

# NETRONIC HTML5 Visual Scheduling Widget - Standard Edition (VSW SE)

Valid for the VSW SE as of version 3.1.2

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## Contents

1	Changelog .....	3
2	System Requirements .....	4
2.1	Supported Browsers and Versions .....	4
2.2	Needed 3 <sup>rd</sup> Party Libraries and Versions .....	4
3	Overview .....	4
4	Object Model .....	5
4.1	Activity .....	6
4.2	Allocations .....	17
4.2.1	Allocation .....	17
4.2.2	AllocationEntry .....	25
4.3	Calendars .....	26
4.3.1	Calendar .....	26
4.3.2	CalendarEntry .....	26
4.4	Curves .....	26
4.4.1	Curve .....	26
4.4.2	CurvePointEntry .....	27
4.5	DateLine .....	27
4.6	Entity .....	28
4.7	Link .....	30
4.8	Resource .....	31
4.9	Symbol .....	34
4.10	TableRowDefinitions .....	34
4.10.1	TableRowDefinition .....	34
4.10.2	TableCellDefinition .....	35
4.11	TooltipTemplate .....	35
5	Widget .....	36

5.1	Options .....	36
5.2	Callbacks .....	50
5.3	Methods .....	56
6	Enumerations .....	60
6.1	ActivityBarDragModes.....	60
6.2	ActivityBarShape .....	61
6.3	AllocationBarDragModes .....	61
6.4	AllocationBarShape .....	61
6.5	CollapseState .....	61
6.6	CurveInterpolationType .....	61
6.7	CurveType.....	62
6.8	DateLineGridModes .....	62
6.9	HorizontalAlignment .....	62
6.10	LinkRoutingType .....	62
6.11	ObjectType .....	62
6.12	ProgressBarWidthCalculationMode.....	62
6.13	RowDesigns .....	63
6.14	RowDragModes .....	63
6.15	SnapTargets .....	63
6.16	TableType .....	63
6.17	TextWrapMode .....	63
6.18	TimescaleNavigationMode.....	64
6.19	TimeType .....	64
6.20	UpdateModes.....	64
6.21	ViewArea .....	64
6.22	ViewType .....	64
6.23	VisualType .....	65

## 1 Changelog

Version	Description of changes
<b>3.1.2</b>	PATCH: Updates to calendar and curve objects now updates also the activities view.
<b>3.1.1</b>	PATCH: Performance issue and memory leaks removed.
<b>3.1</b>	<p>MINOR: New options pm_topRowMarginInTimeArea, pm_bottomRowMarginInTimeArea, pm_subRowDistanceInTimeArea, pm_topBarSymbolsVisible.</p> <p>MINOR: New option pm_linksVisibleInActivitiesView</p> <p>MINOR: New option timescaleNavigationMode</p> <p>MINOR: New link property PM_RoutingType and new option pm_defaultLinkRoutingType</p> <p>MINOR: New option pm_selectionColor</p> <p>MINOR: New option pm_splitterHighlightingColor</p>
<b>3.0</b>	<p>MINOR: New objects TooltipTemplate, TableRowDefinition/TableCellDefinition, DateLine including add/update/remove methods and properties named PM_(Bar/Curve)TooltipTemplateID and PM_TableRowDefinitionID on several objects.</p> <p>MINOR: New properties like PM_RowSelectable/PM_BarSelectable, PM_RowCollapsible on several objects.</p> <p>MINOR: New property PM_ViewArea on Resource objects.</p> <p>MINOR: New properties BaselineStart/BaseLineEnd, DueDate, ReleaseDate plus color properties on Activity objects.</p> <p>MINOR: New properties PM_BarHeight, PM_BarTextWrapMode, PM_EndIsSnapTarget/ PM_StartIsSnapTarget, PM_SnapTargetsForStart/ PM_SnapTargetsForEnd on Activity and Allocation objects.</p> <p>MINOR: New properties PM_CollapsedRowDesign/ PM_ExpandedRowDesign, PM_CollapseState/PM_CurveCollapseState, PM_MinimumRowHeight on Activity and Resource objects.</p> <p>MINOR: New properties EarliestEnd/EarliestStart, LatestEnd/LatestStart, MustEndOn/MustStartOn plus color properties, and PM_EarliestDragStart/ PM_LatestDragEnd on Activity and Allocation objects.</p> <p>MINOR: New method setTimeResolutionForView.</p> <p>MINOR: Many new color options e.g. for coloring the timescale.</p> <p>MINOR: New callbacks onClicked, onCollapseStateChanged/ onCurveCollapseStateChanged, onTableCellDefinitionWidthChanged, onTimeAreaViewParametersChanged, onVerticalScrollOffsetChanged.</p> <p>MINOR: And some more object properties and options.</p>
<b>2.1</b>	<p>MINOR: New method about.</p> <p>MINOR: New message boxes for invalid, expiring, expired, not existing license.</p>
<b>2.0</b>	MAJOR: Now the setting of a license key is mandatory.

	<p>MINOR: New method removeAll.</p> <p>MINOR: New option locale.</p> <p>MINOR: New allocation properties PM_ProgressColor and PM_ProgressNonworkingColor.</p> <p>PATCH: Activity property Editable now marked as deprecated.</p> <p>MINOR: New option pm_linksVisibleInResourcesView.</p>
<b>1.0</b>	Initial release.

## 2 System Requirements

### 2.1 Supported Browsers and Versions

Google Chrome (current version)

Mozilla Firefox (current version)

Apple Safari (current version)

Microsoft Edge (current version, starting with Chromium base)\*

Microsoft Internet Explorer 11 (with limited support and reduced performance)

\* The current (not yet Chromium based) version of Microsoft Edge has glitches in SVG support!

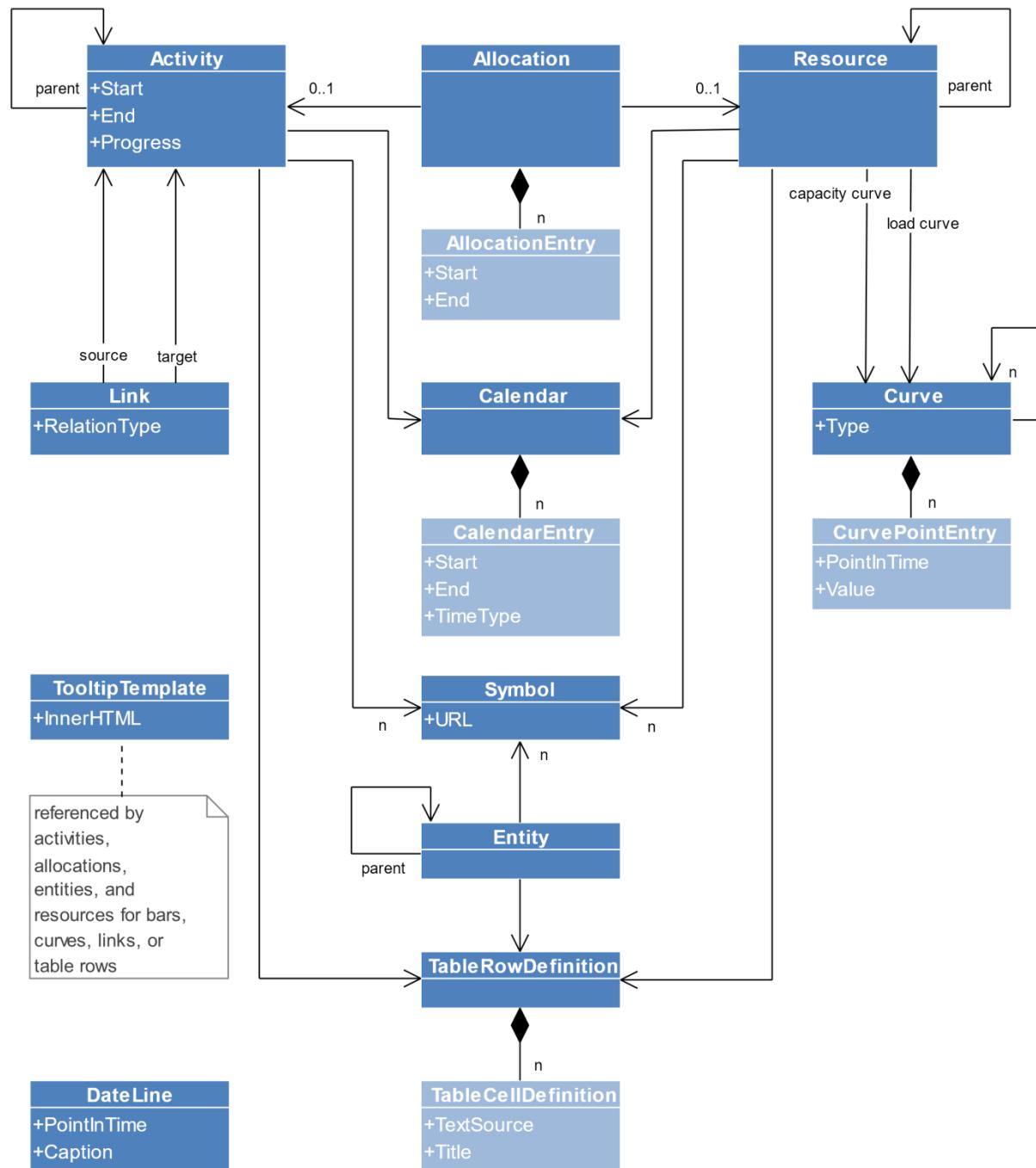
### 2.2 Needed 3<sup>rd</sup> Party Libraries and Versions

Library	Supported Versions	Comment
jQuery	2.x.x/3.x.x	Required. Needed for HTML handling. Versions 2.x.x support older Internet Explorer versions (but these are not supported by VSW Base!). URL: <a href="https://jquery.com/">https://jquery.com/</a>
jQuery UI	1.11.x/1.12.x	Required. Needed as widget factory. URL: <a href="https://jqueryui.com/">https://jqueryui.com/</a>
jQuery.mousewheel	3.1.13	Required. Needed for supporting the mouse wheel. URL: <a href="https://github.com/jquery/jquery-mousewheel/">https://github.com/jquery/jquery-mousewheel/</a>
D3.js	3.x/4.x/5.x	Required. Needed for SVG handling. Versions 3.x are not modular. Beginning with version 5.0.0 Internet Explorer is not supported anymore. URL: <a href="https://d3js.org/">https://d3js.org/</a>
Hammer.js	2.0.8	Required. Needed for touch and mouse gesture handling. URL: <a href="https://hammerjs.github.io/">https://hammerjs.github.io/</a>
TinyColor	1.4.1	Required. Needed for calculating derived colors e.g. for coloring non-working times. URL: <a href="https://bgrins.github.io/TinyColor/">https://bgrins.github.io/TinyColor/</a>

## 3 Overview

The following diagram summarizes all object types described in this document and their relationships using the UML class diagram notation. Only those object properties are listed that are essential for understanding the concept of this data model.

The most important types (Activity, Allocation, Resource, Link, and Calendar) that encapsulate the core of a business logic are placed at the top of the diagram. Objects of any type other than AllocationEntry, CalendarEntry, CurvePointEntry, and TableCellDefinition (see the pale blue shapes) can be managed by calling methods of the widget (see add..., update..., and remove...).



## 4 Object Model

The object model of the Visual Scheduling Widget Base is designed for resource planning in general, but is extended to cover presentations all views, activities view, resources view, and loads view.

The model is extensible on every object. When created by JavaScript code, the objects do not require a special constructor, so they can be created easily with or without using the new keyword.

#### A note regarding the dates in attributes:

Browsers did not handle date strings consistently in the past. So it is recommended to use the simplified ISO 8601 standard see <http://www.ecma-international.org/ecma-262/5.1/#sec-15.9.1.15> for defining unambiguously: Examples: 2019-05-03T08:13:28Z (UTC) or 2019-05-03T10:13:28+02:00 (MEST) for the same time point. Using date objects in the object is recommended, since then the creation can be done on several ways and internally the dates can be used immediately without conversion.

## 4.1 Activity

An Activity object defines the properties of a single activity.

Property Name	Type	Description
<b>BarText</b>	string	<b>Optional, default: undefined –</b> Text to display in the bar.
<b>BaselineEnd</b>	Date string	<b>Optional, default: undefined –</b> Baseline end date of the activity.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>BaselineStart</b>	Date string	<b>Optional, default: undefined –</b> Baseline start date of the activity.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>CalendarID</b>	string	<b>Optional, default: undefined –</b> Corresponding calendar. If undefined, then the default calendar specified by the option defaultCalendarID will be used. See also option pm_activityCalendarsEnabled.
<b>DueDate</b>	Date string	<b>Optional, default: undefined –</b> Due date of the activity.

		<p>If data type is <i>String</i>, then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.</p> <p>See also option <code>pm_releaseDueDateConnectionsVisible</code>, if you want the widget to draw a connection line between a due date and a release date.</p>
<b>EarliestEnd</b>	Date string	<p><b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.</p> <p>If data type is <i>String</i>, then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.</p>
<b>EarliestStart</b>	Date string	<p><b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.</p> <p>If data type is <i>String</i>, then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.</p>
<b>Editable</b>	boolean	<p><b>Optional, default: true</b> – If set to false, then neither this activity nor any allocation in which this activity is involved can be changed by user interactions.</p>
<b>End</b>	Date string	<p><b>Optional, default: undefined</b> – End date of the activity.</p> <p>If data type is <i>String</i>, then the value should be formatted this</p>

		way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>ID</b>	string	<b>Required</b> – Identifier of the activity.
<b>LatestEnd</b>	Date   string	<b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>LatestStart</b>	Date   string	<b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>MustEndOn</b>	Date   string	<b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>MustStartOn</b>	Date   string	<b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.

		If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>ParentID</b>	string	<b>Optional, default: undefined –</b> Identifier of the parent of the activity. This serves for setting up a hierarchy of activities.  If this property is undefined the current activity will be considered as a root node of the activity hierarchy.
<b>PM_AllowedBarDragModes</b>	number (see enum <a href="#">ActivityBarDragModes</a> )	<b>Optional, default: value of option pm_defaultAllowedActivityBarDragModes –</b> This option determines the allowed bar drag modes for this activity in the activities view (these can be overwritten using the callback canDrag).
<b>PM_BarHeight</b>	number	<b>Optional, default: value in option pm_defaultActivityBarHeight –</b> Height of the bars in pixels. This attribute is useful, when more than one line of text is shown inside (see attribute BarText). Proposal: For one line take 22, for two lines 38, for three lines 54, and so on. When no progress bar is needed, then you can subtract 4 from the value.
<b>PM_BarSelectable</b>	boolean	<b>Optional, default: value of option pm_defaultActivityBarSelectable –</b> If set to true, then the bar representing this activity will be selectable.
<b>PM_BarShape</b>	number (see enum <a href="#">ActivityBarShape</a> )	<b>Optional, default: value in option pm_defaultActivityBarShape –</b> This option defines which shape should be used by default for the visualization activity bars.
<b>PM_BarLayoutMode</b>	number (see enum <a href="#">TextWrapMode</a> )	<b>Optional, default:</b> <b>TextWrapMode.None –</b> Specifies whether the text inside the bar is wrapped.
<b>PM_BarTooltipTemplateID</b>	string	<b>Optional, default: undefined –</b> ID

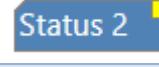
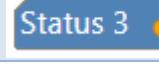
		of a tooltip template.  The template is used for tooltips that appear on the activity bars.
<b>PM_BaselineBorderColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined –</b> Color for the border of the baseline bar. If undefined, a default value of the widget will be used.
<b>PM_BaselineColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined –</b> Color for the working time periods of the baseline bar. The nonworking time periods of the bar will be colored with the same color as long as the property <b>PM_BaselineNonworkingTimeColor</b> is undefined or set to "calculated". If undefined, a default value of the widget will be used.
<b>PM_BaselineNonworkingTimeColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red" or "calculated")	<b>Optional, default: undefined –</b> Color for the nonworking time periods of the baseline bar. If undefined, a default value of the widget will be used. If set to "calculated", a color will be calculated using the color defined by the <b>PM_BaselineColor</b> property.
<b>PM_BorderColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red" or "calculated")	<b>Optional, default: undefined –</b> Color for the border of the bar. If undefined, a default value of the widget will be used. If set to "calculated", a color will be calculated using the color defined by the <b>PM_Color</b> property. This can be useful in situations where two bars are positioned next to each other and a graphical indicator is needed to visually distinguish the two bars.
<b>PM_CollapsedRowDesign</b>	number (see enum <a href="#">RowDesigns</a> )	<b>Optional, default: value in option pm_defaultActivityCollapsedRowDesign</b> – Specifies how the time area is filled when the row is collapsed and visible. See enum <a href="#">RowDesigns</a> in the Enumerations chapter for details.
<b>PM_CollapseState</b>	number (see enum <a href="#">CollapseState</a> )	<b>Optional, default: -1</b> – Specifies whether the row of the activity should be expanded or collapsed when displayed. See also callback

		onCollapseStateChanged.  -1: no change 0: display activity row in an expanded way 1: display activity row in a collapsed way
<b>PM_Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined –</b> Color for the working time periods of the bar. The nonworking time periods of the bar will be colored with the same color as long as the property PM_NonworkingTimeColor is undefined or set to "calculated". If undefined, a default value of the widget will be used.
<b>PM_CurveCollapseState</b>	number (see enum <a href="#">CollapseState</a> )	<b>Optional, default: -1 –</b> Specifies whether the curves in a activity row should be expanded or collapsed when displayed (only applicable, when option curvePanesVisibleInActivitiesView is set). See also callback onCurveCollapseStateChanged.  -1: no change 0: display curves 1: hide curves
<b>PM_DueDateColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> Color for the due date symbol. If undefined, a default value of the widget will be used.
<b>PM_EarliestDragStart</b>	Date string	<b>Optional, default: undefined –</b> If set, then the time before the given date is grayed, when beginning to drag the activity bar. If the option pm_dragDatesLimitingInteraction is set to true, then the bar itself cannot be dragged before the date.
<b>PM_EarliestEndColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option pm_defaultActivityConstraintSymbolColor –</b> Color for the EarliestEnd constraint symbol.
<b>PM_EarliestStartColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or	<b>Optional, default: value in option pm_defaultActivityConstraintSymbolColor –</b> Color for the EarliestStart constraint symbol.

	"red")	
<b>PM_ExpandedRowDesign</b>	number (see enum <a href="#">RowDesigns</a> )	<b>Optional, default: value in option pm_defaultActivityExpandedRowDesign</b> – Specifies how the time area is filled when the row is expanded and visible. See enum <a href="#">RowDesigns</a> in the Enumerations chapter for details.
<b>PM_HasChildren</b>	boolean	<b>Optional, default: false</b> – If set to true, then the row representing this activity will be collapsible/expandable even when there are no children defined. This serves for lazy loading.
<b>PM_LatestDragEnd</b>	Date string	<b>Optional, default: undefined</b> – If set, then the time after the given date is grayed, when beginning to drag the activity bar. If the option pm_dragDatesLimitingInteraction is set to true, then the bar itself cannot be dragged after the date.
<b>PM_LatestEndColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option pm_defaultActivityConstraintSymbolColor</b> – Color for the LatestEnd constraint symbol.
<b>PM_LatestStartColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option pm_defaultActivityConstraintSymbolColor</b> – Color for the LatestStart constraint symbol.
<b>PM_MinimumRowHeight</b>	number	<b>Optional, default: value in option pm_defaultMinimumActivityRowHeight</b> – Minimum height of the activity row in pixels. This attribute is useful, when more than one line of text is shown inside the table cells. Proposal: For one line take 36*, for two lines 52, for three lines 68, and so on. In order to have the same height also, when no bar is placed in the row, take the maximum bar height adding 20 (f.e. 42) as minimum.
<b>PM_MustEndOnColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option pm_defaultActivityConstraintSymbolColor</b> – Color for the MustEndOn constraint symbol.

<b>PM_MustStartOnColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option pm_defaultActivityConstraintSymbolColor</b> – Color for the MustStartOn constraint symbol.
<b>PM_NonworkingTimeColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red" or "calculated")	<b>Optional, default: undefined</b> – Color for the nonworking time periods of the bar. If undefined, a default value of the widget will be used. If set to "calculated", a color will be calculated using the color defined by the PM_Color property.
<b>PM_PredictedEndColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the predicted end bar.
<b>PM_ProgressBackgroundColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option pm_defaultActivityProgressBackgroundColor</b> – Color for the background of the progress bar region.
<b>PM_ProgressColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the working time periods of the progress bar. The nonworking time periods of the bar will be colored with the same color as long as the property PM_ProgressNonworkingTimeColor is undefined or set to "calculated". If undefined, a default value of the widget will be used.
<b>PM_ProgressNonworkingTimeColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red" or "calculated")	<b>Optional, default: undefined</b> – Color for the nonworking time periods of the progress bar. If undefined, a default value of the widget will be used. If set to "calculated", a color will be calculated using the color defined by the PM_ProgressColor property.
<b>PM_ReleaseDateColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the release date symbol. If undefined, a default value of the widget will be used.
<b>PM_RowCollapsible</b>	boolean	<b>Optional, default: value of option pm_defaultActivityRowCollapsibl</b>

		<b>e</b> – If set to true, then the row representing this activity will be interactively collapsible when children exist.
<b>PM_RowSelectable</b>	boolean	<b>Optional, default: value of option pm_defaultActivityRowSelectable</b> <b>e</b> – If set to true, then the row representing this activity will be selectable.
<b>PM_RowSymbolIDs</b>	string[]	<p><b>Optional, default: undefined</b> – Array of identifiers of the symbols to be shown in the table symbol cell of the beginning of the table row.</p> <p>The symbols will be arranged one below the other. However, if the cell is not high enough to hold all symbols, then the remaining symbols are also arranged side-by-side. If this still does not fit, an additional “show more” symbol will be displayed.</p> <p>An empty string (“”) will cause an “empty” symbol to be displayed. By this placeholder, you can reserve space for a symbol that may be shown at a later time.</p> <p>Please note: Each symbol will be resized to an image with a width and height of 16 pixels each at a zoom level of 100%.</p>
<b>PM_RowTooltipTemplateID</b>	string	<p><b>Optional, default: undefined</b> – ID of a tooltip template.</p> <p>The template is used for tooltips that appear on the activity table rows.</p>
<b>PM_SnapTargetsForEnd</b>	number (see enum <a href="#">SnapTargets</a> )	<b>Optional, default: value of widget option pm_defaultActivitySnapTargetsForEnd</b> – When dragging horizontally, then the visible end date of this allocation will optionally be snapping to date lines and calendar grids. The user can override an active snapping by pressing the ALT key while dragging.
<b>PM_SnapTargetsForStart</b>	number (see enum <a href="#">SnapTargets</a> )	<b>Optional, default: value of widget option pm_defaultActivitySnap-</b>

		<b>TargetsForStart</b> – When dragging horizontally, then the visible start date of this activity will optionally be snapping to date lines and calendar grids. The user can override an active snapping by pressing the ALT key while dragging.
<b>PM_Status1Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the status symbol to the right of the bar. If undefined, no symbol appears. Only visible, when property PM_Status1Visible is true.
<b>PM_Status2Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the status symbol to the right of the bar. If undefined, no symbol appears. Only visible, when property PM_Status2Visible is true.
<b>PM_Status3Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the status symbol to the right of the bar. If undefined, no symbol appears. Only visible, when property PM_Status3Visible is true.
<b>PM_Status1Visible</b>	boolean	<b>Optional, default: false</b> – If set to true and the corresponding status color is set in property PM_Status1Color, then a predefined symbol is displayed to the right of the bar. 
<b>PM_Status2Visible</b>	boolean	<b>Optional, default: false</b> – If set to true and the corresponding status color is set in property PM_Status2Color, then a predefined symbol is displayed to the right of the bar. 
<b>PM_Status3Visible</b>	boolean	<b>Optional, default: false</b> – If set to true and the corresponding status color is set in property PM_Status3Color, then a predefined symbol is displayed to the right of the bar. 
<b>PM_TableColor</b>	string (CSS color value, e.g.	<b>Optional, default: undefined</b> – Color for the table row.

	"#ff0000", "rgb(255, 0, 0)", or "red")	If undefined, a default value of the widget will be used.
<b>PM_TableRowDefinitionID</b>	string	<b>Optional, default: value of option pm_defaultActivityTableRowDefinitionID</b> – Identifier of a TableRowDefinition object, that defines the composition of the table row.
<b>PM_TableTextColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the table row texts. If undefined, a default value of the widget will be used.
<b>PM_TextColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the texts of the bar. If undefined, a default value of the widget will be used.
<b>PM_TopLeftBarSymbolID</b>	string	<b>Optional, default: undefined</b> – Identifier of the symbol to be shown at the top left side of the activity bar. Please note: A symbol will be resized to an image with a width and height of 12 pixels each at a zoom level of 100%.
<b>PM_TopRightBarSymbolID</b>	string	<b>Optional, default: undefined</b> – Identifier of the symbol to be shown at the top right side of the activity bar. Please note: A symbol will be resized to an image with a width and height of 12 pixels each at a zoom level of 100%.
<b>PredictedEnd</b>	Date   string	<b>Optional, default: undefined</b> – A date that indicates the predicted end of the activity. This date is used to display a bar between this date and the end of the activity.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>Progress</b>	number (floating point; in	<b>Optional, default: 0.0</b> – Used to display a completion layer.

<b>ReleaseDate</b>	Date string	<p><b>Optional, default: undefined –</b> Release date of the activity.</p> <p>If data type is <i>String</i>, then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.</p> <p>See also option pm_releaseDueDateConnectionsVisible, if you want the widget to draw a connection line between a due date and a release date.</p>
<b>Start</b>	Date string	<p><b>Optional, default: undefined –</b> Start date of the activity.</p> <p>If data type is <i>String</i>, then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.</p>
<b>TableText</b>	string	<p><b>Optional, default: undefined –</b> Text to display in the table row (see also property PM_TableRowDefinitionID).</p>

## 4.2 Allocations

### 4.2.1 Allocation

An Allocation object defines an allocation of one activity to one resource.

Property Name	Type	Description
<b>ActivityID</b>	string	<b>Optional, default: undefined –</b> Identifier of an <a href="#">Activity</a>
<b>BarText</b>	string	<b>Optional, default: undefined –</b> Text to display in the bar.
<b>EarliestEnd</b>	Date string	<b>Optional, default: undefined –</b> If defined, an additional symbol will be displayed to indicate this date.

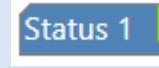
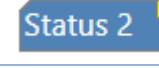
		If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>EarliestStart</b>	Date   string	<b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>Entries</b>	<a href="#">AllocationEntry[]</a>	<b>Optional, default: undefined</b> – array of allocation entries.
<b>ID</b>	string	<b>Required</b> – Identifier of the allocation
<b>LatestEnd</b>	Date   string	<b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>LatestStart</b>	Date   string	<b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.

<b>MustEndOn</b>	Date   string	<p><b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.</p> <p>If data type is <i>String</i>, then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.</p>
<b>MustStartOn</b>	Date   string	<p><b>Optional, default: undefined</b> – If defined, an additional symbol will be displayed to indicate this date.</p> <p>If data type is <i>String</i>, then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.</p>
<b>PM_AllowedBarDragModes</b>	number (see enum <a href="#">AllocationBarDragModes</a> )	<p><b>Optional, default: value of option</b></p> <p><b>pm_defaultAllowedAllocationBarDragModes</b> – This option determines the allowed bar drag modes for this allocation in the resources view (these can be overwritten using the callback <code>canDrag</code>).</p>
<b>PM_BarHeight</b>	number	<p><b>Optional, default: value in option</b></p> <p><b>pm_defaultAllocationBarHeight</b> – Height of the bar in pixels. This is useful, when more than one line of text is shown inside (see attribute <code>BarText</code>). Proposal: For one line take 22, for two lines 38, for three lines 54, and so on. When no progress bar is needed, then you can subtract 4 from the value.</p>
<b>PM_BarSelectable</b>	boolean	<p><b>Optional, default: value of option</b></p> <p><b>pm_defaultAllocationBarSelectable</b> – If set to true, then the bar representing this allocation will</p>

		be selectable.
<b>PM_BarShape</b>	number (see enum <a href="#">AllocationBarShape</a> )	<b>Optional, default: value in option</b> <b>pm_defaultAllocationBarShape</b> – This option defines which shape should be used by default for the visualization allocation bars.
<b>PM_BarTextWrapMode</b>	number (see enum <a href="#">TextWrapMode</a> )	<b>Optional, default:</b> <b>TextWrapMode.None</b> – Specifies whether the text inside the bar is wrapped.
<b>PM_TooltipTemplateID</b>	string	<b>Optional, default: undefined</b> – ID of a tooltip template.  The template is used for tooltips that appear on the allocation bars.
<b>PM_BarLayoutOffset</b>	number	<b>Optional, default: 0</b> – Offset of the bar in pixels relative to its upper side. A negative number will shift the bar upwards, a positive number will shift the bar downwards.
<b>PM_BorderColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red" or "calculated")	<b>Optional, default: undefined</b> – Color for the border of the bar. If undefined, the value of the corresponding activity, if available, will be used. If set to "calculated", a color will be calculated using the color defined by the PM_Color property. This can be useful in situations where two bars are positioned next to each other and a graphical indicator is needed to visually distinguish the two bars.
<b>PM_EarliestDragStart</b>	Date   string	<b>Optional, default: undefined</b> – If set, then the time before the given date is grayed, when beginning to drag the allocation bar. If the option pm_dragDatesLimitingInteraction is set to true, then the bar itself cannot be dragged before the date.
<b>PM_EarliestEndColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option</b> <b>pm_defaultAllocationConstraint SymbolColor</b> – Color for the EarliestEnd constraint symbol.
<b>PM_EarliestStartColor</b>	string (CSS color value, e.g.	<b>Optional, default: value in option</b>

	"#ff0000", "rgb(255, 0, 0)", or "red")	<b>pm_defaultAllocationConstraintSymbolColor</b> – Color for the EarliestStart constraint symbol.
<b>PM_EndIsSnapTarget</b>	boolean	<b>Optional, default: true</b> – If set to true, then the visible end date of this allocation in the resources view is used as a snap target for a dragged bar (see attributes PM_SnapTargetsForStart and PM_SnapTargetsForEnd)
<b>PM_LatestDragEnd</b>	Date   string	<b>Optional, default: undefined</b> – If set, then the time after the given date is grayed, when beginning to drag the allocation bar. If the option pm_dragDatesLimitingInteraction is set to true, then the bar itself cannot be dragged after the date.
<b>PM_LatestEndColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option</b> <b>pm_defaultAllocationConstraintSymbolColor</b> – Color for the LatestEnd constraint symbol.
<b>PM_LatestStartColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option</b> <b>pm_defaultAllocationConstraintSymbolColor</b> – Color for the LatestStart constraint symbol.
<b>PM_MustEndOnColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option</b> <b>pm_defaultAllocationConstraintSymbolColor</b> – Color for the MustEndOn constraint symbol.
<b>PM_MustStartOnColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option</b> <b>pm_defaultAllocationConstraintSymbolColor</b> – Color for the MustStartOn constraint symbol.
<b>PM_NonworkingTimeColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red" or "calculated")	<b>Optional, default: undefined</b> – Color for the nonworking time periods of the bar. If undefined, the value of the corresponding activity, if available, will be used. If set to "calculated", a color will be calculated using the color defined by the PM_Color property.
<b>PM_PredictedEndColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the predicted end bar.

<b>PM_ProgressBackgroundColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: value in option</b> <b>pm_defaultAllocationProgressBackgroundColor</b> – Color for the background of the progress bar region.
<b>PM_ProgressColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined –</b> Color for the working time periods of the progress bar. The nonworking time periods of the bar will be colored with the same color as long as the property <b>PM_ProgressNonworkingTimeColor</b> is undefined or set to "calculated". If undefined, a value of the property with the same in the corresponding activity, if available, will be used.
<b>PM_ProgressNonworkingTimeColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red" or "calculated")	<b>Optional, default: undefined –</b> Color for the nonworking time periods of the progress bar. If undefined, a value of the property with the same in the corresponding activity, if available, will be used. If set to "calculated", a color will be calculated using the color defined by the <b>PM_ProgressColor</b> property.
<b>PM_SnapTargetsForEnd</b>	number (see enum <a href="#">SnapTargets</a> )	<b>Optional, default: value of widget option</b> <b>pm_defaultAllocationSnapTargetsForEnd</b> – When dragging horizontally, then the visible end date of this allocation will optionally be snapping to date lines, calendar grids, and start or end dates of other allocations in same row, when dragging lets these dates get near the end date (see attribute <b>PM_EndIsSnapTarget</b> ). The user can override an active snapping by pressing the ALT key while dragging.
<b>PM_SnapTargetsForStart</b>	number (see enum <a href="#">SnapTargets</a> )	<b>Optional, default: value of widget option</b> <b>pm_defaultAllocationSnapTargetsForStart</b> – When dragging horizontally, then the visible start

		date of this allocation will optionally be snapping to date lines, calendar grids, and start or end dates of other allocations in same row, when dragging lets these dates get near the start date (see attribute PM_StartIsSnapTarget). The user can override an active snapping by pressing the ALT key while dragging.
<b>PM_StartIsSnapTarget</b>	boolean	<b>Optional, default: true</b> – If set to true, then the visible start date of this allocation in the resources view is used as a snap target for a dragged bar (see attributes PM_SnapTargetsForStart and PM_SnapTargetsForEnd)
<b>PM_Status1Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the status symbol to the right of the bar. If undefined, no symbol appears. Only visible, when property PM_Status1Visible is true.
<b>PM_Status2Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the status symbol to the right of the bar. If undefined, no symbol appears. Only visible, when property PM_Status2Visible is true.
<b>PM_Status3Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the status symbol to the right of the bar. If undefined, no symbol appears. Only visible, when property PM_Status3Visible is true.
<b>PM_Status1Visible</b>	boolean	<b>Optional, default: false</b> – If set to true and the corresponding status color is set in property PM_Status1Color, then a predefined symbol is displayed to the right of the bar. 
<b>PM_Status2Visible</b>	boolean	<b>Optional, default: false</b> – If set to true and the corresponding status color is set in property PM_Status2Color, then a predefined symbol is displayed to the right of the bar. 

<b>PM_Status3Visible</b>	boolean	<b>Optional, default: false</b> – If set to true and the corresponding status color is set in property PM_Status3Color, then a predefined symbol is displayed to the right of the bar. 
<b>PM_TextColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the texts of the bar. If undefined, the value of the corresponding activity, if available, will be used.
<b>PM_TopLeftBarSymbolID</b>	string	<b>Optional, default: undefined</b> – Identifier of the symbol to be shown at the top left side of the allocation bar. Please note: A symbol will be resized to an image with a width and height of 12 pixels each at a zoom level of 100%.
<b>PM_TopRightBarSymbolID</b>	string	<b>Optional, default: undefined</b> – Identifier of the symbol to be shown at the top right side of the allocation bar. Please note: A symbol will be resized to an image with a width and height of 12 pixels each at a zoom level of 100%.
<b>PredictedEnd</b>	Date   string	<b>Optional, default: undefined</b> – A date that indicates the predicted end of the allocation. This date is used to display a bar between this date and the end of the allocation.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>Progress</b>	number (floating point; in percent; $\geq 0, \leq 100$ )	<b>Optional, default: 0.0</b> – Used to display a completion layer.
<b>ResourceID</b>	string	<b>Optional, default: undefined</b> – Identifier of a <a href="#">Resource</a>

#### 4.2.2 AllocationEntry

Property Name	Type	Description
<b>End</b>	Date string	<b>Optional, default: undefined</b> – End date of the allocation entry. This date itself is not(!) part of the interval described by this entry.  If data type is <i>String</i> , then the value has to be formatted this way: " YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC).
<b>PM_Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the working time periods of the bar. If undefined, the value of the corresponding allocation, if available, will be used.
<b>PM_Height</b>	number	<b>Optional, default: value in option pm_defaultAllocationBarHeight</b> – Height of the entry in pixels.
<b>PM_NonworkingTimeColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red" or "calculated")	<b>Optional, default: undefined</b> Color for the nonworking time periods of the bar. If undefined, the value of the corresponding allocation, if available, will be used. If that one is also undefined, then the nonworking time periods of the bar will be colored with the same color as the working times (see <b>PM_Color</b> property).  If set to "calculated", a color will be calculated using the color defined by the <b>PM_Color</b> property.
<b>PM_RelativeTopOffset</b>	number	<b>Optional, default: 0</b> – Offset of the entry in pixels relative to the upper side of the corresponding allocation. A negative number will shift the entry upwards, a positive number will shift the entry downwards.
<b>Start</b>	Date string	<b>Optional, default: undefined</b> – Start date of the allocation entry.  If data type is <i>String</i> , then the value has to be formatted this way: " YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC).

## 4.3 Calendars

### 4.3.1 Calendar

A Calendar object defines working and non-working times to be used with resources.

Property Name	Type	Description
<b>Entries</b>	<a href="#">CalendarEntry[]</a>	<b>Optional, default: undefined</b> – Array of calendar entry objects. The order of the entries inside the array is important! If undefined, the calendar consists of non-working times only.
<b>ID</b>	string	<b>Required</b> – Identifier of the calendar

### 4.3.2 CalendarEntry

A CalendarEntry object defines a single time period. It has to be referenced in the Entries array of a Calendar object. If several calendar entries describe the same time period, then the last entry wins.

Property Name	Type	Description
<b>End</b>	Date   string	<b>Optional, default: undefined</b> – End of the working time period.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>Start</b>	Date   string	<b>Optional, default: undefined</b> – Start of the working time period.  If data type is <i>String</i> , then the value should be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC). Since the browsers do not interpret every formatted date string in a standardized way, one has to be careful about it.
<b>TimeType</b>	number (see enum <a href="#">TimeType</a> )	<b>Optional, default: 1</b>  1: WorkingTime, 2: NonworkingTime

## 4.4 Curves

### 4.4.1 Curve

Property Name	Type	Description
<b>CurveIDs</b>	string[]	<b>Optional, default: undefined</b> – Array of curve IDs (in case of StackedCurve only)
<b>CurvePointEntries</b>	<a href="#">CurvePointEntry[]</a>	<b>Optional, default: undefined</b> – Array of point entries (in case of PointCurve only)
<b>ID</b>	string	<b>Required</b> – Identifier of the stacked curve

<b>PM_FillColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color of the area below the curve  Note: If a curve is used as an inventory curve, then the default is "transparent"
<b>PM_InterpolationType</b>	Number (see enum <a href="#">CurveInterpolationType</a> )	<b>Optional, default: undefined</b> – Type of interpolation.  At the moment there are restrictions concerning putting curves of linear interpolation type into curve stacks. It is recommended to use this interpolation type only inside curve lists.
<b>PM_OverloadColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Used, when the curve is used as the load curve that referenced directly by the property LoadCurveID at the object. Then the area above the capacity curve will be colored by this color when the load is higher than the capacity.
<b>PM_StrokeColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color of the curve line itself
<b>Type</b>	number (see enum <a href="#">CurveType</a> )	<b>Optional, default: 0</b> – Type of the curve.  At the moment it is recommended not to put lists or stacks into other lists/stacks!

#### 4.4.2 CurvePointEntry

Property Name	Type	Description
<b>PointInTime</b>	Date   string	<b>Required</b> – This property serves as an identifier of the point entry.  If data type is <i>String</i> , then the value has to be formatted this way: "YYYY-MM-DDThh:mm:ssZ" (this implies that the date is specified in UTC).
<b>Value</b>	number (floating point)	<b>Optional, default: 0.0</b> – Value of the curve at the given point in time.

#### 4.5 DateLine

A DateLine object is a pure presentation object and defines the properties of a single date line.

Property Name	Type	Description
<b>Caption</b>	string	<b>Optional, default:</b> "" – Text for the caption of the date line.
<b>CaptionColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default:</b> "black" – Color of the caption.
<b>Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default:</b> "black" – Color of the line.
<b>DashArray</b>	string	<b>Optional, default:</b> "none" – Pattern of dashes and gaps for drawing the date line. For further information, please see <a href="https://www.w3.org/TR/SVG11/painting.html#StrokeDasharrayProperty">https://www.w3.org/TR/SVG11/painting.html#StrokeDasharrayProperty</a> or <a href="https://developer.mozilla.org/en-US/docs/Web/SVG/Attribute/stroke-dasharray">https://developer.mozilla.org/en-US/docs/Web/SVG/Attribute/stroke-dasharray</a> . The value "none" indicates that no dashing is used. In this case, the link is drawn solid.
<b>ID</b>	string	<b>Required</b> – Identifier of this date line.
<b>PointInTime</b>	Date   string	<b>Optional, default:</b> undefined – Date, where the date line should become visible. The date line only gets visible, when the date is set and the date lies between the values of the widget options start and end.
<b>Width</b>	number $\geq 0$	<b>Optional, default:</b> 1 – Line width of the date line.

## 4.6 Entity

An Entity object defines the properties of a single entity. Entities are shown in a separate table on the right side.

Property Name	Type	Description
<b>Duration</b>	number (in milliseconds)	<b>Optional, default:</b> undefined – Duration of the pure working time of the entity. This property is used, for example, when moving the entity from the entities table to the Gantt diagram to display a bar of correct length during interaction.
<b>ID</b>	string	<b>Required</b> – Identifier of this entity
<b>ParentID</b>	string	<b>Optional, default:</b> undefined – Description of the entity (freely usable)
<b>PM_AllowedRowDragModes</b>	number (see enum <a href="#">RowDragModes</a> )	<b>Optional, default:</b> value of option <b>pm_defaultAllowedEntityRowDragModes</b> – This option determines the allowed row drag modes for this entity when the entities table is visible

		(these can be overwritten using the callback canDrag).
<b>PM_CollapseState</b>	number (see enum <a href="#">CollapseState</a> )	<b>Optional, default: -1</b> – Specifies whether the row of the entity should be expanded or collapsed when displayed the very first time.
<b>PM_HasChildren</b>	boolean	<b>Optional, default: false</b> – If set to true, then the row representing this entity will be collapsible/expandable even when there are no children defined. This serves for lazy loading.
<b>PM_MinimumRowHeight</b>	number	<b>Optional, default: value in option pm_defaultMinimumEntityRowHeight</b> – Minimum height of the entity row in pixels. This attribute is useful, when more than one line of text is shown inside the table cells. Proposal: For one line take 36*, for two lines 52, for three lines 68, and so on. In order to have the same height also, when no bar is placed in the row, take the maximum bar height adding 20 (f.e. 42) as minimum.
<b>PM_RowCollapsible</b>	boolean	<b>Optional, default: value of option pm_defaultEntityRowCollapsible</b> – If set to true, then the row representing this entity will be interactively collapsible when children exist.
<b>PM_RowSelectable</b>	boolean	<b>Optional, default: value of option pm_defaultEntityRowSelectable</b> – If set to true, then the row representing this entity will be selectable.
<b>PM_RowSymbolIDs</b>	string[]	<p><b>Optional, default: undefined</b> – Array of identifiers of the symbols to be shown in the table symbol cell of the beginning of the table row.</p> <p>The symbols will be arranged one below the other. However, if the cell is not high enough to hold all symbols, then the remaining symbols are also arranged side-by-side. If this still does not fit, an additional “show more” symbol will be displayed.</p> <p>An empty string (“”) will cause an “empty” symbol to be displayed. By this placeholder, you can reserve space for a symbol that may be shown at a later time.</p> <p>Please note: Each symbol will be resized to an image with a width and height of 16 pixels each at a zoom level of 100%.</p>
<b>PM_RowTooltipTemplateID</b>	string	<p><b>Optional, default: undefined</b> – ID of a tooltip template.</p> <p>The template is used for tooltips that appear on the entity table rows.</p>

<b>PM_TableColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the table row. If undefined, a default value of the widget will be used.
<b>PM_TableRowDefinitionID</b>	string	<b>Optional, default: value of option pm_defaultEntityTableRowDefinitionID</b> – Identifier of a TableRowDefinition object that defines the composition of the table row.
<b>PM_TableTextColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the table row texts. If undefined, a default value of the widget will be used.
<b>TableText</b>	string	<b>Optional, default: undefined</b> – Text to display in the table (see also property <b>PM_TableRowDefinitionID</b> ).

## 4.7 Link

A Link object defines the properties of a single link between activities.

Property Name	Type	Description
<b>ID</b>	string	<b>Required</b> – Identifier of this link
<b>PM_Color</b>	string (CSS color value, e.g. "#ff0000", "rgb(255,0, 0)", or "red")	<b>Optional, default: "black"</b> – Color for the line.
<b>PM_DashArray</b>	string	<b>Optional, default: "none"</b> – Pattern of dashes and gaps for drawing the line. For further information, please see <a href="https://www.w3.org/TR/SVG11/painting.html#StrokeDasharrayProperty">https://www.w3.org/TR/SVG11/painting.html#StrokeDasharrayProperty</a> or <a href="https://developer.mozilla.org/en-US/docs/Web/SVG/Attribute/stroke-dasharray">https://developer.mozilla.org/en-US/docs/Web/SVG/Attribute/stroke-dasharray</a> . The value "none" indicates that no dashing is used. In this case, the link is drawn solid.
<b>PM_RoutingType</b>	number (see enum <a href="#">LinkRoutingType</a> )	<b>Optional, default: value of option pm_defaultLinkRoutingType</b> – type of the link routing. 1: Curved, 2: Orthogonal
<b>PM_Selectable</b>	boolean	<b>Optional, default: value of option pm_defaultLinkSelectable</b> – If set to true, then the link will be selectable.
<b>PM_TooltipTemplateID</b>	string	<b>Optional, default: undefined</b> – ID of a tooltip template.

		The template is used for tooltips that appear on the links.
<b>PM_Width</b>	number $\geq 0$	<b>Optional, default: 1</b> – Line width of the link. The link arrow is also affected by this property.
<b>RelationType</b>	number	<b>Optional, default: 0</b> – The relation type is used for drawing: 0: Finish-Start, 1: Finish-Finish, 2: Start-Start
<b>SourceActivityID</b>	string	<b>Required</b> – Identifier of the source activity
<b>TargetActivityID</b>	string	<b>Required</b> – Identifier of the target activity

## 4.8 Resource

A Resource object defines the properties of a single resource.

Property Name	Type	Description
<b>CalendarID</b>	string	<b>Optional, default: undefined</b> – Corresponding calendar. If undefined, then the calendar specified by the option <code>defaultCalendarID</code> will be used.
<b>CapacityCurveID</b>	string	<b>Optional, default: undefined</b> – Identifier of any curve representing the capacity of this resource. If the identifier references a curve stack, then the summed curve is shown with the color settings of the curve stack.
<b>ID</b>	string	<b>Required</b> – Identifier of the resource
<b>LoadCurveID</b>	string	<b>Optional, default: undefined</b> – Identifier of any curve representing the load of this resource. If the identifier references a curve stack, then all curves within the curve stack are shown with their individual color settings as a stack.
<b>(Deprecated!) Name</b>	string	<b>Optional, default: undefined</b> – Name of the resource (freely usable)
<b>ParentID</b>	string	<b>Optional, default: undefined</b> – Identifier of a parent resource this resource is assigned to. If this property is defined, the parent resource will become a resource group (if not yet a resource group) and it will keep its role as a resource with a capacity of its own. If this property is undefined the current resource will be considered as a root node of the resource hierarchy.
<b>PM_CollapsedRowDesign</b>	number (see enum <a href="#">RowDesigns</a> )	<b>Optional, default: value in option pm_defaultResourceCollapsedRowDesign</b> – Specifies how the time area is filled when the row is collapsed and visible. See enum <a href="#">RowDesigns</a> in the Enumerations chapter for details.
<b>PM_CollapseState</b>	number (see enum	<b>Optional, default: -1</b> – Specifies whether the row of the resource should be expanded or collapsed

	<a href="#">CollapseState</a>	when displayed. See also callback onCollapseStateChanged.  -1: no change 0: display resource row in an expanded way 1: display resource row in a collapsed way
<b>PM_CurveCollapseState</b>	number (see enum <a href="#">CollapseState</a> )	<b>Optional, default: -1</b> – Specifies whether the curves in a resource row should be expanded or collapsed when displayed. See also callback onCurveCollapseStateChanged.  -1: no change 0: display curves 1: hide curves
<b>PM_CurveTooltipTemplateID</b>	string	<b>Optional, default: undefined</b> – ID of a tooltip template.  The template is used for tooltips that appear on the curve area of resources.
<b>PM_ExpandedRowDesign</b>	number (see enum <a href="#">RowDesigns</a> )	<b>Optional, default: value in option pm_defaultResourceExpandedRowDesign</b> – Specifies how the time area is filled when the row is expanded and visible. See enum <a href="#">RowDesigns</a> in the Enumerations chapter for details.
<b>PM_HasChildren</b>	boolean	<b>Optional, default: false</b> – If set to true, then the row representing this resource will be collapsible/expandable even when there are no children defined. This serves for lazy loading.
<b>PM_HasCurves</b>	boolean	<b>Optional, default: false</b> – If set to true, then the row representing this resource will be collapsible/expandable for curves even where there are no curves defined. This serves for lazy loading.
<b>PM_MinimumRowHeight</b>	number	<b>Optional, default: value in option pm_defaultMinimumResourceRowHeight</b> – Minimum height of the resource row in pixels. This option is useful, when more than one line of text is shown inside the table cells. Proposal: For one line take 36*, for two lines 52, for three lines 68, and so on. In order to have the same height also, when no bar is placed in the row, take the maximum bar height adding 20 (f.e. 42) as minimum.
<b>PM_RowCollapsible</b>	boolean	<b>Optional, default: value of option pm_defaultResourceRowCollapsible</b> – If set to true, then the row representing this resource will be interactively collapsible when children exist.
<b>PM_RowSelectable</b>	boolean	<b>Optional, default: value of option pm_defaultResourceRowSelectable</b> – If set to true, then the row representing this resource will be selectable.
<b>PM_RowSymbolIDs</b>	string[]	<b>Optional, default: undefined</b> – Array of identifiers of the symbols to be shown in the table symbol cell

		<p>of the beginning of the table row. The symbols will be arranged one below the other. However, if the cell is not high enough to hold all symbols, then the remaining symbols are also arranged side-by-side. If this still does not fit, an additional “show more” symbol will be displayed.</p> <p>An empty string (“”) will cause an “empty” symbol to be displayed. By this placeholder, you can reserve space for a symbol that may be shown at a later time.</p> <p>Please note: Each symbol will be resized to an image with a width and height of 16 pixels each at a zoom level of 100%.</p>
<b>PM_RowTooltipTemplateID</b>	string	<p><b>Optional, default: undefined</b> – ID of a tooltip template.</p> <p>The template is used for tooltips that appear on the resource table rows.</p>
<b>PM_TableColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<p><b>Optional, default: undefined</b> – Color for the table row. If undefined, a default value of the widget will be used.</p>
<b>PM_TableRowDefinitionID</b>	string	<p><b>Optional, default: value of option pm_defaultResourceTableRowDefinitionID</b> – Identifier of a TableRowDefinition object, that defines the composition of the table row.</p>
<b>PM_TableTextColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<p><b>Optional, default: undefined</b> – Color for the table row texts. If undefined, a default value of the widget will be used.</p>
<b>PM_ViewArea</b>	number (see enum <a href="#">ViewArea</a> )	<p><b>Optional, default: Default</b> – If set to Top, then the resource and its children are shown in a separate top view area in the resources view. Only settable on resource with no ParentID set. See option pm_topViewAreaVisible.</p>
<b>TableText</b>	string	<p><b>Optional, default: undefined</b> – Text to display in the table row (see also property PM_TableRowDefinitionID).</p>

## 4.9 Symbol

A Symbol object is a pure presentation object and defines the properties of a single symbol. Symbols are used by resources, activities, and allocations. They can be displayed at different locations inside the table and the diagram area.

Please note: The symbols will be resized to an image with an appropriate width and height depending on their application. Therefore, when designing the symbols, you should ensure that they are clearly recognizable and visually distinguishable. For more details regarding the size, please see the descriptions of the properties related to symbols.

For some users maybe it is not possible to use paths in the property URL at all, but instead you have the possibility to use 'data URIs', that can be created using an online service (e.g. <https://websemantics.uk/tools/image-to-data-uri-converter/>) to convert your SVG file to a string containing the SVG.

Property Name	Type	Description
<b>ID</b>	string	<b>Required</b> – Identifier of this symbol
<b>URL</b>	string	<p><b>Required</b> – URL of a SVG image containing the symbol.</p> <p>Two types of URLs are allowed:</p> <ul style="list-style-type: none"> <li>absolute URL (e.g. "https://www.aaazzz.com/symbol.svg")</li> <li>relative URL (e.g. "images/symbol.svg") – In this case, the anchor path for the symbol directory is the application directory.</li> <li>Data URI (e.g. 'data:image/svg+xml;base64,...'). See <a href="https://en.wikipedia.org/wiki/Data_URI_scheme">https://en.wikipedia.org/wiki/Data_URI_scheme</a></li> </ul>

## 4.10 TableRowDefinitions

A TableRowDefinition object defines the composition of a table row containing one or more cells. You can reference these objects with the property PM\_TableRowDefinitionID of Activity, Resource, and Entity objects. It is possible to declare one table row definition to provide the table title for the views and the entities table by using the options pm\_activity/resource/entityTableRowDefinitionIDForTitle.

### 4.10.1 TableRowDefinition

Property Name	Type	Description
<b>CellDefinitions</b>	<a href="#">TableCellDefinition[]</a>	<b>Optional, default:</b> [{ <b>Title:</b> "", <b>TextSource:</b> "TableText", <b>Width:</b> 200, <b>HorizontalAlignment:</b> HorizontalAlignment.Left }] – Array of TableCellDefinition objects.
<b>ID</b>	string	<b>Required</b> – Identifier of this table row definition.

#### 4.10.2 TableCellDefinition

Property Name	Type	Description
<b>HorizontalAlignment</b>	number (see enum <a href="#">HorizontalAlignment</a> )	<b>Optional, default: Left</b> – Horizontal alignment of the shown text. The first column is always shown with left alignment because of the tree symbols on the left side.
<b>MaximumWidth</b>	number	<b>Optional, default: Infinity</b> – Maximum width of the table cell, when cell width is interactively modified.
<b>MinimumWidth</b>	number	<b>Optional, default: 3</b> – Minimum width of the table cell, when cell width is interactively modified.
<b>TextSource</b>	string	<b>Optional, default: "TableText"</b> – Property to take the text out of the referencing activity, resource, or entity object.
<b>Title</b>	string	<b>Optional, default: ""</b> – When the table row definition, that contains this table cell definition, is referenced by one of the options pm_activity/resource/entityTableRowDefinitionIDF orTitle, then the title defined here will be shown on the table title.
<b>Width</b>	number	<b>Optional, default: 200</b> – Width of the table cell.
<b>WrapMode</b>	number (see enum <a href="#">TextWrapMode</a> )	<b>Optional, default: None</b> – If set, then it possible to show more than one line of text using newline characters ('\n').

## 4.11 TooltipTemplate

A TooltipTemplate object describes the appearance of a tooltip in the form of an HTML string. This string describes a DOM subtree and contains placeholders with references to the object properties to be displayed. At runtime, the placeholders are replaced by the values of the referenced object properties.

There are two ways to apply a template:

1. Either you can specify the template ID inside the out-parameter "tooltipTemplateID" of the onShowTooltip callback.
2. Or you can use the properties PM\_TooltipTemplateID, PM\_BarTooltipTemplateID, PM\_RowTooltipTemplateID, and PM\_CurveTooltipTemplateID of the activities, resources, allocations, links, and entities.

Property Name	Type	Description
<b>ID</b>	string	<b>Required</b> – Identifier of this tooltip template.
<b>InnerHTML</b>	string	<b>Required</b> – HTML string that describes the structure of a tooltip.  This string contains the placeholders for object values surrounded by double curly braces {{ }}. For example, based on the following string a tooltip with a table containing three rows of key-value pairs is created, where the values are taken from the object properties "name",

	<p>"firstName", and "age":</p> <pre>&lt;table&gt; &lt;tr&gt;&lt;td&gt;Name: &lt;/td&gt;&lt;td&gt;{{name}}&lt;/td&gt;&lt;/tr&gt; &lt;tr&gt;&lt;td&gt;First name: &lt;/td&gt;&lt;td&gt;{{firstName}}&lt;/td&gt;&lt;/tr&gt; &lt;tr&gt;&lt;td&gt;Age: &lt;/td&gt;&lt;td&gt;{{age}}&lt;/td&gt;&lt;/tr&gt; &lt;/table&gt;</pre> <p>As an escape, the use of three open curly braces {{ are displayed as {{.</p> <p>Additionally, the property name can be extended to contain the desired property type as in {{Start:date}}. At the moment only the type 'date' is possible besides 'string' (other property types are converted automatically with <code>toString()</code>). The type 'date' converts date values using the same format as other dates in the timescale and at the dragging date line captions.</p> <p>It is possible to get associated objects by using the following keywords:</p> <ul style="list-style-type: none"> <li>On activities: &gt;Parent, &gt;Calendar</li> <li>On resources: &gt;Parent, &gt;Calendar, &gt;LoadCurve, &gt;CapacityCurve</li> <li>On entities: &gt;Parent</li> <li>On allocations: &gt;Activity, &gt;Resource</li> <li>On links: &gt;SourceActivity, &gt;TargetActivity</li> </ul> <p>On associated objects, you can then receive a property by using a prefixed dot: .propertyName.</p> <p>On tooltips for allocations you can get the Entry object by using #Entry as a keyword. On tooltips for curves you can show current values by using #Date, #Capacity, #Load.</p>
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## 5 Widget

This is the central object that an application talks to. Here are methods to add, update and remove the data objects meant above and there also are many options and callbacks to refine the appearance of the widget. Technically the widget is based on the widget factory of jQuery UI. Please see <https://learn.jquery.com/jquery-ui/> in order to learn how to work with jQuery and jQuery UI widgets in general.

At first the widget has to be instantiated using a call like `$("#ganttDiv").nXYZWidget(options)`, where 'options' is an optional object containing first settings if needed (otherwise it can be left undefined). After that you can set additional options and use the provided methods.

### 5.1 Options

The following options are settable and gettable by using the jQuery UI Widget command "option" at any time within a session.

Option Name	Type	Description
<b>additionalDateInterpretedAsEmpty</b>	Date string	<b>Optional, default: null</b> – If set, then on properties of date type the value can be set to the value given here and will be interpreted as being null/undefined/"". If given as a string, the date is converted to a Date object internally and each date will be checked by comparing the date values.
<b>additionalDateStringInterpretedAsEmpty</b>	string	<b>Optional, default: ""</b> – If set, then on properties of date type the value can be set to the value given here and will be interpreted as being null/undefined/"". Each date string will be checked by comparing the strings.
<b>curvePanesVisibleInActivitiesView</b>	boolean	<b>Optional, default: false</b> – If this option is set to true, a curve pane is displayed in the ActivitiesView for each activity row. In each pane the curves of the resource first found in an allocation related to the corresponding activity are displayed.  Please note: This option has to be set when instantiating the widget. If it is set later, it has no effect.
<b>dateLineGridMode</b>	number (see enum <a href="#">DateLineGridModes</a> )	<b>Optional, default: Weekly</b> – This option determines the distance of the date lines shown.
<b>defaultCalendarID</b>	string	<b>Optional, default: undefined</b> – Specifies a default calendar to be used in the widget. If calendars are defined on activities or resource they will override this calendar.  If there is no calendar defined on an activity or a resource and if this default calendar ID is undefined, then the calendar is assumed to be one with constantly non-working time only.
<b>editable</b>	boolean	<b>Optional, default: true</b> – If set to false, nothing can be edited.
<b>end</b>	Date string	<b>Required</b> – End date of the considered time area.
<b>entitiesTableViewWidth</b>	number	<b>Optional, default: null</b> – This setting defines the width of the entities table view.
<b>entitiesTableVisibleInActivitiesView</b>	boolean	<b>Optional, default: false</b> – This option lets appear/disappear the entities table on the right side in the

		Activities View.
<b>entitiesTableVisibleInResourcesView</b>	boolean	<b>Optional, default: false</b> – This option lets appear/disappear the entities table on the right side in the Resources View.
<b>(Deprecated!) entitiesTableWidth</b>	number	<b>Optional, default: undefined</b> – Not recommended when using TableRowDefinition objects!  This setting defines the width of the entities table. It is advisable to set this option to a value equal to or greater than the maximum sum of the column widths defined in the column definitions for the entities table (see onDetermineColumnDefinitions).
<b>entitiesTitleText</b>	string	<b>Optional, default: undefined</b> – This text will be shown in the table header of the entities table.
<b>fixedTableColumnWidth</b>	number	<b>Optional, default: 30</b> – This setting defines the width of the fixed table column that contains the numeric scale for the curves in each row.
<b>language</b>	string (currently possible values: "da-DK", "de-DE", "en-GB", "en-US", "es-ES", "fi", "fr-FR", "it-IT", "nl-NL", "no", "sv")	<b>Optional, default:</b> current value of the option "locale" – This option will be used for showing the textual parts for date values in the timescale.  In contrast to option locale, this option does not affect the formatting of dates. It only takes care of the corresponding translation of the texts.
<b>licenseKey</b>	string	<b>Required</b> – Without a license key, the widget will not work at all. Please contact <a href="#">NETRONIC</a> to get a license. This option must be set at the very beginning of the widget initialization and cannot be changed later at runtime.
<b>locale</b>	string (currently possible values: "da-DK", "de-DE", "en-GB", "en-US", "es-ES", "fi", "fr-FR", "it-IT", "nl-NL", "no", "sv")	<b>Optional, default: "en-US"</b> – This option will be used for formatting date and time values in the timescale and numbers in the numeric scales of curves.
<b>multipleSelectionEnabled</b>	boolean number (allowed values: false, true, 2)	<b>Optional, default: true</b> – If set to true multiple bars can be selected all at once. Additionally, if set to 2, then the behavior for dragging a selection

		rectangle is differentiated for a selection left-to-right from right-to-left.
<b>nonWorkingTimeVisible</b>	boolean	<b>Optional, default: true</b> – This option defines whether the common non-working time is visible. The common time is calculated by all calendar information that are relevant to the visualization. Therefore, in task mode the calendars of the activities, in resource mode the calendars of the resources are used.
<b>pm_activityCalendarsEnabled</b>	boolean	<b>Option, default: true</b> – If set to true, calendars assigned to activities by setting the activity property CalendarID are displayed in the Activities View.
<b>pm_activityTableRowDefinitionIDForTitle</b>	string	<b>Optional, default: value of option pm_defaultActivityTableRowDefinitionID</b> – ID of a TableRowDefinition object that will be used to show the table title in the activities view. In parallel, it is currently only possible to interactively change the column widths for the TableRowDefinition object that is referenced here.
<b>pm_bottomRowMarginInTimeArea</b>	number	<b>Optional, default: 5</b> – Height of the margin between the bottom row border and bars above in pixels. The value is also used for the vertical margins of curve panes. See also pm_topRowMarginInTimeArea and pm_subRowDistanceInTimeArea.
<b>pm_calendarGridColor</b>	string (CSS color value) or Object	<b>Optional, default: null</b> – Specifies a color used to color the vertical stripes representing the nonworking times inside the diagram. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example: { 0 /*activities view*/: "yellow", -1 /*other views*/: null }
<b>pm_defaultActivityBarHeight</b>	number	<b>Optional, default: 22</b> – Default height of the activity bars in pixels. See also Activity.PM_BarHeight.
<b>pm_defaultActivityBarSelectable</b>	boolean	<b>Optional, default: true</b> – This option holds the default for the attribute PM_BarSelectable of Activity objects.

<b>pm_defaultActivityBarShape</b>	number (see enum <a href="#">ActivityBarShape</a> )	<b>Optional, default: Regular</b> – This option defines which shape should be used by default for the visualization of activity bars.
<b>pm_defaultActivityCollapsedRowDesign</b>	number (see enum <a href="#">RowDesigns</a> )	<b>Optional, default: 11</b> – This option holds the default for the attribute PM_CollapsedRowDesign of Activity objects.
<b>pm_defaultActivityConstraintSymbolColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: null</b> – Specifies the color used by default for the symbols visualizing the constraint dates (EarliestStart/End, LatestStart/End, MustStart/EndOn).
<b>pm_defaultActivityExpandedRowDesign</b>	number (see enum <a href="#">RowDesigns</a> )	<b>Optional, default: 11</b> – This option holds the default for the attribute PM_ExpandedRowDesign of Activity objects.
<b>pm_defaultActivityProgressBackgroundColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the background of the progress bar region for activities.
<b>pm_defaultActivityRowCollapsible</b>	boolean	<b>Optional, default: true</b> – This option holds the default for the attribute PM_RowCollapsible of Activity objects.
<b>pm_defaultActivityRowSelectable</b>	boolean	<b>Optional, default: true</b> – This option holds the default for the attribute PM_RowSelectable of Activity objects
<b>pm_defaultActivitySnapTargetsForEnd</b>	number (see enum <a href="#">SnapTargets</a> )	<b>Optional, default: 8</b> – This option holds the default for the attribute PM_SnapTargetsForEnd of Activity objects
<b>pm_defaultActivitySnapTargetsForStart</b>	number (see enum <a href="#">SnapTargets</a> )	<b>Optional, default: 8</b> – This option holds the default for the attribute PM_SnapTargetsForStart of Activity objects.
<b>pm_defaultActivityTableRowDefinitionID</b>	string	<b>Optional, default: undefined</b> – ID of a TableRowDefinition object that will be used when an activity object has set the property PM_TableRowDefinitionID to "".
<b>(Deprecated!) pm_defaultAllocationBarDesign</b>	number (see enum <a href="#">AllocationBarDesign</a> )	<b>Optional, default: GroupedEntries</b> – This option holds the default for the attribute PM_BarDesign of Allocation objects.  The value GroupedEntries (4) is highly recommended!
<b>pm_defaultAllocationBarHeight</b>	number	<b>Optional, default: 22</b> – Default height of the allocation bars in pixels. See also Allocation.PM_BarHeight.

<b>pm_defaultAllocationBarSelectable</b>	boolean	<b>Optional, default: true</b> – This option holds the default for the attribute PM_BarSelectable of Allocation objects.
<b>pm_defaultAllocationBarShape</b>	number (see enum <a href="#">AllocationBarShape</a> )	<b>Optional, default: Regular</b> – This option defines which shape should be used by default for the visualization of allocation bars.
<b>pm_defaultAllocationConstraintSymbolColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: null</b> – Specifies the color used by default for the symbols visualizing the constraint dates (EarliestStart/End, LatestStart/End, MustStart/EndOn).
<b>pm_defaultAllocationProgressBackgroundColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the background of the progress bar region for allocations.
<b>pm_defaultAllocationSnapTargetsForEnd</b>	number (see enum <a href="#">SnapTargets</a> )	<b>Optional, default: 11</b> – This option holds the default for the attribute PM_SnapTargetsForEnd of Allocation objects.
<b>pm_defaultAllocationSnapTargetsForStart</b>	number (see enum <a href="#">SnapTargets</a> )	<b>Optional, default: 11</b> – This option holds the default for the attribute PM_SnapTargetsForStart of Allocation objects.
<b>pm_defaultAllowedActivityBarDragModes</b>	number (see enum <a href="#">ActivityBarDragMode</a> s)	<b>Optional, default:</b> <b>ActivityBarDragModes.DragHorizontally</b> – This option holds the default for the attribute PM_AllowedBarDragModes of Activity objects.
<b>pm_defaultAllowedAllocationBarDragModes</b>	number (see enum <a href="#">AllocationBarDragModes</a> )	<b>Optional, default:</b> <b>AllocationBarDragModes.DragAutoHorizontalOrVertical</b> – This option holds the default for the attribute PM_AllowedBarDragModes of Allocation objects.
<b>pm_defaultAllowedEntityRowDragModes</b>	number (see enum <a href="#">RowDragModes</a> )	<b>Optional, default:</b> <b>RowDragModes.DragOutside</b> – This option holds the default for the attribute PM_AllowedRowDragModes of Entity objects.
<b>pm_defaultEntityRowCollapsible</b>	boolean	<b>Optional, default: true</b> – This option holds the default for the attribute PM_RowCollapsible of Entity objects.
<b>pm_defaultEntityRowSelectable</b>	boolean	<b>Optional, default: true</b> – This option holds the default for the attribute PM_RowSelectable of Entity objects.
<b>pm_defaultEntityTableRowDefinitionID</b>	string	<b>Optional, default: undefined</b> – ID of a TableRowDefinition object that will

		be used when an entity object has set the property PM_TableRowDefinitionID to "".
<b>pm_defaultLinkRoutingType</b>	number (see enum <a href="#">LinkRoutingType</a> )	<b>Option, default</b> <b>LinkRoutingType.Curved</b> – This option holds the default for the attribute PM_RoutingType of Links objects.
<b>pm_defaultLinkSelectable</b>	boolean	<b>Optional, default: false</b> – This option holds the default for the attribute PM_Selectable of Link objects.
<b>pm_defaultLoadCurvePaneColor</b>	string (CSS color value, e.g. "#ff0000", "rgb(255, 0, 0)", or "red")	<b>Optional, default: undefined</b> – Color for the background of the load curve pane.
<b>pm_defaultMinimumActivityRowHeight</b>	number	<b>Optional, default: 42</b> – Default minimum height of the activity rows in pixels. See also Activity.PM_MinimumRowHeight.
<b>pm_defaultMinimumEntityRowHeight</b>	number	<b>Optional, default: 42</b> – Default minimum height of the entity rows in pixels. See also Entity.PM_MinimumRowHeight.
<b>pm_defaultMinimumResourceRowHeight</b>	number	<b>Optional, default: 42</b> – Default minimum height of the resource rows in pixels. See also Resource.PM_MinimumRowHeight.
<b>pm_defaultResourceCollapsedRowDesign</b>	number (see enum <a href="#">RowDesigns</a> )	<b>Optional, default: 11</b> – This option holds the default for the attribute PM_CollapsedRowDesign of Resource objects.
<b>pm_defaultResourceExpandedRowDesign</b>	number (see enum <a href="#">RowDesigns</a> )	<b>Optional, default: 11</b> – This option holds the default for the attribute PM_ExpandedRowDesign of Resource objects.
<b>pm_defaultResourceRowCollapsible</b>	boolean	<b>Optional, default: true</b> – This option holds the default for the attribute PM_RowCollapsible of Resource objects.
<b>pm_defaultResourceRowSelectable</b>	boolean	<b>Optional, default: true</b> – This option holds the default for the attribute PM_RowSelectable of Resource objects.
<b>pm_defaultResourceTableRowDefinitionID</b>	string	<b>Optional, default: undefined</b> – ID of a TableRowDefinition object that will be used when a resource object has set the property PM_TableRowDefinitionID to "".
<b>pm_detailedActivityConstraintSymbolsEnabled</b>	boolean	<b>Optional, default: true</b> – If set to true, there will be shown different symbols for the constraint dates

		<p>depending on their constraint types:</p> <ul style="list-style-type: none"> <li>• EarliestStart: </li> <li>• LatestStart: </li> <li>• MustStartOn: </li> <li>• EarliestEnd: </li> <li>• LatestEnd: </li> <li>• MustEndOn: </li> </ul> <p>Otherwise, a simple down arrow will be shown: </p>
<b>pm_detailedAllocationConstraintSymbolsEnabled</b>	boolean	<p><b>Optional, default: true</b> – If set to true, there will be shown different symbols for the constraint dates depending on their constraint types:</p> <ul style="list-style-type: none"> <li>• EarliestStart: </li> <li>• LatestStart: </li> <li>• MustStartOn: </li> <li>• EarliestEnd: </li> <li>• LatestEnd: </li> <li>• MustEndOn: </li> </ul> <p>Otherwise, a simple down arrow will be shown: </p>
<b>pm_dragDatesLimitingInteraction</b>	boolean	<p><b>Option, default: false</b> – If set to true, then bars cannot be dragged before the value in the property PM_EarliestDragStart and later than PM_LatestDragEnd, respectively.</p>
<b>pm_entitiesTableHeaderBackgroundColor</b>	string (CSS color value) or Object	<p><b>Optional, default: null</b> – Specifies a color used to color the background of the entities table header. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.</p>
<b>pm_entitiesTableHeaderColumnSeparatorColor</b>	string (CSS color value) or Object	<p><b>Optional, default: null</b> – Specifies a color used to color the column separators in the entities table header. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.</p>
<b>pm_entitiesTableHeaderHighlightingColor</b>	string (CSS color value) or Object	<p><b>Optional, default: null</b> – Specifies the color to be used during the interaction, e.g. to highlight the separation line between two</p>

		adjacent columns when altering the column widths.
<b>pm_entitiesTableHeaderTextCol or</b>	string (CSS color value) or Object	<b>Optional, default: null</b> – Specifies a color used to color the text in the entities table header. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.
<b>pm_entityTableRowDefinitionID ForTitle</b>	string	<b>Optional, default: value of option pm_defaultEntityTableRowDefinitionID</b> – ID of a TableRowDefinition object that will be used to show the table title in the entities table. In parallel, it is currently only possible to interactively change the column widths for the TableRowDefinition object that is referenced here.
<b>pm_entitiesTableSymbolColumnVisible</b>	boolean	<b>Optional, default: false</b> – If set to true, a special column at the left of the entities table will be displayed to show the row symbols of the entities.
<b>pm_entitiesTableSymbolColumnWidth</b>	number	<b>Optional, default: 22</b> – Width of the symbol column in the entities table. If set to a value less than the default, it will be set to the default automatically.
<b>pm_linksVisibleInActivitiesView</b>	boolean	<b>Option, default: true</b> – If set to false, the activities view does not show links between activities.
<b>pm_linksVisibleInResourcesView</b>	boolean	<b>Option, default: false</b> – If set to true, the resources view shows links between all allocations whose referenced activities are linked.
<b>pm_maximumSnapDistance</b>	number	<b>Optional, default: 8</b> – Maximum distance in pixels of a currently dragged bar to a snap target, within which a dragged bar will get snapped to the snap target.
<b>pm_maximumTopViewAreaHeightRatio</b>	number (0 ≤ n ≤ 0.8)	<b>Optional, default: 0.5</b> – This value determines the maximum height of the top view area. If the resources shown in total are higher than the view then a vertical scroll bar is shown. See also option pm_topViewAreaVisible.
<b>pm_preventDefaultOnContextMenuEvents</b>	boolean	<b>Option, default: true</b> – This option determines whether "contextmenu" triggered by the browser's DOM should get a call to preventDefault().

		If set to false, then the system default behavior is not prevented (useful for Microsoft Dynamics 365 Finance and Operations).
<b>pm_progressBarWidthCalculationMode</b>	number (see <a href="#">ProgressBarWidthCalculationMode</a> )	<p><b>Option, default:</b> <code>ProgressBarWidthCalculationMode.ConsiderWorkingTimesOnly</code> – This option determines how the widths of the progress bars are calculated.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>• <code>ConsiderWorkingTimesOnly</code> – If this value is used, it is assumed that there is no progress during non-working times.</li> <li>• <code>ConsiderWorkingAndNonworkingTimes</code> – If this value is used, it is assumed that there is progress during both working and non-working times.</li> </ul>
<b>pm_releaseDueDateConnectionsVisible</b>	boolean	<p><b>Optional, default: false</b> – If set to true and an activity has set both a ReleaseDate and a DueDate, a line will be displayed to visually connect both dates:</p> 
<b>pm_resourceTableRowDefinitionIDForTitle</b>	string	<p><b>Optional, default: value of option pm_defaultResourceTableRowDefinitionID</b> – ID of a TableRowDefinition object that will be used to show the table title in the resources view. In parallel, it is currently only possible to interactively change the column widths for the TableRowDefinition object that is referenced here.</p>
<b>pm_selectionColor</b>	string (CSS color value) or Object	<p><b>Optional, default: null</b> – Specifies a color used to highlight selected bars, links or table rows. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option <code>pm_calendarGridColor</code>.</p>
<b>pm_splitterHighlightingColor</b>	string (CSS color value) or Object	<p><b>Optional, default: null</b> – Specifies a color used to highlight the splitters when a splitter is dragged. This refers to the splitters between the table or entities table and the Gantt area. If a string is given, then the widget uses</p>

		the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.
pm_subRowDistanceInTimeArea	number	<b>Optional, default:</b> 5 – Vertical distance between two bars in pixels. See also pm_topRowMarginInTimeArea and pm_bottomRowMarginInTimeArea. Please have in mind that symbols are drawn inside this distance.
pm_symbolColumnVisible	boolean	<b>Optional, default:</b> false – If set to true, a special column at the left of the table will be displayed to show the row symbols of the activities in the Activities view and of the resources in the Resources or Loads view.
pm_symbolColumnWidth	number	<b>Optional, default:</b> 22 – Width of the symbol column in the Activities, Resources and Loads view. If set to a value less than the default, it will be set to the default automatically.
pm_tableHeaderBackgroundColor	string (CSS color value) or Object	<b>Optional, default:</b> null – Specifies a color used to color the background of the table header of the Gantt diagram. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.
pm_tableHeaderColumnSeparatorColor	string (CSS color value) or Object	<b>Optional, default:</b> null – Specifies a color used to color the column separators in the table header of the Gantt diagram. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.
pm_tableHeaderHighlightingColor	string (CSS color value) or Object	<b>Optional, default:</b> null – Specifies the color to be used during the interaction, e.g. to highlight the separation line between two adjacent columns when altering the column widths.
pm_tableHeaderTextColor	string	<b>Optional, default:</b> null – Specifies a

	(CSS color value) or Object	color used to color the text in the table header of the Gantt diagram. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.
<b>pm_timeAreaBackgroundColor</b>	string (CSS color value) or Object	<b>Optional, default:</b> "white" – Specifies a color used to color the background of the time area. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.
<b>pm_timescaleBackgroundColor</b>	string (CSS color value) or Object	<b>Optional, default:</b> "#646464" – Specifies a color used to color the background of the timescale. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.
<b>pm_timescaleHighlightingColor</b>	string (CSS color value) or Object	<b>Optional, default:</b> "#F7C365" – Specifies the color to be used during the interaction on the timescale, e.g. to highlight the time period under the mouse cursor.
<b>pm_timescaleTextColor</b>	string (CSS color value) or Object	<b>Optional, default:</b> "white" – Specifies a color used to color the text in the timescale. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.
<b>pm_timescaleTickColor</b>	string (CSS color value) or Object	<b>Optional, default:</b> "white" – Specifies a color used to color the ticks in the timescale. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.

<b>pm_timescaleWeekendBackgroundColor</b>	String (CSS color value) or Object	<b>Optional, default:</b> "#888888" – Specifies a color used to color the background of the weekend cells of the timescale. If a string is given, then the widget uses the color for all view types. If an object is given, then one can specify a color string for each view type and one for not mentioned view types. Example see at option pm_calendarGridColor.
<b>pm_topBarSymbolsVisible</b>	boolean	<b>Optional, default:</b> true – If set to false, then no symbols are shown at the top left and top right of allocation bars and activity bars.
<b>pm_topRowMarginInTimeArea</b>	number	<b>Optional, default:</b> 10 – Height of the margin between the top row border and bars in pixels. See also pm_bottomRowMarginInTimeArea and pm_subRowDistanceInTimeArea. Please have in mind that symbols are drawn inside this margin.
<b>pm_topViewAreaVisible</b>	boolean	<b>Optional, default:</b> false – If set to true, then resources in the resources view are shown in a separate top view area, that have the attribute PM_ViewArea set to Top. See also option pm_maximumTopViewAreaHeightRatio.
<b>start</b>	Date   string	<b>Required</b> – Start of the considered time area.
<b>tableViewWidth</b>	number	<b>Optional, default:</b> null – This setting defines the width of the table view.
<b>(Deprecated!) tableWidth</b>	number	<b>Optional, default:</b> undefined – Not recommended when using TableRowDefinition objects!  This setting defines the width of the table. It is advisable to set this option to a value equal to or greater than the maximum sum of the column widths defined in the column definitions for the Gantt table (see also onDetermineColumnDefinitions).
<b>timescaleNavigationMode</b>	number (see <a href="#">TimescaleNavigation Mode</a> )	<b>Optional, default:</b> 0 – Mode of navigation in the timescale.
<b>timeStepUnit</b>	string (one of "second", "minute", "hour", "day")	<b>Optional, default:</b> "second" – Unit for time steps on horizontal drag interactions of bars. See timeStepUnitFactor.

		<b>Attention!</b> Currently, the dates of the bars as well as the dates in the calendar must not be defined more finely than this unit together with the timeStepUnitFactor indicate. Otherwise, unexpected jumps will occur when moving bars.
<b>timeStepUnitFactor</b>	number (>= 1)	<b>Optional, default:</b> 1 – Number of units for a single time step on horizontal drag interactions of bars. See timeStepUnit. Integer values are recommended.  <b>Attention!</b> Currently, the dates of the bars as well as the dates in the calendar must not be defined more finely than this factor together with the timeStepUnit indicate. Otherwise, unexpected jumps will occur when moving bars.
<b>titleText</b>	string	<b>Optional, default: undefined</b> – This text will be shown in the table header, when additionally the flag hasColumnHeaders is not set in the callback onDetermineColumnDefinitions (see there).
<b>version</b>	string	<b>Read only</b> – This option holds the version number of the widget set by NETRONIC. Usually it is formatted using the semantic versioning format “MAJOR.MINOR.PATCH” (see also <a href="https://semver.org/">https://semver.org/</a> ).
<b>viewType</b>	number (see enum <a href="#">ViewType</a> )	<b>Optional, default:</b> <b>ViewType.Activities</b> – This option determines the type of view that is shown.
<b>visualZoomFactor</b>	number	<b>Optional, default: 1.0</b> – Factor used to zoom in (>1) and out (<1) the whole widget. Values <= 0 will be ignored.
<b>weekNumbering</b>	string (currently possible values: "ISO8601", "USA")	<b>Optional, default: undefined</b> – This option determines the first day of the week (ISO8601: Monday, USA: Sunday) and the week numbering scheme. If set to undefined, then the implicit setting of the option "locale" is used.
<b>workDate</b>	Date string	<b>Optional, default: undefined</b> – Date on which the work date line will be displayed.

		Please note: The work date line is a simple line only. There are no further properties like color, line width, or line pattern to be set. Also labeling the line is not possible. If such properties are needed, then a <a href="#">date line</a> should be used.
<b>workDateLineCaption</b>	string	<b>Optional, default: undefined</b> – text to be displayed at the work date line

## 5.2 Callbacks

For simplicity reasons, we have implemented callbacks instead of events. They can be set in the same way as all other “regular” options.

Option Name	Type	Description
<b>canDrag</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when the user is moving the mouse cursor over an activity/allocation or touches an activity/allocation with a finger.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <a href="#">ObjectType</a>,   "object" : Object,   "visualType" : <a href="#">VisualType</a>,   "entry"<sup>1</sup> : AllocationEntry,   "entryIndex"<sup>1</sup> : number,   "allowedDragModes" : <a href="#">ActivityBarDragModes</a>       <a href="#">AllocationBarDragModes</a> // [in/out] }</pre> <p>If the application sets args.allowedDragModes to None, then no dragging will be possible. This callback is called only once every time when the mouse enters the visual representation of the object (bar).</p>
<b>canSelect</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when the user moves the mouse cursor onto the graphical representation of an object.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <a href="#">ObjectType</a>,   "object" : Object,   "visualType" : <a href="#">VisualType</a>,   "otherSelectedObjects" : Object[],   "event" : DOMEEvent,   "cancel" : boolean [out] }</pre>
<b>compareObjects</b>	Function	<b>Optional, default: undefined</b> – This function is called when an object is added or its parent is

<sup>1</sup> Available only if objectType == ObjectType.Allocation.

		<p>changed on updating it. The result will determine the sorting of the rows in the view. The comparison always only is made between siblings.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <u>ObjectType</u>,   "objectA" : Object,   "objectB" : Object,   "isALowerThanB": Boolean // [in/out] }</pre> <p>The function should compare objectA and objectB and write the result into isALowerThanB: true, when A is lower than B and false, when A is greater than B. A cannot be equal to B.</p>
<b>onClicked</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when an object is clicked by the user.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <u>ObjectType</u>,   "object" : Object,   "visualType" : <u>VisualType</u>,   "date" : Date,   "entry"<sup>1</sup> : AllocationEntry,   "entryIndex"<sup>1</sup> : number,   "curve" : Object // Only available when clicked on a curve; the "object" parameter will then hold the corresponding resource }</pre> <p>On time area and timescale, the object is null.</p>
<b>onCloseContextMenu</b>	Function	<p><b>Optional, default: undefined</b> – When a context menu is visible in the application and the user starts a new action elsewhere in the widget, the widget sends this event in order to close the open context menu.</p> <p><b>Profile:</b></p> <pre>function ()</pre>
<b>onCollapseStateChanged</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when a group was expanded or collapsed either in the table of the Gantt diagram or of the entities table. This callback can be triggered:</p> <ul style="list-style-type: none"> <li>• by the user clicking on the appropriate symbol in the group row</li> <li>• by automatic row expansion when dragging objects</li> <li>• by using the method scrollToObject</li> <li>• by setting the attribute PM_CollapseState either on a resource or on an activity object</li> </ul> <p><b>Profile:</b></p>

		<pre>function (args) args = {   "objectType" : <u>ObjectType</u>,   "object" : Object or null,   "newCollapseState" : <u>CollapseState</u>,   "interactively" : boolean,   "promise" : Promise [out] }</pre> <p>If the application sets the promise attribute, then the update of the DOM is delayed until the promise is resolved.</p>
<b>onCurveCollapseStateChanged</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when a curves pane was expanded or collapsed table of the Gantt diagram. This callback is triggered by the user clicking on the appropriate symbol in the resource or activity row.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <u>ObjectType</u>,   "object" : Object,   "newCollapseState" : <u>CollapseState</u>,   "resource" : Resource undefined,   "promise" : Promise [out] }</pre> <p>The property "resource" is only set, when the object is not the resource itself.</p> <p>The application can update the property PM_CurveCollapseState of the object if needed.</p> <p>If the application sets the promise attribute, then the update of the DOM is delayed until the promise is resolved.</p>
<b>onDoubleClicked</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when an object is double-clicked by the user.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <u>ObjectType</u>,   "object" : Object,   "visualType" : <u>visualType</u>,   "date" : Date,   "entry"<sup>1</sup> : AllocationEntry,   "entryIndex"<sup>1</sup> : number }</pre> <p>On time area and timescale, the object is null.</p>
<b>onDrag</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when the user drags an activity, allocation or allocation entry (called anew on every new move of the mouse/finger). If args.dropAllowed is set to false on return of the callback, then a</p>

		<p>forbidden cursor is shown within the widget and a drop will be ignored. If args.cancel is set to true, then the drag action will be canceled.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <a href="#">ObjectType</a>,   "object" : Object,   "visualType" : <a href="#">VisualType</a>,   "entry"<sup>1</sup> : AllocationEntry,   "entryIndex"<sup>1</sup> : number,   "dragMode" : <a href="#">ActivityBarDragModes</a>      <a href="#">AllocationBarDragModes</a>,   "newRowObjectType" : <a href="#">ObjectType</a>,   "newRowObject" : Object,   "newStart" : Date,   "newEnd" : Date,   "dropAllowed" : boolean [out],   "cancel" : boolean [out] }</pre>
onDragEnd		<p><b>Optional, default: undefined</b> – This function is called when the user ends dragging an activity, allocation, allocation entry, or entity (please check args.objectType!) even when dropping is not allowed on the new row.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <a href="#">ObjectType</a>,   "object" : Object,   "visualType" : <a href="#">VisualType</a>,   "entry"<sup>1</sup> : AllocationEntry,   "entryIndex"<sup>1</sup> : number,   "dragMode" : <a href="#">ActivityBarDragModes</a>      <a href="#">AllocationBarDragModes</a> }</pre>
onDragStart	Function	<p><b>Optional, default: undefined</b> – This function is called when the user starts to drag an activity, allocation, allocation entry, or entity (please check args.objectType!). If args.cancel is set to true, then the drag action will be canceled.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <a href="#">ObjectType</a>,   "object" : Object,   "visualType" : <a href="#">VisualType</a>,   "entry"<sup>1</sup> : AllocationEntry,   "entryIndex"<sup>1</sup> : number,   "dragMode" : <a href="#">ActivityBarDragModes</a>      <a href="#">AllocationBarDragModes</a>,   "cancel" : boolean [out] }</pre>
onDrop	Function	<p><b>Optional, default: undefined</b> – This function is called when an activity/allocation/entity is dropped by the user after dragging it (but only when dropping was allowed by the last triggered onDrag callback). When the function sets a jQuery Promise object into event.result,</p>

		<p>then the widget disables dragging of the dropped bar until the promise is resolved or rejected. It is also possible to cancel the interaction.</p> <p><b>Profile:</b></p> <pre>function (args) args = {     "objectType" : <u>ObjectType</u>,     "object" : Object,     "visualType" : <u>VisualType</u>,     "entry"<sup>1</sup> : AllocationEntry,     "entryIndex"<sup>1</sup> : number,     "dragMode" : <u>ActivityBarDragModes</u>          <u>AllocationBarDragModes</u>,     "newRowObjectType" : <u>ObjectType</u>,     "newRowObject" : Object,     "newStart" : Date,     "newEnd" : Date,     "cancel" : boolean [out]     "promise" : Promise [out] }</pre> <p>If the promise is resolved, then it is possible to call it with an arguments object, which offers cancel the interaction at last:</p> <pre>args = {     "cancel" : boolean }</pre> <p>When using a promise, then the application should ensure that it will be resolved/rejected later in any way, since the drag action lasts active until then. Maybe there should be a timer for time out.</p>
<b>onSelectionChanged</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when the user selects/deselects an object solely or in addition. The property "selectedObjects" holds the new selection completely and can be changed by the application, while the previously selected objects (if any) are contained in the property "previouslySelectedObjects".</p> <p><b>Profile:</b></p> <pre>function (args) args = {     "objectType" : <u>ObjectType</u> 0,     "object" : Object null,     "selectedObjects" : Object[], ///[in/out]     "visualType" : <u>VisualType</u>,     "previouslySelectedObjects" : Object[] null,     "previouslySelectedObjectsType" : <u>ObjectType</u>          null,     "event": DOMEEvent,     "cancel": Boolean /* [in/out],         Default: false */ }</pre>
<b>onShowContextMenu</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when a context menu can appear. If the function sets a jQuery Promise object (see <a href="http://api.jquery.com/promise/">http://api.jquery.com/promise/</a>) at event.result,</p>

		<p>then the widget will internally hold the state of a context menu being open until the promise is resolved or rejected. Possible items are resources, activities, allocations, allocation entries (only when shown as separate bars instead of allocation bars), links, timescale, and empty time area.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <u>ObjectType</u>,   "object" : Object,   "visualType" : <u>VisualType</u>,   "date" : Date,   "event" : DOMEvent or jQuery.Event,   "entry"<sup>1</sup> : AllocationEntry,   "entryIndex"<sup>1</sup> : number,   "promise" : Promise // [out] }</pre>
<b>onShowTooltip</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when a tooltip can appear (i.e. when the mouse cursor hovers over an object). The tooltip itself is to be shown by the application. Possible objects are resources, activities, allocations, and links.</p> <p><b>Profile:</b></p> <pre>function (args) args = {   "objectType" : <u>ObjectType</u>,   "object" : Object,   "visualType" : <u>VisualType</u>,   "event" : DOMEvent,   "date"<sup>2</sup> : Date // date at mouse cursor,   "capacity"<sup>2</sup> : number,   "load"<sup>2</sup> : number,   "singleLoads"<sup>3</sup> : Object,   "entry"<sup>1</sup> : AllocationEntry,   "entryIndex"<sup>1</sup> : number,   "innerHTML" <sup>4</sup> : string // [in/out]   "tooltipTemplateID" : string // [in/out] }</pre>
<b>onTableCellDefinitionWidthChanged</b>	Function	<p><b>Optional, default: undefined</b> – If set, then this function is called when the user has changed the width of a table column. This callback will only work, when the table columns were defined by TableRowDefinition objects. You</p>

<sup>2</sup> Available only if objectType == ObjectType.Resource and the mouse cursor hovers over a curve area.

<sup>3</sup> Available only if objectType == ObjectType.Resource and the mouse cursor hovers over a curve area. This object has properties where the names are the IDs of the underlying curves of a curve stack and the values represent the current values of these curves at the current date.

<sup>4</sup> Text to be displayed inside a tooltip window. This text has to be formatted compliant to the formatting rules for the contents of HTML <div> elements. **Line breaks** can be inserted by adding a <br> tag to the text.

Embracing substrings by <b> and </b> tags will show **bold texts**. The same way you can use the <table> and the corresponding <tr> and <td> tags to **tabulate** the tooltip contents. If your original text contains the symbols "<" or ">" - i.e. those symbols should be displayed as they are and must not be interpreted as parts of HTML tag – then you have to replace the symbols by escape sequence codes (replace "<" by "&lt;" and ">" by "&gt;").

		<p>then are able to update the cell definition inside of the appropriate TableRowDefinition object e.g. for gaining persistency inside the application.</p> <p><b>Profile:</b></p> <pre>function (args) args = {     "tableType" : TableType,     "tableRowDefinition" : Object,     "cellIndex": number,     "newWidth": number,     "oldWidth" : number }</pre>
<b>onTimeAreaViewParametersChanged</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when the visible time area changes either by changing the visible start or by changing the resolution. There is an internal delay of 500 milliseconds.</p> <p><b>Profile:</b></p> <pre>function (args) args = {     "scrollOffset" : number, /* in pixels */     "width" : number, /* in pixels */     "start" : Date,     "end" : Date,     "timeResolutionUnit" : string (possible         values: "seconds"/"minutes"/"hours"/         "days"),     "timeResolutionUnitCount" : number }</pre> <p>The values of the properties “start” and “end” can be used in the method fitTimeAreaIntoView to restore the current view at a later time. Alternatively the he values of the properties “timeResolutionUnit” and “timeResolutionUnitCount” can be used for the method setTimeResolutionForView.</p>
<b>onVerticalScrollOffsetChanged</b>	Function	<p><b>Optional, default: undefined</b> – This function is called when the visible area is scrolled vertically or when the row object visible at top has changed. There is an internal delay of 500 milliseconds.</p> <p><b>Profile:</b></p> <pre>function (args) args = {     "tableType" : TableType,     "scrollOffset" : number, /* in pixels */     "rowObjectTypeAtTop" : ObjectType,     "rowObjectAtTop" : Object }</pre>

## 5.3 Methods

The following methods are callable in two ways:

- `$("#ganttDiv").nXYZWidget("methodName", param1, param2, ...)`
- `$("#ganttDiv").nXYZWidget("instance").methodName(param1, param2, ...)`

The first way is the classical one for jQuery UI Widgets. The second way is more object-oriented and faster, when the instance object is hold in its own variable within the application.

Method Name	Result Type	Parameters	Description
<b>about</b>	-	-	Opens a popup dialog that shows the licenses of all libraries used.
<b>addActivities</b>	-	activities : <a href="#">Activity[]</a>	Adds activities. <sup>5</sup>
<b>addAllocations</b>	-	allocations : <a href="#">Allocation[]</a>	Adds allocations. <sup>5</sup>
<b>addCalendars</b>	-	calendars : <a href="#">Calendar[]</a>	Adds calendars. <sup>5</sup>
<b>addCurves</b>	-	curves : <a href="#">Curve[]</a>	Adds curves. <sup>5</sup>
<b>addDateLines</b>	-	dateLines : <a href="#">DateLine[]</a>	Adds date lines. <sup>5</sup>
<b>addEntities</b>	-	entities : <a href="#">Entity[]</a>	Adds entities. <sup>5</sup>
<b>addLinks</b>	-	links : <a href="#">Link[]</a>	Adds links. <sup>5</sup>
<b>addResources</b>	-	resources : <a href="#">Resource[]</a>	Adds resources. <sup>5</sup>
<b>addSymbols</b>	-	symbols : <a href="#">Symbol[]</a>	Adds symbols. <sup>5</sup>
<b>addTableRowDefinitions</b>	-	tableRowDefinitions : <a href="#">TableRowDefinition[]</a>	Adds table row definitions. <sup>5</sup>
<b>addTooltipTemplates</b>	-	tooltipTemplates : <a href="#">TooltipTemplate[]</a>	Adds tooltip templates. <sup>5</sup>
<b>addWorkingTime</b>	Date	calendarID : number, start : Date string, workingTime : number	Add a working time given in milliseconds to a date and returns a new date object with the calculated date.
<b>calculateWorkingTime</b>	number	calendarID : number, start : Date string, end : Date string	Calculates the working time of a time period given by a start and an end date. The working time returned is given in milliseconds.
<b>fitTimeAreaIntoView</b>	-	start : Date undefined, end : Date undefined	Fits the time area into the visible area. If start and/or end dates are given, then only the time between these are fitted into the visible area. Not given dates are internally replaced by start and end date of the complete time area.
<b>removeActivities</b>	-	activitiesOrIDs : string[]   <a href="#">Activity[]</a>	Removes activities. <sup>5</sup>
<b>removeAll</b>	-	-	Removes all objects.

<sup>5</sup> After changing the data model, the changes will not become visible until the method "render" is called. These calls should be made after all changes are made once. If forgotten, there is a timer which calls the method "render" automatically, but this eventually leads to flickering within the Widget's visualization.

Method Name	Result Type	Parameters	Description
<b>removeAllocations</b>	-	allocationsOrIDs : string[]   <a href="#">Allocation</a> []	Removes allocations. <sup>5</sup>
<b>removeCalendars</b>	-	calendarsOrIDs : string[]   <a href="#">Calendar</a> []	Removes calendars. <sup>5</sup>
<b>removeCurves</b>	-	curvesOrIDs : string[]   <a href="#">Curve</a> []	Removes curves. Resources have to be unused to be removable. <sup>5</sup>
<b>removeDateLines</b>	-	dateLinesOrIDs : string[]   <a href="#">DateLine</a> []	Removes date lines. <sup>5</sup>
<b>removeEntities</b>	-	entitiesOrIDs : string[]   <a href="#">Entity</a> []	Removes entities. <sup>5</sup>
<b>removeLinks</b>	-	linksOrIDs : string[]   <a href="#">Link</a> []	Removes links. <sup>5</sup>
<b>removeResources</b>	-	resourcesOrIDs : string[]   <a href="#">Resource</a> []	Removes resources. <sup>5</sup>
<b>removeSymbols</b>	-	symbolsOrIDs : string[]   <a href="#">Symbol</a> []	Removes symbols. <sup>5</sup>
<b>removeTableRowDefinitions</b>	-	tableRowDefinitionsOrIDs : string[]   <a href="#">TableRowDefinition</a> []	Removes table row definitions. <sup>5</sup>
<b>removeTooltipTemplates</b>	-	tooltipTemplatesOrIDs : string[]   <a href="#">TooltipTemplate</a> []	Removes tooltip templates. <sup>5</sup>
<b>render</b>	-	-	Refreshes the view after changes to data objects. When the application forgets to call this method, then it is called automatically when the application goes idle.
<b>scrollToDate</b>	-	Date	Scrolls to the given date.
<b>scrollToObject</b>	-	objectType: <a href="#">ObjectType</a> , object: object	Scrolls to the object (activity/allocation/entity/resource). If the object is not visible, the corresponding rows are expanded automatically.
<b>selectObjects</b>	-	objectType : <a href="#">ObjectType</a> , objectsOrIDs : string[]   object[], visualType: <a href="#">VisualType</a>	Selects the given objects or the objects addressed by the given IDs. In the activity mode only activities can be selected. In the resource mode only resources and allocations can be selected.  The parameter visualType is only required in the activity mode if objects of type Activity are to be selected. In this case you can define whether the activity rows (VisualType.Row) or the activity bars (VisualType.Bar) should be selected. It is possible to select objects that are hidden in the collapsed parent

Method Name	Result Type	Parameters	Description
			object. The selectionChanged callback (see options) is not called by the widget.
<b>setTimeResolutionForView</b>	-	unit : string ("seconds", "minutes", "hours", "days"), unitCount : number undefined, start : Date undefined	Sets the resolution in the time area view. If unitCount is undefined, then 1 is used. If start is undefined, then the current visible start is used.
<b>updateActivities</b>	-	activities : <a href="#">Activity</a> [] , updateMode : <a href="#">UpdateModes</a>	Update activities. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter for details.
<b>updateAllocations</b>	-	allocations : <a href="#">Allocation</a> [] , updateMode : <a href="#">UpdateModes</a>	Updates allocations. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter for details.
<b>updateCalendars</b>	-	calendars: <a href="#">Calendar</a> [] , updateMode : <a href="#">UpdateModes</a>	Updates calendars visually. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter of API description for details.
<b>updateCurves</b>	-	curves : <a href="#">Curve</a> [] , updateMode : <a href="#">UpdateModes</a>	Updates curves. Allowed changes are modification of all attributes but ID and Type. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter for details.
<b>updateDateLines</b>	-	dateLines : <a href="#">DateLine</a> [] , updateMode : <a href="#">UpdateModes</a>	Updates date lines. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter for details.
<b>updateEntities</b>	-	entities : <a href="#">Entity</a> [] , updateMode : <a href="#">UpdateModes</a>	Update entities. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum

Method Name	Result Type	Parameters	Description
			<a href="#">UpdateModes</a> in the Enumerations chapter for details.
<b>updateLinks</b>	-	links : <a href="#">Link</a> [], updateMode : <a href="#">UpdateModes</a>	Updates links. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter for details.
<b>updateResources</b>	-	resources : <a href="#">Resource</a> [], updateMode : <a href="#">UpdateModes</a>	Updates resources. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter for details.
<b>updateSymbols</b>	-	symbols : <a href="#">Symbol</a> [], updateMode : <a href="#">UpdateModes</a>	Updates symbols. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter for details.
<b>updateTableRowDefinitions</b>	-	tableRowDefinitions : <a href="#">TableRowDefinition</a> [], updateMode : <a href="#">UpdateModes</a>	Updates table row definitions. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter for details.
<b>updateTooltipTemplates</b>	-	tooltipTemplates: <a href="#">TooltipTemplate</a> [], updateMode : <a href="#">UpdateModes</a>	Updates tooltip templates. Allowed changes are modification of all attributes besides ID. <sup>5</sup>  updateMode is optional. See enum <a href="#">UpdateModes</a> in the Enumerations chapter for details.

## 6 Enumerations

The following enumerations are provided:

### 6.1 ActivityBarDragModes

```
netronic.nVSW.ActivityBarDragModes = {
```

```
// Note: Values are flags,  
//       i.e. they can be combined by using bitwise OR operators.
```

```
None: 0,
```

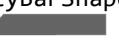
```

    DragStart: 1,
    DragEnd: 2,
    DragHorizontally: 4,
    DragVertically: 8,
    DragAutoHorOrVer: 16,
};


```

## 6.2 ActivityBarShape

```

netronic.nVSW.ActivityBarShape = {
    Regular: 0, 
    Summary: 1, 
    Diamond: 2, 
    Rectangle: 3, 
};


```

## 6.3 AllocationBarDragModes

```

netronic.nVSW.AllocationBarDragModes = {

    // Note: Values are flags,
    //        i.e. they can be combined by using bitwise OR operators.

    None: 0,
    DragStart: 1,
    DragEnd: 2,
    DragHorizontally: 4,
    DragVertically: 8,
    DragAutoHorOrVer: 16,
};


```

## 6.4 AllocationBarShape

```

netronic.nVSW.AllocationBarShape = {
    Regular: 0, 
    Summary: 1,  // Only to be used if the allocation has only one
                    // entry
    Rectangle: 3, 
};


```

## 6.5 CollapseState

```

netronic.nVSW.CollapseState = {
    Unchanged: -1,
    Expanded: 0,
    Collapsed: 1
};


```

## 6.6 CurveInterpolationType

```
netronic.nVSW.CurveInterpolationType = {
```



```
    Linear: 1,  
};
```

## 6.7 CurveType

```
netronic.nVSW.CurveType = {  
    PointCurve: 0,  
    CurveStack: 3,  
    CurveList: 4  
};
```

## 6.8 DateLineGridModes

```
netronic.nVSW.DateLineGridModes = {  
    None: 0,  
    Auto: 1,  
    Weekly: 2,  
    Daily: 4  
};
```

## 6.9 HorizontalAlignment

```
netronic.nVSW.HorizontalAlignment = {  
    Left: 0,  
    Center: 1,  
    Right: 2  
};
```

## 6.10 LinkRoutingType

```
netronic.nVSW.LinkRoutingType = {  
    Curved: 1,  
    Orthogonal: 2  
};
```

## 6.11 ObjectType

```
netronic.nVSW.ObjectType = {  
    TimeArea: -2,  
    Timescale: -1,  
    Activity: 1,  
    Allocation: 2,  
    Resource: 5,  
    Link: 6,  
    Curve: 7,  
    Entity: 13  
};
```

## 6.12 ProgressBarWidthCalculationMode

```
netronic.nVSW.ProgressBarWidthCalculationMode = {  
    ConsiderWorkingTimesOnly: 0,  
    ConsiderWorkingAndNonworkingTimes: 1,
```

```
};
```

## 6.13 RowDesigns

```
netronic.nVSW.RowDesigns = {

    // Note: flags!
    // These values can be combined by using bitwise OR operators.

    Empty: 0,
    Bars: 1,
    Optimized: 2,
    BarsInHiddenDescendantRows: 4,
    CalendarGrid: 8
};
```

## 6.14 RowDragModes

```
netronic.nVSW.RowDragModes = {

    // Note: Values are flags,
    //       i.e. they can be combined by using bitwise OR operators.

    None: 0,
    DragOutside: 32,
};
```

## 6.15 SnapTargets

```
netronic.nVSW.SnapTargets = {

    // Note: Values are flags,
    //       i.e. they can be combined by using bitwise OR operators.

    None: 0,
    Start: 1, // only valid for bars representing allocations
    End: 2, // only valid for bars representing allocations
    DateLines: 4,
    CalendarGrids: 8,
    DateLineGrids: 16
};
```

## 6.16 TableType

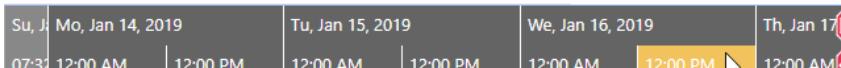
```
netronic.nVSW.TableType = {
    Gantt: 0,
    Entities: 1
};
```

## 6.17 TextWrapMode

```
netronic.nVSW.TextWrapMode = {
    None: 0, // no wrapping at all
    Line: 1, // text is wrapped at \n
};
```

## 6.18 TimescaleNavigationMode

```
netronic.nVSW.TimescaleNavigationMode = {
    Latest: 0, // use the latest version of the timescale navigation
    
    • A click onto the left and right button scrolls the chart sideward by the width of the view.
    • A click onto the up button reduces the timescale resolution.
    • A click onto a highlighted period (see orange area) fits this period completely into the view.
    • Use the mouse wheel for increasing and reducing the timescale resolution.
};

LegacyVersion1: 1, 
    • A click onto the left and right button scrolls the chart sideward by the widths of one unit in the upper timescale ribbon
    • A click onto a highlighted period (see orange area) fits this period completely into the view.
    • Use the mouse wheel for increasing and reducing the timescale resolution.
```

## 6.19 TimeType

```
netronic.nVSW.TimeType = {
    WorkingTime: 1,
    NonWorkingTime: 2
};
```

## 6.20 UpdateModes

```
netronic.nVSW.UpdateModes = {
    UpdateOnly: 0,
    ImplicitAddObjects: 1 // If an object to be updated does not exist,
                           // it will be added automatically.
};
```

## 6.21 ViewArea

```
netronic.nVSW.ViewArea = {
    Top: -1,
    Default: 0
};
```

## 6.22 ViewType

```
netronic.nVSW.ViewType = {
    Activities: 0,
    Resources: 1,
    Loads: 2
}
```

```
};
```

## 6.23 VisualType

```
netronic.nVSW.VisualType = {  
    Background: -1,  
    Bar: 0,  
    Row: 1,  
    Curve: 2,  
    Link: 3  
};
```