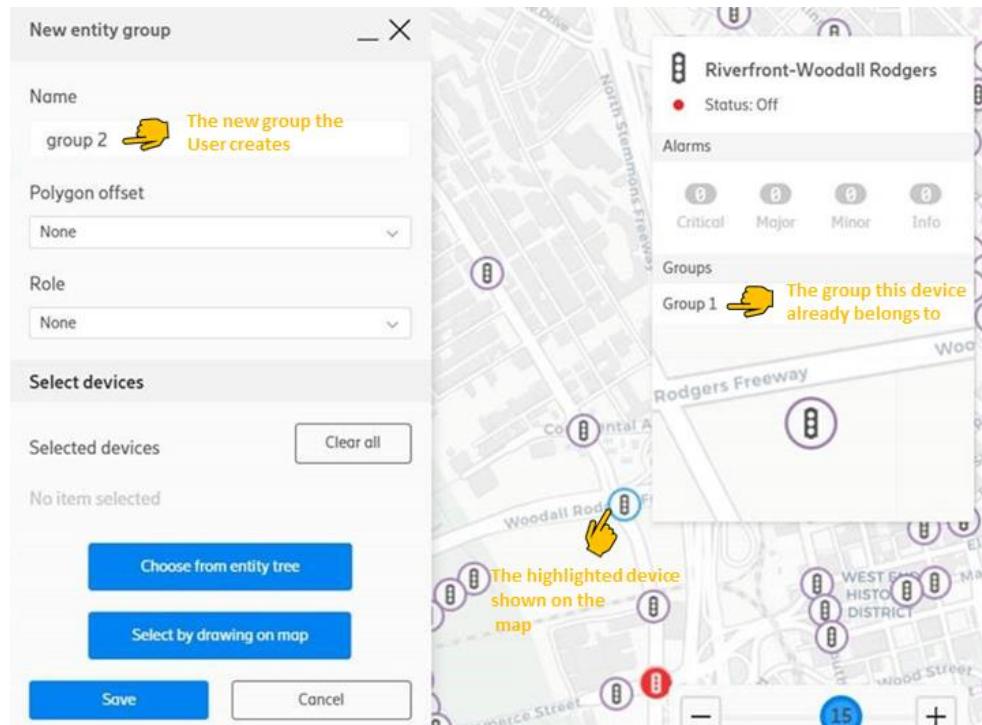


Figure 63 Adding New Group with Devices from Other Group - Example Screenshot

If the User clicks on this device and adds it also to "group 2", all devices belonging to "group 1" will be highlighted blue, see Figure 64.

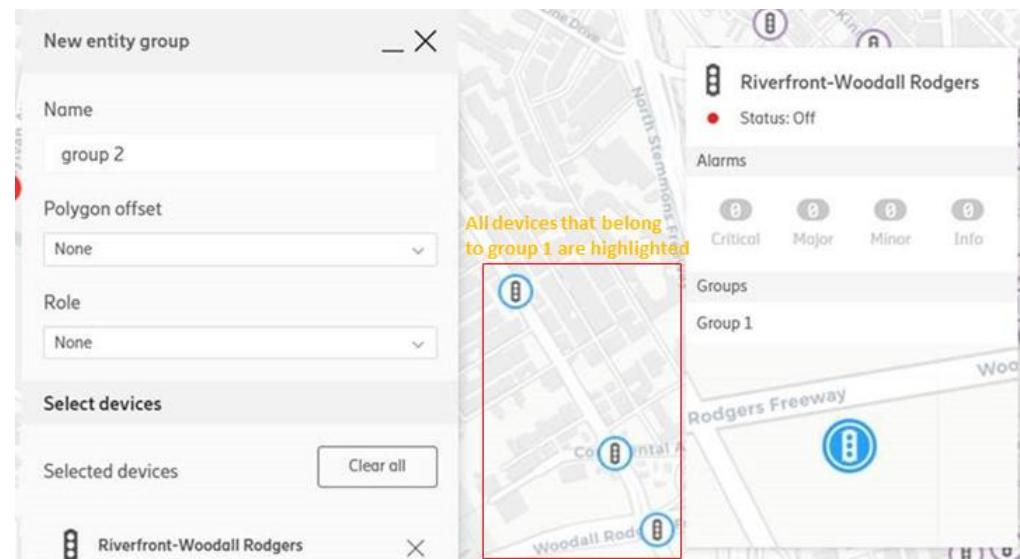


Figure 64 Devices Belonging to Group 1 - Example Screenshot

If the device belonging to both "group 1" and "group 2" is added to a third group, devices in both "group 1" and "group 2" will be highlighted during that group creation, see Figure 65.

Note: The User cannot see which devices belong to which group, or if some devices are part of both groups.

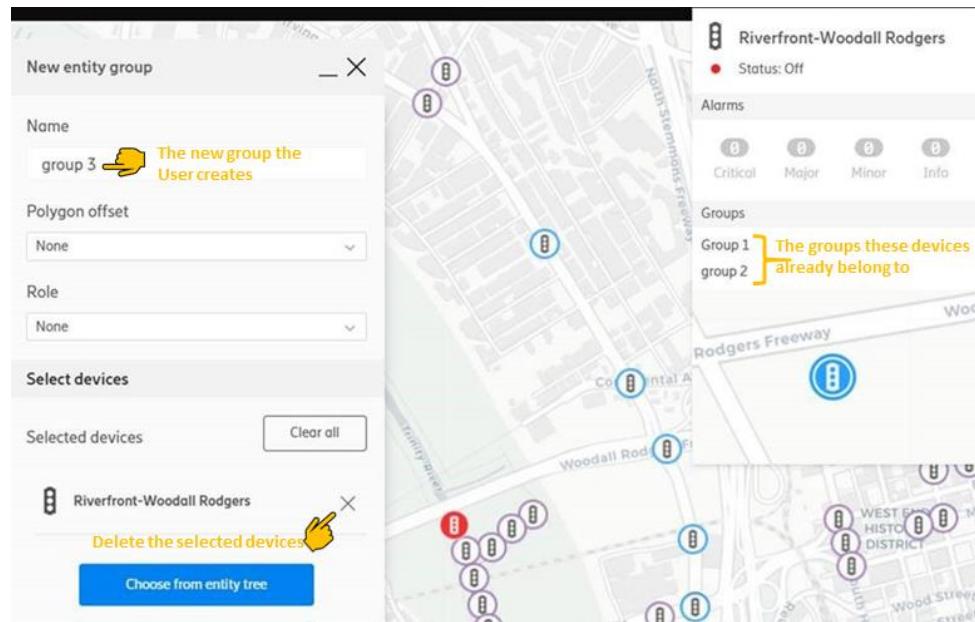


Figure 65 Highlighted Devices while Creating New Group - Example Screenshot

When the User creates a new group using the polygon method, he/she can select the area on the map close to the polygon to shadow by choosing the desired offset, see Figure 66.

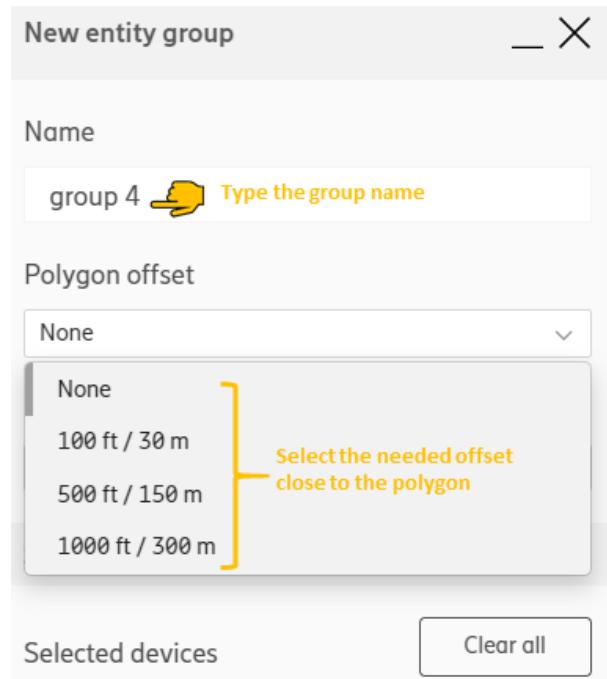


Figure 66 Creating New Group with Devices Using Polygon - Example Screenshot

Devices in the center of the polygon are marked totally blue. Devices with the center inside the shadowed area, which belong to the same type as the devices inside the polygon, are highlighted with a blue border, see Figure 67. It means that if the User selected only traffic light devices, no cameras will be included in the shadow.

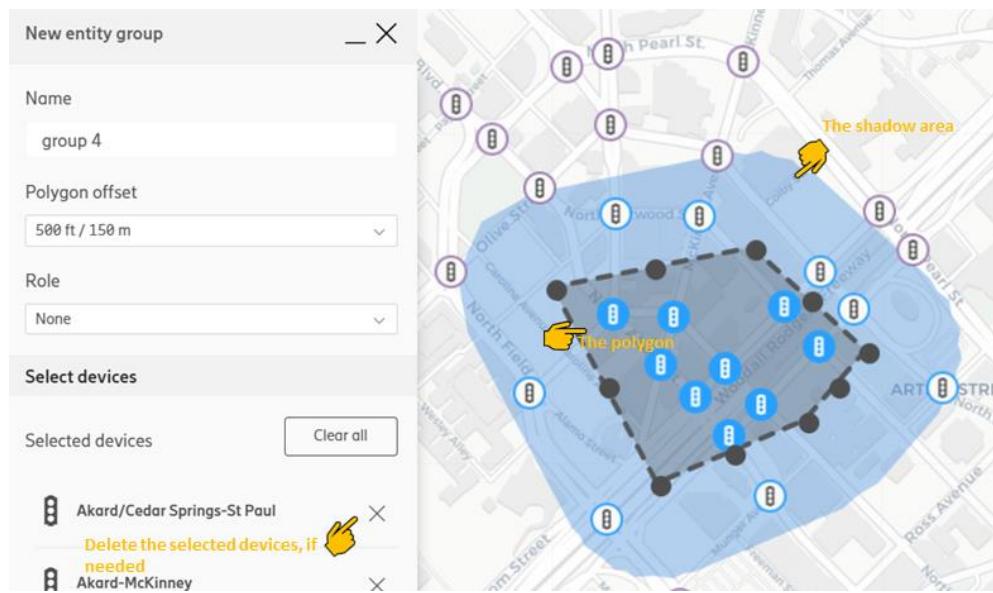


Figure 67 Polygon and Shadow Area - Example Screenshot

The User can edit the polygon, and the shadowed area will be updated according to the changes, see Figure 68. The User can click on the devices he/she wants to be included in the shadow area. However, note that no highlighted devices are added to the group unless the user actively clicks on it.

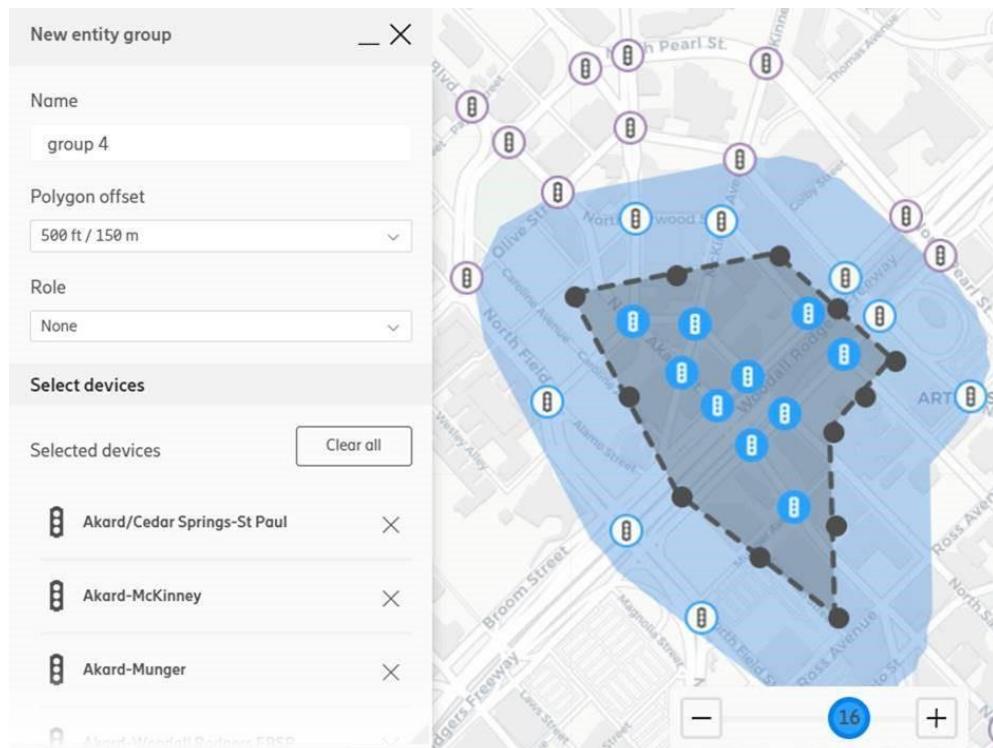


Figure 68 Edit Polygon - Example Screenshot



6.8.2.2

Add New Entity Group - Basic Parameters

Note: The parameters for a new Entity group do not need to be entered in advance of actual Entity selection but are described first in this document, for clarity.

With the *New entity group* card open, the User must select a **Name** for the New entity group (Step 1 in the figure below). Note that, when launched, the *New entity group* card will produce an auto-generated name for the new group, but the User may change this. The **Name** parameter is mandatory.

The User must select a **Role** for whom the new Entity group shall be visible (Step 2 in the figure below). If this is a Group for the User's own use then 'None' must be selected for the Role (this is presented by the card as the default value). Note that only Authorized Users may create Entity groups for Roles.

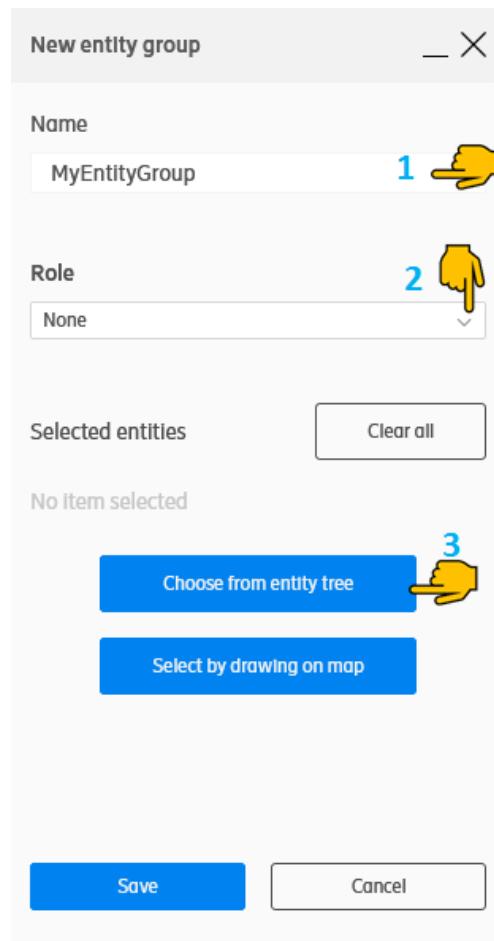


Figure 69 New Entity Group Card Parameters - Example Screenshot

After pressing **Choose from entity tree**, (Step 3 in the figure above), the User must select the entities from the list, see Figure 70. The User can use the search to find the required device, and delete the chosen device if needed.

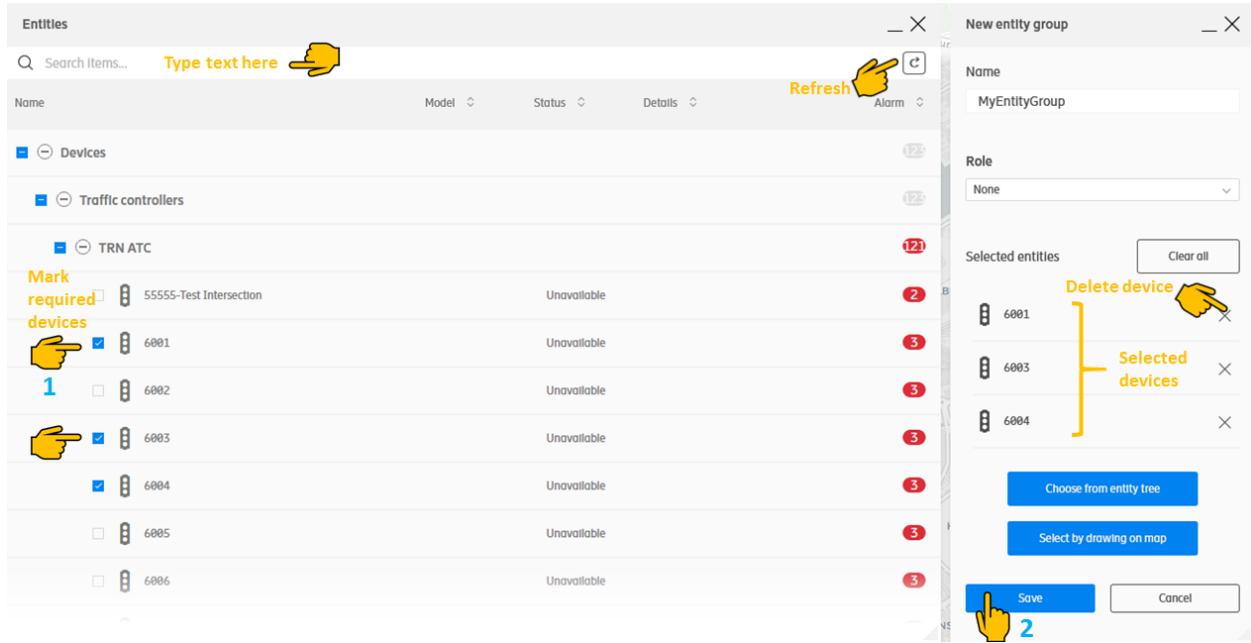


Figure 70 Select Devices for Entity Group - Example Screenshot



6.8.2.3

Add New Entity Group - Entity Selection- Option 1

The first option for Entity selection is to click on the Entities to be added, directly in Map view. Note that the *New entity group* card must be launched, as shown above, in Figure 62.

The User then selects the Entities on the Map view that are to be added to the new Entity group (Step 1 in the figure below). As Entities are selected they are highlighted blue on the Map view and are added to the list in the *New entity group* card. The User may edit the list by clicking on the X beside an Entity, in order to remove it (Step 2 in the figure below). The User may also click on a selected (blue) Entity icon in order to deselect it. The User then scrolls down the list of added Entities (Step 3 in the figure below) to reveal the **Save** button. Before saving, the User checks that the basic parameters for the *New entity group* are filled in, according to Section 6.8.2.2. The User clicks on **Save** (Step 4) to save the new Entity Group.

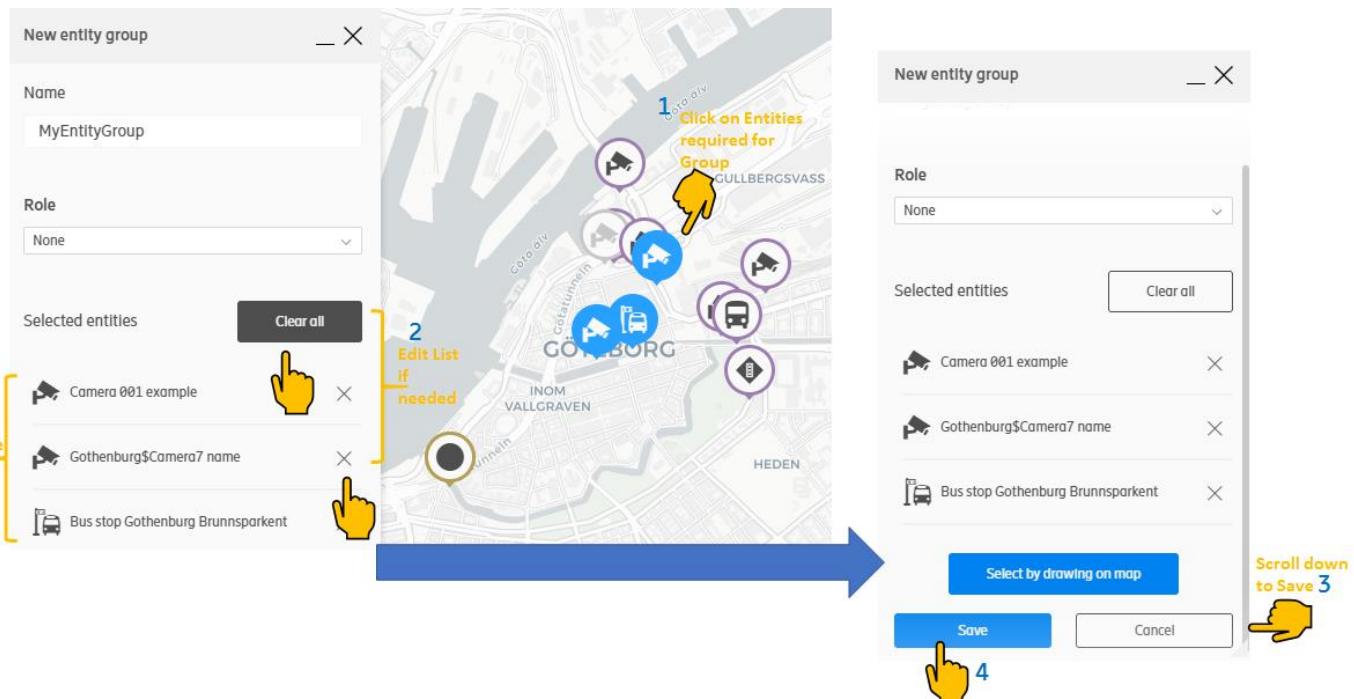


Figure 71 Select Entities on Map View to Create New Entity Group - Example Screenshot



6.8.2.4

Add New Entity Group - Entity Selection- Option 2

The second option for Entity selection is to draw a polygon around the Entities to be added, in Map view. Note that the *New entity group* card must be launched, as shown above, in Figure 62.

To enable the polygon draw feature, the User clicks the button **Select by drawing on map** in the *New entity group* card. The button is shown in the figure below.

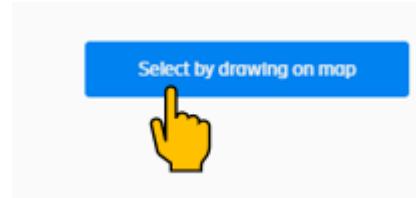


Figure 72 Enable Polygon Draw Feature- Example Screenshot

The User must check the Filter settings before creating the group. If filters are applied, not all devices are shown on the map. They will however appear in the group. Figure 73 shows the difference in view between the view with the filters applied, and when filters not applied. If the filters to show only the ones with critical alarms are applied, the map will look like the right example screenshot in Figure 73.

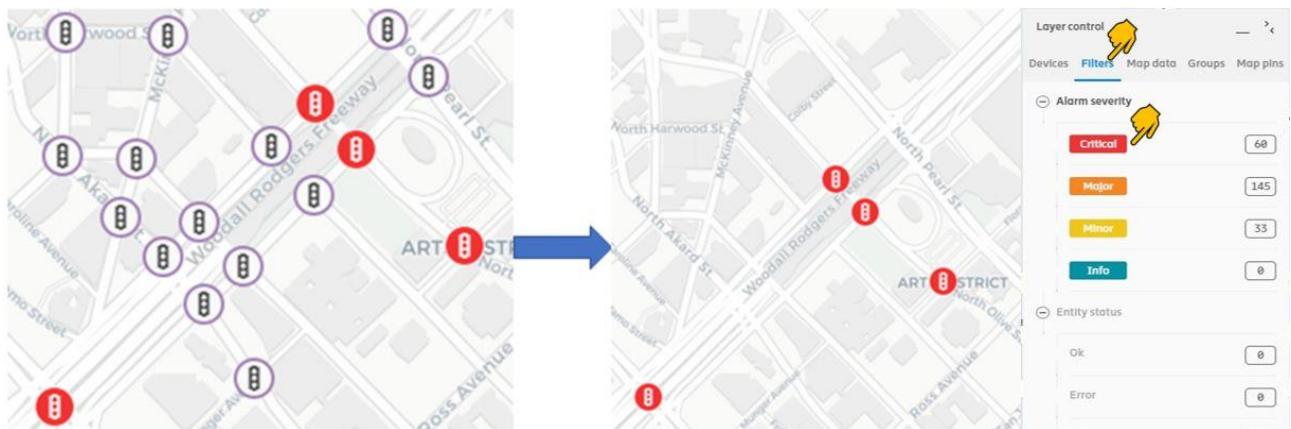


Figure 73 Difference in View when Filters are Applied - Example Screenshot

Once the Polygon draw feature is enabled and the User places the mouse on the Map view, the presentation will be as shown below. The User clicks once on the map to start drawing the polygon.

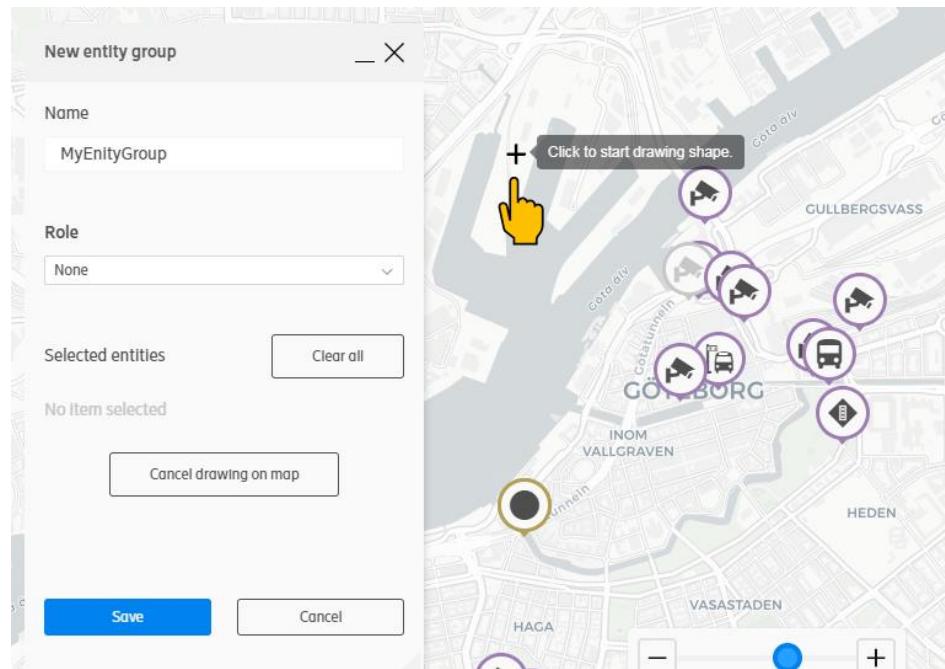


Figure 74 Start Drawing Polygon - Example Screenshot

The User then drags the mouse across the map to enclose the Entities to be added to the *New entity group* (Step 1 in the figure below).

The polygon feature allows for a series of straight lines to be drawn. Thus, the User must click the mouse once at every point where the shape must change direction in order to enclose the Entities (Step 2 in the figure below). Once the User has enclosed the chosen Entities, the polygon must be completed by clicking on the same point where the polygon began (Step 3 in the figure below).

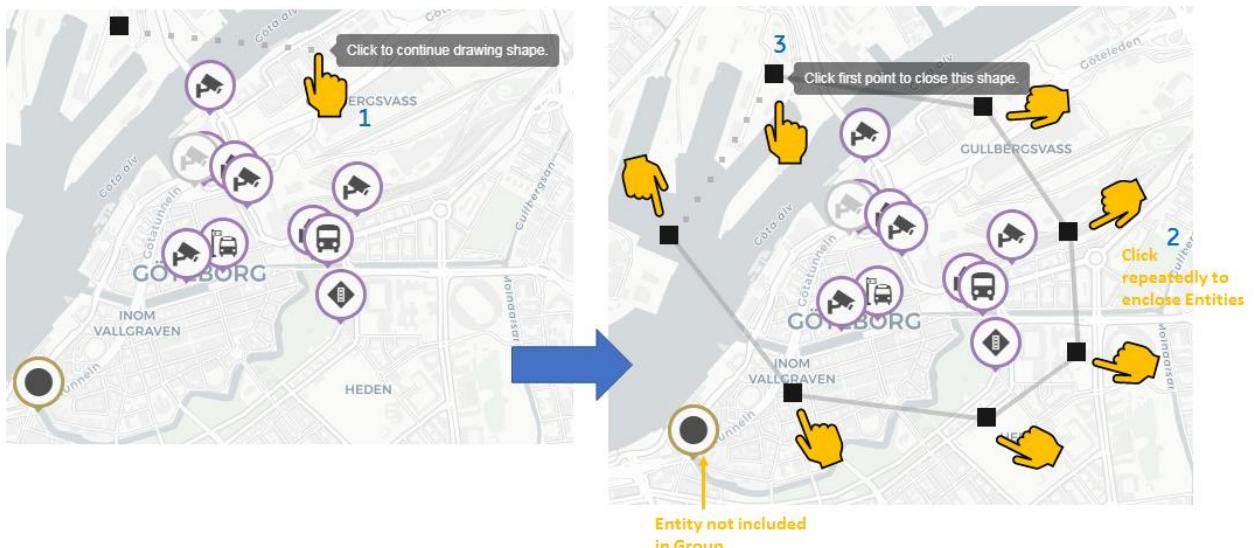


Figure 75 Complete Polygon - Example Screenshots



Once completed, the polygon appears as in the figure below. Note that all the enclosed Entities appear as a list on the *New entity group* card. The User may then edit the list by clicking the X beside any Entity in the list, by clicking on the **Clear All** button to remove all the Entities (Step 1 in the figure below) or by changing the shape of the polygon on the map (Step 2 in the figure below). It is also possible to deselect Entities inside the polygon to remove them from the Group or select Entities outside the polygon to add them.

When the list of Entities is correct, the User then scrolls down the list of added Entities (Step 3 in the figure below) in the *New entity group* card to reveal the **Save** button. Before saving, the User checks that the basic parameters for the New entity group are filled in, according to Section 6.8.2.2. The User clicks on **Save** (Step 4) to save the New entity group.

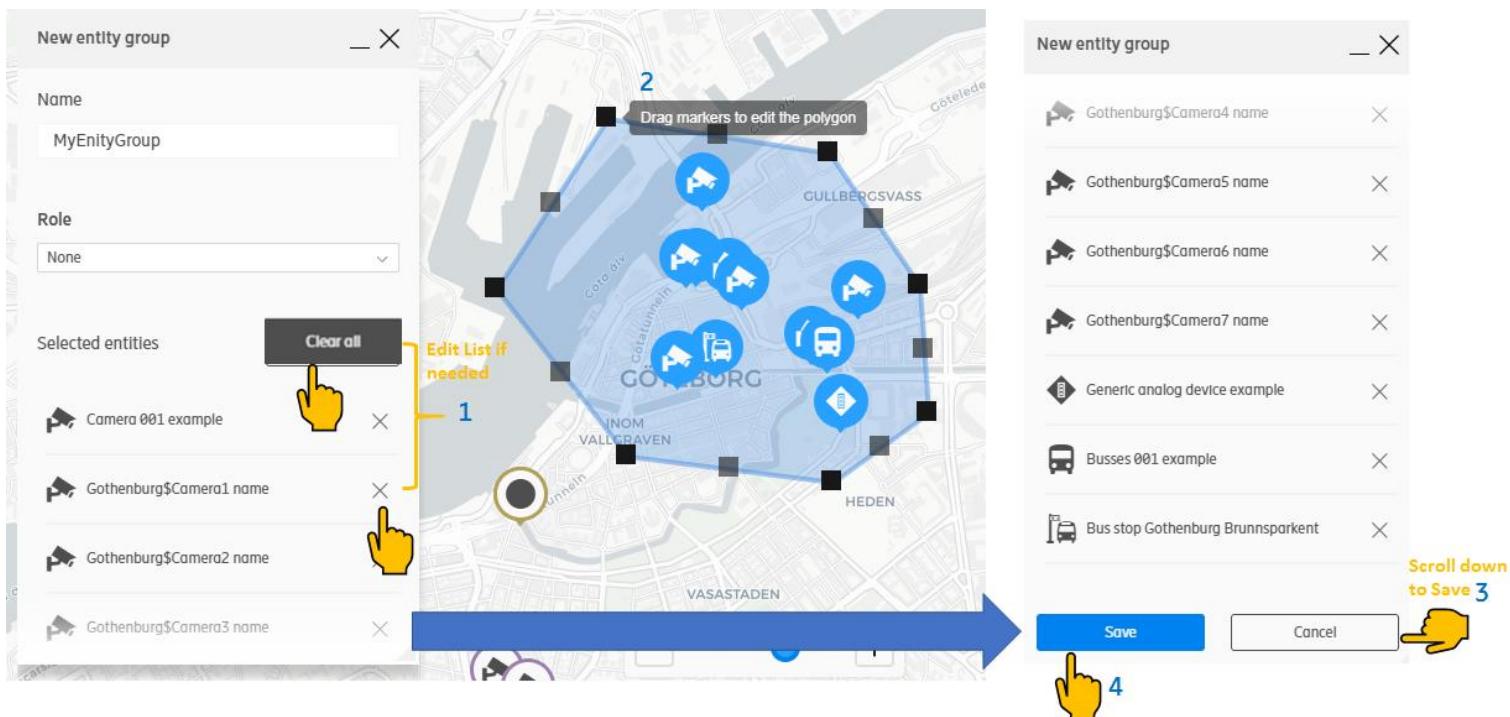


Figure 76 Edit and Save New Entity Group Created by Polygon - Example Screenshot

If the User creates a group *Devices with problems*, using the polygon method, the map looks like Figure 77.

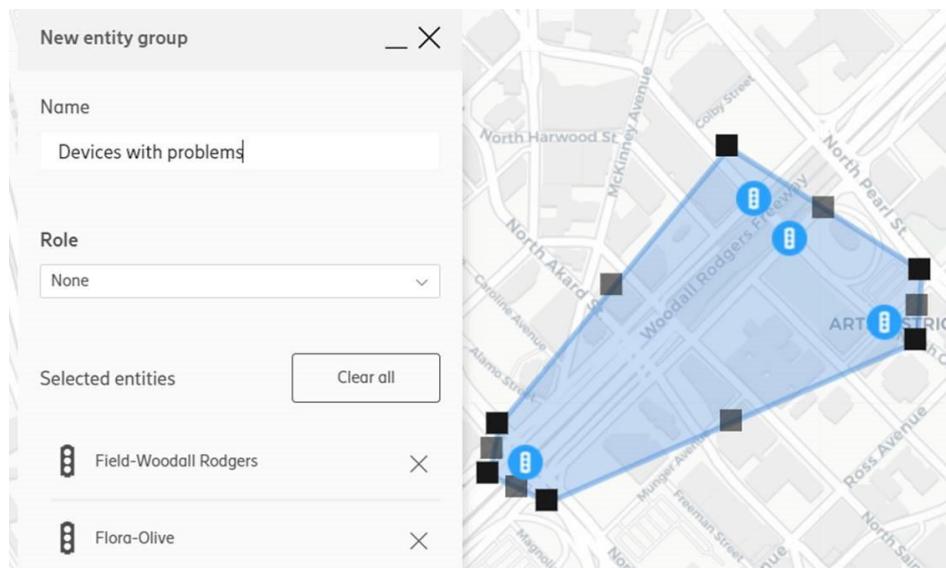


Figure 77 Create for Devices with Problems Entity Group – Example Screenshot

But note that all filtered out devices will actually be added to the group *Devices with problems*, see Figure 78.

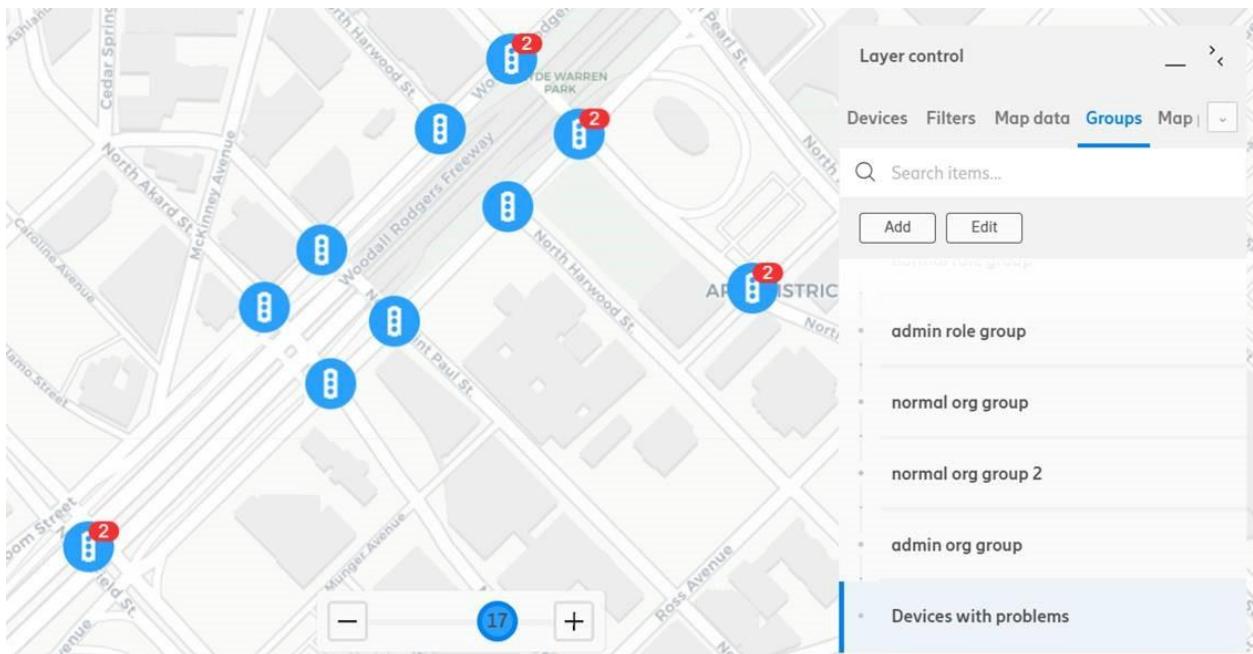


Figure 78 Filtered Out Devices Added to Group - Example Screenshot



6.8.3

Edit Entity Group

To edit an Entity Group the User first selects **Groups** from Layer control (Step 1 in the figure below) and then clicks the **Edit** button (Step 2 in the figure below). Check boxes appear beside each Group listed in Layer control and the User clicks the check box beside the Group that they wish to edit (Step 3 in the figure below). The User clicks on the **Edit group** button (Step 4 in the figure below).

The *Edit entity group* card then appears. The User may deselect Entities in the list by clicking the X beside a given Entity. The User may click the **Clear All** button to remove all Entities from the list. Authorized Users may select a different Role to apply to the Entity group. It is possible also to change the name of the Entity group. Note that this is not a method to create an additional Group as it simply changes the name of an existing Group.

The edit options are shown as Step 5 in the figure below. If needed, entities can be added using the methods described in Section 6.8.2. When the edits are complete, the User may scroll down the Edit entity group card to reveal the **Save** button. The User clicks on the **Save** button to save the changes (not shown in figure).

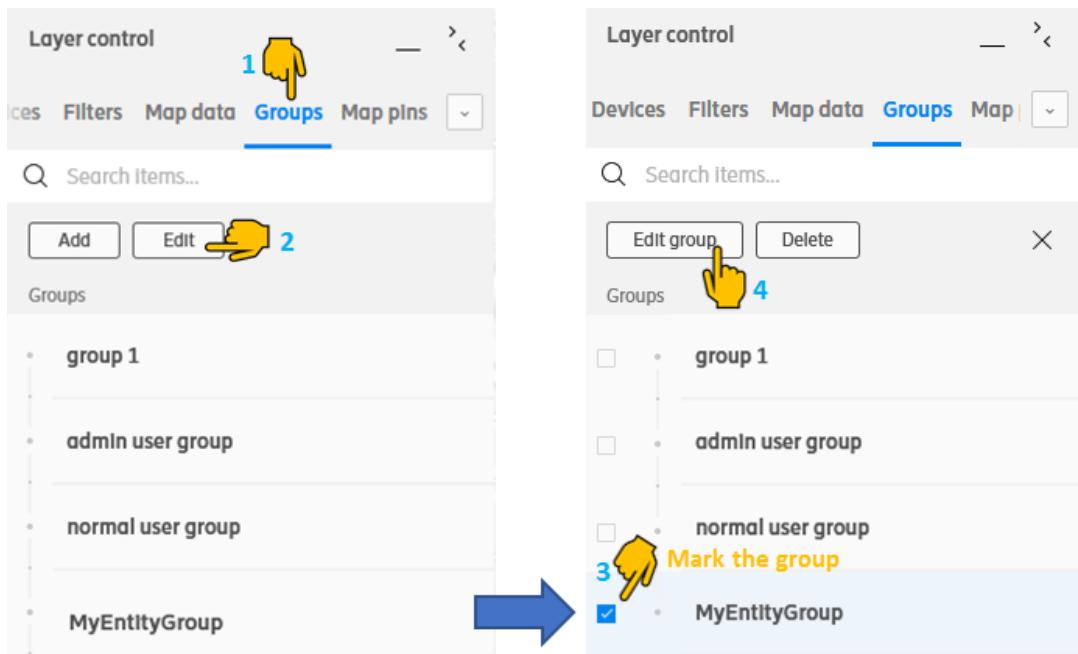


Figure 79 Edit Entity Group - Example Screenshot

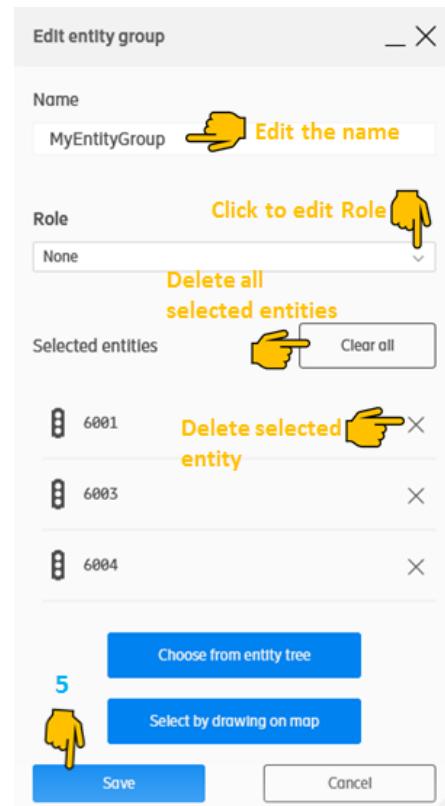


Figure 80 Edit Entity Group - Example Screenshot



6.8.4

Delete Entity Group

To Delete an Entity Group, the User selects Groups in Layer control (Step 1 in the figure below) and then the Edit button (Step 2 in the figure below). Check boxes then appear beside the listed Entity groups. The User selects the Entity group (or Groups) they wish to delete (Step 3 in the figure below) and then clicks on the **Delete** button (Step 4 in the figure below). A confirmation check appears as a pop-up and the User selects **Delete** to confirm that they want to delete the Entity Group(s), see Step 5 in the figure below. Confirmation of the deletion then appears briefly in another pop-up with the message "*Successfully deleted device groups*".

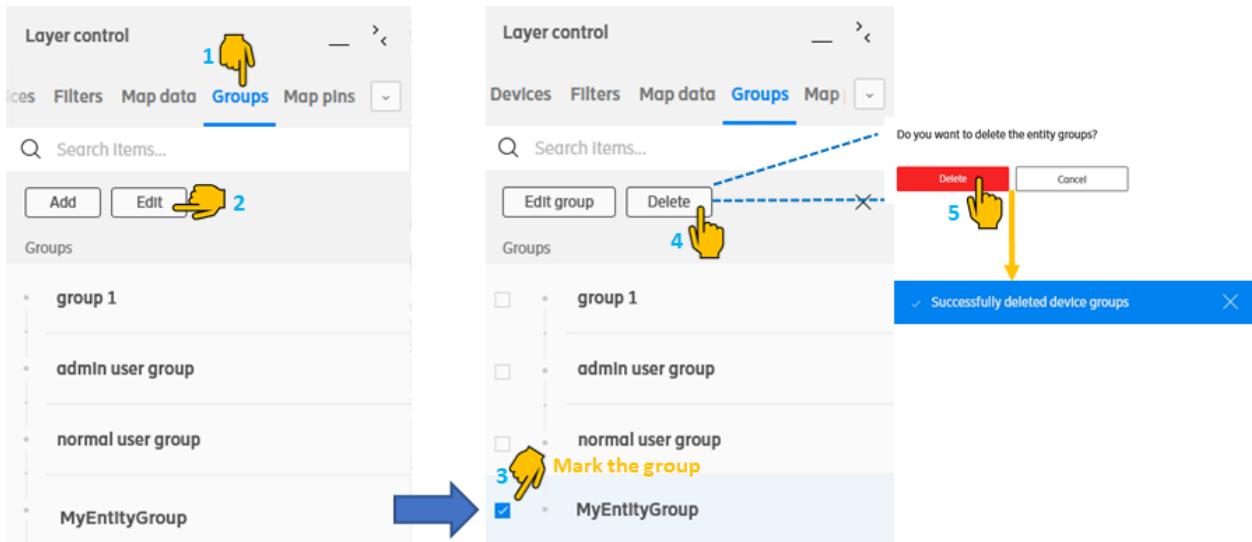


Figure 81 Delete Entity Group(s) - Example Screenshot



6.8.5

Measurements History for Groups

To open the measurements history for groups the User selects the required group from the list, and right clicks on three dots sight, see Figure 82.

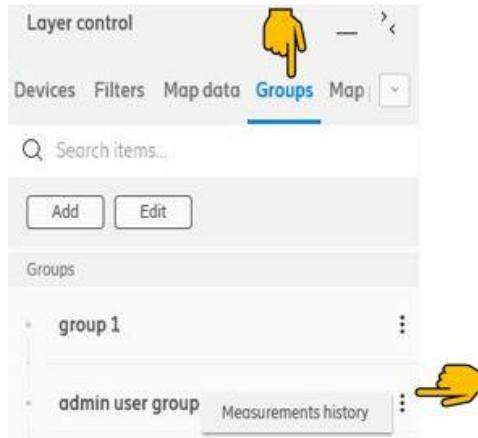


Figure 82 Measurements History for Groups - Example Screenshot

For how to set the measurements history, see Section 7.9.



6.9

Layer Control: Map Pins

A Map pin may be considered as a User-defined entity. The Map pin layer is described in Section 5.7.

6.9.1

General

At Map pin creation, the User may decide to use any of the provided Map pin icons to represent a point of interest on the Map. Map pin icons are categorized in the following eight types (layers), within four main groups:

1. General Map pins
2. Intersection Map pins
3. Event Map pins
4. Traffic Map pins, containing the following five layers:
 - Roadworks
 - Abnormal Traffic
 - Accident
 - Lane Change
 - Obstruction

6.9.2

Select Map Pin

This section describes selection of the Map pin layers. That is, individual Map pins cannot be viewed directly from Layer control. Layer control allows Authorized Users to view all Map pins represented by a specific icon to be shown as a single layer. To select an individual Map pin, see Section 7.5. Map pin layers may also be added to Favorites, see Section 6.10.

From Layer control, the User clicks the Layer domain **Map pins** (Step 1 in the figure below).

The User then clicks on the beside the underlying layer **Map pin** layer groups to expand all the Map pin layers available to view (Step 2 in the figure below). The User may then select (layer name in bold font) and deselect (layer name in pale font) the Map pin layers, as desired (deselection is shown in Step 3 in the figure below).

Note: Map pins may also be selected directly from Map view, see Section 7.4.

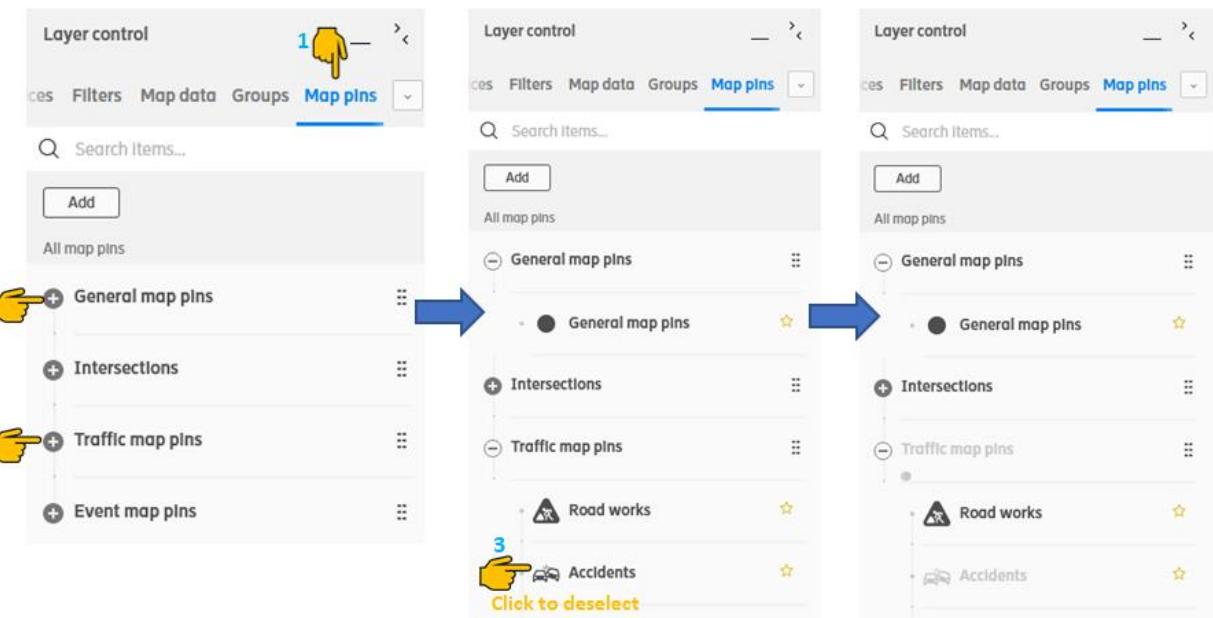


Figure 83 Select Map Pin Layer - Example Screenshot

6.9.3 Add Map Pin

Note: It is also possible to add a Map pin through Tools > Entities from the main CUT navigation bar, see Section 8.2.



6.9.3.1

Add Map Pin - Option 1

The User places the mouse on the part of the Map view where they wish to position the Map pin. The User performs a right-click at the desired spot and selects the pop-up *Add an entity*, as shown in the figure below. The *Create an entity* card then opens. The User fills in the required parameters and then saves the Map pin.

Note: An advantage with using this method is that the parameters *longitude* and *latitude* are automatically provided by GUI. Guidelines on the required parameters are given in Section 6.9.3.3.

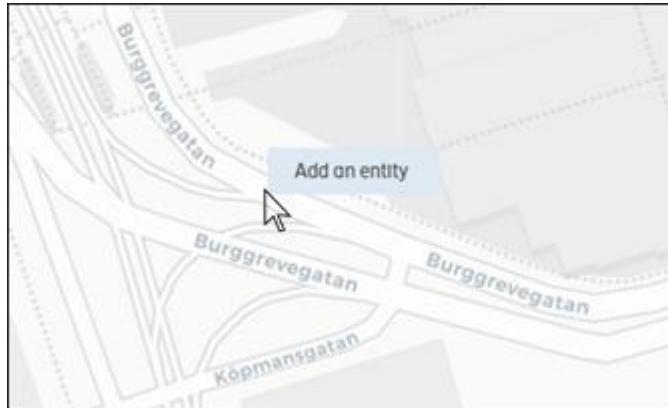


Figure 84 Add Map Pin from Entity Tree - Example Screenshot



6.9.3.2

Add Map Pin - Option 2

It is also possible to add a Map pin using Layer control. From the Layer control, the User clicks on **Map pins** (Step 1 in the figure below) and then clicks on **Add** (step 2 in the figure below). The *Create new entity* card will then open. The User fills in the required parameters and then saves the Map pin (Entity). Guidelines on the required parameters are given in Section 6.9.3.3.

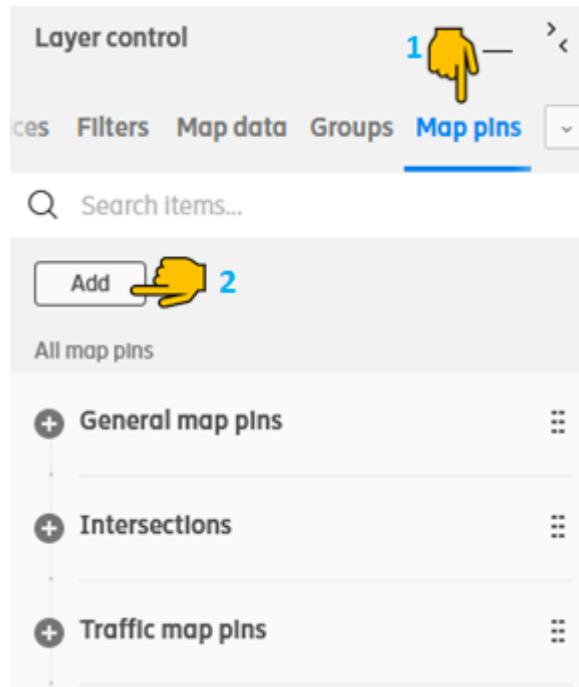


Figure 85 Add Map Pin from Entity Tree - Example Screenshot



6.9.3.3

Add Map Pin - Required Parameters and Save

With the *Create new entity* card open, the User must select an *Entity type* (Step 1 in the figure below). The Entity type parameter simply represents the icon that the User wishes to represent the Entity when in Map view. Note that each icon represents a layer in the Map pin domain. This parameter is mandatory.

The User must type a name for Entity (Step 2 in the figure below). The **Name** parameter is a mandatory text field.

The User may optionally enter text to describe the Entity in the **Description** field (Step 3 in the figure below).

The User must ensure the map co-ordinates are entered correctly (Step 4 in the figure below). The **latitude** and **longitude** parameters represent the exact position of the Entity on Map view.

Note that when using Option 1 (Section 6.9.3.1), the CUT GUI will provide these values automatically. Otherwise, the User must provide them. Map coordinates can be sourced from many online websites.

Both longitude and latitude are mandatory parameters, and they must be entered with the following format:

➤ xx.yyyy

Where 'xx' is Latitude and 'yy' is Longitude.

Latitude values may vary from -90 to 90.

Longitude values may vary from -180 to 180

The y part of the entry may vary in length and is optional. However, if y is to be included then a '.' must be used as the delimiter between the xx and the y.

Optionally, the User may upload an **image** to be associated with the Entity (Step 5 in the figure below). Note that the image will not be displayed on Map view; User-defined Entities are represented by the Map pin icon selected at Step 1. Any uploaded image will, however, be displayed within the Entity *Details* card which opens when the Map pin is selected on the Map view or via Layer Control (Section 6.9.2) or the Entity tree (Section 8.1.1.1).

Uploaded images must be either GIF, JPEG or PNG files.

The User then scrolls down the *Create new entity* card to reveal the **Save** button.

The User clicks **Save** to save the newly created Entity (Step 6 in the figure below).



Create an entity

Entity type: General Map Pins

Name: MyEntity

Description: Start of carneval route

Latitude: 57.70847487909747

Longitude: 11.972184777259828

Latitude: 57.70848920818789

Longitude: 11.971862912178041

Upload Image:

Maximum Image size: 2MB
Supported Image format: GIF, JPEG & PNG

Cancel Save

1 Choose a device type
2 Name
3 Description
4 Values appear automatically with Option 1
5 Find and select file
6 Save
Scroll down to Save

Figure 86 Create Map Pin Entity - Example Screenshot



6.9.4

Edit/Delete Map Pin from Layer Control

It is not possible to edit or delete Map pins from Layer control. To edit/delete a Map pin, see Section 6.9.5.



Caution

When a Map pin is deleted, any associated Notes and Attachments will also be deleted. The User must take care to download and preserve these, in advance, if needed. The User may also copy Notes and Attachments to any other Entity. The procedure is described in Section 7.7.6.



6.9.5

Edit/Delete Map Pin from Map View

A Map pin may be edited or deleted from Map view, using either of two methods.

The first method is to right click on the Map pin in Map view and to select either *Edit entity* or *Delete entity* from the submenu that appears. The submenu is shown in the figure below. If *Edit entity* is selected from the submenu, the *Edit an entity* card appears and the User may follow the Steps 3 and 4 to edit the Map pin, as shown in Section 6.9.5.1, Figure 89. If *Delete entity* is selected from the submenu, a pop-up message appears asking the User to confirm the Map pin deletion. The User clicks the **Delete** button and the Map pin is deleted. Deletion is confirmed by a further pop-up message. Deleting a Map pin through the submenu is shown in the figure below.

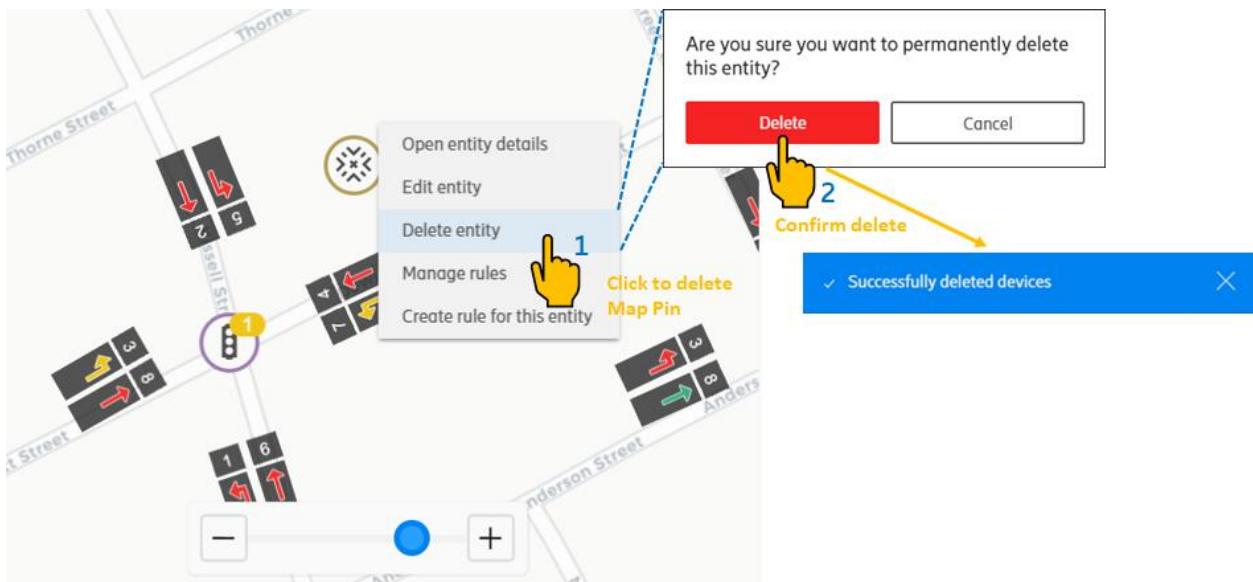


Figure 87 Delete Map Pin from Map View Using Submenu - Example Screenshot

Note that when deleting a Map pin with attachment, the User is notified by a pop-up warning message that the deletion will also delete the attachment, see Figure 88. The User must take care to download and preserve the attachment, in advance, if needed.

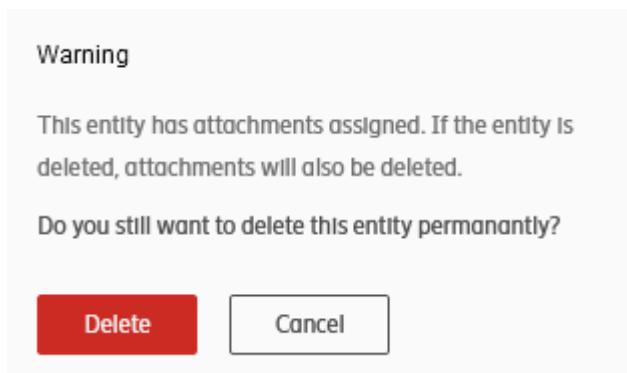


Figure 88 Deletion of Map Pins with Attachment – Example Screenshot



6.9.5.1 Edit/Delete Map Pin from Details Card

When in Map view, the User locates the Map pin they wish to edit or delete (Step 1 in the figure below). The User clicks on the Map pin and the Entity *Details* card opens. The User follows the Steps 2 and 3 outlined in the figure below to access the Map pin details and edit the details. At Step 4, the User clicks on the **Save** button, to save the changes.

The Map pin may also be deleted by following the same steps except that Step 3 is skipped and at Step 4, the **Delete** button is pressed. The User should also confirm the deletion with any resulting pop-up message to complete the Delete action.

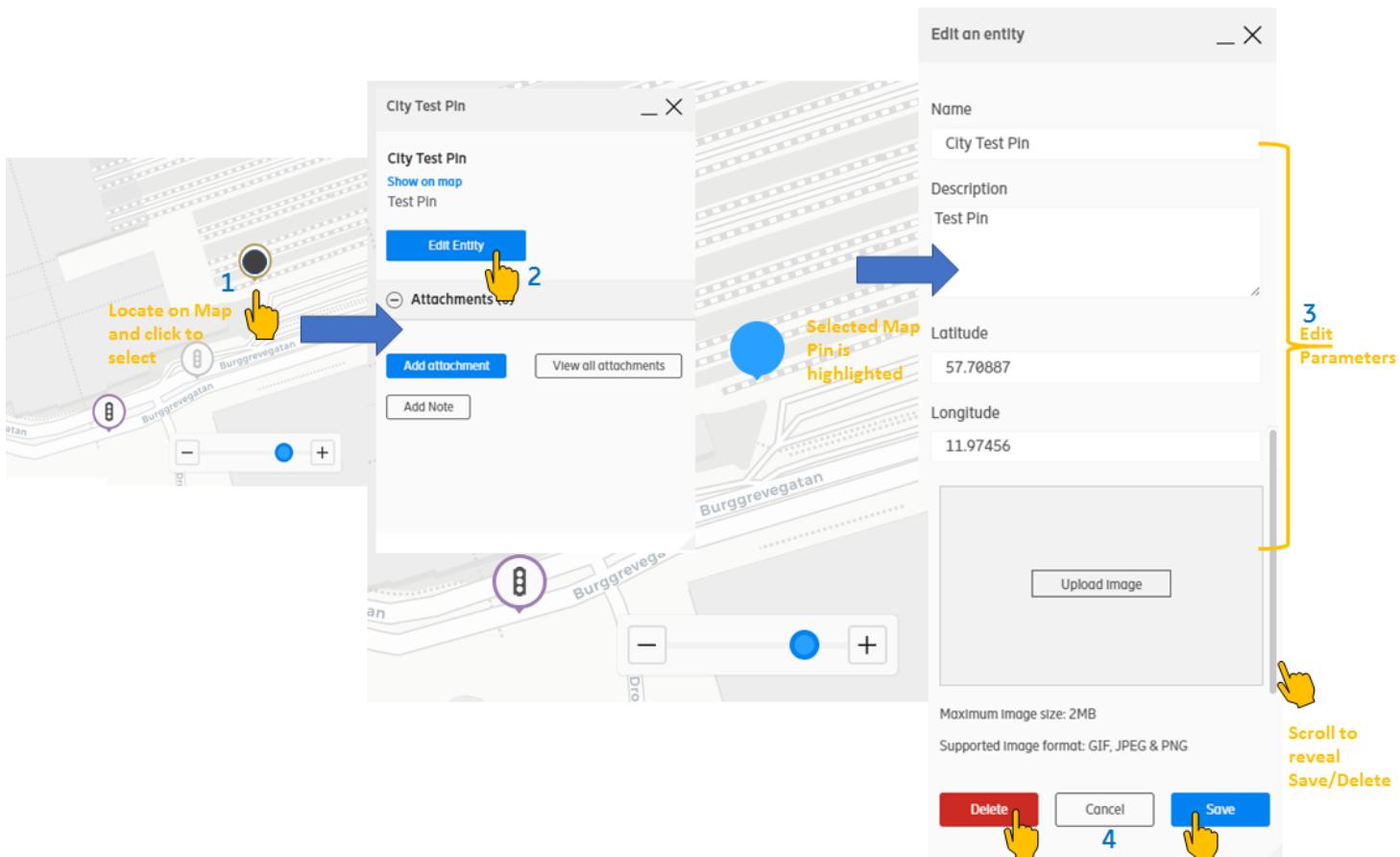
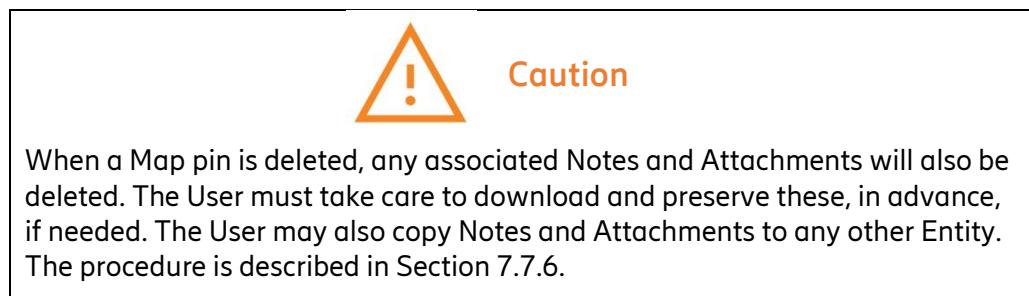


Figure 89 Edit/Delete a Map Pin from Map View Using Details Card - Example Screenshot



6.10 Favorite Layer Settings

Favorite layers are described in Section 5.8.

To add any layer in Map view to their Favorite layer, the User simply clicks or taps on the icon to the right of the layer name in Layer control. When selected, the icon becomes filled and is displayed as . This is shown in screen 1 in the figure below.

Note that Favorites are grouped together within each domain in Layer control. The first time a User adds a layer to *Favorites*, a new grouping, labelled 'Favorites' appears at the top of the listed layers for that specific domain. This is shown in screen 2, in the figure below.

If the User clicks the icon, the Favorites list will expand and show all the chosen Favorite layers for that domain. The Layers will also remain in the standard domain list. This is shown in screen 3 in the figure below.

Favorite layers will always be displayed, regardless of the Window layout that is in use for the User.

To remove a layer from the Favorite layer, the User simply clicks or taps the solid star icon once. This can be done from within the expanded list of Favorites for the given domain or from the standard domain list. This is shown in screen 4 in the figure below.

Once clicked, the star icon will then revert to unselected status: and be removed from the User Favorites. Note that removing a layer as favorite does not remove the layer from the Map view.

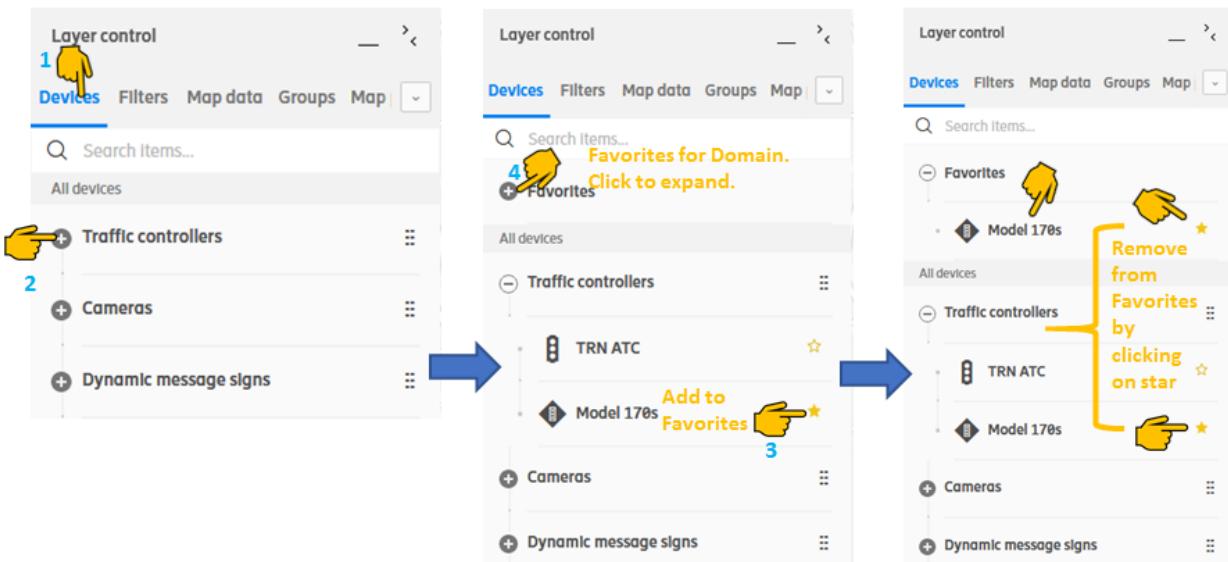


Figure 90 How to Set a Layer as Favorite, View Favorites and Remove Layer from Favorites - Example Screenshots



6.11 Set Layer Visibility by Zoom Level

The User can set up the layer visibility by a zoom level. To do it, the User opens Layer control panel and chooses the type of entity - devices, map layers or map pins - for which the zoom level will be determined. Then the User selects the required object by clicking on the icon. The list of objects unfolds. The User right-clicks the mouse button to open *Layer display settings* window, see Figure 91.

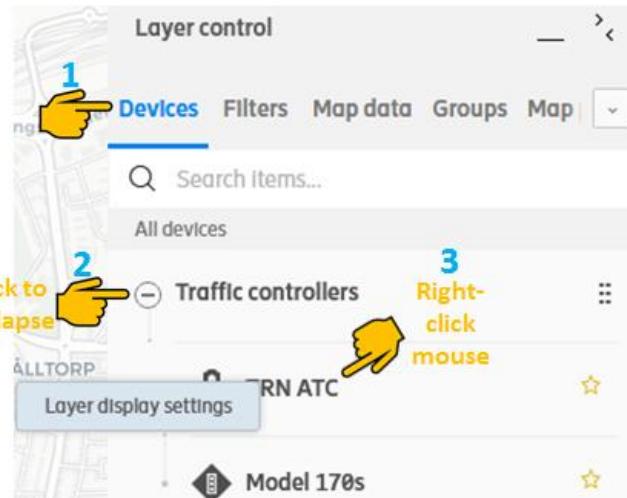


Figure 91 Setting Layer Visibility by Zoom Level – Example Screenshot

The User drags the grey circles to set the required zoom level on which the device information is shown on the map, see Figure 92.

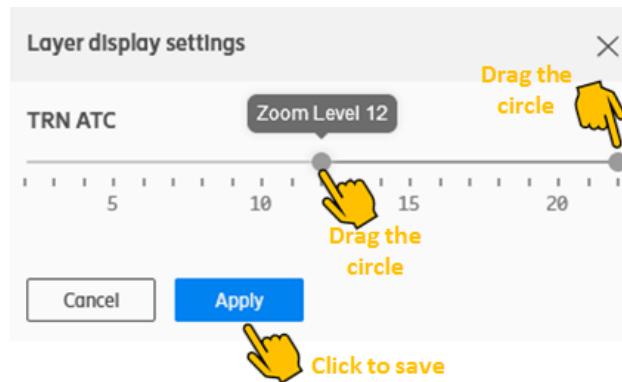


Figure 92 Setting Zoom Level - Example Screenshot

The User can also set up the zoom level on which detailed information about traffic controllers appears. To do it, the User follows the steps shown in Figure 91. The opened card contains two settings: **Visibility** and **Details**.

In the **Visibility** settings, the User can specify from which and to which zoom levels he/she at all wants to see traffic controller icons. The User drags the grey circles to the left/right in order to set up the zoom level.



In the *Details* settings, the user can specify on which zoom level he/she wants to see the different kind of realizations of the related graphics.

For other device types, only the *Visibility* setting is available.

Using the provided legends, see Figure 93, the User can determine the needed level of detail. The default zoom levels are shown in Figure 93. Note that the zoom level changes to 16 by selecting the option *Open intersection on map*. The grey circle, which is in the middle, is always set to *Zoom level 18*. Thus, the User can drag only side circles.

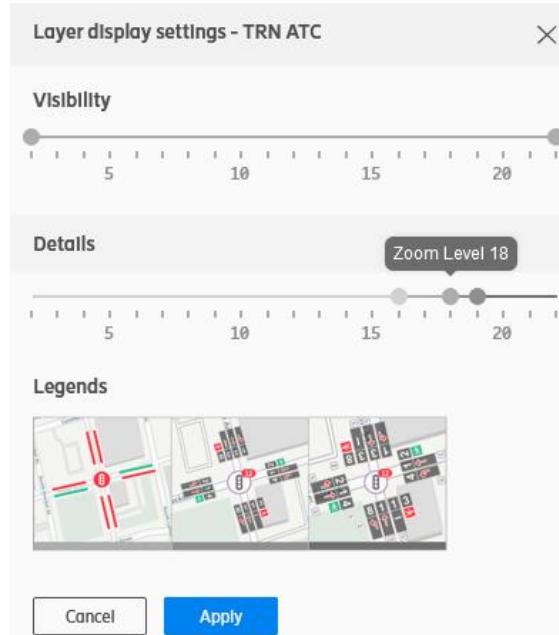


Figure 93 Setting Zoom Level for Traffic Controllers - Example Screenshot

The User is also able to save the changed zoom settings before logout via *Save current view*. Another option is to select the *Log out* option from the drop-down menu that appears when they click on their name in the CUT GUI navigation bar. If the view is not saved, a notification message will be displayed asking if the User wants to save the current view, see Figure 94. For more information about saving Window layout at logout, see Section 6.3.4.2.

Figure 94 Notification Message - Example Screenshot



7

CUT GUI - Entities in Map View

When viewing the CUT GUI Basemap, the User is shown the CUT Entities which they have permission to view. Entities are Devices or Map pins that are represented by icons. Devices are connected which means that they have a status and other details that Map pins, which are unconnected, do not. Map pins are defined by the User and represent a specific point of interest on the Basemap.

This section describes selecting and editing any Entity from the Map view. An attempt is made to distinguish between Map pins and Devices in the text and the term 'Entities' is used to mean both Map pins and Devices. However, note that Map pins are more precisely described in Section 6.8.5.

7.1 General

The Map view display depends on the Layers that the User has selected to view and the Zoom level that is set, see Section 6. The figure below shows a typical Map view with a mix of Entities at four selected zoom levels. Note that the connected Entities (Devices) have a purple border, whereas unconnected Entities (Map pins) have a brown border. Note also that Screen 4 in the figure below shows the low-level, lane information for the intersection (Traffic signal controller device).

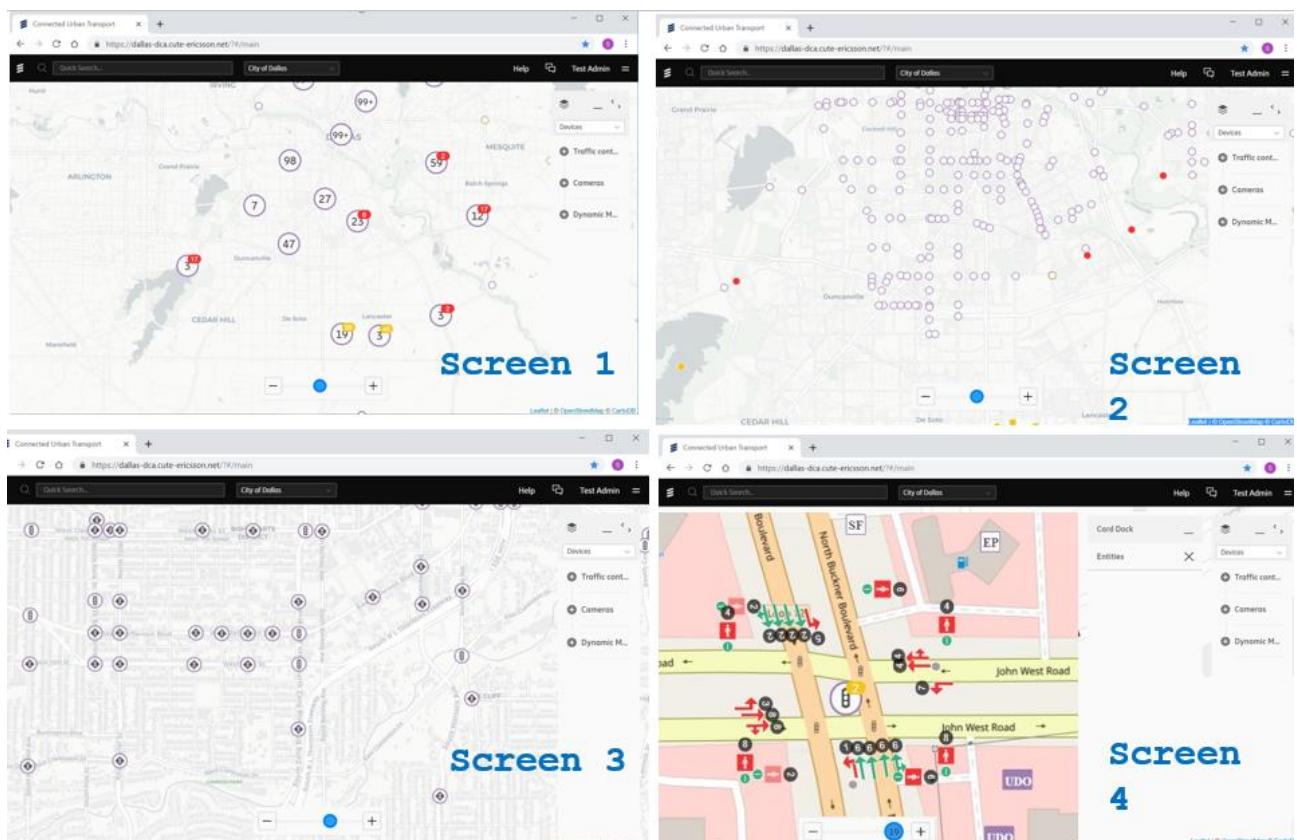


Figure 95 CUT Map View of Entities - Example Screenshot



7.2 Entity Search

It is possible to search for a specific Entity either through the Search function on the Entity card (see Section 8.1.1.2) or from the CUT GUI navigation bar (Ribbon), situated at the top of the screen as shown in Section 4.4.1.

The User may search for individual Entities by typing keywords or Entity names in the Search function. After four characters are entered in the Search field, possible matches start to appear in a drop-down results list. If the input is not unique, multiple search results will be returned. The User may then click on a result in the list and the relevant Entity card opens.

The Entity search is not case sensitive. An example of a Search entry and the results is shown in the figure below.

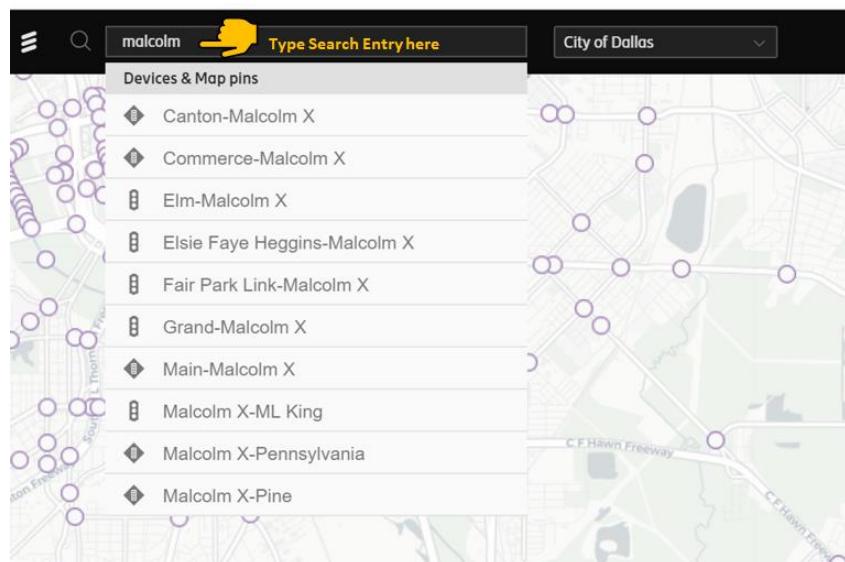


Figure 96 Example Entity Search in CUT GUI - Example Screenshot

7.3 Connection Status

The Device connection status can be quickly assessed by placing the mouse over the Device icon in Map view, as shown in the figure below.

Note: Map pins are unconnected and do not have a status that may be viewed in this manner.

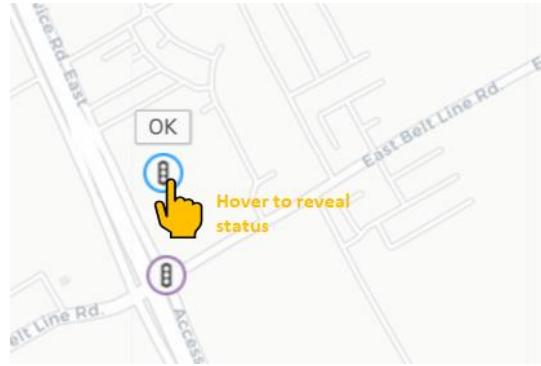


Figure 97 Device Status in CUT GUI - Example Screenshot

7.4 Edit/Delete Entity

Devices have no Edit or Delete functions available to the User. Devices are added at Service On-boarding through the related Service Application. Changes made in the Service Application are reflected in CUT GUI through CUT APIs.

Map pins, having been defined by a User, are subject to Edits and Deletion from within the CUT GUI. These functions are described in subsections of Section 6.8.5.



7.5

Select Entity

The User clicks on an Entity in Map view and the Entity is highlighted blue, to indicate that it is currently selected. The Entity *Details* card opens automatically. This is shown in the figure below. The Entity *Details* card is described further in sections from Section 7.6.

Note: Individual Entities may also be selected through the *Entities* card, which is described in Section 8.

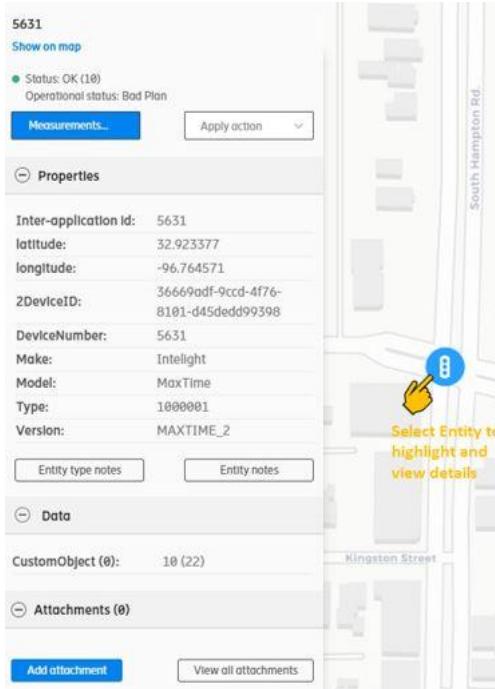


Figure 98 Select Entity to View Details - Example Screenshot

7.5.1

Entity Submenu

When the mouse is placed over an Entity in Map view, the User may perform a right-mouse click to reveal a submenu. The User may then select the desired option from the list. The Entity submenu for a Device is shown in the figure below. The submenu for a Map pin contains Edit and Delete options, which are described in Section 6.9.5.

Note: The Entity submenu reflects the same options that are available for that specific Entity from the Entity *Details* card, Section 7.6.

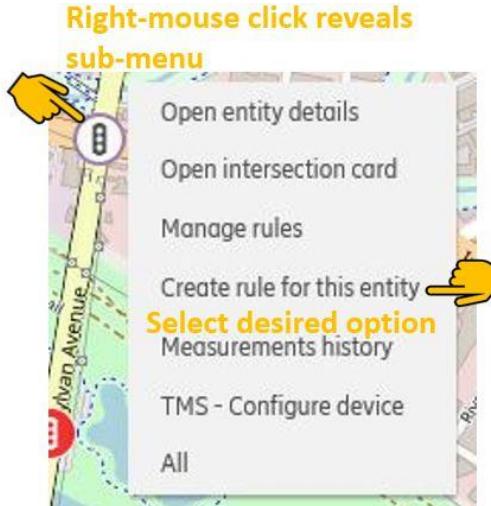


Figure 99 Entity Submenu - Example Screenshot

The option "*Open entity details*" will launch the Entity *Details* card. See Section 7.6 for more information on the Entity *Details* card.

The option "*Manage rules*" will launch the general Rules card for Devices (Rules do not apply to Map pins). See Section 0 for more information on Device rules.

The option "*Create rule for this entity*" will launch the device-specific *Create rule* card. See Section 7.8.3 for more information on adding a rule.

An option "*Action*" will execute the primary Action for a connected Entity (Device). It may be given a more precise name such as in the example in Figure 99, *Configure Device in TMS*. The primary action is determined at Service On-boarding or may be added following a specific request. It is the same Action that is executed from the Entity *Details* card for that Entity.

Note: Since the Entity submenu reflects all options that are available from the Entity *Details* card, Devices which support multiple actions will have these actions included in their Entity submenus.

7.5.1.1

Entity Submenu Actions Card

Note that not all Entities will support the submenu items relating to Rules and Action. In the cases where Actions are supported, the Entity submenu could include several Actions that apply to the Entity. Examples are shown in the figure below. Entity Actions are those that are determined at Service On-boarding. If the Entity submenu options include 'All', such as in the figure below, this option may be selected to launch a card of all applicable Actions for the Entity (Step 1 in Figure 100). The User may then select the desired option (Step 2 in Figure 100) and then click **Apply** to execute (Step 3 in Figure 100).

Note that the user can broadcast video to the wall if there is a video-wall screen suitable for this. However, this action is available only for cameras.

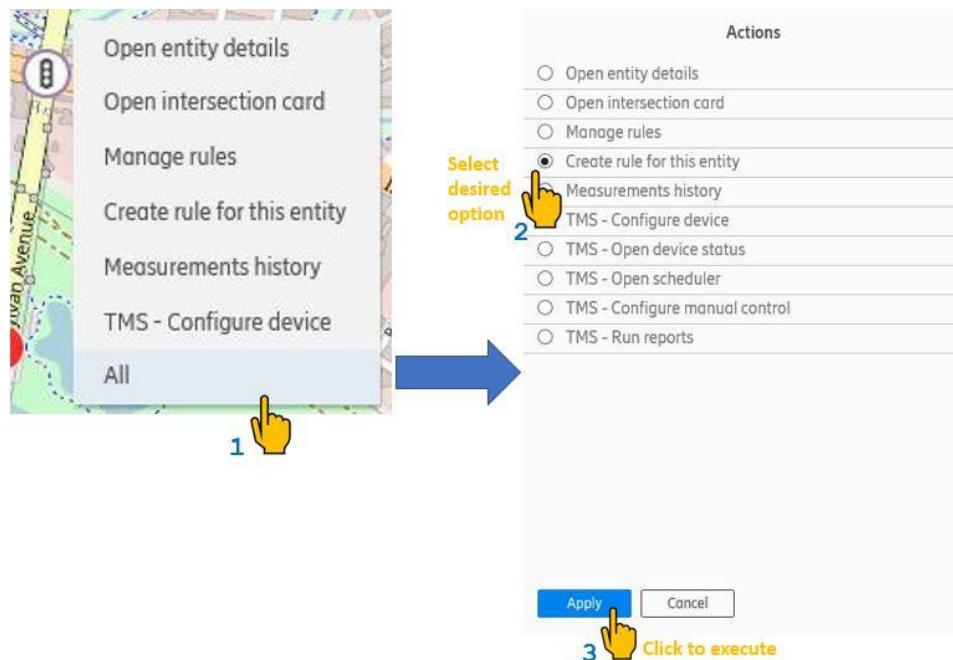


Figure 100 Entity Submenu and Entity Actions card - Example Screenshot

7.6 Details Card - General

What is displayed on the Entity *Details* card highly depends on the underlying Entity. Figure 101 shows typical items seen on cards but it should be noted that some cards will have a lot less or perhaps more than what is shown.



Gothenburg\$Camera6 name

Show on map

This is a camera in a Stampgatan street

Status: OK

Measure... **Apply action**

Details

Inter-application Id:	IaID Gothenburg\$Camera6
latitude:	57.707632
longitude:	11.975361

Entity type notes **Entity notes**

Sensors

CTC Status:	10
CTC Status Details:	OK

Attachments (0)

Add attachment **View all attachments**

Figure 101 Details Card - General - Example Screenshot

Map pin cards are notably different in that they have an **Edit** button and have no Action or Link buttons, Alarms or Sensor information. Map pins however, may have attachments and notes associated with them, just like Devices. Map pin settings that are not shared by Devices are explained in Section 6.8.5. To Add/View or Delete an Attachment or Note to a Map pin, the User may see the sections below.

Note that it is possible to upload an image file as an attachment for most Entities and to display that image at the top of the Entity *Details* card. If the Device type is a camera, then the decision to allow an image to be uploaded or not is made at Service On-boarding.

The procedure to upload an image for an Entity described in Section 7.7.4. Figure 102 shows the *Details* card without an image.

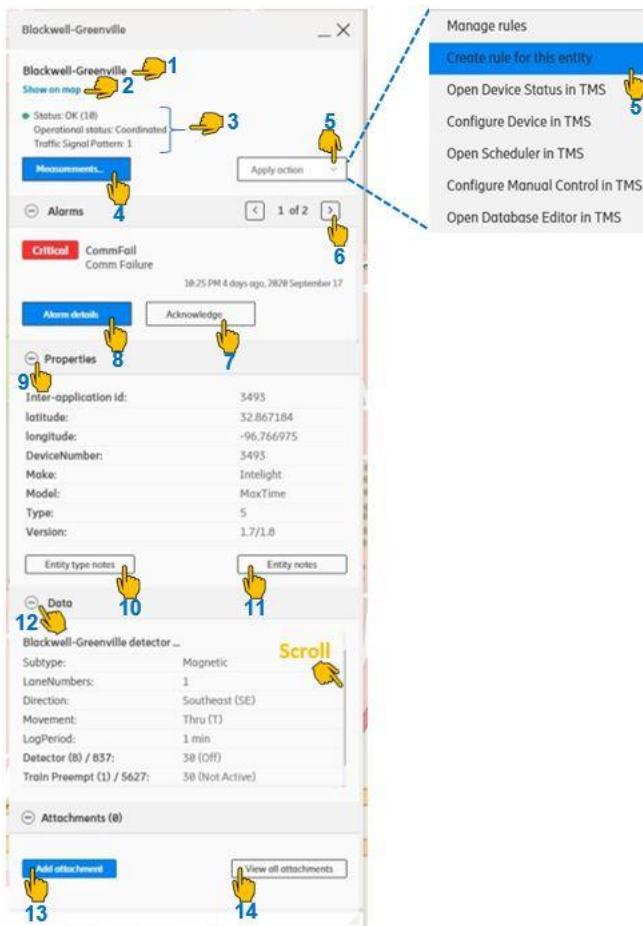


Figure 102 View Entity Details Card - Example Screenshot

Typical options on the Entity *Details* card for a Device, as shown in the figure above, are:

1. Name

The Entity name is shown on the Details card.

2. Show on map

The User clicks on this link to shift the Map view to the Entity. The Entity will show highlighted blue.

3. Status

The Device status is shown. Map pins have no status and do not have this item displayed. Traffic Signal Patter and Operational Status are also displayed here.

4. [Action]

This button executes the primary Action for a Device. This action is determined at Service On-boarding. The Action may have a specific name, as in the figure above.

Note: Actions do not apply to Map pins.



5. Apply action

From a drop-down menu the User may select which actions to trigger for the Device. Note that this option may not applicable to all devices and is decided at On-boarding. Actions could include an API call, GUI Linking, invocation of a URL or sending an email and so on.

Note that for some Devices, this drop-down menu contains the options **Create rule** and **Manage rules**. For more general information on Device rules and their creation, see Section 7.8.

Notes: Devices which only support Rules and no other Actions may have **Create rule** and **Manage rule** as separate buttons.

The figure above shows action examples but actual possibilities are determined at Service On-boarding and depend on the capabilities of the Device Type.

Actions do not apply to Map pins.

6. Alarms

Some Devices may also display Alarm information. The User may scroll through the Device alarm information by clicking on the <> buttons.

Note: Alarms do not apply to Map pins.

7. Acknowledge alarm

The Authorized User may acknowledge the Alarm directly from the Entity *Details* card.

8. Alarm details

9. Properties

Some Device types may specify several measurements and Device details. The meaning of the Details and related parameters are Device type specific. Refer to the Device type vendor's documentation for specifics.

Note: Details do not apply to Map pins.

10. Entity type notes

This button opens a Wiki form, in a new browser tab where the Authorized User may fill in or edit a Note related to the Entity TYPE. Only one Note per Entity type may be maintained. This Note will be accessible from the Entity *Details* card of all Entities of this Type.

Further information on adding a note may be found in Section 7.7.1.

Note: Entity type notes apply also to Map pins. There is one Entity type note that applies to all Map pins of the same Map pin type (there are eight Map pin types, see Section 6.9.1).

11. Entity notes

This button opens the related Wiki Notes, for the specific Entity, in a new browser tab. Every Entity may have an individual Note associated with it. Further information on adding a note may be found in Section 7.7.1.



Note: Notes apply also to Map pins.

12. Data

Most commonly, the CUT Status is shown as CUT determines the CUT status for each Device. CUT Status code values and their meanings are shown in the table below but the description may also be included on the Details Card, for some Devices.

Note that not all Status values may be applicable for all Devices.

Table 2 CUT Status Codes

CUT Code	Status
10	OK
20	Error
30	Off
40	No Connection
50	Unknown
99	No Status

For Traffic signal controllers, the System detector parameters 'Volume', 'Occupancy' and 'Speed' may be shown. These parameters show the most recent data available for a lane, according the polling frequency.

Volume refers to the number of seconds that the data refers to, *Occupancy* refers to the percentage of time that the sensor is occupied by a vehicle.

Speed refers to the average speed at which the traffic is moving during the period.

13. Add attachment

Attachments are files that may be uploaded for the Entity. Further information on adding an attachment may be found in Section 7.7.3.

Note: Attachments also apply to Map pins.

14. View all attachments

The number of attachments associated with the Device is shown directly above the **Add attachment** button.

The **View all attachments** button allows the User to view the Attachments already uploaded for the Entity. A *New attachment* card open where the files may be browsed and downloaded to the User's laptop/mobile and so on. This is described in Section 7.7.4.

Note: Attachments also apply to Map pins.

7.6.1

InterApplicationId

The general purpose of InterApplicationID is to identify devices at the same location across different 3PP systems. A typical case is to group multiple devices (for example, camera and traffic controller) to the same intersection. InterApplicationId is used as a logical identifier, usually of the same location.



Bear in mind that InterApplicationId is not unique per device, thus it can be configured for all partners on the project.

To view InterApplicationId, the User opens a *Device card*. Then the User goes to **Details** (step 1 in Figure 103) and sees **Inter-application Id** (step 2 in Figure 103).

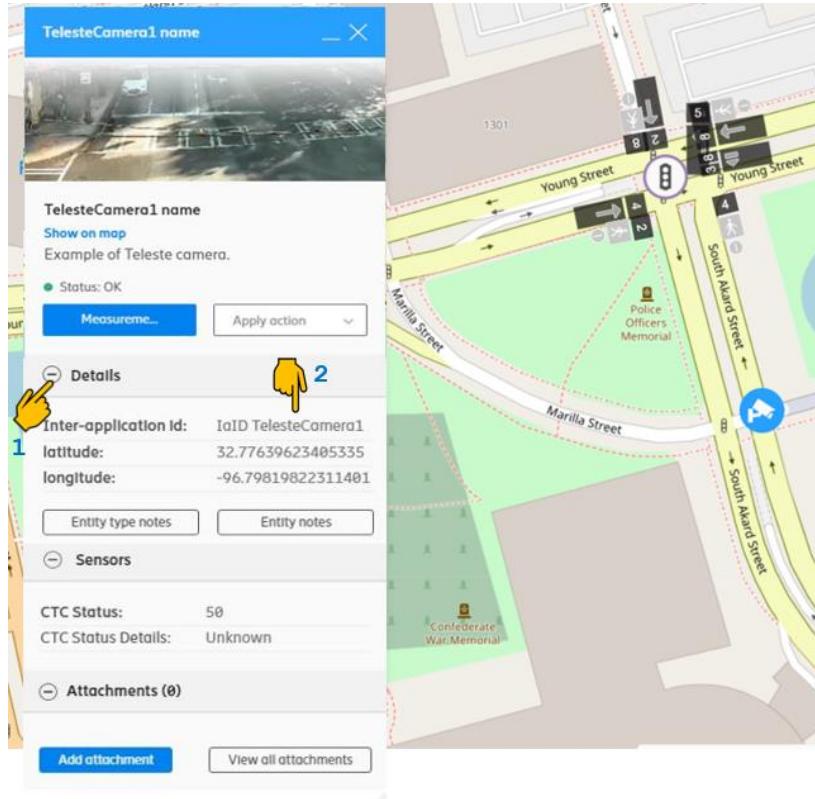


Figure 103 InterApplicationId on Device Details Card - Example Screenshot

7.6.2

PTZ Controls for Cameras

PTZ (Pan, Tilt, Zoom) telemetric controls will be present in the video stream in device cards for the devices that have the corresponding capabilities.

The User has the following options, see Figure 104.

- Pan (left/right): using the arrows <>
- Tilt (up/down): using the arrows Δ ∇ . Do not use the arrows on the keyboard.
- Zoom: using the "+" or "-" signs.



Figure 104 PTZ Camera - Example Screenshot

Note: A device might support a subset of PTZ features. If just zoom is supported, the zoom controls will be displayed. If only pan and tilt is supported, just the left/right and up/down arrows will be displayed. For the whole set of control assets, see Figure 105.

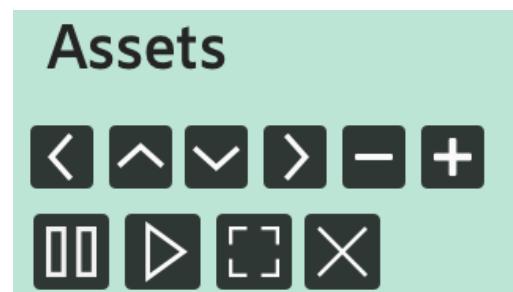


Figure 105 PTZ Control Assets - Example Screenshot

The User can select an existing view (preset position) of a PTZ enabled camera from the drop-down list. The current position of the camera can be saved as a new view, and an existing view can be deleted. Figure 106 shows an internal example.

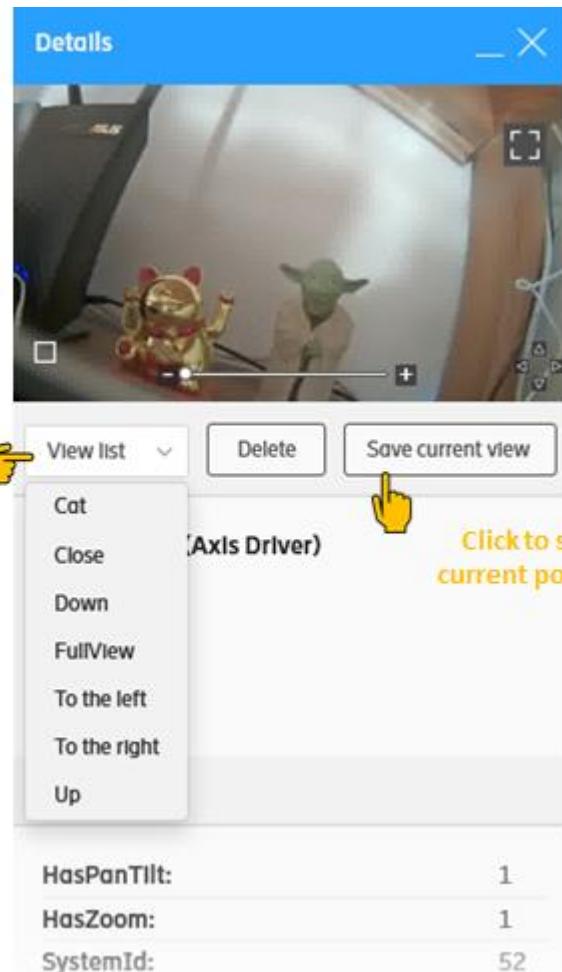


Figure 106 View Handling of PTZ Camera - Screenshot Example

7.7

Details Card - Notes and Attachments

7.7.1

Add Note for Entity or Entity Type

Every Entity may have its own Note associated with it which is accessible from the *Details* card of that Entity. Every Entity type may also have a Note associated with it which is accessible from the *Details* card of every Entity of that type.

Entity notes or Entity type notes can be added by an Authorized User by clicking the **Entity notes** or **Entity type notes** button on the Entity *Details* card (see Figure 102).

Note: Adding Notes for Entity or Entity type requires the same steps and has the same 'look and feel'. In the steps below, adding Entity notes is shown in the figures but the steps apply equally to Entity type notes.



When the **Entity notes** or **Entity type notes** button is clicked from the Entity *Details* card, a Wiki form (shown in the figure below) opens in a new web browser tab. The Wiki notes form has a fixed title which reflects the Entity name or the Entity type name, depending on which notes are being added. The figure below shows the title as the Entity name because Notes are being added for the specific Entity '*Routh-Woodall Rodgers*'.

To add a note, the Authorized User clicks on the **Edit article** (Step 1 in the figure below). The *Edit article* form opens and the User types a text into the free text field (Step 2 in the figure below). Note that the Title and the Topic are fixed values and may not be altered.

To save the note the User clicks the **Create article** button (Step 3 in the figure below) and then clicks the **Save article** button (Step 4). A pop-up message confirms that the note was saved successfully.

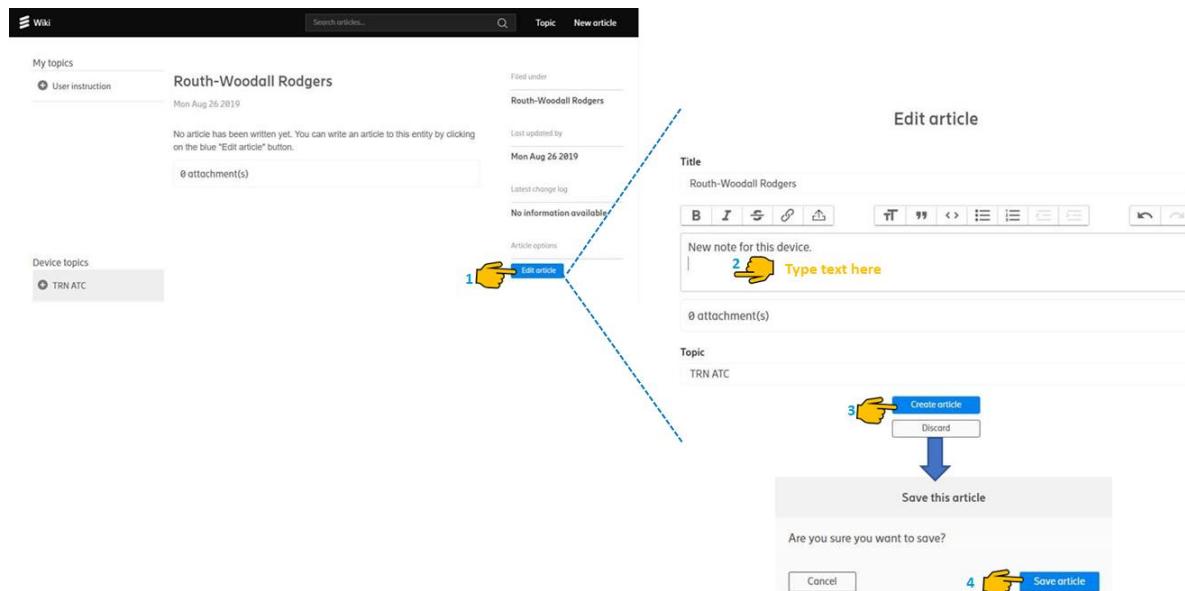


Figure 107 Add Note for Device - Example Screenshot

7.7.2 Edit Note for Entity or Entity Type

Entity notes or Entity type notes can be edited by an Authorized User by clicking the **Entity notes** or **Entity type notes** button on the Entity *Details* card, see Figure 102.

Note: Editing notes for Entity or Entity type requires the same steps and has the same 'look and feel'. In the steps below, editing Entity notes is described but the steps apply equally to Entity type notes.

When the **Entity notes** or **Entity type notes** button is clicked from the Entity *Details* card, a Wiki form (shown in the figure below) opens in a new web browser tab. The Wiki notes form has a fixed title which reflects the Entity name or the Entity type name, depending on which notes are being edited. The figure below shows the title as the Entity name because notes are being edited for the specific Entity '*Routh-Woodall Rodgers*'. Note that because Notes have already been created for the specific Entity, the current Note details are displayed.



To edit the note, the Authorized User clicks on the **Edit article** button (Step 1 in the figure below). The Edit Article form opens and the User types a text into the free text field and enters **Change log information** (Step 2 in the figure below). Note that the Title and the Topic are fixed values and may not be edited. Change log information is mandatory. To save the edited the note the User clicks the **Update article** button (Step 3 in the figure below) and then clicks the **Save article** button (Step 4). A pop-up message confirms that the edited note was saved successfully.

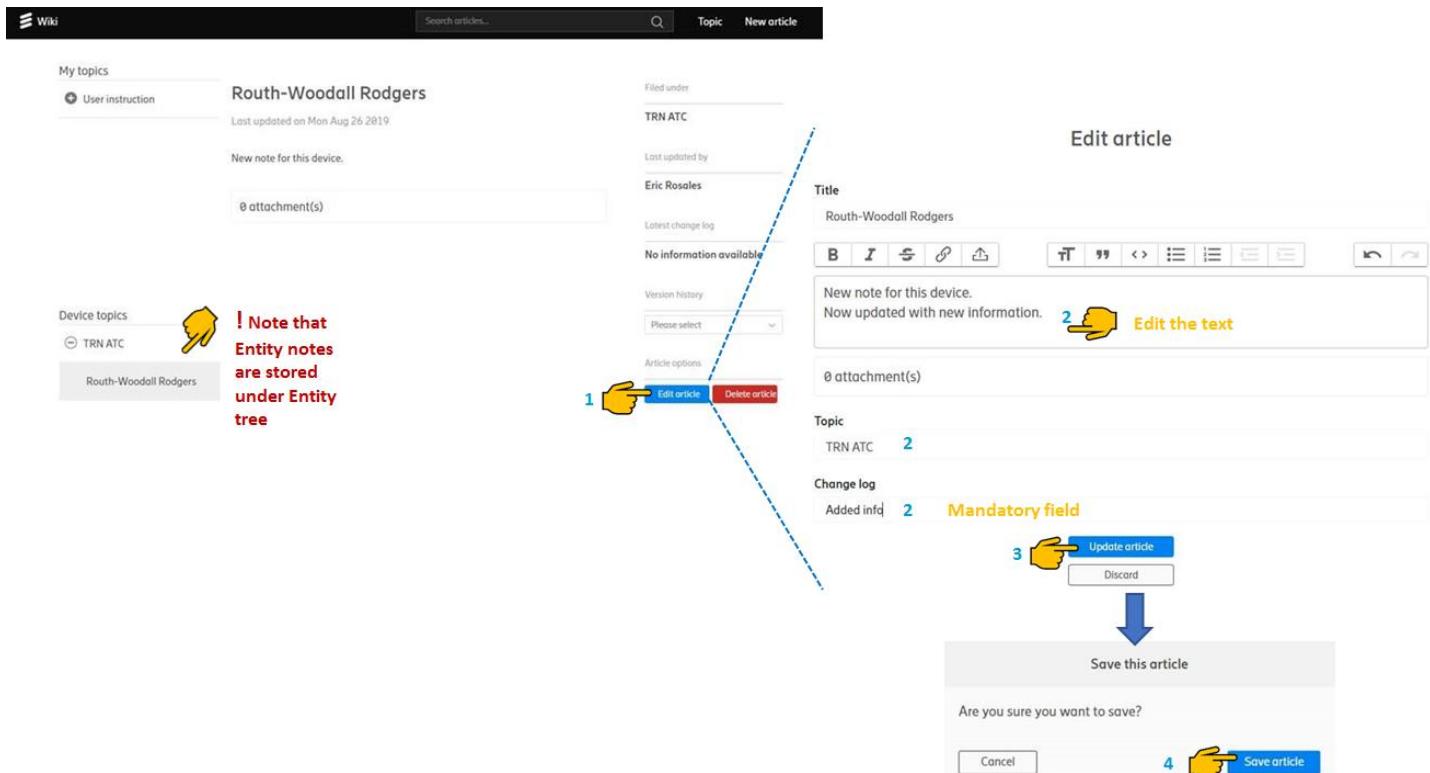


Figure 108 Edit Note for Entity - Example Screenshot

7.7.3 Add Attachment for Entity

If the User selects **Add Attachment** from the Entity *Details* card, the User is first asked to explicitly confirm that the file they will upload is not illegal (Step 1 in the figure below). Then a *New add attachment* card opens as shown below. The User must enter a Name for the attachment and then follow the steps 2 – 3 below, to add the attachment. The User is able to set the maximum size of a file as an attachment, as well as maximum storage size and the size when the alarm is sent. The actual values are customer-specific.

Note: Attachments apply to Map pins as well as Devices.

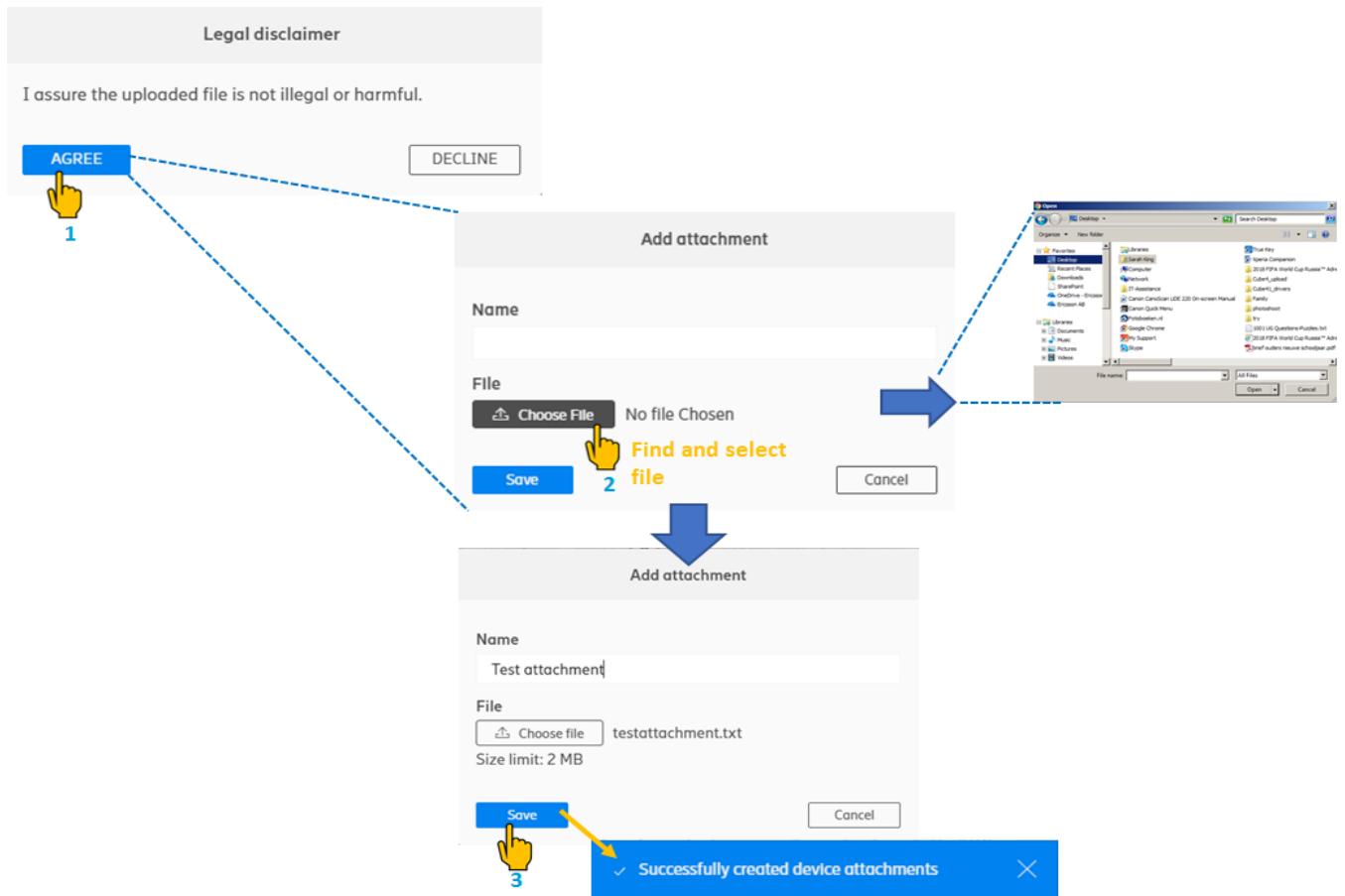


Figure 109 Add Attachment for Entity - Example Screenshots

7.7.4 Delete Device with Attachment

When a User tries to delete a device with an attachment, the status of the device may change to the following: *Deleted in master system (60)*, see Figure 110. This status means that the device is not deleted in the service because of its attachment.



Central-Hall

Central-Hall
Show on map

Status: Deleted in master system (60)
Operational status: Unknown

Measurements... Apply action

Properties

Inter-application id:	3274
latitude:	32.7987557263219
longitude:	-96.7930537462235
DeviceID:	ee8fa672-2d91-4edc-a398-a95b4428647c
IntersectionID:	e09e102a-1c01-4ecc-b029-440d8fe544f4
DeviceNumber:	3274
Make:	Intelight
Model:	MaxTime
Type:	1000001
Version:	MAXTIME_2

Entity type notes Entity notes

Data

Custom Object (0) / 1:	10
Custom Object (0) / 92:	10

Attachments (1)

123	10:31 AM, 12/23/2020
-----	----------------------

Figure 110 Deleting Device with Attachment - Example Screenshot



7.7.5

Set Attachment as Main Entity Image

When the attachment that is uploaded is an image file (jpeg, png and so on) then the User has an option to use the file as the Entity image to be displayed on the *Details* card.

Following the steps 1 to 3 outlined in section 7.7.3 above, the Authorized User uploads the image file. The User enters a name for the attachment (Step 4 in the figure below). The User checks the box *Select as card image* and a tick mark appears (Step 5 in the figure below). The User then clicks the **Save** button and an acknowledgement message appears (Step 6 in the figure below). The image is then automatically added to the Entity attachments list and rendered at the top of the Entity *Details* card (shown as 7 in the figure below).

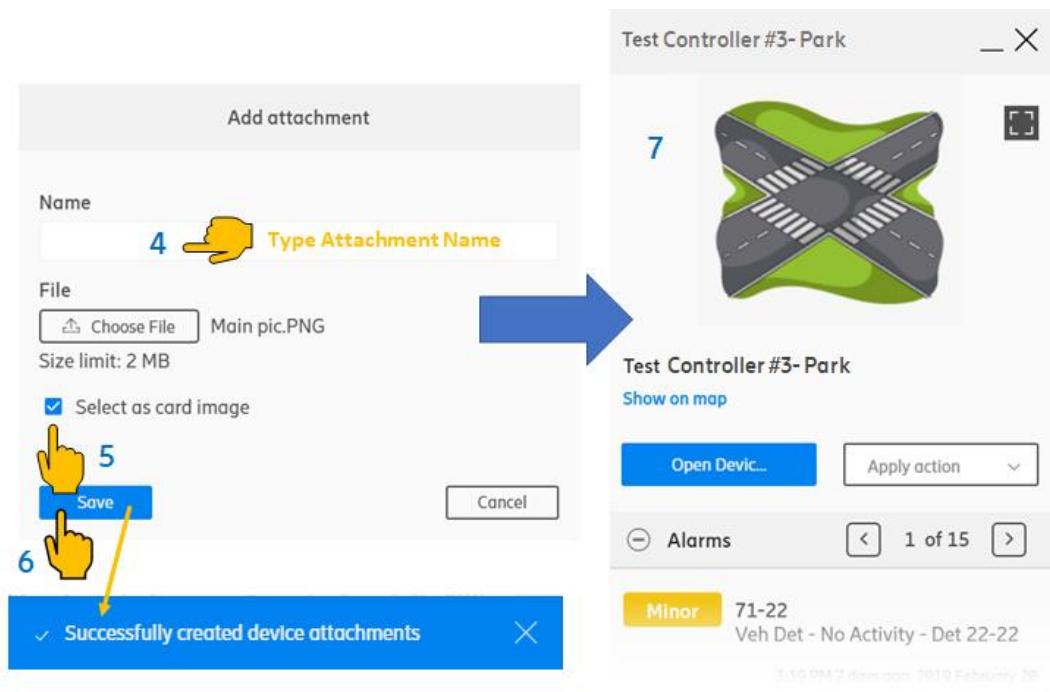


Figure 111 Set Attachment as Entity Image - Example Screenshots



7.7.5.1

Enlarge Entity Image

It is possible for the User to enlarge the Entity image by clicking on the black box icon in the top right-hand corner of the image. This is shown in the figure below.

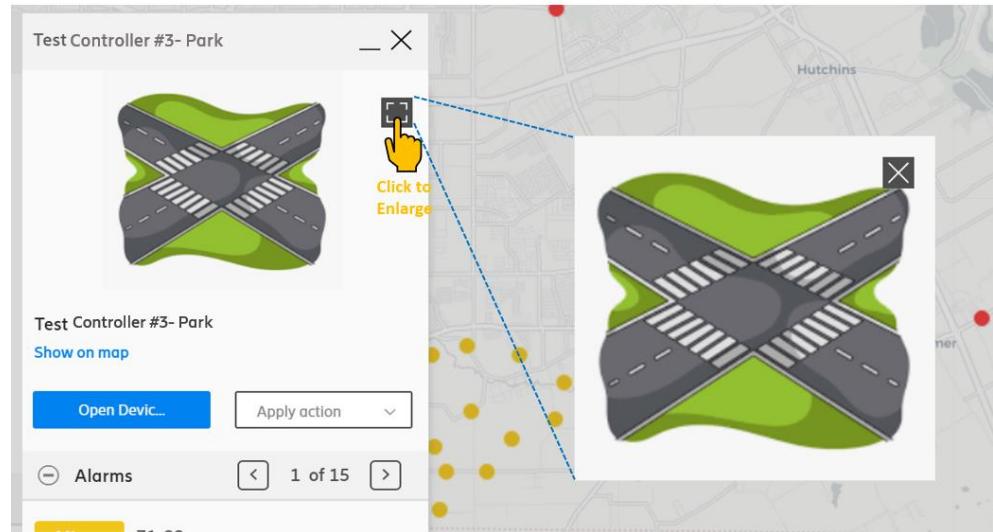


Figure 112 Enlarge Entity Image - Example Screenshots



7.7.6

Manage, Copy, Edit and View All Attachments

When the Authorized User clicks the **View all attachments** button on the Entity *Details* card, the Attachments card opens, as shown in the figure below.

The User may click the **Add** button to add a new attachment for the Entity. This action is described in section 7.7.3.

The attachments are displayed in a list. The list may be sorted by clicking on the arrows beside each column. It is possible to sort on the name of the attachment, the name of the User who uploaded it (**Uploaded by**), the date and time it was uploaded (**Uploaded**), the size of the file that was uploaded (**File size**) and the type of file that was uploaded (**Type**).

The Authorized User may click on the **Download** text of an attachment in the list. This action opens the attachment in a new browser tab. The User may also click on the **Delete** text to delete an attachment. In this case, the User must confirm they want to delete the attachment by clicking on the **Delete** button in the confirmation message that pops-up.

It is possible to copy an attachment from one Entity to another from the source Entity's *Attachments* card. Selection of the Entity to copy the attachment to (i.e. the target Entity) may be done via either the CUT GUI Map view or via the *Entities* card. Copying an attachment to another Entity using the Entities card is described in Section 7.7.6.1 and copying while using Map view is described in Section 7.7.6.2.

Note: Attachments may be copied to any other Entity, even if the source and target Entities are of different Entity types.

Name	Uploaded by	Uploaded	File size	Type	Card image	Actions
Picture	Eric Rosales	2:19 PM, 8/...	575B	png	Deselect	Download Delete
Test attach...	Eric Rosales	2:18 PM, 8/...	27B	txt	Download a specific attachment	Download Delete a specific attachment

Figure 113 Attachments Card for Entity 'Test attachment' - Example Screenshot



7.7.6.1 Copy Attachment for Entity - *Select from entity card*

To copy an attachment from the attachment list to another Entity using the *Entities* card, the User clicks on the **Edit** button (Step 1 in Figure 114) in the *Attachments* card of the source Entity. The User then selects the attachment to be copied by clicking the check box beside the attachment in the attachments list (Step 2 in Figure 114). From the *Copy to Entity* drop-down menu, the User selects *Select from entity card* (Step 3 in Figure 114). The *Entities* card opens. The User then searches for the target Entity (see Section 8.1 for *Entities* card navigation description), in the *Entities* card (Step 4 in Figure 114). When the Entity tree card is opened, the User can mark one device, using radio buttons.

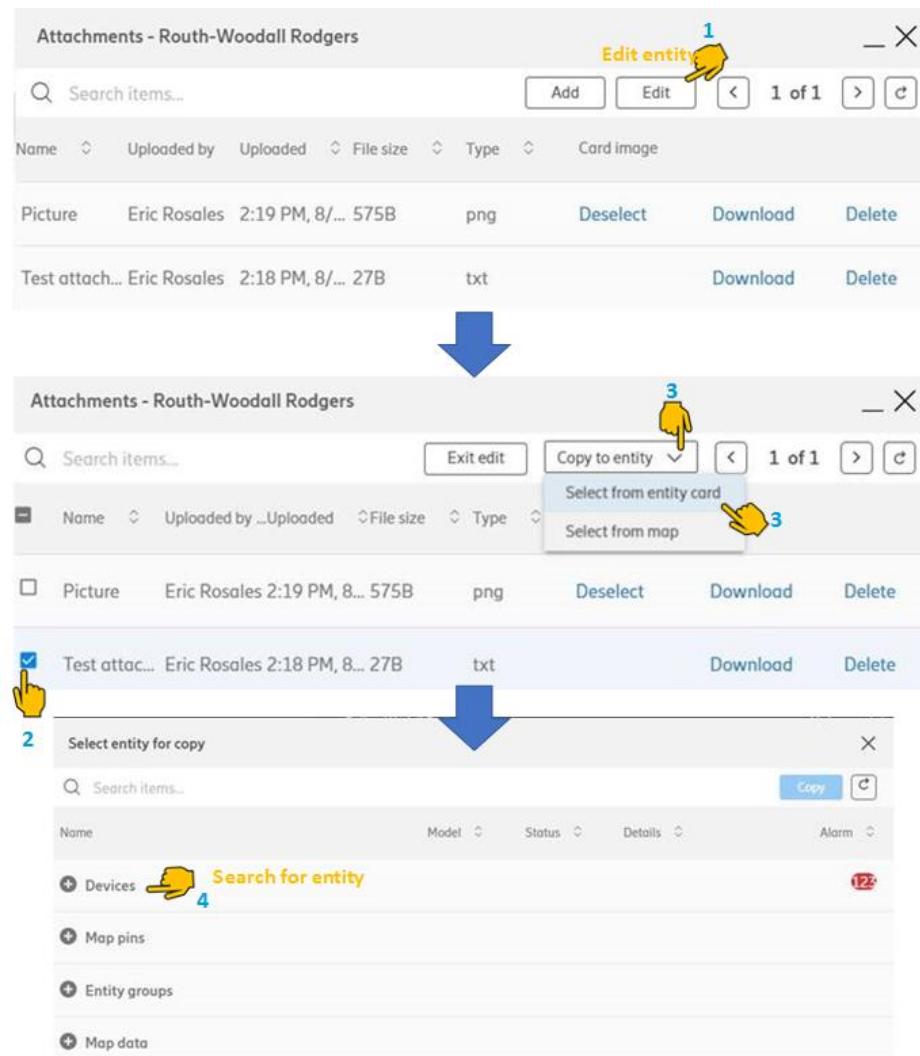


Figure 114 Copy Attachment from One Entity to Another - Example Screenshots

After the device is selected (Step 1 in Figure 115), the blue **Copy** button will now be enabled. The User clicks on the **Copy** button (Step 2 in Figure 115) and the attachment is copied to the target Entity. This is acknowledged by the CUT GUI through a pop-up message. The newly copied attachment is now listed at the bottom of the *Details* card of the target Entity.



Select entity for copy

Search items...

Copy

Name Model Status Details Alarm

Name	Model	Status	Details	Alarm
Abrams-Kenwood		Off		
Abrams-La Vista		Off		
Abrams-Lovers		Off		
Abrams-Mockingbird		Off		
Abrams-Monticello		Off		

Select the Device 1

Figure 115 Selecting Entity for Copy - Example Screenshot



7.7.6.2

Copy Attachment for Entity - *Select from Map*

To copy an attachment from the attachment list to another Entity using the Map view, the User clicks on the **Edit** button (Step 1 in the figure below) in the *Attachments* card of the source Entity. The User then selects the attachment to be copied by clicking the check box beside the attachment in the attachments list (Step 2 in the figure below). From the *Copy to Entity* drop-down menu, the User selects *Select from map* (Step 3 in the figure below). The User then selects, in the Map view, the Entity to which the attachment should be copied (Step 4 in the figure below). The target Entity will appear blue on the Map view and the **Copy** button in the *Copy Attachment* card becomes enabled. The User then clicks on the **Copy** button (Step 5 in the figure below) and the attachment that was selected previously is copied to the target Entity. This is acknowledged by the CUT GUI through a pop-up message.

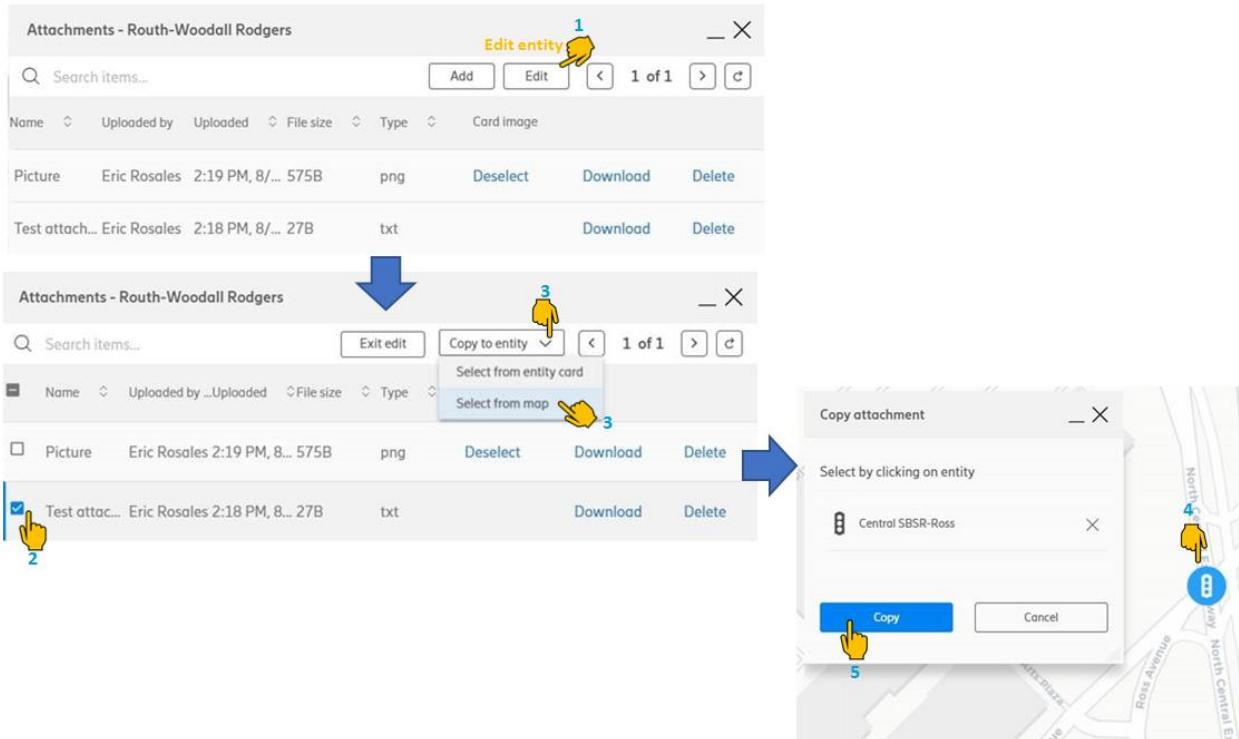


Figure 116 Copy Attachment from One Entity to Another - Example Screenshots



7.8 Details Card - Rules

7.8.1 General

Rules may be set so that an event is triggered following a threshold breach by a Device measurement. Rules may be created for individual Devices based on measurements that apply to the Device's Device type.

A Device type is a logical grouping of Devices. For example, Cameras and Traffic signal controllers are different Device types. Additionally, Cameras from different suppliers which have different interfaces or measurements would likely be separated into different Device types; Device type Camera X and Device type Camera Y, for example. How to best group Devices into Device types is performed at Service On-boarding.

For each Device type, an Event template is created, also at Service On-boarding. The Event template defines what measurements can be expected from the Devices within the Device type and what constitutes an unacceptable measurement threshold. What action that could apply when measurements are exceeded is also defined. The Event template is created by Ericsson to pre-define the available measurements and possible actions, per Device type in the CUT GUI. When the User creates a Rule for a Device (described below) the available measurements and actions that were agreed for the related Device type are then available from drop-down menus.

Actions to be triggered by a Rule can vary considerably depending on the sophistication of the underlying Devices. Actions such as "*send email to..*" and "*send notification to..*" are quite standard and are executed directly by the CUT GUI. However, some Service Applications may support API calls that allow the User to restart/reboot the Device, for example. The Actions supported by a Device type, that are agreed at Service On-boarding will be available for choice through the CUT GUI and may vary between Device types.

7.8.2 View All Rules

The Rules card displays all the Rules that have been created. The Rules card may be found by clicking on **Settings** in the navigation bar and selecting **Rules** from the drop-down menu. This is shown in Figure 117.

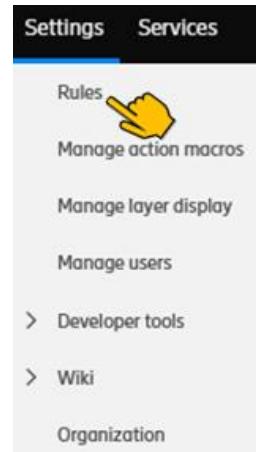


Figure 117 Launching Rules Card from Navigation Bar - Example Screenshot

The Rules card appears in the CUT GUI as shown below. A full list of existing Rules that the User is authorized to view are shown. Active rules appear in **bold** font and deactivate rules appear **pale**. Authorized Users may activate and deactivate the rules using the slide button to the right of each rule. The rules may be sorted by *Device type* or *Name* by clicking on the or arrows.

Type	Name	Status	Action
Rule with email	MT Local Test 3 - Kamal	Active	Edit Delete Activate/Deactivate Rule
Notify at Failure	Controller #3-Park	Pale	Edit View Rule Edit Delete Scroll
Processor overload warning	Controller #4-Forest	Pale	Edit Delete
Comms Error	Controller #5-River	Pale	Edit Delete

Figure 118 CUT Rules Card - Example Screenshot

7.8.2.1 View/Edit/Delete Rule

Authorized Users may view or edit the Rule by clicking **Edit** in the list entry of the Rule they wish to edit in the Rules card. The Rule may be edited in the subsequent card by following the parameter guidelines described for adding a Rule, Section 7.8.3.

Authorized Users may delete the Rule by clicking **Delete** in the list entry of the Rule they wish to delete.



7.8.3

Add Rule

Authorized Users may add a rule for a specific device by either:

- Placing the mouse over the Device in Map view, performing a right-mouse click and selecting "*Create rule for this entity*" from the Entity submenu that appears (see Figure 99).
- From the Entity *Details* card (see Section 7.5.1), click on the **Create rule** button or, where supported, select "*Create rule for this entity*" from the **Apply actions** drop-down menu. Both possibilities are shown in Figure 102.

The card for new rule creation will appear, showing the fields available for creating a basic or simple rule. There is also an option to enable "**Advanced rules**" which is set to disabled by default. Adding a simple or advanced rule is discussed further in the sections below.

Simple rules are made based on one, pre-defined condition and trigger one action. Advanced rules are made based on multiple, cumulative conditions (Boolean AND) and trigger one action. All the conditions set for an advanced rule must be true for the event to occur.

Multiple simple and advanced rules may be created for each Device. Thus, a series of events can be defined for a threshold breach.

7.8.3.1

Add Simple Rule

When the User selects to *Add rule for a device*, using one of the methods explained above, a *New create rule* card opens, as shown in the figure below. A description of the required parameters may be found below the figure. Note that all fields are mandatory.

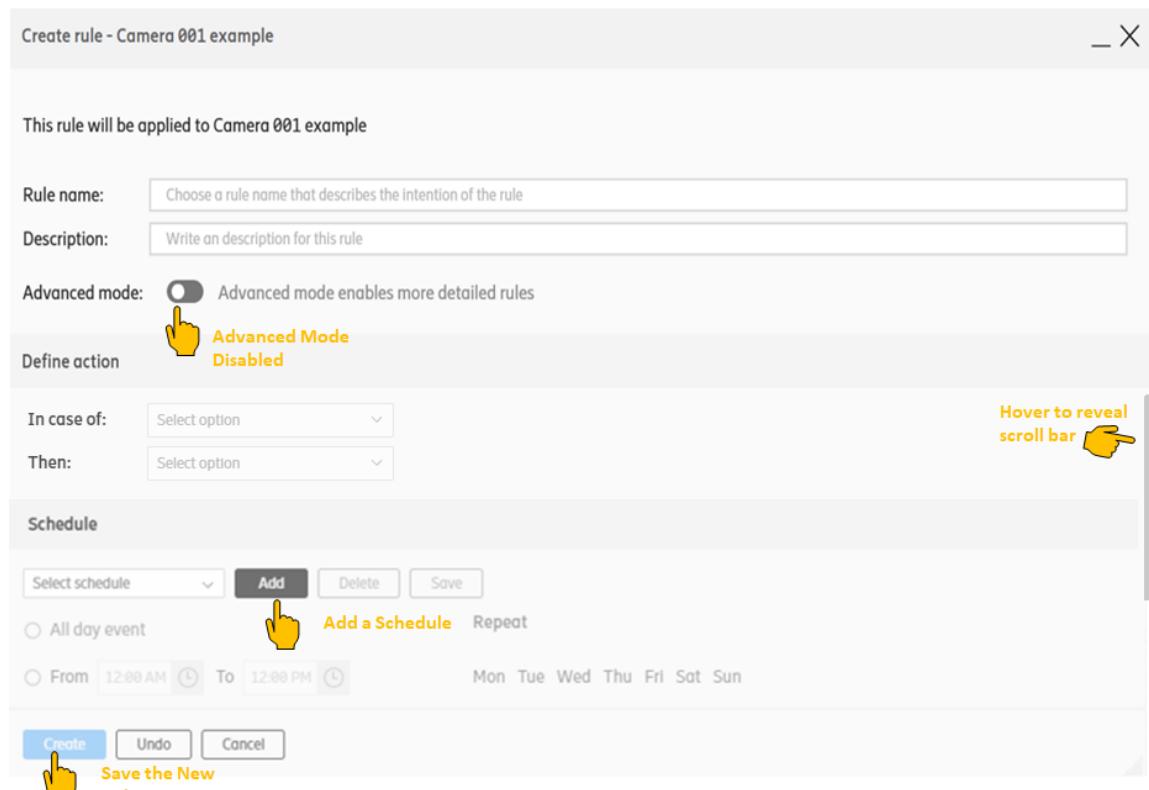


Figure 119 How to Create Simple Rule - Example Screenshot

The parameters to configure a simple rule are:

- **Advanced mode**
For a simple rule (one condition), the slider should be deactivated. The slider is inactive by default.
- **Name**
The User must enter a name for the rule.
- **Description**
The User must enter a short description of the rule.
- **Define action > In case of**
From the drop-down menu, the User selects the predefined measurement that was created for the Device type during Service On-boarding discussions between Ericsson and the Organization. Examples might be "*Battery low*" or "*Temperature too high*". Note that the threshold that triggers these examples would have been predefined and built into the CUT GUI logic for the Organization. A more descriptive name could also be predefined such as "*Battery below 40%*" or "*Temperature above 90 F*".



➤ Define action > **Then**

The User selects the predefined action that should occur once the **In case of** condition is met, from the drop-down menu. Typical actions are sending a Notification to the User/entire Organization or sending an email.

Notifications are accessed by Users from the navigation bar at the top of the CUT GUI (described in section 7.8.4).

Emails are sent to email accounts that are indicated in the *Create rule* card when the event selected is to send an email. During Rule creation, if this field is set to email then the User will be prompted to add recipients, as the fields shown below will appear:

In case of:	Easy Mile Low Battery
Then:	Send email
To Email:	To Email
CC Emails:	CC Emails
BCC Emails:	BCC Emails
Subject:	CUT action triggered

Figure 120 Email Settings - Simple Rule- Example Screenshot

➤ Schedule > **Select schedule**

The User selects a schedule from the drop-down menu. Each schedule has a set of configured Days of Week or Times of Day that the Rule will apply. Schedules are created by Authorized Users by clicking the **Add** button beside the drop-down menu.

➤ Schedule > **Add**

If the existing schedules in the drop-down schedule menu are not suitable for the Rule, the User may click the **Add** button to create a new schedule that will then be available for all Authorized Users.

The User is prompted to enter a **Name** for the new Schedule. The User fills in a name and then clicks **Submit**. The new schedule is then available from the drop-down schedule menu.

The User may then change the schedule for the Rule being created, as needed and then clicks **Save**. Authorized Users may also edit existing schedules by making changes to any schedule and then clicking **Save**. The figure below shows the options for schedule creation and editing.



Currently selected Schedule Name

Add a new Schedule

Delete current schedule

Save changes to current schedule

Select if the Rule applies for the whole day

Select Day(s) of Week when the Rule will apply

Time of Day for Rule to apply if All Day Event not selected

Figure 121 Rule Schedules - Example Screenshot

Buttons placed at the end of the *Create rule* card are, as follows:

- **Create**
Once all the fields are filled in, the **Create** button will change from unusable to usable. The User may now click on the **Create** button to create and save the new Rule in the system.
- **Undo (Clear all)**
This button will clear all the fields that have been entered so far.
- **Cancel (revert to list view)**
This button returns the User to the Rules card showing existing Rules in a list.

7.8.3.2 Add Advanced Rule

When the User selects to add a Rule for a device, using one of the methods explained above, a new *Add rule* card opens, as for a simple rule. The User must enable Advanced mode by moving the **Advanced mode** slider. Then the display changes, as shown in the figure below. A description of the required parameters may be found below the figure. Note that all fields are mandatory.



Create rule - Blackwell Street & Greenville Avenue X

This rule will be applied to Blackwell Street & Greenville Avenue

Rule name: Test rule

Description: Test rule

Advanced mode: Advanced mode enables more detailed rules
Advanced Mode Enabled

Define thresholds

A: Latitude 40

All Instances String equals value

Add threshold Add multiple thresholds

A and or not ()

Select conditions for the selected thresholds

Please fill the expression
e.g. (A and B) or C

Define action

Select option

Need confirmation: Confirmation notification Enabled
Confirmation notification Enabled

Please select

Figure 122 Create Advanced Rule - Example Screenshot

The parameters to configure an advanced rule are:

- **Advanced mode**
For an advanced rule (multiple conditions), the slider must be enabled. The slider is disabled by default.
- **Rule name**
The User must enter a name for the rule.
- **Rule description**
The User must enter a short description of the rule.
- **Define Thresholds** (Multiple Thresholds may be created)
For each Threshold there are three fields to be defined:



> **Select option:** from this drop-down menu the User selects the predefined measurement that was created for the Device type during Service On-boarding discussions between Ericsson and the Organization. Examples might be "*Status*" or "*Temperature*".

> **Select option:** from this drop-down menu the User selects how the measurement should be assessed. The option selected should match the expected measurement type (number, string or Boolean). The User applies their knowledge of the Device type measurements to select the suitable assessment from the drop-down menu, choosing from options such as "*Greater than*", "*Not greater than*", "*equals*" and so on.

> **Select option:** Here the User adds the value which applies to the threshold. After a Threshold is defined, the User may select the **Add** button to define any additional thresholds. Each threshold (condition) that is defined must be met for the Rule to be triggered.

> **Select conditions:** Here the User constructs a logical expression by selecting the conditions that will be applied to the threshold. It is an obligatory field for the Rule to be triggered.

> Define action > **Action**

The User selects the action that should occur once the threshold conditions are met. Actions are selected from the drop-down menu and are pre-determined at Service On-boarding. Example actions are sending a Notification to the User/all Admins (shown in figure above) or sending an email. For some Services, the list of Actions may be dynamically built via an API call to the Service application, using a template provided by Ericsson.

Notifications are accessed by Users from the navigation bar at the top of the CUT GUI (described in Section 7.8.4).

Emails are sent to email accounts that are indicated in the *Add rule* card when the event selected is to send an email. During rule creation, if this field is set to email then the User will be prompted to add recipients automatically, as the fields shown below will appear in the Card:

Action:	Send email
To Email:	To Email
CC Emails:	CC Emails
BCC Emails:	BCC Emails
Subject:	CUT action triggered

Fields appear if Action field set to Send email

Figure 123 Email Settings - Advanced Rule - Example Screenshot



The User may enable the flag **Need confirmation** so that when a rule is triggered, the User is asked to confirm whether the action should be executed or not. If the flag is enabled, the User get the notification, see Figure 124.

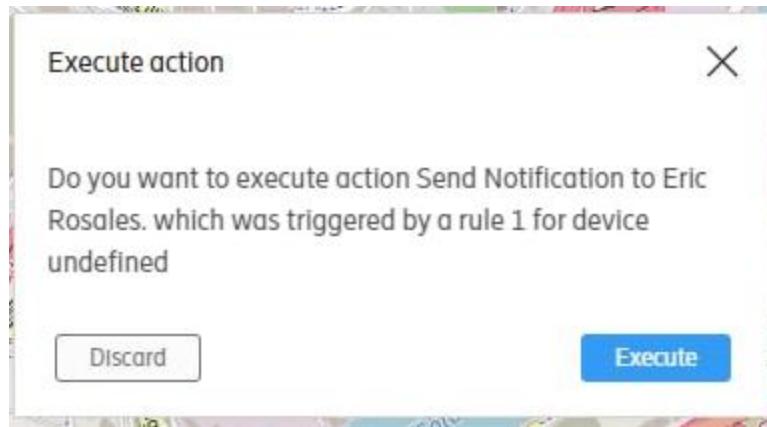


Figure 124 Confirmation Notification - Example Screenshot

➤ **Schedule > Select schedule**

The User selects a schedule from the drop-down menu. Each schedule has a set of configured Days of Week or Times of Day that the Rule will apply. Schedules are created by Authorized Users by clicking the **Add** button beside the drop-down menu.

➤ **Schedule > Add**

If the schedules in the drop-down schedule menu are not suitable for the Rule, the User may click the **Add** button to create a new schedule.

The User is prompted to enter a name for the new Rule. The User fills in a name and then clicks **Submit**. The new schedule is then available from the drop-down schedule menu.

The User may then change the schedule, as needed and then click **Save**.

Authorized Users may also edit existing schedules by making changes to any schedule and then clicking **Save**. The figure below shows the options for schedule creation.

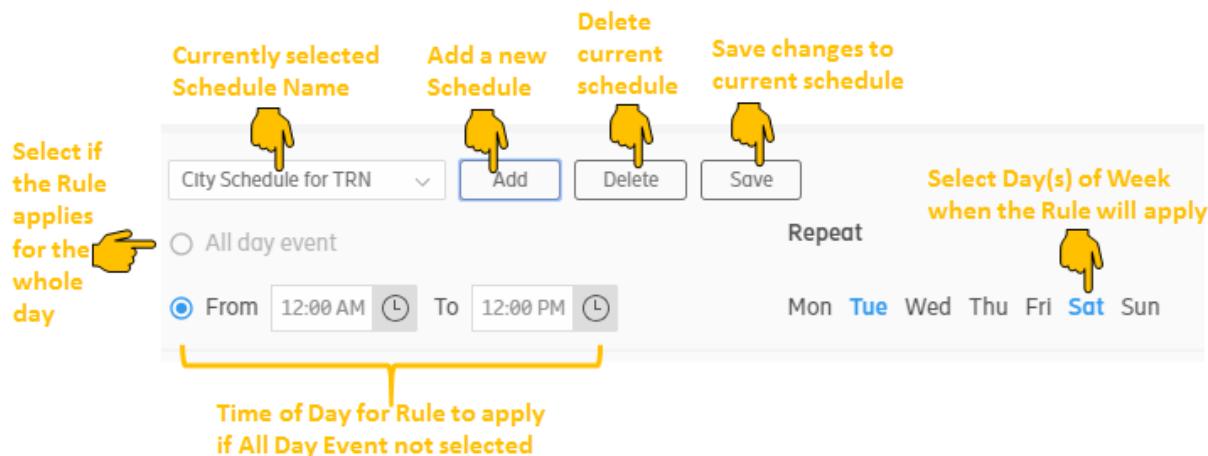


Figure 125 Rule Schedules - Example Screenshot

Buttons placed at the end of the **Create rule** card are, as follows:

- **Create**
Once all the fields are filled in the **Create** button will change from unusable to usable. The User may now click on the **Create** button to create and save the new Rule in the system.
- **Undo (Clear all)**
This button will clear all the fields that have been entered so far.
- **Cancel (revert to list view)**
This button returns the User to the Rules card showing existing Rules in a list.

7.8.4

Notifications

Notifications can appear on the User's screen just after the User has logged into the CUT system, see Figure 126. The notification informs the User that he or she might have missed some important information. Thus, a notification provides personalized alerts to a User. The User can close the displayed notification after that the *Notification card* opens.

From the *Notifications* card, the User can assess if any action should be taken.

Note: Alarms do not automatically create Notifications. The User must have an understanding of what will create an alarm for a Device type and then set a corresponding Rule with a resulting event/action to create a Notification.

The *Notifications* card can also be launched from the navigation bar, by selecting the **Notifications** button, as shown in Figure 126. From the *Notifications* card the User can use the Search function to search for keywords (this Search is not case sensitive), Dismiss (acknowledge) a notification and Hide notifications that have already been dismissed. The User may also choose Details to prompt the Map view to jump to the affected Device on the map. The Entity *Details* card will also open.



Warning	Title	Created	Device name	Description
	Exposed permissions for subs... 3:00 PM, 2020-3-10			Dismissed
	Exposed permissions for subscribed service Dallas MaxView service have changed			Dismissed
	Exposed permissions for subs... 4:22 PM, 2020-3-10			Dismissed

Figure 126 Notifications Card - Example Screenshot



7.9

Details Card – Measurements History

The *Measurements History* option aims at visualizing sensor values in chart and table formats. To open the Measurements history window, choose an entity, then right-click and select **Measurements history**, see Figure 127.

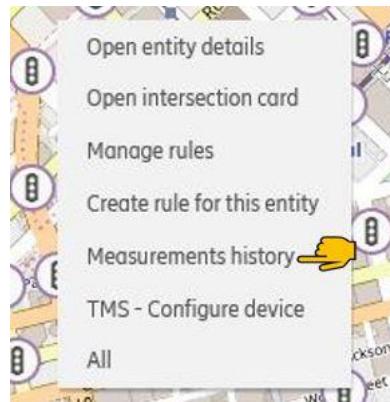


Figure 127 Measurements History - Example Screenshot

Another way to open the Measurements history window is to click on an entity in Map view. The Entity *Details* card opens automatically. After that the User clicks on **Apply action** button and selects **Measurement history** option, see Figure 128.



Figure 128 Details Card - Measurements History - Example Screenshot



The Measurement history window is displayed. The User must state definite date and time using the corresponding fields (Step 1 in Figure 129). Optionally, the User can use the buttons to set the time frames, see Step 2 in Figure 129. Then the User ticks criteria (see Step 3 in Figure 129) depending on which the list of sensors (see Step 4 in Figure 129) will be sorted out. After that the User selects the required sensors from the drop-down list (Step 4 in Figure 129). The search results are shown at the bottom of the window. To delete a sensor, the User can click on a required criss-cross sign (see Step 5 in Figure 129).



Figure 129 Settings of Measurement History - Example Screenshot

To view the sensor's details for any moment within the set time frames, the User hovers a cursor over the point on the curve, see Figure 130.

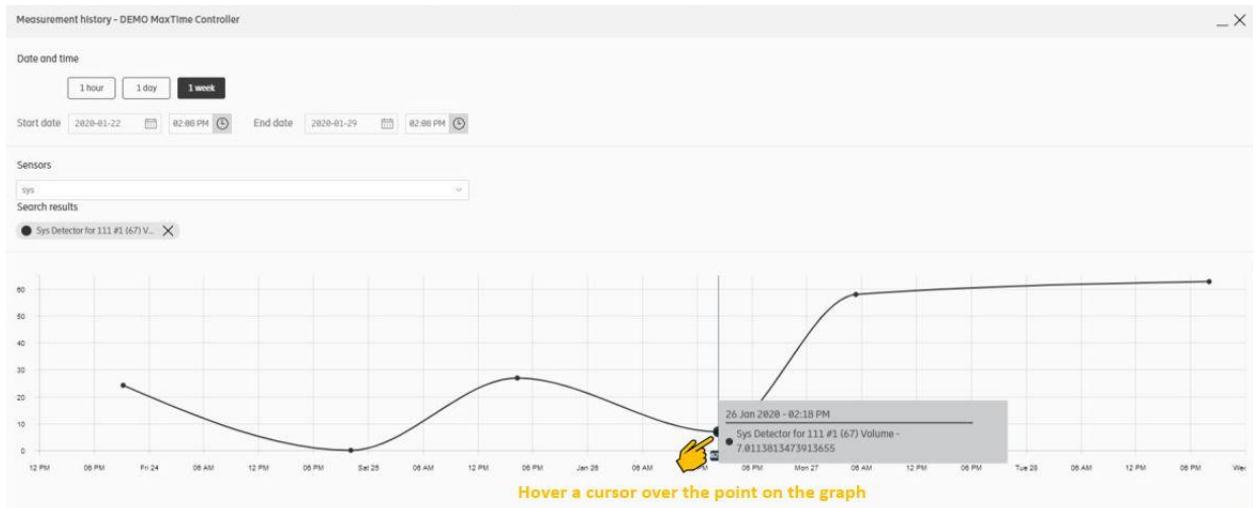


Figure 130 Measurement History - Detailed Information - Example Screenshot



8

CUT Menu: Tools: Entities

The Entities feature provides a view of CUT Entities, in tabular form. It reflects the Domains of Layer Control but additionally allows for viewing all the Entities within each Layer. This is presented to the User in a table called an Entity tree. As is standard in the CUT GUI, Users will only be shown Entities for which they have the appropriate Role permissions.

8.1

Launch Entities Card

The Entity tree is accessible from the CUT GUI navigation bar. From the navigation bar, the User clicks **Tools** and then selects **Entities**. The process for launching the Entities card from large/medium or small screens is shown in the figure below. When **Entities** is selected, the Entities card pops-up as shown in Sections 8.1.1 and 8.1.2.

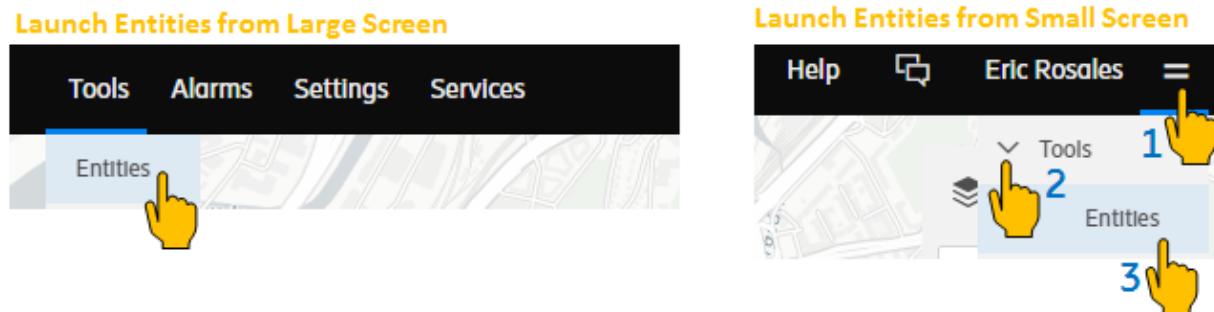


Figure 131 Launch Entities Card - Example Screenshot



8.1.1

Entities Card on Medium/Large Window

The figure below shows the Entities card as it appears in a medium or large size window. The arrangement of rows in the Entities card reflect the Domain names in the Layer control. Note that if the User minimizes the Entities card, it will be added to the Card dock (see Section 4.4.4.1) on the Map view.

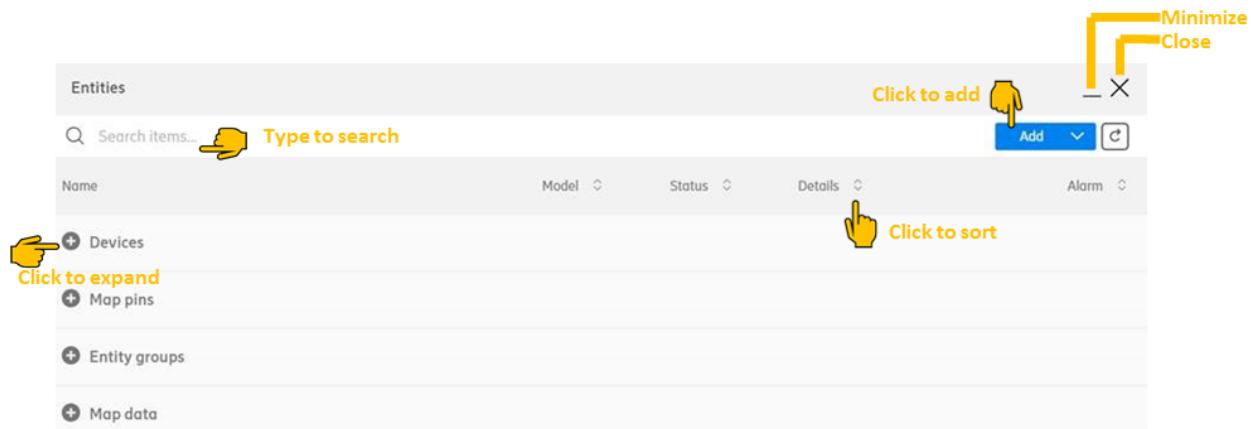


Figure 132 Entities Card Display in Medium/Large Window - Example Screenshot

8.1.1.1

View Entities

The User may click on the icons to reveal the underlying layers and individual Entities. When a Device in a Device layer or Group layer is selected, the Entity *Details* card for that Device will be displayed and the Device highlighted on the Basemap in Map view. See section 7.5.1 for more information on the Entity *Details* card.

Entities may be sorted by clicking on the arrows to the right of each Sort method; by Model, Detail, Status or Alarm.

In the Entity tree, CUT shows the summation of alarms listed in each category. The color shown represents the highest severity alarm. When the User hovers over the alarm summation, a breakdown of the alarms by severity is shown. Hovering to reveal Alarm breakdown by status may be done at each level of the Entity tree. The figure below shows Alarm breakdown at the Device layer level.

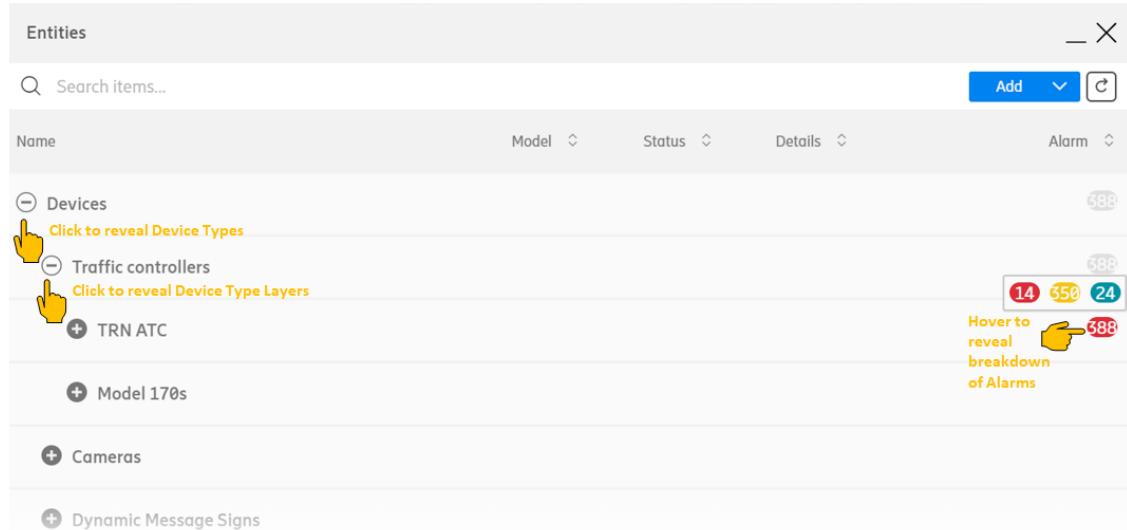


Figure 133 Summary of Alarms per Category - Example Screenshot

8.1.1.2 Entity Search

The User may search for individual Entities by typing keywords or Device names in the Search function. If the input is not unique, multiple search results will be returned. The Entity search is not case sensitive.

The User may select to **Add an Entity** (Map pin) or an Entity group (user-defined collection of devices) by clicking the **Add** button on the Entity card. This is described further in Section 8.2.

8.1.2 Entities Card on Small Window

The figure below shows the Entities card as it appears in a small window such as on a mobile phone or tablet.

The only functional difference with using a small window is that Users do not have access to the **Add** button. Thus, Users with mobiles or tablets must add Entities (Map pins) or Entity groups through the Layer control function. How to add an Entity through Layer control is described in Section 6.9.3. How to add an Entity group through Layer control is described in Section 6.8.2.

Note: It is also possible to add an Entity (Map pin) by performing a right-mouse click on the Basemap in Map view. This method is described in Section 6.9.3.

The only presentation difference with the small window is that the Sort options (based on Model, Status, Details or Alarms) are collapsed into a drop-down menu on the right-hand side of the card. Assets may be sorted by selecting a sort method from the **Sort by** button.



All other aspects of the Entities card in a small window are the same as for medium/large windows, as described in Section 8.1.1.

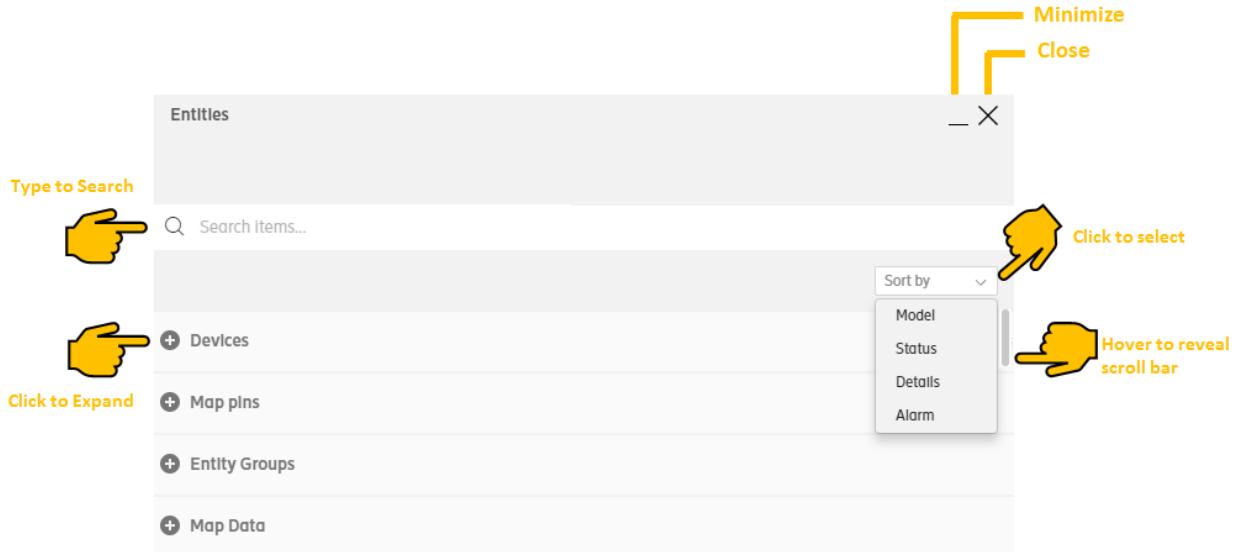


Figure 134 Entities Card Display in Small Window- Example Screenshot

8.2 Add Entity/Entity Group

A User-defined Entity group is a collection of miscellaneous Entities (Devices and/or Map pins) that the User wishes to group together.

8.2.1 Small Browser Window

To add an Entity or Entity group from a small browser window such as a mobile or tablet, the User must refer to the methods described in the Layer control section, see 6.8.2 for adding an entity group, and Section 6.9.3 for adding a Map pin.

8.2.2 Add Entity

From a medium or large window, the User may create an Entity (Map pin) by launching the *Create an entity* card from the main Entities card, as shown in the figure below. The User clicks on the **Add** button and selects **Add an entity**. Once the *Create an entity* card is open, the User may follow the instructions for creating a Map pin, as described in Section 6.9.3.

Note: It is also possible to add a Map pin Entity by performing a right-mouse click on the Basemap in Map view. This method is described in a subsection of Section 6.9.3, Section 6.9.3.1.

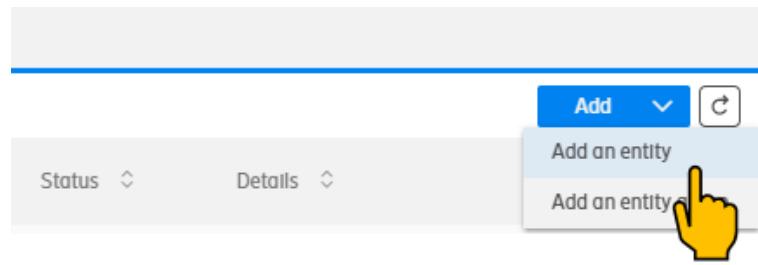


Figure 135 Add Entity from Entity Card (Medium/Large Screen) Navigation - Example Screenshot

8.2.3

Add Entity Group Using Map View

From a medium or large window, the User may create an Entity group by launching the *New entity group* card from the main Entities card, as shown in the figure below. The User clicks on the **Add** button and selects **Add an entity group**. Once the *New entity group* card is open, the User may follow the instructions for adding an Entity group, either using the method described in Section 6.8.2.3 or the method in Section 6.8.2.4. To make an Entity group using the Entity tree, see Section 8.2.4.

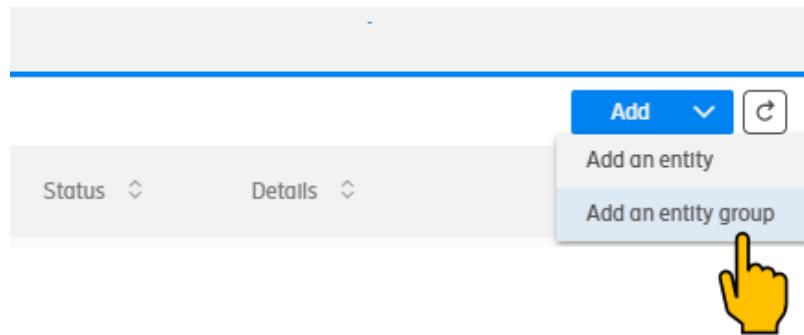


Figure 136 Add Entity Group from Entity Card (Medium/Large Screen) Navigation - Example Screenshot



8.2.4

Add Entity Group Using Entity Tree

To use the Entity tree to scroll, select and add Entities to a New entity group, the User must first ensure that there is sufficient room in the browser window for the Entities card and the New entity group card to be open at the same time.

For a large screen such as a monitor there is likely enough space without the User needing to change anything. The User should launch the *Entities* card as described in Section 8.1 and then click the **Add** button to launch the *New entity group* card.

On a medium screen such as a laptop, the User must first launch the Entities card as described in Section 8.1. Then the **User must resize the Entities card** so that it is smaller but not so small that the **Add** button disappears from view.

How to resize a Card is indicated in Figure 8. If the User places the mouse over the bottom, righthand corner of the card, a double-ended arrow will appear, allowing them to resize the card. Then the User clicks the **Add** button on the Entities card so that the *New entity group* card opens, see Figure 137.

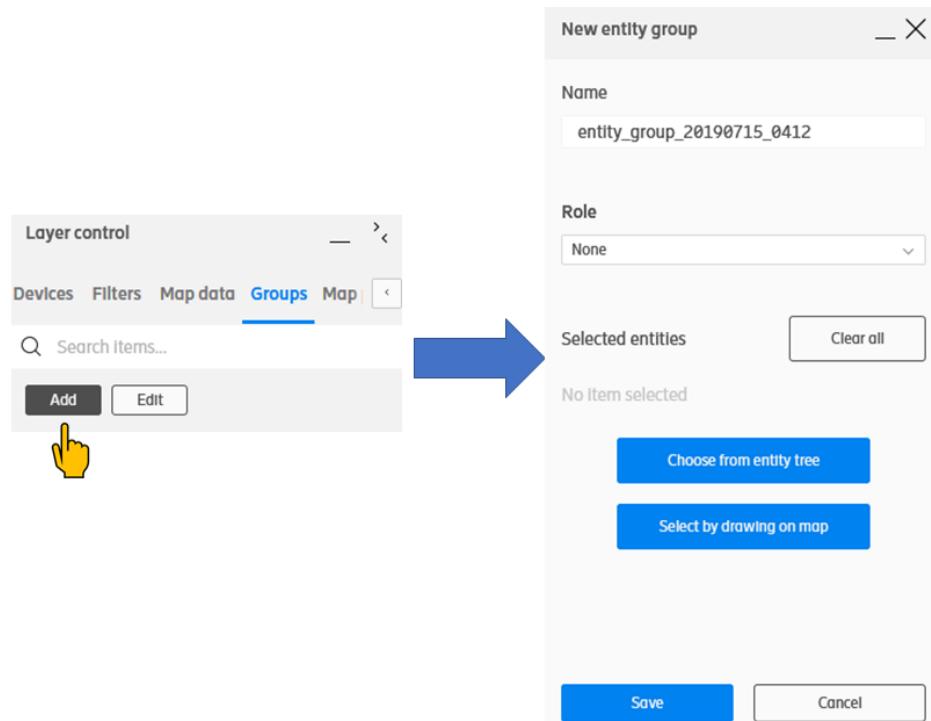


Figure 137 Add New Group - Example Screenshot

Then the User names the new entity group, or renames the proposed title. In the **Role** field, the User selects an appropriate role from a drop-down list for the entity group, see Steps 1–3 in Figure 138. After that, the User clicks **Choose from entity tree** button to select entities from the available ones, see Step 4 in figure below.

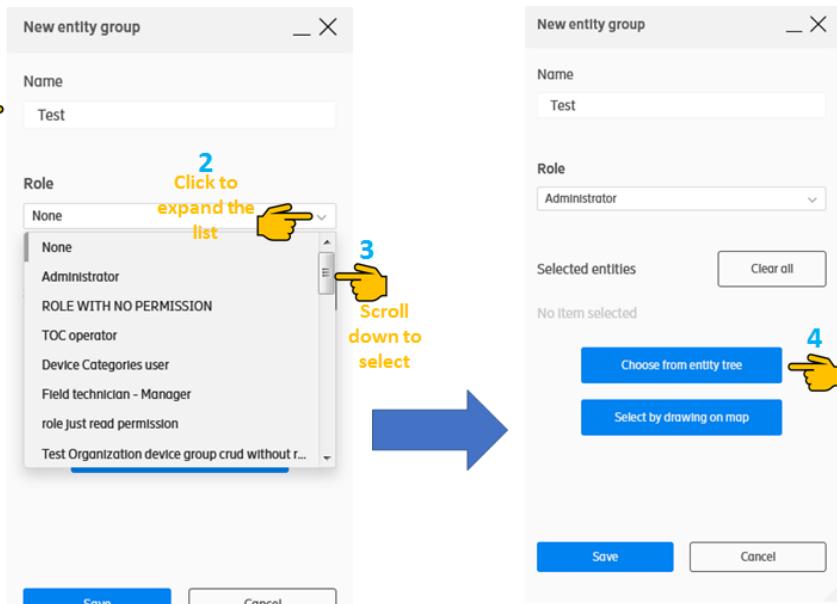


Figure 138 Edit New Group - Example Screenshot

The list of entities is shown in Figure 139.

Figure 139 List of Entities - Example Screenshot

The User expands the Entity groups and selects the check box beside each device that they want to add to the group, see Steps 1-2 in Figure 140. Each Entity that is selected appears in a list in the *New entity group* card. To remove an Entity, the User deselects the appropriate check box or clicks X beside the Entity in the *New entity group* card list. The User may also select the **Clear all** button to remove all Entities added. Edit options are shown in Step 3 in the figure below.

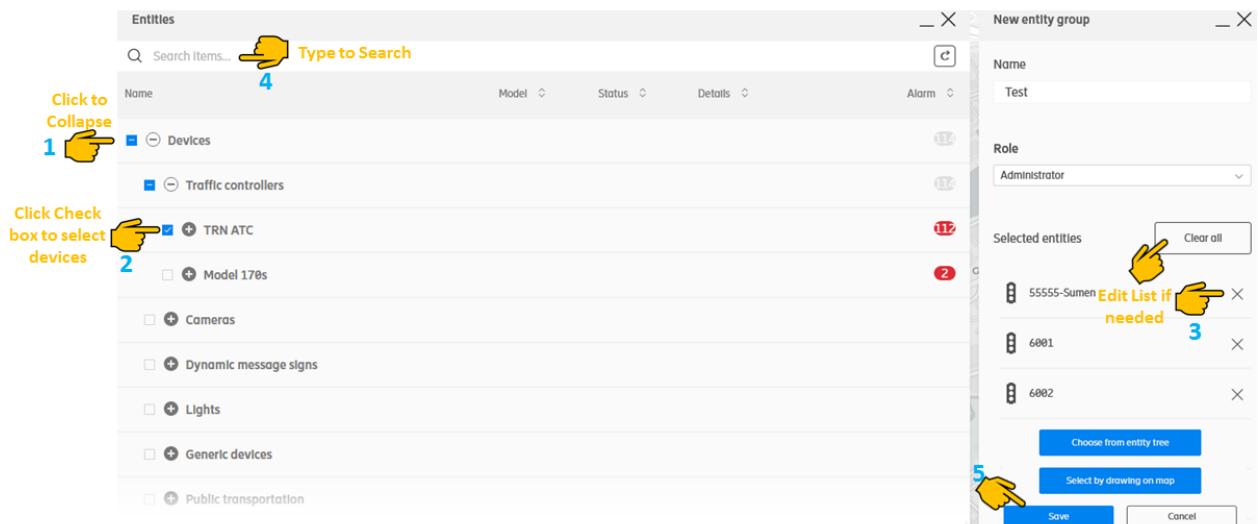


Figure 140 Adding Entities to New Entity Group - Example Screenshot

The User may use the Search function to search for an Entity (Step 4 in Figure 140). To add a search result to the Group, the User selects the checkbox beside the result.

Once the Entity group is complete the User may scroll down the list of added Entities in the *New entity group* card to reveal the **Save** button (Step 5 in Figure 140).

Before saving, the User checks that the basic parameters for the new Entity group are filled in, according to Section 6.8.2.2.

8.2.5

Edit/Delete Entity or Entity Group

To edit or delete an Entity (Map pin), the User may follow the instructions in Section 6.9.4 or Section 6.9.5.

To edit an Entity group, the User may follow the instructions in the Layer control section, see Section 6.8.3. To delete an Entity group, the User may follow the instructions in Section 6.8.4.



9

CUT Menu: Tools: Manage Action Macros

The action macro tool is used to group actions related to devices and/or services. To open the tool, the User clicks on **Settings** menu, and then chooses **Manage action macros**, see Figure 141.

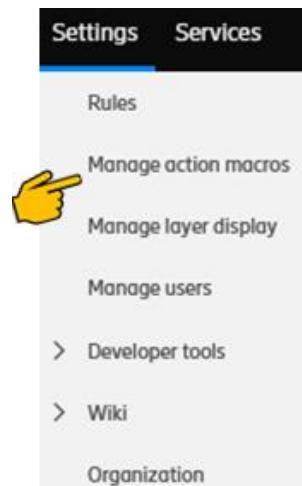


Figure 141 Manage Action Macros - Example Screenshot

When opened, all existing macros are listed, see Figure 142.

Manage action macros					
<input type="text"/> Search items...		Create new action macro			
Name		Invalid			
Action Macro Mock		⚠	Edit	Execute	Schedule
This Action Macro is used for testing					Delete
Rush hour ver 1		⚠	Edit	Execute	Schedule
Applicable for NB traffic					Delete

Figure 142 List of Existing Macros - Example Screenshot

To execute a macro, the User clicks on **Execute**. CUT will then trigger (send) all actions to the corresponding systems.

Note: This might not mean that the action is executed in the southbound system. The action can be executed at a later time, depending upon what action it is.

The “successful”, “not successful” result info shown in CUT GUI refers to sending the actions to the southbound systems as such. It says nothing about if the actual execution in the external system was successful or not.



To create a new macro, the User selects **Create new action macro**, see Figure 143. It is then possible to *Add service action pair* (services are like TMS and VMS), or *Add entity action pair*, see Figure 144.

Name	Description	Actions
Action Macro Mock	This Action Macro is used for testing	⚠ Edit Execute Schedule Delete
Rush hour ver 1	Applicable for NB traffic	Edit Execute Schedule Delete

Figure 143 Create New Action Macro - Example Screenshot

To delete a pair, the User clicks on X. To change the order of the pairs, use the up and down arrows, see Figure 144. When ready, click **Save**.

Create new action macros

Name: Enter action macros name

Description: Enter description

Define pair:

To change order of Pairs

Select option Select option

Add service action pair Add entity action pair

To delete a Pair

Save Clear Cancel

Figure 144 Create Action Macros - Detail Window

A created macro can be edited later, see Figure 145.



Update new action macros

Name: Rush hour ver 1

Description: Applicable for NB traffic

Define pair:

TMS	Action set on device level TEST	<input type="button" value="X"/>	
Gothenburg\$Camera...	Change	Turn on device	<input type="button" value="X"/>
<input type="button" value="Add service action pair"/>		<input type="button" value="Add entity action pair"/>	

Figure 145 Update Action Macros - Example Screenshot

Macros marked as Invalid (the red triangle) cannot be executed, see Figure 146. It can happen that the macro was valid when being created. But since then something has happened and the service or device might have disappeared. It led to situation that the action might no longer exist. The User can select to **Edit** the macros, and correct what is wrong, see Figure 146.

Update new action macros

⚠ Please update the invalid pair.

Name: Action Macro Mock

Description: This Action Macro is used for testing

Define pair:

Handmade Steel Gloves	Select option	<input type="button" value="Select to Edit"/>	<input type="button" value="X"/>
TMS	Select option	<input type="button" value="X"/>	action does not exist
Small Wooden Cheese	Select option	<input type="button" value="X"/>	
Select option	Select option	<input type="button" value="X"/>	action does not exist
Awesome Fresh Chips	Select option	<input type="button" value="X"/>	action does not exist
Stark, Williamson and O'Keefe	Select option	<input type="button" value="X"/>	

Figure 146 Invalid Macros - Example Screenshot



10

CUT Menu: Settings: Manage Layer Display

With these settings, the User is able to configure (to some extent) on which zoom level, he/she wants to see a certain amount of device details on the map. To configure, the User goes to **Settings** menu and chooses **Manage layer display** option.

Then **Manage layer display** window is shown. The User drags the grey circles to set the required zoom level on which the device information is shown on the map. The legend is also provided, see Figure 147. For more information about zoom levels, see Section 4.6.3. For how to work with Device layers, see Section 6.5.

Note that only Layer Groups can be reordered, but Individual layer cannot.

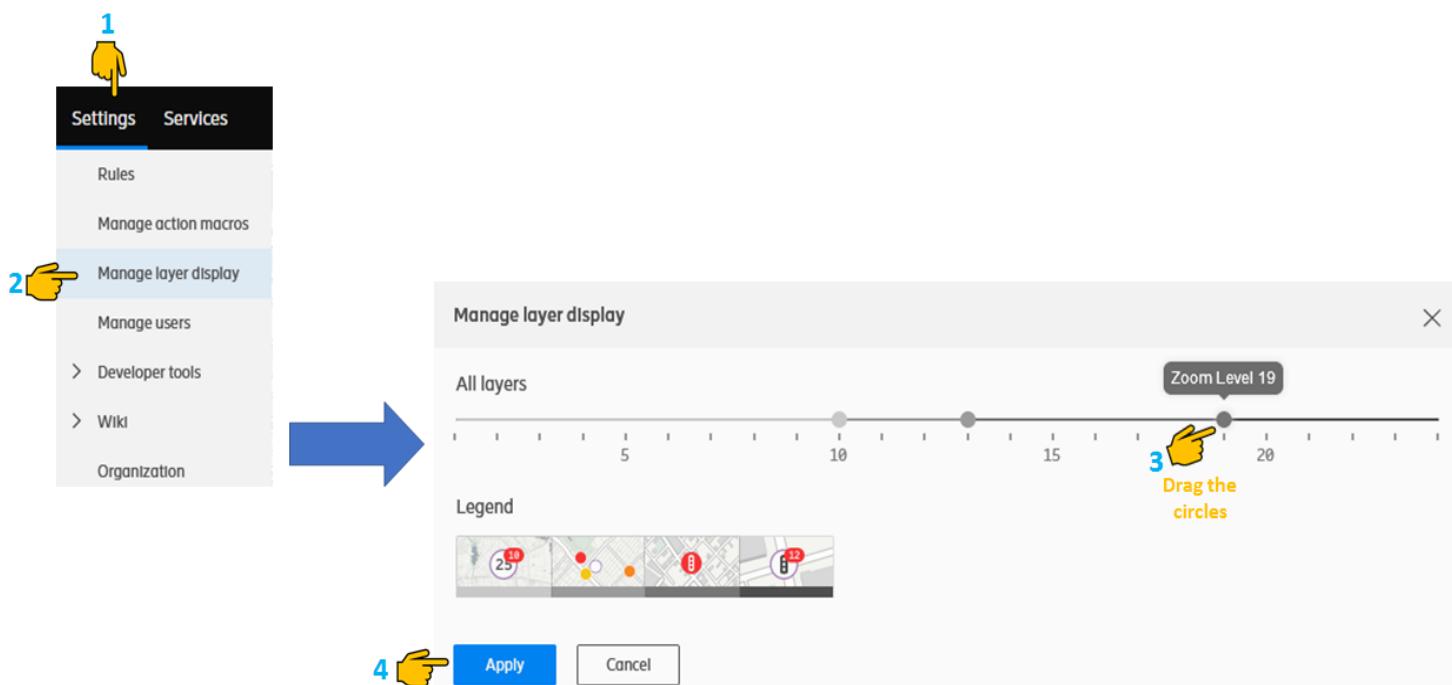


Figure 147 Manage Layer Display - Example Screenshot



11

CUT Menu: Alarms: Alarms

CUT provides clear and concise ways for Authorized Users to view and manage Alarms. As part of Service On-boarding, Device-generated alarms are configured. This configuration ensures that if a Device can raise an alarm, CUT will render that alarm on the Map view.

Alarm visualization in Map view is dependent on the Zoom levels, as shown in Figure 24. The figure below shows specifically how the Device alarms are rendered at four selected zoom levels. The level shown at Screen 1 shows Alarms when the zoom level is zoomed out. Screens 2 - 4 show the Alarms as they are rendered at selected, lower zoom levels.

Note: Alarms do not directly result in any User notifications. To create a Notification based on any specific Device measurement threshold breach, the User must set a Rule for a Device. Rules are covered in Section 7.8.

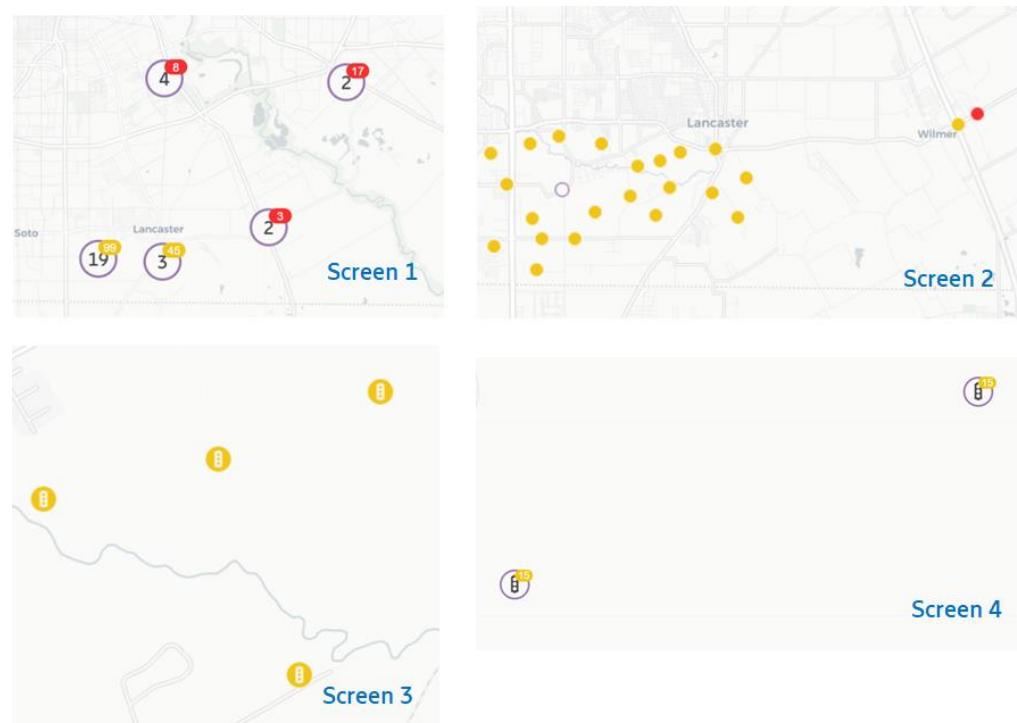


Figure 148 Alarms in Map View at Selected Zoom Levels - Example Screenshot



At the lower Zoom levels, an alarm badge is used to indicate alarm status. The number in the badge shows the number of active, unacknowledged alarms on the Device. The color of the badge indicates the highest severity of the active, unacknowledged alarms. CUT supports the following Alarm severities:

Severity



Figure 149 Alarm Severities - Example Screenshot

To view the Alarms card, the User selects **Alarms > Alarms** from the main navigation bar. This is shown in the figure below for large/medium and small browser windows.

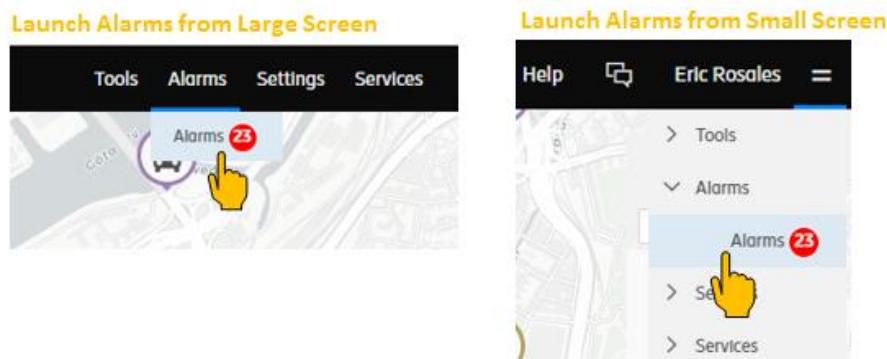


Figure 150 Launch Alarms Card - Example Screenshot

When the Alarm card is launched it shows a default view of the Active alarms. These are discussed in the section below. The Alarm history may be viewed by selecting the appropriate tab in the *Alarms* card. This is described in Section 11.3.



11.1

Visible and Audible Alarm

A User with extended permissions can trigger a visible and audible notification to all logged in users through the CUT API. This alarm is used in order to inform the users who are in the system at the moment that the system is going to shut down. A specific notification message can be defined. All logged in users will see a visible notification on their screens and hear an audible alarm, unless the computer / browser is muted. For the example of the notification message for logged in users, see Figure 151.

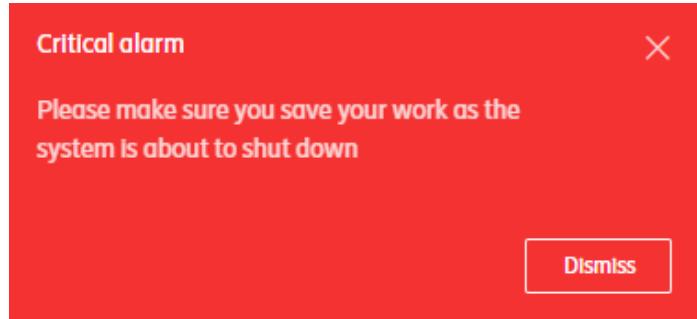


Figure 151 Critical Alarm - Example Screenshot



11.2 View Active Alarms

When the Alarms card is launched, the default view will be of **Active alarms**, as shown in the figure below. Active alarms are alarms that have not yet been cleared.

An alarm, which has been reported as 'cleared' by the system generating it but still is unacknowledged in CUT, will be automatically acknowledged. The time period a cleared alarm remains unacknowledged is configured at organization onboarding.

Severity	Raised	Alarm code	Alarm name	Device name	Service name	
Major	5:48 AM, 2019-8-29	4	Device is not re...	S-VMX		View Acknowledge Acknowledge the Alarm Click for options
Minor	12:05 AM, 2019-8-14	UploadFailed	Database Uplo... Beacon-Live OakTMS			View Acknowledge
Minor	12:05 AM, 2019-8-14	UploadFailed	Database Uplo... Canada-West... TMS			View Acknowledge Click for options
Minor	12:05 AM, 2019-8-14	UploadFailed	Database Uplo... Bahama/Jacqu... TMS			View Acknowledge Click for options

Figure 152 Active Alarms - Example Screenshot

The **Active alarms** view displays the following:

- **Severity:**
Indicates the Alarm severity and shows the severity color.
- **Raised:**
Indicates the timestamp of when the alarm was raised.
- **Alarm code:**
Device type specific value, provisioned by Ericsson during Service On-boarding.
The User will need familiarity with Alarm codes for the Device types to interpret.
- **Alarm name:**
Provisioned during Service On-boarding.
- **Device name:**
The name of the device that raised the alarm.
- **Service name:**
The name of the Service that manages the Device type. For example, if a supplier of the Traffic signal controller devices is called "TMS Corp." then a relatable name will be shown here. Service names are decided at Service On-boarding.



The User can choose to sort the list of Active alarms by clicking on the arrows beside each category.

The User may click on the **Map** text for a specific alarm in the list. The Map view will zoom to the Device with the alarm. The Entity *Details* card will also open.

When the User clicks on **Acknowledge**, CUT notes the User name and the timestamp of the acknowledgement. The alarm list will be updated with the name of the acknowledger. If the Alarm severity on the same Device is increased in the future, the alarm will be treated as unacknowledged. If the alarm is raised again with the same or lower severity, the alarm is treated as already acknowledged. Acknowledging an alarm will decrement the number in the alarm badge, as the number is used to track the number of active unacknowledged alarms on the device.

Note: Acknowledgement of an alarm means that a User has acknowledged it in the CUT GUI. It does not mean that the alarm is cleared at the Device. Alarms can be acknowledged from 3pp (Kinetic).

The User may click on to reveal options. Options depend on the underlying device but include opening the Device *Details* card, zooming to the Device on the Map or opening a Service related webpage for the Device, as shown in Figure 153.

The screenshot shows the CUT GUI interface. On the left, there is a 'Details' card for 'Canada-Westmoreland' with a status of 'Unavailable'. It shows a 'TMS - Open...' button, an 'Apply action' dropdown, and an 'Alarms' section with one critical alarm for 'CommFail' (Comm Failure) from 10:14 PM 15 days ago. The alarm has an badge with the number '3'. Below this is an 'Alarm details' section. On the right, the main window shows an 'Alarms' list titled 'Active alarms' with 33 items. The first item is a 'Minor' alarm for 'UploadFailed' from 12:05 AM 2019-8-14. A context menu is open over this row, with the first option 'Click for 1 options' highlighted with a yellow box and a hand cursor. Other options in the menu include 'Show device on map', 'Show device details', and 'Alarm details'. The menu has a step number '2' next to the second option.

Figure 153 Active Alarms - Show Options

The Details card shows the different 'events' related to the alarm.

To open a Detail card, the User clicks on , than selects **Show device details** (Step 1 in Figure 153). The Alarm detail card is shown. Next the User clicks **Alarm details** (Step 2 in Figure 153).

The details are displayed in a separate window, see Figure 154.



Note: CUT supports external Acknowledge (the field **User** and **Description** in *Details* tab are filled in optionally). The alarm can be acknowledged or unacknowledged with the help of an external service user. The values of all **Description** fields taken from the table displayed in Figure 154 are also written in the header of the *Alarm Detail card*. The format of the field is as follows: "description1";"description2" and so on, see Figure 154.

The screenshot shows a software interface titled 'Alarm Details'. At the top, there is a header with the following information: 'Alarm name : Coord Active', 'Alarm code : Coord Active', 'Device name : Buckner and John West', 'Service name : TMS', and 'Description : "Hi!"; "Bye!"'. Below this is a search bar labeled 'Search Items...' and a navigation bar with arrows and the text '1 of 1'. The main area is a table with the following data:

Severity	Date	State	User	Description
Minor	10:19 AM , 2020-12-23	Unacknowledged	api_user	Bye!
Minor	10:18 AM , 2020-12-23	Acknowledged	api_user	Hi!
Minor	10:17 AM , 2020-12-23	Unacknowledged	test user	
Minor	10:17 AM , 2020-12-23	Acknowledged	test user	
Minor	10:03 AM , 2020-12-23	Raised		

Figure 154 Alarm Details – Example Screenshot



11.3 View Alarm History

The Alarm history tab on the Alarms card shows the history of all the alarms that are raised, acknowledged and cleared. The Acknowledger column keeps track of the User that acknowledged the alarm.

The User can select the starting and ending dates for the alarm(s) to be displayed as well as the time interval, see Figure 155.

The screenshot shows the 'Alarms' card with the 'Active alarms' tab selected, indicated by a blue underline. At the top right, there are two 'Click to view' buttons for 'Alarm history' and a close button (X). Below the tabs is a search bar with a placeholder 'Type text to search' and a magnifying glass icon. To the left of the search bar is a 'Search items...' input field. On the right, there are buttons for 'Select ending date and time' and '1 of 2'. The main area contains a table of alarms with the following columns: Severity, Raised, Alarm code, Alarm name, Device name, Service name, Acknowledger, and View options. The first row shows an alarm with 'Cleared' status, '10:37 AM, 2019-8-22' raised at 'CoordActive', acknowledged by 'TMS'. The second and third rows show 'Minor' alarms at 'LocalFree' and 'CoordActive' respectively, also acknowledged by 'TMS'. A context menu is open over the third alarm, with options: 'Show device on map', 'Show device details', and 'Alarm details'. Yellow callout boxes highlight the search bar, the date/time selection buttons, and the context menu. A yellow dashed arrow points from the 'View options' button in the third row to the context menu.

Severity	Raised	Alarm code	Alarm name	Device name	Service name	Acknowledger	View options
Cleared	10:37 AM, 2019-8-22	CoordActive	Coord Active		TMS	View	:
Minor	10:37 AM, 2019-8-22	LocalFree	Local Free		TMS	View	:
Minor	10:35 AM, 2019-8-22	CoordActive	Coord Active		TMS	View	:

Figure 155 Alarm History - Example Screenshot



12

CUT Menu: Settings: Manage Users

Users in CUT belong to one and only one Organization and consume that Organization's User licenses.

How a User uses the CUT GUI depends on what permissions are defined for them. Permissions are grouped into Roles and a User is assigned one or many Roles. For convenience, an Organization may also choose to group Users into User Groups. Users added to a User Group inherit the Roles that are assigned to that User Group. In addition, Users may have additional Roles, outside of those assigned by their User group(s). Refer to the CUT Data Model Description, Reference [4], for additional information on Users, User groups, Roles and permissions in an Organization.

Note that On-boarding of most Users is performed by the Configuration Package of CUT professional service, refer to Reference [3] prior to launch.

12.1 General

The following sections describe how an Authorized User can manage Users.

12.1.1 Organization Administrator

The Organization Administrator is typically a User that is Authorized to perform the following tasks:

- The Organization Administrator can see the mapping between roles and permissions. If the mapping requires adjustment (i.e. if new roles are needed to distinguish the job function of one department from another), the Organization Administrator has the permission to make changes.
- By default, a User does not initially belong to any User group and has no roles assigned, i.e. when the User logs into CUT, he/she can see that his/her User account belongs to the Organization. The Organization Administrator controls what the User can do by:
 - Assigning a User to a User group, and/or
 - Assigning a Group to a User group or to a User directly. When assigning a role to a User, the Organization Administrator can optionally choose to give User Group edit rights to the User. A User with User Group edit rights allow the User to set up common set of attributes (e.g. Window layout, common rules), which will be available to all Users with the same role.



12.2

Manage Users Card

Authorized Users may manage the Users of the Organization through the *Manage users* card. This is accessible for Authorized Users from the CUT Menu. The User selects **Settings > Manage users** to launch the *Manage users* card.

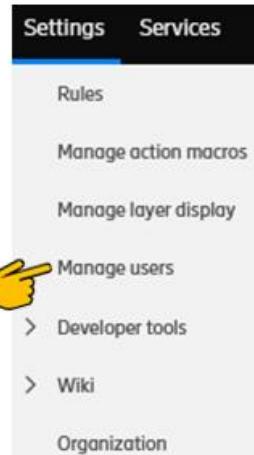


Figure 156 Launch Manage Users Card - Example Screenshot

12.2.1

Users Tab

When launched, the *Manage users* card appears as shown in the figure below. Note that the default view is of the **Users** tab, which displays all the Users for the Organization. Note that the number of Users in the system is shown in brackets beside the *Users* text.

Online	First name	Last name	Organization	Group	Role	
●	Eric	Rosales	CTC Default	Feest Ondricka And Borer, La...	Administrator, Wiki Administr...	View/edit Delete
●	test	user	CTC Default		Administrator, TOC operator, ...	View/edit Delete

Figure 157 Manage Users - Users Tab- Example Screenshot



The Organization's Users are presented in a list showing **First name**, **Last name**, and the **Groups** and **Roles** they are associated with. To the left of each User is an indication whether or not they are **Online** (green dot shown in figure above indicates online presence; offline is indicated by grey dot). Note that a user's status turns grey after one hour inactivity. By default, Users that are online will be listed first.

The User's **Organization** is also displayed. This value is the same for all Users and cannot be changed.

The User can choose to sort the list of Users by clicking on the arrows beside each category.

The User may click the **View/edit** text to view or edit a particular User. The User may click the **Delete** text to delete the User. Edit and Delete options are described further in Section 12.4. The User may click on the **Add** text to add a user. This is described further in Section 12.3.3. The User may type text in the **Search** field to find particular Users.

Note: The Search field in the *Manage users* card is not case sensitive.

12.2.2 User Groups Tab

The User may click on **User groups** tab to view the defined User groups for the whole Organization.

The Organization's User Groups are presented in a list showing **Group name** and **Description**.

The User may click the **View/edit** text to view or edit a particular User group. The User may click the **Delete** text to delete the User group. Edit and Delete options are described further in Section 12.4. The User may click on the **Add group** text to add a user group. This is described further in Section 12.3.3. The User may type text in the **Search** field to find particular User groups.

Note: The Search field in the *Manage users* card is not case sensitive.

A screenshot of a table titled 'User Groups'. The table has three columns: 'Group name', 'Description', and actions ('View/edit', 'Delete'). A 'Search Items...' input field with a magnifying glass icon is at the top left. A 'Type to Search' placeholder is also present. A 'Click to view tab' annotation points to the 'User groups' tab at the top. A 'Hover to reveal Scroll Bar' annotation points to the scroll bar on the right. A 'Add group' button is located at the top right. Row annotations include 'Administrators [City of CUT]' and 'Administrators of the City of CUT'; 'Users [City of CUT]' and 'Users of the City of CUT'; 'Feest Ondricka And Borer' and 'FeestOndrickaAndBorer'; 'Langosh Wolf And Hammes' and 'test LangoshWolfAndHammes'; and 'Ruecker Parker And Hilpert' and 'test RueckerParkerAndHilpert'. Each row has 'View/edit' and 'Delete' buttons.

User Groups		
Group name	Description	
Administrators [City of CUT]	Administrators of the City of CUT	
Users [City of CUT]	Users of the City of CUT	
Feest Ondricka And Borer	FeestOndrickaAndBorer	
Langosh Wolf And Hammes	test LangoshWolfAndHammes	
Ruecker Parker And Hilpert	test RueckerParkerAndHilpert	



Figure 158 Manage Users - User Groups Tab- Example Screenshot

12.2.3 Roles Tab

The User may click on **Roles** tab to view the defined **Roles** for the whole Organization.

The Organization's User groups are presented in a list showing **Role name** and **Permissions**. The User's **Organization** is also displayed. This value is the same for all Users and cannot be changed.

The User may click the **View/edit** text to view or edit a particular Role. The User may click the **Delete** text to delete the Role. Edit and Delete are described further in Section 12.4. The User may click on the **Add role** text to add a user group. This is described further in Section 12.3.3. The User may type text in the **Search** field to find particular Roles.

Note: The Search field in the *Manage users* card is not case sensitive.

Users				
Users	User groups	Roles		
<input type="text"/> Search items Type to Search		Click to view tab		
Role name	Organization	Permissions		
Administrator [City of CUT]	City Of CUT	All permissions		
View Users [City of CUT]	City Of CUT	6 permissions	View/edit	Delete
Normal Users [City of CUT]	City Of CUT	2 permissions	View/edit	Delete
User Update [City of CUT]	City Of CUT	1 permissions	View/edit	Delete
Administrator	CTC Default	All permissions		

Figure 159 Manage Users - Roles Tab - Example Screenshot



12.3

Add User/User Group/Role

The majority of Users, User groups and Roles are determined at On-boarding and are created by Ericsson. However, it is possible for Authorized Users to add additional Users, User groups and/or Roles.

The sections below describe how to create a Role, User group or User, in that order. This is because, if a new User were to require a new Role, then the Role should be created first.

Note that Authorized Users may add a new Organization User to CUT but the User **must** be already part of the Organization's Azure Active Directory. Users that are not provisioned in the Organization's Azure Active Directory must be added by Ericsson as they will be provisioned into the Ericsson Azure Active Directory.

12.3.1

Add Role

A Role is a convenient way to group permissions. A Role is then assigned to one or many Users. All permissions are predetermined and are set at On-boarding. Permissions are then grouped into Roles at the discretion of the Organization, by an Authorized User.

Each permission is tied to a Service. The Service name is either that of a Device type provider (such as the supplier of a type of Traffic signal controller) or CUT itself (CUT Common Service). Permissions for a Device type service typically include the ability to view the devices on Map view or (possibly) edit the device.

Permissions for CUT Common Service include tasks such as "View all users", "Create role", "Edit ESRI layers" or "Add Map pin".

Note: Roles and permissions are cumulative. If a User has many Roles then all permissions from all the assigned Roles are available to the User, all the time.

To add a new Role for the Organization, the Authorized User clicks on the **Add role** button in the **Roles** tab of the **Manage users** card (see Figure 159). The User then enters a name for the Role (Step 1 in the figure below). The User may then navigate the permissions list by using the **Search** function (Step 2 in Figure 160) or by scrolling through the list of permissions (Step 3 in Figure 160).

Alternatively, the User may navigate the permissions list by clicking the drop-down menu **All permissions**. Here, the User may select an existing Role from the drop-down list (Step 4 in Figure 160). This is simply to aid User navigation as the new Role might be required to include permissions of an existing Role.

As the User finds the permissions to be associated with the new Role, the User selects the permissions by clicking the check box (Step 5 in Figure 160). Multiple permissions from the list may be selected. The Role and associated permissions are then saved by clicking the **OK** button (Step 6 in Figure 160).

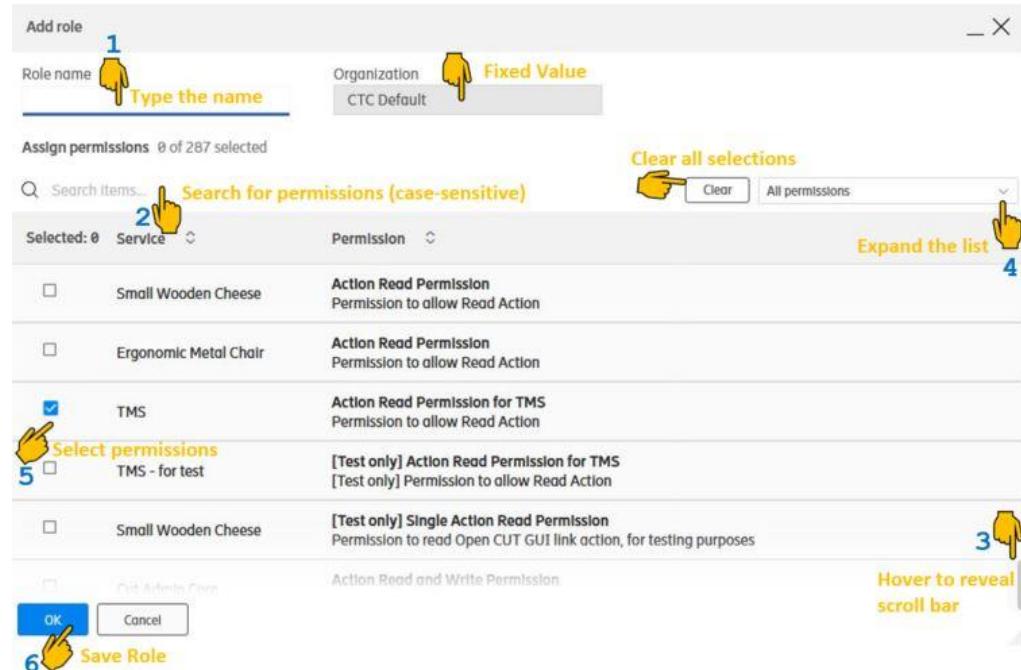


Figure 160 Create Role - Example Screenshot



12.3.2 Add User Group

A User group is a convenient way to group Roles. In addition to multiple Roles, a User may be assigned to many User groups.

To create a new user group, the Authorized User clicks on the **Add group** button from the **User groups** tab of the *Manage users* card (see Figure 158).

The User then enters a **Group name** for the User groups (Step 1 in Figure 161) and, optionally, a short **Description** (Step 2 in Figure 161). The User may optionally select from the **Select role** drop-down menu a Role to be assigned to the User group (Step 3 in Figure 161). If more Roles are to be assigned to the User group, the User clicks the **Add role** button which will allow the User to select another Role from the **Select role** drop-down menu (Step 4 in Figure 161). This step may be repeated several times.

When all the required Roles are assigned for the User group, the User clicks the **Save** button (Step 5 in Figure 161).

The screenshot shows the 'Add group' dialog box. It has fields for 'Group name' (labeled 1), 'Description' (labeled 2), and 'Assign from organization' (labeled 3, pointing to a dropdown menu set to 'CTC Default'). Below is the 'Assign roles' section (labeled 4, pointing to an 'Add role' button) with a dropdown menu listing 'Administrator [City of CUT]', 'View Users [City of CUT]', 'Normal Users [City of CUT]', and 'User Update [City of CUT]'. At the bottom are 'Save' and 'Cancel' buttons (labeled 5, pointing to the 'Save' button).

Figure 161 Create User Group - Example Screenshot

12.3.3 Add Organization User

Authorized Users may add a new Organization User. To create a new User, the Authorized User clicks on the **Add user** button in the **Users** tab.

A small screen pops-up requesting that the e-mail address for the new User is entered. The User enters the email address and then clicks the **Save** button (Step 1 in Figure 162).



The **Add user** card then opens, with the previously entered e-mail address already populated. The **Organization** field is already filled in, see Figure 162.

The User types Application ID in the corresponding filed (Step 2 in Figure 162). Then the User selects from the **Select group** drop-down menu (Step 3 in Figure 162) a User group to be assigned to the User. If the new User is to be assigned to more User groups, the Authorized User clicks the **Add group** button (Step 4 in Figure 162), which will allow the User to select another User group from the **Select group** drop-down menu (Step 3 in Figure 162). This step may be repeated several times.

The User then selects, from the **Select role** drop-down menu (Step 5 in Figure 162), a Role to be assigned to the User, if necessary. If more Roles are to be assigned, the User clicks the **Add role** button (Step 6 in Figure 162), which will allow the User to select another Role from the **Select role** drop-down menu (Step 5 in Figure 162). This step may also be repeated several times.

The Authorized User then clicks the **Save** button to create and save the new User (Step 7 in Figure 162).

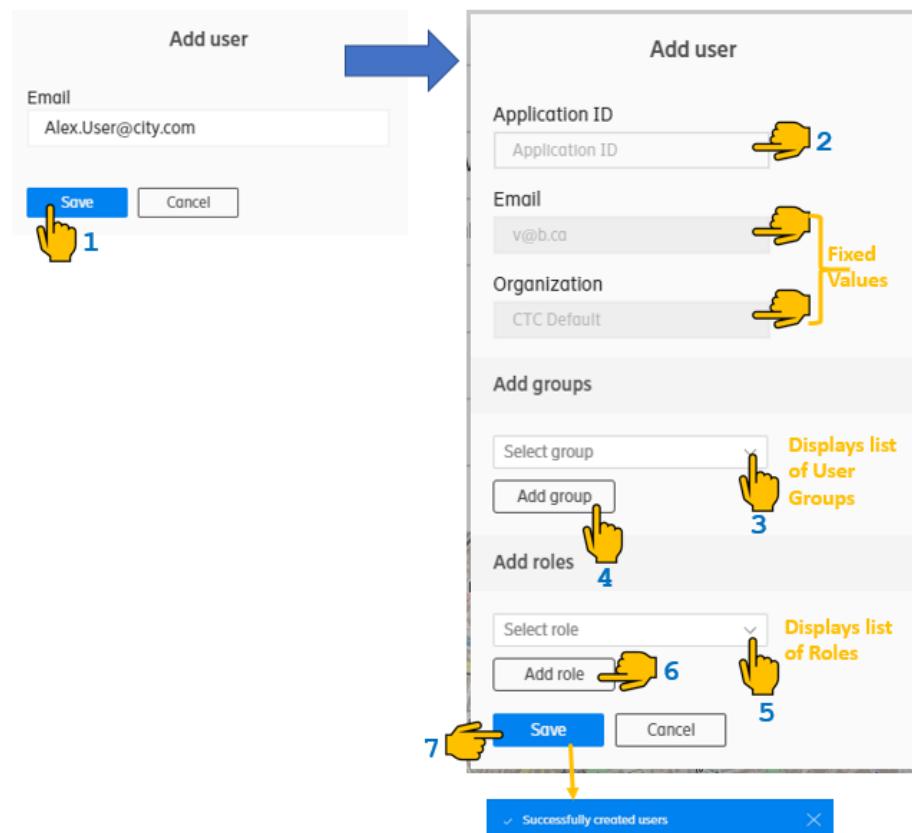


Figure 162 Add Organization User - Example Screenshot



12.4 View/Edit and Delete

This section applies to Users, User groups and Roles.

12.4.1 View/Edit

To view or edit a User, User group or Role, the Authorized User must click the **View/edit** text beside the item in the list that is to be viewed or edited (Step 1 in the figure below). A *Details* card opens for the item. To edit the item, the User clicks the **Edit** button on the *Details* card (Step 2 in the figure below). The User may then change and save the parameters for the item.
For information on the item parameters, see Section 12.3.3 for Users, Section 12.3.2 for User Groups, or Section 12.3.1 for Roles.

The screenshot shows a user interface for managing roles. At the top, there are tabs for 'Users', 'User groups', and 'Roles'. The 'Roles' tab is selected, indicated by a blue underline. Below the tabs is a search bar with placeholder text 'Search items...'. Underneath the search bar are three filter dropdowns: 'Role name', 'Organization', and 'Permissions'. A table lists a single role: 'City Test' (Role name), 'CTC Default' (Organization), and '1 permissions' (Permissions). A dashed arrow labeled '1' points from the 'View/edit' link next to 'City Test' in the list to a callout box. Another dashed arrow labeled '2' points from the 'Edit' button in the callout box to another callout box. The callout box for 'City Test' contains the following details:

- Role name: City Test
- Organization: CTC Default
- Assign permissions: 1 of 83 selected
- Search items... (search bar)
- Service: Small Wooden Che... (dropdown)
- Permission: Action Read Permission: Permission to allow Read Action (list item)
- Service: TMS (dropdown)
- Permission: Action Read Permission: Permission to allow Read Action (list item)
- Buttons: OK, Cancel

Figure 163 View/Edit Role Item - Example Screenshot



12.4.2

Delete

Note that with regard to delete, dependencies apply. To delete a role, all associated User groups and Users must first be detached. To delete a User group, all associated Users must be detached. Notes on edit and delete functions are in the sections below.

To delete a User, User group or Role, the Authorized User must click the **Delete** text beside the item to be deleted in the list (Step 1 in Figure 164). A pop-up confirmation query is presented. To confirm the delete the User clicks **Delete** (Step 2 in Figure 164). A success message is then briefly displayed. The figure below shows an example of delete, where the Role 'TMS View Devices and layers' is deleted.

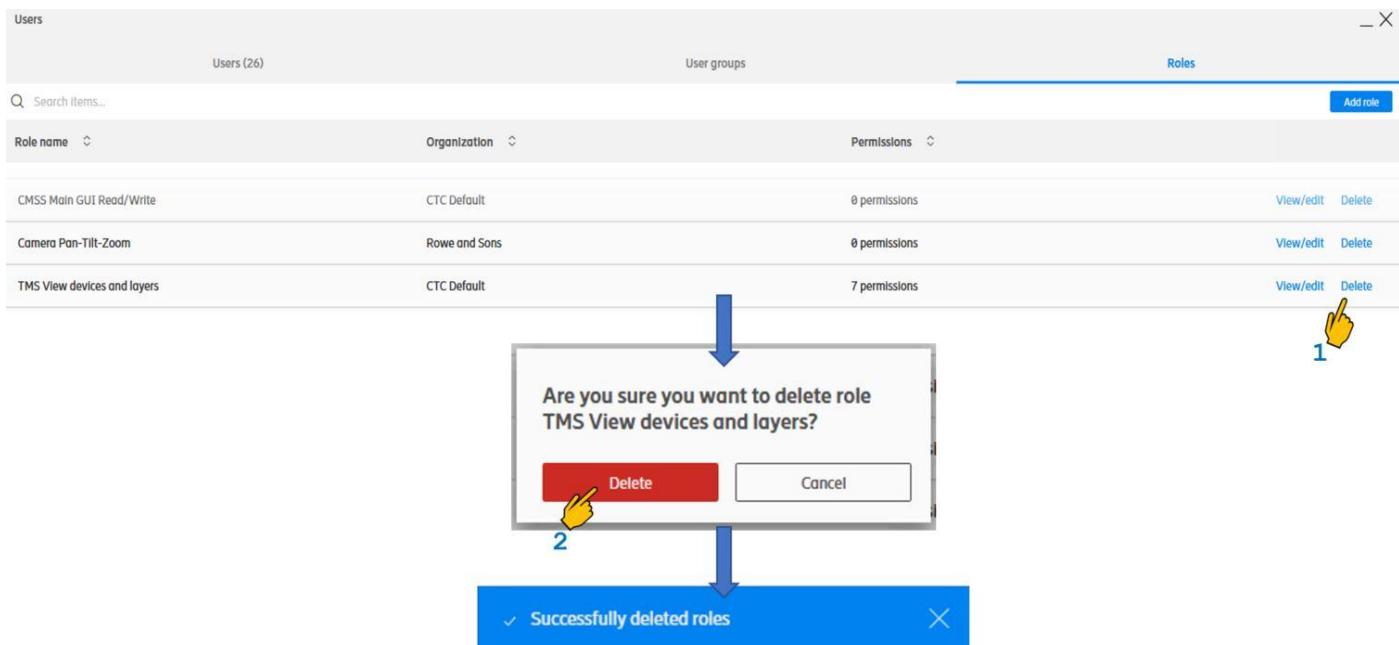


Figure 164 Delete Manage Users Item - Example Screenshot



13 CUT Menu: Services

13.1 General

A Service is a software application created and maintained by a 3rd Party supplier, external to CUT. Typically, Services are applications that control a set of Devices for an Organization. An example is an application that is designed to govern certain Traffic signal controllers.

A key CUT GUI feature is the ability to launch specific Service application web pages from the CUT Main menu. This is called GUI Linking.

Note: CUT itself is also considered a Service but that is not relevant for the Services Menu item, which handles only linking to external Services. CUT Services are only relevant to the User with regard to User management, see Section 12.

The Service application web pages that are available are decided at Service On-boarding but typically relate to the capabilities of the Devices, in terms of Device management. Thus, it may be possible to launch a 3rd Party supplier's main page or a subpage, relating to Device management or Troubleshooting.

Note that CUT cannot govern the consequences of any Service applications, its role is to provide a central point from which to trigger them. Users must have a good understanding of the 3rd Party Device supplier and Device behavior in order to use the Service related links.

Service On-boarding details such as Device Types, Device behavior, Alarms and Actions are outside the scope of this document. For more detailed information on CUT and Services in general, refer to the CUT Data Model document, Reference [4].

Note: It is also possible to launch Service-related web pages or tasks for Devices, from the Entity *Details* card, where this option is supported by the Device. The Entity *Details* card is described in Section 7.5.1.

13.1.1 Single Sign On (SSO)

Single Sign On (SSO) is the process of authenticating the User once and allowing access to systems and linked applications based on the existing trust relationship without requiring additional authentication.

If the Service supports SSO with Azure Active Directory in the government Cloud, then the User's transition to the Service webpage is seamless. The selected web page is opened in a new browser tab or, depending on the On-boarding decision, in a new card within the CUT GUI.

Otherwise, the User may be prompted to enter their Service application username and password before being shown the selected web page.



13.2

Select Service

Note that there is no overall Services card that is launched from the CUT GUI. The Services option from the Main menu allows the User to directly select the Service application webpage that they wish to open.

To view and select the Service-related webpages, the Authorized User first clicks **Services** from the navigation bar. A list of Services appears. The User clicks on the Service which is relevant. A Service-specific list of webpages then appears, representing specific tasks that the Service application supports that may be launched directly. The User clicks on the required webpage to launch.

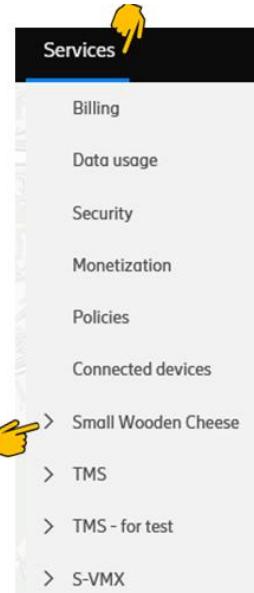


Figure 165 Launch Services - Example Screenshot

13.3

Schedule Actions and Macros

Some actions, defined for devices and services, are possible to schedule. A schedule always starts from the action. Such actions are marked with a ">" sign. To open the schedule options, the User goes to **Services** menu (Step 1 in Figure 166), then selects **TMS > Test action set**, see Steps 2 and 3 in Figure 166.

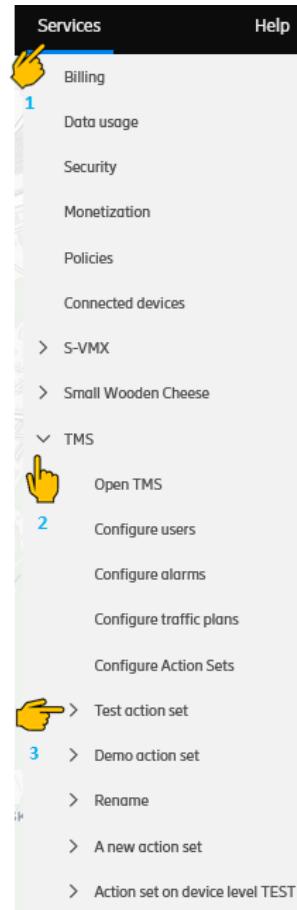


Figure 166 Services - Test Action Set Menu - Example Screenshot

When selected, the User can choose to trigger the action or to schedule it, see Figure 167.

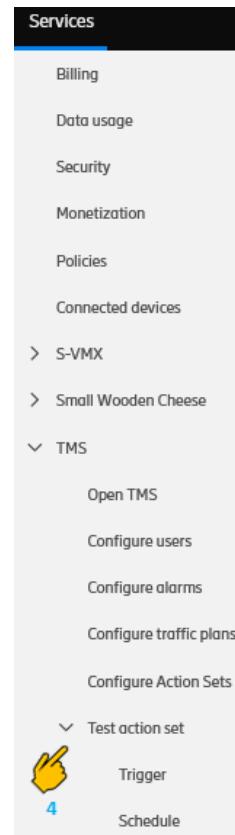


Figure 167 Services - Schedule or Trigger Action - Example Screenshot

If the User selects to schedule the action, it can be defined if the action is to be executed once, or repeatedly, see Figure 168. The User can state the definite execution time and date, recurrence and the end day. To save the settings, the User clicks on **Save**, or **Undo / Cancel** to revert the changes.

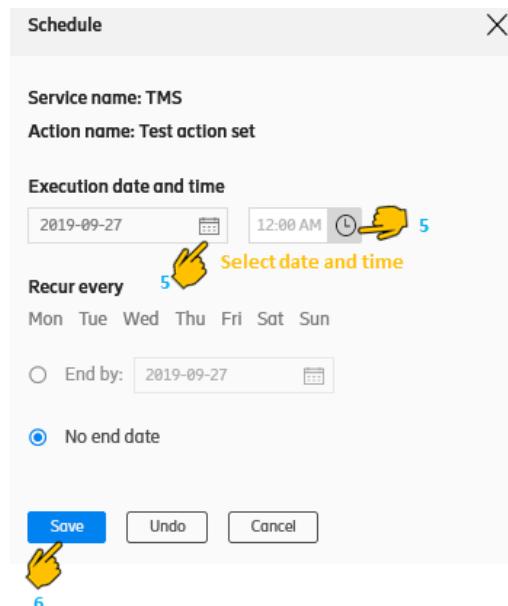
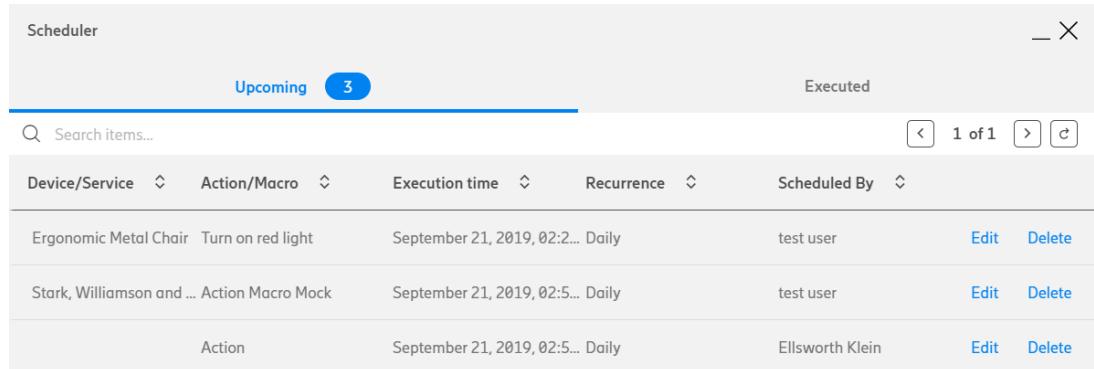


Figure 168 Schedule Action - Example Screenshot



The scheduler overview is found under menu **Tools > Scheduler**. When opened, the User sees upcoming and executed schedules, see Figure 169. The User can edit or delete a schedule.



A screenshot of a software window titled "Scheduler". At the top, there are tabs for "Upcoming" (which is selected, showing a blue circle with the number "3") and "Executed". Below the tabs is a search bar with placeholder text "Search items...". To the right of the search bar are navigation buttons: back, forward, and a refresh icon. The main area is a table with three columns: "Device/Service", "Action/Macro", and "Execution time". The table contains three rows of data:

Device/Service	Action/Macro	Execution time	Scheduled By	Edit	Delete
Ergonomic Metal Chair	Turn on red light	September 21, 2019, 02:2...	Daily	test user	Edit Delete
Stark, Williamson and ...	Action Macro Mock	September 21, 2019, 02:5...	Daily	test user	Edit Delete
Action		September 21, 2019, 02:5...	Daily	Ellsworth Klein	Edit Delete

Figure 169 Scheduler Window - Example Screenshot



14

CUT Menu: Help

The Help feature in the CUT GUI provides a range of support options for the CUT User. There is no standalone Help card. Instead, the User selects the Help option required from the drop-down menu when **Help** is selected from the navigation bar.

14.1

Contact Us

The *Contact Us* Help option allows an Authorized User to send an email to the CUT Support Team. The User clicks **Help** in the navigation bar (step 1 in Figure 170) and then clicks **Contact us** from the drop-down menu (Step 2 in Figure 170). An email to the CUT Support team opens automatically. The User writes the email (Step 3 in Figure 170) and then sends it.

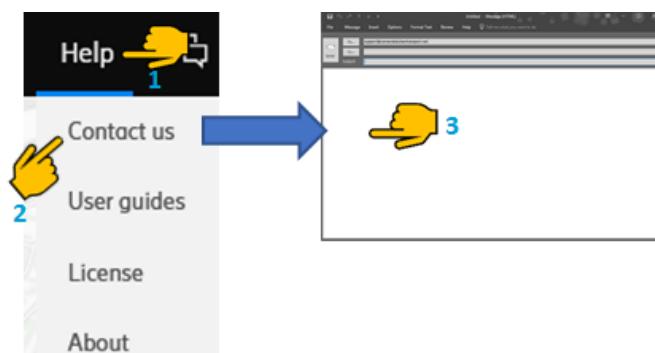


Figure 170 Help > Contact Us - Example Screenshot



14.2 User Guides

Standard CUT documentation is available from the Help option User Guides. The User clicks **Help** in the navigation bar (step 1 in Figure 171) and then clicks **User guides** from the drop-down menu (step 2 in Figure 171). The *User guides* card opens, listing the documents available. The User then clicks on the document they want to view (step 3 in Figure 171). The User may also use the Search field to search for documents, or use the <> buttons to scroll through pages of the User Guides list, if needed.

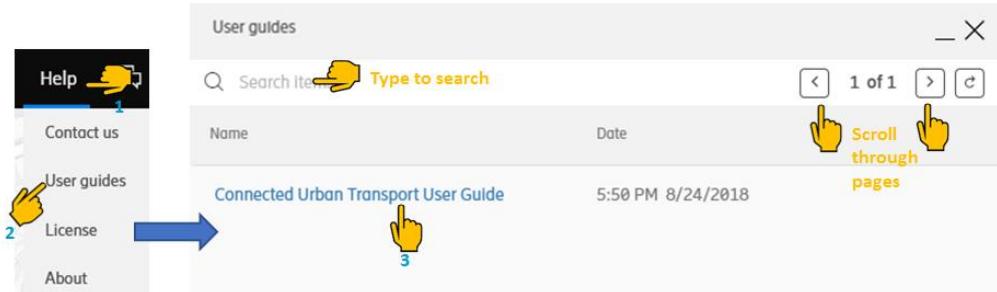


Figure 171 Help > User Guides - Example Screenshot



14.3 Wiki

The Wiki feature allows an Organization to create helpful, Organization-specific Topics and Articles, to aid the overall User experience. The Topics and Articles are created, written and maintained by Authorized CUT Users of an Organization. Topics and Articles may be on any subject as CUT does not restrict the User to anything predefined. The basic premise to using Wiki is that Topics are created first. A Topic is simply the name given to a discussion or subject of interest. Then, Articles may be written in connection to a Topic.

Note: In the Entity *Details* card for any Entity (Device or Map pin), an Authorized User may upload a Wiki Note. Wiki Notes are also associated with pre-existing Topics. How to add a Wiki Note for an Entity is described in Section 0.

To launch the CUT Wiki Page for their Organization, the User clicks **Tools** in the navigation bar (Step 1 in the figure below) and then clicks **Wiki** from the drop-down menu (Step 2 in the figure below). The Wiki page opens in a new web browser tab. The available Topics for view are listed in a column on the left of the page. If the User clicks on a Topic then Articles related to that Topic appear in a column to the right of the Topics column. The User may click on the Articles to view and edit them. The User may also use the Search field to search for Topics and Articles, if needed. To create a new Article for an existing Topic, the User clicks **New article** text in the ribbon at the top of the Wiki page. How to add a new Article is described further in Section 14.3.2. To manage all Topics, including adding a new one, the User clicks the **Topic** text in the ribbon at the top of the Wiki page. How to manage Topics is described further in Section 14.3.1.

The screenshot shows the CUT Wiki Main Page. At the top, there is a navigation bar with links for Tools, Alarms, Settings, Entities (highlighted with a yellow box and number 1), Analytics, Links, Search, Wiki (highlighted with a yellow box and number 2), and Attachments. Below the navigation bar is a search bar with the placeholder "Search articles..." and a magnifying glass icon. To the right of the search bar are buttons for "Type to search", "Manage topics", "Topic" (highlighted with a yellow box), and "New article" (highlighted with a yellow box). The main content area is divided into two columns. The left column, titled "My topics", contains a section for "User instruction" with a "CUT Overview" article. The right column, titled "CUT Overview", displays the content of the "User instruction" article, which includes a brief description of Connected Urban Transport (CUT) and its benefits. There are also sections for "Communication Failure" and "Latest change log".

Figure 172 Help > Wiki Main Page - Example Screenshot



14.3.1 Manage Wiki Topic

To Manage Wiki Topics, including adding a new one, the Authorized User first opens the Topics page by clicking on the **Topic** link from the Wiki main page (shown in Figure 172). Topics open in the Wiki page.

The Authorized User may then click the **Add topic** button to add a new topic. The *Add topic* page opens in the Wiki and the User may add the details as shown in the figure below. The User must click the second **Add topic** button in order to save the new topic.

The Authorized User may choose to edit an existing Topic by clicking the **Edit** button shown beside each existing topic in the list. The *Update topic* page opens in the Wiki and the User may edit the details as shown in the figure below. The User must click the **Update topic** button in order to save the changes.

The Authorized User may choose to edit an existing topic by clicking the **Delete** button shown beside each existing topic in the list. The User is then prompted to confirm that the topic should be deleted, as shown in the figure below. The User may cancel the delete action by clicking the **Cancel** button or confirm the action by clicking the **Delete topic** button.

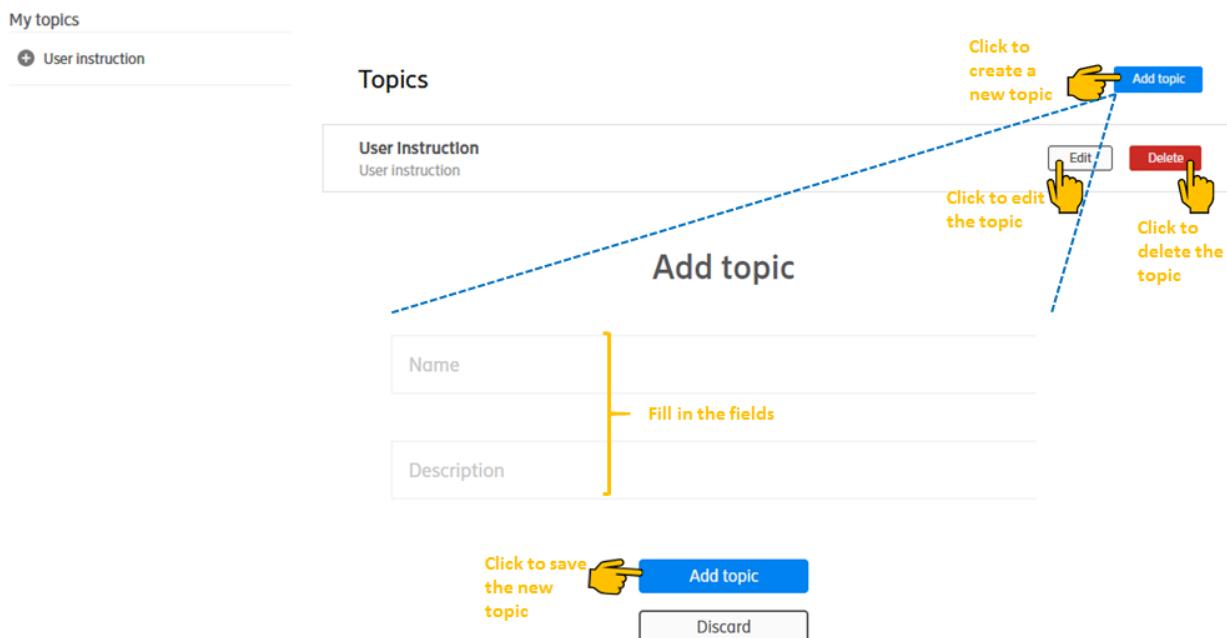


Figure 173 Manage Wiki Topics - Example Screenshot

Figure 174 shows how to update the existing topic.



My topics

+ User instruction

Update topic

Name
User instruction 1 Click to update the topic

Description
User instruction 1 Click to update the topic

2 **Update topic**

Discard

✓ Topic has been edited

Figure 174 Update Topic - Example Screenshot



14.3.2

Add Wiki Article

To add a Wiki article, the Authorized User first opens the *Add article* page by clicking on the **New article** link from the Wiki main page (shown in Figure 172). *Add article* opens in the Wiki page. The User then enters the Article details, as indicated in the figure below. It is also possible to add an attachment to the article. For the size limits applicable to the attachment, see Section 7.7.3. When the Article is complete, the User clicks the **Create article** button to create and save the article.

Note: Articles must be linked to an existing topic. How to add a topic is described in Section 14.3.1.

Add article

Title
How to turn cameras on/off  **Add article title**



... Article text  **Add article text**

0 attachment(s)

Select associated topic for article 

Topic
User instruction

Create and save article  **Create article**

Discard



Figure 175 Add Wiki Article - Example Screenshot



14.3.3

Edit or Delete Wiki Article

To edit or delete a Wiki article, the Authorized User first opens the Article by clicking on the Article link from the Wiki main page (see Figure 172). The Article opens in the Wiki page and on the right, publishing information is shown in a column, as shown in the figure below.

To delete the article, the User clicks the **Delete article** button at the bottom of the publishing column. To edit the article, the User clicks the **Edit** button. An *Edit article* page opens in the Wiki page and the details of the specific Article may be changed, as indicated in the figure below. When the changes are complete, the User clicks the **Update article** button to save the changes.

The screenshot shows the 'Edit article' interface. On the left, there's a sidebar with sections like 'Filed under', 'User Instructions', 'Last updated by' (Eric Rosales), 'Latest change log' (No information available), 'Version history' (Please select), and 'Article options' with buttons for 'Edit article' (highlighted with a yellow hand icon) and 'Delete article'. The main area is titled 'Edit article' and contains fields for 'Title' (Test title), 'Edit article title' (with a yellow hand icon), rich text editor tools, 'Test article text' (with a yellow hand icon), '0 attachment(s)', 'Topic' (with a dropdown menu 'Select associated topic for article' highlighted with a yellow hand icon), 'User instructions', 'Change log' (Describe your changes...), and buttons for 'Update article' (highlighted with a yellow hand icon), 'Save article changes', and 'Discard'.

Figure 176 Edit or Delete Wiki Article - Example Screenshot



15

CUT Menu: Organization

This section focuses on the process of requesting and giving permissions to services. The information is presented from the point of view of two different organizations:

- User A is the Administrator of the subscribed organization.
- User B is the Administrator of owner organization.

To request permissions for specific services for the organization of interest, User A goes to **Settings** (step 1 in Figure 177) menu and clicks **Organization** (step 2 in Figure 177). The *Organization* window is displayed.

User A can edit the provided information about the organization. To open the services available for the Organization, User A must go to **Services** tab, see step 3 in Figure 177. Note that User A is able to see permissions only for his organization.

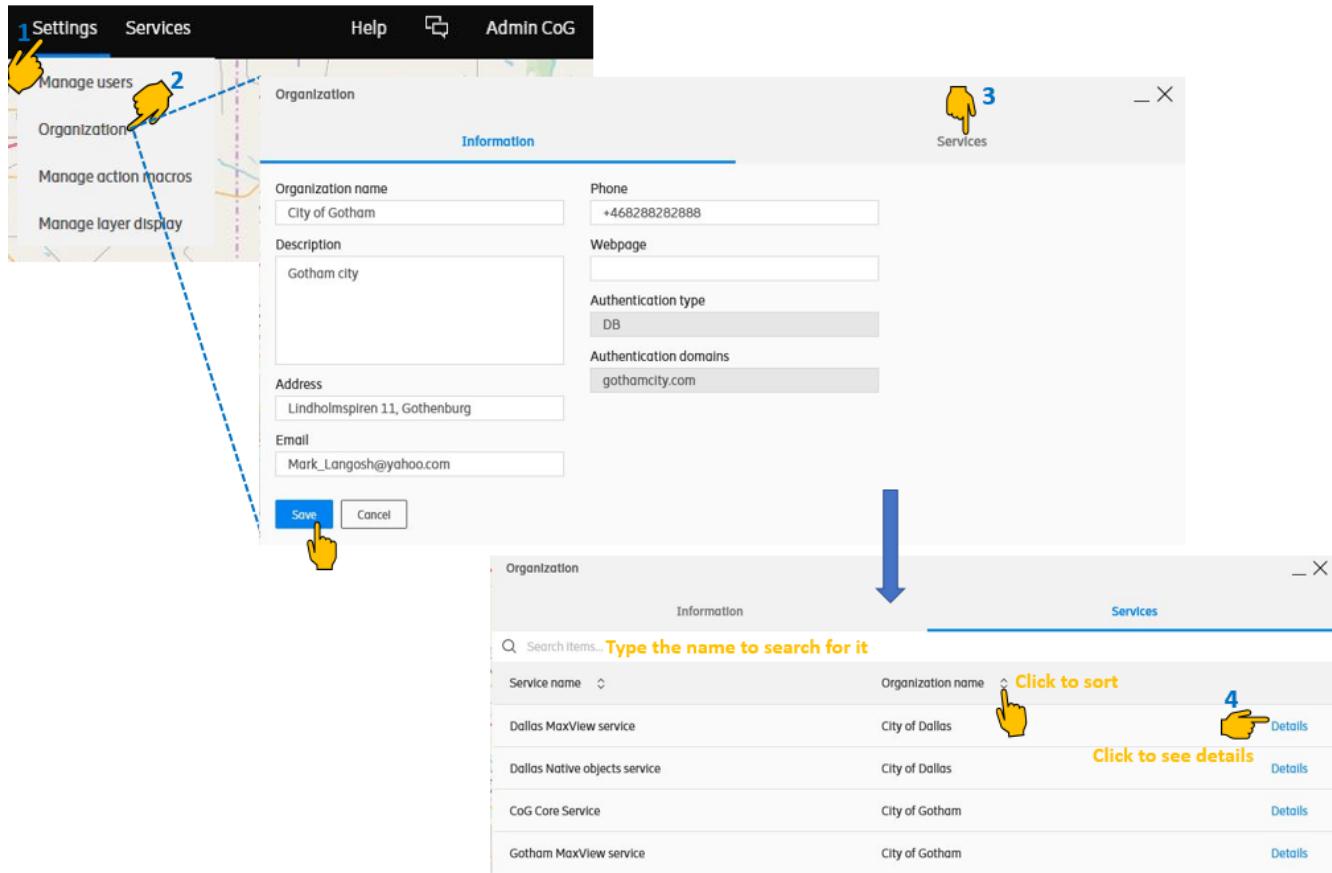


Figure 177 Organizations Menu – Example Screenshot

After that User A scrolls down the list of services to find the needed one. It is also possible to search for a service using the search option, and sort service names or Organizations using up or down arrows. When the service of request is found, User A clicks **Details**, see step 4 in Figure 177.



Now the details about the selected service are displayed. User A opens **Subscribed organizations** slide panel (step 5 in Figure 178) and then clicks **Permissions** (step 6 in Figure 178).

The list of *All permissions* is displayed by default. If User A chooses *Exposed permissions* from the drop-down list, a table with all already available permissions is displayed. If User B, has rejected the request for permission, User A can resend the request.

User A can use the search option in order to find the needed services. The permissions that are already requested are marked as **Requested**. To request new permissions for the service, User A clicks the **Request** button, which is colored blue (step 7 in Figure 178). Non-exposed permissions are grayed out (displayed as disabled). In the displayed window, User A can add a message for the Approver, if needed, and then clicks **Confirm** button (step 8 in Figure 178).

Note that User A is not able to edit the list of permissions, but he can request any of them if he has rights to request permissions.

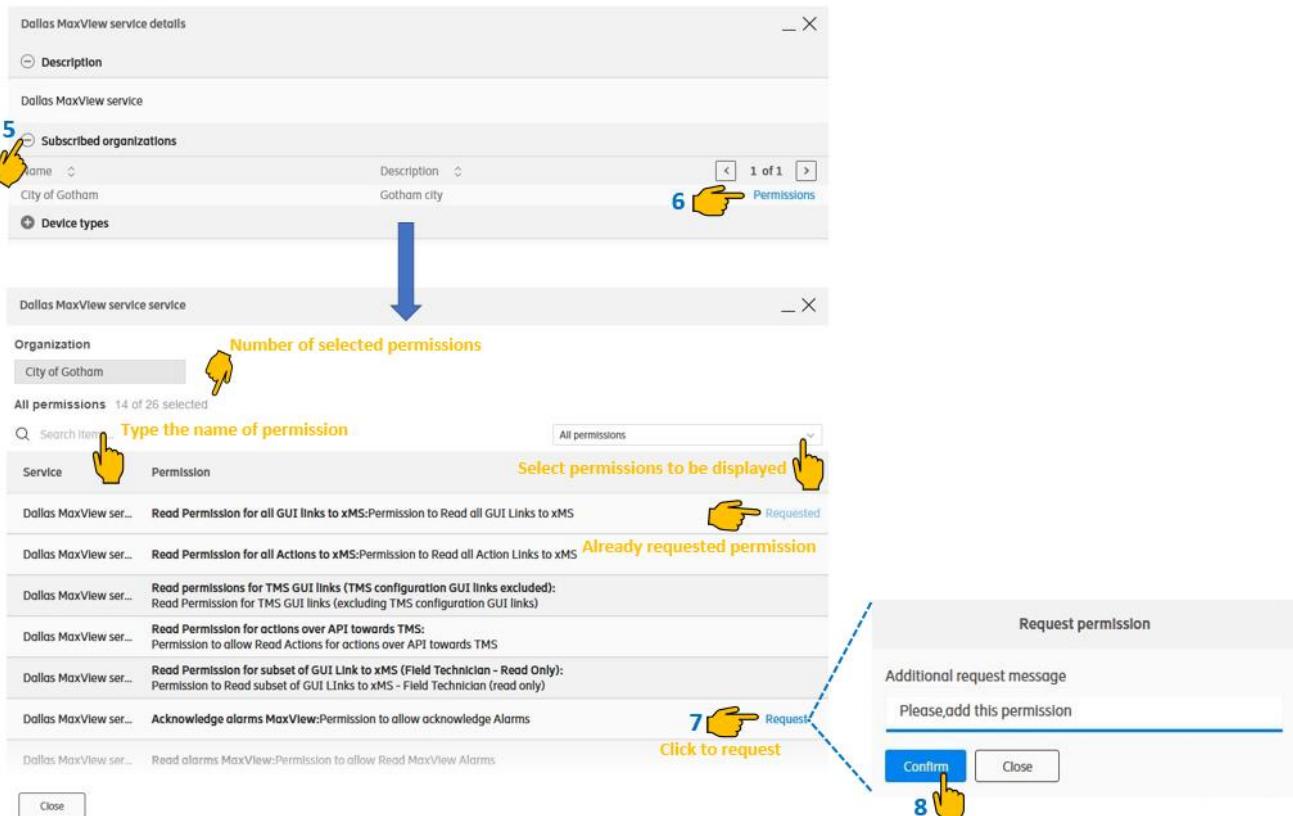


Figure 178 Request Permissions - Example Screenshot

After User A sent a request for the required permission, User B gets a notification and is able to view the requested permissions and decide whether to accept or reject the requests. Note that User A cannot request the permission, which is still being requested. The **Request** button will be available after User B rejects the appropriate permission.



For User B to accept or reject the requested permissions he must follow the same steps **1-6** shown in Figure 177 and Figure 178. The view of the window with the list of requested permissions is shown in Figure 179.

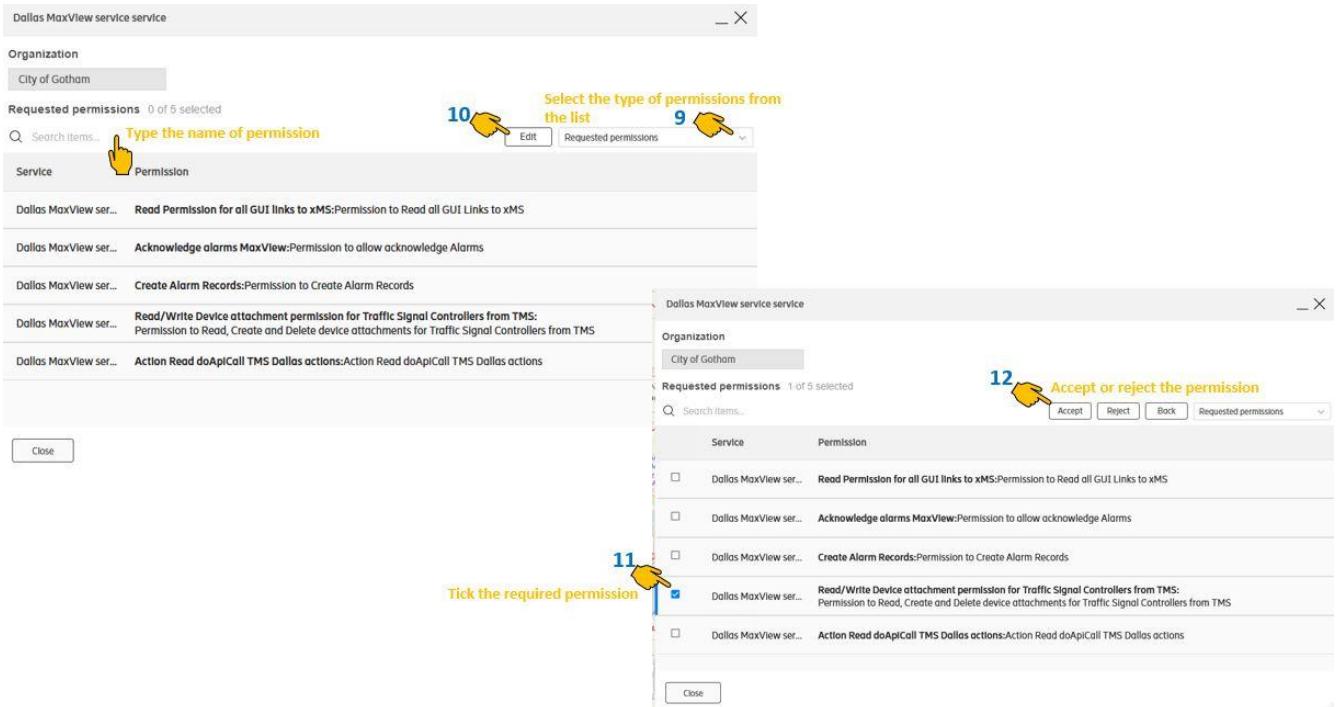


Figure 179 Accept / Reject Permissions - Example Screenshot

User B selects **Requested permissions** from the drop-down list to be displayed (step **9** in Figure 179). The list of the requests sent to User B is displayed. User B clicks **Edit** button (step **10** in Figure 179), then ticks the required permission (step **11** in Figure 179). After that User B clicks **Accept** or **Reject** buttons (step **12** in Figure 179). A notification message about a successful update is shown to User B. Now the permission of interest has gone from the list of requested permissions.

User A is notified (step **13** in Figure 180) when User B accepts or rejects the request. If it is accepted, the permission is added to the exposed permissions. By selecting **Exposed permissions** (step **14** in Figure 181), User A can view only those permissions, which are available to the Organization.

For how to assign permissions to different roles, see Section 15.1.

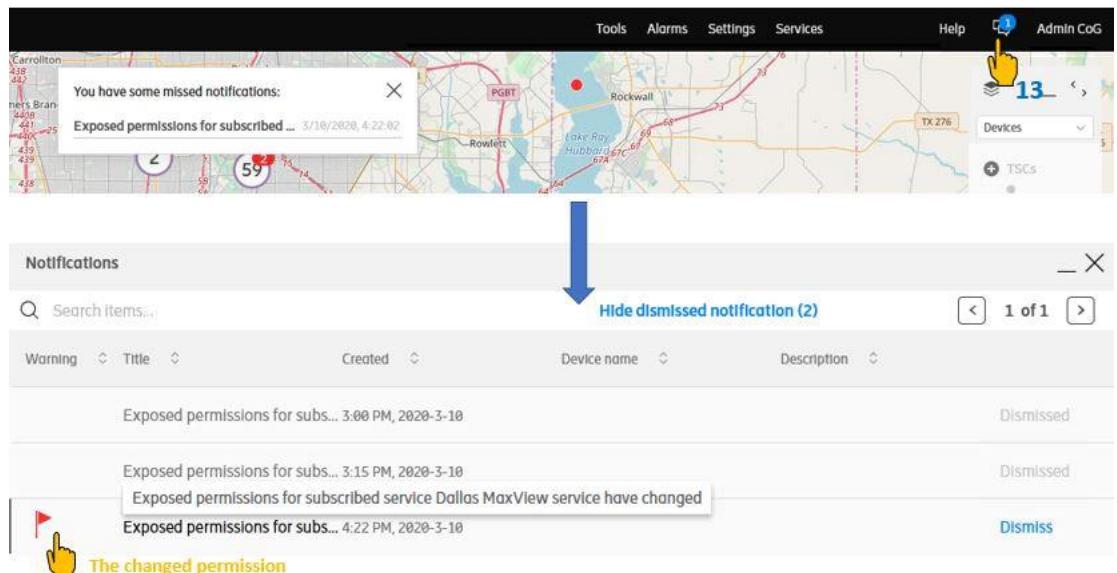


Figure 180 Notification about Changed Service - Example Screenshot

Dallas MaxView service service

Organization The name of the Organization
City of Gotham

Exposed permissions 16 of 16 selected

Search items... Type the name of permission to be searched

Service Permission Exposed permissions Select to view all given permissions 14

Dallas MaxView ser...	MaxView Action Set Read Permission by Type:MaxView Action Set Read Permission by Type
Dallas MaxView ser...	Device attachment READ permission for Traffic Signal Controllers from TMS: Permission to read device attachment for Traffic Signal Controllers from TMS
Dallas MaxView ser...	Read/Write Device attachment permission for Traffic Signal Controllers from TMS: Permission to Read, Create and Delete device attachments for Traffic Signal Controllers from TMS
Dallas MaxView ser...	Read Permission for TMS Configuration actions using TMS API: Permission to allow Read Actions for TMS Configuration The permission that was given in the example
Dallas MaxView ser...	Read permission for MaxView devices:Permission to allow Read MaxView devices
Dallas MaxView ser...	Device metadata UPDATE permission for MaxView service: Permission to update device metadata for specific MaxView devices

Close

Figure 181 View Exposed Permissions to Organization - Example Screenshot

15.1 Assign Permissions

When User A is granted permissions by User B, User A can assign permissions to the already existing role inside his Organization. To do it, User A goes to **Settings > Manage users**. Then User A goes to tab **Roles** (step 1 in Figure 182) and finds the role of interest on the list. User A clicks **View/edit** button (step 2 in Figure 182).



Role name	Organization	Permissions	
Camera Pan-Tilt-Zoom	Rowe and Sons	0 permissions	View/edit Delete
TMS View devices and layers	CTC Default	7 permissions	View/edit Delete
TMS View action sets	CTC Default	1 permissions	View/edit Delete

Figure 182 View or Edit Permissions for Role - Example Screenshot

In the displayed window (see Figure 183), User A selects the service(s) from the drop-down list (step 3 in Figure 183). The corresponding permissions will be displayed in the table. The User can use the search option to find the required permission and sort the presented permissions using the up and down arrows. Then User A clicks **Edit** button (step 4 in Figure 183) and unticks the permissions the User wants to reject (step 5 in Figure 183), or ticks to add. When ready, User A clicks **Save** button (step 6 in Figure 183). The notification about a successful updated of a role is shown to User A. The tab **Roles** is also updated according to the performed change. Note that if User A removes some of exposed permissions, all roles of the Organization will also lose these permissions.

Service	Permission
Small Wooden Cheese	Action Read Permission Permission to allow Read Action
Ergonomic Metal Chair	Action Read Permission Permission to allow Read Action
TMS	Action Read Permission for TMS Permission to allow Read Action
TMS - for test	[Test only] Action Read Permission for TMS [Test only] Permission to allow Read Action
Small Wooden Cheese	[Test only] Single Action Read Permission Permission to read Open CUT GUI link action, for testing purposes
Cut Admin Core	Action Read and Write Permission Permission to allow Read, Create, Delete and Update Action

Figure 183 Edit Permissions for Role - Example Screenshot

User A can also assign the given permissions to a new role. For such a case, it does not matter in which order this process will be handled – User A can request the required permissions first, and then assign them to the newly created role, or first create a new role and then assign the needed permissions to it. For how to add a role, see Section 12.3.1.



16

User Tracking

CUT supports tracking of users in the organization that has configured this tracking. Some parameters, for example, Schedulable and Vehicle type can be configurable on the organization level for a definite user.

By default, the user tracking feature is not enabled for the first time the User logs in. The browser confirmation popup will appear after turning on position tracking, or the logging is performed under the user that is allowed to be tracked on a new device.

The notification message is displayed on the screen, asking either to block or to allow to track the location of this user, see Figure 184.

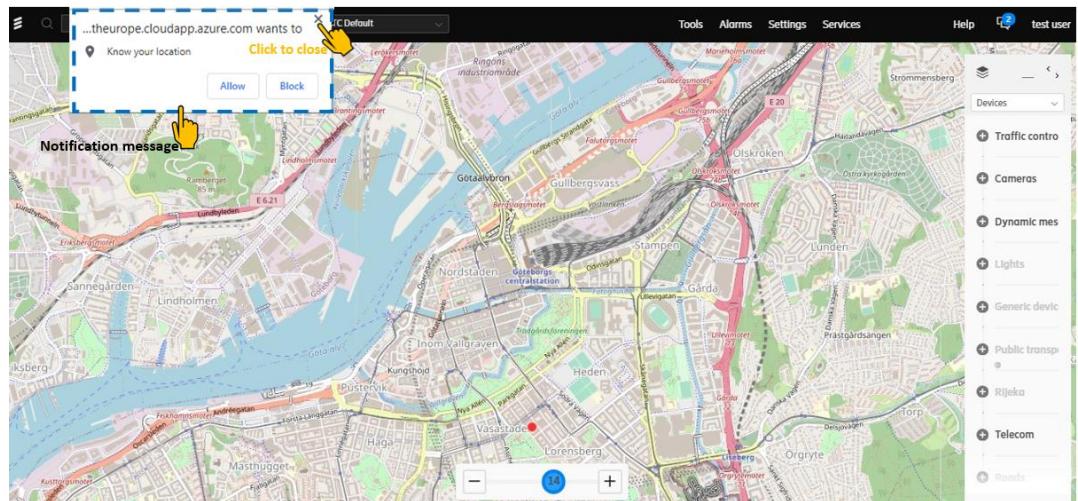


Figure 184 Location Tracking Notification - Example Screenshot

Trackable users are presented on maps in a similar way to any device, with the only difference that it is an icon of a man in a purple circle, see Figure 185.

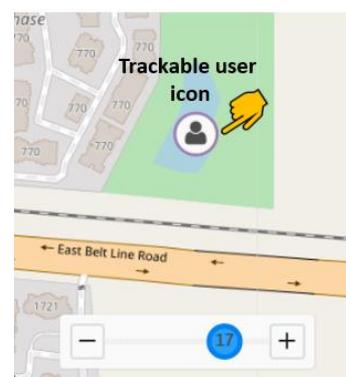


Figure 185 Trackable User on Map - Example Screenshot



To be able to see this icon on a map, the User must enable the **Users** layer first. To enable the layer, the User goes to **Devices** on Layer control panel (see step 1 in Figure 186) and scrolls down the list of devices till **Users** (see step 2 in Figure 186). The layer is grayed out. The User clicks on the **Users** to enable the function. The User can also move up/down the item on the list using the dots on the right side of the panel. Pressing the “plus” sign expands the list of available Users. It is also possible to mark users. To fold the expanded list, click the “minus” sign.

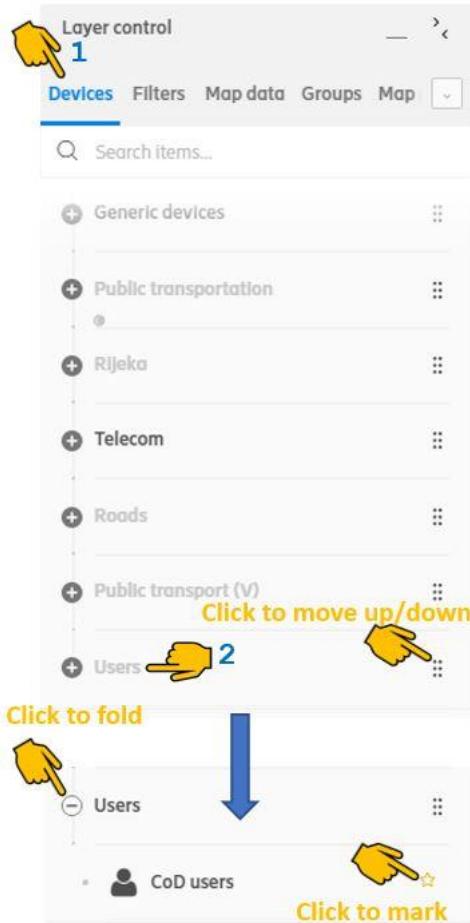


Figure 186 Enabling Users Layer - Example Screenshot

The User can also view devices of trackable users via **Tool** menu. To do it, the User goes to **Tools > Entities**, (step 1, 2 in Figure 187). The User can use the search option to find the required device, or scroll down the list till **Users** item (step 3 in Figure 187).



The screenshot shows a software interface for managing entities. On the left, there's a sidebar with links like Tools, Alarms, Entities, Analytics, Links, Search, Wiki, Attachments, and Scheduler. A dashed blue line connects the 'Entities' link in the sidebar to the 'Entities' section in the main window. The main window has a header with 'Entities', a search bar ('Type the name to search for'), and buttons for 'Add' and 'Click to sort'. Below the header is a table listing entities. The first entity listed is 'Public transportation'. Other entries include 'Rijeka', 'Telecom', 'Roads', 'Public transport (V)', 'Users', 'CoD users', 'test user', 'test user', 'Map pins', 'Entity groups', and 'Map data'. The 'Users' entry is expanded, showing two 'test user' entries. A yellow callout '3' points to the 'Click to unfold' arrow next to the 'Users' entry. Another yellow callout '2' points to the 'Entities' link in the sidebar. A third yellow callout '1' points to the 'Entities' link in the main header.

Figure 187 Trackable User Devices - Example Screenshot

The User can also interact with the Trackable users in the same way as with any other device on the map:

- Right-click on the icon opens the available options, see Figure 188, such as **Open entity details**, **Manage rules**, **Measurements history**, etc.

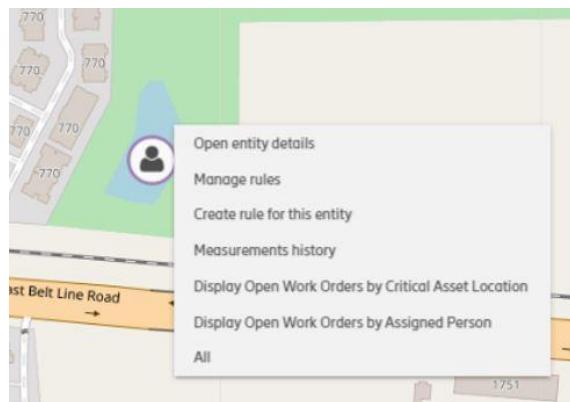


Figure 188 Trackable User Menu - Example Screenshot

- Left-click on the icon opens the **Entity card**, see Figure 189. Here the User can view the entity on the map, or add an attachment to the entity, or view the entity notes.

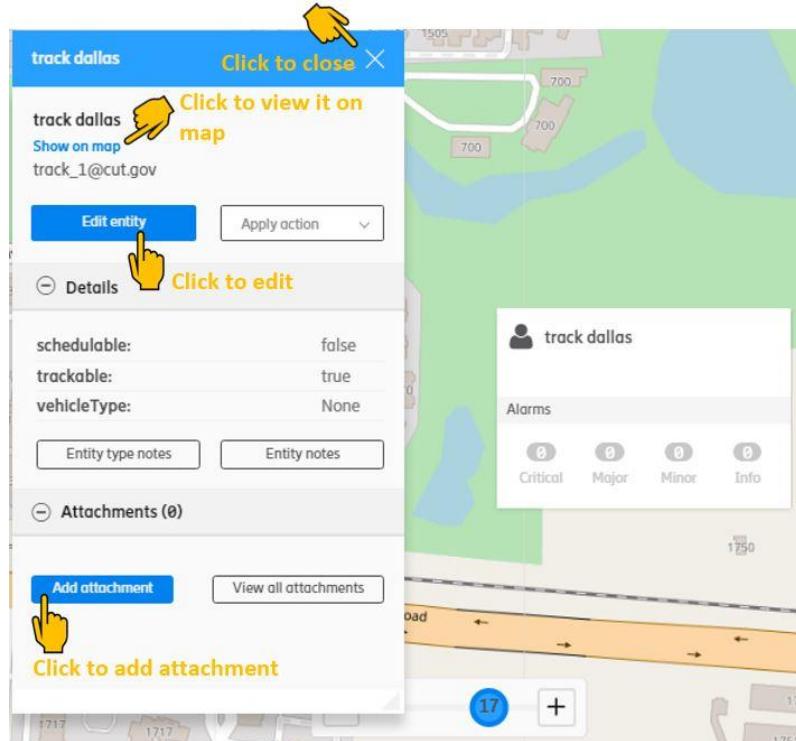


Figure 189 Trackable User Entity Card - Example Screenshot

The User can edit the entity using the **Edit entity** button, see Figure 189.

In the displayed window, see Figure 190, the User can add/update the entity name, add the entity description, or upload the image to it.

The entity has also such fields as:

- Position tracking;
- Schedulable;
- Vehicle type.



Edit an entity X

Name	Type the name
track dallas	
Description	Type the description
track_1@cut.gov	
Position tracking	Click to enable
Schedulable	
Vehicle type	None
Latitude	Select the type
Longitude	
Click to add an image	
Upload image	
Maximum image size: 1 MB	
Supported image format: GIF, JPEG, JPG & PNG	
Click to save	
Delete	Cancel
Save	

Figure 190 Edit Trackable User Entity - Example Screenshot

All these fields are present on the *Entity card*, see Figure 189, and can be changed, if needed. However, notice that the field **Position tracking** can only be changed by the User himself.



17 Terminology

Refer to the CUT Terminology document, Reference [5], for the complete list of CUT terminologies used in this document.

17.1 Abbreviations

The main abbreviations used in this document are listed in the table below.

Abbreviation	Description
AAD	Azure Active Directory
API	Application Program Interface
CD	Continuous Development
CI	Continuous Integration
CUT	Connected Urban Transport
DMS	Dynamic Message Sign
ESRI	Environmental System Research Institute
GIS	Geographic Information System
GPS	Global Positioning System
GUI	Graphical User Interface
HTTP	HyperText Transfer Protocol
I2X	Infrastructure to Anything
LRM	Light Rail Maneuver
LRP	Light Rail Preepmt
OS	Operating System
OWM	Open Weather Map
SaaS	Software as a Service
SSO	Single Sign On
URL	Uniform Resource Locator
WMS	Web Map Service



18

References

- [1] CUT Southbound Application Integration Guide, 1/198 17-HSM 901 4721 Uen
- [2] CUT Interface Description, 155 19-HSM 901 4721 Uen
- [3] CUT Service Description, 221 04-FGD 102 02 Uen
- [4] CUT Data Model Description, 1/198 18-HSC 901 140 Uen
- [5] CUT Terminology, 0033-HSC 901 140 Uen