



zenon
by COPA-DATA

zenon manual

Worldview

v.8.10



COPADATA

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1 Welcome to COPA-DATA help

ZENON VIDEO-TUTORIALS

You can find practical examples for project configuration with zenon in our YouTube channel (https://www.copadata.com/tutorial_menu). The tutorials are grouped according to topics and give an initial insight into working with different zenon modules. All tutorials are available in English.

GENERAL HELP

If you cannot find any information you require in this help chapter or can think of anything that you would like added, please send an email to documentation@copadata.com.

PROJECT SUPPORT

You can receive support for any real project you may have from our Support Team, who you can contact via email at support@copadata.com.

LICENSES AND MODULES

If you find that you need other modules or licenses, our staff will be happy to help you. Email sales@copadata.com.

2 Worldview

A worldview in zenon is any screen for which the **Use screen size from frame** option has been deactivated and which is larger or the same size as the frame. It makes it possible to display screens that have a size that exceeds the frame size and allows navigation and zooming in these screens. With this it is possible to display very large equipment completely and to navigate in them. In the worldview you can zoom in on parts of the equipment. Dependent on the zoom steps you can define which details are displayed (zooming, panning and decluttering). You can also jump directly to elements.

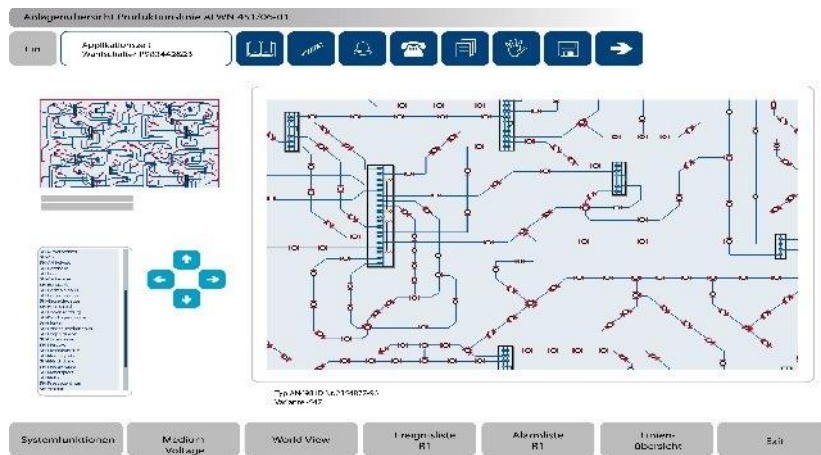
The zoom level setting in which an element should be visible in the worldview, is set in the property group **Runtime** of the element under **Worldview display**.

The Zoom levels (on page 9) for the worldview can be set in the project properties under **Graphical design, Runtime general** and **Zoom steps for world view**.



Information

Some elements cannot be zoomed such as Combo/Listbox, Alarm Message List, diagram of the Extended Trend and so on. The size of these elements remains constant. However their position changes.



3 Engineering in the Editor

To use a worldview, you need:

1. a screen (on page 6) which is larger than its frame; this is the worldview
2. a screen of type **Worldview overview** (on page 6); this is used for navigating in the worldview and affects the frame of the worldview

Note: These two screen must be based on different frames.

When calling up the screen (on page 11) of type **Worldview overview**, you define which frame is controlled by this screen.

Hints:

- ▶ Do not use the **Worldview** as start screen.
- ▶ Start the **Worldview** and the **Worldview overview** together with the help of a script.



Information

A worldview overview necessary when navigating a worldview screen with Multi-touch. With Multi-touch, you can directly navigate in the worldview.

SCREEN ELEMENTS

The visibility of dynamic elements, vector elements and their names for object lists are defined in the properties of the respective objects: **Runtime/Worldview display/...**

3.1 Create worldview

In order to create a worldview:

1. create a new screen
2. go to property group **Frame**
3. select the **Use screen size from frame** property
4. deactivate this property (remove tick if necessary)
5. for properties **Width [pixels]** and **Height [pixels]** select values which exceed the size of the frame
Maximum values: 32.000
6. create a screen switch function for this screen



Information

Faceplates are not suitable for worldview. Linked screens are not scaled in screen containers, but always shown in their original size.

3.2 Creating a screen of the type Worldview overview

ENGINEERING

Two procedures are available to create a screen:

- ▶ The use of the screen creation dialog
- ▶ The creation of a screen using the properties

Steps to create the screen using the properties if the screen creation dialog has been deactivated in the menu bar under **Tools, Settings** and **Use assistant**:

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 **Name** property.
- b) Select *Worldview overview* in the **Screen type** property.
- c) Select the desired frame in the **Frame** property.

3. Configure the content of the screen:

- a) Select the **Elements (screen type)** menu item from the menu bar.
- b) Select *Insert template* in the drop-down list.
The dialog to select pre-defined layouts is opened. Certain control elements are inserted into the screen at predefined positions.
- c) Remove elements that are not required from the screen.
- d) If necessary, select additional elements in the **Elements** drop-down list. Place these at the desired position in the screen.

4. Create a screen switch function.



CONTROL ELEMENTS

Control element	Description
Insert template	<p>Opens the dialog for selecting a template for the screen type.</p> <p>Templates are shipped together with zenon and can also be created by the user.</p> <p>Templates add pre-defined control elements to pre-defined position in the screen. Elements that are not necessary can also be removed individually once they have been created. Additional elements are selected from the drop-down list and placed in the zenon screen. Elements can be moved on the screen and arranged individually.</p>

WINDOW

Control elements for the overview window.

Control element	Description
Overview Window	Display the screen which is controlled.
Object list	List of the directly controllable Objects (on page 11).
Show zoom steps	<p>Displays the current zoom level (on page 9).</p> <p>Note: Element of the type <i>Dynamic text</i>. Functionality is assigned using the Screen type specific action property.</p>

ZOOM

Control elements for the operation of the zoom.

Control element	Description
Minimum zoom	Turns off zooming. The screen is displayed in the size of the frame.
Maximum zoom	Maximum zoom level.
Zoom in	Zoom into the screen.
Zoom out	Zoom out of the screen.

Control element	Description
Zoom (slider)	Slider for setting the zoom level.

NAVIGATION

Buttons for navigation in the diagram.

Control element	Description
Move left	Moves the displayed section to the left.
Move right	Moves the displayed section to the right.
Up	Moves the displayed section up.
Down	Moves the displayed section down.

COMPATIBLE ELEMENTS

Control elements that are replaced or removed by newer versions and continue to be available for compatibility reasons. These elements are not taken into account with automatic insertion of templates.

Control element	Description
Show zoom steps	Static Win32 control element. Was replaced by a <i>dynamic text</i> field. For the description, see current element.

3.3 Zoom steps

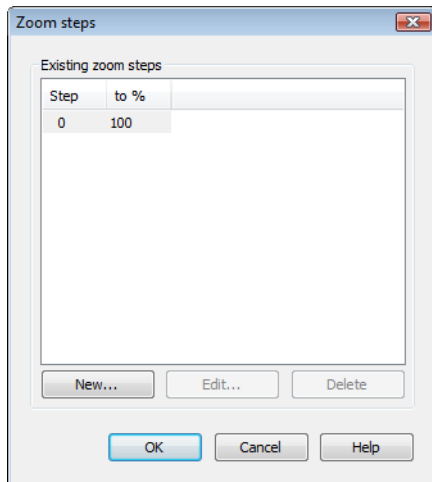
Zoom steps define the relation of frame size and displayed screen. The display takes place in steps to which percentage numbers are assigned. 100 % equals the frame size. The larger the section, the lower the step.

Note: Worldview zooming is not possible in faceplates

To engineer zoom steps:

1. navigate to group **Graphical design/Runtime general** in project properties
2. Click on the ... button in the **Zoom steps for world view** property

3. the dialog for configuring zoom steps is opened



Parameter	Description
Existing zoom steps	In the list you can find the available zoom steps.
New...	Creates a new zoom step. You can edit the proposed value manually. The value must be between 1 and 100.
Edit...	Opens the field for the percentage value for the highlighted step.
Delete...	Deletes the selected zoom level.

MINIMUM ZOOM STEP

The minimum step is limited to the relation of the screen size to the frame size.

Example:

- ▶ 10 zoom steps from 10% to 100% are engineered.
- ▶ The screen is twice as large as the frame.
 - ▶ The zoom steps come up to 50%. From this point on the full screen size is displayed.
- ▶ The screen is four times as large as the frame.
 - ▶ The zoom steps come up to 20 %.

3.4 Objects

Each element in a screen can be given a unique name. This name can also be used for navigation in the worldview overview. A click on the name in the object list moves the displayed section until the element is in the middle of the displayed section.

To define objects:

1. click on the desired element
2. navigate to Group **Runtime** in properties
3. Click on the **Name for object list** property
4. enter a name for the object

In the Runtime all named objects are displayed in the object list.

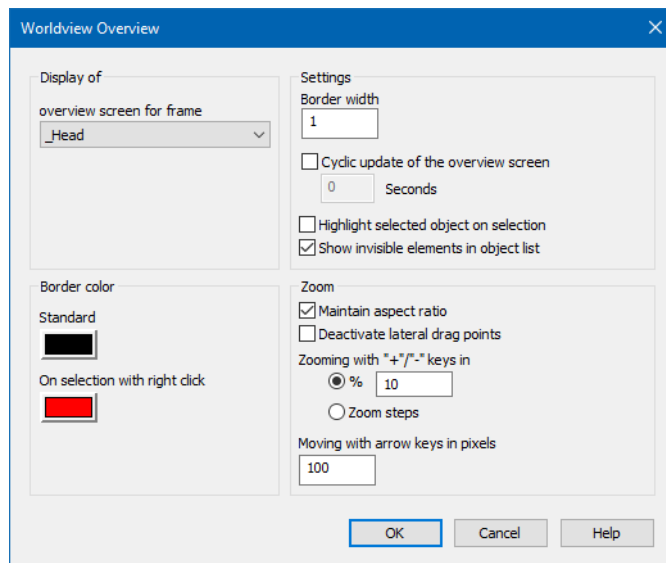
4 Function screen switch to Worldview overview

When a Worldview overview screen is called up in the Runtime, you define which frame is navigated by the screen. The screen which should be controlled must not have property **Use screen size from frame** and must be larger than the corresponding frame.

To engineer a function screen switch to a screen of type Worldview overview:

1. Create a new function
2. Select screen switching
3. the dialog for selecting a screen is opened
4. select the screen of type Worldview overview (on page 6)

5. the dialog for configuring the screen is opened



Parameter	Description
Display of the overview screen for the frame	Selection of the frame which should be controlled from drop-down list.
Border color	Defines color display in the Runtime:
Standard	Color for the frame that indicates the currently selected area in the Worldview. Clicking on Color opens the palette.
When selecting with right click	Color of the border if the section is clicked with the right mouse button for moving. Clicking on Color opens the palette.
Settings	
Frame width	Width for the frame that indicates the currently selected area in the Worldview.
Cyclic update of the overview screen	<i>Active:</i> Dynamic elements in the assigned screen are updated at defined time intervals.
Seconds	Time in seconds for the cyclic update .
Highlight selected object on selection	<i>Active:</i> If you click a object in the object list, the object is highlighted.
Show invisible elements in station list	<i>Active:</i> Invisible screen elements are shown in the station list. <i>Inactive:</i> The station list is updated as soon as a

Parameter	Description
	visibility change of elements is undertaken.
Zoom	Properties for zoom.
Maintain aspect ratio	<i>Active:</i> The aspect ratio between height and width of the rectangle is retained when dragging.
Deactivate lateral drag points	<i>Active:</i> The drag points of the border are deactivated and no longer displayed. Exception: Corner points.
Zooming with +/- keys in	Selection on how to use keys + and - for zooming. The keys must be assigned (on page 14) appropriately.
%	With the assigned keys zooming is done in percentage steps. Enter a value between <i>1</i> and <i>100</i> . Default: <i>10</i>
Zoom steps	With the assigned keys zooming is done in zoom steps (on page 9).
Moving with arrow keys in pixels	Enter the number of pixels by which the screen is moved when using the arrow keys. The keys must be assigned (on page 14) appropriately. Enter a value between <i>1</i> and <i>16,000</i> . Default: <i>100</i>
OK	Applies information, closes dialog and opens dialog for replacing links.
Cancel	Discards all changes and closes dialog.
Help	Opens online help.



Information

Changes of the property in the Editor only take effect in the Runtime after the screen of type **Worldview overview** is called up again.

5 Operation in Runtime

To be able to navigate in a worldview in the Runtime, use:

- ▶ a screen of the type Worldview overview
or
- ▶ Multi-Touch gestures on a touch screen

WORLDVIEW OVERVIEW

1. call up screen Worldview (on page 6) with the help of a screen switch function
2. call up the screen of type Worldview overview (on page 6) with the help of a Screen switch function (on page 11)

Hint: Use a script in order to always call up both screen switch functions.

With the help of the control elements, the mouse and the keyboard you can navigate and zoom in the worldview. You can find details in the Worldview overview (on page 14) chapter.

MULTI-TOUCH

You can also go directly to the worldview without its own worldview overview by means of Multi-Touch. You can find details in the Navigation with Multi-Touch in the worldview (on page 18) chapter.

5.1 Worldview Overview

In the Runtime you have several possibilities to control zoom size and displayed section in the worldview overview:

- ▶ Control elements (on page 15)
- ▶ Mouse (on page 16) and touch
- ▶ Keyboard (on page 17)

The control elements can also be operated via touch screen. The points of contact for the operation via mouse are dimensioned respectively in order to be also operated via touch without problems.

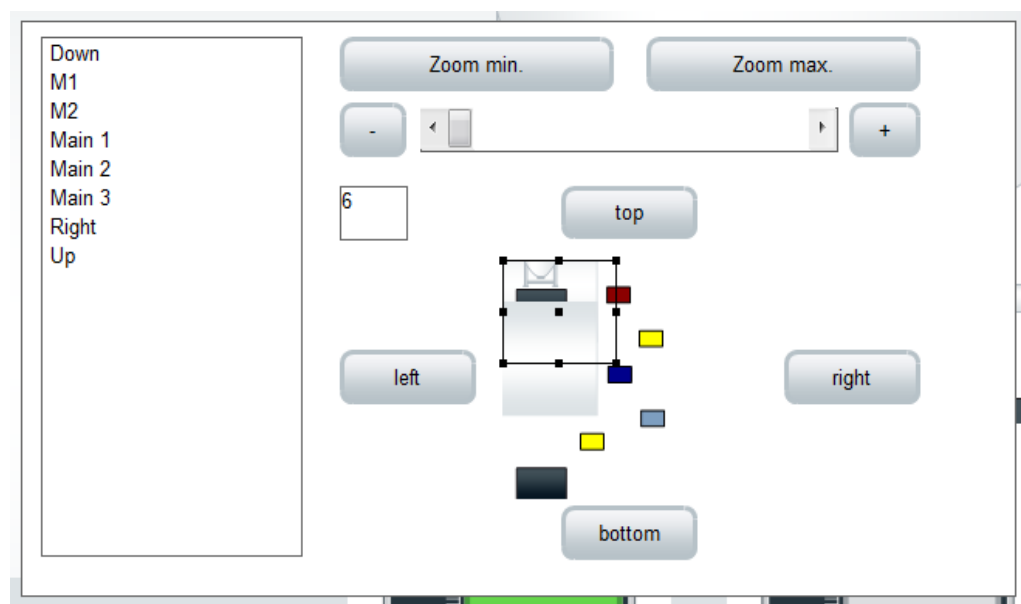
When using Multi-Touch gestures (on page 18), you can directly navigate in the worldview and a *Worldview overview* type screen is not necessary.



Information

The worldview overview is always in the foreground as its own window in the Runtime, regardless of the settings for screen elements in the Editor.

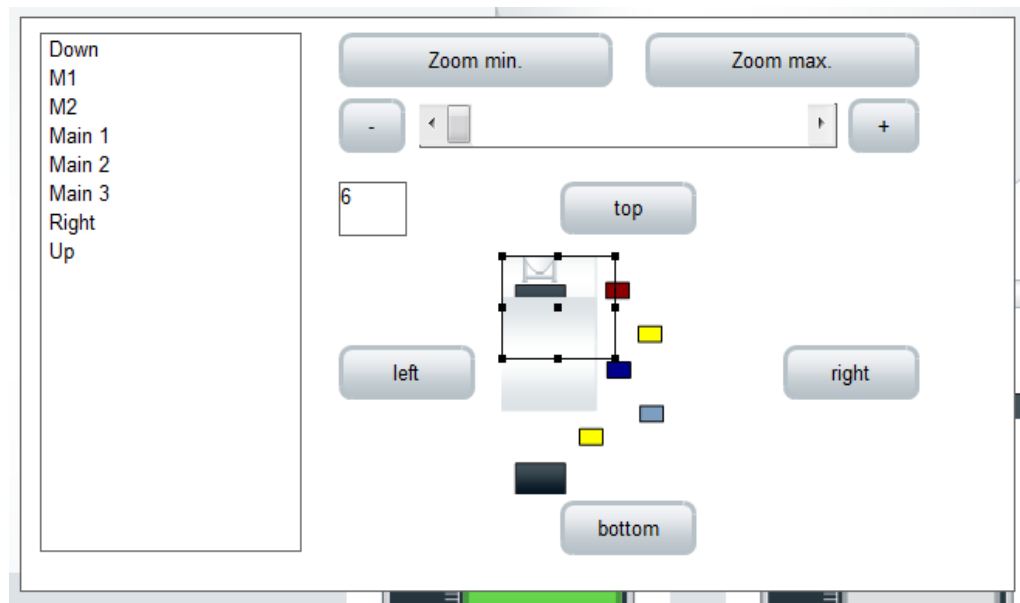
5.1.1 Navigation with control elements



Parameters	Description
Zoom min.	Turns off zoom. The section is displayed in the size of the frame.
Zoom max.	Maximum zoom level.
+	Zoom into the screen.
-	Zoom out of the screen.
Slider	Slider for setting the zoom level.
Move left	Moves the displayed section to the left.
Right	Moves the displayed section to the right.
Up	Moves the displayed section up.
Down	Moves the displayed section down.
Object list	List of the directly controllable Objects (on page 11). Click on an object in order to center the object in the displayed screen section.

5.1.2 Navigation with the mouse

With the mouse and touch operation the following action are available:



► Move section:

To move the displayed section of the worldview, you have several possibilities:

- In the section click on the center and move the mouse over the frame while holding the left mouse button.
- Press the **space** bar and click in the worldview. The form of the mouse cursor changes to a hand. Now you can move the worldview with the help of the mouse. Left mouse clicks are not registered in the worldview when the space bar is pressed.
- Click in the section with the right mouse button and move the mouse over the frame while holding the right mouse button.
- Press and hold the mouse wheel and move the mouse over the frame.

► Zooming:

Click in the section and spin the mouse wheel in order to zoom. Zooming is carried out in the defined zoom steps (on page 9). During zooming the mouse cursor remains over the selected position in the screen.

► Scrolling:

The worldview can be scrolled with the mouse wheel:

- Vertical: Click in the worldview and spin the mouse wheel.
- Horizontal: Click in the worldview, hold and press **Shift** and spin the mouse wheel.

Shift key + mouse wheel upwards: scroll to the right

Shift key + mouse wheel downwards: scroll to the left

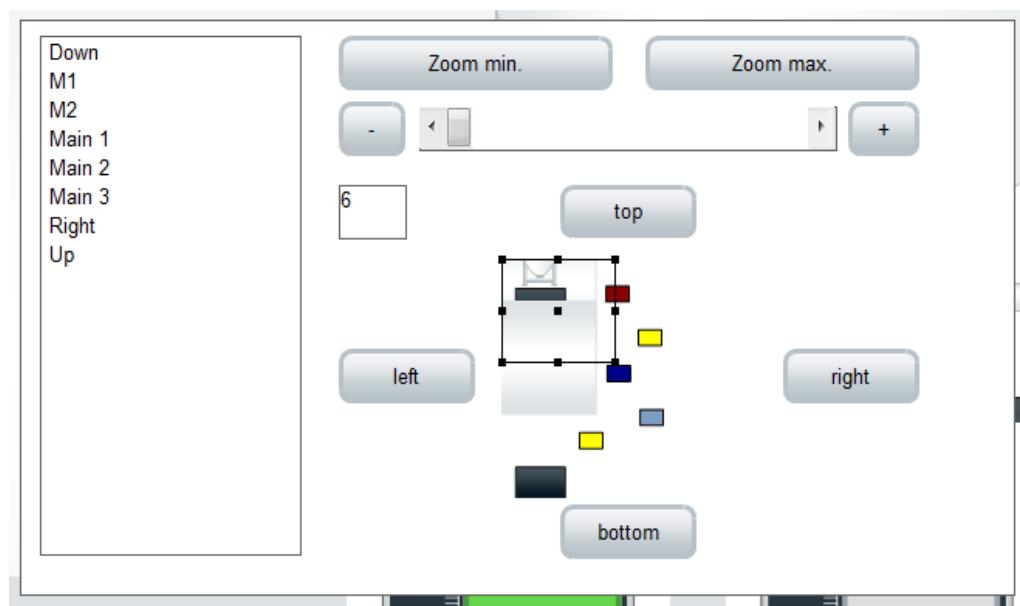


Information

Frames can also be moved with the mouse if the screen is not a worldview. To do this, the **Move Frame via mouse** property must be activated. In the Runtime, a left mouse click in a free area of the screen and then moving the mouse with the mouse button held down moves the whole screen.

5.1.3 Navigation with the keyboard

You can also use the keyboard for zooming and moving. For this you must assign keys to control elements, for example:



- ▶ **up** -> arrow key **up**
- ▶ **down** -> arrow key **down**
- ▶ **left** -> arrow key **left**
- ▶ **right** -> arrow key **right**
- ▶ **+** (slider) -> key **+**
- ▶ **-** (slider) -> key **-**

To assign a key to a control element:

1. Highlight the control element
2. go to property **Key combination**
3. Click on the ... button or in the input field

4. the dialog for defining the key combination is opened
5. click in field key combination
6. press the desired key or key combination on the keyboard, e.g.: +
7. the key combination is displayed in the input field
8. Close the dialog by clicking on OK

5.2 Navigation with Multi-Touch in the worldview

Multi-Touch gestures for zooming and scrolling are suitable for navigation on touch panels in the worldview. For this a screen of type Worldview overview is not necessary. The navigation can be implemented with:

- ▶ Windows 7 touch gestures (on page 19)
- ▶ Windows 8 touch gestures (on page 20)

RULES

- ▶ Move: If a screen in a container is not a worldview, it accepts the settings of the faceplate screen.

MOVING THE WORLDVIEW OR WORLDVIEW IN THE CONTAINER OF A FACEPLATE

- ▶ Screen is bigger than the frame: Content of the screen is moved.
- ▶ Screen is the same size or smaller than the frame: No reaction.

WORLDVIEW EMBEDDED IN FACEPLATE.

- ▶ Screen is bigger than the frame: Content of screen is moved.
- ▶ Screen is the same size or smaller than the frame: No reaction.

MOVE THE FRAME OR BORDER WITH THE MOUSE IF THE SCREEN IS A WORLDVIEW AND THE SAME SIZE OR SMALLER THAN THE FRAME:

- ▶ With the right mouse button: No reaction.
- ▶ With the left mouse button: Frame is moved.

CHANGE WORLDVIEW SIZE

The size of the worldview cannot be changed.

Exception: If the worldview is a faceplate, the size cannot be changed.

Click with right mouse button:

- ▶ Screen is bigger than the frame: Contents are moved.
- ▶ Screen is the same size or smaller than the frame: No reaction.

PROJECT CONVERSION

Values for **Move horizontally** and **Move vertically** when converting from an earlier version to zenon 7.20:

- ▶ Screen is bigger than the frame: *Move*.
- ▶ Screen is the same size or smaller than the frame: *No reaction*.

5.2.1 Navigation under Windows 7

To be able to use Multi-Touch gestures under Windows 7 to navigate in the worldview, you must:

- ▶ activate them via property **Multi-Touch for zoom and scroll**
- ▶ or implement them via VBA/VSTA

ZOOM AND SCROLL VIA PROPERTY MULTI-TOUCH FOR ZOOM AND SCROLL

To use Multi-Touch without VBA/VSTA:

1. In the project properties in the **Interaction** node for the **Recognition** property, activate *Windows 7*.
2. Deactivate property **Use screen size from frame** in node **Frame** at the properties of the screen
3. Activate property **Multi-Touch for zoom and scroll** in node **Interaction** at the properties of the screen

With this you can scroll and zoom in the screen with touch operation using Multi-Touch gestures. With this VBA/VSTA for zooming and scrolling is deactivated.

ZOOM AND SCROLL VIA VBA/VSTA

To implement zooming and scrolling via VBA/VSTA Events, property **Multi-Touch for zoom and scroll** must not be active.

The following is available in the [DynPicture](#):

- ▶ Property
int ZoomLevel: Displays the current zoom level in the worldview (valid value only in the Runtime and for a worldview).

► Style

SetZoomAndPos(float ZoomX, float ZoomY, int ZoomLevel, int CursorX, int CursorY, int PosX, int PosY, int PosMode):

ZoomX -> New zoom factor X direction; if not used, set to 0

ZoomY -> New zoom factor Y direction; if not used, set to 0

ZoomLevel -> Zoom level, if not used, set to -1

CursorX -> Cursorposition X

CursorY -> Cursorposition Y

PosX -> New position X (see PosMode)

PosY -> New position Y (see PosMode)

PosMode -> Coordinates in Pos

-1 = PosX, PosY are ignored

0 = center point , original coordinates

1 = center point, zoomed coordinates

2 = left top, original coordinates

3 = left top, zoomed coordinates

4 = zoomed coordinates of the cursor from the top left

The position of the window is changed in such a way that after the zooming, the mouse cursor is still over the same position of the screen

Attention: **ZoomX**, **ZoomY** and **ZoomLevel** can never be used simultaneously. Either you enter a **ZoomLevel** or a zoom factor for x and y axis.

5.2.2 Navigation under Windows 8

To navigate in a worldview with Multi-Touch under Windows 8:

1. In the project properties in the **Interaction** node for the **Recognition** property, activate *Windows 8*.
2. Deactivate, for the screen in the **Frame** group, the **Use screen size from frame** property and define the screen size as larger than the frame.
3. navigate to group **Interaction** in the screen properties.
4. Configure the properties for **Zoomen** and **Verschieben**.

For the move gesture, you can define the direction - horizontal, vertical or both. To do this, use the **Horizontal verschieben** and **Vertikal verschieben** properties.