A MITEL
PRODUCT
GUIDE

# Unify OpenScape Alarm Response Professional

## OScAR V5
## Positioning System-view

Administrator Documentation
07/2024

P31003-S1750-M103-01-00A9

Mitel

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# Table of Content

# 1 Conventions and Operating Instructions

## Target audience and qualifications

This Administrator and User Manual is written for service staff members in charge of the basic configuration and commissioning of DPS-view. It also provides support for all users and operators who work with DPS-view on an everyday or regular basis.

To carry out the operations described in this document you need to be familiar with Windows and have a good understanding of the basic laws and principles of telecommunications engineering. Also, all service staff members should be familiar with the handsets and terminals that are employed and the functions of their PBX.

## Contents

This chapter covers the following areas:

## 1.1 Overview of the chapters in this document

This manual also contains the following chapters:

| Chapter | Summary |
|---|---|
| Chapter 2, "Overview" | This chapter provides an overview of the various functions and properties of DPS-view. It also covers the system requirements and the central positioning interface of DAKS-Positioning Services (DPS). |
| Chapter 3, "Install and Uninstall DPS-view and Migrate Data Structures" | This chapter shows you how to install DPS-view, how to remove it again from your PC and how to migrate data structures of n already existing and installed DPS-view versions. It also covers the example files that are included ex-works in every DPS-view delivery and explains the hierarchical DPS-view data structure that also serve as a basis for your further administration. |
| Chapter 4, "The Administrator Tool DPS-view-Edit" | This chapter covers the DPS-view-Edit administrator tool that serves all local settings. It shows you how the visualization of the obtained positioning results is simulated and introduces you to the predefined visualization templates, including their default settings. Also, this chapter shows you how to create and edit your own customized visualization templates for the positioning processes you need to carry out, and work with Levels, Objects and Polygons. |
| Chapter 5, "The Server Application DPS-view" | This chapter covers the functions of the server application DPS-view, including the settings and the logging of the positioning processes in the logfile and in the window of the application. |
| Chapter 6, "Glossary" | The Glossary lists and explains in alphabetical order the technical terms that are found in this document. |

Table 1-1 Overview of chapters

## 1.2 Reference manuals

The below-listed documents can be of additional help when working with DPS-view and this document:

- OScAR-Pro User Manual
- OScAR-Pro Installation Manual
- OScAR-Pro Server Configuration Manual

## 1.3 Notations and symbols

### Conventions

The following definitions are used in this Administrator and User Manual:

| | |
|---|---|
| `Text` | All texts copied from files that are described in this document and all entries that are made in the application are shown in the monospace font `Courier`. |
| The password 123456 ... | Details and instructions in the continuous text that are of particular importance or must be heeded are output in bold print. Buttons are also in bold print. |
| The file `global.cfg` | Files and directories are output in the monospace font `Courier`. |
| "Name" | Field names, menu names and window descriptions are placed in "quotation marks". |
| <Place holder> | Entries and outputs, both of which may vary depending on the individual situation in which they appear, are placed in <angle brackets> and are in italics. |

Table 1-2 Notations

### Symbols

The following symbols are used in this Administrator and User Manual:

Note:
The info "i" is used to indicate additional helpful information.

Caution!
The exclamation mark is used to indicate important information which the reader should treat with particular caution.

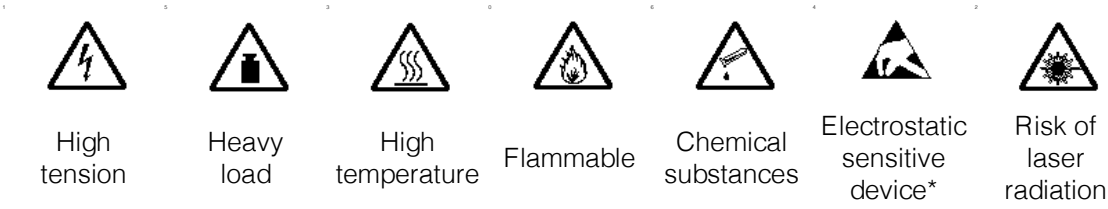
## 1.4 General instructions

Operations on the OScAR server and the PBX

Please bear in mind that operations performed on the OScAR server may only be carried out by qualified service staff. These operations are mainly covered in the OScAR-Pro Server Configuration Manual, and are not further described in this document.

## 1.5 Symbols used to classify potential causes of danger

The below-listed symbols can be found on devices to warn operators of potential risks and dangers. They are, however, not normally used in this document.



| High tension | Heavy load | High temperature | Flammable | Chemical substances | Electrostatic sensitive device* | Risk of laser radiation |
|---|---|---|---|---|---|---|

* electrostatic discharge damage

## 1.6 Privacy and data security

This system processes and uses, among other things, personal data, e.g. for billing purposes, display outputs and to create subscriber data.

In Germany, the processing and application of use of such personal data is subject to various regulations, including the Federal Data Protection Act (Bundesdatenschutzgesetzes, BDSG). Be careful to follow the laws and regulations for the protection of personal data that are in force in the country in which you work.

The purpose of data protection is to protect the individual against any infringement of his or her personal rights through the misuse of personal data.

In addition, the goal of the data Protection Regulations is the safeguard of the data from misuse during the different processing phases and consequently to counter any impairment caused to external or internal legitimate interests.

Please help ensure complete data protection and data security by being aware of these issues as you work:

- Always make sure that only authorized persons have access to personal data.
- Assign passwords whenever you can. Do not grant unauthorized persons access to your passwords, for example by writing them down.
- Always make sure that no unauthorized persons can process or utilize personal data in any way, for example by saving, communicating, blocking or deleting this information.
- Always make sure that no unauthorized persons have access to data storage media, for example to backup disks or printouts of logfiles or reports. This applies both to service work provided directly at the customer and to the storage and transport of data carriers.
- Always make sure that every data storage medium that is no longer needed is properly and fully destroyed. Also be careful not to leave behind any papers that could become openly accessible to others.

# 2 Overview

## Overview

This chapter provides an overview of the various functions and properties of DPS-view. It also covers the system requirements and the central positioning interface of OScAR-Positioning Services (DPS).

## Contents

This chapter covers the following areas:

## 2.1 Introduction and functionality

In connection with the operation of the OScAR Positioning Services (DPS) to locate DECT handsets or WLAN capable communication devices in order to provide protection of employees and staff members, we are increasingly witnessing the need to also visualize the exact location of an alerting or distressed person in a format that is clear-cut, straightforward and easy to read. In this context it is especially important to structure the graphic output in such a way that also untrained staff can spot an alerting person quickly and as reliably.

DPS-view is a supplementary component of OScAR'-Pro and visualizes the location tracking results in DECT and wireless LAN infrastructures. DPS-view visualizes the location tracking results that are otherwise only output as a voice message or display text directly at the communication device or handset.

Fro more information on the OScAR-Positioning-Services:

➤ see OScAR-Pro User Manual

### 2.1.1 System requirements

The following systems must be installed to work with DPS-view:

OScAR-Pro with the application OScAR-Positioning-Services (DPS)

➤ see Section 2.3 "DAKS Positioning Services (DPS)"

### 2.1.2 Components

DPS-view consists of the following components:

- The server application: DPS-view

  The server application DPS-view represents the operative part of the visualization system. It accepts visualization requests, builds the maps with the superimposed objects, and provides the computed results in form of HTML pages for output in the OScAR-TT Operator-Tool.

  ➤ see Chapter 5, "The Server Application DPS-view"
- The administrator tool: DPS-view-Edit

  The administrator tool DPS-view-Edit is used to create and administrate the data structure for DPS-view. DPS-view-Edit is a graphic tool that serves to load the different maps, but also to superimpose and edit the objects thereon.

  OScAR-Positioning-Services (DPS) offers functions to export the data of objects (BS, AP, AOI). This ensures that no double data maintenance is required. When the data of objects is changes in the database of OScAR-Positioning-Services (DPS), you can export the new object data in form of a text file for import into an already existing project in DPS-view-Edit.

  ➤ see Section 4.6.2.1 "Import object list from a text file"

### 2.1.3 Visualization of objects

The visual rendition of location tracking results in DPS-view is achieved via OScAR-TT Operator-Tool in hierarchically structured graphics. These graphics consist of maps upon which the received objects are output, namely:

- Base Stations or Access Points

  Output in form of symbols representing the object. The size and color of the symbols vary depending on the field strength with which they are received.
- Areas of Interest

  Output in form of polygons that cover the area where the device is most likely located at present. The color of the polygons varies depending on the quality of the positioning process, which enables a clear and easy-to-grasp presentation of the positioning results.

  ➤ see Image 2-2 DPS-view visualization of positioning results in DAKS-TT Operator-Tool

With its user-friendly and intuitive operation, DPS-view makes it possible to navigate easily between the different maps. This enables the user to open, for example, an exploded view of a lower map-level simply by directly clicking the wanted object.

As the visualization is structured in different hierarchy levels, the individual map-levels can easily be reached at any time at the click of the mouse.

DPS-view is very user-friendly and easy to install. The system configuration and administration is via the graphic administrator tool DSP-view-Edit.

➤ see Chapter 4, "The Administrator Tool DPS-view-Edit"

In addition, DPS-view enables you to freely parameterize the graphic rendition of your objects using so-called predefined visualization templates. This option makes it possible to customize the way in which your location tracking results are output to the specific needs and requirements of your business.

➤ see Section 4.3 "DPS-view-Edit visualization templates"

## 2.1.4 Applied maps

DPS-view operates with maps (any) in the JPEG format, for example with:

- structural plans (e.g. architectural drawings, site plans)
- Exploded views and isometric data (3D views)
- Aerial views (e.g. aerial view of your company site/premises)
- Sketches (e.g. hand-drawn sketches and abstract drawings of buildings)

The below screen shot shows the exemplary positioning results when based on the isometric presentation of a company site:

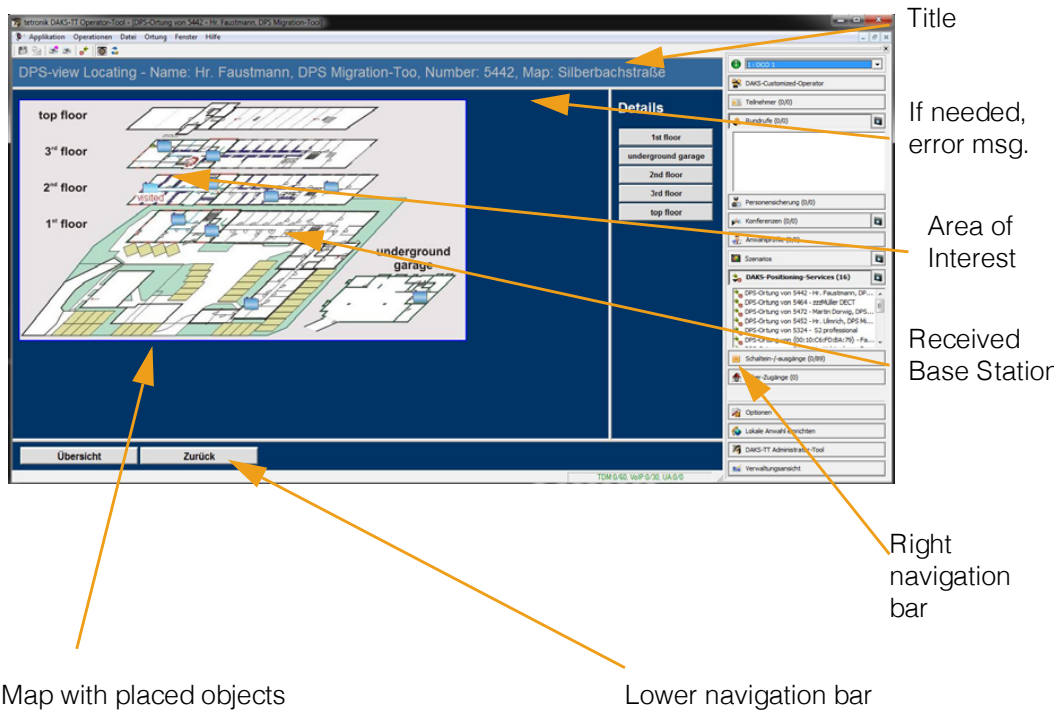



Image 2-1 DPS-view - Isometric presentation of company site (example)

The visualization of positioning findings in DPS-view consists of these components:

- Caption above the positioning findings shown in DPS-view
  The title consists of: "DPS-view Positioning - Name: <name of subscriber>, Number: <phone number of communication device>, Map: <name of map>"
- Map with placed objects (details)

The map shows the following objects depending on their received standardized field strength:

- Area of Interest (AOI)
  The size and the color of the symbols varies depending on their received field strength.
- Received Base Station (BS) or Access Point (AP)
  Visualized in form of symbols that show the respective objects depending on their received standardized field strength.

- Right navigation bar
  This area contains the navigation buttons to jump to the next maps.
- Lower navigation bar
  Use these two buttons to navigate to the main view (Overview) or jump back to the last map (Back).
- Where needed, error message
  ➤ see Section 2.5 "Information and error reports"

## 2.2 Positioning in DECT and WLAN infrastructures

The prerequisite for any positioning of a communication device to be carried out in DECT or wireless LAN networks is a positioning request that must be addressed to the handset. There are several categories of handsets:

- DECT handsets with full positioning capability:
  Positioning details: Visited Station and field strength table
  Communication devices: OpenScape DECT-Phone S5, OpenScape DECT-Phone SL5, OpenScape M3
- Communication devices with limited positioning capability:
  Positioning details: Visited Station
  Communication devices: Any DECT handsets that has no full positioning capability
- WLAN communication devices:
  Positioning details: Field strength table
  Communication devices: OpenScape WL3, Ekahau Tag

The location tracking results are composed of the following elements:

- Visited Station
  This is the Base Station through which the communication device you want to locate is currently communicating. This station is the so-called "Visited Station".
- Field strength table
  This table lists the field strength values of the Base Stations (for DECT networks) as well as the field strength values of the Access Points (for wireless LAN networks), which the DECT or WLAN communication device is currently receiving in its physical surrounding.

### 2.2.1 Positioning Accuracy Level when positioning devices

The positioning is carried out in three levels of accuracy with the obtained results output in form of a voice message or a display text message, or in form of a graphic visualization of the computed location details:

- Positioning Accuracy Level 1 - Lowest degree of accuracy (only for DECT):
  - Voice/Display text message: Output of the Visited Station
  - Visualization: Output of the Visited Station in DPS-view
- Positioning Accuracy Level 2 - Medium degree of accuracy (for DECT and WLAN):
  - Voice/Display text message: Output of the Base Stations or Access Points that are received the strongest in the surrounding of the wanted communication device, with classification of the field strength. This process does not include an interpreting of the obtained results; the measured results are processed and presented to the alerted user in an easy-to-read and straightforward format.
  - Visualization: Output of the received Base Stations or Access Points in DPS-view. Both the color and the size of the received Base Stations or Access Points vary depending on their received field strength.
- Positioning Accuracy Level 3 - Highest degree of accuracy (for DECT and WLAN):
  - Voice/Text message: Both HPS and EPE compute the most probable location or Area of Interest (AOI) for the wanted terminal. This is done on the basis of the field strengths of the Base Stations or Access Points that are presently being received by the device in its physical surroundings, and by using reference measuring and calibrated maps. The results of this process are transmitted as in form of a voice message or display text message.
  - Visualization: The graphic output of the wanted device's most probable location, output in form of a circle superimposed on a calibrated map by the SPS Locator, or else in form of a colored polygon in DPS-view.

## 2.3 OScAR Positioning Services (DPS)

OScAR-Positioning-Services (DPS) is the central positioning interface of OScAR-Pro and integrates the positioning servers HiPath-Positioning-Server (HPS) and Ekahau-Positioning-Engine (EPE). The positioning capability provided by OScAR-Positioning-Services itself is without interpretation of the obtained positioning results (positioning accuracy levels 1 and 2).

Also, DPS can assess the threshold values of the field strength received by the Base Stations and in this way match them to the equivalent Areas of Interest (AOIs), i.e. to the the most probably area in which the wanted device is currently located.

Via DPS-view, OScAR Positioning Services (DPS) can visualize both Areas of Interests as well as Base Stations and Access Points as the obtained results of a positioning process.

The positioning results are shown in the OScAR-TT Operator-Tool in an own window.

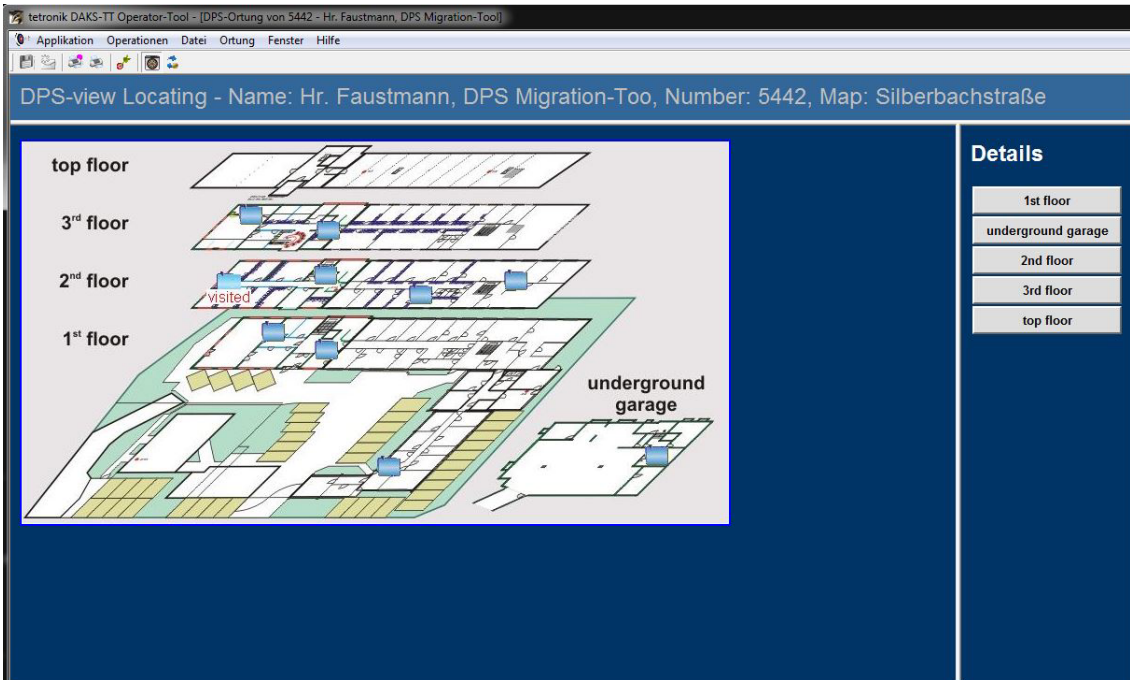



Image 2-2 DPS-view visualization of positioning results in OScAR-TT Operator-Tool

## 2.4 System requirements

- For server application DPS-view: Windows PC (Windows 10, Windows Server 2016/2019)
- For administrator tool DPS-view-Edit: Windows PC (Windows 10, Windows Server 2016/2019)
- For output positioning results in OScAR-Positioning-Services (DPS): OScAR-TT Operator-Tool

## 2.5 Information and error reports

In the event of an error, DPS-view outputs helpful additional details above the map, e.g. when OScAR Positioning Services (DPS) receives a Base Station in the field strength table that has not yet been administrated in DPS, or a valuable indication when the obtained positioning results are obsolete.

### 2.5.1 Information when positioning results are obsolete

When DPS-view detects that the positioning results have already become obsolete, it places a helpful warning right above the map, for example:

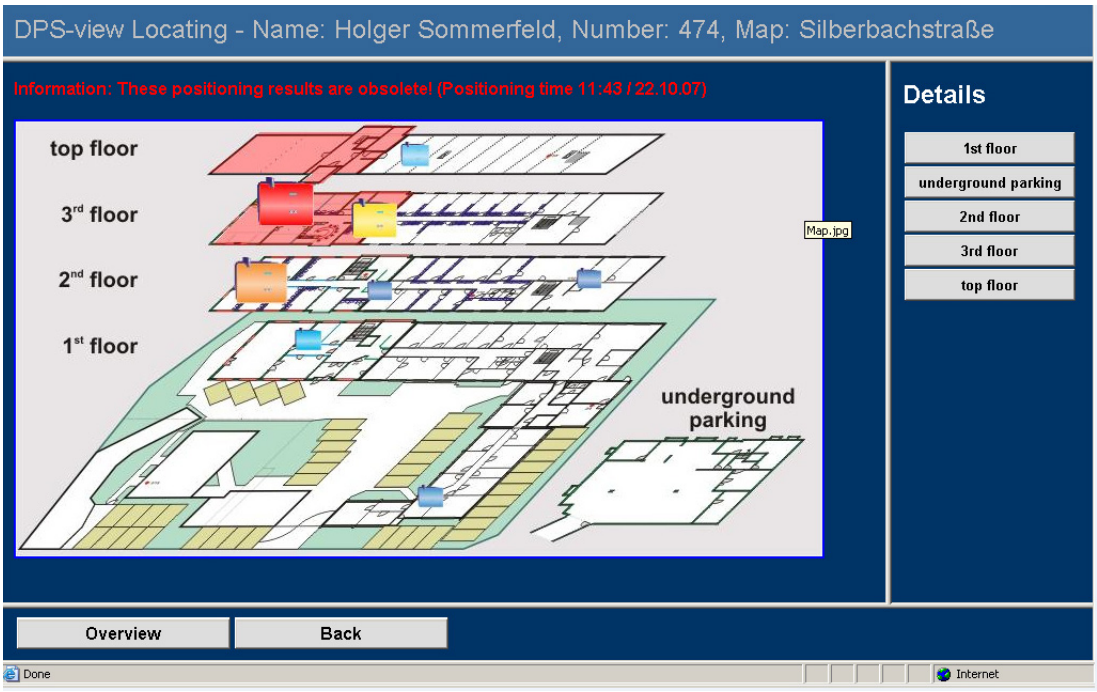



Image 2-3 Information when results are obsolete (not locatable for technical reasons)

## 2.5.2 Information when visual output is not possible

If the application is unable to visualize the positioning results, it sends a corresponding error message.

Device not locatable

The below image shows shows the error message that is sent by DPS-view when a communication device cannot be located for technical reasons. Here, the number of the device that could not be positioned is shown in brackets.

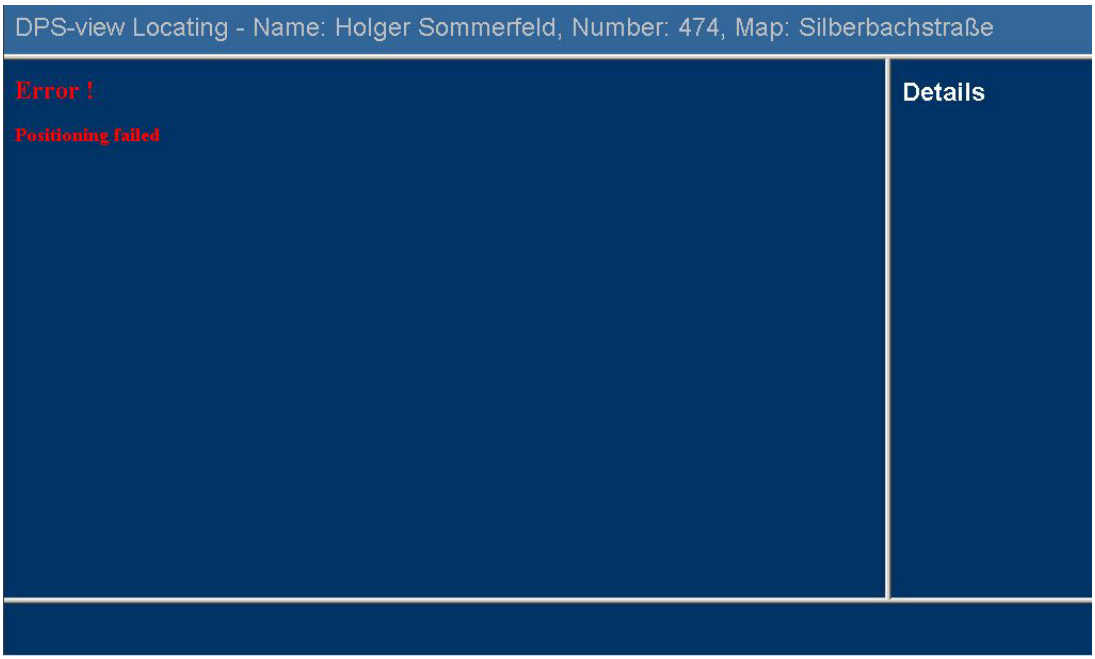



Image 2-4 Error message when device cannot be located (positioning error)

# 3 Install and Uninstall DPS-view and Migrate Data Structures

## Overview

This chapter shows you how to install DPS-view, how to remove it again from your PC and how to migrate data structures of n already existing and installed DPS-view versions. It also covers the example files that are included ex-works in every DPS-view delivery and explains the hierarchical DPS-view data structure that also serve as a basis for your further administration.

## Contents

This chapter covers the following areas:

## 3.1 Install DPS-view

DPS-view can be installed in a single step process.

Note:
You must have administrator rights to install the DPS-view software.

To install the DPS-view software on your computer, the following requirements must be fulfilled:

- Microsoft Windows 10, Windows Server 2016 or Windows Server 2019 is installed on your computer.

During the installation process, the following components are installed on your computer:

- Server application DPS-view
- Administrator tool DPS-view-Edit
- Example files with data structure

Note:
Follow the system instructions that are output to you during the installation. Click Back if you want to return to a previous window, for example to add changes. If you want to abort and not complete the installation, click Cancel.

Caution!
It is strongly recommended that you install DPS-view server application as a service (Server service).

Proceed as follows to install DPS-view on your computer:

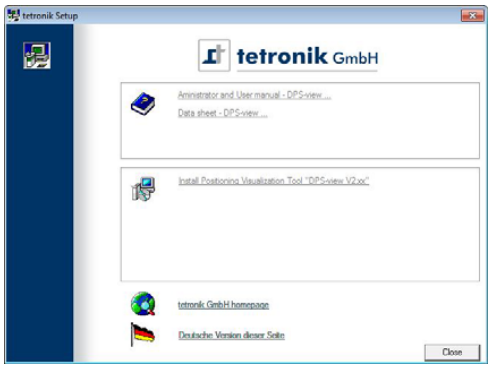
| No. | Task | Window |
|---|---|---|
| 1. | Place the Installation CD in the CD-ROM drive.<br>If the installation software fails to start automatically, please start the CD installation manually from the Windows interface with the command Run menu....<br>To do so, enter the following command in the command bar and click OK:<br>• <CD-Rom drive>:\cdsetup ,<br>e.g.: d:\cdsetup. |  |
| 2. | Now click the menu item:<br>• "Install the Positioning Tool "DPS-view V2.xx"" |  |

Table 3-1 Install DPS-view

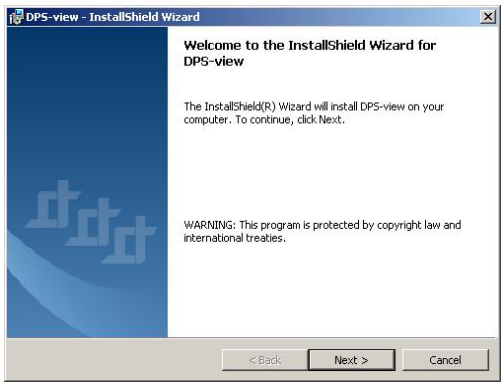
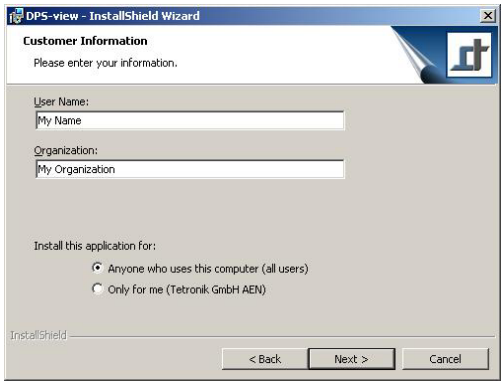
| No. | Task | Window |
|---|---|---|
| 3. | Select the language you want to use and confirm with OK. |  |
| 4. | The installation is now initialized. |  |
| 5. | Click on Next to make additional installation settings. |  |
| 6. | Enter the user name and the name of the organization or company.<br>Specify if you want the software to be installed for all users of this PC, or only for you.<br>Now click Next. |  |

Table 3-1 Install DPS-view

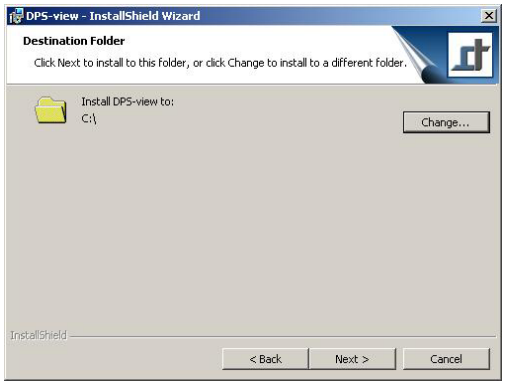
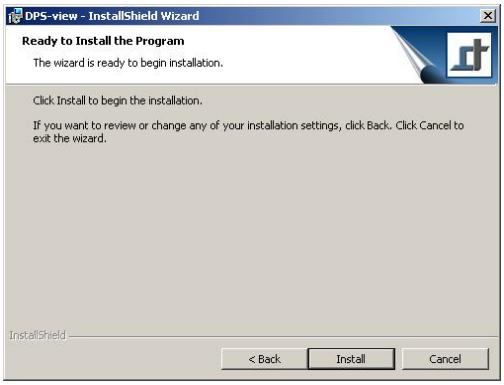
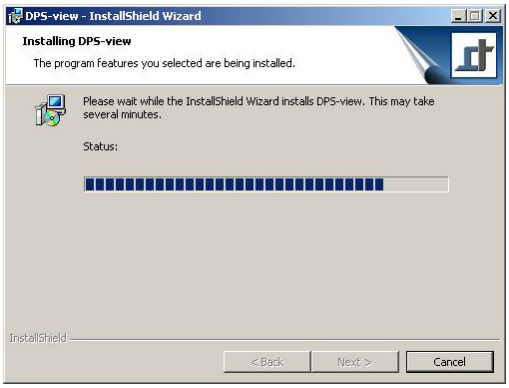
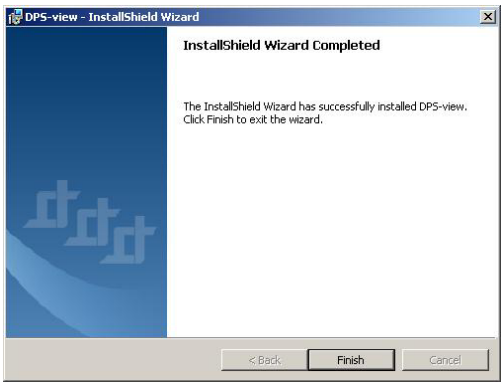
| No. | Task | Window |
|---|---|---|
| 7. | To change the installation path, click the button Change... and enter the new path in the window that pops up next.<br>Click Next. |  |
| 8. | Click Install to install DPS-view on your PC. |  |
| 9. | The software is now installed in the selected directory.<br>The progress of the installation is shown with a blue progress bar. |  |
| 10. | Click Finish to complete the installation.<br>After the installation is completed, the Windows Program Manager, and there the program group "tetronik OScAR-TT" will list the program icon for:<br>• DPS-view, DAKS V9.x. |  |

Table 3-1 Install DPS-view

| No. | Task | Window |
|---|---|---|
| 11. | This will open the window "Settings" of the server application DPS-view ("DPS-view Settings").<br>Now, go to the window area "Server service" and click Install, to install DPS-view as a service.<br>➤ see Section 5.3 "Configuration of the server application via DPS-view-Config" | |

Table 3-1 Install DPS-view

## 3.2 Migrate and upload DPS-view data structures

Already existing DPS-view V1.xx data structures and projects can be migrated to the latest version.

Proceed as follows to migrate data structures and projects:

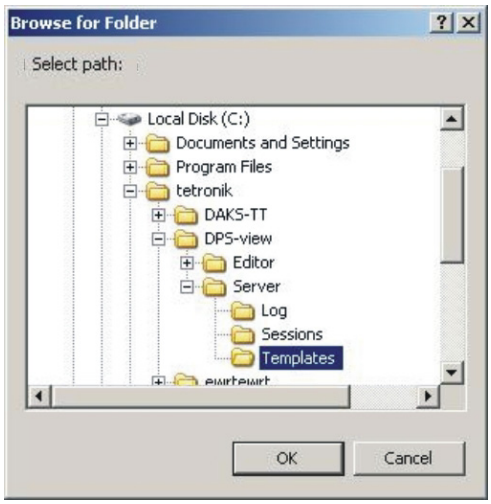
| No. | Task | Window |
|---|---|---|
| 1. | Open the function "Migrate" through the menu:<br>• Project → Migrate...<br>or apply the hotkey:<br>• `CTRL + M` | |
| 2. | Select the path you want to use.<br>The software will automatically migrate and load the data.<br>During this process, the old DPS-view is retained and will not be automatically overwritten.<br>The new structure will only be written to the hard disc when the current project is saved. |  |
| 3. | After you completed these steps, you can further edit the newly migrated and uploaded project in DPS-view. | |

Table 3-2 Migrate already existing projects from DPS-view V1.xx

## 3.3 DPS-view example file and data structure included ex-works

The name of the example file included ex-works on the Installation CD reads:

- Example project: "tetronik"
  The example project "tetronik" is a fully administrated DPS-view data structure with different hierarchy levels. To load the "tetronik" project, go the menu bar, open "File" and select Open....
  ➤ see Section 4.1.1 "The menu bar, toolbar and keyboard shortcuts"

## 3.4 Uninstall DPS-view

Proceed as follows to remove DPS-view again from your computer:

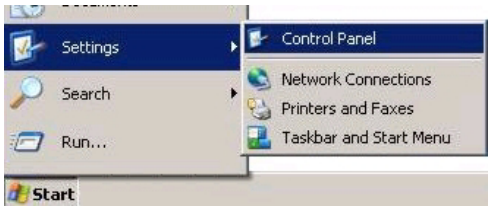
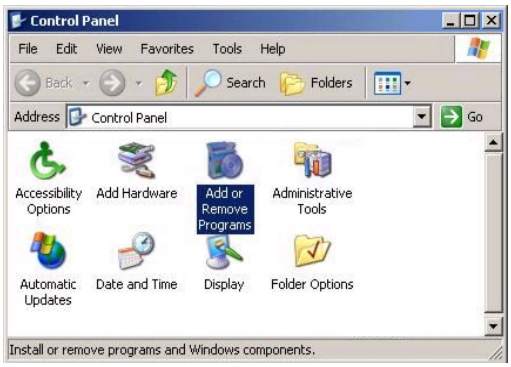
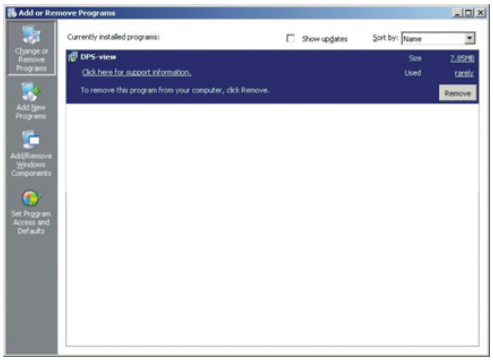
| No. | Task | Window |
|---|---|---|
| 1. | Open the Windows Control Panel. |  |
| 2. | Open Software or Programs and Features. |  |
| 3. | Select the entry DPS-view.<br>Next, click Delete. |  |
| 4. | This will trigger the following security prompt.<br>Confirm with Yes.<br>The uninstall process of DPS-view is now started. |  |
| 5. | The DPS-view software will now be removed.<br>The progress of the uninstall process is indicated in form of a progress bar. |  |

Table 3-3 Uninstall DPS-view

# 4 The Administrator Tool DPS-view-Edit

## Overview

This chapter covers the DPS-view-Edit administrator tool that serves all local settings. It shows you how the visualization of the obtained positioning results is simulated and introduces you to the predefined visualization templates, including their default settings. Also, this chapter shows you how to create and edit your own customized visualization templates for the positioning processes you need to carry out, and work with Levels, Objects and Polygons.

## Contents

The chapter covers the following areas:

## 4.1 DPS-view-Edit - Main View

Note:
In DPS-view-Edit, there can never be more than one data structure or project open at any given moment of time.

The main view of DPS-view-Edit covers these areas:

- Menu bar
  ➤ see Section 4.1.1 "The menu bar, toolbar and keyboard shortcuts"
- Toolbar
  ➤ see Section 4.1.1 "The menu bar, toolbar and keyboard shortcuts"
- Structure view
  Including hierarchical order that outputs the DPS-view data structure in form of a tree view
  ➤ see Section 4.5 "Levels"
- Object list
  Consisting of the Base Stations, WLAN Access Points and Areas of Interest (see )
  ➤ see Section 4.1.2 "The Object list"
- Map view
  Including an image of the current level and the objects placed thereon
  ➤ see Image 4-1

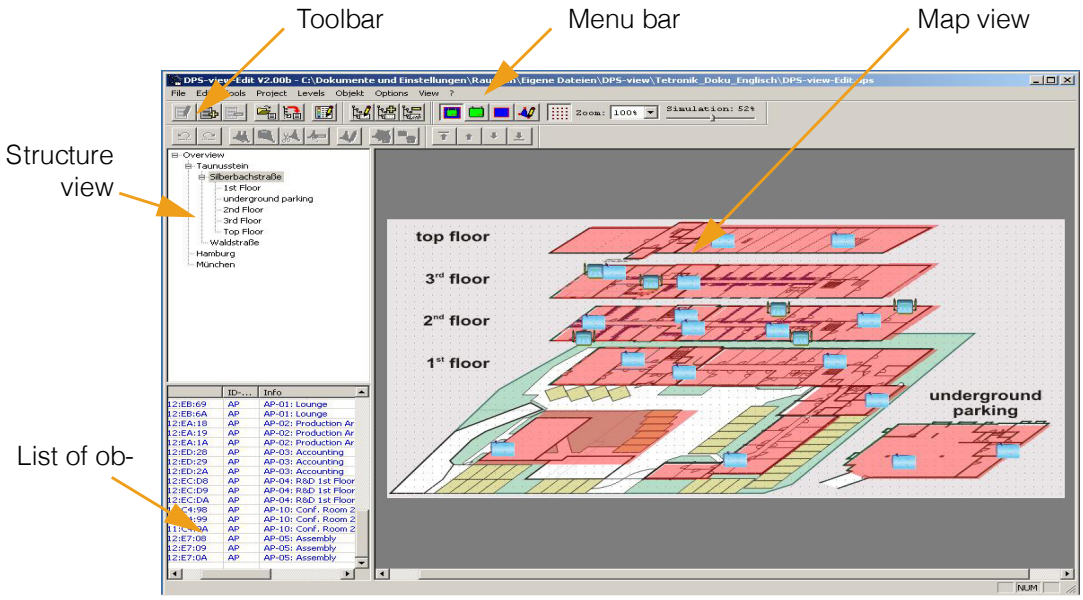



Image 4-1 Main view of DPS-view-Edit (example)

### 4.1.1 The menu bar, toolbar and keyboard shortcuts

This section covers the functions that can be accessed in DPS-view-Edit through the menu bar, the toolbar and via hotkey.

| Menu item | Description |
|---|---|
| Summary of the pull-down menu "File" | |
| New..<br>CTRL+N<br>  | Creates an empty project with default settings. |
| Open..<br>Ctrl+O<br>  | Opens an existing DPS-view data structure. |
| Save<br>Ctrl+S<br>  | Saves a changed data structure. |
| Save as... | Saves the currently open data structure under a different name. |
| Close<br>Alt+F4 | Ends DPS-view-Edit. |
| Summary of the pull-down menu "Edit" | |
| Undo<br>Ctrl+Z | Undoes the last administrative change. |
| Restore<br>Ctrl+Y | Restores and executes the last administrative change that was undone. |
| Submenu "Order" | |
| Bring to top<br>Ctrl+Pos1 | Use this menu item or shortcut to move an object to the foreground.<br>➤ see Section 4.6.6 "Change the order of objects (Z-Level)" |
| Move up<br>Ctrl+Page Up | Use this menu item or shortcut to change the position of an object in the sequence, and move it to the next higher level on the screen.<br>➤ see Section 4.6.6 "Change the order of objects (Z-Level)" |
| Move down<br>Ctrl+Page down | Use this menu item or shortcut to change the position of an object in the sequence, and move it to the next lower level on the screen.<br>➤ see Section 4.6.6 "Change the order of objects (Z-Level)" |
| Move to end<br>Ctrl+End | Use this menu item or shortcut to move an object to the background.<br>➤ see Section 4.6.6 "Change the order of objects (Z-Level)" |

Table 4-1 Menu items, icons and buttons in DPS-view-Edit

| Menu item | Description |
|---|---|
| Summary of the pull-down menu "Tools" | |
| Move image<br>Ctrl+B<br>  | Use this menu item or shortcut to move an image on the map. |
| Submenu "Object" | |
| Move<br>Ctrl+G<br>  | Use this menu item or shortcut to move an object on the map. |
| Undo assignment<br>Ctrl+T<br>  | Use this menu item or shortcut to disengage an object from its assigned graphic image. |
| Delete<br>Delete<br>  | Use this menu item or shortcut to delete an object from the map. |
| Submenu "Polygon" | |
| Create<br>Ctrl+L<br>  | Use this menu item or shortcut to create a new polygon. |
| Edit<br>Ctrl+P<br>  | Use this menu item or shortcut to move individual points of a polygon. |
| Assign object<br>Ctrl+A | Use this menu item or shortcut to assign an object to a polygon. |
| Add point<br>Ctrl+J | Use this menu item or shortcut to add a point to a polygon. |
| Delete point<br>ALT+Delete<br>  | Use this menu item or shortcut to remove a point from a polygon. |
| Copy<br>Ctrl+C<br>  | Use this menu item or shortcut to copy a polygon. |

Table 4-1 Menu items, icons and buttons in DPS-view-Edit

| Menu item | Description |
|---|---|
| Paste<br>`Ctrl+V`<br>  | Use this menu item or shortcut to paste a copied or cut polygon from the clipboard. |
| Cut<br>`Ctrl+X)`<br>  | Use this menu item or shortcut to cut a polygon and copy it to the clipboard |
| Delete<br>`Ctrl+Del`<br>  | Use this menu item or shortcut to remove a polygon and copy it to the clipboard. |
| Summary of the pull-down menu "Project" | |
| Migrate...<br>`Ctrl+M` | Use this menu item or shortcut to migrate already existing data structures from DPS-view V1.xx, and save them in the current DPS-view Version. |
| Visualization templates<br>`Ctrl+Alt+T` | Use this menu item or shortcut to edit the visualization templates of a project. |
| Submenu "Import object list" | |
|  | To import an object list to DPS-view-Edit, you must start by creating and saving a DPS-view import file in the application OScAR Positioning Services of the OScAR-TT Administrator-Tool ("Create DPS-view import files..."), i.e. a `.txt` text file (name and storage place freely selectable).<br>➤ see OScAR-Pro User Manual |
| From file...<br>`Ctrl+I`<br>  | Opens a window to import objects from a transfer file previously created in OScAR Positioning Services in the OScAR-TT Administrator-Tool in form of a `.txt` text file and saved. |
| From project...<br>`Ctrl+R`<br>  | Opens a window to import objects of a project which already exists in DPS-view-Edit, and that were previously and successfully saved in form of a `.dps` file and saved (name and storage place freely selectable). |
| Summary of the pull-down menu "Levels": | |
| New<br>`Ctrl+Shift+N`<br>  | Use this menu item or shortcut to add a new level. |

Table 4-1 Menu items, icons and buttons in DPS-view-Edit

| Menu item | Description |
|---|---|
| Edit<br>Ctrl+Shift+E<br>  | Use this menu item or shortcut to edit the attributes of a level. |
| Copy<br>Ctrl+Shift+C | Use this menu item or shortcut to copy a level with all its attributes and settings. |
| Paste<br>Ctrl+Shift+V | Use this menu item or shortcut to paste a copied or cut level at the wanted position in the tree. |
| Cut<br>Ctrl+Shift+X | Use this menu item or shortcut to copy a level to the clipboard. |
| Delete<br>Ctrl+Shift+Delete<br>  | Use this menu item or shortcut to remove a level from the structure tree. |
| Pull-down menu "Object" | |
| New<br>Ctrl+F<br>  | Use this menu item or shortcut to add a new object to the object list manually. |
| Edit<br>Ctrl+D<br>  | Use this menu item or shortcut to edit the attributes of an object. |
| Delete<br>Ctrl+H<br>  | Use this menu item or shortcut to remove an object from the object list. |
| Submenu "Sort" | |
| ID<br>Ctrl+1 | Use this menu item or shortcut to sort the object list by ID. |
| Type<br>Ctrl+2 | Use this menu item or shortcut to sort the object list by object type. |
| Info<br>Ctrl+3 | Use this menu item or shortcut to sort the object list by object info. |
| Status<br>Ctrl+4 | Use this menu item or shortcut to sort the object list by object status. |

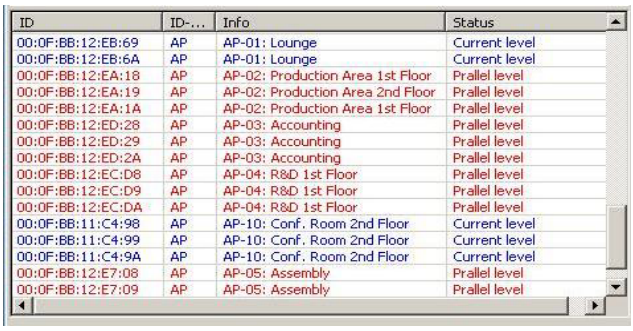
Table 4-1 Menu items, icons and buttons in DPS-view-Edit

| Menu item | Description |
|---|---|
| Summary of the pull-down menu "Options" | |
| Parameters... | Use this menu item to edit the parameters and settings of DPS-view. |
| Predefined visualization templates... | Edit predefined templates for the visualization. |
| Grid  | Use this function to locks objects or polygons to the grid. |
| Submenu "Language" | |
| German | Switches the language of the DPS-view-Edit user interface to German. |
| English | Switches the language of the DPS-view-Edit user interface to English. |
| Summary of the pull-down menu "View" | |
| Status bar | Shows and hides the status bar. |
| Submenu "Symbol bar" | |
| File | Click this item to activate the icons for the toolbar "File". |
| Objects | Click this item to activate the icons for the toolbar "Objects". |
| Level | Click this item to activate the icons for the toolbar "Level". |
| Tools | Click this item to activate the icons for the toolbar "Tools". |
| Edit | Click this item to activate the icons for the toolbar "Edit". |
| Arrange | Click this item to activate the icons for the toolbar "Arrange". |
| Summary of the pull-down menu "?" | |
| About DPS-view-Edit ...<br>F1  | Opens the window with the version number and the copyright information. |

Table 4-1 Menu items, icons and buttons in DPS-view-Edit

## 4.1.2 The Object list

The Object list itemizes all Base Stations, WLAN Access Points and Areas of Interest:



| ID | ID-... | Info | Status |
|---|---|---|---|
| 00:0F:BB:12:EB:69 | AP | AP-01: Lounge | Current level |
| 00:0F:BB:12:EB:6A | AP | AP-01: Lounge | Current level |
| 00:0F:BB:12:EA:18 | AP | AP-02: Production Area 1st Floor | Prallel level |
| 00:0F:BB:12:EA:19 | AP | AP-02: Production Area 2nd Floor | Prallel level |
| 00:0F:BB:12:EA:1A | AP | AP-02: Production Area 1st Floor | Prallel level |
| 00:0F:BB:12:ED:28 | AP | AP-03: Accounting | Prallel level |
| 00:0F:BB:12:ED:29 | AP | AP-03: Accounting | Prallel level |
| 00:0F:BB:12:ED:2A | AP | AP-03: Accounting | Prallel level |
| 00:0F:BB:12:EC:D8 | AP | AP-04: R&D 1st Floor | Prallel level |
| 00:0F:BB:12:EC:D9 | AP | AP-04: R&D 1st Floor | Prallel level |
| 00:0F:BB:12:EC:DA | AP | AP-04: R&D 1st Floor | Prallel level |
| 00:0F:BB:11:C4:98 | AP | AP-10: Conf. Room 2nd Floor | Current level |
| 00:0F:BB:11:C4:99 | AP | AP-10: Conf. Room 2nd Floor | Current level |
| 00:0F:BB:11:C4:9A | AP | AP-10: Conf. Room 2nd Floor | Current level |
| 00:0F:BB:12:E7:08 | AP | AP-05: Assembly | Prallel level |
| 00:0F:BB:12:E7:09 | AP | AP-05: Assembly | Prallel level |

Image 4-2 List of objects - ID-Types

### Sort the List of objects

You can sort the List of objects in the following ways:

- Click the head of the column
- In the menu, click:

| | | |
|---|---|---|
| Object→ | Sort→ | ID |
| Object→ | Sort→ | ID-Type |
| Object→ | Sort→ | Info |
| Object→ | Sort→ | Status |

The entries in the List of objects have the following columns:

| Entry | Description |
|---|---|
| ID | The identifier is the identification number of the object:<br>• for a DECT Base Station: DECT-ID + SLC no. + Port no.,<br>• for a WLAN Access Point: the MAC address<br>[max. 32 characters] |
| ID-Type | The ID-Type specifies the object type:<br>• BS = Base Station<br>• AP = WLAN Access Point<br>• AOI = Area of Interest<br>• SITE = Site<br>[max. 4 characters] |
| Info | The info text described the object, e.g. "2nd floor right".<br>[max. 64 characters] |

Table 4-2 Columns of the Object list

| Entry | Description |
|---|---|
| Status | • Can be placed<br>This object can be placed in the current level.<br>• Parallel level<br>This indicates that the object has already been placed on a parallel level and as a result, you cannot place it again. When you click an object of this type, the link will take you directly to the first sublevel in the tree structure where this object appears, i.e. you can reach the parallel level by making a click on a unique object in the present level, or by making a click in the navigation bar.<br>• Can be placed<br>This indicates that the object cannot be placed in the current level because it has not yet been placed in the next higher level.<br>• Current level<br>This indicates that the object is already placed in the current level and can therefore not be placed in this level a second time. |

Table 4-2 Columns of the Object list

## 4.2 Local parameters

With the exception of the predefined visualization templates, the local settings of DPS-view-Edit are saved in the Registry.

In contrast, the predefined visualization templates are saved in a separate directory.

```
"<DPS-view path> + Editor + Templates"
```

The function Edit parameters is opened as follows:

- via the menu bar: Options→ Parameters...

### 4.2.1 Edit local parameters

The local parameters of DPS-view-Edit are configured in the following window:

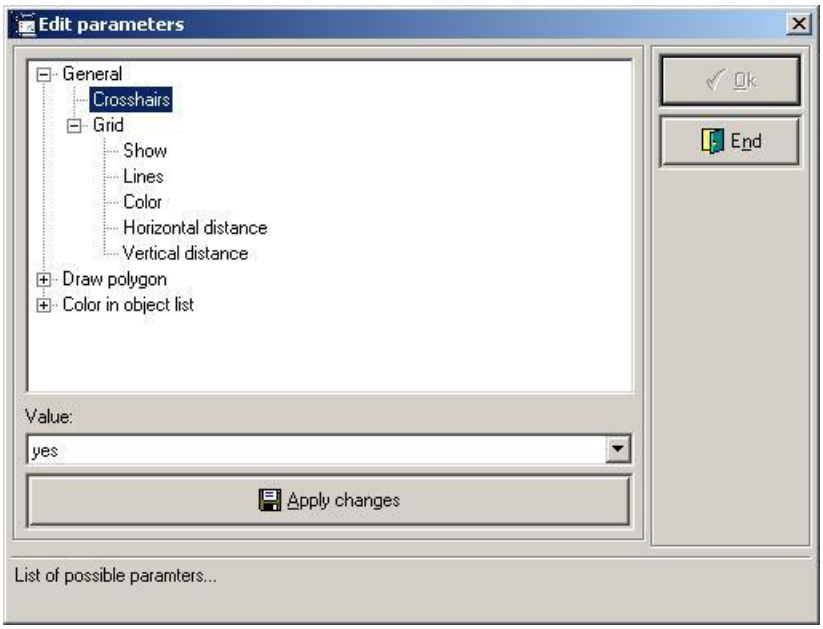



Image 4-3 DPS-view-Edit - Local parameters

Description of the fields and parameters in the user window "Edit parameters":

| Entry | Description |
|---|---|
| General | |
| Crosshairs | Shows the crosshairs when you are drawing a polygon.<br>[yes], no |
| General - Grid | |
| Show | Shows the grid when editing a map.<br>[no], yes |
| Lines | Shows the grid in form of lines.<br>[no], yes |
| Color | Defines the color of the grid points or grid lines.<br>000000 .. FFFFFF, [909090] |
| Horizontal distance | Defines the horizontal space between grid points, in pixels.<br>1 .. 100 Pixel, [10 Pixel] |
| Vertical distance | Defines the vertical space between grid points, in pixels.<br>1 .. 100 Pixel, [10 Pixel] |

Table 4-3 DPS-view-Edit - Edit local parameters

| Entry | Description |
|---|---|
| Draw polygons | |
| Color | Defines the color that the polygon has during the drawing process.<br>000000 .. FFFFFF, [0000FF] |
| Transparency | Defines the transparency that the polygon has during the drawing process.<br>0% .. 100%, [0%] |
| Frame width | Defines the width that the polygon's frame has during the drawing process, in pixels.<br>1 .. 5 Pixel, [1 Pixel] |
| Frame color | Defines the color that the polygon's frame has during the drawing process.<br>000000 .. FFFFFF, [000000] |
| Sensitivity to new points | Defines the sensitivity of the cursor when you add new points to a polygon, in pixels.<br>1 .. 5 Pixel, [2 Pixel] |
| Draw polygons - Points | |
| Size | Defines the size that the points of a polygon have during the drawing process, in pixels.<br>1 .. 20 Pixel, [5 Pixel] |
| Color | Defines the color that the points of a polygon have during the drawing process, in pixels.<br>000000 .. FFFFFF, [900000] |
| Frame width | Defines the frame width that the points of a polygon have during the drawing process, in pixels.<br>1 .. 5 Pixel, [1 Pixel] |
| Frame color | Defines the frame color that the points of a polygon have during the drawing process.<br>000000 .. FFFFFF, [000000] |
| Draw polygons - Selected points | |
| Size | Defines the size that the selected points of a polygon have during the drawing process, in pixels.<br>1 .. 20 Pixel, [6 Pixel] |
| Color | Defines the color that the selected points of a polygon have during the drawing process, in pixels.<br>000000 .. FFFFFF, [900000] |
| Frame width | Defines the frame width that the selected points of a polygon have during the drawing process, in pixels.<br>1 .. 5 Pixel, [1 Pixel] |
| Frame color | Defines the frame color that the selected points of a polygon have during the drawing process.<br>000000 .. FFFFFF, [00FF00] |
| Color in object list | |
| Object can be placed | Defines the color of the text of an object that can be placed.<br>000000 .. FFFFFF, [000000] |
| Object in current level | Defines the color of the text of an object that is placed in the current level.<br>000000 .. FFFFFF, [0000FF] |
| Object in parallel level | Defines the color of the text of an object that is placed on the parallel level.<br>000000 .. FFFFFF, [FF0000] |

Table 4-3 DPS-view-Edit - Edit local parameters

| Entry | Description |
|---|---|
| Object under the mouse pointer | Defines the color of the text of an object above which you are currently moving your mouse cursor.<br>000000 .. FFFFFF, [00FF00] |
| Object cannot be placed | Defines the color of the text of an object that CANNOT be placed in the current level.<br>000000 .. FFFFFF, [505050] |

Table 4-3 DPS-view-Edit - Edit local parameters

### 4.2.2 Predefined visualization templates

The function Predefined visualization templates is opened in the following way:

- via the menu bar: Options→ Predefined visualization templates...

More information on the predefined visualization templates can be found here:

➤ see Section 4.3 "DPS-view-Edit visualization templates"

### 4.2.3 Select a language

You can change the language of the user interface in the following ways:

- via the menu bar: Options→ Language→ German
- via the menu bar: Options→ Language→ English

Caution!
Changes of the language setting only take effect after the next start of the program.

### 4.2.4 Grid

The function Grid is opened as follows:

- via the menu bar: Options→ Grid
- or via the toolbar: 

Use this function to activate the grid and have the cursor locked to the grid points when you are placing objects or drawing polygons.

You can change the width of the grid as follows:

- Options→ Parameters

➤ see Section 4.2 "Local parameters"

### 4.2.5 Zoom

The function Zoom is opened as follows:

- or via the toolbar: 


This function enables you to scale up the map you are currently editing between 50% and 500%.

## 4.2.6 Simulation of the visualization

For the output of Access Points, Base Stations and Areas of Interest, the intensity of the received field strength or the positioning quality is simulated in a value ranging between 0% and 100% (configurable).

During this process, all objects that share the same level are output with the selected simulation size.

The function Simulation is opened as follows:

- or via the toolbar: 


The below image shows several DECT Base Stations and one Area of Interest (is the most probable location) in the way they are output by the system with different simulation values (100% to 0%):

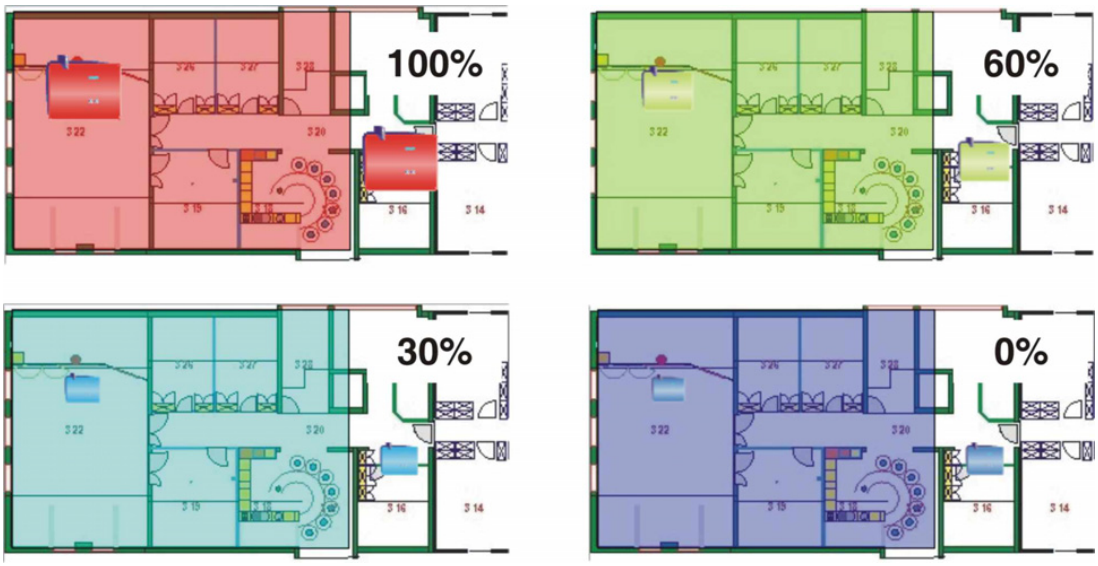


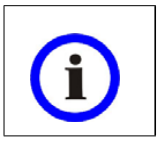

Image 4-4 Simulation of intensity and object quality DECT BS and AOI

## 4.3 DPS-view-Edit visualization templates

Visualization templates are masks that are used to visualize objects. Their describe how the form in which the objects that are received by DPS-view shall be shown. Depending on the type of visualization template that is used, the visual output can vary in terms of the object type, the simulation size and the quality or intensity of the positioning.

The following visualization templates are available:

- Predefined visualization templates
- Project-specific visualization templates



Note:
In the administration of visualization templates, the list of predefined visualization templates always appears first.

### Predefined visualization templates

The administration of predefined visualization templates is made in the local work environment of the Administrator Tool DPS-view-Edit.

➤ see Section 4.2 "Local parameters"

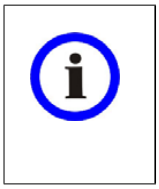
DPS-view-Edit saves these settings on the local hard disc in the directory `"templates"`. It is in this directory that all attributes of the predefined visualization templates are stored.

The name of the subdirectory of a "`Predefined visualization template`" under the "`template`" directory reads:

`DEF<x>_<Name of the "Predefined visualization template">`

For the name of these subdirectories the system uses the following place holders:

- `<x>`
  - This is the serial number that is automatically inserted by DPS-view-Edit
- `<Name of the "Predefined visualization template">`
  - This is the name of the predefined visualization template, with all special characters removed.

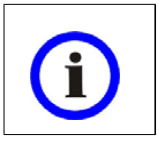


Note:
Predefined visualization templates can also be exchanged among the administrators of DPS-view. To exchange templates, all you need to do is copy the subdirectory of the pertinent predefined visualization template to the wanted "`template`" directory. At the next program start, DPS-view will find and apply the newly added predefined visualization template.

### Project-specific visualization templates

The project-specific visualization templates are stored together with its respective project. You can either create a project-specific visualization template freely or upload an already available predefined visualization template and then edit it further if needed.

➤ see Section 4.3.1 "Predefined visualization templates - Lists"
➤ see Section 4.3.2 "Create and edit a visualization template"



Note:
However, you can also save a project-specific visualization templates as a predefined template, and subsequently make it available for other projects as well.

## 4.3.1 Predefined visualization templates - Lists

### List of the Predefined visualization templates

The list of Predefined visualization templates is opened as follows:

- via the menu bar: Options→ Predefined visualization templates...

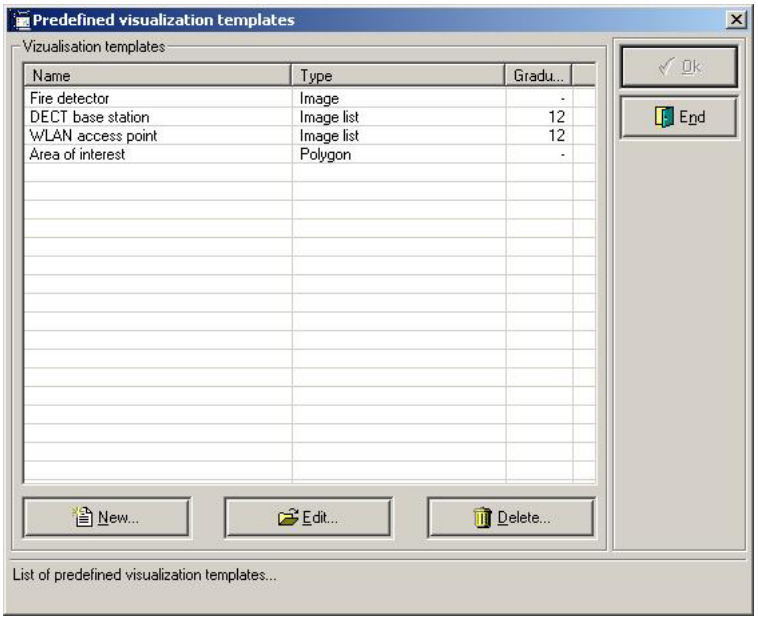



Image 4-5 Options - Predefined visualization templates

### List of Project-specific visualization templates

The list of Project-specific visualization templates is opened as follows:

- via the menu bar: Project→ Visualization templates...

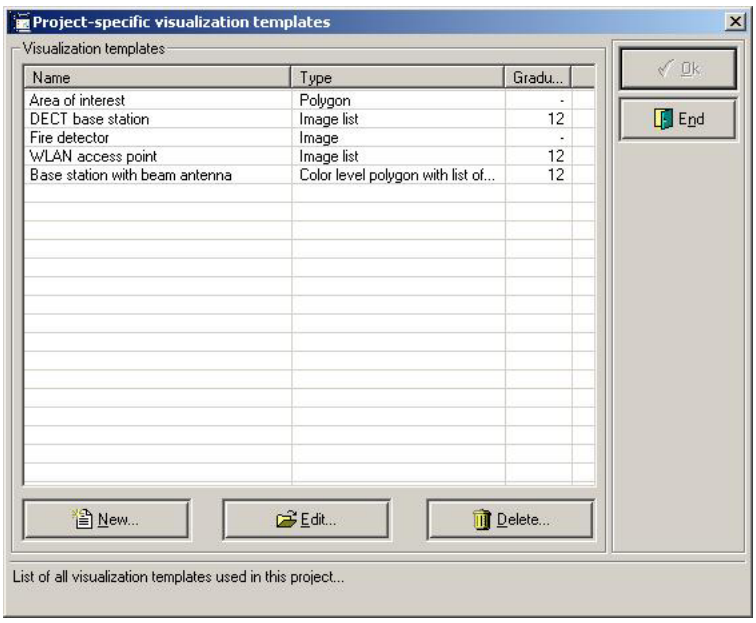



Image 4-6 Window Project-specific visualization templates

#### 4.3.1.1 Predefined visualization templates: Fire detector

Note:
The predefined visualization template that is automatically included in the delivery for the graphic output "Fire detector" uses the default settings of the visualization type "Image".

➤ see Section 4.4.1 "Default settings for "Image""

| Scaling | Image |
|---|---|
| 100 % |  |

Table 4-4 Ex-works visualization templates - Fire detector

#### 4.3.1.2 Predefined visualization templates: Area of Interest (AOI)

Note:
The predefined visualization template that is automatically included in the delivery for the graphic output of an "Area of interest", i.e. of the most probable location, uses the default settings of the visualization type "Polygon".

➤ see Section 4.4.3 "Default settings for a 'Polygon'"

| Filling color | Frame color | Transparency | Frame width | View |
|---|---|---|---|---|
| FF0000 | 000000 | 60% | 1 pixel | |

Table 4-5 Ex-works predefined visualization templates - Area of Interest (AOI)

### 4.3.1.3 Predefined visualization template: DECT Base Station

Note:
The predefined visualization template included in the delivery for the graphic output of a 'DECT base station' uses the default settings of the visualization type 'Image list'.
➤ see Section 4.4.2 "Default settings for "Image list""

| Graduation | from | to | Scaling | Image |
|---|---|---|---|---|
| Visited | - | - | 100% |  |
| Not received | - | - | 44% |  |
| 1. Graduation | 95% | 100% | 100% |  |
| 2. Graduation | 90% | 95% | 95% |  |
| 3. Graduation | 85% | 95% | 85% |  |
| 4. Graduation | 80% | 85% | 80% |  |
| 5. Graduation | 75% | 80% | 75% |  |
| 6. Graduation | 70% | 75% | 70% |  |
| 7. Graduation | 65% | 70% | 65% |  |
| 8. Graduation | 60% | 65% | 60% |  |
| 9. Graduation | 50% | 60% | 50% |  |
| 10. Graduation | 35% | 50% | 48% |  |

Table 4-6 Ex-works predefined visualization templates - DECT Base Station

| Graduation | from | to | Scaling | Image |
|---|---|---|---|---|
| 11. Graduation | 20% | 35% | 46% |  |
| 12. Graduation | 0% | 20% | 44% |  |

Table 4-6 Ex-works predefined visualization templates - DECT Base Station

#### 4.3.1.4 Predefined visualization template: WLAN Access Points.

Note:
The predefined visualization template included in the delivery for the graphic output of a 'WLAN Access Point' uses the default settings of the visualization type 'Image list', with the images for Base Stations replaced by those for Access Points

➤ see Section 4.4.2 "Default settings for "Image list""

| Graduation | from | to | Scaling | Image |
|---|---|---|---|---|
| Visited | - | - | 100% |   |
| Not received | - | - | 44% |  |
| 1. Graduation | 95% | 100% | 100% |  |
| 2. Graduation | 90% | 95% | 95% |  |
| 3. Graduation | 85% | 95% | 85% |  |
| 4. Graduation | 80% | 85% | 80% |  |
| 5. Graduation | 75% | 80% | 75% |  |
| 6. Graduation | 70% | 75% | 70% |  |

Table 4-7 Ex-works predefined visualization templates - WLAN Access Points

| Graduation | from | to | Scaling | Image |
|---|---|---|---|---|
| 7. Graduation | 65% | 70% | 65% |  |
| 8. Graduation | 60% | 65% | 60% |  |
| 9. Graduation | 50% | 60% | 50% |  |
| 10. Graduation | 35% | 50% | 48% |  |
| 11. Graduation | 20% | 35% | 46% |  |
| 12. Graduation | 0% | 20% | 44% |  |

Table 4-7 Ex-works predefined visualization templates - WLAN Access Points

Summary of the fields in the user windows "Predefined visualization templates" and "Project-specific visualization templates"

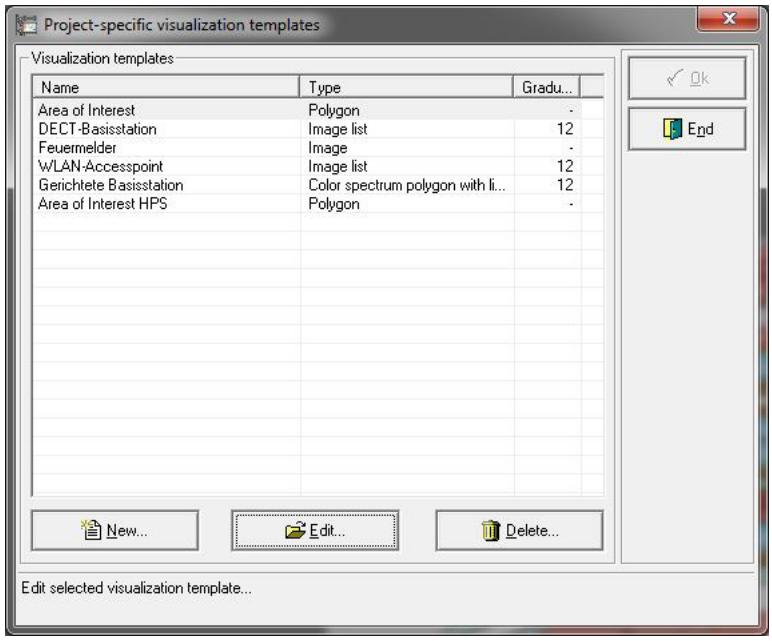



Image 4-7 Window Project-specific visualization templates

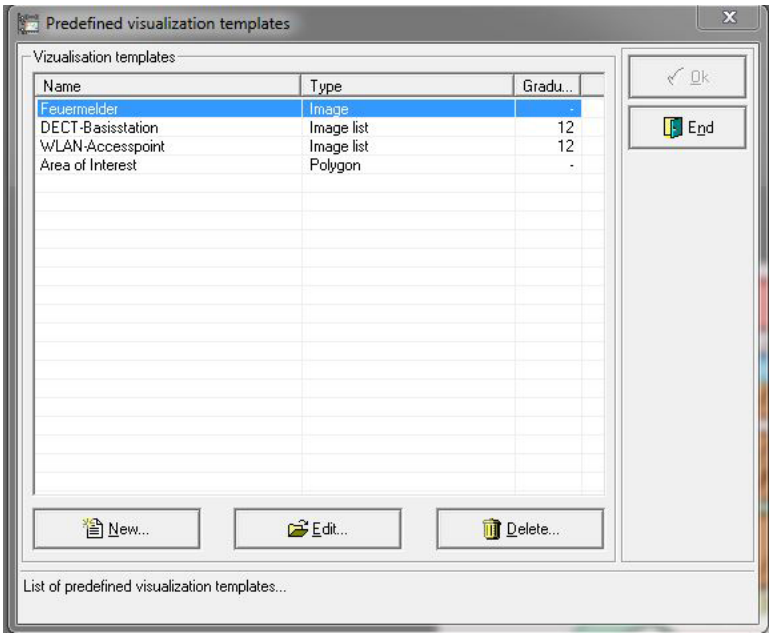



Image 4-8 Window Predefined visualization templates

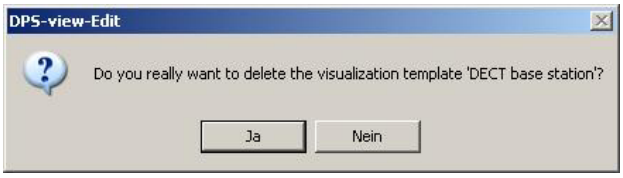
| Menu bar/ button | Description |
|---|---|
| List "Visualization templates" | Columns:<br>• Name<br>• Type<br>• Graduation |
| New | Use this button to create a new and empty predefined visualization template. |
| Edit | Use this button to edit an already existing predefined visualization template. |
| Delete | Use this button to delete an existing predefined visualization template.<br>When you click this button, the system will ask you to confirm the following security prompt:<br>  |

Table 4-8 Window: Predefined visualization templates/Project-specific visualization templates

## 4.3.2 Create and edit a visualization template

### Visualization template - Properties and attributes

The general attributes are the properties that are shared by all visualization template types. All other attributes and properties depend on the visualization type you select. Here, new or edited visualization templates can be saved locally in form of a new predefined visualization templates.


Image 4-9 Create/edit visualization template - General attributes

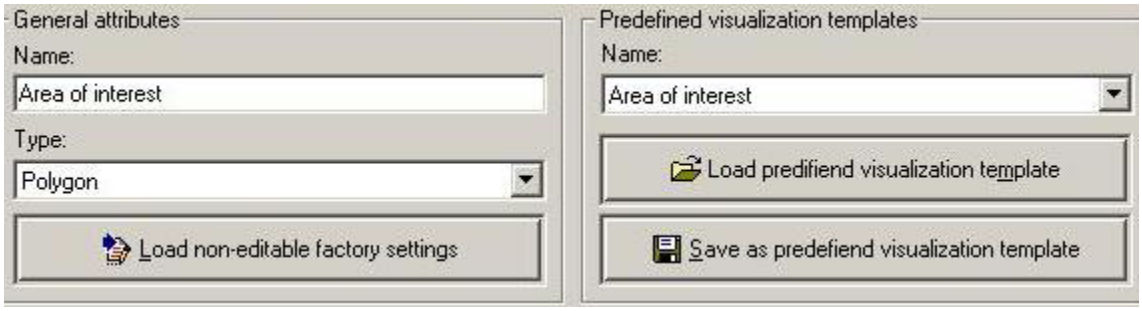



Image 4-10 Create/edit a visualization template - Purs. to visualization type

Summary of the fields in the user windows "Edit predefined visualization template" and "Add new predefined visualization template"

| Menu bar/ button | Description |
|---|---|
| General attributes (same for predefined visualization templates and project-specific visualization templates) | |
| Name | The name of the predefined visualization template.<br>[0 .. 32 characters; ""] |
| Type | Use this drop-down combo to select the type of the visualization template. The following templates are available:<br>• Image<br>• Image list<br>• Color spectrum polygon<br>• Color spectrum polygon with image<br>• Color spectrum polygon with list of images<br>• Polygon<br>• Polygon with image<br>• Polygon with list of images<br>For further details on the different settings and options available, please see below. |

Table 4-9 Window visualization template - Create/edit

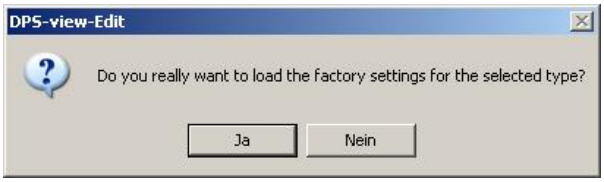
| Menu bar/ button | Description |
|---|---|
| Load default settings | Click here to upload the default settings for the selected visualization type.<br>When you click this button, the system will ask you to confirm the following security prompt:<br>  <br><br>Further details on the default settings for the individual visualization types can be found here:<br>➤ see Section 4.4 "Default settings" |
| Predefined visualization templates (only under Project-specific visualization templates) | |
| Visualization templates | Drop-down combo with all predefined visualization templates available |
| Load predefined visualization template | Use this button to upload the predefined visualization template you selected in the combo-box, and copy it to the project as a project-specific visualization template. |
| Save as predefined visualization template | Use this button to save locally the current project-specific visualization template as a predefined one. |
| Type | Use this drop-down combo to select the type of the visualization template. The following templates are available:<br>• Image<br>• Image list<br>• Color spectrum polygon<br>• Color spectrum polygon with image<br>• Color spectrum polygon with list of images<br>• Polygon<br>• Polygon with image<br>• Polygon with list of images<br>For further details on the individual attributes and settings, including the options they offer, please see below. |

Table 4-9 Window visualization template - Create/edit

### 4.3.2.1 Visualization type " Image"

The Image attributes listed here refer to the visualization type "Image" . A typical example for a visualization templates of the type "Image" is the fire detector that is output by DPS-view-Edit at a predefined location when a fire breaks out. Here, the only attribute that can be edited is the image's scaling factor.

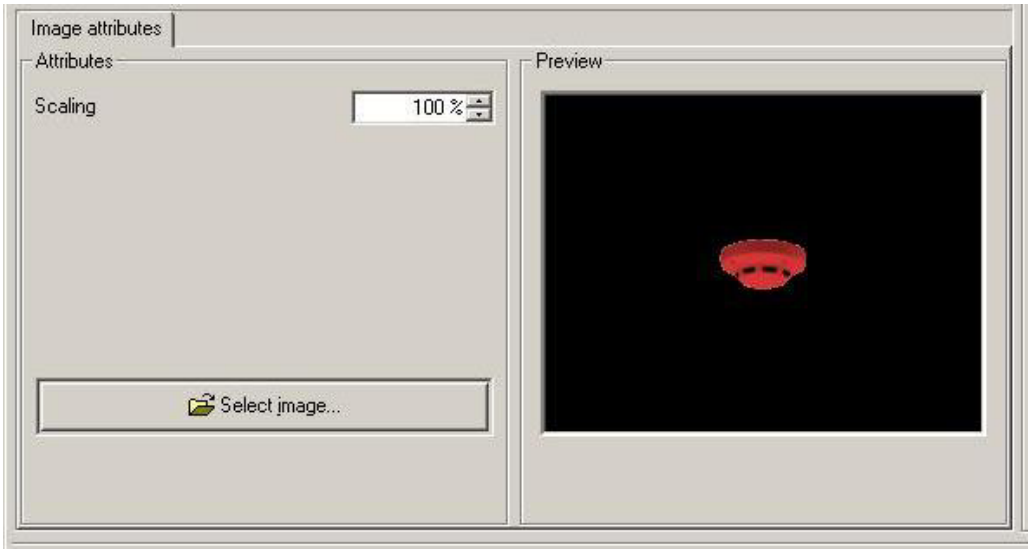



Image 4-11 Edit visualization template - Visualization type "Image"

Summary of the fields in the user window area " Image attributes" for the visualization type " " Image" :

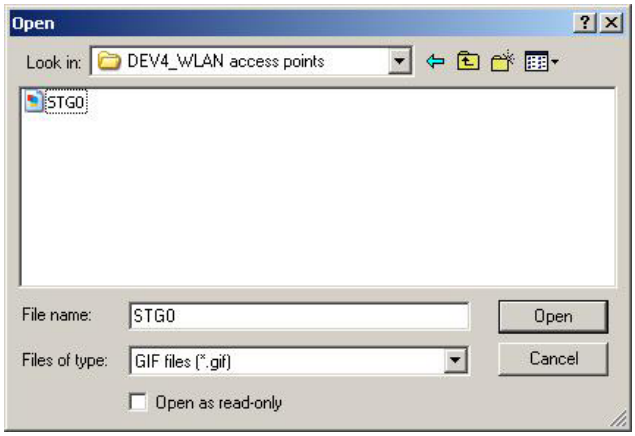
| Menu bar/ button | Description |
|---|---|
| Scaling | Use this field to select the scaling factor for the image based on its real size, in per cent.<br>0 .. 1000%, [100%] |
| Select Image... | Click this button to open the following dialog and select the Image you want to use. Bear in mind that only images of the type `.gif` are accepted here.<br>No other formats can be output by the system.<br>  |
| Preview | The window area Preview shows you how the image will appear in DPS-view, in keeping with the configured Scaling factor. |



Table 4-10 Description of menus in window: Image attributes for an image

#### 4.3.2.2 Visualization type "Image list".

The Image attributes listed here refer to the visualization type "Image list". A typical example for the visualization templates of the type "Image list" is the DECT Base Station or a WLAN Access Point, the color and size of which appear in keeping with their received field strength graduation for positioning processes with no interpretation of the obtained results.

The list of field strength graduations contains the following entries:

- Visited

  Every object that the system classifies as "Visited" is shown with a specific icon and its defined graduation parameters. For example, a mobile handset in a cellular network (DECT/WLAN) may be communicating via several Base Stations but its actual datasets are only transmitted via one specific Base Station, the so-called "Visited Base Station" or "Visited station".

  For the field strength graduation "Visited", the only attribute that can be edited is image's the scaling factor.
- Not received

  All objects that are characterized as "Not received" are represented with a specific icon and that icon's graduation parameters. This may prove helpful when you need to analyze obtained positioning results as it shows you where all objects that the system could not receive are physically located.
- 1. to 12. Graduation

  In the graphic output of an object that is received with a specific field strength, the system will select the corresponding symbol from the field strength graduation list, with set margins of values between 0% and 100%.

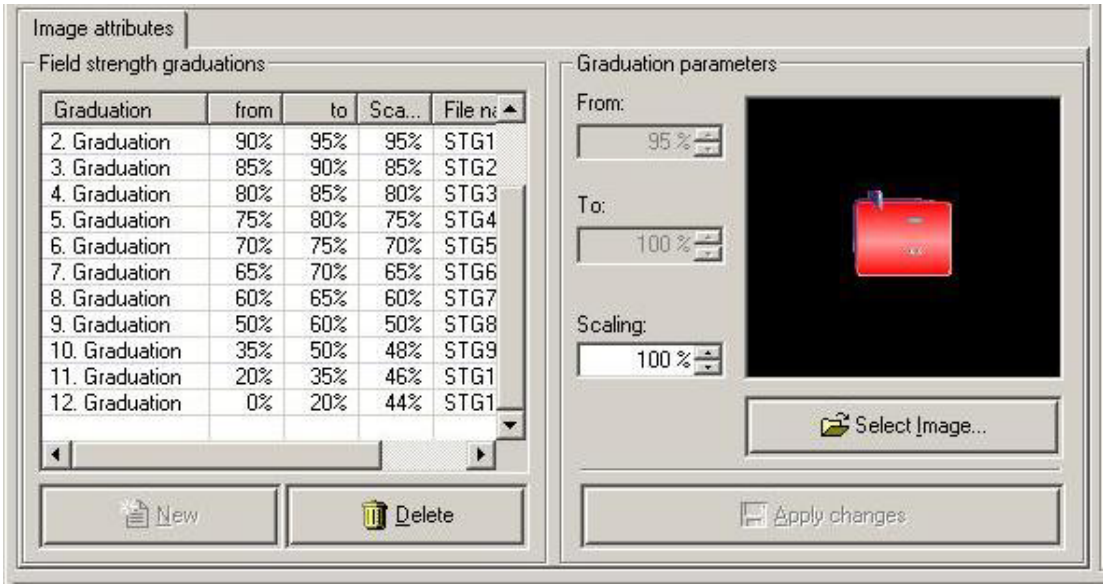



Image 4-12 Edit visualization templates - Visualization type "Image list"

Summary of the fields in the user window area " Image attributes" for the visualization type " Image list" :

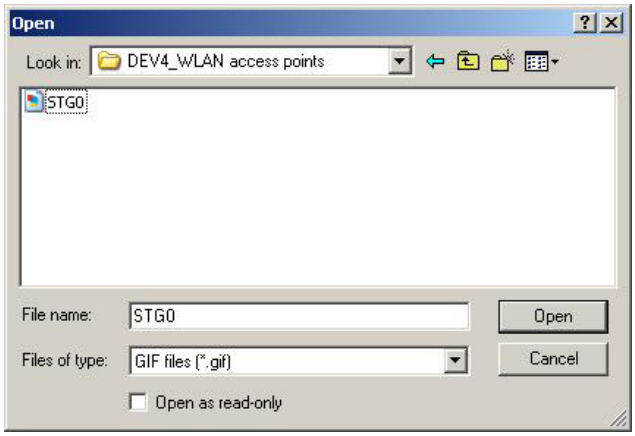
| Menu bar/ button | Description |
|---|---|
| Field strength graduations | |
| New | Use this button to add a new graduation to the list. The list can hold a maximum of 12 different graduations. |
| Delete | Use this button to delete a field strength graduation from the list. |
| Graduation | Columns:<br>• Graduation<br>• from<br>• to<br>• Scaling<br>• File name: This is the name of the file from which the image was imported |
| Graduation parameters | |
| From | Shows the the margin of values in percent for the marked graduation interval ["From:", "To:"].<br>0 .. 100% , [100%] |
| To | |
| Scaling | Use this field to select the scaling factor for the image based on its real size, in per cent.<br>0 .. 1000%, [100%] |
| Select Image... | Click this button to open the following dialog and select the Image you want to use. Bear in mind that only images of the type `.gif` are accepted here.<br>No other formats can be output by the system.<br>  |
| Preview | The window area Preview shows you how the image will appear in DPS-view, in keeping with the configured Scaling factor. |
| Apply changes | Use this button to save your changes of the graduation parameters in the list "Field strength graduations" on the left. |

Table 4-11 Description of menus in window: Image attributes for Image list

#### 4.3.2.3 Visualization type "Polygon"

The polygon attributes listed here refer to the visualization type "Polygon". A typical example of a visualization template of the type "Polygon" is an "Area of Interest", i.e. the area in which the device is most likely located.

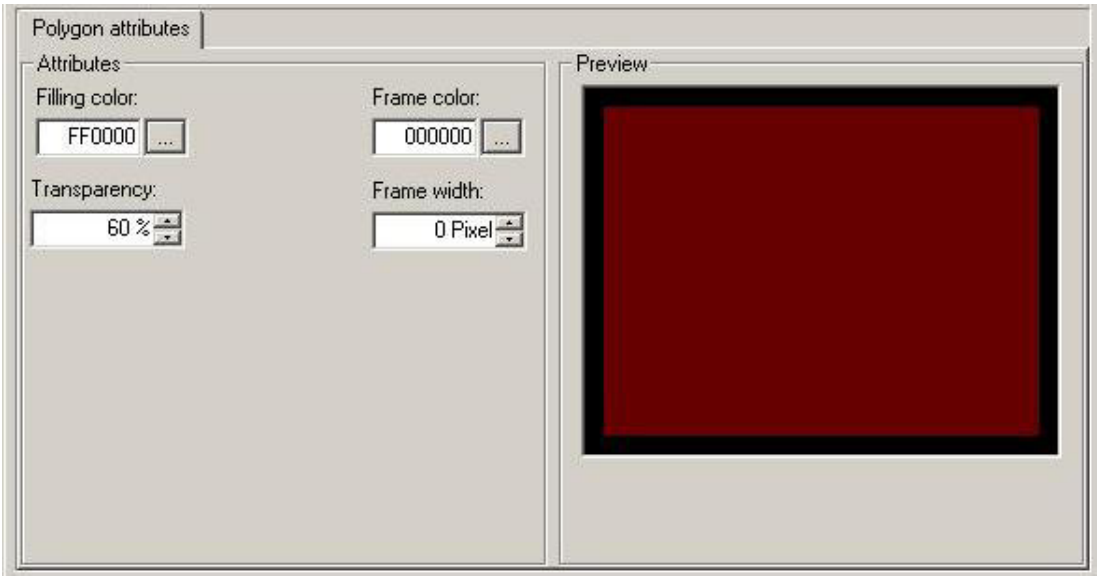



Image 4-13 Edit visualization template - Visualization type "Polygon"

Summary of the fields in the user window area "Polygon attributes" for the visualization type "Polygon":

| Menu bar/ button | Description |
|---|---|
| Filling color | Use this button to open the user window to select the color with which you want the polygon to be filled.<br>000000 .. FFFFFF, [FF0000] |
| Frame color | Use this button to open the user window to select a color for the polygon frame.<br>000000 .. FFFFFF, [000000] |
| Transparency | Use this button to open the user window to select the transparency with which the polygon is output.<br>0 .. 100%, [60%] |
| Frame width | Use this button to open the user window to select the width of the polygon frame.<br>0 .. 100 Pixel, [1 Pixel] |
| Preview | Preview of the graphic output of the polygon with the entered values. |

Table 4-12 Description of menus in window: Image attributes for Polygon

### 4.3.2.4 Visualization type "Color spectrum polygon"

The polygon attributes listed here refer to the visualization type "Color spectrum polygon". A typical example of a "Color spectrum polygon" is the graphic output of an "Area of Interest" (most probably location) with a computed positioning result whose quality matches a set value range which lies within the overall margin of values between 0% and 100%.

Here, the color of the polygon mirrors the quality of the positioning results.

Just like the "Image list" (➤ see Section 4.3.2.2 "Visualization type "Image list"."), the "Color spectrum polygon" also spans the following field strength graduations:

- Visited
  Objects that the system classifies as "Visited" are shown with their specific graduation parameters. The system applies the visualization option "Visited" if it finds itself unable to obtain specific information on the field strength quality during the map query.
- Not received
  An "Area of Interest" (most probable location) that the system characterizes as not received, is shown with the specific graduation parameters. This may prove helpful when you need to analyze obtained positioning results as it shows you where all objects that the system could not receive are physically located.
- 1. to 12. Graduation
  In the visual output of an object that is received with a specific field strength, the system will select the corresponding icon from the list of field strength graduations, with set margins of values between 0% and 100%.

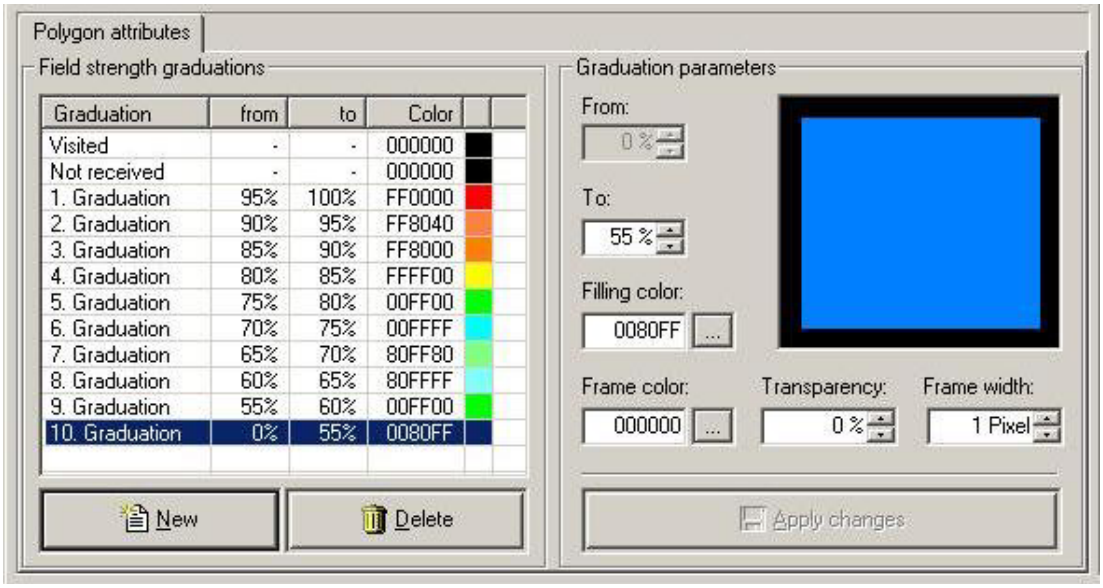



Image 4-14 Visualization templates - Visualization type "Color spectrum polygon"

Summary of the fields in the window area "Polygon attributes" for the visualization type "Color spectrum polygon":

| Menu bar/ button | Description |
|---|---|
| Graduation parameters | |
| From | Shows the margin of values in percent for the marked graduation interval ["From", "To"].<br>0 .. 100% |
| To | |
| Filling color | Use this button to open the user window to select the color with which you want the polygon to be filled.<br>000000 .. FFFFFF |

Table 4-13 Description of menus in window: Image attributes for Color spectrum polygon

| Menu bar/ button | Description |
|---|---|
| Frame color | Use this button to open the user window to select a color for the polygon frame.<br>000000 .. FFFFFF [000000] |
| Transparency | Use this button to open the user window to select the transparency with which the polygon is output.<br>0 .. 100%; [60%] |
| Frame width | Use this button to open the user window to select the width of the polygon frame.<br>0 .. 100 Pixel, [1 Pixel] |
| Preview | Preview of the graphic output of the polygon, with the configured values. |
| Apply changes | Use this button to save your changes of the graduation parameters in the list "Field strength graduations" on the left. |
| Field strength graduations | |
| New | Use this button to add a new graduation to the list. The list can hold a maximum of 12 different graduations. |
| Delete | Use this button to delete a field strength graduation from the list. |
| Graduation | Columns:<br>• Graduation<br>• from<br>• to<br>• Color |

Table 4-13 Description of menus in window: Image attributes for Color spectrum polygon

### 4.3.2.5 Edit visualization template "Polygon with image"

The visualization template of this type consists of the following components:

- Image
  ➤ see Section 4.3.2.1 "Visualization type "Image""
- Polygon
  ➤ see Section 4.3.2.3 "Visualization type "Polygon""

A typical example of a visualization template of the type "Polygon with image" is fire detector that stretches a specific area, i.e. an Area of Interest (i.e. the area in which the device is most likely located).

Note:
When a fire alarm is raised, the system will here show both the image for the fire detector image plus the polygon itself.

#### 4.3.2.6 Visualization template "Polygon with list of images"

The visualization template of this type consists of the following components:

- Image list
  ➤ see Section 4.3.2.2 "Visualization type "Image list"."
- Polygon
  ➤ see Section 4.3.2.3 "Visualization type "Polygon""

A typical example for a visualization template of the type "Polygon with a image list" is a Base Station, the coverage area of which shall be shown as an Area of Interest (i.e. as the most probable location.

Note:
The color with which this Base Station is rendered on the map changes depending on the intensity of the field strength with which the Base Station is received, whereas the Area of Interest (i.e. the most probable location) is always shown with the same color.

#### 4.3.2.7 Visualization template "Color spectrum polygon with image"

The visualization template of this type consists of the following components:

- Image
  ➤ see Section 4.3.2.1 "Visualization type "Image""
- Color spectrum polygon
  ➤ see Section 4.3.2.4 "Visualization type "Color spectrum polygon""

A typical example of a visualization template of the type "Color spectrum polygon with image" is an Area of Interest (i.e. the most probably location), the quality of which shall be output by the system in form of a positioning result. Here, to heighten the visibility, the graphic output shall be supported by an additional icon, e.g. a Base Station.

#### 4.3.2.8 Visualization template "Color spectrum polygon with list of images"

The visualization template of this type consists of the following components:

- Image list
  ➤ see Section 4.3.2.2 "Visualization type "Image list"."
- Color spectrum polygon
  ➤ see Section 4.3.2.4 "Visualization type "Color spectrum polygon""

A typical example of a visualization template of the type "Color spectrum polygon with list of images" is is a Base Station or a WLAN Access Point (i.e. the most probably location) whose coverage area shall be shown in form of an Area of Interest (AOI), with the color of the AOI varying in keeping with the intensity of the received field strength.

Note:
The color with which a DECT Base Station or WLAN Access Point is shown on the map changes analogous to the intensity of the field strength with which that DECT Base Station or WLAN Access Point is received.

In addition, the color of the polygon with which the Area of Interest (i.e. the most probable location) is shown also changes depending on the field strength.

## 4.4 Default settings

### 4.4.1 Default settings for "Image"

| Scaling | Image |
|---|---|
| 100 % |  |

Table 4-14 Default settings "Image"

### 4.4.2 Default settings for "Image list"

| Graduation | From | to | Scaling | Image |
|---|---|---|---|---|
| Visited | - | - | 100% |  |
| Not received | - | - | 100% |  |
| 1. Graduation | 95% | 100% | 100% |  |
| 2. Graduation | 90% | 95% | 95% |  |
| 3. Graduation | 85% | 95% | 85% |  |
| 4. Graduation | 80% | 85% | 80% |  |
| 5. Graduation | 75% | 80% | 75% |  |
| 6. Graduation | 70% | 75% | 70% |  |
| 7. Graduation | 65% | 70% | 65% |  |

Table 4-15 Default settings "Image list"

| Graduation | From | to | Scaling | Image |
|---|---|---|---|---|
| 8. Graduation | 60% | 65% | 60% |  |
| 9. Graduation | 50% | 60% | 50% |  |
| 10. Graduation | 35% | 50% | 48% |  |
| 11. Graduation | 20% | 35% | 46% |  |
| 12. Graduation | 0% | 20% | 44% |  |

Table 4-15 Default settings "Image list"

### 4.4.3 Default settings for a 'Polygon'

| Filling color | Frame color | Transparency | Frame width | View |
|---|---|---|---|---|
| FF0000 | 000000 | 60% | 1 pixel | |

Table 4-16 Default settings "Polygon"

### 4.4.4 Default settings for "Color spectrum polygon"

| Graduation | From | to | Filling color | Frame color | Transpar-ency | Frame width | View |
|---|---|---|---|---|---|---|---|
| Visited | - | - | FF0000 | 000000 | 60% | 1 pixel | |
| Not re-ceived | - | - | 000000 | 000000 | 60% | 1 pixel | |
| 1. Gradua-tion | 95% | 100% | FF0000 | 000000 | 60% | 1 pixel | |
| 2. Gradua-tion | 90% | 95% | FF643C | 000000 | 60% | 1 pixel | |
| 3. Gradua-tion | 85% | 95% | FFAF46 | 000000 | 60% | 1 pixel | |
| 4. Gradua-tion | 80% | 85% | FFFF00 | 000000 | 60% | 1 pixel | |
| 5. Gradua-tion | 75% | 80% | BEFA3C | 000000 | 60% | 1 pixel | |
| 6. Gradua-tion | 70% | 75% | 78FF00 | 000000 | 60% | 1 pixel | |

Table 4-17 Default settings "Color spectrum polygon"

| Graduation | From | to | Filling color | Frame color | Transpar-ency | Frame width | View |
|---|---|---|---|---|---|---|---|
| 7. Gradua-tion | 65% | 70% | 1EBE00 | 000000 | 60% | 1 pixel | |
| 8. Gradua-tion | 60% | 65% | 00FFAA | 000000 | 60% | 1 pixel | |
| 9. Gradua-tion | 50% | 60% | 3CFAFA | 000000 | 60% | 1 pixel | |
| 10. Gradua-tion | 35% | 50% | 00F017 | 000000 | 60% | 1 pixel | |
| 11. Gradua-tion | 20% | 35% | 0A64FA | 000000 | 60% | 1 pixel | |
| 12. Gradua-tion | 0% | 20% | 1414FA | 000000 | 60% | 1 pixel | |

Table 4-17 Default settings "Color spectrum polygon"

## 4.5 Levels

The DPS-view maps are stored in form of a hierarchically structured tree. The top level of this tree is the so-called root level. You can nest the subordinate levels of the tree in any order you like.

Note:
Usually, a tree structure with maximally four sublevels is sufficient.

The below image describes a typical data structure in DPS-view-Edit:

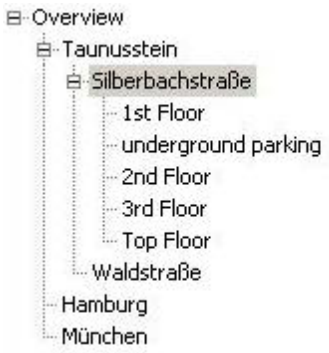



Image 4-15 DPS-view data structure - Example

The hierarchical tree structure corresponds to a tree on the hard disc and contains all the information that is needed for the successful operation of DPS-view.

### 4.5.1 Edit the attributes of a level

The window to edit the "Attributes of the level xxx" is opened in these ways:

- via the menu bar: LevelIt→Edit...
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+Shift+E`

This will open the below dialog to edit the level attributes:

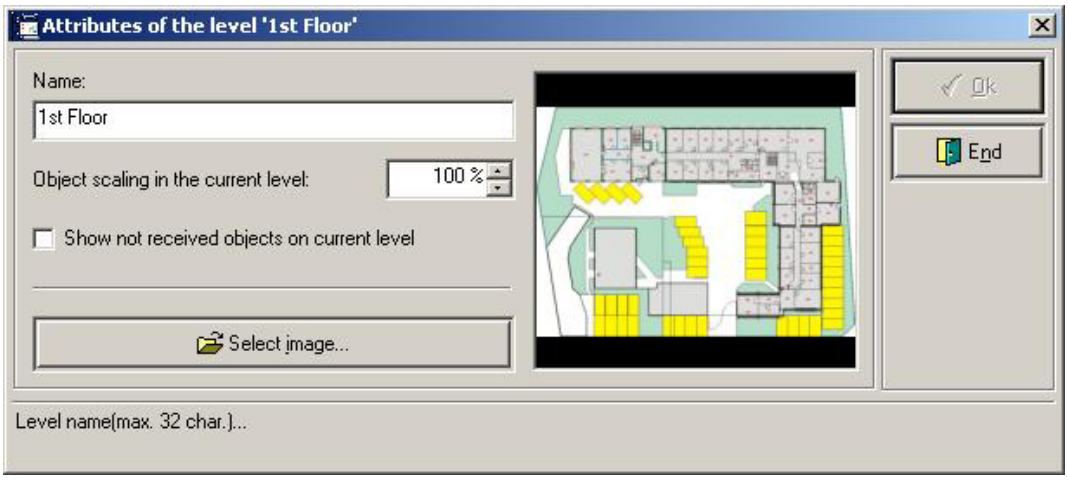



Image 4-16 Edit attributes of the level xxx

Summary of the fields in the user window "Attributes of the level xxx..."

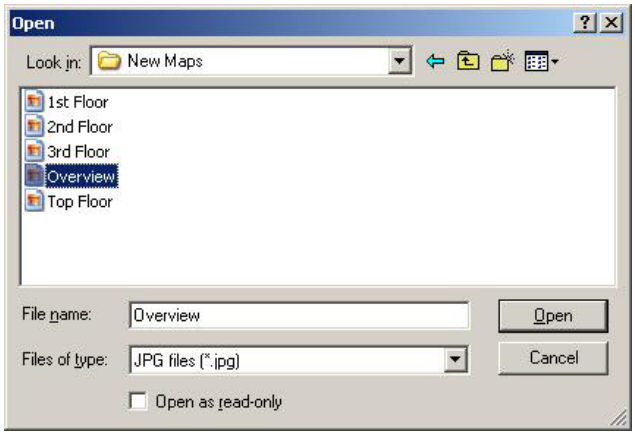
| Menu bar/ button | Description |
|---|---|
| Name | This is the name of the level that appears in the OScAR-TT Operator-Tool as the map name and serves as the caption on the corresponding navigation button.<br>➤ see Section 2.1 "Introduction and functionality" |
| Object scaling in the current level | This scaling factor is applied to all objects of the type "Image" (not Polygons) that are placed on this level.<br>1 .. 1000%, [100%] |
| Also show all not received objects of this level | This level not only shows the objects that are received but also the objects that are not received, in the selected visualization.<br>➤ see Section 4.3 "DPS-view-Edit visualization templates" |
| Select Image... | Click this button to open the following dialog and select the Image you want to use. Bear in mind that only images of the type .jpg are accepted here.<br>No other formats can be output by the system.<br>  |



Table 4-18 Description of the fields in the user window: Edit the attributes of level...

### 4.5.2 Add a new level

The function "Add new level in `xxx`" is opened as follows:

- via the menu bar: Level→ New...
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+Shift+N`

Either of these commands will open the user window "Add new level in ...." to add a sublevel to the level is currently marked in the tree view.

➤ see Section 4.5.1 "Edit the attributes of a level"

### 4.5.3 Delete a level

The function to delete an existing level is opened as follows:

- via the menu bar: Level→ Delete...
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+Shift+Delete`

Before this command is executed, the system will ask you to confirm if you really want to delete the selected level. If you confirm with "Yes", the system will irrevocably delete the selected level and all its sublevels. If you answer with "No", the system will immediately cancel the delete process.

### 4.5.4 Copy a level

The function to copy an existing level is opened as follows:

- via the menu bar: Level→ Copy
- via the keyboard shortcut: `Ctrl+Shift+C`

Use this function to cut a level and copy it to the clipboard. The level can then be pasted from the clipboard and inserted at the wanted position in the tree.

### 4.5.5 Cut a level

The function to cut an existing level is opened as follows:

- via the menu bar: Level→ Cut
- via the keyboard shortcut: `Ctrl+Shift+X`

Use this function to cut a level and copy it to the clipboard. The level can then be pasted from the clipboard and inserted at the wanted position in the tree.

### 4.5.6 Paste and insert a level

The function to insert a previously cut or copied level is opened as follows:

- via the menu bar: Level→ Paste
- via the keyboard shortcut: `Ctrl+Shift+V`

Note:
You can only paste and insert a level when all objects that are placed on this level are also placed on the next higher level in the tree. If not, there would be inconsistency in the tree itself. Consequently, the menu item "Paste" only becomes active when this condition is met.

# 4.6 Objects

## 4.6.1 Import objects

To import objects into DPS-view-Edit, they must first be exported by OScAR Positioning Services (DPS) as a text file (`.txt`).

➤ see OScAR-Pro User Manual

The objects consist of the following elements, with the "ID" together with "ID type" forming the object's unique identifier.

- ID type: The ID type corresponds to the object type and can assumes the following attributes:
  - BS: a DECT Base Station
  - AP: a WLAN Access Point
  - AOI: Area of Interest (most probable location)
- ID: Depending on the object type, the ID of an object reads:
  - for a DECT Base Station: DECT-ID + SLC no. + Port no.
  - for a WLAN Access Point: the MAC address
  - for an Area of Interest: the alphanumeric text
- Info text: The alphanumeric description of the object

## 4.6.2 Update object lists of existing projects

You can always add to or bring up to date a project's object list. If objects have already been created in the project or imported into it, DPS-view-Edit will automatically ask if you really want to add the data.

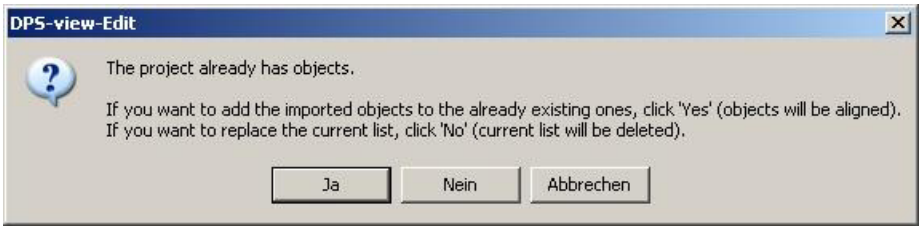



Image 4-17 Security query when importing objects

This security query can be answered as follows:

- No
  DPS-view-Edit deletes the existing object list in the database and import the new list.
- Yes
  During the import process, DPS-view-Edit verifies the unique object identifier consisting of the ID and the ID type.
  During this process the system can detect that:
  - The object already exists and the object data is identical:
    In this case, DPS-view-Edit ignores the object as it is already included in the project.
  - The object already exists in the project but its object data is different:
    In this case, DPS-view-Edit asks the user to confirm if he/she really wants to save the new object data.
  - The object is not yet included in the project:
    In this case, DPS-view-Edit adds the object to the object list with no further queries.

### 4.6.2.1 Import object list from a text file

This function makes it possible to import objects from an object list (`.txt`) into DPS-view-Edit.

Note:
To import an object list from of a text file to DPS-view-Edit, that list must first be created and saved in the application OScAR Positioning Services of the OScAR-TT Administrator-Tool ("Create DPS-view import files...") as a `.txt` text file. The name and storage place are freely selectable.

To import objects of an object list from a file (`.txt` file), open the function "Import object list" as follows:

- via the menu bar: Project→ Import object list→ From file...
- via the keyboard shortcut: `Ctrl+I`

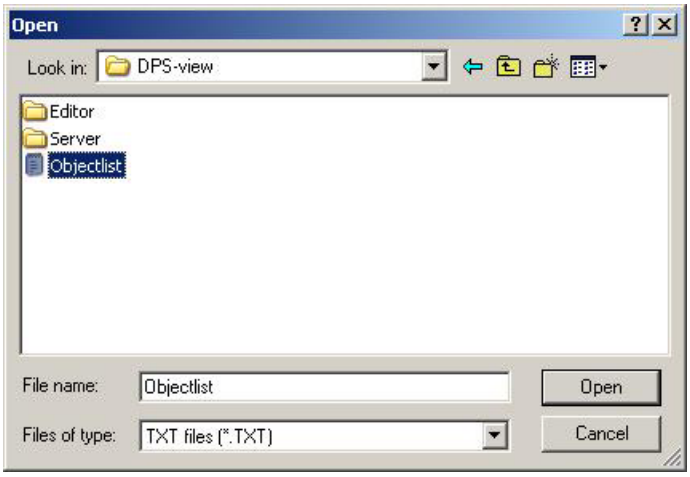



Image 4-18 Project - Import object list - From file (`.txt` file)

In the window "Open", select the object list (`.txt` file) that contains the objects you want to import, and click "Open".

After the import the system will output the new objects in the object list.

➤ see Section 4.1.2 "The Object list"

### 4.6.2.2 Import an object list from a project

It may prove helpful to utilize the object of a project that already exists in DPS-view-Edit also in other projects. This function enables you to import objects of an existing project into a different DPS-view-Edit project..

Note:
To import objects of an existing DPS-view project to another project in form of an object list, you need to save the original project as `.dps` file in DPS-view-Edit. The name and storage place are freely selectable.
To do so, use the menu bar item: File → Save as..

Note:
In order to be able to save the objects of a project in DPS-view-Edit as a `.dps` file, the pertinent project must be currently open.
Bear in mind that only one project can be open at a time.

To import objects of another project into your current project in form of an object list (`.dps` file), apply the function "Import object list" as follows:

- via the menu bar: Project→ Import object list→ From project...
- via the keyboard shortcut: `Ctrl+R`

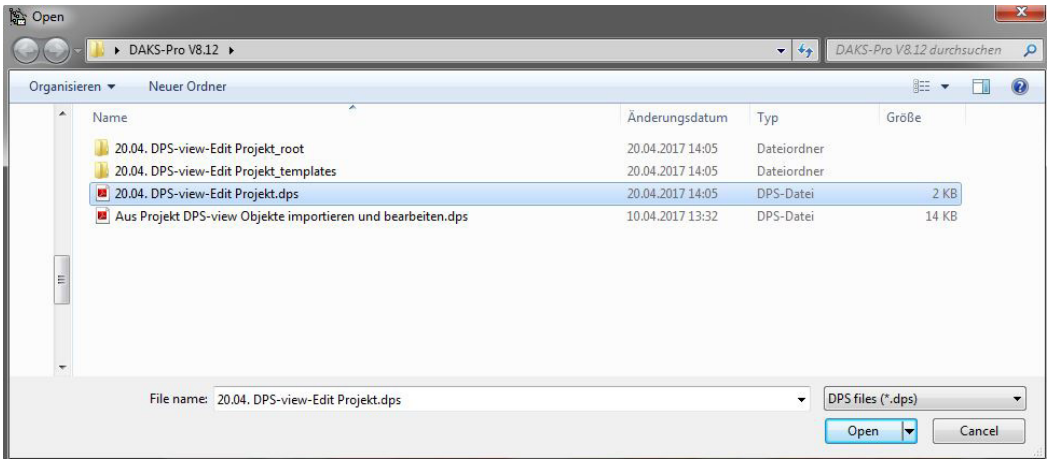



Image 4-19 Project - Import object list - From project (`.dps` file)

In the window "Open", select the project whose objects you want to import, and click "Open".

After importing the objects of another project, the system will output the new objects in the current object list.

➤ see Section 4.1.2 "The Object list"

## 4.6.3 Add new objects and edit object attributes

Object lists can be edited manually by adding new objects to it or editing the attributes of already existing objects.

The function "Add new object" is opened as follows:

- via the menu bar: Object→ New...
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+F`

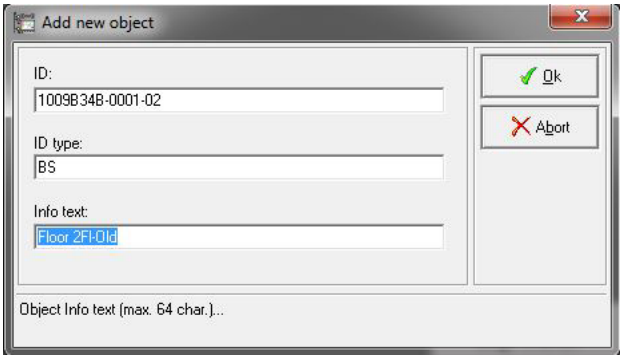



Image 4-20 Add new object

The function to edit the "Edit object attributes" can be opened as follows:

- via the menu bar: Object→ Edit...
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+D`

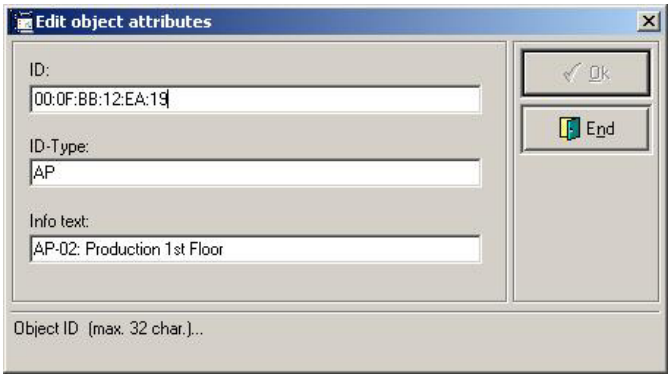



Image 4-21 Edit object attributes

| Menu bar/ button | Description |
|---|---|
| ID | The ID is the identifier of an object, e.g. for a DECT Base Station: DECT-ID + SLC no. + Port no., WLAN Access Point: MAC Address<br>[max. 32 characters] |
| ID- type | The ID type specifies the type of the object, e.g. Base Station: "BS", WLAN Access Point: AP<br>[max. 4 characters] |
| Info text | Info string that describes the object.<br>[max. 64 characters] |

Table 4-19 The fields in the user windows "Add new object" and "Edit object attributes"

### 4.6.4 Delete objects

Note:
Before an object is deleted, DPS-view-Edit asks you if you really want to delete it. When you confirm the security prompt with "Yes", the system will immediately delete the object irrevocably. When you answer with "No", DPS-view-Edit will immediately abort the process.

The function to delete an object can be opened as follows:

- via the menu bar: Object→ Delete
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+H`

### 4.6.5 Place objects

To place an object on a map, it must be marked in the object list and carry the status "Can be placed". When this is the case, the object can be placed on the map through drag&drop.

Objects can be placed in the following ways:

- Place objects freely on a map
  ➤ see Section 4.6.5.1 "Place objects freely on a map"
- Place objects in an already existing polygon through drag&drop
  ➤ see Section 4.6.5.2 "Place objects in a polygon through drag&drop"
- Assign an object to a polygon
  ➤ see Section 4.6.5.3 "Assign an object to a polygon"

### 4.6.5.1 Place objects freely on a map

Note:
During the drag&drop process, the system will output the positioning coordinates of the object in the user window's status bar (lower left).

Note:
After you initially assign an object of a certain ID type to a visualization template, DPS-view-Edit will suggest that template the next time you place an object with the same ID type.

Follow the below instructions to place an object freely on a map:

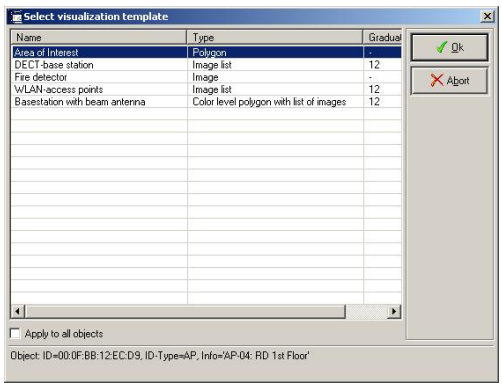
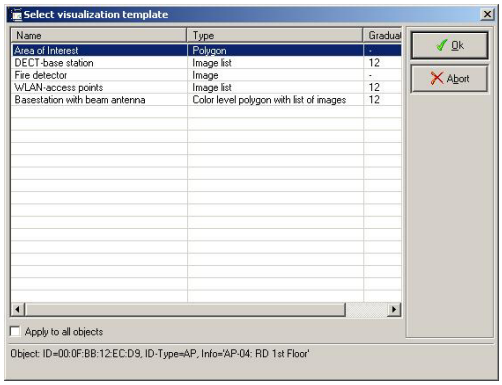
| No. | Task | Window |
|---|---|---|
| 1. | Choose the wanted objects from the object list. | The selected objects are highlighted in blue.<br>  |
| 2. | Pull the selected objects to the polygon through drag&drop.<br><br>Note: As your mouse pointer moves over the polygon, the polygon takes on a black frame surrounding it. | The system will now open the following user window to select a visualization template. If more than one object is selected, the additional option "Apply to all objects" will also appear:<br>• yes (ticked)<br>The entry is applied to all objects.<br>• no (not ticked)<br>The system will repeat the entry request for all of the other objects until you either confirm or all selected objects have been placed.<br>  |

Table 4-20 Place objects freely on map

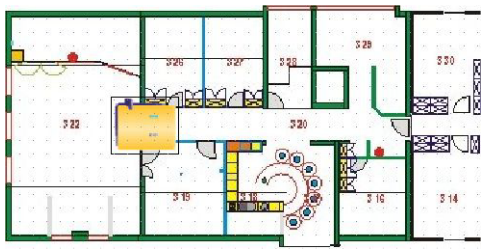
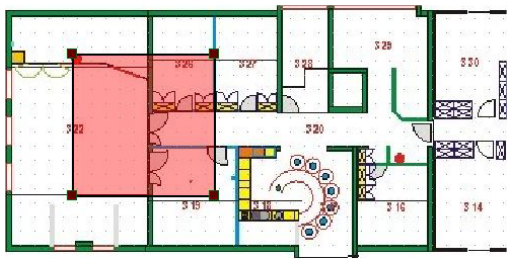
| No. | Task | Window |
|---|---|---|
| 3a. | When you select the visualization template of the type:<br>• "Image" or<br>• "Image list" | Here, the icon for the visualization template of the type "Image" is output in keeping with the configured simulation value in percent.<br>In contrast, the icon for the visualization template of the type "Image" is output in keeping with its static parameters.<br>  |
| 3b. | When you select the visualization template of the type:<br>• "Color spectrum polygon" or<br>• "Polygon" | Here, the polygon for visualization template of the type "Color spectrum polygon" is output in form of a square and in keeping with the configured simulation value in percent.<br>In contrast, a polygon for the visualization template of the type "Polygon" s output in form of a square in keeping with its static parameters.<br>  |

Table 4-20 Place objects freely on map

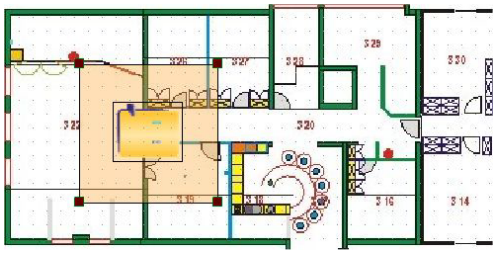
| No. | Task | Window |
|---|---|---|
| 3c. | When you select the visualization template of the type:<br>• "Color spectrum polygon with image",<br>• "Color spectrum polygon with list of images",<br>• "Polygon with list of images" or<br>• "Polygon with image" | Here, the Polygon for the visualization templates of the types "Color spectrum polygon with image" and "Color spectrum polygon with list of images" is output in form of a square in keeping with the configured simulation value in percent.<br>In the same way, the icon for the visualization templates of the types "Polygon with list of images" and "Color spectrum polygon with images list" is output in keeping with the configured simulation value in percent.<br>In contrast, the Images and Polygons for the visualization templates of the types "Polygon with image", "Polygon with list of images" and "Color spectrum polygon with image" are output in keeping with their static parameters.<br>  |

Table 4-20 Place objects freely on map

### 4.6.5.2 Place objects in a polygon through drag&drop

Follow the below instructions to place an object on a polygon through drag&drop:

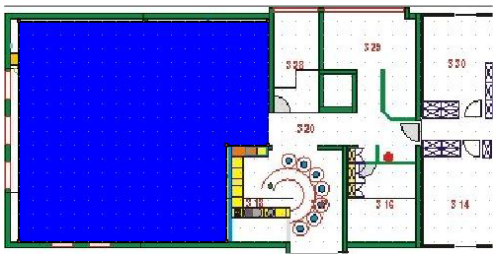
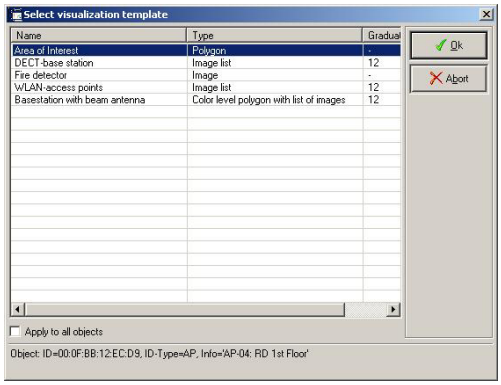
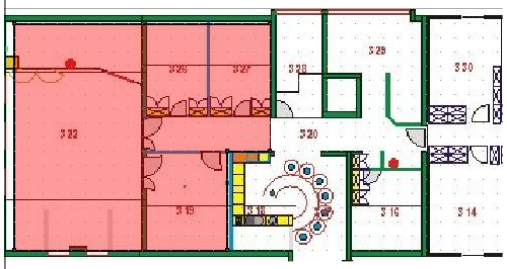
| No. | Task | Window |
|---|---|---|
| 1. | Draw a polygon.<br>➤ see Section 4.7 "Polygons" | Every polygon that does not yet have an object assigned to it is marked blue.<br>  |
| 2. | Go to the object list and pull the wanted objects from the list to the polygon through drag&drop.<br>Note: As your mouse pointer moves over the polygon, the polygon takes on a black frame surrounding it. | The system will now open the user window to select a visualization template.<br>  |
| 3a. | When you select the visualization template of the type:<br>• "Polygon" or<br>• "Color spectrum polygon" | For the visualization type "Polygon" and "Color spectrum polygon":<br>• The polygon is shown in keeping with the configured simulation value.<br>  |

Table 4-21 Place objects in polygon through drag&drop

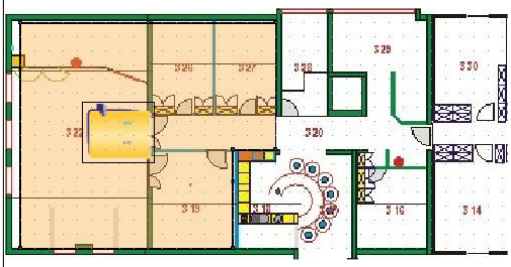
| No. | Task | Window |
|---|---|---|
| 3b. | When you select the visualization template of the type:<br>• "Polygon with image",<br>• "Polygon with list of images",<br>• "Color spectrum polygon with image", or<br>• "Color spectrum polygon with list of images" | For the visualization type "Color spectrum polygon with image" and "Color spectrum polygon with list of images":<br>• The polygon is shown in keeping with the configured simulation value.<br>For the visualization type "Polygon with image" and "Polygon with list of images":<br>• Also the polygon is shown in keeping with the configured simulation value.<br>  |
| 3c. | When you select the visualization template of the type:<br>• "Image" or<br>• "Image list" | For the visualization type "Image" or "Image list":<br>• The image is shown in keeping with the configured simulation value.<br>• The polygon is retained as a non-assigned object. |

Table 4-21 Place objects in polygon through drag&drop

### 4.6.5.3 Assign an object to a polygon

The function "Assign object" is opened as follows:

- via the menu bar: Tools→ Polygon→ Assign object...
- via the keyboard shortcut: `Ctrl+A`

Follow the below instructions to place an object on a polygon:

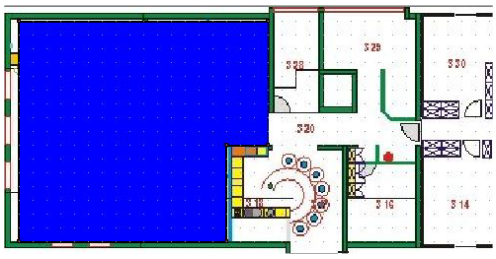
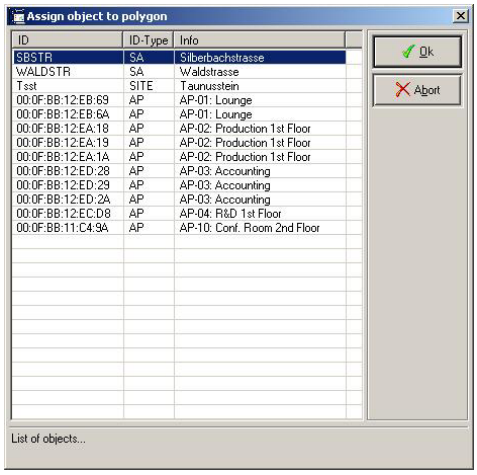
| No. | Task | Window |
|---|---|---|
| 1. | Draw a polygon.<br>➤ see Section 4.7 "Polygons" | Every polygon that does not yet have an object assigned to it is marked blue.<br>  |
| 2. | If needed, edit the polygon.<br>Via the menu bar:<br>Tools→ Polygon→ Edit<br>Via the shortcut:<br>`CTRL+P` | With DPS-view-Edit you can edit polygons. |
| 3. | To add an object to a polygon, make a mouse click on the polygon. | This will mark the polygon to which you want to assign an object. |
| 4. | Assign the wanted object(s) to the polygon.<br>Via the menu bar:<br>Tools→ Polygon→ Assign object...<br>Via the shortcut:<br>`CTRL+A` | This will open the list of all placeable objects that are available:<br>  |

Table 4-22 Assign object to polygon

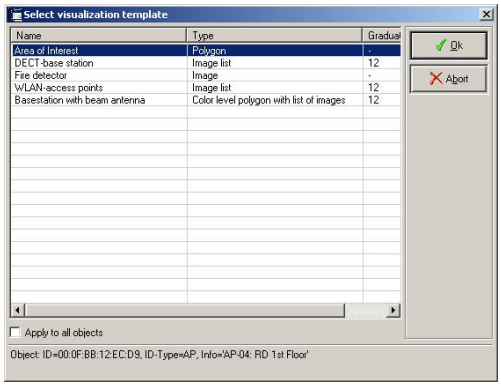
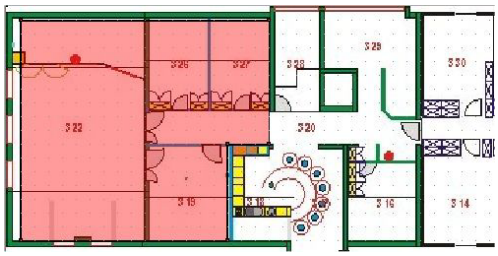
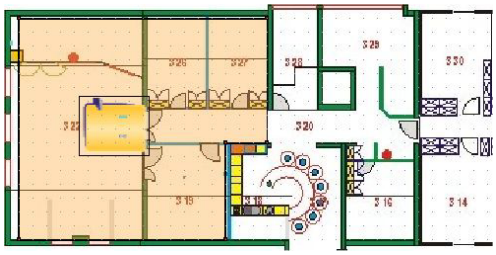
| No. | Task | Window |
|---|---|---|
| 5. | From the list of placeable objects, select all objects you want to place. | The system will now open the user window to select a visualization template.<br>  |
| 6a. | When you select the visualization template of the type:<br>• "Polygon" or<br>• "Color spectrum polygon". | The polygon is output in keeping with your configured simulation value (for the visualization template of the type "Color spectrum polygon").<br>  |
| 6b. | When you select the visualization template of the type:<br>• "Polygon with image",<br>• "Polygon with list of images",<br>• "Color spectrum polygon with image", or<br>• "Color spectrum polygon with list of images" | The polygon (for "Color spectrum polygon with image" and "Color spectrum polygon with list of images") and the image (for "Polygon with images" and "Polygon with list of images") are output in keeping with the configured simulation value in percent.<br>  |
| 6c. | When you select the visualization template of the type:<br>• "Image" or<br>• " Image list" | The image (for visualization type "Image list") is shown in keeping with the configured simulation value in percent.<br>The polygon is retained as a non-assigned object. |

Table 4-22 Assign object to polygon

## 4.6.6 Change the order of objects (Z-Level)

Caution!
Bear in mind that the Z-Level is only relevant in DPS-view-Edit when editing objects. It has no influence on the way in which the positioning results later appear in DPS-view.
As soon as DPS-view is in operation, the objects are shown according to the field strength with which they are received, with the Base Station or Access Point that is received the strongest always shown at the top.

Objects are placed individually on the map and arranged in the Z-level in keeping with the chronological order of their placement process.

➤ see Image 4-22

Note:
When new objects are placed at a later point in time they may overlap and hide those that were placed on the map before.

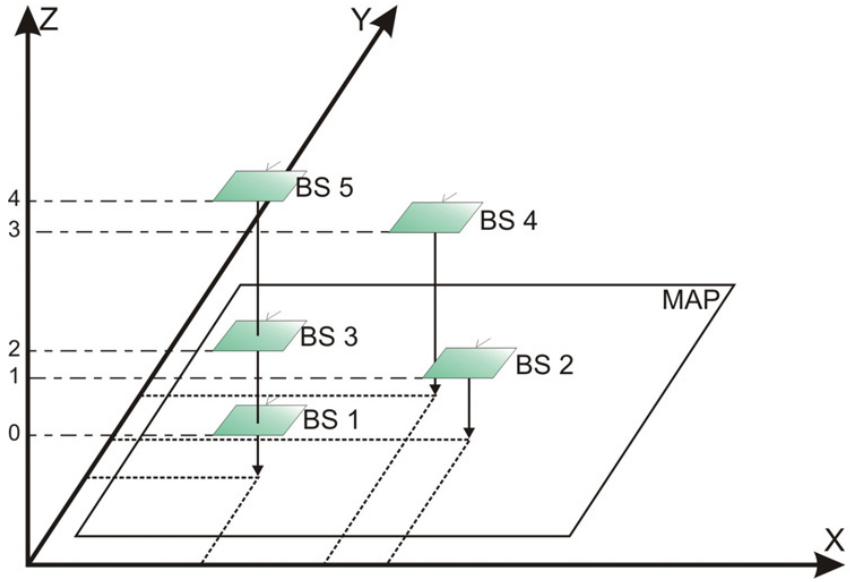



Image 4-22 Graphic representation of the Z-level: Placement of objects

The order of placed objects can be modified by changing their position in the Z-Level:

- Via the menu item or shortcut

| | | | | |
|---|---|---|---|---|
| Edit | → | Sequence→ | Bring to top | (Ctrl+ Home) |
| Edit | → | Sequence→ | Move up | (Ctrl + Page up) |
| Edit | → | Sequence→ | Move down | (Ctrl + Page down) |
| Edit | → | Sequence→ | Move to end | (Ctrl + End) |

# 4.7 Polygons

Caution!
Bear in mind that a polygon must have at least three but cannot have more than 20 polygon points. If less than three points are drawn, DPS-view-Edit will automatically delete the polygon after the double-click.

## 4.7.1 Add a new polygon

The function to create a new polygon is opened as follows:

- via the menu bar: Tools→ Polygon→ New
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+L`

The drawing of a polygon always begins with the first click of your mouse. From then on, every next mouse click adds another point to the polygon. The drawing process ends with a double click. The polygon is closed by connecting the last polygon point with the first.

The below image demonstrates how a polygon is drawn:

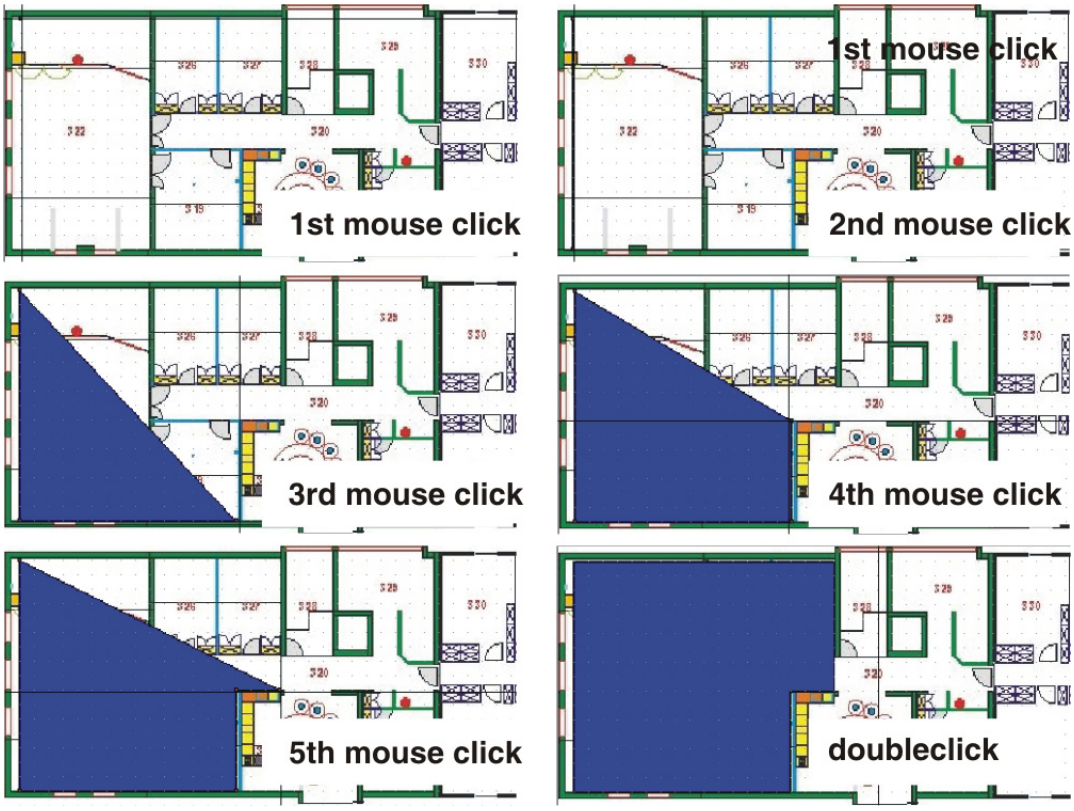



Image 4-23 Draw new polygon

## 4.7.2 Edit polygon points

Note:
Once you mark this menu item you can shift the points of the marked polygon.

The function to edit the polygon points is opened as follows:

- via the menu bar: Tools→ Polygon→ Edit
- via the keyboard shortcut: `Ctrl+P`

### 4.7.2.1 Add points to a polygon

Note:
You can customize the line-sensitivity of the mouse pointer to define when the pointer turns into crosshairs.

➤ see Section 4.2 "Local parameters"

Follow the below instructions to add new points to a polygon:

- Activate the context menu "Add point" (shortcut: `Ctrl+J`)
- To do so, move your mouse pointer over the polygon line to which you want to add a new point until the pointer changes into the crosshairs.
- Make a right mouse click at the spot where you want to add a new point to the polygon.
- The new point will now be added to the polygon.

### 4.7.2.2 Delete points from a polygon

Note:
Use this function to delete marked polygon points.

The function to delete points from a polygon is opened as follows:

- via the menu bar: Tools→ Polygon→ Delete point
- or via the toolbar: 
- via the keyboard shortcut: `Alt+Delete`

### 4.7.2.3 Copy a polygon

Note:
With this function you can copy a polygon to the clipboard.

The function to copy a polygon is opened as follows:

- via the menu bar: Tools→ Polygon→ Copy
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+C`

### 4.7.2.4 Cut a polygon

Note:
This function can be used to cut a polygon and copy it to the clipboard.

The function to cut a polygon is opened as follows:

- via the menu bar: Tools→ Polygon→ Cut
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+X`

### 4.7.2.5 Paste a polygon

Note:
With this function, polygons can be pasted from the clipboard.

The function to copy a polygon is opened as follows:

- via the menu bar: Tools→ Polygon→ Paste
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+V`

### 4.7.2.6 Delete a polygon

Note:
With this function polygons can be deleted altogether.

The function to delete a polygon is opened as follows:

- via the menu bar: Tools→ Polygon→ Delete
- or via the toolbar: 
- via the keyboard shortcut: `Ctrl+Delete`

# 5 The Server Application DPS-view

## Overview

This chapter covers the functions of the server application DPS-view, including the settings and the logging of the positioning processes in the logfile and in the window of the application.

## Contents

The chapter covers the following sections:

## 5.1 The system operation

The server application DPS-view operates similar to a WEB server. Here, the HTML positioning requests from OScAR-TT Operator-Tool are addressed to a TCP/IP Port (configurable, default: Port 80). The positioning requests are answered by DPS-view with HTML pages, with the wanted positioning details shown via OScAR-TT Operator-Tool.

The visualization process follows this routine:

- Show waiting page

  The HTML positing request from OScAR-TT Operator-Tool lasts a few seconds. During this time, DPS-view outputs a so-called wait page, including details on the current positioning request.
- Create session

  The purpose of a session is to minimize the data traffic during the navigation between the OScAR-TT Operator-Tool and DPS-view. To do so, the positioning details are transmitted in encrypted form when the session is created. Once the session has been created, DPS-view sends back the Session ID to OScAR-TT Operator-Tool. The session data is deleted after a configurable timeout.

  During a session, the following information is deposited:
  - the time when the session is created
  - the positioning details
  - the HTML map that was used last
- Update a session (refresh)

  Once a Session ID is available, the session's positioning details can be overwritten. This function is applied in cyclical location tracking processes. In contrast, all other session-specific details such as but not limited to the navigation data is maintained.
- Show map

  OScAR-TT Operator-Tool can request a map from the server application DPS-view. Upon the initial request, this map is shown at the top level. It ensures that when the positioning details are refreshed or updated, DPS-view always shows the map that the user last saw last.

## 5.2 The application start and the main window

Note:
We recommend you install the server application DPS-view as a service.

Caution!
After the start of the DPS-view server application, the main window "DPS-view" will not automatically open:

The main window "DPS-view" will only open after you start the DPS-view server application manually:

All requests and replies thereto are logged in the main window of the DPS-view server application.

The administration of the server application DPS-view is carried out via the "DPS-view-Config.exe".

➤ see Section 5.3 "Configuration of the server application via DPS-view-Config"

Example of the main window of the server application DPS-view:

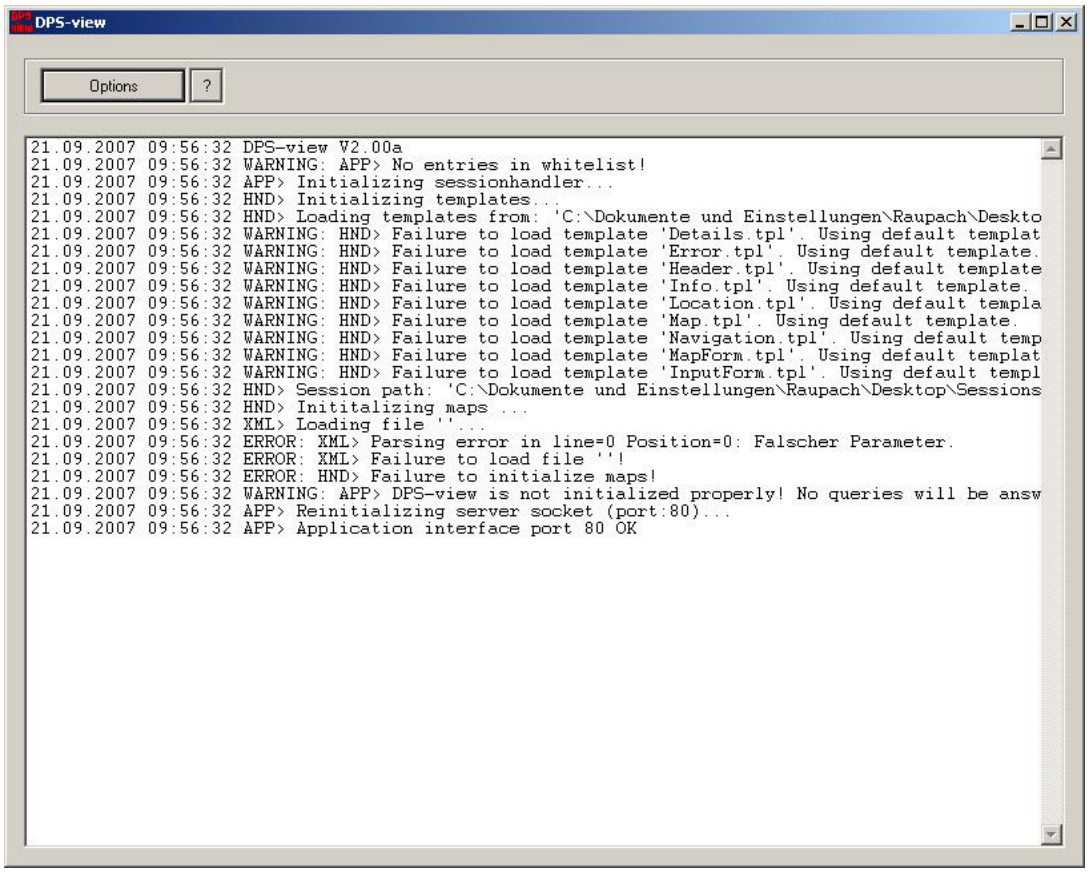



Image 5-1 Main window DPS-view - Example

Summary of the fields in the window of the server application DPS-view:

| Menu bar/ button | Description |
|---|---|
| ? | Opens the DPS-view 'About' box.<br>➤ see Image 5-2 |

Table 5-1 DPS-view

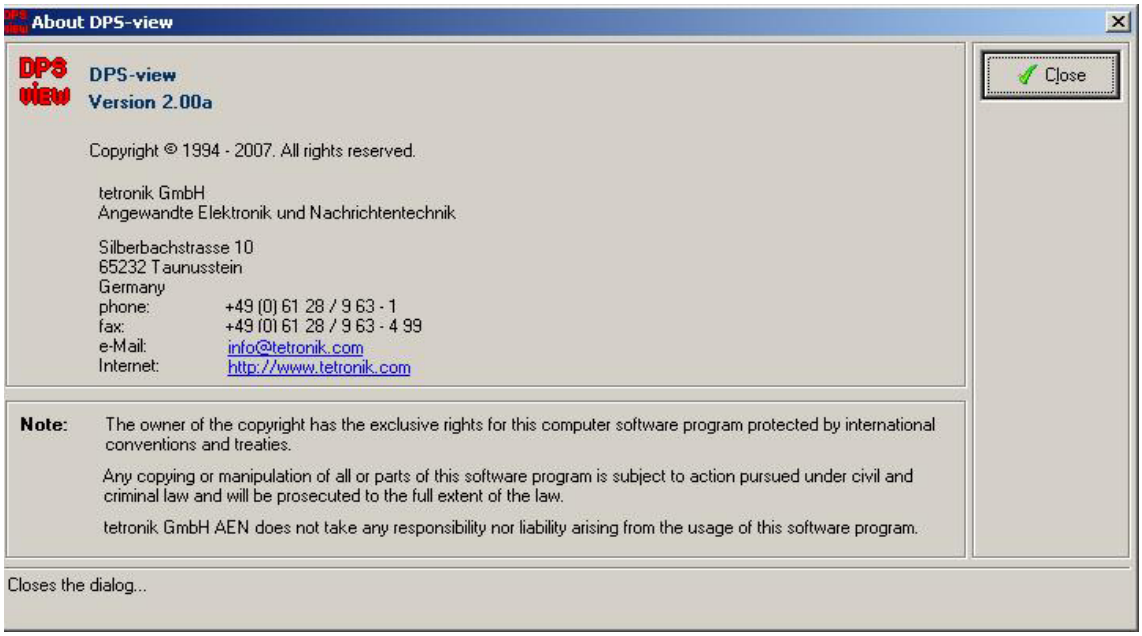



Image 5-2 DPS-view 'About' box - Example

## 5.3 Configuration of the server application via DPS-view-Config

The settings for the server application DPS-view are made in the program "DPS-view-Config"

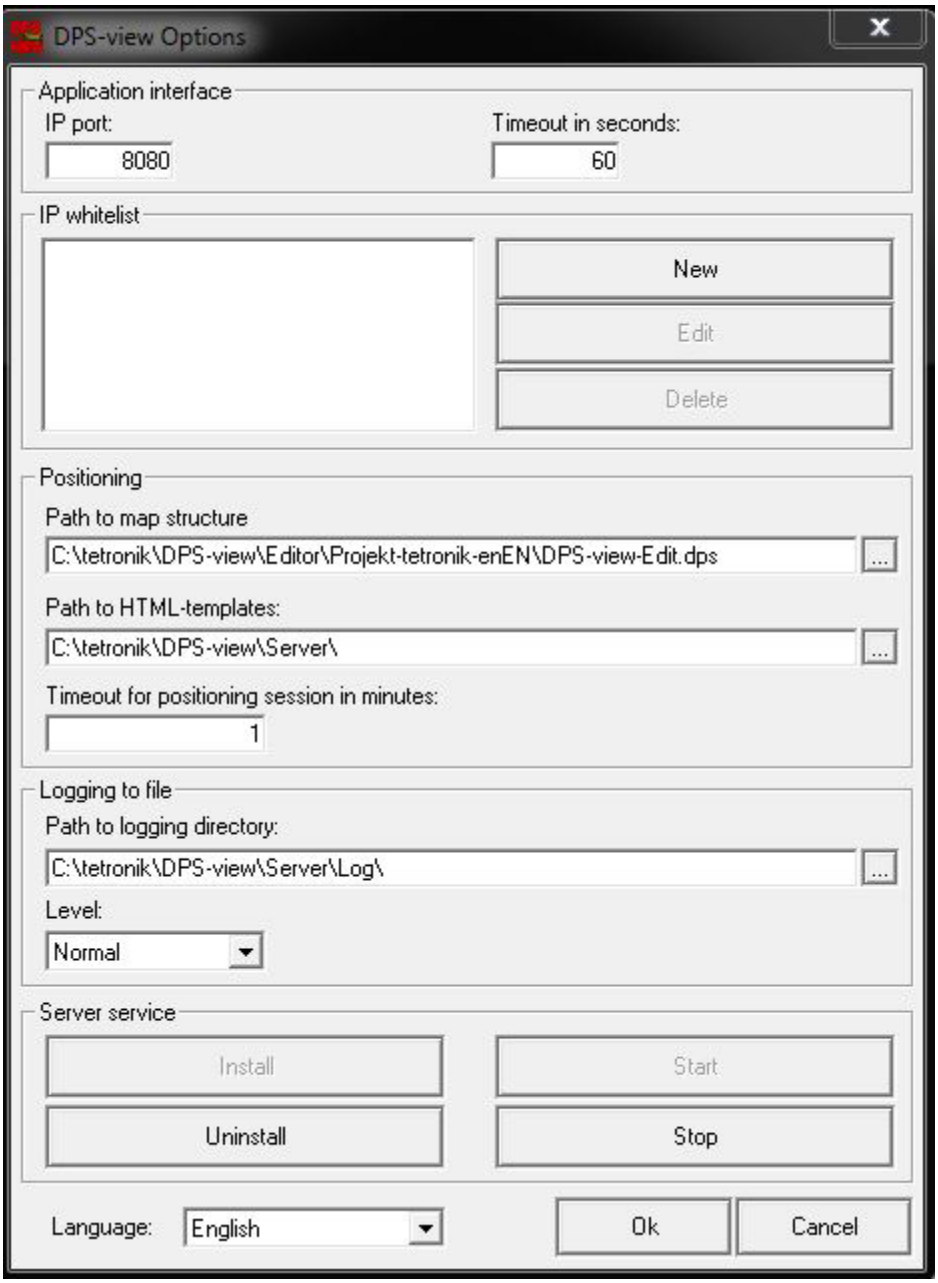



Image 5-3 DPS-view-Config - Options

Summary of the fields in the window 'DPS-view Settings:

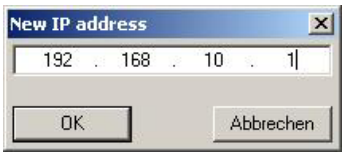
| Menu bar/ button | Description |
|---|---|
| The window area "Application interface" | |
| IP port | Enter here the TCP/IP port to which the applications address the visualization requests.<br>[80] |
| Timeout in seconds | Enter here the timeout in seconds after which the port is automatically closed by the server, even if the request has not yet been completely received.<br>[60 s] |
| The window area 'IP whitelist' | |
| IP whitelist | This is the list of all IP addresses that may be used by PCs to connect to DPS-view. If no entries are made in this list, all PCs may connect to DPS-view without restriction. |
| New | Click this button to open a dialog and add a new IP address to the IP whitelist.<br>  |
| Edit | Click this button to open the following dialog to edit an IP address.<br>  |
| Delete | Click this button to delete marked entries from the IP whitelist. |
| The window area "Positioning" | |
| Path to map structure | Enter here the path to the hierarchical tree that contains all maps, including their objects and parameterization. |
| Path for HTML templates | Enter here the path of the HTML templates that constitute the groundwork for the creation of HTML map renditions. |
| Timeout for positioning session in minutes | Enter here the timeout after which all session-specific information is deleted. |

Table 5-2 Options - DPS-view Options

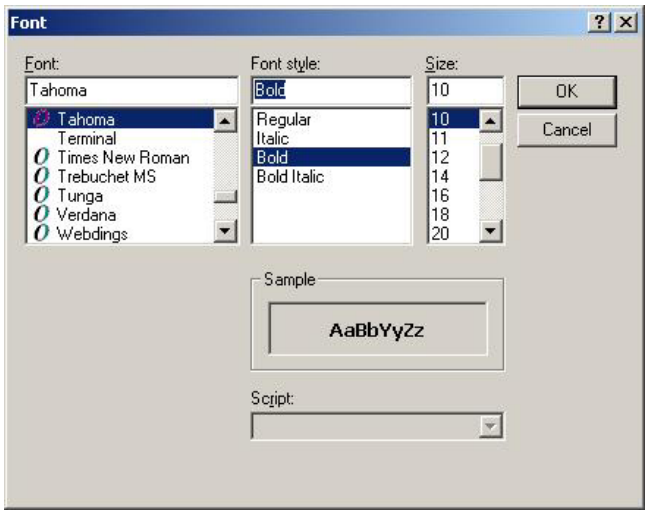
| Menu bar/ button | Description |
|---|---|
| Window area "Logging in the Terminal window" | |
| Level | • 'Disabled' — No protocoling<br>• 'Minimum' — Data set ready<br>Inquiries from clients<br>Answers to clients<br>• Normal — same as Minimum<br>+ detailed activation reporting<br>+ details on the drawn objects<br>• 'Maximum' — Same as Normal<br>+ output of of all raw data of the protocol between client and server (debugging mode). |
| Font | This is the font that is used by the system when logging in this window. Click the box next to this field to open the window to select the font:<br>  |
| Window area "Logging in file" | |
| Path to logging directory | Enter here the path where the logfiles are written. |
| Level | Same as 'Level' in the window area "Logging in the Terminal window". |
| Window area "Server service" | |
| Install | Installs DPS-view as a Windows service. |
| Uninstall | Removes the DPS-view Server service. |
| Start | Starts the currently inactive DPS-view Server service. |
| Stop | Ends the currently active DPS-view Server service. |
| Language | Language available:<br>• German<br>• English |

Table 5-2 Options - DPS-view Options

## 5.4 Logging in a file and in the program window

Depending in the settings, the system activities of DPS-view are logged in the program window and/or written in a logfile.

➤ see Section 5.3 "Configuration of the server application via DPS-view-Config"

Provided you select at least a minimum logging to a file, DPS-view will write a separate logfile fro each day. This logfile contains details on the received visualization requests, ranging from the maps that were requested to the objects that were output by the system.

The entries in this logfile have the following structure:

*<dd>.<mm>.<yyyy> <HH><MM><SS><Status><Source>: <Message>*

These entries make it possible for the user to trace the visualization requests that were received and to analyze possible errors, e.g. misconfigured paths, missing Base Stations in the structure etc.

Logfiles are created in the following path:

*<Path>*\Server\Log.

The logfile names are in the following format:

*<yyyy>-<mm>-<dd>_<HH>-<MM>-<SS>*_DPS-view.log

Example of a valid logfile path:

C:\tetronik\DPS-view\Server\Log\2007-01-25_00-05-12_DPS-view.log

The below table itemizes and explains the placeholders that are used in the messages that are output in the program window and in the logfiles, and in the logfile names:

| Placeholder | Description | |
|---|---|---|
| <dd> | Day | |
| <mm> | Month | |
| <yyyy> | Year | |
| <HH> | Hour | |
| <MM> | minute | |
| <SS> | second | |
| <Status> | • without status | Output of an info message |
| | • WARNING | Output of a warning |
| | • ERROR | Output of an failure of system error |
| <Source> | • APP | Application messages, e.g. regarding the connection, initialization etc. |
| | • HND | Messages in connection with the processing of positioning information |
| | • XML | Messages in connection with the parsing of XML data |
| | • DPS | Messages in connection with the setup of maps and HTML pages |
| <Message> | Message in plaintext | |
| <Path> | The installation path of DPS-view | |

Table 5-3 Summary of the placeholders used in file names and logfile entries

The below image stands as an example of the possible contents of a DPS-view logfile.

All entries included in this file are itemized with the date and time, and listed in the correct chronological order with the newest entries at the end of the logfile.

```
*************************************************************************
LogFile initialized: 07.10.2005, 15.27.02
*************************************************************************


07.10.2005, 15.27.02: Applicationinterface Port 80: Start listening
07.10.2005, 15.27.54: 192.168.6.23:2138 -> accept incoming connection request
07.10.2005, 15.27.54: 192.168.6.23:2138 -> incoming data
    #GET /GetSession.htm HTTP/1.1
    #User-Agent: PNEZ
    #Host: 192.168.6.23
    #Cache-Control: no-cache
    #
07.10.2005, 15.27.54: Infos: /GetSession.htm
07.10.2005, 15.27.54: 192.168.6.23:2138 -> Incoming 'GET'-Request: (/GetSes-
sion)
07.10.2005, 15.27.54: 192.168.6.23:2138 -> 'GET'-Request data
07.10.2005, 15.27.54: 192.168.6.23:2138 -> parsed 'GET'-Request data
07.10.2005, 15.27.54: Prepare all Pages
07.10.2005, 15.27.54: 192.168.6.23:2138 -> GET-Request answered (/GetSes-
sion.ht)
07.10.2005, 15.27.59: 192.168.6.23:2140 -> accept incoming connection request
07.10.2005, 15.27.59: 192.168.6.23:2140 -> incoming data
    #GET /UserManagement/GetMap.htm?BsVal=0568594377e3619c98f5c4d5b322a47f7a17
    #Accept: image/gif, image/x-xbitmap, image/jpeg, image/pjpeg, application/
    #Accept-Language: de
    #Accept-Encoding: gzip, deflate
    #User-Agent: Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; .NET
    #Host: 192.168.6.23
    #Connection: Keep-Alive
    #
07.10.2005, 15.27.59: Infos: /UserManagement/GetMap.htm?BsVal=0568594377e3619c
07.10.2005, 15.27.59: 192.168.6.23:2140 -> Incoming 'GET'-Request: (/UserManag
07.10.2005, 15.27.59: 192.168.6.23:2140 -> 'GET'-Request data
07.10.2005, 15.27.59: 192.168.6.23:2140 -> parsed 'GET'-Request data
07.10.2005, 15.27.59: Prepare all Pages
07.10.2005, 15.27.59: Delete old files
07.10.2005, 15.27.59: Parameter from HTML
07.10.2005, 15.27.59: Prepare the Map
07.10.2005, 15.27.59:   Paint BS and Edit Imagemaps
07.10.2005, 15.27.59: Application 192.168.6.23:2140 -> Try to paint BS= 1009B3
07.10.2005, 15.27.59: Application 192.168.6.23:2140 -> Try to paint BS= 1009B3
07.10.2005, 15.27.59: Application 192.168.6.23:2140 -> Try to paint BS= 1009B3
07.10.2005, 15.27.59: Application 192.168.6.23:2140 -> Try to paint BS= 1009B3
07.10.2005, 15.27.59: Create JPGmap
07.10.2005, 15.27.59: Prepare the Subpages
07.10.2005, 15.27.59: Pages Created.
```

Table 5-4 Example of a DPS-view logfile

# 6 Glossary

The Glossary lists and explains in alphabetical order the technical terms that are found in this document.

| Term | Definition |
|---|---|
| Area of Interest | This is the terrain that is visually output on a map in DPS-view as the result of the positioning of a DECT or WLAN terminal to specify the area in which the wanted handset is currently located. |
| DECT | Short for Digital Enhanced Cordless Telecommunications. DECT stands for digital and enhanced cordless telecommunication. This is a standard for cordless handsets and cell phones as well as for wireless data transfer in general. |
| EPE | Short for the Ekahau positioning server for cellular networks (WLAN), "Ekahau Positioning Engine" |
| Field strength table | This is the table with the base stations/ac-cess points and their matching field strength values, administrated internally by the terminals (DECT, WLAN). |
| Gigaset | Name of the Siemens AG for the product series of cordless handsets that are based on the DECT standard. |
| HPS | Short for the Siemens positioning server for cellular networks (DECT, WLAN), or: HiPath Positioning System. |
| Emergency Call Response Center (short: PNEZ) | This is the center where emergency or distress calls from emergency terminals (PNG, PNG-S) are received and processed. The short for Emergency Call Response Centers with voice communication is: PNEZ-S.* |
| Emergency call handsets (PNG, PNG-S) | These are cordless signal emitting terminals carried by exposed corporate persons or lone workers that are able to raise personal will-dependent and/or will-independent alarms in the case of an emergency at the Emergency Response Call Center (short: PNEZ).<br>The short for emergency handsets with voice is: PNG-S.* |
| SPS-Locator | A component of the Siemens HPS that visualizes received positioning results for DECT and WLAN terminals on gauged maps in form of a circle in the Browser. |
| Visited Station | The DECT base station that is currently being used by the DECT handset to communicate. |
| WLAN | Short for Wireless Local Area Network (WLAN), i.e. a "cordless" local radio network in keeping with the standards of the IEEE 802.11-group. |

Table 6-1 Glossary

*.Source: Regulation of the German Employer's Liability Insurance (Berufsgenossenschaften) for health and safety at work, short: BGR-139, on the operation of emergency call response systems, HVBG, Hauptverband der gewerblichen Berufsgenossenschaften; 2004