zenon
by COPA-DATA

Manuel de zenon
Intégration de GIS

v.8.10

COPADATA

Contenu

1 Bienvenue dans l'aide de COPA-DATA

TUTORIELS VIDÉO DE ZENON.

Des exemples concrets de configurations de projets dans zenon sont disponibles sur notre chaîne YouTube (https://www.copadata.com/tutorial_menu). Les tutoriels sont regroupés par sujet et proposent un aperçu de l'utilisation des différents modules de zenon. Les tutoriels sont disponibles en anglais.

AIDE GÉNÉRALE

Si vous ne trouvez pas certaines informations dans ce chapitre de l'aide ou si vous souhaitez nous suggérer d'intégrer un complément d'information, veuillez nous contacter par e-mail : documentation@copadata.com.

ASSISTANCE PROJET

Si vous avez besoin d'aide dans le cadre d'un projet, n'hésitez pas à adresser un e-mail à notre service d'assistance : support@copadata.com

LICENCES ET MODULES
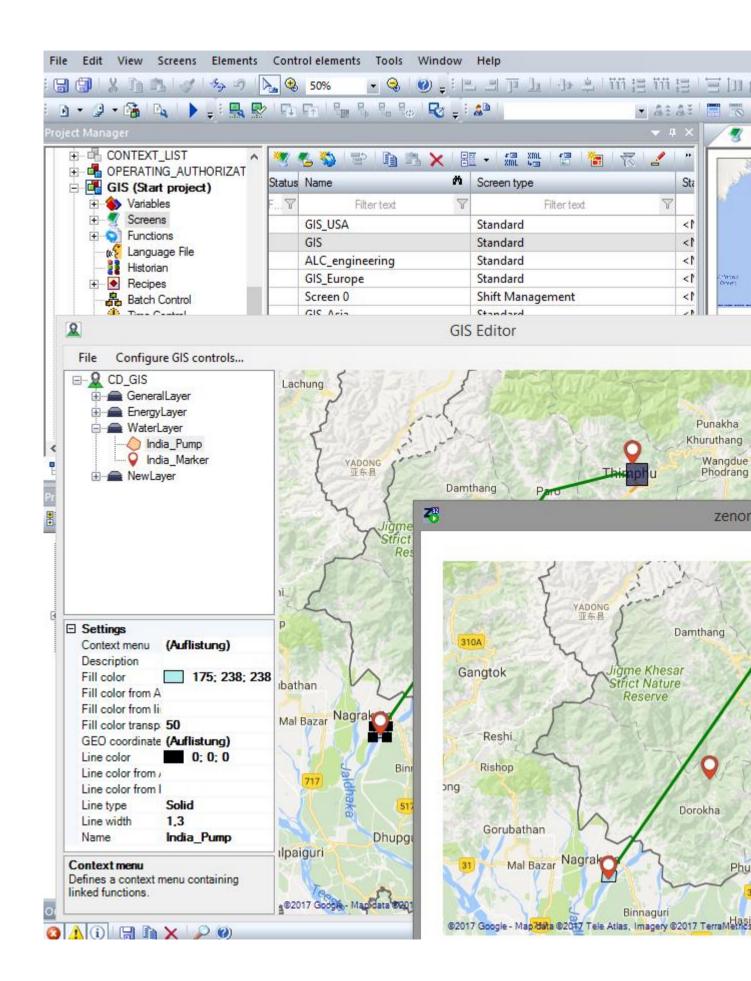
Si vous vous rendez compte que vous avez besoin de licences ou de modules supplémentaires, veuillezcontacter l'équipe commerciale par e-mail : E-mail sales@copadata.com.

2 GIS Integration

The **GIS Integration package** from zenon offers an easy and simple possibility to draw objects with a geographic reference and to link these objects to zenon ALC information, variables and functions.

Display in the zenon Runtime visualizes ALC engineering with selectable **Map provider**.

Included in the GIS integration package:

▶ **GIS Editor**
Tool for the configuration of a GEO-data-based ALC project configuration.
The project configuration is implemented by means of the mouse and setting parameters of properties. The geographical relationship is visualized in a real-time view of selectable map views. Project configuration content is placed on a map directly.

▶ **GIS control**
As a result of the positioning of an **ActiveX element** for the project configuration in the zenon Editor, the project configurations in the **GIS Editor** are applied for display in Runtime.

3 GIS Editor

The **GIS Editor** is a tool for the configuration of a GEO-data-based ALC configuration.

The result is saved in a file. This file contains information for display in zenon Runtime.

For project configuration lines (à la page 18), areas (à la page 23) and markers (à la page 27) are supported.

These can:

▶ Be drawn or placed on a map.
There are different **Map provider**s available for display on a map.

▶ Set up in the **GIS Editor** directly.
Simple engineering of the elements by clicking on a mouse.

▶ Be linked to an existing configuration of the zenon Editor.
The following can be linked

▶ Variables

▶ Functions

▶ ALC information

3.1 Installing and calling up the GIS editor

The **GIS Editor** is automatically installed as part of the zenon standard installation.

> ⚠ **Attention**
>
> The GIS Editor only accepts backed-up project configurations from the zenon Editor.
>
> Make sure that your current configuration has been saved. Pay particular attention to opened zenon screens.

The wizard must be entered into zenon6.ini in order for it to be displayed in zenon:

[ADDINS]

ON=*1*
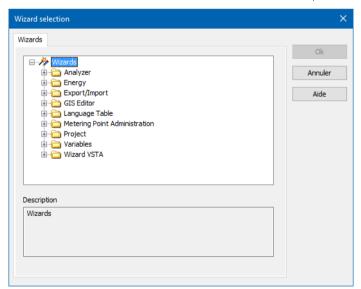
You can find more information on using **Wizards** in the manual.

STARTING THE WIZARD

To start the wizard:

1. Click on **Tools -> Start Editor Wizards...**.
    Or: Press the short cut **Alt+F12**
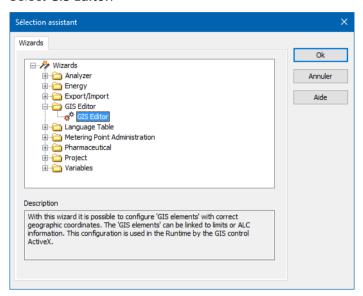
    The selection window with the available wizards opens.

2. Navigate to the node **GIS Editor**.
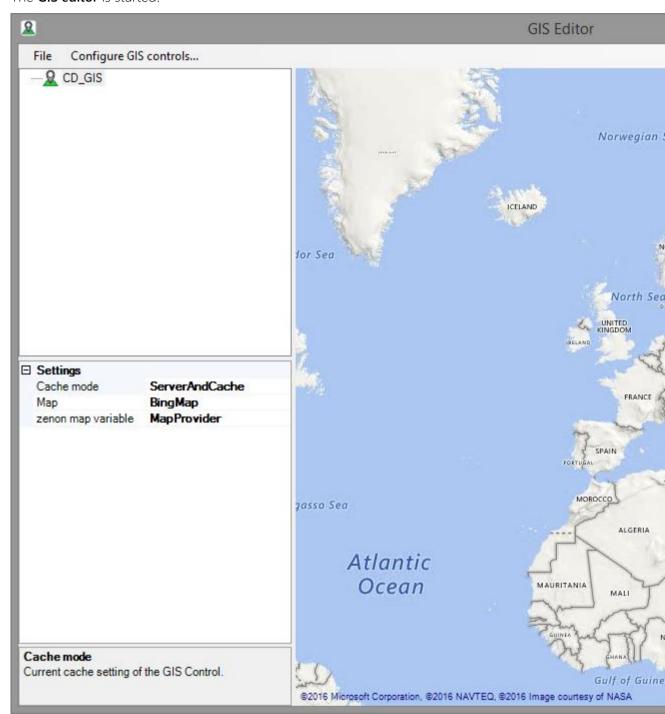
3. Select **GIS Editor**.

4. Click on **OK.**

The **GIS editor** is started.

3.2 Areas in the GIS Editor
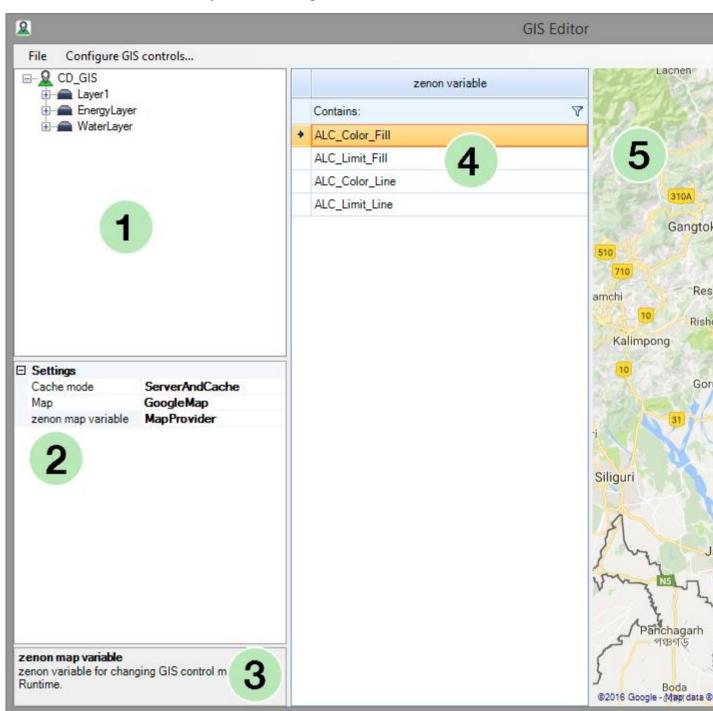
In general, the following applies:

▶ The window size of the tool can be freely scaled.

▶ The size of the areas can be amended by moving the splitters.

▸ If the **GIS editor** is open, no configuration in the zenon Editor is possible.

Note: The user interface of is only available in English.

The **GIS Editor´s** user interface consists of different areas:

Parameter	Description
(1)	Tree view of the current GIS configuration.

Parameter	Description
Tree view of the GIS configuration	The display is divided into levels and the elements contained therein. ▶ *[+]* Expand the tree view. ▶ *[-]* Collapse the tree view
(2) Settings	Configurations of the selected level Properties for the currently-selected element. The properties depend on the selected element. Select the element in the tree view of the GIS configuration or click directly on a configured element in the map view.
(3) Property help	Short description of the property currently selected in the **Settings** area.
(4) Configuration content of zenon Editor	Configuration content of the current zenon project. **Note:** This area can be shown or hidden by clicking on the **...** button for a property with a linking function. This area is hidden by default.
(5) Main window	Main window with map view (à la page 30). Map view of the selected **Map provider** and configured elements.

3.2.1 Graphic user interface (tool bars/context menus)

MENU BAR

Parameter	Description
File	Menu bar for file administration.
Configure GIS controls...	Opens the dialog to link a GIS configuration file to a configured GIS control (à la page 43) in the zenon project configuration.
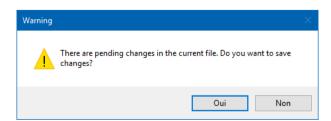
FILE

The **File** menu entry contains entries for the administration of an XML file with the saved GIS project configurations.

Parameter	Description
New	Creates a new, empty GIS configuration.
Open…	Opens an existing GIS configuration.
	Selection of the file by means of a file selection dialog. Only XML files can be loaded in this selection dialog.
	▸ If there is already a GIS configuration active in the GIS editor and this contains unsaved changes, this is visualized with a request for confirmation.
	▸ If the file to be loaded contains an invalid data structure (i.e. not compliant with the project), this is shown in a warning dialog.
Save	Saves the current configuration of the **GIS editor**.
	Par défaut :*DefaultGISConfiguration.xml* Default save path: *C:\ProgramData\COPA-DATA\SQL2012\[***Identifiant du projet***]\zenon\custom\additional*
	Note: If the project configuration is saved for the first time, the save dialog is opened at first.
	Attention: The GIS configuration file must always be in this folder for correct display in Runtime.
Save as…	Backs up the current GIS configuration as a new XML file.
	Selection of the save path by means of a save dialog.
Exit	Closes the **GIS Editor**. If there are unsaved changes in the current project configuration, this is shown by a warning dialog.
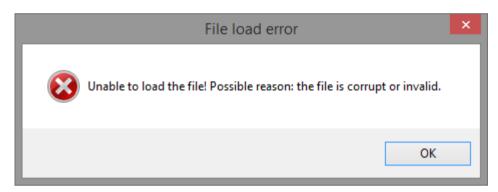
UNSAVED CHANGES
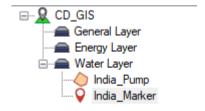
Parameter	Description
Yes	Saves current project configuration.
	Select the save location with the save dialog.
	Note: Click on the **Cancel** button in the save dialog to close the **GIS editor**. Unsaved configurations are discarded.
No	Changes to the current project configuration are discarded without saving.
	The **GIS editor** is closed.

FILE NOT SUCCESSFULLY LOADED

3.2.2 CD_GIS

Tree view of the current GIS configuration.

The display is divided into levels and the elements contained therein.

CONTEXT MENU

Parameter	Description
Add Layer	Creates a new layer.
Show/Hide Lines	Showing and hiding lines.

Parameter	Description
	Note: This entry is not supported in the current version.

3.2.3 Settings

In the **Settings** area, properties in the context of the selected node in the CD_GIS tree are shown.

Context help is available for each property. This offers a short description of the selected property in the **Settings** area and is shown in updated form by clicking on an property.

3.2.3.1 GIS control configuration

In this area, you configure the general settings for the display. This project configuration is applicable for all elements configured in the **GIS editor**.

SETTINGS

Parameter	Description
Cache mode	Type of updating of the map view for display in zenon Runtime. Click in the line of the entry to display the arrow symbol for the drop-down list. Clicking on the arrow symbol opens the drop-down list. The following options are available: ▸ *CacheOnly* The map view is only displayed with loaded data. **Note:** only select these settings in order to be able to visualize your project configurations offline in Runtime. In doing so, note that these settings may lead to a restricted display of the map material. ▸ *ServerOnly* The display of the map view is automatically updated via the Internet. **Note:** This setting can, depending on the internet connection, impair the performance of the *GIS control*. ▸ *ServerAndCache* The display of the map view is updated online if required. Par défaut :*ServerAndCache*

Parameter	Description
	Note: *ServerOnly* requires an active Internet connection for the display.
Click position variable	Allows the selection and display of a variable that stores the last GEO coordinates you clicked on in GIS control.
	Click in the line of the entry to display the **…** button for the selection dialog:
	▸ Click on the **…** button to open the selection dialog for the zenon variable.
	▸ Click on the **Esc key** to close the selection dialog.
Fault marker graphics file	Allows the selection of a graphics file for displaying error flags in Runtime.
	Click on the **…** button to open the selection dialog. Graphics file.
Map cache path	Allows the selection and display of the save destination folder for the map information loaded by the GIS control.
	Click on the **…** button to open the selection dialog. Path.
Map provider	Selection of the provider for the display in map view.
	Click in the line of the entry to display the arrow symbol for the drop-down list.
	Clicking on the arrow symbol opens the drop-down list.
	The following options are available:
	▸ *GoogleMap*
	▸ *GoogleSetelliteMap*
	▸ *GoogleTerrainMap*
	▸ *BingMap*
	▸ *BingSatelitteMap*
	▸ *OpenStreetMap*
	▸ *ArcGISWorldStreet*
	▸ *ArcGISWorldTopo*
	▸ *EmptyProvider*
	Par défaut : *BingMap*
Map variable	Input field for the name of the zenon variable for the selection of the **Map providers**.

Parameter	Description
	Click in the line of the entry to display the **…** button for the selection dialog: ▸ Click on the **…** button to open the selection dialog for the zenon variable. ▸ Click on the **Esc key** to close the selection dialog. Par défaut :*MapProvider*
Object focus variable	Allows the selection and display of a variable that centers the specified GIS element. **Example:** If the selected variable is described with the name of an existing GIS element, the camera view of the map is centered on that element. The element is now in the center of the view. Click in the line of the entry to display the **…** button for the selection dialog: ▸ Click on the **…** button to open the selection dialog for the zenon variable. ▸ Click on the **Esc key** to close the selection dialog.
Zoom level variable	Enables selection and display of a variable for which the current zoom level is stored. Click in the line of the entry to display the **…** button for the selection dialog: ▸ Click on the **…** button to open the selection dialog for the zenon variable. ▸ Click on the **Esc key** to close the selection dialog.

NUMERICAL VALUES FOR THE MAP PROVIDER

The following prescribed assignment is applicable for the selection of the **Map providers** by means of a variable:

Value	Map provider
0	**EmptyProvider** (no map display)
1	**GoogleMap**
2	**GoogleSatelliteMap**
3	**GoogleTerrainMap**
4	**BingMap**

Value	Map provider
5	**BingSatelliteMap**
6	**OpenStreetMap**
7	**ArcGISWorldStreet**
8	**ArcGISWorldTopo**

If an invalid value is selected, no map is displayed.

3.2.3.2 Layer

You configure the general settings of a **Layer** in this area. This engineering is applicable for all elements configured in the **GIS editor**.

▶ If a configuration is changed for the layer, this is applied for all elements of this layer.

▶ If a configuration of an element is amended, this is applied for the settings of the layer.

> 💡 **Information**
>
> **Layer** correspond to **Niveau de visibilité** in the zenon Editor.

SETTINGS FOR LAYER

| Parameter	Description
Areas	Settings (properties) for areas. Click on the **...** button to open the area properties (**Settings** (à la page 23)) in their own dialog.
Lines	Settings (properties) for lines. Click on the **...** button to open the line properties (**Settings** (à la page 21)) in their own dialog.
Markers	Settings (properties) for markers. Click on the **...** button to open the marker properties (**Settings** (à la page 27)) in their own dialog.
Name	Name of the layer. Entry of an element name in the input field. Par défaut :*NewLayer*
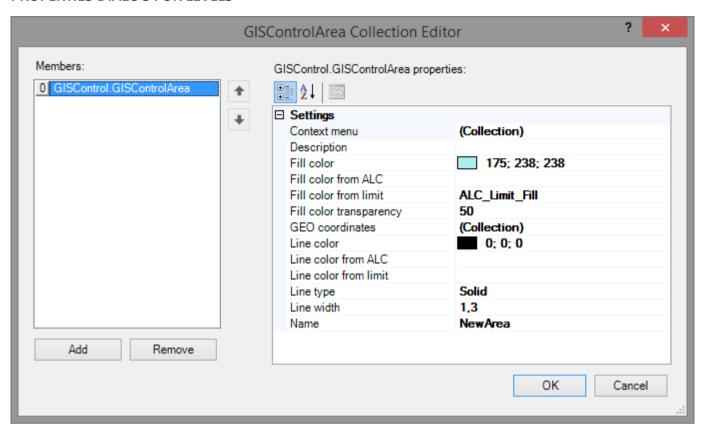
LAYER CONTEXT MENU

Parameter	Description
Add line	Inserts a new line into the current layer.
	The display of the mouse pointer in the map view switches to a cross-hair. Lines can be drawn by setting the line points by means of clicking.
Add area	Inserts a new area into the current layer.
	The display of the mouse pointer in the map view switches to a cross-hair. Areas can be drawn by setting the corner points of the area by means of clicking.
Add marker	Inserts a new marker into the current layer.
	The display of the mouse pointer in the map view switches to a cross-hair. A marker can be positioned by clicking in the map view directly.
Show/hide	Hides or shows the current layer and elements configured for this.
	Note: This entry is not supported in the current version.
Rename	Renaming of the level.
	Note: This entry is not supported in the current version. Change the name in the **Name** property.
Delete	Deletes the level and the elements configured therein.
	Attention: The deletion of the level and the content configured therein is carried out directly, without requesting confirmation.

PROPERTIES DIALOG FOR LEVELS

The settings in this dialog correspond to those as set up for the respective GIS element in the Settings area.
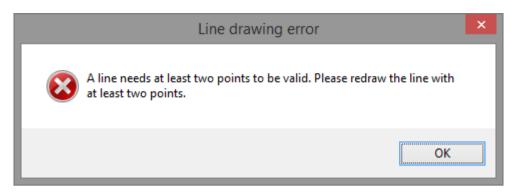
> ⚠ **Attention**
>
> Changes to properties in the dialog also change the parameter settings for an existing GIS element.
>
> It is expressly recommended that the parameters for project configurations for GIS elements are always set up using the element properties. A project configuration with the properties dialog of the level is not recommended.

WARNING DIALOG FOR LEVEL WITHOUT ELEMENT

If a level is created and assigned an invalid project configuration, this configuration error is visualized with a warning dialog. The project configuration is not applied and the level is removed.

3.2.3.3 Line

You configure the settings of a line in this area.

Parameter	Description
Context menu	Linked zenon function The function linked here is executed in Runtime with a mouse click. Clicking on the **...** button opens the area to select a configured zenon function. Clicking on the ... button opens an area in the **GIS Editor** with functions of the current zenon project configuration. Par défaut : *vide* You can find further information on this in the Linking of functions (à la page 40) chapter.
Description	Input field for a freely-configurable description of the element. The configured content of this property is visualized as a tool tip in the zenon Runtime display. Par défaut : *empty* **Note:** This entry is not supported in the current version.
Fault marker from end	Value change of the linked variable triggers an output of the distance from the ending point to the fault location.

Parameter	Description
Fault marker from start	Value change of the linked variable triggers an output of the distance from the starting point to the fault location.
GEO coordinates	Configuration of the line by entering GEO coordinates. Clicking on **...** opens the dialog for the manual entry of GEO coordinates (à la page 45). **Note:** A line must consist of at least two GEO coordinates.
Line color	Static color for the display of the GIS element in zenon Runtime. Clicking on ... opens a drop-down list to select colors. **Note:** The configuration of this property is applied by the level settings. A change to the settings is applied in the level settings. Par défaut : *0; 0; 0 (Black)*
Line color from ALC	The color of the GIS element is dynamically applied for the display in Runtime of an existing ALC project configuration in the zenon Editor. By clicking on **...**, in the **GIS Editor**, the area of the **zenon Editor project configuration content** with configured ALC elements (à la page 42) of the zenon Editor are shown. You can find further information in the Coloring of GIS elements (à la page 56) chapter in zenon Runtime. Par défaut : *vide*
Line color from limit	The color of the GIS elements is applied dynamically for display in Runtime from the configuration of the zenon variable. By clicking on **...** in the **GIS Editor**, the area of the **zenon Editor configuration content** with variables (à la page 41) is shown. You can find further information in the Coloring of GIS elements (à la page 56) chapter in zenon Runtime. Par défaut : *vide*

Line type	Type of line.
	
	Select from drop-down list:
	
	  ▸ *Solid*
	     solid line
	
	  ▸ *Dash*

Parameter	Description
	dashed line
	▸ *Dot*
	dotted line
	▸ *DashDot*
	dash-dot line
	▸ *DashDotDot*
	dash-dot-dot line
	▸ *Custom*
	Par défaut : *Solid*
	Note: The *Custom* line type is not supported and displayed as *Solid*.
Line width	Line thickness in pixels.
	Entry of a numerical value in the input field. The input is validated. If no valid numerical value is entered, this is shown in a warning dialog. Par défaut :*3*
Name	Name of the line.
	Entry of an element name in the input field.
	Par défaut :*NewLine*

CONTEXT MENU

Parameter	Description
Delete	Deletes the selected element.
	Attention: The selected element and its configuration are carried out immediately, without a request for confirmation.

3.2.3.4 Area

You configure the settings of an area in this area.

An area object is a polygenic area with any desired number of support points. An area must consist of more than two points.

Parameter	Description
Context menu	Linked zenon function
	The function linked here is executed in Runtime with a mouse click.
	Clicking on the **...** button opens the area to select a configured zenon function.
	Clicking on the ... button opens an area in the **GIS Editor** with functions of the current zenon project configuration.
	Par défaut : *vide*
	You can find further information on this in the Linking of functions (à la page 40) chapter.
Description	Input field for a freely-configurable description of the element. The configured content of this property is visualized as a tool tip in the zenon Runtime display.
	Par défaut : *empty*
	Note: This entry is not supported in the current version.
Fill color	Static color for the display of the GIS element in zenon Runtime. Clicking on ... opens a drop-down list to select colors.
	Note: The configuration of this property is applied by the level settings. A change to the settings is applied in the level settings.
	Par défaut : *175; 238; 238* (Cyan)
Fill color from ALC	The color of the GIS element is dynamically applied for the display in Runtime of an existing ALC project configuration in the zenon Editor.
	By clicking on **...**, in the **GIS Editor**, the area of the **zenon Editor project configuration content** with configured ALC elements (à la page 42) of the zenon Editor are shown.
	You can find further information in the Coloring of GIS elements (à la page 56) chapter in zenon Runtime.
	Par défaut : *vide*
Fill color from limit	The color of the GIS elements is applied dynamically for display in Runtime from the configuration of the zenon variable.
	By clicking on **...** in the **GIS Editor**, the area of the **zenon Editor configuration content** with variables (à la page 41) is shown.

Parameter	Description
	You can find further information in the Coloring of GIS elements (à la page 56) chapter in zenon Runtime. Par défaut : *vide*
Fill color transparency	Transparency of the **Fill color** of the GIS element. Enter the transparency in percent. An input of *100* causes the element to be completely colorless or see-through. **Note:** The values of this property are also used for the display of objects in limit value colors. If the transparency for limit values is not used for the element, configure the value *0* here. Par défaut : *50*
GEO coordinates	Configure the area by entering GEO coordinates. Clicking on **...** opens the dialog for the manual entry of GEO coordinates (à la page 45). **Note:** An area must consist of at least three GEO coordinates.
Line color	Static color of the outer line of the surface area. Static color for the display of the GIS element in zenon Runtime. Clicking on ... opens a drop-down list to select colors. Par défaut : *0; 0; 0 (Black)*
Line color from ALC	Color of the outer line of the area is transferred from a zenon ALC element. The color of the GIS element is dynamically applied for the display in Runtime of an existing ALC project configuration in the zenon Editor. By clicking on **...**, in the **GIS Editor**, the area of the **zenon Editor project configuration content** with configured ALC elements (à la page 42) of the zenon Editor are shown. You can find further information in the Coloring of GIS elements (à la page 56) chapter in zenon Runtime. Par défaut : *vide*
Line color from limit	Color of the outer line of the area is transferred from a zenon variable. The color of the GIS elements is applied dynamically for display in Runtime from the configuration of the zenon variable.

Parameter	Description
	By clicking on **...** in the **GIS Editor**, the area of the **zenon Editor configuration content** with variables (à la page 41) is shown. You can find further information in the Coloring of GIS elements (à la page 56) chapter in zenon Runtime. Par défaut : *vide*

Line type	Type of outer line of the area.
	Selection form a drop-down list:
	
	   ▸ *Solid*
	
	   ▸ *Dash*
	
	   ▸ *Dot*
	
	   ▸ *DashDot*
	
	   ▸ *DashDotDot*
	
	   ▸ *Custom*
	
	Par défaut : *Solid*
	
	Note: The *Custom* line type is not supported and displayed as *Solid*.

Line width	Width of the outer line of the area in pixels. Par défaut :*1,3*
Name	Name of the area. Entry of an element name in the input field. Par défaut :*NewArea*

CONTEXT MENU

Parameter	Description
Delete	Deletes the selected element. **Attention:** The selected element and its configuration are carried out immediately, without a request for confirmation.

3.2.3.5 Marqueur

Ici, vous configurez les paramètres d'un marqueur.

Paramètre	Description
Context menu	Linked zenon function
	The function linked here is executed in Runtime with a mouse click.
	Clicking on the **...** button opens the area to select a configured zenon function.
	Clicking on the ... button opens an area in the **GIS Editor** with functions of the current zenon project configuration.
	Par défaut : *vide*
	You can find further information on this in the Linking of functions (à la page 40) chapter.
Description	Input field for a freely-configurable description of the element. The configured content of this property is visualized as a tool tip in the zenon Runtime display.
	Par défaut : *empty*
	Note: This entry is not supported in the current version.
GEO coordinate	Configurez le marqueur en saisissant les coordonnées GEO.
	Clicking on **...** opens the dialog for the manual entry of GEO coordinates (à la page 45).
	Remarque : Un marqueur est toujours constitué de coordonnées GEO.
Graphics file	Paramètres d'affichage graphique du marqueur.
	Cliquez sur **...** pour afficher la boîte de dialogue de sélection d'un fichier graphique.
	Si aucun fichier graphique n'est sélectionné pour le marqueur, les éléments graphiques prescrits par **GIS Editor** sont utilisés.
	Par défaut :*CD_Marker.png*
	Remarque : en cas de sélection d'un type de fichier non valide, ceci est affiché dans une boîte de dialogue d'avertissement. Dans ce cas, aucun nouveau fichier n'est utilisé pour le marqueur.

Paramètre	Description
Graphics heigt	Hauteur du fichier graphique, en pixels. Entry of a numerical value in the input field. The input is validated. If no valid numerical value is entered, this is shown in a warning dialog. Par défaut :*25*
Graphics width	Largeur du fichier graphique, en pixels. Entry of a numerical value in the input field. The input is validated. If no valid numerical value is entered, this is shown in a warning dialog. Par défaut :*25*
Name	Nom du marqueur. Entry of an element name in the input field. Par défaut :*NewMarker*

CONTEXT MENU

Parameter	Description
Delete	Deletes the selected element. **Attention:** The selected element and its configuration are carried out immediately, without a request for confirmation.

SYMBOLE DU MARQUEUR

La représentation graphique du marqueur peut être spécifiée individuellement, à l'aide d'éléments graphiques. Différents marqueurs d'une configuration GIS peuvent être affichés avec différents marqueurs.

Pour ouvrir la boîte de dialogue de sélection de fichiers, cliquez sur le bouton **...** dans la propriété **Graphics file**. Le contenu du dossier ..*ProgramData\COPA-DATA\SQL2012\\[***Identifiant du projet***]*FILES\zenon\custom\graphics* est affiché par défaut. Ce dossier réunit le contenu du nœud **Fichiers** => **Éléments graphiques** du projet actuel de zenon Editor.

Sélectionnez un fichier graphique à utiliser pour l'affichage du marqueur dans **GIS Editor** et dans le Runtime de zenon.
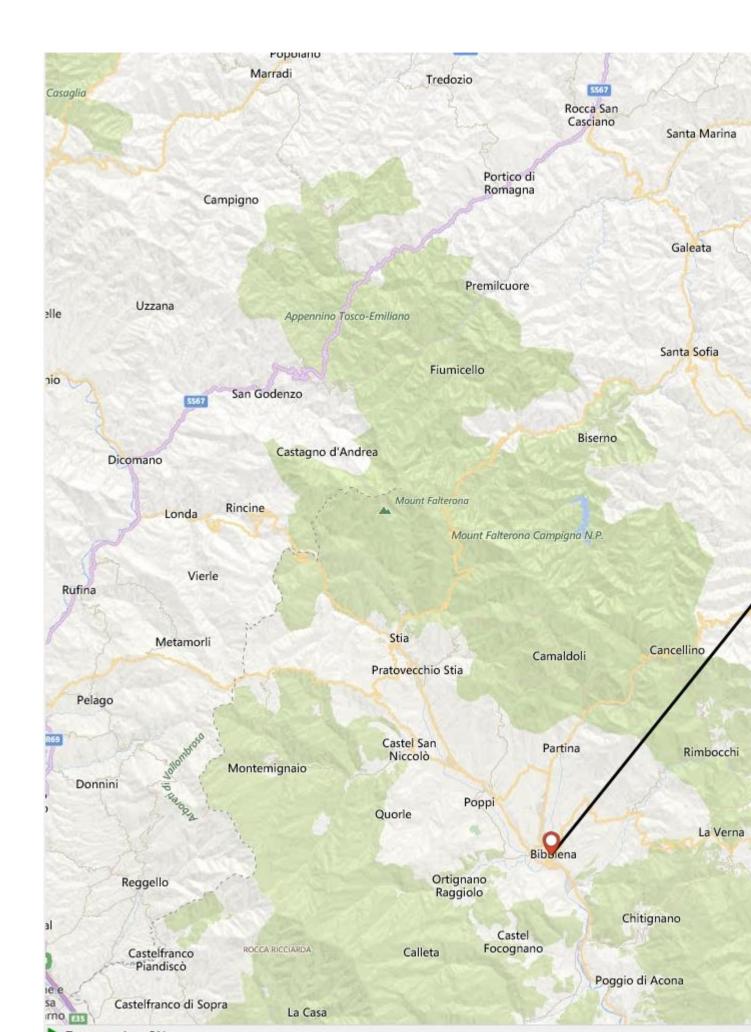
👍 **Hint**

La sélection du fichier graphique utilisé pour le marqueur n'est pas limitée au contenu du dossier du projet zenon. Vous pouvez sélectionner un fichier graphique dans n'importe quel dossier dans la boîte de dialogue de sélection de fichiers.

Lorsque vous sélectionnez un fichier, il est appliqué à la configuration du projet zenon. Outre la configuration du projet GIS, ce fichier est automatiquement appliqué dans le nœud **Fichiers** => **Éléments graphiques** dans le projet actuel dans zenon Editor. Le fichier graphique est copié en conséquence.

3.3   Map view

The GIS elements are configured at the click of a mouse in the map view.

▶ The display depends on the **Map provider** selected.

▶ The context menu entries depend on the selected element.

▶ If there is no valid **Map provider** available, the view is gray.

NAVIGATION IN THE MAP VIEW

The view can be orientated and scaled as desired with the mouse.

▶ **Mouse wheel forwards:**
Zooms into the map view = larger display.

▶ **Mouse wheel backwards:**
Reduces zoom stage of the map view.

▶ **Moving the mouse pointer when the right mouse button is held down**
Moves the card view in the direction of the mouse. The display of the mouse pointer switches during this time.

▶ **Right mouse button held on the element**
Display of the context menu
Note: The context menu can be hidden by pressing the **ESC key**.

In the bar under the map view the following outputs are displayed:

▶ Status of the zoom preview **(ON/OFF)**.

▶ Coordinates of the mouse pointer on the map. Displayed are *Latitude (Lat:)* and *Longitude (Lng:)*.

▶ Current zoom level (maximum: *20*/Minimum: *3*)

3.4 Engineering in the GIS editor

The following is applicable for configuration in the **GIS editor**:

▶ The configuration is implemented with the mouse and by setting parameters.

▶ Changes to the properties are visualized in real time in the map view of the **GIS editor**.

▶ The geographical reference is visualized in a real-time view of selectable maps.

▶ The configured elements are placed on a map directly.

▶ For linkings, the content of the current zenon editor projects are offered for selection.

▶ The project configuration is saved in an XML file.
This file contains the necessary parameters for the *GIS control* for display in zenon Runtime.

> ⚠ **Attention**
>
> Changes in the zenon Editor must be also manually implemented in the GIS editor or XML files.

PROJECT CONFIGURATION STEPS IN THE GIS EDITOR

Carry out the following steps in the **GIS editor** for a new GIS configuration:

1. Start the **GIS editor** in the zenon Editor.

2. Create a new configuration file:
   To do this, select the **New** entry in the **File** menu bar.

3. Configure the GIS element.
   Note: You can find further information on this in the project configuration instructions for the individual elements.

4. Link the GIS project configuration to zenon screens.

   a) To do this, select the **Configure GIS controls...** entry in the menu bar.
      The **GIS Control configuration** (à la page 43) configuration dialog is opened.

5. Save the project configuration:
   To do this, click on the **Save** or **Save as...** entry in the **File** menu bar.

CHANGING AN EXISTING GIS CONFIGURATION

Carry out the following steps to amend an existing configuration:

1. Start the GIS editor in the zenon Editor.

2. Load an existing GIS configuration.

   a) To do this, select the **Open...** entry in the **File** menu bar.
      The file selection dialog is opened.

   b) Select an XML file.
      The configuration of the selected file is loaded. The content is visualized in the GIS editor.

3.4.1 Use of the zoom preview

With the zoom preview you can test the visibility of screen elements in certain zoom levels already in the GIS editor.

The zoom preview can be activated or deactivated.

1. For this go to **Edit** in the GIS editor.

2. Click on **Enable/Disable Zoom Preview** or press shortcut **Ctrl+E**.

At the bottom left edge of the map view you can see whether the zoom preview is active (*ON*) or inactive (*OFF*) ist.

General procedure:

1. Switch the zoom preview on.

2. Define the desired zoom area in which the screen elements should be visible.

3. Change to the desired zoom level.

   Depending on the setting the screen elements are now visible or invisible.

SETTING THE DESIRED ZOOM LEVEL

To set the zoom level:

1. Create a screen element in the GIS editor if not yet available.

2. On the left hand side of the screen under **Visibility** you can define the following properties:

   ▶ **Zoom level max:** Maximum value = *20*

   ▶ **Zoom level min:** Minimum value = *3*

Note: If the maximum value is smaller than the minimum value, the screen elements are always visible.

Example: Zoom level max was set to *17* and **Zoom level min** to *10*. Move the mouse pointer to the map view and change the zoom level with the help of the mouse wheel. The entered screen elements are visible between zoom levels *17* and *10*. The screen elements are not visible in zoom levels above or below these levels.

In the bar under the map view the following outputs are displayed:

▶ Status of the zoom preview **(ON/OFF)**.

▶ Coordinates of the mouse pointer on the map. Displayed are *Latitude (Lat:)* and *Longitude (Lng:)*.

▶ Current zoom level (maximum: *20*/Minimum: *3*)

3.4.2 Configuration of a level

To create a new layer:

1. In the **tree view of the GIS configuration**, select the **Add Layer** context menu entry.
   A new level with the name *NewLayer* is added.

2. Set the properties for the layer.

To delete an existing layer:

1. Select the level to be deleted in the **tree view of the GIS configuration**.

2. Select the **Delete** context menu entry.
   The selected level is removed from the node without a request for confirmation.

3.4.3 Configuration of a line

To create a new line:

1. In the **tree view of the GIS configuration**, select the corresponding level at which the line is to be created.

2. Select **Add Line** in the context menu entry.
   A new line with the name *NewLine* is added in the node.

3. Position line points (supporting points) in the main window of the **GIS editor**.

4. End drawing of the element by pressing the **Esc key**.

5. Set the properties of the line.

To delete an existing line:

1. Select the line to be deleted in the **tree view of the GIS configuration**.

2. Select the **Delete** context menu entry.
   The selected line and its configuration are removed from the node without a request for confirmation.

To extend an existing line:

1. Select the line to be extended in the **tree view of the GIS configuration**.
   The respective line is selected in the main view.

2. Select the corresponding context menu entry in the main view:

   ▶ *Add point*

   ▶ *Extend line at end*

   ▶ *Extend line at begin*

POSITIONING OF THE LINE

Lines are positioned in the main window of the **GIS Editor** by clicking the mouse. New or existing support points are created or moved with a mouse click.

The drawing or editing of the element is ended with the **ESC** key. The cross-hair is replaced with the normal mouse pointer.

> ⚠ **Attention**
>
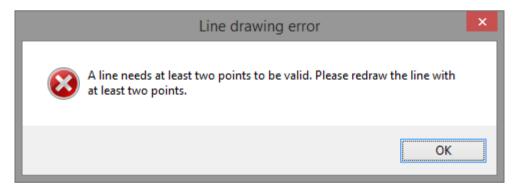> LinesCan only be configured for one layer.
> You can find information on creating a layer in the Configuration of a level (à la page 34) chapter.

CONTEXT MENU ENTRIES

A context menu with the following entries is shown by right-clicking on a line that has already been configured in the map view:

Parameter	Description
Add Point	Adds a new point to the existing project configurationat the position of the mouse pointer.
Extend line at end	Adds a new point to the existing project configurationat the end of the line.
Extend line at begin	Adds a new point to the existing project configurationat the start of the line.
Delete point	Deletes the selected point or the marker.

INCORRECT CONFIGURATION OF A LINE

A line must consist of at least two points (support points). If a configuration is canceled with the **ESC key** after only one point has been configured, configuration is canceled and a corresponding warning dialog is shown. The line configuration is discarded and the line created in the layer is deleted.

3.4.4 Configuration of a line

To create a new area:

1. In the **tree view of the GIS configuration**, select the corresponding level at which the area is to be created.

2. Select **Add Area** in the context menu entry.
   A new area with the name *NewArea* is added.

3. Position corner points of the area in the main window of the **GIS editor**.

4. End drawing of the element by pressing the **Esc key**.

5. Set the properties for the area.

To extend an existing area:

1. Select the area to be extended in the **tree view of the GIS configuration**.
   The selected area is selected in the main view.

2. Select the **Add Point** context menu entry in the main view.

To delete an existing area:

1. Select the area to be deleted in the **tree view of the GIS configuration**.

2. Select the **Delete** context menu entry.
   The area to be deleted and its configuration are removed from the configurations without a request for confirmation.

POSITIONING OF THE AREA

Areas are positioned in the main window of the **GIS Editor** by clicking the mouse. Points for the areas are moved with a mouse click.

The drawing or editing of the element is ended with the **ESC** key. The cross-hair is replaced with the normal mouse pointer.

> ⚠ **Attention**
>
> AreasCan only be configured for one layer.
> You can find information on creating a layer in the Configuration of a level (à la page 34) chapter.
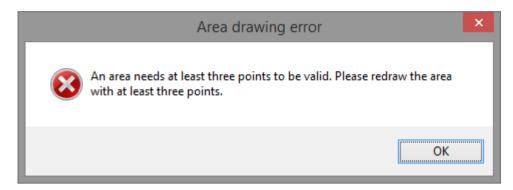
CONTEXT MENU ENTRIES

A context menu with the following entry is shown by right-clicking on an area in the map view that has already been configured:

Parameter	Description
Add Point	Adds a new point to the existing project configurationat the position of the mouse pointer.

INCORRECT CONFIGURATION OF AN AREA

An area must consist of at least three points (support points). If a configuration is canceled with the **ESC key** after only one or two support points have been configured, configuration is canceled and a corresponding warning dialog is shown. The area configuration is discarded and the area created in the layer is deleted.

3.4.5 Configuration of a line

In order to create a new marker:

1. Select the corresponding layer on which the marker ist to be created in the **tree view of the GIS configuration**.

2. Select **Add Marker** in the context menu entry.
   A new marker with the name *NewMarker* is added.

3. Position the marker in the main window of the **GIS editor** with a mouse click.

4. Set the properties for the marker.

To delete an existing marker:

1. Select the area to be deleted in the **tree view of the GIS configuration**.

2. Select the **Delete Element** context menu entry.
   The selected marker and its configuration are removed from the node without a request for confirmation.

POSITIONING OF THE MARKER

A marker is positioned in the main window of the **GIS Editor** by clicking the mouse. The marker can be moved by holding down the mouse button. The marker is highlighted with a black border whilst being edited in the main window.

> ⚠ **Attention**
>
> MarkerCan only be configured for one layer.
> You can find information on creating a layer in the Configuration of a level (à la page 34) chapter.

CONTEXT MENU ENTRIES

A context menu with the following entry is shown by right-clicking on a marker that has already been configured in the map view:

Parameter	Description
Delete element	Deletes the selected point or the marker.

3.4.6 Configuring a fault marker

Fault markers show the exact location of connection breaks of lines.

The calculation of the distance to the connection break is carried out if the selected variables change their value.

Define the desired variables by assigning them:

▶ Link the variable for starting the calculation from the ending point of the line with **Fault marker from end**.

▶ Link the variable for starting the calculation from the starting point of the line with **Fault marker from start**.

To link the variables:

1. Create a line:

2. On the left-hand side of the screen click on the plus at settings.

   The menu is opened.

3. Click on the empty filed at the right side of **Fault marker from end**.

   The **...** selection area is displayed.

4. Click on the selection area in order to open dialog **Variable**.

5. Double-click the desired variable in order to select it.

6. You can use the same method to link a variable to **Fault marker from start** .

7. Close the dialog by clicking on **Esc**.

3.4.6.1 Acknowledging a fault location message

If the value of the selected variables for defining the exact location of a connection break changes, a fault location message occurs.

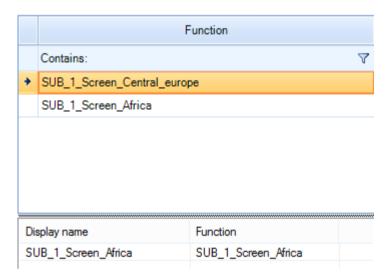**Note:** A maximum of two error location markers per line can be active.

You can acknowledge this fault location message:

1. opening the context menu of the fault location entry.

2. Click on **Acknowledge** in order to acknowledge the error.

   A CEL entry is created: **Fault on line <LineName> acknowledged**. Der entry contains the current time stamp and the source variable.

   The fault marker disappears.

3.4.7 Linking of functions

The **area of the zenon Editor project configuration content** is divided into two windows:

▸ **Function**
List of all functions configured in the current zenon Editor project.
The list entry corresponds to the **Nom** property in the zenon Editor.
The list can be filtered. Click on the funnel symbol to select a filter criterion.

▸ *Linked function(s)*
List of the function(s) linked to the **GIS Editor** property
Functions can be applied or removed from the *list of linked functions* by slowly double-clicking on the **Function** list.
The column width can be moved by holding down the mouse button. The list can be filtered by clicking on the filter bar and entering corresponding parameters.
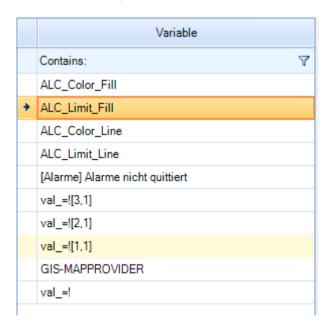
▶   *Display name of the function in Runtime*
     This name can be changed in the name field by clicking in the name field.

▶   *Function*
     Name of the function configured in zenon.
     This name cannot be changed.

ENGINEERING IN THE GIS EDITOR

Carry out the following steps in order to be able to execute a zenon function in Runtime via a context menu:

▶   In the map view, select the GIS element that you want to link to a configured zenon function.

▶   In the **Context menu** property of the GIS element, click the **...** Button.
     The area with the configuration content of the zenon Editor is shown.

▶   Select the desired zenon function in the function list.

▶   Apply the selected function by double clicking in the list of linked functions.

3.4.8 Linking of functions

Variable	
Contains:	▽
ALC_Color_Fill	
➜ ALC_Limit_Fill	
ALC_Color_Line	
ALC_Limit_Line	
[Alarme] Alarme nicht quittiert	
val_=![3,1]	
val_=![2,1]	
val_=![1,1]	
GIS-MAPPROVIDER	
val_=!	

The area of the **zenon Editor configuration content** for variables lists configured variables.

▶   The list entry corresponds to the **Nom** property in zenon Editor.

▶   The list can be filtered.
     Click on the funnel symbol to select a filter criterion.

▶   The selected variable is linked to the property by double clicking on a variable name in the list.
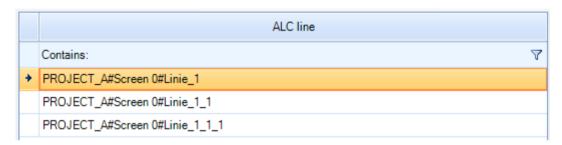
ENGINEERING IN THE GIS EDITOR

Carry out the following steps to link a zenon variable to the GIS configuration:

- ▶ In the map view, select the GIS element that you want to link to a configured zenon variable.

- ▶ In the **Fill color from limit** property of the GIS element, click the **...** Button.
  The area with the configuration content of the zenon Editor is shown.

- ▶ Select the desired zenon variable from the list.

- ▶ Apply the selected variable by double clicking in the GIS configuration.

3.4.9 Linking of functions

The area of the **zenon Editor configuration content** for ALC elements lists configured variables:

- ▶ The list can be filtered.
  Click on the funnel symbol to select a filter criterion.

- ▶ The selected variable is linked to the property by double clicking on a variable name in the list.

- ▶ The list entries comprise:

  *[zenon screen name].[zenon **ID d'élément** of the ALC line]*

ENGINEERING IN THE GIS EDITOR

Carry out the following steps to link a zenon variable to the GIS configuration:

1. In the map view, select the GIS element that you want to link to a configured zenon variable.

2. In the **Line color from ALC** property of the GIS element, click the **...** Button.
   The area with the configuration content of the zenon Editor is shown.

3. Select the desired zenon ALC element from the list.

4. Apply the selected variable by double clicking in the GIS configuration.

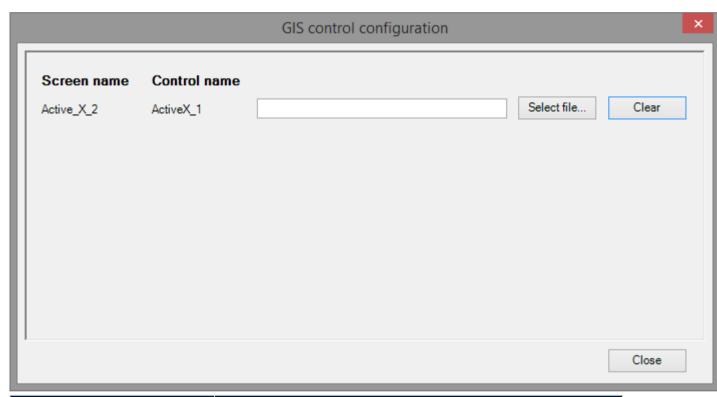5. Close the selection dialog by pressing **Esc**.

3.4.10 GIS control configuration dialog

In this dialog, you configure the linking of a file to the GIS project configuration content with an **ActiveX** *GIS control* in the zenon Editor.

> ⚠ **Attention**
>
> When the dialog is opened, all ActiveX elements used must be linked to a control. Otherwise the GISConfigLoad.xml file will be overwritten when closing the dialog with empty entries and GIS will not be available in Runtime.

| Parameter	Description
Screen name	Name of the screen of the zenon Editor project configuration. This corresponds to the **Nom** property in zenon Editor. zenon screens with a configured GIS control are shown in this dialog.
Control name	Name of the configured GIS ActiveX controls in zenon Editor. This corresponds to the **ID d'élément** property in zenon Editor.
Select file...	Opens dialog to select a GIS configuration file (default:
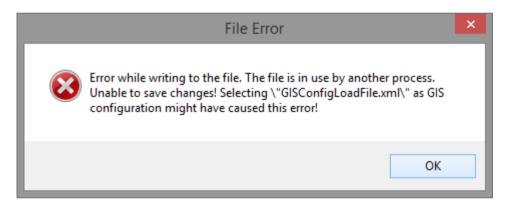
Parameter	Description
	GisConfigLoadFile.xml).
Clear	Discards all configured settings. The dialog remains open.
Close	Applique les paramètres et ferme la boîte de dialogue.

💡 Information

The number of available entries and their naming depends on the project configuration in the current zenon project.
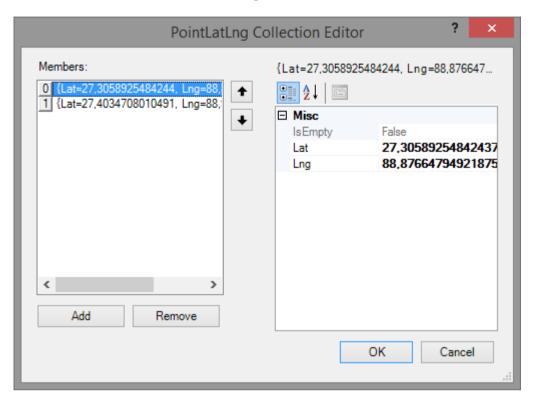
ERROR HANDLING

If the file selected with **Select file...** cannot be loaded, this is shown by a warning dialog.

Possible solutions:

▸ If the selected file is blocked by a running service, end the task responsible for the blocking with the Task Manager.

▸ If the file is blocked by an external application, close the external application.

▸ If the selected file contains an invalid XML structure, select a file with a valid structure.

3.4.11 GEO coordinates dialog

In this dialog, you configure GEO coordinates by manually entering coordinates for the geographical length and width.

> ⚠ **Attention**
>
> The configuration of GEO coordinates in this dialog is not recommended for the current version of the **GIS Editor**.

Parameter	Description
Members	List of the configured GEO coordinates: ▸ *New coordinates*: Click on the **Add** button. ▸ *Delete coordinate(s)*: Select and click on the **Remove** button. **Note:** Multiple selection is possible.

Misc	Properties of the GEO coordinates selected for **Members**:

> ▸ *Lat*:
>   GEO coordinates of the geographical width of the support point.
>
> ▸ *Lng*:
>   GEO coordinates of the geographical length of the support point.

Add	Adds new GEO coordinates to the **Members** list.
Remove	Removes the selected GEO coordinate from the **Members** list.

👍 Hint

It is recommended that the GEO coordinates of the support points are placed in the main view of the graphical user interface with the mouse.

3.4.12 Importing KML/KMZ files

You can import data from ***.KML** and ***.KMZ** files to the GIS editor.

To import data:

1. In the GIS editor click on **File** and then **Load KML/KMZ...**.

   Alternatively you can also use shortcut **Ctrl + K**.

2. The **Select a KML/KMZ file** dialog is opened.

3. Select the desired file.

4. Confirm the selection by clicking on **Open**.

   The **Select GIS layers to import...** dialog is opened.

   Note: The display of the content of the *.KML files in the GIS editor depends on the internal structure of the KML file. Not all content is supported which the current standard v2.3 provides.

   If there are already several folders displayed in column **Foldername**, you can select the desired folder by enabling the corresponding checkbox in column **Import**.

   If only one folder is available, it is selected per default.

5. Confirm the selection by clicking on **OK**.

   The selected folder is imported. The lines, areas, markers and layer information in this folder are then applied in the project.

3.5   Possibilities for application

Via configuration in the zenon Editor and in the GIS editor you can created projects which allow you to display fault locations such as line breaks with ALC.

There are two procedures available:

▸ Using the GIS basic features

▸ Using an additional Add-In application

3.5.1 GIS basic features

For evaluating fault location messages there are in addition to the linked variables for some drivers user bits available. Per default this is not the case for internal variables. The user bits can however be activated in the ***.ini** file of the project:

1. In the zenon Editor go to project property **Paramètres du Runtime**.

2. Enable the **État/horodatage des variables du driver interne**   property checkbox.

    The user bits for the internal variables are now available.

The following statuses are possible:

Variable / Value	User bit / Status	Description
unequal *0*	*LOW*	active alarm at fault marker
unequal *0*	*HIGH*	acknowledged alarm
Equal *0*	*HIGH*	fictional state which can only occur in this possible application
Equal *0*	*LOW*	intitial value at Runtime start

Note: By using this possible application the variable is no longer available for fault location messages if it has been used once for a fault location message and the corresponding acknowledgment. At acknowledging the first case of a fault the user bit is set to *HIGH* by the GIS system. Resetting the status to *LOW* is only possible with the help of an additional Add-In application.

A fault location message can be displayed on one, two or several GIS instances. If a fault location message is acknowledged, it is acknowledged in all instances.

In addition an entry in the CEL is created.

Note: Even if there are several instances, a CEL entry is created only for the one acknowledged fault location message.

For each line two fault markers can be used to localize the fault location.

For each variable only one fault marker can be used. This means that for continuous value change of the variable, the position of the fault marker is also continuously updated.

3.5.2 Additional Add-In application

Using an additional Add-In application makes it possible to permanently use a variable for fault location messages.

Note: The add-in application is not part of the zenon **GIS integration package** and must be created by the user themselves if they want this application.

At acknowledging a fault location message and the subsequent value change of the same variable, the corresponding user bit is reset to status *LOW* by the Add-In application.

To install the Add-In application:

1. In the project manager of the zenon project click on the plus of node **Programming interfaces**.

   The subfolders are displayed.

2. Click on **Add-Ins**.

   A list of the currently available Add-In applications is opened.

3. In the context menu or in the menu bar click **Import Add-In...**.

   The selection dialog **Open** is opened.

4. Select the desired file and confirm this selection by clicking **Open**.

5. The Add-In application is imported and displayed in the list.

Note: Add-In applications depend on the version and are project-based. An area of the supported version (e.g. zenon version 7.00 to zenon version 8.00) shows the validity of the add-in applications.

4 Engineering in the zenon Editor

The configuration in the zenon Editor serves as the basis for the configurations in the **GIS-Editor**. Ensure that all configurations in zenon - especially the content of screens opened in the zenon Editor - have been saved. Unsaved content is not offered in the GIS editor for linking.

> 👍 **Hint**
>
> Well-structured naming of elements in the zenon Editor simplifies the assignment for linking in the **GIS editor**.

Note:

The configuration of a zenon screen with a GIS control (à la page 49) must be carried out before starting the **GIS editor**.

Attention: In order for the GIS configuration files to be available in Runtime, they must be present in the **additional** folder under the following path:

C:\ProgramData\COPA-DATA\SQL2012\[Projekt ID]\zenon\custom\additional

---

☀ Information

The connection between a zenon configuration and a GIS configuration is implemented by means of links. This means that when changing the zenon Editor configuration, the GIS configuration must be adjusted, newly linked or created again.

⚠ Attention

Changes in the zenon Editor must be manually implemented also in the GIS editor or the XML files.

4.1 zenon screen and GIS control

Carry out the following steps for the display in Runtime in the zenon Editor:

1. Create a new screen.

   To do this, select the **New screen** command in the tool bar or in the context menu of the **Screens** node.

2. Change the properties of the screen:

   a) Name the screen in the **Nom** property.

   b) Select the desired screen type in the **Type de synoptique** property.
   Note: The GIS control can be configured for each screen type.

   c) Select the desired frame in the **Gabarit** property.

3. Configure the content of the screen:

   a) Place the **ActiveX** screen element in the screen.
   The **element input** dialog is opened.

   b) In this dialog, select the **GISControl.GISControl** entry from the list of the **ActiveX elements**.

   c) Confirm the selection by clicking on the **OK** button.

d) The screen element is shown on the screen with a preview screen:
Note: the symbolic display always visualizes the country settings configured on the operating system. The actual zoom level configured in the **GIS editor** and the map view are not visualized in the zenon Editor.

e) Ensure that this **ActiveX element** is configured with a sufficient size in order for it to be shown correctly in Runtime.

f) If necessary, configure additional elements for the screen.

4. Créez une nouvelle fonction :

Dans la barre d'outils ou le menu contextuel du nœud Fonctions, sélectionnez **Nouvelle fonction**.
La boîte de dialogue de sélection d'une fonction s'affiche à l'écran.

Go to the node **Favoris**.

a) Select the **Appel de synoptique** function.

b) The dialog for selecting a screen is opened.

c) Select the desired screen.
Note: If you select a screen from another project, ensure that the project is running in the Runtime.

d) Name the function in the **Nom** property.

4.2 Functions and Colors

FUNCTION(S) - ENGINEERING

Carry out the following steps to create a new function:

1. Créez une nouvelle fonction :

   ▸ Dans la barre d'outils ou le menu contextuel du nœud Fonctions, sélectionnez **Nouvelle fonction**.
   La boîte de dialogue de sélection d'une fonction s'affiche à l'écran.

2. Select the desired color function in the list of functions.

3. The dialog for selecting a screen is opened.

4. Select the desired screen.
   Note: If you select a screen from another project, ensure that the project is running in the Runtime.

5. *Optional:* Configure the filter.

6. Name the function in the **Nom** property.

Note: You can find further information in the **Functions and Scripts** manual.

COLOR(S) - ENGINEERING

Carry out the following steps to create a color:

1. Create a new Color palette:

   ▸ Select the *Color Palettes* node (either via the *Screens* node in the local project or in the global project)

2. Select **New color palettes** in the context menu or in the toolbar.
   A new color palette is created with:

   ▸ **Color palette** plus **Color palette**, for example **Color**0

   ▸ the same number of colors as the pre-existing palettes, all colors are *white* as standard

3. Create a new color:

   ▸ Select **New color** in the context menu or in the toolbar, or press the **Insert key**.

   At the lower end of the color table, a new color is inserted for all palettes with

   ▸ Default color *white* and

   ▸ Default **color** plus **index number**, for example **Color**10

4. Define the color and give it a name:

   a) Highlight the desired color in the palette

   b) Enter the color:

   ▸ either directly into the table cell in the detail view, as a hexadecimal code or via the selection dialog by clicking on **...**

   ▸ or in the properties in the **Couleur** group in the property group **Couleur** field as a hexadecimal code or via the selection dialog by clicking on **...**

Note: You can find further information in the Screens manual in the Color palettes chapter.

☀ Information

zenon functions are linked in the **GIS editor** in the **Context menu** property.

You can find further information for the display in Runtime in the Coloring of GIS elements (à la page 56) chapter in zenon Runtime.

4.3 Variables, Limits and Reaction matrices

In the GIS editor variables, functions and ALC objects from zenon projects as well as integration projects and subprojects can be used. The variables are loaded and renamed at the start of the GIS wizard. For the renaming the following syntax is used: *PROJECTNAME#VARIABLENNAME*.

VARIABLE(S) - ENGINEERING

Carry out the following steps to create a new variable:

1. Create a new variable:

   ▸ In the **Variables** node in the context menu, select the **New variable** command.
   The dialog to configure the variables is opened.

2. Configure the properties of the variable.

Note: You can find further information on this in the Variables manual in the Create, modify and use variables chapter.

LIMIT(S) - ENGINEERING

Carry out the following steps to create a new limit:

1. Select the **Variables** node in the tree view of the Project Manager.

   ▸ Select a variable in the detail view of the project manager.

2. Create a limit:

   a) Click on the **Valeurs limite** property group.

   b) Create a new limit value by clicking on the **{Nouvelle limite}** property.
   A new limit value is created. The view of the properties switches to the properties group of the new limit value.

   c) Configure the properties for the limit value.

   d) **Optional:** Use the color palettes when setting the parameters of the limit value color.
   to do this, click on ... in the **Couleur de limite** property and select the *color palettes* tab in the drop-down list.

3. Repeat Item 2 to create further limit values.

Note: You can find further information in the Variables manual in the Limit values chapter.

REACTION MATRIX - ENGINEERING

Carry out the following steps to create a Reaction matrix:

1. Create a new Reaction matrix

a) In the **Variables** node, go to the **Reaction matrix** sub node.

a) In the toolbar or in the context menu of the node, select the **New reaction matrix...** command.
The dialog to select a reaction matrix is opened.

b) Name the reaction matrix and select the type of reaction matrix from the options list.

c) Confirm your input by clicking on the **OK** button.
The dialog to configure the reaction matrix is opened.

2. Set the parameters for the Reaction matrix

a) Configure the states for the respective status.

b) Configure the **limit value color** property in the **Additional attributes** field.

c) **Optional:** Activate the **Flashing** option

3. Link the reaction matrix to a variable:

a) Select the **Variables** node in the tree view of the Project Manager.

b) Select a variable in the detail view of the project manager.

c) Go to the **Valeurs limite** property group.

d) Click on the **...** button for the **Matrice de réaction** property.
The dialog to select a reaction matrix is opened.

e) Select the configured reaction matrix and confirm your selection by clicking on the **OK** button.

Note: You can find further information in the Variables manual in the Reaction matrices chapter.

> 💡 **Information**
>
> zenon limit values and reaction matrices are linked to a zenon variable in the **GIS editor** in the **Limit color from limit** or **Fill color from limit** property.
>
> The variable for the display of the map view is linked in the **GIS editor** in the **Map variable** property.
>
> You can find further information for the display in Runtime in the Coloring of GIS elements (à la page 56) chapter in zenon Runtime.

4.4 GIS control - Engineering in the zenon Editor

ALC LINE - ENGINEERING

Carry out the following steps for the display in Runtime in the zenon Editor:

1. Create a new screen:

   In the toolbar or the context menu of the **Screens**node, select the **New screen** command.
   An empty *Standard* screen is created.

2. Change the properties of the screen:

   a) Name the screen in the **Nom** property.

   b) Select the desired screen type in the **Type de synoptique** property.
       Note: The GIS control can be configured for each screen type.

   c) Select the desired frame in the **Gabarit** property.

3. Configure the content of the screen:

   a) Place the *Line* screen element on the screen.
       Click on the start of the line in the screen and drag the line with the mouse button held down.
       The end of the line is set by releasing the mouse button.

4. Change the properties of the line:

   a) Name the line in the **ID d'élément** property of the **Général** properties group.

   b) Activate, in the **Coloration Automatique de Lignes** project properties group, the **Couleur définie par CAL** property.

   c) **Optional:** Amend the parameter settings for **Automatic Line Coloring** in the properties of the **Coloration Automatique de Lignes** project properties group.

5. Save the configurations of the zenon screen.

6. **Optional:** Configure additional ALC lines:

   ▸ Repeat steps 5 to 7.

Note: You can find further information on configuration in the Automatic Line Coloring (ALC) manual in the Lines chapter.

FLASHING - ENGINEERING

Carry out the following steps to activate the flashing of screen elements:

1. Place the desired screen element onto a zenon screen.

2. Change the properties of the screen element:

   a) Activate the **Gestion d'alarmes active** property in the **Liste d'alarmes** properties group.

   b) Activate the **Les alarmes non acquittées clignotent** property.

   c) **Optional:** Configure further alarm settings.

> 🔅 **Information**
>
> zenon ALC lines are linked to a zenon ALC line in the **GIS editor** in the **Limit color from ALC** or **Fill color from ALC** property.
>
> You can find further information for the display in Runtime in the Coloring of GIS elements (à la page 56) chapter in zenon Runtime.

5 Operation in zenon Runtime

NAVIGATION IN THE MAP VIEW

Navigation is effected with the mouse:

- **Mouse wheel forwards:**
  Zooms into the map view = larger display.

- **Mouse wheel backwards:**
  Reduces zoom stage of the map view.

- **Moving the mouse pointer when the right mouse button is held down**
  Moves the card view in the direction of the mouse. The display of the mouse pointer switches during this time.

- **Right mouse button held on the element**
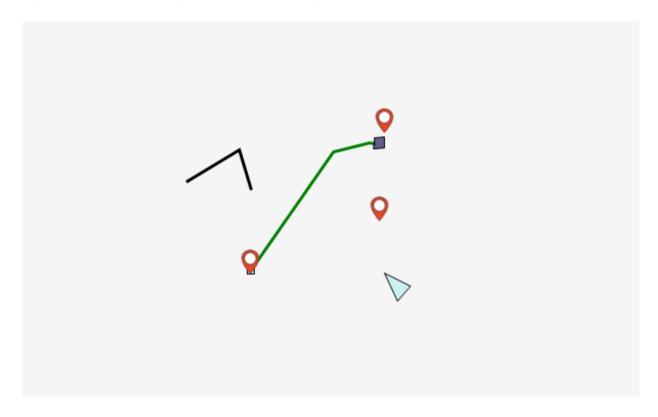 Display of the context menu
  Note: The context menu can be hidden by pressing the **ESC key**.

EXECUTION OF LINKED FUNCTIONS VIA THE CONTEXT MENU

The context menu of the element is shown by right-clicking on a line or in an area. zenon functions that were linked during configuration are offered in this context menu. The function is executed in Runtime by selecting a context menu entry.

DISPLAY IN THE EVENT OF INVALID MAP PROVIDER

If no **Map provider** is linked or the map view cannot be loaded with the existing configuration, a gray background is shown in Runtime.

5.1 Coloring of GIS elements

GIS elements adopt the color for display in the zenon Runtime according to the configuration of the variable in the zenon Editor. If several configurations have been configured for a GIS element and these are relevant, they are visualized according to a prescribed priority.

It is always only the highest-priority coloring that is visualized in Runtime.

PRIORITIZATION OF THE COLORING

The coloring of a GIS element is shown in zenon Runtime according to the following order:

1. **Automatic Line Coloring**
   If a zenon ALC line is linked in the GIS configuration, the coloring of the linked element is visualized in Runtime according to the ALC line configuration.

2. **Reaction matrix**
   If the GIS configuration contains a linking to a zenon variable with a linked reaction matrix, the coloring of the GIS element is visualized in Runtime according to the reaction matrix.

3. **Limit value**
   If there is a violation of a limit value for a variable and this variable is linked in the **GIS editor**, the limit value colors linked to the variable are used for display of the element in Runtime.

4. **Configured color in the GIS editor**
   If there is no variable in the configuration in the GIS editor linked for ALC, reaction matrices or limit values, the (static) color configured in the GIS editor is shown.

FLASHING

If flashing has been configured in the configuration in the zenon Editor for the element linked in the GIS editor (variable, ALC line, ...), this is also visualized for the display of GIS elements in zenon Runtime. The flashing interval is prescribed with a value of 750 milliseconds in the process. This flashing interval cannot be changed.