TMS FNC UI Pack
DEVELOPERS GUIDE

January 2022

Index

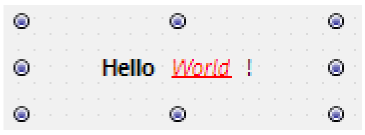
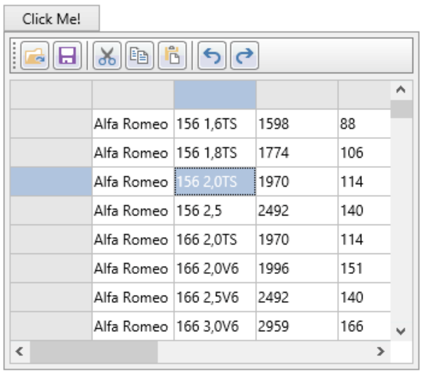
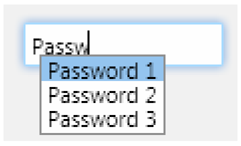
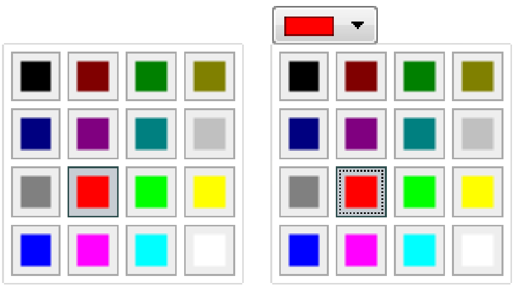
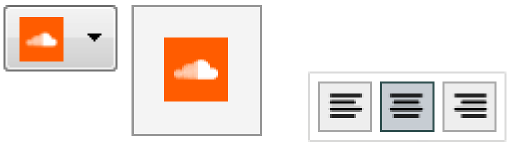
Availability

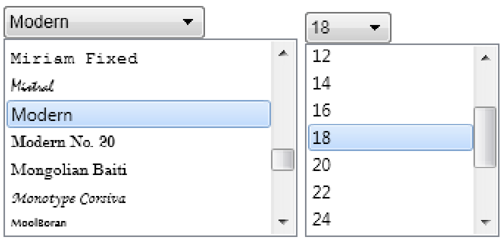
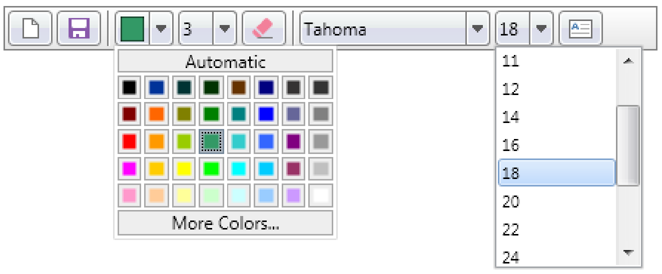
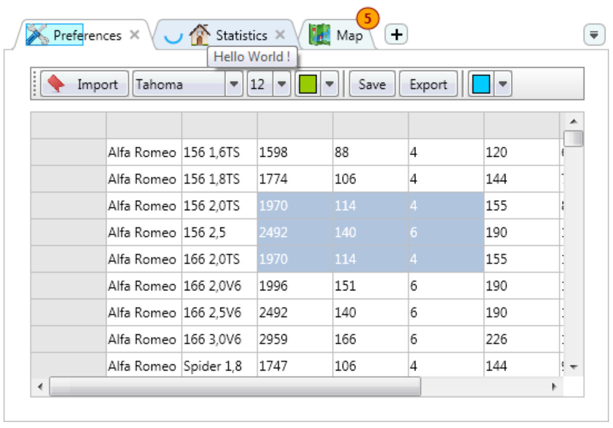
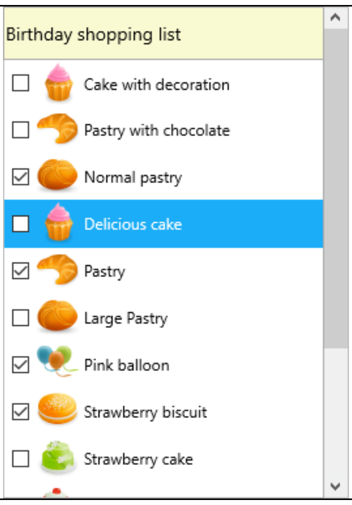
Supported frameworks and platforms
- VCL Win32/Win64
- FMX Win32/Win64, macOS, iOS, Android, Linux
- LCL Win32/Win64, macOS, iOS, Android, numerous Linux variants including Raspbian
- WEB: Chrome, Edge, Firefox, …

Supported IDE's
- Delphi XE7 and C++ Builder XE7 or newer releases
- Lazarus 1.4.4 with FPC 2.6.4 or newer official releases
- TMS WEB Core for Visual Studio Code 1.3 or newer releases

Important Notice: TMS FNC UI Pack requires TMS FNC Core (separately available at the My Products page)

List of available controls

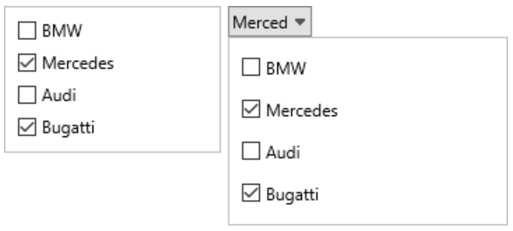
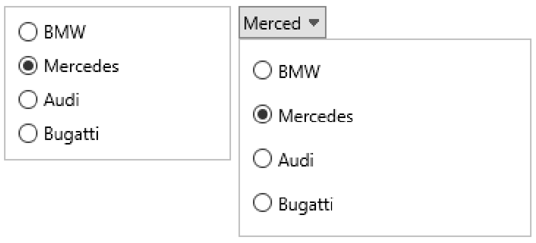
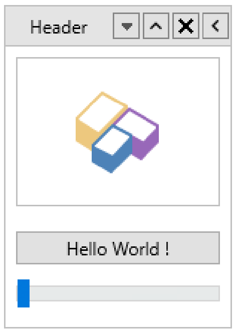
TTMSFNCHTMLText Text shape that supports HTML (see **MiniHTML chapter**)	
TTMSFNCBitmapContainer Container that holds multiple bitmaps	
TTMSFNCPopup Component that allows displaying any type of control inside a customizable popup dialog.	 Alfa Romeo 156 1,6TS 1598 88 Alfa Romeo 156 1,8TS 1774 106 Alfa Romeo 156 2,0TS 1970 114 Alfa Romeo 156 2,5 2492 140 Alfa Romeo 166 2,0TS 1970 114 Alfa Romeo 166 2,0V6 1996 151 Alfa Romeo 166 2,5V6 2492 140 Alfa Romeo 166 3,0V6 2959 166
TTMSFNCEdit Autocomplete and lookup enabled control that extends TEdit. Has the capability of display and editing various editing types such as float, money, lowercase, uppercase, …	
TTMSFNCColorPicker / TTMSFNCColorSelector A color selector and picker with many customization / custom drawing options and events.	
TTMSFNCBitmapPicker / TTMSFNCBitmapSelector A bitmap selector and picker with many	

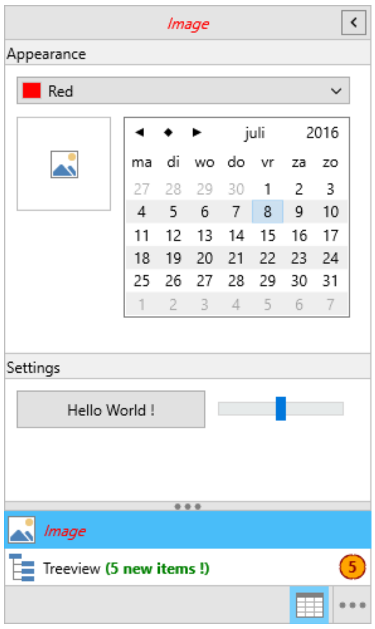
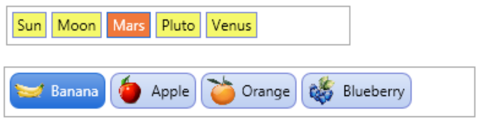
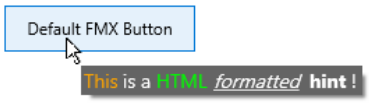
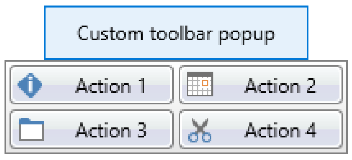
customization / custom drawing options and events.	
TTMSFNCFontNamePicker / TTMSFNCFontSizePicker	
TTMSFNCToolBar	
TTMSFNCTabSet / TTMSFNCPageControl	
TTMSFNCListBox / TTMSFNCCheckedListBox	

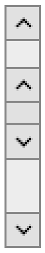
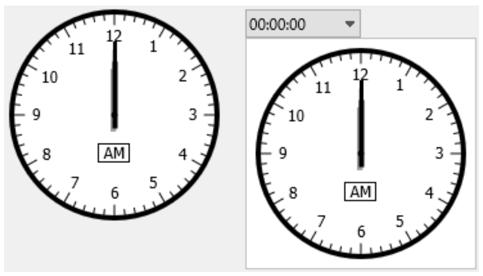
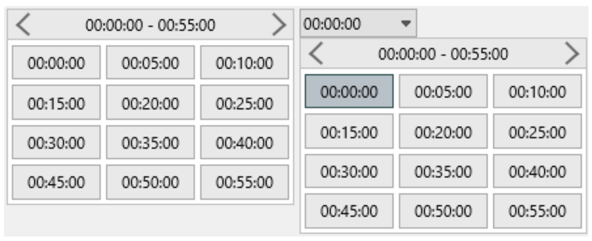
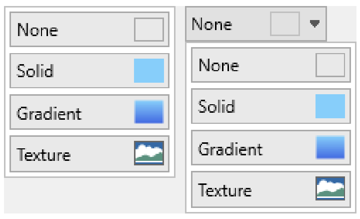
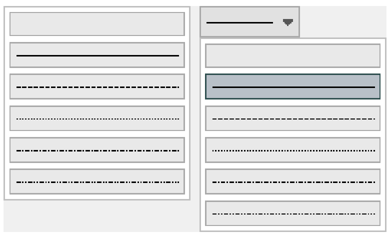
	Alfa Romeo	156 1,6TS	1598	88	4	120
	Alfa Romeo	156 1,8TS	1774	106	4	144
	Alfa Romeo	156 2,0TS	1970	114	4	155
	Alfa Romeo	156 2,5	2492	140	6	190
	Alfa Romeo	166 2,0TS	1970	114	4	155
	Alfa Romeo	166 2,0V6	1996	151	6	190
	Alfa Romeo	166 2,5V6	2492	140	6	190
	Alfa Romeo	166 3,0V6	2959	166	6	226
	Alfa Romeo	Spider 1,8	1747	106	4	144

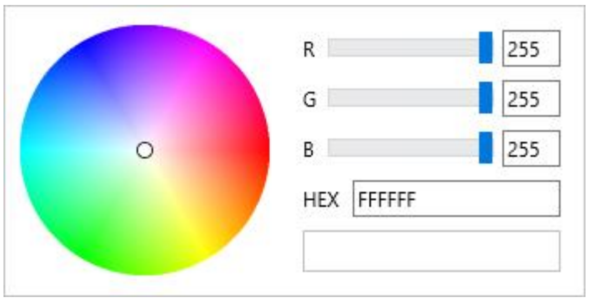
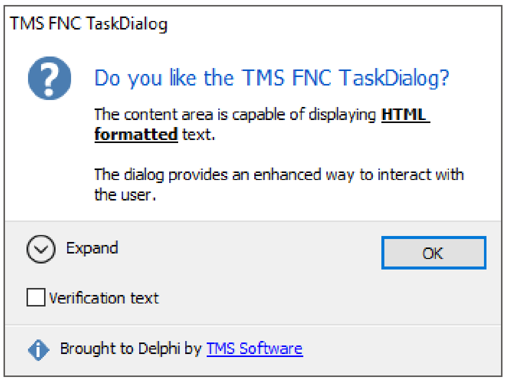
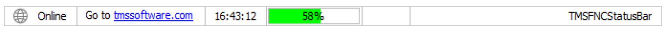
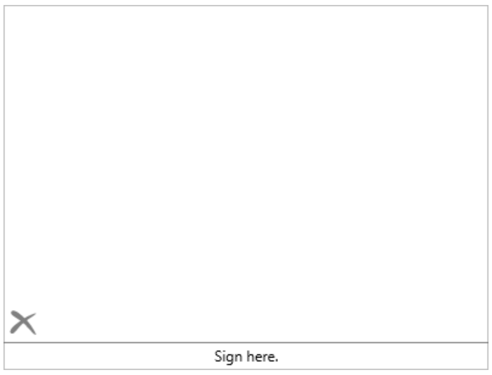
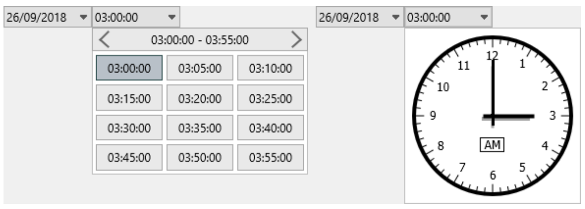
Birthday shopping list

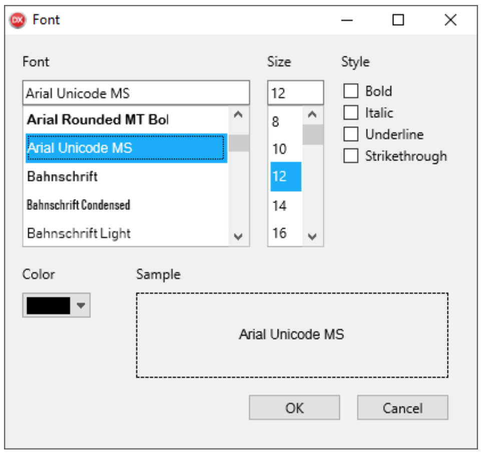
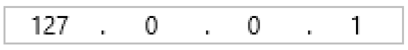
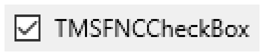
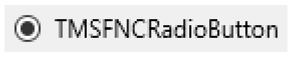
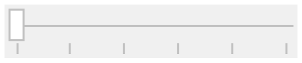
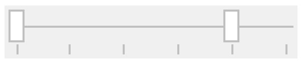
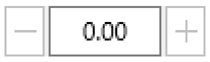
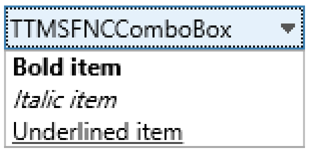
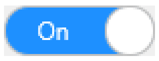
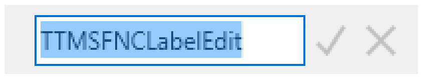
- ☐ Cake with decoration
- ☐ Pastry with chocolate
- ☑ Normal pastry
- ☐ Delicious cake
- ☑ Pastry
- ☐ Large Pastry
- ☑ Pink balloon
- ☑ Strawberry biscuit
- ☐ Strawberry cake

TTMSFNCCheckGroup / TTMSFNCCheckGroupPicker	 BMW Mercedes Audi Bugatti Merced BMW Mercedes Audi Bugatti
TTMSFNCRadioGroup / TTMSFNCRadioGroupPicker	 BMW Mercedes Audi Bugatti Merced BMW Mercedes Audi Bugatti
TTMSFNCPanel	

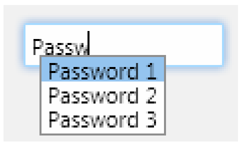
TTMSFNCNavigationPanel	 Image Appearance Red juli 2016 Settings Hello World ! Image Treeview (5 new items !) 5
TTMSFNCListEditor	 Sun Moon Mars Pluto Venus Banana Apple Orange Blueberry
TTMSFNCHint	
TTMSFNCToolBarPopup	 Custom toolbar popup Action 1 Action 2 Action 3 Action 4

TTMSFNCScrollBar	
TTMSFNCAnalogTimeSelector / TTMSFNCAnalogTimePicker	
TTMSFNCDigitalTimeSelector / TTMSFNCDigitalTimePicker	
TTMSFNCFillKindSelector / TTMSFNCFillKindPicker	
TTMSFNCStrokeKindSelector / TTMSFNCStrokeKindPicker	

TTMSFNCColorWheel	 R 255 G 255 B 255 HEX FFFFFF
TTMSFNCTaskDialog	 TMS FNC TaskDialog Do you like the TMS FNC TaskDialog? The content area is capable of displaying **HTML formatted** text. The dialog provides an enhanced way to interact with the user. Expand OK Verification text Brought to Delphi by TMS Software
TTMSFNCStatusBar	 Online | Go to tmssoftware.com | 16:43:12 | 58% | TMSFNCStatusBar
TTMSFNCSignatureCapture	 Sign here.
TTMSFNCDateTimePicker	 26/09/2018 03:00:00 03:00:00 - 03:55:00 03:00:00 03:05:00 03:10:00 03:15:00 03:20:00 03:25:00 03:30:00 03:35:00 03:40:00 03:45:00 03:50:00 03:55:00 26/09/2018 03:00:00

TTMSFNCFontDialog	 Font Font Size Style Arial Unicode MS 12 Arial Rounded MT Bol Arial Unicode MS Bahnschrift Bahnschrift Condensed Bahnschrift Light 8 10 12 14 16 Bold Italic Underline Strikethrough Color Sample Arial Unicode MS OK Cancel
TTMSFNCIPEdit	
TTMSFNCCheckBox	
TTMSFNCRadioButton	
TTMSFNCTrackBar	
TTMSFNCRangeSlider	
TTMSFNCSpinEdit	
TTMSFNCComboBox	 TTMSFNCComboBox Bold item Italic item Underlined item
TTMSFNCSwitch	
TTMSFNCLabelEdit	

TTMSFNCEdit



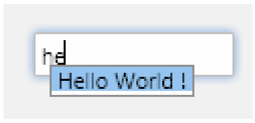
TTMSFNCEdit extends TEdit and adds several capabilities such as autocompletion, Lookup and supports edit types such as alphanumeric, numeric, float, uppercase, lowercase, money, ….

The lookuplist can be enabled by setting the enabled property to true:

```
TMSFNCEdit1.Lookup.Enabled := True;
```

To display the list while typing, items can be added to the displaylist. The amount of displayed items when typing can be controlled with `TMSFNCEdit1.Lookup.DisplayCount`.

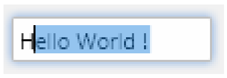
```
TMSFNCEdit1.Lookup.DisplayList.Add('abs');
TMSFNCEdit1.Lookup.DisplayList.Add('Item 1');
TMSFNCEdit1.Lookup.DisplayList.Add('Hello World !');
```



When typing, the list shows after 2 characters, with the property `TMSFNCEdit1.Lookup.NumChars` this can be modified. When typing text, the text that is typed can also be automatically added to the list by setting `TMSFNCEdit1.Lookup.History` to true.

Autocompletion can be actived with `TMSFNCEdit1.AutoComplete := True;` The edit automatically displays the item that matches the characters typed in the edit.

```
TMSFNCEdit1.AutoComplete := True;
TMSFNCEdit1.Lookup.DisplayList.Add('Hello World !');
```



The text in the edit can be displayed as password characters by setting `TMSFNCEdit1.Password := True;`

TTMSFNCPopup

The TTMSFNCPopup is a component that has the capability to display a control inside a fully customizable transparent popup window. This component can be easily configured to display itself positioned at a specific control on the form or a given absolute position.
Header and footer are configurable via following properties:

After setting properties where the popup must be shown you can use the following methods to popup or close the dialog:

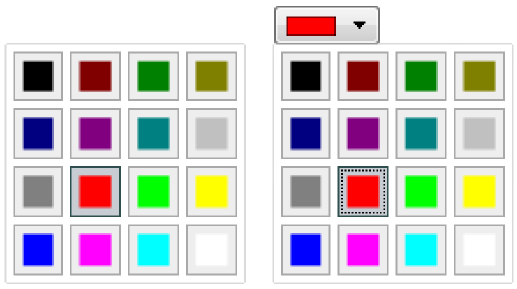
```
TMSFNCPopup1.Popup;
```

Example:

This code snippet assigns a TTMSFNCGrid control to be displayed on the popup and configures the TTMSFNCPopup to open at the bottom of a button on the form.

```
procedure TForm1.FormCreate(Sender: TObject);
begin
  // assign the tableview as detail control for the popup
  TMSFNCPopup1.ContentControl := TMSFNCGrid1;
  // set the control as reference for position of the popup
  TMSFNCPopup1.PlacementTarget := Button1;
  // show the popup at the bottom of the button centered
  TMSFNCPopup1.Placement := TPlacement.plBottomCenter;
end;
```

TTMSFNCColorSelector / TTMSFNCColorPicker

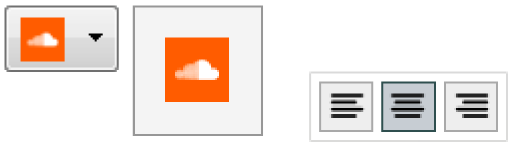


The TTMSFNCColorSelector and TTMSFNCColorPicker are components that are pre-configured, adding a standard set of colors to select from. Selecting a color is as easy as implementing the OnColorSelected event and/or programmatically retrieve the selected color with the TMSFNCColorSelector.SelectedColor or TMSFNCColorPicker.SelectedColor property. The picker variant displays the selector in a popup.

The TTMSFNCColorSelector and TTMSFNCColorPicker inherit from a base that allows a high level of customization. Each base supports an item collection that can be displayed in a column and row structure. Each item can be optionally hidden and/or disabled, stretched over a column and / or row span and can also be optionally configured as a seperator. The TTMSFNCColorSelector component overrides and adds a Color property to the base collection item class.

The base selector and picker classes support custom drawing on three levels: the background, the content and the text. A sample can be found at the TTMSFNCBitmapSelector / TTMSFNCBitmapPicker chapter.

TTMSFNCBitmapSelector / TTMSFNCBitmapPicker



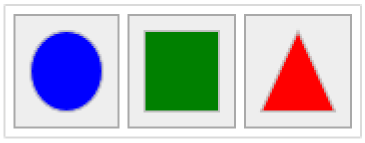
The TTMSFNCBitmapSelector and TTMSFNCBitmapPicker are components that support displaying a collection of images to select from either directly in a selector or through a popup in a picker variant. Selecting a bitmap is as easy as implementing the OnBitmapSelect event and/or programmatically retrieve the selected Bitmap with the TMSFNCColorSelector.SelectedBitmap / TMSFNCColorSelector.SelectedItemIndex or TMSFNCColorPicker.SelectedBitmap property. The picker variant displays the selector in a popup.

The TTMSFNCBitmapSelector and TTMSFNCBitmapPicker inherit from a base that allows a high level of customization. Each base supports an item collection that can be displayed in a column and row structure. Each item can be optionally hidden and/or disabled, stretched over a column and / or row span and can also be optionally configured as a seperator. The TTMSFNCBitmapSelector component overrides and adds a Bitmap property to the base collection item class.

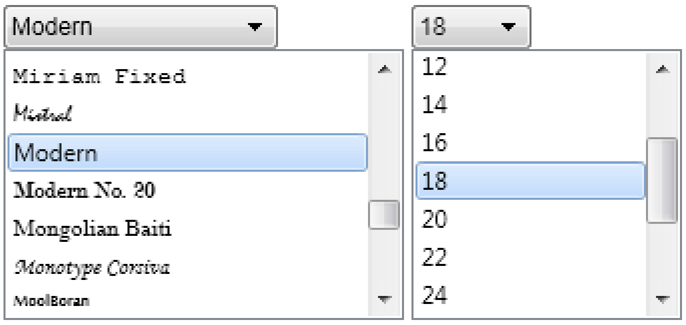
The base selector and picker classes support custom drawing on three levels: the background, the content and the text. Below is a sample that demonstrates this.

```
procedure TForm1.FormCreate(Sender: TObject);
var
  I: Integer;
begin
  TMSFNCBitmapSelector1.BeginUpdate;
  TMSFNCBitmapSelector1.Items.Clear;
  TMSFNCBitmapSelector1.Columns := 3;
  TMSFNCBitmapSelector1.Rows := 1;
  for I := 0 to 2 do
    TMSFNCBitmapSelector1.Items.Add;
  TMSFNCBitmapSelector1.EndUpdate;
end;

procedure TForm1.TMSFNCBitmapSelector1ItemAfterDrawContent(Sender: TObject;
  AGraphics: TTMSFNCGraphics; ARect: TRectF; AItemIndex: Integer);
var
  pt: TTMSFNCGraphicsPath;
begin
  case TMSFNCBitmapSelector1.Items[AItemIndex].State of
  isHover: InflateRect(ARect,-4, -4);
  isDown,isSelected:
    begin
      InflateRectEx(ARect,-4, -4);
      AGraphics.Stroke.Width := 2;
      AGraphics.Stroke.Color := gcBlack;
    end;
  isNormal: InflateRectEx(ARect, -8, -8);
  end;

  ARect := RectF(Int(ARect.Left)+ 0.5, Int(ARect.Top) + 0.5,
Int(ARect.Right) +0.5, Int(ARect.Bottom) + 0.5);

  case AItemIndex of
  0:
    begin
      AGraphics.Fill.Color := gcBlue;
      AGraphics.DrawEllipse(ARect);
    end;
  1:
    begin
      AGraphics.Fill.Color := gcGreen;
      AGraphics.DrawRectangle(ARect);
    end;
  2:
    begin
      pt := TTMSFNCGraphicsPath.Create;
      pt.MoveTo(PointF(ARect.Left + ARect.Width / 2, ARect.Top));
      pt.LineTo(PointF(ARect.Left + ARect.Width , ARect.Bottom));
      pt.LineTo(PointF(ARect.Left , ARect.Bottom));
      pt.ClosePath;

      AGraphics.Fill.Color := gcRed;
      AGraphics.DrawPath(pt);
      pt.Free;
    end;
  end;
```

```
end;
```

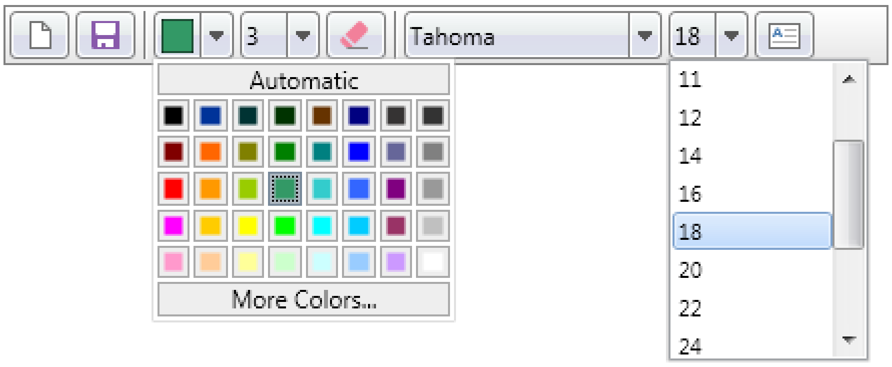


TTMSFNCFontNamePicker / TTMSFNCFontSizePicker



The TTMSFNCFontNamePicker and TTMSFNCFontSizePicker are components that are pre-configured, adding a standard set of font names and font sizes to select from. Selecting a font name / font size is as easy as implementing the OnFontNameSelected / OnFontSizeSelected event and/or programmatically retrieve the selected font name / Font size with the TMSFNCFontNamePicker.SelectedFontName or TMSFNCFontSizePicker.SelectedFontSize property.

TTMSFNCToolBar



The TTMSFNCToolBar is a component to display a group of toolbar buttons / pickers with optional separators. Each toolbar button is highly configurable and has the ability to show a dropdownbutton with a dropdowncontrol. There are also built-in font name, font size, bitmap and color pickers.

Set of components

- TTMSFNCToolBar
- TTMSFNCDockPanel
- TTMSFNCToolBarSeparator
- TTMSFNCToolBarButton
- TTMSFNCToolBarFontNamePicker
- TTMSFNCToolBarFontSizePicker
- TTMSFNCToolBarColorPicker

Properties

Appearance: The appearance of the toolbar which includes margins for automatic alignment of the controls inside the toolbar.
AutoAlign: Automatically aligns the controls inside the toolbar.
AutoSize: Automatically resizes the Toolbar according to the displayed buttons.
CustomOptionsMenu: A custom options menu, displayed when clicking the button at the right side of the toolbar. The options menu displays a list of controls that are available, and the controls can be hidden when clicking the appropriate item.
OptionsMenu: Configure the options menu at the right side of the toolbar.
State: The state of the toolbar. By default the state is esNormal, but when developing for mobile forms, the state can optionally be set to esLarge to allow larger buttons and sharper graphics.

Methods

AddControl(AControl: TControl; AIndex: Integer = -1);
Adds an existing control to the toolbar, optionally at a specified index.

AddControlClass(AControlClass: TControlClass; AIndex: Integer = -1): TControl;
Adds a new control based on the AControlClass parameter, optionally at a specified index.

AddButton(AWidth: Single = -1; AHeight: Single = -1; AResource: String = ''; AResourceLarge: String = ''; AText: String = ''; AIndex: Integer = -1): TTMSFNCToolBarButton;

Adds a new TTMSFNCToolBarButton with the ability to configure the button size, normal bitmap and large bitmap resources, text and position within the toolbar.

AddSeparator(AIndex: Integer = -1): TTMSFNCToolBarSeparator;
Adds a new separator to the toolbar.

AddFontNamePicker(AIndex: Integer = -1): TTMSFNCToolBarFontNamePicker;
Adds a new TTMSFNCToolBarFontNamePicker control, which inherits from TTMSFNCToolBarButton.

AddFontSizePicker(AIndex: Integer = -1): TTMSFNCToolBarFontSizePicker;
Adds a new TTMSFNCToolBarFontSizePicker control, which inherits from TTMSFNCToolBarButton.

AddColorPicker(AIndex: Integer = -1): TTMSFNCToolBarColorPicker;
Adds a new TTMSFNCToolBarColorPicker control, which inherits from TTMSFNCToolBarButton.

AddBitmapPicker(AIndex: Integer = -1): TTMSFNCToolBarBitmapPicker;
Adds a new TTMSFNCToolBarBitmapPicker control, which inherits from TTMSFNCToolBarButton.

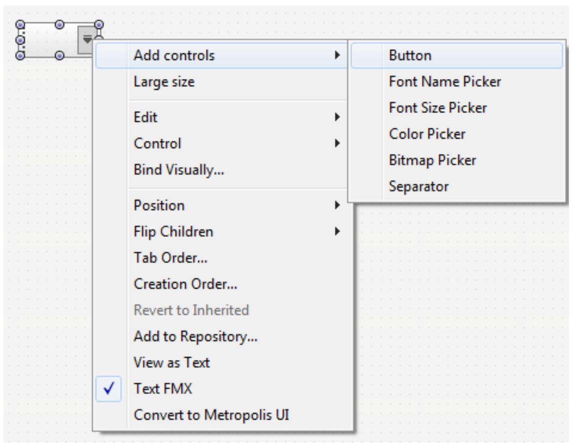
GetOptionsMenuButtonControl: TTMSFNCToolBarButton;
Returns the right-most options menu button for further customization.

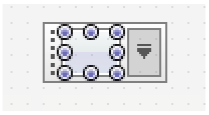
Events

OnOptionsMenuButtonClick: Event called when the menu button at the right side of the Toolbar is clicked.
OnOptionsMenuCustomize: Event called after the options menu is initialized and further customizations need to be applied.
OnOptionsMenuItemApplyStyle: Event called when the menu item style is applied.
OnOptionsMenuItemCanShow: Event called when showing
OnOptionsMenuItemClick: Event called when a menu item is clicked.
OnOptionsMenuItemCustomize: Event called when a menu item is initialized and further customization is necessary.

Adding new components at designtime

When dropping a TTMSFNCToolBar on the form, right-clicking it will give you a context menu with options to add controls. Adding a Button will create an instance of TTMSFNCToolBarButton and add it to the TTMSFNCToolBar. By default the AutoSize and AutoAlign is true which will align the button according to the properties set in the appearance and the width/height of the control.



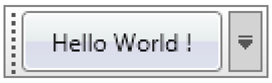


The TTMSFNCToolBarButton can be further customized through the object inspector. The TTMSFNCToolBarButton has a few descendants that are listed in the beginning of this chapter, each inherit all properties from the TTMSFNCToolBarButton and already configure some properties to suit their purpose. The most important properties, methods and events are listed below.

Adding new components at runtime

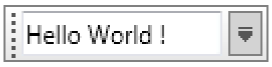
For this sample we are taking the previous sample of adding a new TTMSFNCToolBarButton at designtime. The toolbar has a few helper methods of adding a new or existing control programmatically.

```
var
  b: TTMSFNCToolBarButton;
begin
  b := TMSFNCToolBar1.AddButton(100, 30);
  b.Text := 'Hello World !';
```



We can also add other non-built in type of controls, such as a TEdit.

```
var
  e: TEdit;
begin
  e := TMSFNCToolBar1.AddControlClass(TEdit) as TEdit;
  e.Text := 'Hello World !';
```



Toolbar button

Below are the most important properties, methods and events for the TTMSFNCToolBarButton.

Properties

Appearance: The appearance of the button, which includes fill and stroke for all states of the button including a optional transparent mode and the ability to change the corners and rounding.
AutoOptionsMenuText: The text that is displayed when clicking the options menu button in the toolbar.
Bitmap: The bitmap for normal state.
BitmapContainer: A container of bitmaps defined by a name property.
BitmapLarge: The bitmap for large state.
BitmapName: The name of the bitmap in normal state used in combination with the BitmapContainer.
BitmapNameLarge: The name of the bitmap in large state used in combination with the BitmapContainer.
DropDownControl: A reference to the control displayed inside the dropdown area.
DropDownHeight: The height of the dropdown area where the dropdown control will be displayed.

DropDownKind: The kind of dropdown button configured inside the toolbar button. When setting the DropDownKind to ddkDropDownButton a separate button is added to the toolbar button which takes care of displaying the dropdown. When specifying ddkDropDown, the whole toolbar button area will trigger a dropdown.
DropDownPosition: The position of the dropdown button.
DropDownWidth: The width of the dropdown area where the dropdown control will be displayed.
State: The state of the button, used to show the difference between normal and large states for desktop and mobile applications.

Methods

GetDropDownButtonControl: TTMSFNCToolBarDropDownButton;
Returns the internally created dropdown control button for further customization.

GetBitmapControl: TTMSFNCBitmap;
Returns the internally created instance of TTMSFNCBitmap used to display a bitmap inside the toolbar button.

GetTextControl: TTMSFNCHTMLText;
Returns the internally created instance of TTMSFNCHTMLText used to display the text inside the toolbar button.

DropDown;
Shows the dropdown area.

CloseDropDown;
Closes the dropdown area.

GetPopupControl: TPopup;
A reference to the popup control used to display the dropdown area.

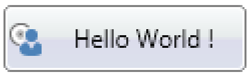
DownState: Boolean
A special state that forces the downstate on the toolbar button.

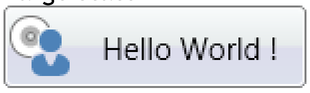
PopupPlacement: TPlacement
The placement of the dropdown area. By default the dropdown area is shown with the direction set to bottom.

Normal State vs Large State

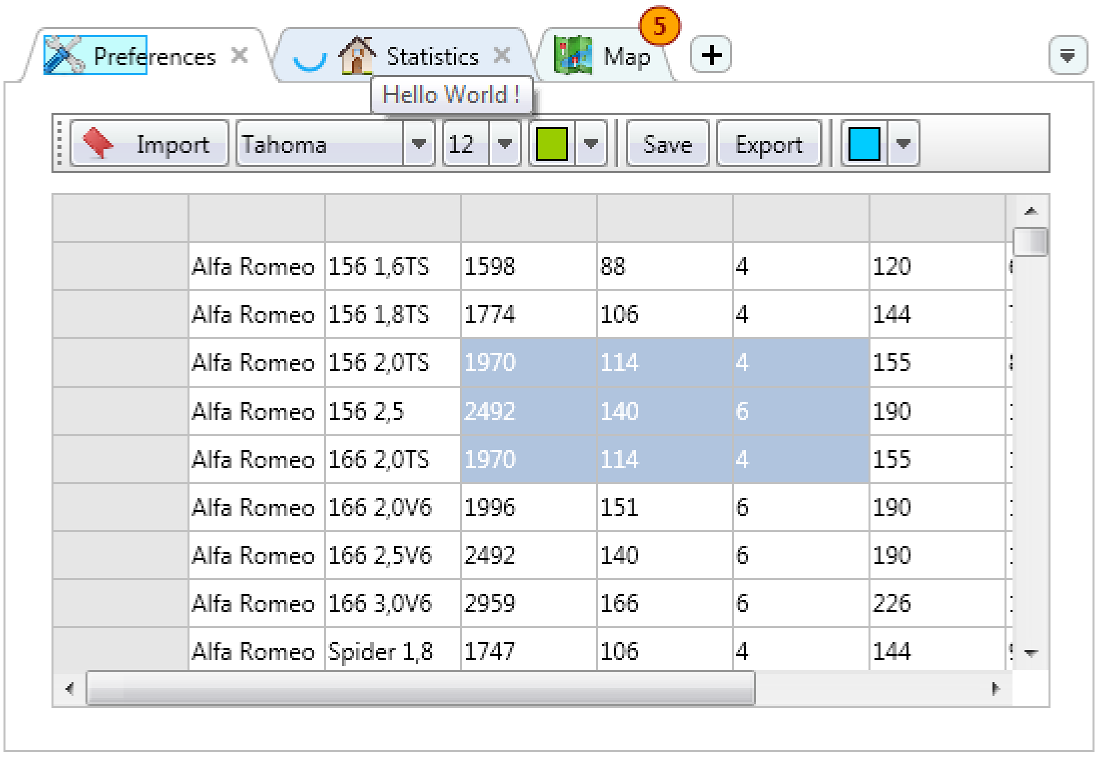
The button implements a state property, which is also available on the toolbar and dock panel. When setting the state property, the buttons are switched to a larger state, and will display a larger font size, larger size and larger bitmap. The bitmap is the most important because the bitmap will be loaded from the BitmapLarge properties. When you configure your application to include large states, you should also include a large state variant for the Bitmap and / or BitmapName properties.

Below is a sample that includes a bitmap for normal and large state.

Normal state


Large state


TTMSFNCTabSet / TTMSFNCPageControl



	Alfa Romeo	156 1,6TS	1598	88	4	120
	Alfa Romeo	156 1,8TS	1774	106	4	144
	Alfa Romeo	156 2,0TS	1970	114	4	155
	Alfa Romeo	156 2,5	2492	140	6	190
	Alfa Romeo	166 2,0TS	1970	114	4	155
	Alfa Romeo	166 2,0V6	1996	151	6	190
	Alfa Romeo	166 2,5V6	2492	140	6	190
	Alfa Romeo	166 3,0V6	2959	166	6	226
	Alfa Romeo	Spider 1,8	1747	106	4	144

Properties

ActivePageIndex/ActiveTabIndex	Property to get or set the active page/tab.
BitmapContainer	Property to assign a TTMSFNCBitmapContainer instance in order to retrieve bitmaps via a name.
ButtonAppearance	Appearance of the scroll, insert and close buttons in the menu.
ButtonAppearance → DisabledFill	The fill appearance of a button in disabled state.
ButtonAppearance → DisabledStroke	The stroke appearance of a button in disabled state.
ButtonAppearance → DownFill	The fill appearance of a button in down state.
ButtonAppearance → DownStroke	The stroke appearance of a button in down state.
ButtonAppearance → Fill	The fill appearance of a button in normal state.
ButtonAppearance → HoverFill	The fill appearance of a button in hover state.
ButtonAppearance → HoverStroke	The stroke appearance of a button in hover state.
ButtonAppearance → InsertIcon	The icon of the insert button when the insert button is shown in the menu or as an additional tab.
ButtonAppearance → ScrollNextIcon	The icon of the scroll to next tab button in the menu.
ButtonAppearance → ScrollPreviousIcon	The icon of the scroll to previous tab button in the menu.

ButtonAppearance → Size	The size of the buttons in the menu.
ButtonAppearance → Stroke	The stroke appearance of a button in normal state.
ButtonAppearance → TabListIcon	The icon of the tablist button in the menu.
ButtonAppearnce → CloseIcon	The icon of the close button when the close button is shown in the menu.
Fill	The background fill appearance of the tabset/pagecontrol.
Interaction	Various properties to control interaction with the tabset/pagecontrol.
Interaction → AutoOpenURL	When true, automatically opens executes the URL when HTML text is added to a tab.
Interaction → CloseTabWithKeyboard	When true, deletes or hides the tab, depending on the Options.CloseAction.
Interaction → Editing	When true, allows editing a tab.
Interaction → InsertTabWithKeyboard	When true, allows inserting a tab with the keyboard.
Interaction → Reorder	When true, allows tab reorder.
Interaction → SelectTabOnFocus	When true, automatically selects the focused tab.
Interaction → SelectTabOnInsert	When true, automatically selects the inserted tab.
Interaction → SelectTabOnScroll	When true, automatically selects the tab when navigating to the next or previous tab.
Layout	Properties to change the layout of the tabset/pagecontrol.
Layout → Multiline	Displays the tabs on multiple lines instead of a single scrollable line.
Layout → Position	Displays the tabs at the left, top, right or bottom position.
Options	Additional options to configure the look and feel of the tabset/pagecontrol.
Options → CloseAction	Specifies the way the tab should be removed. When the CloseAction is set to ttcaFree, the Tab is destroyed while ttcaHide removes the tab from the displayed tabs and adds it to the hidden tab list. When the Options.TabListButton is true, the button will be visible when the hidden tab list count is greater than 0.
Options → CloseMode	Displays a close button on each tab, or a separate button in the menu.
Options → InsertMode	Displays an insert button as an additional tab, or a separate button in the menu.
Options → TabListButton	Displays a button in the menu that holds a list of invisible tabs. Tabs that are hidden via the Visible property set to False, or when deleting via the CloseAction set to ttcaHide will be shown in this list.
Stroke	The stroke of the background of the TabSet/PageControl.
TabAppearance	The global tab appearance applied to each tab with UseDefaultAppearance set to True.
TabAppearance → ActiveFill	The fill applied on an active tab, when the UseDefaultAppearance is set to true.

TabAppearance → ActiveStroke	The stroke applied on an active tab, when the UseDefaultAppearance is set to True.
TabAppearance → ActiveTextColor	The text color of an active tab, used when the UseDefaultAppearance is set to True.
TabAppearance → BadgeFill	The fill of the badge, used when the UseDefaultAppearance is set to True.
TabAppearance → BadgeFont	The font of the badge.
TabAppearance → BadgeStroke	The stroke of the badge, used when the UseDefaultAppearance is set to True.
TabAppearance → CloseDownFill	The fill of the tab close button in down state, used when the UseDefaultAppearance is set to True.
TabAppearance → CloseDownStroke	The stroke of the tab close button in down state, used when the UseDefaultAppearance is set to True.
TabAppearance → CloseFill	The fill of the tab close button in normal state, used when the UseDefaultAppearance is set to True.
TabAppearance → CloseHoverFill	The fill of the tab close button in hover state, used when the UseDefaultAppearance is set to True.
TabAppearance → CloseHoverStroke	The stroke of the tab close button in hover state, used when the UseDefaultAppearance is set to True.
TabAppearance → CloseSize	The size of the tab close button.
TabAppearance → CloseStroke	The stroke of the tab close button in normal state, used when the UseDefaultAppearance is set to True.
TabAppearance → DisabledFill	The fill of the tab in disabled state, used when the UseDefaultAppearance is set to True.
TabAppearance → DisabledStroke	The stroke of the tab in disable state, used when the UseDefaultAppearance is set to True.
TabAppearance → DisabledTextColor	The text color of the tab in disabled state, used when the UseDefaultAppearance is set to True.
TabAppearance → DownFill	The fill of the tab in down state, used when the UseDefaultAppearance is set to True.
TabAppearance → DownStroke	The stroke of the tab in down state, used when the UseDefaultAppearance is set to True.
TabAppearance → DownTextColor	The text color of the tab in disabled state, used when the UseDefaultAppearance is set to True.
TabAppearance → Fill	The fill of the tab in normal state, used when the UseDefaultAppearance is set to True.
TabAppearance → FocusedBorderColor	The border color of the rectangle drawn on a focused tab.
TabAppearance → Font	The font of a tab.
TabAppearance → HoverFill	The fill of the tab in hover state, used when the UseDefaultAppearance is set to True.
TabAppearance → HoverStroke	The stroke of the tab in hover state, used when the UseDefaultAppearance is set to True.
TabAppearance → HoverTextColor	The text color of a tab in hover state, used when the UseDefaultAppearance is set to True.
TabAppearance → InsertSize	The size of the insert tab button.
TabAppearance → ProgressCircularSize	The size of the circular progress indicator.
TabAppearance → ProgressFill	The fill of the progress indicator, used when the

	UseDefaultAppearance is set to True.
TabAppearance → ProgressStroke	The stroke of the progress indicator, used when the UseDefaultAppearance is set to True.
TabAppearance → Shape	The default shape of the tab, used when the UseDefaultAppearance is set to True.
TabAppearance → ShapeOverlap	The tab shape overlapping.
TabAppearance → ShapeRounding	The tab shape rounding.
TabAppearance → ShapeSlope	The tab shape slope.
TabAppearance → ShowFocus	Shows or hides rectangle drawing on a focused tab.
TabAppearance → Stroke	The stroke of a tab in normal state, used when the UseDefaultAppearance is set to True.
TabAppearance → TextAlign	The alignment of the text of a tab, used when the UseDefaultAppearance is set to True.
TabAppearance → TextColor	The color of the text of a tab in normal state, used when the UseDefaultAppearance is set to True.
TabAppearance → Trimming	The trimming of the text of a tab, used when the UseDefaultAppearance is set to True.
TabAppearance → WordWrapping	The wordwrapping of the text of a tab, used when the UseDefaultAppearance is set to True.
Tabs → BadgeColor	The color of the badge, used when UseDefaultAppearance is set to False.
Tabs / Pages	A collection used to add / remove new or existing tabs / pages.
Tabs[Index] → ActiveColor	The color of a tab in active state, used when UseDefaultAppearance is set to False.
Tabs[Index] → ActiveTextColor	The color of the text of a tab in active state, used when UseDefaultAppearance is set to False.
Tabs[Index] → Badge	The badge of the tab, shown in the upper right corner.
Tabs[Index] → BadgeTextColor	The text color of the badge, used when UseDefaultAppearance is set to False.
Tabs[Index] → Bitmaps	The bitmap of the badge, multiple bitmaps can be added with a different scale to support different DPI settings.
Tabs[Index] → BitmapSize	The size of the bitmap.
Tabs[Index] → BitmapVisible	Shows or hides the bitmap.
Tabs[Index] → CloseButton	Shows or hides the close button, when Options.CloseMode is set to tcmTab.
Tabs[Index] → Color	The color of a tab in normal state, used when UseDefaultAppearance is set to False.
Tabs[Index] → DisabledBitmaps	The bitmap of the badge in disabled state, multiple bitmaps can be added with a different scale to support different DPI settings.
Tabs[Index] → DisabledColor	The color of a tab in disabled state, used when UseDefaultAppearance is set to False.
Tabs[Index] → DownColor	The color of a tab in down state, used when UseDefaultAppearance is set to False.
Tabs[Index] → DownTextColor	The color of the text of a tab in down state, used when UseDefaultAppearance is set to False.
Tabs[Index] → Enabled	Enables or disables the tab.

Tabs[Index] → Hint	Shows a hint on the tab, when ShowHint property is true on TabSet or PageControl level. (Please note that hints are only supported starting from 10 Seattle in FMX)
Tabs[Index] → HoverColor	The color of a tab in hover state, used when UseDefaultAppearance is set to False.
Tabs[Index] → HoverTextColor	The color of the text of a tab in hover state, used when UseDefaultAppearance is set to False.
Tabs[Index] → Progress	The progress value of a circular or rectangular progress indicator.
Tabs[Index] → ProgressColor	The color of the progress indicator.
Tabs[Index] → ProgressKind	The kind of the progress indicator, rectangular or circular.
Tabs[Index] → ProgressMax	The maximum value of a circular or rectangular progress indicator.
Tabs[Index] → ProgressMode	The mode of the progress indicator, normal or marquee.
Tabs[Index] → Shape	The shape of a tab, used when UseDefaultAppearance is set to False.
Tabs[Index] → Text	The text of a tab.
Tabs[Index] → TextAlign	The alignment of the text of a tab, used when UseDefaultAppearance is set to False.
Tabs[Index] → TextColor	The color of the text of a tab, used when UseDefaultAppearance is set to False.
Tabs[Index] → TextVisible	Shows or hides the text.
Tabs[Index] → Trimming	Applies trimming on the text, if the text is to long to fit inside the tab area.
Tabs[Index] → UseDefaultAppearance	When UseDefaultAppearance is set to True, applies the properties of the TabAppearance property on TabSet or PageControl level. When UseDefaultAppearance is set to False, applies the properties of the tab itself.
Tabs[Index] → Visible	Shows or hides the tab.
Tabs[Index] → Width	Sets the width of a tab in case the TabSize.Mode is set to tsmFixedSize or tsmFixedSizeAutoShrink.
Tabs[Index] → WordWrapping	Applies wordwrapping to the text in case the size of the text exceeds the tab size.
TabSize	Options to specify the size of the tabs.
TabSize → Height	The height of the tabs.
TabSize → Margins	The margins applied around the tabs.
TabSize → Mode	The size mode of the tabs.
TabSize → Spacing	The spacing between the tabs.
TabSize → Width	The width of the tabs in tsmFixedSize or tsmFixedSizeAutoShrink mode.

Methods

AddTab / AddPage	Adds a new tab / page
CancelEditing	Cancels editing if editing is active.
CloseInplaceEditor	Closes the inplace editor if editing is active and applies updates the tab text value or cancels

	the changes.
FindNextTab	Returns the next tab based on the tab index.
FindPreviousTab	Returns the previous tab based on the tab index.
FocusNextTab	Focuses the next tab based on the tab index.
FocusPreviousTab	Focuses the previous tab based on the tab index.
FocusTab	Focuses a specify tab.
InsertTab / InsertPage	Inserts a new tab / page.
IsEditing	Returns a boolean if editing is active.
IsTabEnabled	Returns a boolean if a tab is enabled.
IsTabVisible	Returns a boolean if a tab is visible.
MoveTab / MovePage	Moves a tab to a new index.
RemoveTab / RemovePage	Removes an existing tab / page.
ScrollToTab	Scrolls to a specific tab.
SelectNextTab	Selects the next tab.
SelectPreviousTab	Selects the previous tab.
SelectTab	Selects a specific tab.
StopEditing	Stops editing and applies the changes to the tab.
XYToCloseButton	Returns the menu close button at a specific X/Y coordinate.
XYToCloseTab	Returns the tab close indicator at a specific X/Y coordinate.
XYToInsertButton	Returns the menu insert button at a specific X/Y coordinate.
XYToScrollNextButton	Returns the menu scroll next button at a specific X/Y coordinate.
XYToScrollPreviousButton	Returns the menu scroll previous button at a specific X/Y coordinate.
XYToTab	Returns the tab at a specific X/Y coordinate.
XYToTabListButton	Returns the menu tab list button at a specific X/Y coordinate.

Events

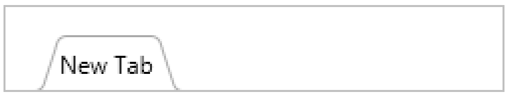
OnAchorTabClick	Event called when an anchor is clicked at a specific tab.
OnAfterDrawMenuButton	Event called after the menu button is drawn.
OnAfterDrawTabBackground	Event called after the background of the tab is drawn.
OnAfterDrawTabBadge	Event called after the badge of the tab is drawn.
OnAfterDrawTabBitmap	Event called after the bitmap of a tab is drawn.
OnAfterDrawTabCloseButton	Event called after the close button of a tab is drawn.
OnAfterDrawTabProgress	Event called after the progress of a tab is drawn.
OnAfterDrawTabText	Event called after the text of a tab is drawn.
OnBeforeChangeTab	Event called before the active tab will change.
OnBeforeCloseTab	Event called before a tab will be closed.
OnBeforeDrawMenuButton	Event called before the menu button is drawn.
OnBeforeDrawTabBadge	Event called before the badge of a tab is drawn.

OnBeforeDrawTabBitmap	Event called before the bitmap of a tab is drawn.
OnBeforeDrawTabCloseButton	Event called before the close button of a tab is drawn.
OnBeforeDrawTabProgress	Event called before the progress indication of a tab is drawn.
OnBeforeDrawTabText	Event called before the text of a tab is drawn.
OnBeforeInsertTab	Event called before a new tab is inserted.
OnBeforeOpenInplaceEditor	Event called before the inplace editor is opened.
OnBeforeReorderTab	Event called before the tab is reordered.
OnBeforeUpdateTab	Event called before the tab is updated with the new value after editing.
OnChangeTab	Event called after the active tab has changed.
OnCloseInplaceEditor	Event called after the inplace editor is closed.
OnCloseTab	Event called after the tab is closed.
OnCustomizeInplaceEditor	Event called to customize the inplace editor.
OnGetInplaceEditor	Event called to get a custom inplace editor class.
OnGetInplaceEditorRect	Event called to get the inplace editor rectangle.
OnInsertTab	Event called after a new tab is inserted.
OnOpenInplaceEditor	Event called after the inplace editor is opened.
OnReorderTab	Event called after a tab is reordered.
OnUpdateTab	Event called after a tab is updated via editing.

Adding new tabs

By default the TabSet is initialized with three tabs. Adding new tabs can be done by using The tabs collection directly or by using the helper methods as demonstrated below.

```
TMSFNCTabSet1.Tabs.Clear;
TMSFNCTabSet1.AddTab('New Tab');
```

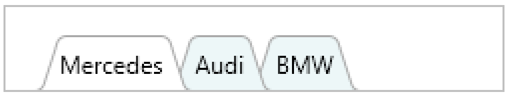


Removing tabs

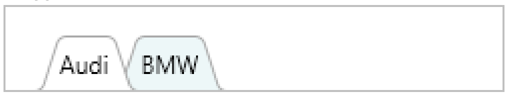
To remove an existing tab, you can use the tabs collection directly or use the RemoveTab helper method as demonstrated below.

```
TMSFNCTabSet1.RemoveTab(0);
```

Before



After

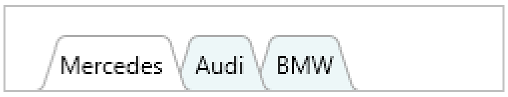


Moving tabs

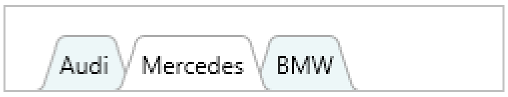
To move a tab to a different location, changing the index of the tab collection item is sufficient, or you can also use the MoveTab method as demonstrated below. You might notice here that the ActiveTabIndex is set to the new index. The MoveTab automatically changes the ActiveTabIndex.

```
TMSFNCTabSet1.MoveTab(0, 1);
```

Before



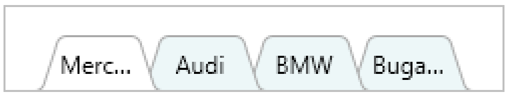
After



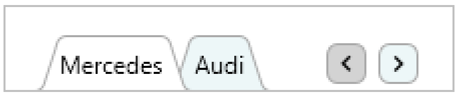
<u>Modes</u>

The TabSet supports different modes to display tabs. The mode can be change with the TabSize.Mode property. Below is a description of each mode.

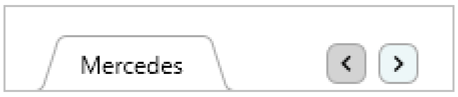
- tsmAutoSize
  Automatically resizes / stretches all tabs to fit in the available size of the TabSet. No scrolling capabilities as each tab will be displayed.



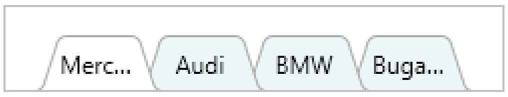
- tsmAutoTabSize
  Calculates the necessary tab size based on the text, bitmap, progress indicator and close button. Scrolling is available if the amount of tabs that need to be display exceed the available size of the TabSet.



- tsmFixedSize
  Sets a fixed width on the tab. Scrolling is available if the amount of tabs that need to be displayed exceed the available size of the TabSet. The default width is 100.

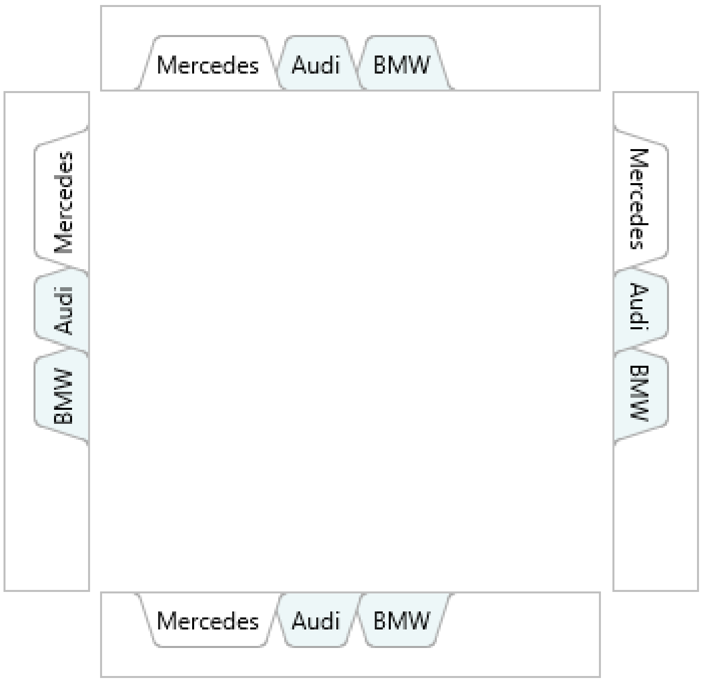


- tsmFixedSizeAutoShrink
  Sets a fixed width on the tab. When the amount of tabs is going to exceed the available size of the TabSet, the tabs are automatically resized to fit the available size of the TabSet. No scrolling capabilities as each tab will be displayed.



<u>Position</u>

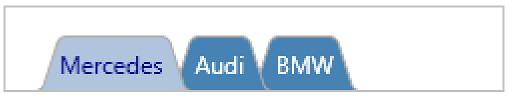
The TabSet supports 4 positions, changing the position is done with the Layout.Position property. Each tab can handle rotation for non-HTML formatted text. HTML formatted text is shown horizontally in case the tab is rotated 90 degrees. The rotation angle is fixed depending on the tab position. The default position is tlpTop. Alternative values to control the position are tlpLeft, tlpRight and tlpBottom as shown in the configuration below



Appearance

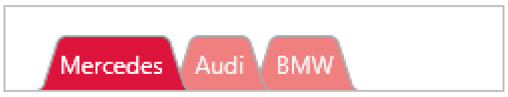
Each tab has different states (normal, hover, down active and disabled). Each state is represented with a fill and a stroke under TabAppearance. When the UseDefaultAppearance property is set to False, the properties under each tab are applied to allow changing the appearance of a single tab. Each tab has a color for the background and text for each state. By default the UseDefaultAppearance property is set to False. Below is a sample to indicate the difference between the states and the purpose of the UseDefaultAppearance property.

```
var
  I: Integer;
begin
  TMSFNCTabSet1.TabAppearance.Fill.Color := gcLightcoral;
  TMSFNCTabSet1.TabAppearance.ActiveFill.Color := gcCrimson;
  TMSFNCTabSet1.TabAppearance.TextColor := gcWhitesmoke;
  TMSFNCTabSet1.TabAppearance.ActiveTextColor := gcWhite;
  for I := 0 to TMSFNCTabSet1.Tabs.Count - 1 do
  begin
    TMSFNCTabSet1.Tabs[I].Color := gcSteelBlue;
    TMSFNCTabSet1.Tabs[I].ActiveColor := gcLightsteelblue;
    TMSFNCTabSet1.Tabs[I].TextColor := gcWhite;
    TMSFNCTabSet1.Tabs[I].ActiveTextColor := gcDarkblue;
  end;
end;
```



In the above code, you notice that the tabs are responsible for the actual appearance. Note that the UseDefaultAppearance is set to False by design, which allows to further customize the appearance of each tab separately. If we would set the UseDefaultAppearance property to True, the appearance would change and take on the properties from the global TabAppearance as demonstrated in the following sample.

```
var
  I: Integer;
begin
  TMSFNCTabSet1.TabAppearance.Fill.Color := gcLightcoral;
  TMSFNCTabSet1.TabAppearance.ActiveFill.Color := gcCrimson;
  TMSFNCTabSet1.TabAppearance.TextColor := gcWhitesmoke;
  TMSFNCTabSet1.TabAppearance.ActiveTextColor := gcWhite;
  for I := 0 to TMSFNCTabSet1.Tabs.Count - 1 do
  begin
    TMSFNCTabSet1.Tabs[I].Color := gcSteelBlue;
    TMSFNCTabSet1.Tabs[I].ActiveColor := gcLightsteelblue;
    TMSFNCTabSet1.Tabs[I].TextColor := gcWhite;
    TMSFNCTabSet1.Tabs[I].ActiveTextColor := gcDarkblue;
    TMSFNCTabSet1.Tabs[I].UseDefaultAppearance := True;
  end;
end;
```



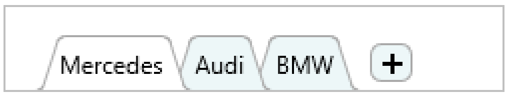
Interaction

The TabSet supports interaction in various ways, through the mouse and keyboard. By default, clicking on a tab will set the active tab and show an optional focus indication. The home, end and arrow keys can be used to navigate through the different tabs. When Interaction.CloseTabWithKeyboard and Interaction.InsertTabWithKeyboard is true, the TabSet destroys or hides (depending on Options.CloseAction) the tab with the Delete key and inserts a new tab with the insert key. Pressing the F2 or Return key on the keyboard will start editing when Interaction.Editing is true.

When the mode is set to tsmFixedSize, tsmAutoTabSize and the amount of tabs exceed the available size of the TabSet, scroll buttons appear to allow scrolling through the tabs. By default, the scroll buttons will change the active tab but when Interaction.SelectTabScroll is set to False, the scroll buttons will only navigate through the tabs by changing the focused tab. To make the focused tab active, the Space or Return key can be used.

Inserting tabs via the tab insert button

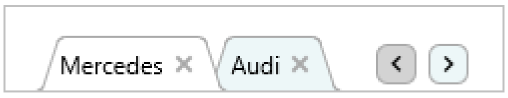
New tabs can be inserted programmatically, but also via user interaction. When setting the Options.InsertMode to timTab a new special insert tab appears.



Clicking on this tab will insert a new tab and via the OnBeforeInsertTab the index can be set at which position the tab needs to be inserted. By default this is always at the last position. Optionally, the insert tab button can be changed to a menu button via the timMenu option. This button has the same purpose but it stays visible inside the menu instead of as an additional special tab.

Closing tabs via the tab close button

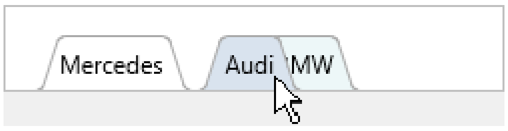
Tabs can be removed / closed programmatically via the free action or setting the visible property to false, but can also be closed via a tab or menu close button. Setting the Options.CloseMode to tcmTab will show an additional close button at each tab. Clicking the close button will destroy or hide the tab depending on the Options.CloseAction. In case the Options.CloseAction is ttcaFree the tab will be destroyed. In case the Options.CloseAction is ttcaHide, the tab visible propery will be set to False and the tab will be displayed in the separate invisible tab list, available when the Options.TabListButton is set to true.



<ins>Reorder</ins>

Reordering can be enabled by setting the Interaction.Reorder property to true. When pressing the finger/left-mouse button on a tab and dragging left or right, up or down depending on the position, the tab will detach from its current position and will navigate the to where the finger/left-mouse button is currently located. When releasing the finger/left-mouse button the new tab position is detected and the tab will move to the new location. Events can determine if a tab can be moved or moved to (OnBeforeReorderTab & OnReorderTab).

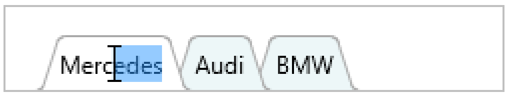
TMSFNCTabSet1.Interaction.Reorder := True;



<ins>Editing</ins>

Editing can be enabled by setting the Interaction.Editing property to true. When selecting a tab, pressing the F2 or clicking on the text area will start editing and show the default inplace editor (TEdit). The event OnBeforeOpenInplaceEditor is called to determine if a tab can be edited. The editor class itself can be changed to support custom inplace editors (demonstrated in a separate sample) and the editor class is retrieved via the OnGetInplaceEditor event. Before the editing is shown, but after the event that is called to determine if a tab can be edited the editor is further customized via the optional OnCustomizeInplaceEditor event. By default, the text rectangle is used as coördinates for the inplace editor, but this can also be customized via the OnGetInplaceEditorRect. After the inplace editor is configured and approved, the OnAfterOpenInplaceEditor is called. In this event, the Parent of the inplace editor is already set.

TMSFNCTabSet1.Interaction.Editing := True;

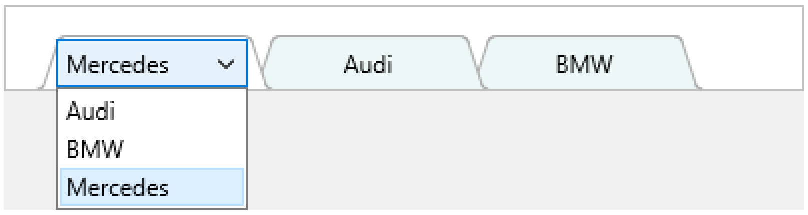


After editing is done, pressing the Return or F2 will apply changes in the inplace editor. The OnCloseInplaceEditor event is called which will contain parameters to control the text that is being applied to the tab. After optionally changing the value, the OnBeforeUpdateTab and OnUpdateTab event are called. The OnBeforeUpdateTab can be used to specify if a tab can be updated.

When pressing the Escape key, The OnCloseInplaceEditor is called with different parameters and the changes are cancelled.
Custom inplace editor

As mentioned, the TabSet supports editing via a custom inplace editor. In this sample, we create, customize and use a TComboBox as inplace editor. The code below demonstrates this behavior.

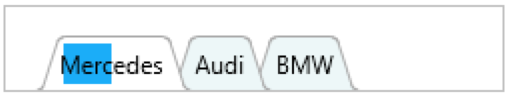
```
procedure TForm1.FormCreate(Sender: TObject);
begin
  TMSFNCTabSet1.Interaction.Editing := True;
  TMSFNCTabSet1.TabSize.Mode := tsmFixedSize;
  TMSFNCTabSet1.TabSize.Width := 120;
  TMSFNCTabSet1.Width := 400;
end;

procedure TForm1.TMSFNCTabSet1CustomizeInplaceEditor(Sender: TObject;
  ATabIndex: Integer; AInplaceEditor: TControl);
var
  cbo: TComboBox;
begin
  cbo := (AInplaceEditor as TComboBox);
  cbo.Items.Add('Audi');
  cbo.Items.Add('BMW');
  cbo.Items.Add('Mercedes');
  cbo.ItemIndex := cbo.Items.IndexOf(TMSFNCTabSet1.Tabs[0].Text);
end;

procedure TForm1.TMSFNCTabSet1GetInplaceEditor(Sender: TObject;
  ATabIndex: Integer; var AInplaceEditorClass: TTMSFNCTabSetInplaceEditorClass);
begin
  AInplaceEditorClass := TComboBox;
end;
```



Progress indication

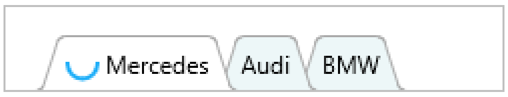
Each tab has the ability to show progress, in the form of a rectangular or circular progress indicator. The Progress and ProgressMax properties determine the visual representation. By default, the ProgressMax property is 100.

```
TMSFNCTabSet1.Tabs[0].ProgressKind := tpkRectangular;
TMSFNCTabSet1.Tabs[0].Progress := 50;
```



```
TMSFNCTabSet1.Tabs[0].ProgressKind := tpkCircular;
```

```
TMSFNCTabSet1.Tabs[0].Progress := 50;
```

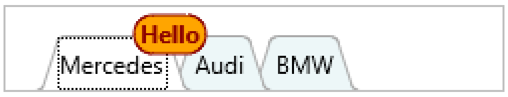


Optionally, the progress indicator can also be configured in marquee mode with the ProgressMode property. The progress indicator will, independent of the ProgressKind property setting, continuously indicate a busy operation. The ProgressColor property is used to further customize the appearance of the progress indicator for each tab separately.

Badges

Each tab can show a badge, which is placed in the upper right corner relative to its position. To show a badge, enter a value for the Badge property at a specific tab.

```
TMSFNCTabSet1.Tabs[0].Badge := 'Hello';
```

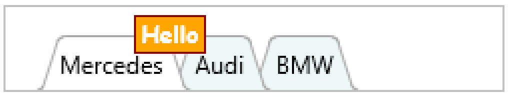


Custom drawing

Each element in the TabSet can be customized via the TabAppearance or ButtonAppearance properties. When the UseDefaultAppearance property on tab level is set to False, further customizations can be applied using the color and text color properties for each state. Even if these customizations are not sufficient, the TabSet exposes a set of events for custom drawing. Below is a sample that demonstrates this.

In this sample we took the badge sample from the previous chapter, we draw a rectangle instead of a rounded rectangle, and change the font name and color.

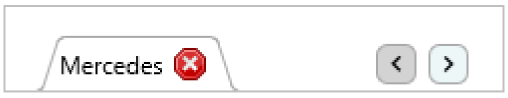
```
TMSFNCTabSet1.Tabs[0].Badge := 'Hello';

procedure TForm1.TMSFNCTabSet1BeforeDrawTabBadge(Sender: TObject;
  AGraphics: TTMSFNCGraphics; ATabIndex: Integer; ARect: TRectF; AText: string;
  var ADefaultDraw: Boolean);
begin
  ADefaultDraw := False;
  AGraphics.DrawRectangle(ARect);
  AGraphics.Font.Color := gcWhite;
  AGraphics.Font.Name := 'Comic Sans MS';
  AGraphics.DrawText(ARect, AText, False, gtaCenter);
end;
```



The next sample is customization of the close button. The close button is custom drawn, but it might be useful to show a close button icon instead. Implementing the OnBeforeDrawTabCloseButton will help you with this.

```
procedure TForm1.FormCreate(Sender: TObject);
```

```
begin
  TMSFNCTabSet1.Options.CloseMode := tcmTab;
  TMSFNCTabSet1.TabAppearance.CloseSize := 20;
end;

procedure TForm1.TMSFNCTabSet1BeforeDrawTabCloseButton(Sender: TObject;
  AGraphics: TTMSFNCGraphics; ATabIndex: Integer; ARect: TRectF;
  AState: TTMSFNCTabSetButtonState; var ADefaultDraw: Boolean);
begin
  ADefaultDraw := False;
  AGraphics.DrawBitmap(ARect, TMSFNCBitmapContainer1.FindBitmap('close'));
end;
```



Note that in this sample, the close bitmap is actually the same bitmap for each state, but when a separate bitmap for each state is preferrable then this can be handled easily via the AState parameter.

PageControl

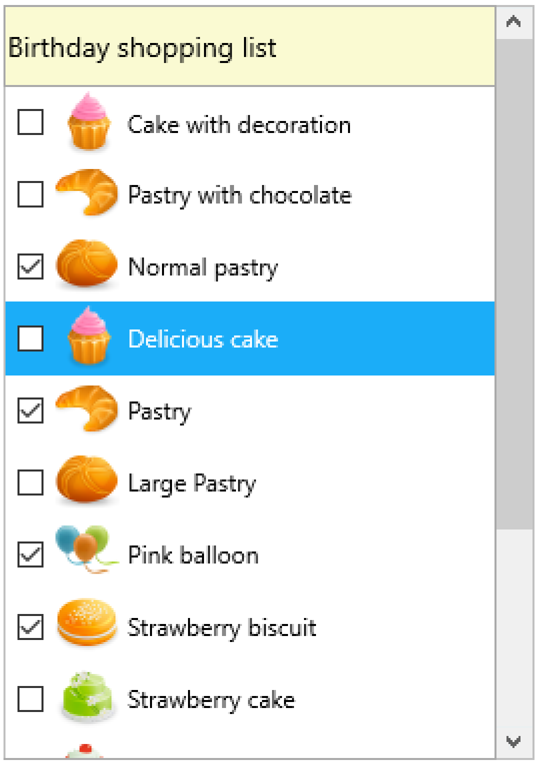
The PageControl inherits from the TabSet and adds the ability to show pages that act as a container for other controls. There is a separate Pages property that inherits from the Tabs collection and exposes PageControl specific event handlers. Except for the page containers there is no difference in properties and appearance, so all the above code is also valid for the PageControl.

Performance

The TabSet/PageControl is optimized for handling a large amount of tabs/pages. When the amount of tabs/pages are less than or equal to 10 then you can safely use the code above as-is. If the amount of tabs/pages exceed this number it is recommended to wrap the code with a BeginUpdate/EndUpdate code block. This block bundles all recalculate and repaint instructions in to one call and makes sure that adding 1000 tabs do not result in a time and resource consuming task.

```
TMSFNCTabSet1.BeginUpdate;
for I := 1 to 1000 do
  TMSFNCTabSet1.Tabs.Add;
TMSFNCTabSet1.EndUpdate;
```

TTMSFNCListBox / TTMSFNCCheckedListBox



Properties

DefaultItem	The default item properties, which are applied when creating a new item.
DefaultItem → Bitmap	The Bitmap of the item.
DefaultItem → BitmapName	The name of the bitmap of the item (used in combination with a TTMSFNCBitmapContainer).
DefaultItem → DisabledTextColor	The color of the text of the item in disabled state.
DefaultItem → Enabled	Sets an item enabled or disabled.
DefaultItem → Height	The height of an item. When using this property, the auto-height calculation or fixed size settings in ItemsAppearance is overriden.
DefaultItem → SelectedTextColor	The color of the text of the item in selected state.
DefaultItem → Text	The text of the item.
DefaultItem → TextAlign	The alignment of the text of the item.
DefaultItem → TextColor	The color of the text of the item in normal state.
DefaultItem → Trimming	The trimming of the text of the item.
DefaultItem → WordWrapping	The wordwrapping of the text of the item.
DefaultItem → Checked (TTMSFNCCheckedListBox)	The checked state of the item.
Fill	The background fill of the listbox.
Header	The header of the listbox.
Header → Fill	The background fill of the header of the listbox.

Header → Font	The font of the header.
Header → HorizontalTextAlign	The horizontal text align of the header.
Header → Size	The size of the header.
Header → Stroke	The background stroke of the header.
Header → Text	The text of the header.
Header → Trimming	The trimming of the header.
Header → VerticalTextAlign	The vertical text align of the header.
Header → Visible	The visibility of the header.
Header → WordWrapping	The wordwrapping of the header.
Interaction	The interaction properties of the listbox.
Interaction → ClipboardMode	The clipboard mode of the listbox.
Interaction → DragDropMode	The drag & drop mode of the listbox.
Interaction → Filtering	The filtering options of the listbox.
Interaction → Lookup	The lookup options of the listbox.
Interaction → MultiSelect	Enables multi-select on the listbox.
Interaction → Reorder	Enables reordering on the listbox.
Interaction → Sorting	Enables sorting on the listbox
Interaction → TouchScrolling	Allows touch scrolling.
ItemIndex	The selected item index.
Items	The collection of listbox items.
ItemsAppearance	The general appearance of the listbox items.
ItemsAppearance → DisabledFill	The fill of an item in disabled state.
ItemsAppearance → DisabledStroke	The stroke of an item in disabled state.
ItemsAppearance → Fill	The fill of an item in normal state.
ItemsAppearance → FixedHeight	The fixed height of an item in case the HeightMode is set to lihmFixed.
ItemsAppearance → Font	The font of the items.
ItemsAppearance → HeightMode	The height mode of the items.
ItemsAppearance → SelectedFill	The fill of an item in selected state.
ItemsAppearance → SelectedStroke	The stroke of an item in selected state.
ItemsAppearance → Stroke	The stroke of an item in normal state.
Stroke	The stroke of the background of the listbox.
VerticalScrollBarVisible	Shows or hides the vertical scrollbar.

Methods / public properties

AddItem(AText: string = ''): TTMSFNCListBoxItem	Adds a new item
ApplyFilter;	Applies the filter, configured programmatically with the filter property.
Checked[AItemIndex: Integer]: Boolean; (TTMSFNCCheckedListBox)	Returns the checked state for an item based on the index.
CheckedItems: TTMSFNCListBoxCheckedItems; (TTMSFNCCheckedListBox)	Returns all the checked items in the listbox.
CheckedItems[AItem: TTMSFNCCheckedListboxItem]: Boolean; (TTMSFNCCheckedListBox)	Returns the checked state for an item.
ClearSorting;	Clears all sorting applied to the listbox.
CopyToClipboard(ATextOnly: Boolean = False);	Copies the selected items to the clipboard.
CutToClipboard(ATextOnly: Boolean = False);	Cuts the selected items to the clipboard.
Filter: TTMSFNCListBoxFilter;	The filter, used for programmatic filtering in the listbox.
GetItemsFromClipboard: TTMSFNCListBoxCopyItems	Gets the items from the clipboard.

IsItemSelectable(AItem: TTMSFNCListBoxItem): Boolean;	Returns a boolean whether an item is selectable or not.
LoadFromFile(AFileName: String);	Loads the listbox items from a flie.
LoadFromStream(AStream: TStream);	Loads the listbox items from a stream.
LoadFromStrings(AStrings: TStrings);	Loads the listbox items from a TStrings instance.
LookupItem(ALookupString: String; ACaseSensitive: Boolean = False; AAutoSelect: Boolean = False): TTMSFNCListBoxItem;	Looks up an item, and optionally selects it.
PasteFromClipboard;	Pastes items from the clipboard.
RemoveFilter;	Removes the active filter.
RemoveFilters;	Removes all filters from the listbox.
RemoveItem(AItem: TTMSFNCListBoxItem);	Removes an item from the listbox.
SaveToFile(AFileName: String; ATextOnly: Boolean = True);	Saves the listbox to a file, optionally text-only to be compatible with other item loading components such as TTreeView / TListBox.
SaveToStream(AStream: TStream; ATextOnly: Boolean = True);	Saves the listbox to a stream, optionally text-only to be compatible with other item loading components such as TTreeView / TListBox.
SaveToStrings(AStrings: TStrings);	Saves the listbox item to a TStrings instance.
ScrollToItem(AItemIndex: Integer);	Scrolls to the itemindex.
SelectedItem: TTMSFNCListBoxItem;	Returns the selected item.
SelectedItemCount: Integer	Returns the selected item count.
SelectedItems[AIndex: Integer]: TTMSFNCListBoxItem;	Returns the selected item based on the index in the selected items collection.
SelectItem(AItemIndex: Integer);	Selects an item.
SelectItems(AItemIndexes: TTMSFNCListBoxItemArray);	Selects an array of items.
Sort(ACaseSensitive: Boolean = True; ASortingMode: TTMSFNCListBoxItemsSortMode);	Sorts the items.
XYToItem(X, Y: Single): TTMSFNCListBoxItem;	Returns the item under X and Y coordinate.
XYToItemIndex(X, Y: Single): Integer;	Returns the item index under X and Y coordinate.

<u>Events</u>

OnAfterCopyToClipboard	Event called after a clipboard copy operation is completed.
OnAfterCutToClipboard	Event called after a clipboard cut operation is completed.
OnAfterDrawItem	Event called after an item is drawn.
OnAfterDrawItemCheck (TTMSFNCCheckedListBox)	Event called after an item checkbox is drawn.
OnAfterDrawItemIcon	Event called after an item icon is drawn.
OnAfterDrawItemText	Event called after the text of an item is drawn.
OnAfterDropItem	Event called after an item has been dropped by a drag & drop operation.
OnAfterPasteFromClipboard	Event called after content has been pasted from the clipboard.
OnAfterReorderItem	Event called after an item is reordered.
OnBeforeCopyToClipboard	Event called before a clipboard copy operation is completed.
OnBeforeCutToClipboard	Event called before a clipboard cut operation is completed.
OnBeforeDrawItem	Event called before an item is drawn.

OnBeforeDrawItemCheck (TTMSFNCCheckedListBox)	Event called before an item checkbox is drawn.
OnBeforeDrawItemIcon	Event called before an item icon is drawn.
OnBeforeDrawItemText	Event called before the text of an item is drawn.
OnBeforeDropItem	Event called before an item has been dropped by a drag & drop operation.
OnBeforePasteFromClipboard	Event called before content has been pasted from the clipboard.
OnBeforeReorderItem	Event called before an item is reordered.
OnFilterSelect	Event called when a item from the filter listbox is clicked.
OnItemAnchorClick	Event called when an anchor inside an item text is clicked.
OnItemCheckChanged (TTMSFNCCheckedListBox)	Event called when an item check state has changed.
OnItemClick	Event called when an item is clicked.
OnItemCompare	Event called when an item is compared with another item when sorting is applied.
OnItemDblClick	Event called when an item is double-clicked.
OnItemSelected	Event called when an item is selected.
OnNeedFilterDropDownData	Event called when the filter request the data that needs to be placed inside the filter box.
OnVScroll	Event called when the listbox is scrolled.

Adding new Items

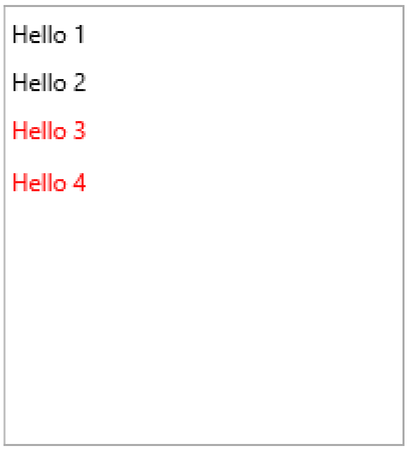
Items can be added at designtime through the items collection, but can also be added programmatically using the AddItem function. Below is a sample using both the collection and the helper function.

```
TMSFNCListBox1.AddItem('Hello');

it := TMSFNCListBox1.Items.Add;
it.Text := 'Hello';
```

Default Item

When adding new item, the values from the DefaultItem property are copied. This way, you can add a default icon, text, text color and many more. Below is a sample that demonstrates this.

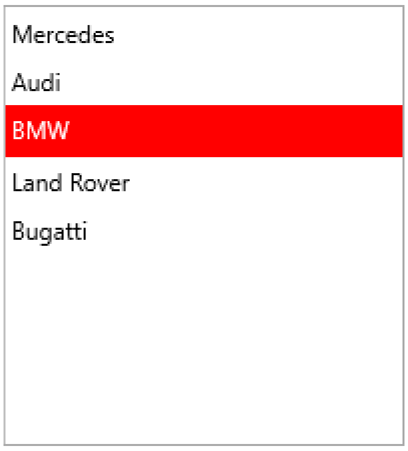
```
var
  it: TTMSFNCListBoxItem;
begin
  TMSFNCListBox1.BeginUpdate;
  TMSFNCListBox1.Items.Clear;
  TMSFNCListBox1.DefaultItem.Text := 'Hello';
  it := TMSFNCListBox1.Items.Add;
  it.Text := it.Text + ' 1';
  it := TMSFNCListBox1.Items.Add;
  it.Text := it.Text + ' 2';
  TMSFNCListBox1.DefaultItem.TextColor := gcRed;
  it := TMSFNCListBox1.Items.Add;
  it.Text := it.Text + ' 3';
  it := TMSFNCListBox1.Items.Add;
  it.Text := it.Text + ' 4';
  TMSFNCListBox1.EndUpdate;
end;
```



Appearance

The listbox exposes a set of properties for overall item appearance. The background of an item can be customized for various states such as normal, selected, disabled. Below is a sample that demonstrates how to customize the selection color of an item.

```
TMSFNCListBox1.ItemsAppearance.SelectedFill.Color := gcRed;
TMSFNCListBox1.ItemsAppearance.SelectedStroke.Color := gcRed;
```



Interaction

The Listbox supports interaction through mouse and keyboard. When clicking on an item that is selectable, the item is selected. When navigating with the keys up, down, home, end, page up or page down the selected item will be changed. Disabled items are not selectable.

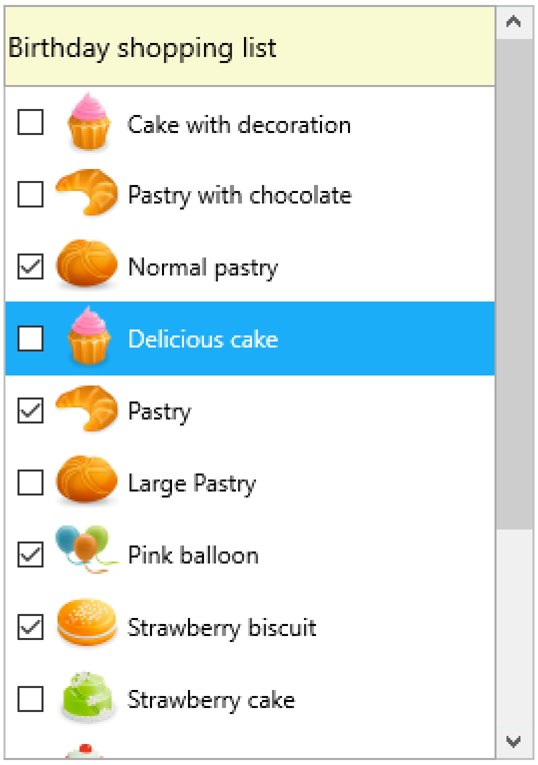
When the property MultiSelect is true, multiple items can be selected with the CTRL and SHIFT key with either the mouse or keyboard. The selected items can be retrieved with the SelectedItemCount function and SelectedItems property. Selection of items can be done with the SelectItem or SelectItems method. The SelectItems method takes an array of items.

Clipboard

Cut, Copy and Paste is supported when setting the Interaction.ClipboardMode property to tcmTextOnly or tcmFull. The tcmTextOnly value only copies the text and does not copy along other attributes such as the check state or the item icon. The tcmFull clipboard mode copies all attributes of the item. Cut will first copy the item and then remove it from the listbox. There are additional events that are triggered when performing a cut, copy or paste action.

Reordering / Drag & Drop

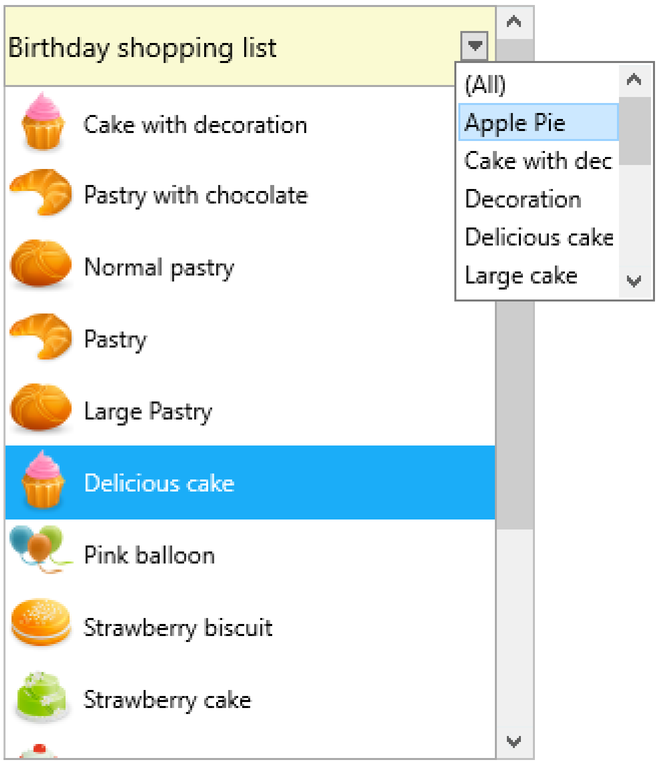
When setting Interaction.Reorder to True, clicking on an already selected item will duplicate the item and attach it while dragging. When releasing the item over another item it will reorder the item to the new location. Please note that touch scrolling is disabled when reordering is true on the selected item part. On the non-selected item parts, touch scrolling is still active.



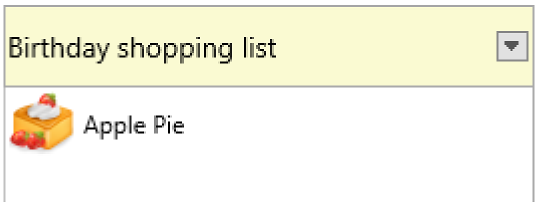
When setting Interaction.DragDropMode to ldmMove or ldmCopy the same approach can be used as reordering, and will allow you to drop the item to a different location. Drag & drop takes precedence over reordering, and with drag & drop you cannot only move or copy items in the same listbox but also move items to another listbox.

Filtering

When setting Interaction.Filtering.Enabled := True; a filter dropdown button appears at the right side of the header. Clicking on the filter button will show a filter dropdown list with unique values. After clicking a value, the listbox shows a filtered list.

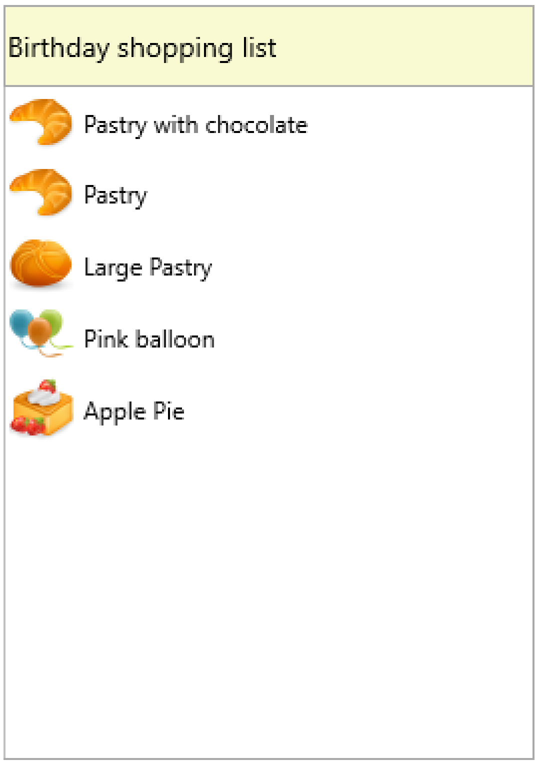


After filtering, the node that matches the chosen filter is shown.



To clear filtering, click the '(All)' entry in the filter list.
Note that filtering is also available programmatically. Below is a sample that filtes the items with an O:

```
var
  f: TTMSFNCListBoxFilterData;
begin
  TMSFNCListBox1.Filter.Clear;
  f := TMSFNCListBox1.Filter.Add;
  f.Condition := '*P*';
  TMSFNCListBox1.ApplyFilter;
end;
```

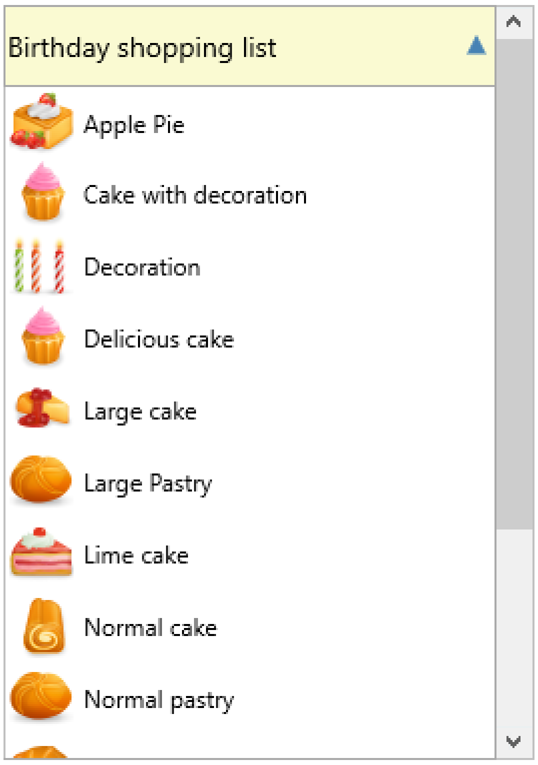


To clear all filtering programmatically, you can use the following code:
TMSFNCListBox1.RemoveFilters;

<u>Sorting</u>

When clicking on the header, the items are sorted and the listbox is updated. Below is a sample that demonstrates this.

TMSFNCListBox1.Interaction.Sorting := lcsNormal;



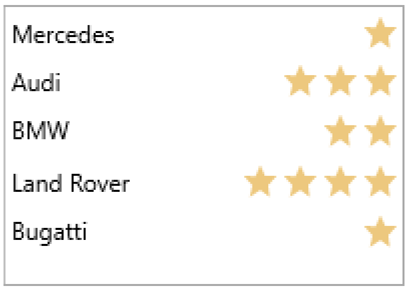
Sorting can also be done programmatically, with the following code, which will show the same result as the screenshot above.

```
TMSFNCListBox1.Sort(False, ismAscending);
```

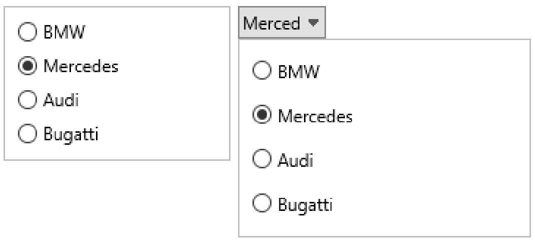
<u>Customization</u>

The listbox supports various kinds of customization, such as custom drawing, custom filtering and sorting. Below is a sample that demonstrates how to draw a rating icon for each item through the OnAfterDrawItem event.

```
procedure TForm1.FormCreate(Sender: TObject);
var
  I: Integer;
begin
  for I := 0 to TMSFNCListBox1.Items.Count - 1 do
    TMSFNCListBox1.Items[I].DataInteger := RandomRange(1, 6)
end;

procedure TForm1.TMSFNCListBox1AfterDrawItem(Sender: TObject;
  AGraphics: TTMSFNCGraphics; ARect: TRectF; AItem: TTMSFNCListBoxItem);
var
  r: Integer;
  I: Integer;
  bmp: TBitmap;
  rrt: TRectF;
begin
  r := AItem.DataInteger;
  bmp := TMSFNCBitmapContainer1.FindBitmap('rating');
  for I := 0 to r - 1 do
  begin
    rrt := RectF(Round(ARect.Right - ((bmp.Width + 4) * (I + 1))), Round(ARect.Top + (ARect.Height -
bmp.Height) / 2),
      Round(ARect.Right - ((bmp.Width + 4) * I)), Round(ARect.Top + (ARect.Height - bmp.Height) / 2
+ bmp.Height));

    AGraphics.DrawBitmap(rrt, bmp);
  end;
end;
```

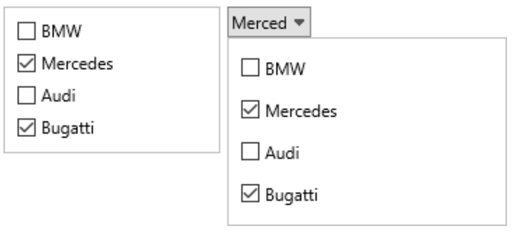

Mercedes ★
Audi ★★★
BMW ★★
Land Rover ★★★★
Bugatti ★

TTMSFNCRadioGroup / TTMSFNCRadioGroupPicker



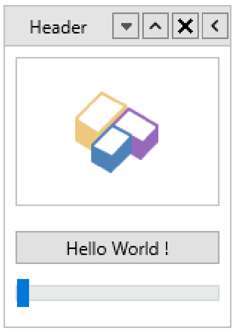
The TTMSFNCRadioGroup and TTMSFNCRadioGroupPicker are components that display a group of radiobuttons. With the ItemIndex property you can set which value is selected. The OnRadioButtonClick event is triggered when a value is selected. Both components can display HTML.

TTMSFNCCheckGroup / TTMSFNCCheckGroupPicker



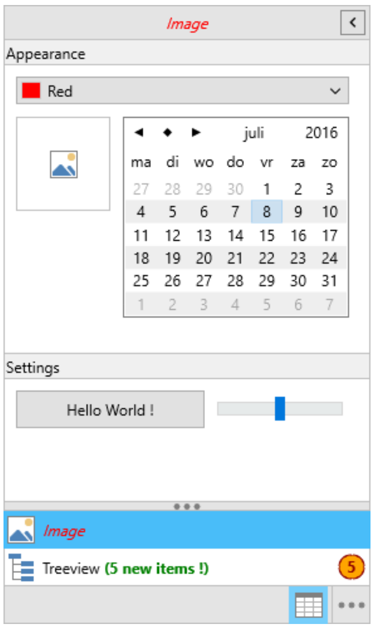
The TTMSFNCCheckGroup and TTMSFNCCheckGroupPicker are components that display a group of checkboxes. With the Value property you can set which checkes are checked. The OnCheckBoxClick event is triggered when a value is selected. Both components can display HTML.

TTMSFNCPanel



The TTMSFNCPanel is capable of hosting controls and has the ability to display a header and footer. Optionally, both the header and footer can display a close, expand, compact and dropdown button. The close button can destroy the panel, or can set it visible to false. The expand button expands or collapses the panel so only the header / footer is visible. The compact button, will shrink the panel width so only the compact button is visible. Optionally, sections can be added that divide the control in different areas. The TTMSFNCPanel is used inside the TTMSFNCNavigationPanel.

TTMSFNCNavigationPanel



The TTMSFNCNavigationPanel displays a set of TTMSFNCPanel instances based on a panel collection. The navigation panel can display items, buttons and has a separate compact mode.

Properties

ActivePanelIndex	Property to get or set the active panel.
BitmapContainer	Property to assign a TTMSFNCBitmapContainer instance in order to retrieve bitmaps via a name.
ButtonsAppearance	A set of properties to configure the buttons appearance at the bottom of the navigation panel.
ButtonsAppearance → ActiveFill	The fill of the button in active state.
ButtonsAppearance → ActiveStroke	The stroke of the button in active state.
ButtonsAppearance → BackgroundFill	The background fill of the button area.
ButtonsAppearance → BackgroundStroke	The background stroke of the button area.
ButtonsAppearance → DisabledFill	The fill of the button in disabled state.
ButtonsAppearance → DisabledStroke	The stroke of the button in disabled state.
ButtonsAppearance → DownFill	The fill of the button in down state.
ButtonsAppearance → DownStroke	The stroke of the button in down state.
ButtonsAppearance → Fill	The fill of the button in normal state.
ButtonsAppearance → HoverFill	The fill of the button in hover state.
ButtonsAppearance → HoverStroke	The stroke of the button in hover state.
ButtonsAppearance → OptionsButtonBulletColor	The color of the bullets in the options button.
ButtonsAppearance → ShowOptionsButton	Shows or hides the options button.
ButtonsAppearance → Size	The size of the buttons area.
ButtonsAppearance → Spacing	The spacing between the buttons.
ButtonsAppearance → Stroke	The stroke of the button in normal state.
CompactMode	Switches between normal and compact mode. In compact mode the CompactModeSize is applied

	to the width.
CompactModeSize	The width of the navigation panel in compact mode.
ItemsAppearance	A set of properties to configure the items appearance.
ItemsAppearance → ActiveFill	The fill of the item in active state.
ItemsAppearance → ActiveFont	The font of the item in active state.
ItemsAppearance → ActiveStroke	The stroke of the item in active state.
ItemsAppearance → BadgeFill	The fill of the badge of the item.
ItemsAppearance → BadgeFont	The font of the badge of the item.
ItemsAppearance → BadgeStroke	The stroke of the badge of the item.
ItemsAppearance → CompactDisabledFill	The fill of the compact item in disabled state.
ItemsAppearance → CompactDisabledStroke	The stroke of the compact item in disabled state.
ItemsAppearance → CompactDownFill	The fill of the compact item in down state.
ItemsAppearance → CompactDownStroke	The stroke of the compact item in down state.
ItemsAppearance → CompactHoverFill	The fill of the compact item in hover state.
ItemsAppearance → CompactHoverStroke	The stroke of the compact item in hover state.
ItemsAppearance → DisabledFill	The fill of the item in disabled state.
ItemsAppearance → DisabledStroke	The stroke of the item in disabled state.
ItemsAppearance → DownFill	The fill of the item in down state.
ItemsAppearance → DownStroke	The stroke of the item in down state.
ItemsAppearance → Fill	The fill of the item in normal state.
ItemsAppearance → Font	The font of the item in normal state.
ItemsAppearance → HoverFill	The fill of the item in hover state.
ItemsAppearance → HoverFont	The font of the item in hover state.
ItemsAppearance → HoverStroke	The stroke of the item in hover state.
ItemsAppearance → Size	The size of the items.
ItemsAppearance → Spacing	The spacing between the items.
ItemsAppearance → Stroke	The stroke of the items in normal state.
MaxButtonCount	The maximum number of buttons shown in the buttons area. If the number of buttons exceed this number the buttons are automatically added to the context menu, shown with the options button.
MaxItemCount	The maximum number of items shown in the items area. If the number of items exceed this number the items are automatically added to the context menu, shown with the options button.
Mode	The mode of the navigation panel. The default mode is mixed, to show items and buttons. The other modes are configured to only display items, or only display buttons.
Panels	The panel items collection.
Panels[Index] → Badge	The badge of an item.
Panels[Index] → Bitmaps	The bitmaps of an item.
Panels[Index] → CompactText	The text of a compact item.
Panels[Index] → Enabled	The enabled state of an item.
Panels[Index] → Hint	The hint of an item.
Panels[Index] → Kind	The kind of an item, to configure the item as a button or a normal item.
Panels[Index] → Text	The text of an item.
Panels[Index] → Visible	The visibility of an item. If an item is not

	visible, the item is transferred to the context menu in the “Add or Remove items option.
ShowCompactModeButton	Shows or hides the compact mode button in the header of the panel.
ShowFooter	Shows or hides the footer of each panel inside the navigation panel.
ShowHeader	Shows or hides the header of each panel inside the navigation panel.
Splitter	The splitter of the navigation panel to show more or less items.
Splitter → BulletColor	The color of the bullets of the splitter.
Splitter → Fill	The fill of the splitter.
Splitter → Size	The size of the splitter.
Splitter → Stroke	The stroke of the splitter.
Splitter → Visible	The visibility of the splitter.

Methods

AddPanel	Adds a new panel.
InsertPanel	Inserts a new panel at a specific index.
MovePanel	Moves an existing panel to a specific index.
RemovePanel	Removes an existing panel.
SelectNextPanel	Selects the next panel starting from the active panel index.
SelectPanel	Selects a specific panel.
SelectPreviousPanel	Selects the previous panel starting from the active panel index.
SplitItems	Converts / splits a number of items in buttons.

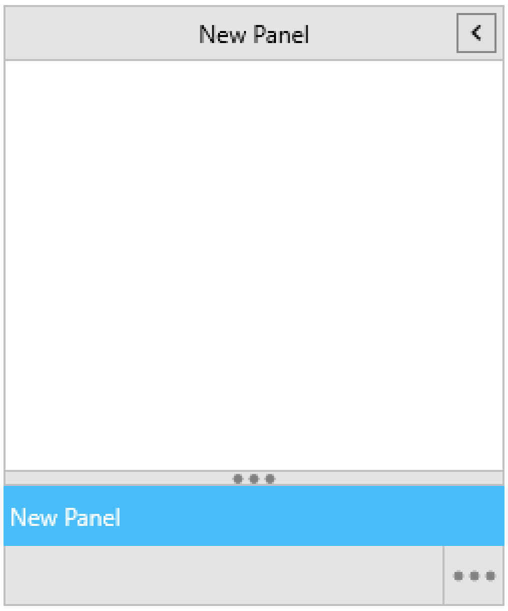
Events

OnAfterDrawButton	Event called after a button is drawn.
OnAfterDrawCompactItem	Event called after a compact item is drawn.
OnAfterDrawItem	Event called after an item is drawn.
OnAfterDrawItemBadge	Event called after a badge is drawn.
OnAfterDrawOptionsButton	Event called after the options button is drawn.
OnAfterDrawSplitter	Event called after a splitter is drawn.
OnBeforeDrawButton	Event called before a button is drawn.
OnBeforeDrawCompactItem	Event called before a compact item is drawn.
OnBeforeDrawItem	Event called before an item is drawn.
OnBeforeDrawItemBadge	Event called before a badge is drawn.
OnBeforeDrawOptionsButton	Event called before the options button is drawn.
OnBeforeDrawSplitter	Event called before a splitter is drawn.
OnCompactItemClick	Event called when an item in compact mode is clicked.
OnCustomizeContextMenu	Event called to further customize the context menu shown from the options menu button.
OnItemAnchorClick	Event called when an anchor is clicked at a specific item.
OnItemClick	Event called when an item is clicked.
OnSplitterMove	Event called when the splitter is moved.

Adding new panels

By default the NavigationPanel is initialized with three panels. Adding new panels can be done by using the panels collection directly or by using the helper methods as demonstrated below.

```
TMSFNCNavigationPanel1.Panels.Clear;
TMSFNCNavigationPanel1.AddPanel('New Panel');
```

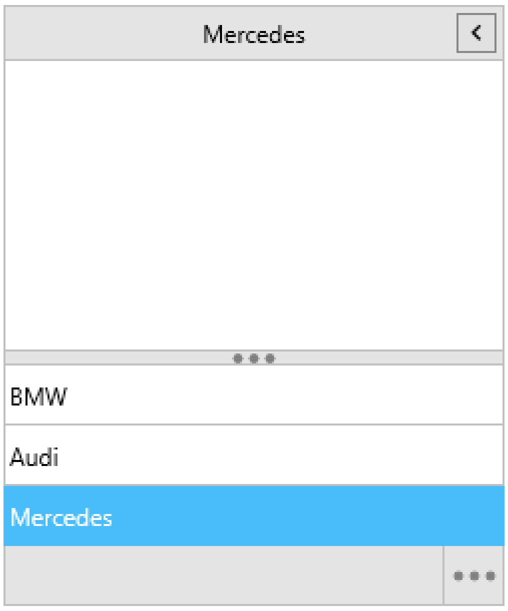


Removing panels

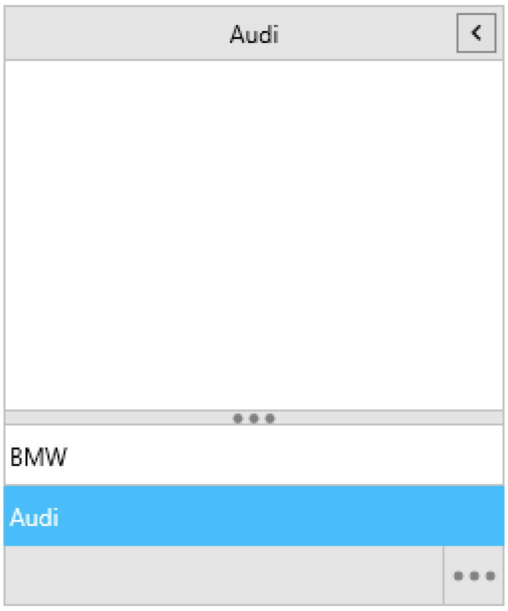
To remove an existing panel, you can use the panels collection directly or use the RemovePanel helper method as demonstrated below.

```
TMSFNCNavigationPanel1.RemovePanel(0);
```

Before



After

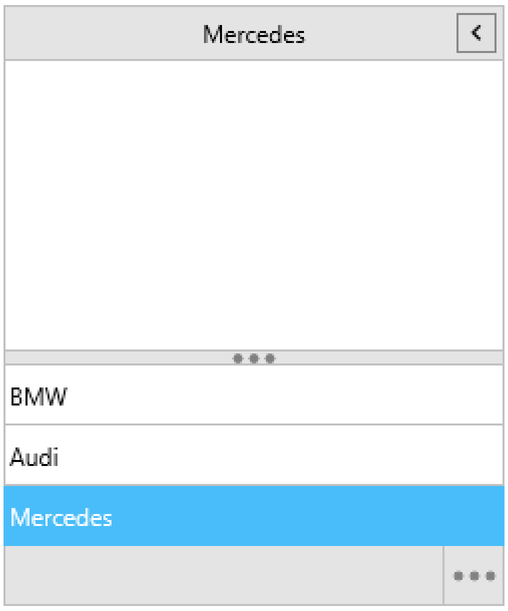


<u>Moving panels</u>

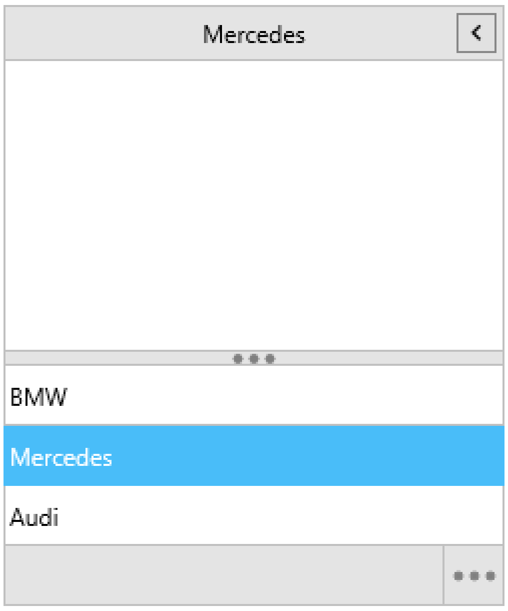
To move a panel to a different location, changing the index of the panel collection item is sufficient, or you can also use the MovePanel method as demonstrated below. You might notice here that the ActivePanelIndex is set to the new index. The MovePanel function automatically changes the ActivePanelIndex.

```
TMSFNCNavigationPanel1.MovePanel(0, 1);
```

Before



After



Modes

The navigation panel supports three modes.

npmItems

Setting the mode property to npmItems will show the items in the panel collection above the buttons area. Using the splitter to hide items will not show them as buttons but instead will add them as menu items in the options menu.

npmButtons

Setting the mode property to npmButtons will show the items in the panel collection as buttons inside the buttons area. There is no splitter as there will also be no items above the buttons area. The buttons are shown from right left and are automatically added as menu items to the options menu when they would exceed the available size.

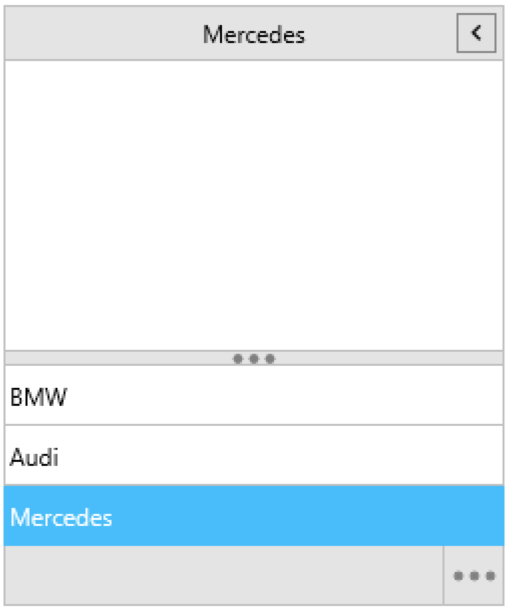
npmMixed (default)

Setting the mode property to npmMixed will show the items in the panel collection above the buttons area and inside the buttons area, depending on the Kind property. When the kind property is set to pikItem, the panel item is added as an item above the buttons area. When the kind property is set to pikButton, the panel item is added as a button inside the buttons area. When the splitter is moved, the items are added as buttons when moving down, and buttons are converted to items when moving up. When the available size is exceeded or the maximum number of items / buttons is exceeded, then the panel items are added as entries in the options menu.

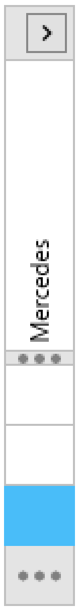
Compact Mode

The navigation panel has a separate compact mode that can be activated programmatically via the CompactMode property or visually via the compact mode button inside the panel. By default the header of the panel contains a compact button (optionally shown with ShowCompactModeButton) as shown in the screenshot below, and when clicking it, the panel width is reduced to the CompactModeSize property.

Normal mode



Compact mode

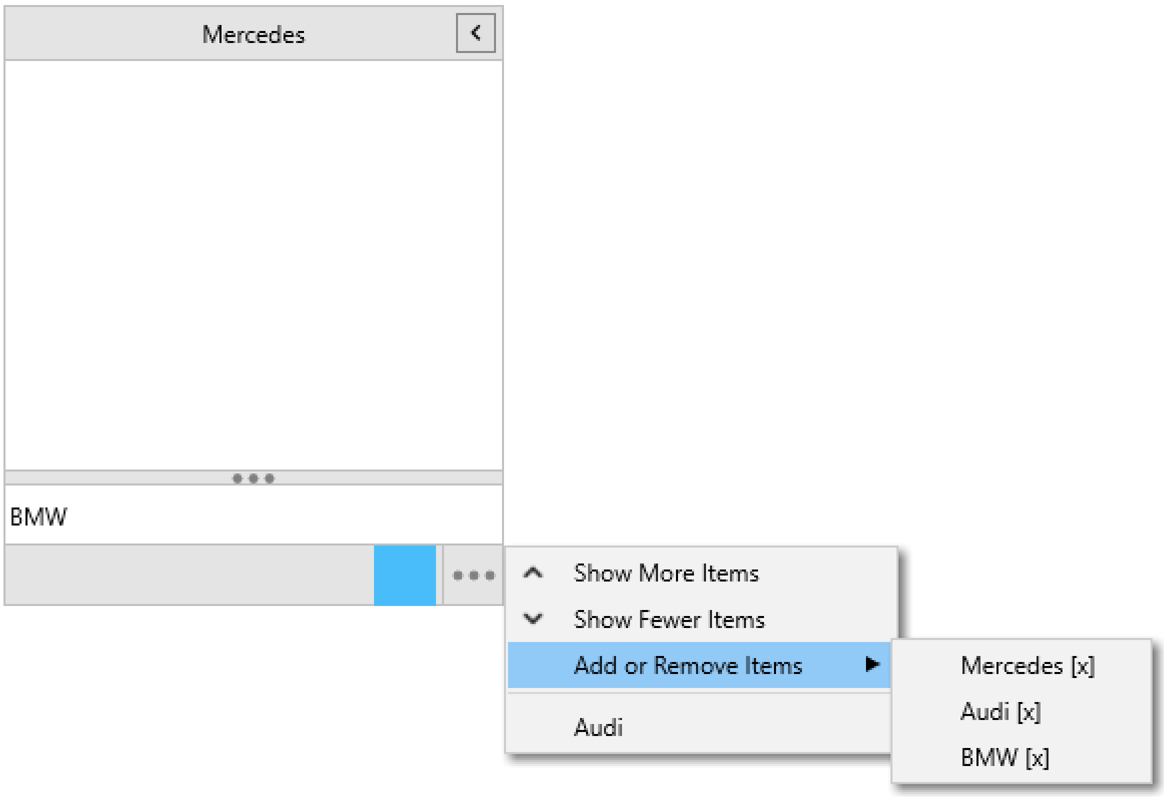


In the compact mode, the items are reduced to bitmap only, and the content of the panel disappears. The content area is then filled with a separate button and contains vertical text that is set with the CompactText property of a panel item. The button also has a separate compact appearance under the ItemsAppearance property. When clicking this button the OnCompactItemClick event is triggered.

Options Menu

As already explained in the modes chapter, when some items are set unvisible, or are hidden during a splitter or resize operation they are transferred to the options menu. The options menu is shown after clicking on the three-dotted button at the buttons area. This button can optionally be shown using the ButtonsAppearance.ShowOptionsButton (True by default). Clicking on this button shows a context menu with the hidden items, the ability to show more or less items above the buttons area and the list of items to add or remove from the visible items / buttons lists.

In the sample below, the MaxButtonCount property is set to 1, which means that when dragging the splitter down, only one item will be converted as a button item, and the rest of the items will be added to the options menu. As they are three items, and one item remains in the items area, there is one additional item available in the options menu. Clicking that item will show the corresponding panel and trigger the OnItemClick event.

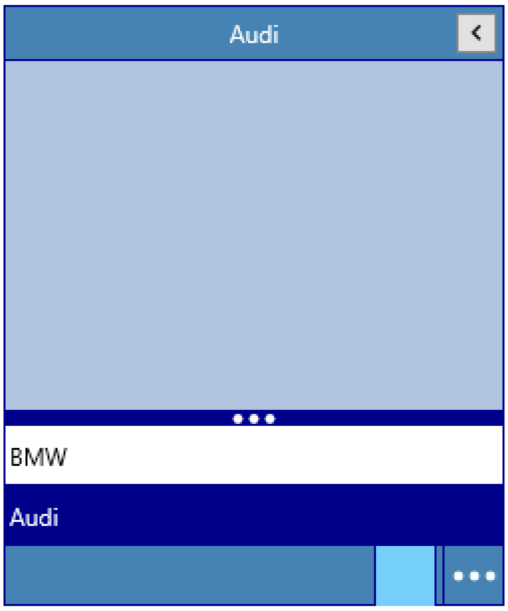


Appearance

The appearance of the navigation panel can be customized in three areas: the items area, the buttons area and the panel area. The items area is customized with the ItemsAppearance property where each state (normal, disabled, hover, down and active) of the item can be customized. The same applies to the buttons area, where the ButtonsAppearance property is responsible for the appearance of each button and its state. The buttons have the same states as the items. The panel header, footer and content area is styled by the panel itself. The panel can be accessed at designtime / runtime and has separate property to control the appearance. Below is a sample that customizes the appearance of the navigation panel.

```
var
  I: Integer;
begin
  Fill.Color := gcWhite;
  Fill.Kind := TBrushKind.Solid;
  TMSFNCNavigationPanel1.ButtonsAppearance.BackgroundFill.Color := gcSteelblue;
  TMSFNCNavigationPanel1.ButtonsAppearance.OptionsMenuButtonBulletColor := gcWhite;
  TMSFNCNavigationPanel1.ButtonsAppearance.BackgroundStroke.Color := gcDarkblue;
  TMSFNCNavigationPanel1.ButtonsAppearance.Stroke.Color := gcDarkblue;
  TMSFNCNavigationPanel1.ButtonsAppearance.ActiveFill.Color := gcDarkblue;
  TMSFNCNavigationPanel1.ButtonsAppearance.ActiveStroke.Color := gcDarkblue;
  TMSFNCNavigationPanel1.ButtonsAppearance.HoverStroke.Color := gcDarkblue;
  TMSFNCNavigationPanel1.ButtonsAppearance.DownStroke.Color := gcDarkblue;
  TMSFNCNavigationPanel1.ItemsAppearance.Stroke.Color := gcDarkblue;
  TMSFNCNavigationPanel1.ItemsAppearance.ActiveFill.Color := gcDarkblue;
  TMSFNCNavigationPanel1.ItemsAppearance.ActiveStroke.Color := gcDarkblue;
  TMSFNCNavigationPanel1.ItemsAppearance.HoverStroke.Color := gcDarkblue;
```

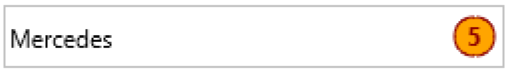
```
 TMSFNCNavigationPanel1.ItemsAppearance.DownStroke.Color := gcDarkblue;
 TMSFNCNavigationPanel1.Splitter.Fill.Color := gcDarkblue;
 TMSFNCNavigationPanel1.Splitter.Stroke.Color := gcDarkblue;
 TMSFNCNavigationPanel1.Splitter.BulletColor := gcWhite;
 TMSFNCNavigationPanel1.Stroke.Color := gcDarkBlue;

 for I := 0 to TMSFNCNavigationPanel1.Panels.Count - 1 do
 begin
   TMSFNCNavigationPanel1.Panels[I].Container.Header.Fill.Color := gcSteelBlue;
   TMSFNCNavigationPanel1.Panels[I].Container.Header.Font.Color := gcWhite;
   TMSFNCNavigationPanel1.Panels[I].Container.Header.Stroke.Color := gcDarkblue;
   TMSFNCNavigationPanel1.Panels[I].Container.Fill.Color := gcLightsteelblue;
   TMSFNCNavigationPanel1.Panels[I].Container.Stroke.Color := gcDarkblue;
 end;
```



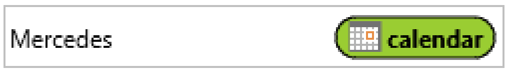
Badges

Each panel item can display a badge, at the right side of the item. The badge can be any text you like, including HTML formatted text. Badges are separately styled with the Badge* properties under ItemsAppearance. Below is a sample that displays a simple numeric badge as well as a completely styled HTML formatted text with images badge.

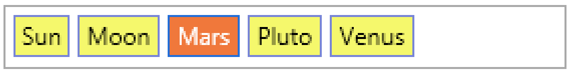
```
TMSFNCNavigationPanel1.Panels[0].Badge := '5';
```

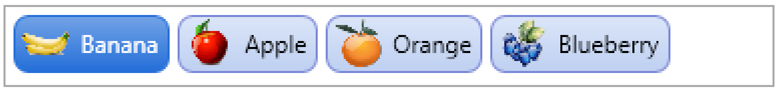


```
TMSFNCNavigationPanel1.ItemsAppearance.BadgeFill.Color := gcYellowgreen;
TMSFNCNavigationPanel1.ItemsAppearance.BadgeFont.Color := gcBlack;
TMSFNCNavigationPanel1.ItemsAppearance.BadgeStroke.Color := gcBlack;
TMSFNCNavigationPanel1.BitmapContainer := TMSFNCBitmapContainer1;
TMSFNCNavigationPanel1.Panels[0].Badge := '<p> <img
src="'+TMSFNCBitmapContainer1.RandomBitmapName+'"/> calendar</p>';
```


Mercedes
calendar

TTMSFNCListEditor





Architecture

TTMSFNCListEditor is an edit control to edit a list of values in a flexible way similar to the Microsoft Outlook or iOS email address input. It consists of a collection of items that can be edited, added, deleted via the control. Items are displayed in the control as clickable rectangular areas with an appearance that is controlled by the property TTMSFNCListEditor.ItemAppearance. In addition to text, each item can optionally also display an image before and/or after the text. The images can be clicked to perform further actions on.

Appearance

The appearance of the TTMSFNCListEditor is controlled by TTMSFNCListEditor.ItemAppearance. This property holds settings for normal state of items and for selected state. The settings include:

FillNormal: sets the background color of items in normal state
FontFillNormal: sets the text color of items in normal state
StrokeNormal : sets the color of the item border in normal state
RoundingNormal: sets the rectangle rounding of the item in normal state
FillSelected: sets the background color of items in selected state
FontFillSelected: sets the text color of items in selected state
StrokeSelected : sets the color of the item border in selected state
RoundingSelected: sets the rectangle rounding of the item in Selected state

Further, there is:
HorizontalSpacing : horizontal spacing in pixels between items in the list
VerticalSpacing : vertical spacing in pixels between items in the list
Note that the size of an item is determined by the text width & height (as well as optionally the width & height of a left and/or right image in the item). This means that to increase the height of an item for example, the font size shall be increased.

DefaultLeftImage, DefaultLeftImageName:
Sets the image or image name for the (optional) image on the left side of items. When DefaultLeftImage, DefaultLeftImageName is set, all new items get the image specified by DefaultLeftImage or DefaultLeftImageName.

DefaultRightImage, DefaultRightImageName:
Sets the image or image name for the (optional) image on the right side of items. When DefaultRightImage, DefaultRightImageName is set, all new items get the image specified by DefaultRightImage or DefaultRightImageName.

Note that the image on left side or right side can also be set per item via the item's LeftImage, LeftImageName and RightImage, RightImageName properties.

Note that in order to use DefaultLeftImageName or DefaultRightImageName, a TTMSFNCBitmapContainer must be connected to TTMSFNCListEditor.BitmapContainer. This is a container control that holds multiple images and these images can be accessed via a unique name identifier.

Items

TTMSFNCListEditor.Items is the collection that holds the items for the list. When the user adds or removes items, this is automatically reflected in the items collection. An item has following properties:

LeftImage, LeftImageName : sets the image to appear on the left side of the item
RightImage, RightImageName : sets the image to appear on the right side of the item
Tag : general purpose integer property
Text: holds the text of the item
Value: additional text property per item, available for storing extra information such as a hyperlink etc...

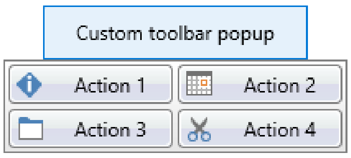
Adding items can be easily done via TTMSFNCListEditor.Items.Add.Text := 'New item' and deleting an item programmatically via TTMSFNCListEditor.Items.Delete(Index);

Events

In addition to the standard FireMonkey control events, TTMSFNCListEditor exposes some additional events relating to the process of editing items in the editor:

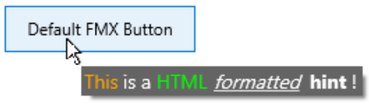
OnEditorCreate: event triggered when the inplace editor is about to be created and allows to customize the editor class. The default editor class is TEdit
OnEditorGetSize : event triggered just before the inplace editor will be displayed in the control and allows to customize the size of the editor in the control
OnEditorGetText: allows to retrieve a text value for the value of the editor. When the inplace editor derives from TCustomEdit, the .Text property is automatically used but this event allows to use inplace editors that expose the value via another property than .Text for example.
OnEditorHide : event triggered when the inplace editor will be hidden
OnEditorShow : event triggered when the inplace editor will be displayed
OnEditorUpdate : event triggered when the value of the inplace editor has changed
OnItemCanDelete : event triggered when the user presses the DEL key for a selected item and allows to query for confirmation before the item is actually deleted
OnItemClick : event triggered when an item is clicked
OnItemDelete : event triggered when an item is deleted
OnItemInsert : event triggered when a new item is inserted via inplace editing
OnItemLeftImageClick : event triggered when the left image for an item is clicked
OnItemRightImageClick :event triggered when the right image for an item is clicked
OnItemUpdate : event triggered when the inplace editing stops and the value needs to be retrieved to update the item with.

TTMSFNCToolBarPopup



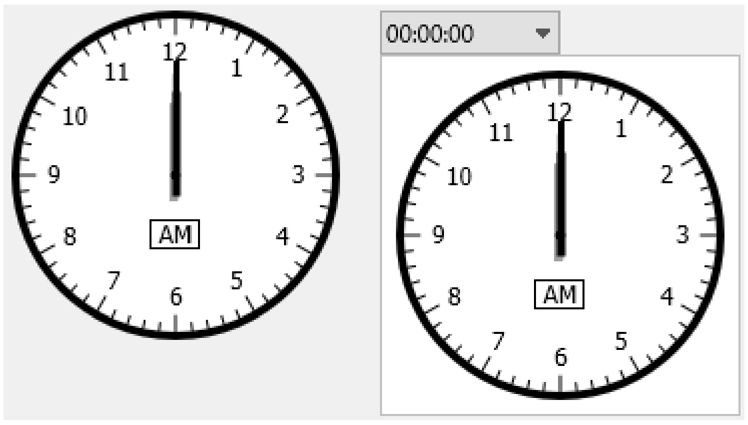
The TTMSFNCToolBarPopup is a popup version of the TTMSFNCToolBar. The TTMSFNCToolBarPopup has a set of properties to configure the buttons and has public access to the TTMSFNCToolBar. To show the toolbar simply call Activate.

TTMSFNCHint



The TTMSFNCHint is a non-visual component that allows displaying HTML formatted hints on any visual control that supports the hints. An instance of TTMSFNCHint can be dropped on the form and replace the default hint appearance. The properties fill and stroke define the background and border of the hint window. The Hint property of a control is then displayed with the properties applied in the TTMSFNCHint component. The text can be HTML formatted based on the minihtml reference.

TMSFNCAnalogTimeSelector / TMSFNCAnalogTimePicker



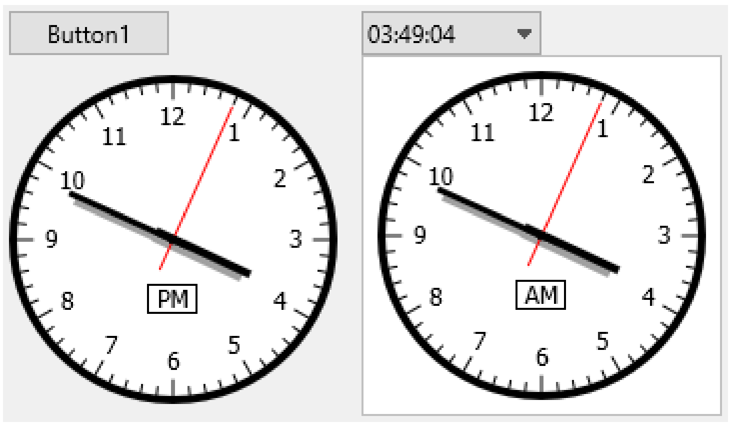
The TMSFNCAnalogTimeSelector and TMSFNCAnalogTimePicker are components that display a watch, and they can be used for time selection.

Time selection

To select the hour, click inside of the circle that is defined by the minute indication marks. To select the minute, click outside of this circle. Holding down the mouse button and dragging the mouse will cause the hour/minute hand to follow the cursor if the FollowMouse property is enabled. If the AM/PM rectangle is visible, then clicking it will switch between AM and PM. Time selection is also possible with the keyboard.

The time can be selected programmatically as well, by using the TMSFNCAnalogTimeSelector.Time or TMSFNCAnalogTimePicker.SelectedTime property.

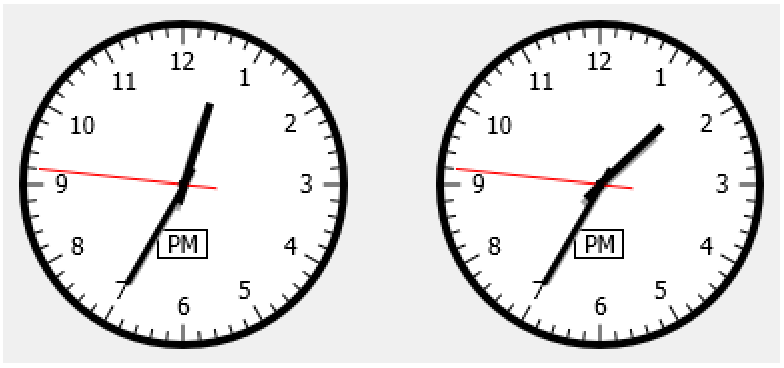
```
procedure TForm1.FormCreate(Sender: TObject);
begin
  TMSFNCAnalogTimeSelector1.Appearance.ShowSecondPointer := True;
  TMSFNCAnalogTimePicker1.SelectorAppearance.ShowSecondPointer := True;
end;

procedure TForm1.Button1Click(Sender: TObject);
begin
  TMSFNCAnalogTimeSelector1.Time := StrToTime('15:49:04');
  TMSFNCAnalogTimePicker1.SelectedTime := StrToTime('03:49:04');
end;
```



Configuration

The TMSFNCAnalogTimeSelector has a Settings property which contains the following settings: Auto, ReadOnly and TimeOffset. With the Auto enabled, the TMSFNCAnalogTimeSelector will display the device's current time, and no selection can be made until this setting remains enabled. If the ReadOnly is enabled, then again, no selection can be made by the user. The TimeOffset property will only have an affect if the Auto is enabled. It will set the displayed time back / forward with the given value in minutes.

```
procedure TForm1.FormCreate(Sender: TObject);
begin
  TMSFNCAnalogTimeSelector1.Appearance.ShowSecondPointer := True;
  TMSFNCAnalogTimeSelector2.Appearance.ShowSecondPointer := True;
  TMSFNCAnalogTimeSelector1.Settings.Auto := True;
  TMSFNCAnalogTimeSelector2.Settings.Auto := True;
  TMSFNCAnalogTimeSelector2.Settings.TimeOffset := 60;
end;
```



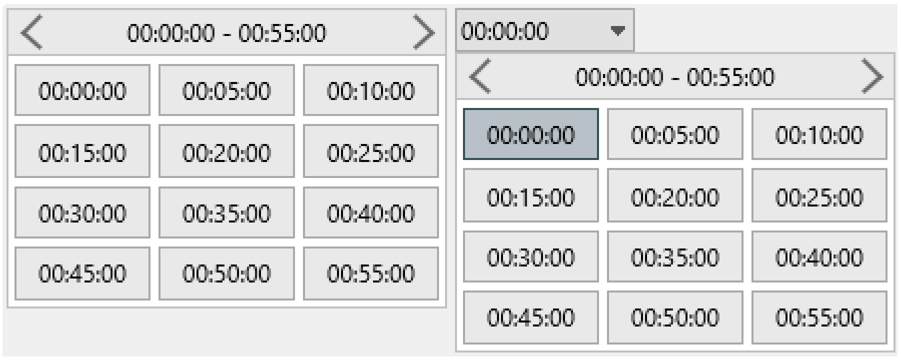
The TMSFNCAnalogTimeSelector .Styles property has some predefined appearances, but you can set your preferred appearance using the TMSFNCAnalogTimeSelector.Appearance and TMSFNCAnalogTimePicker.SelectorAppearance properties.

The TMSFNCAnalogTimePicker has an Editable property. With the Editable enabled, you can write the time you'd like to select, and clicking the dropdown will automatically set the watch to the time that's written into the field.

In the TMSFNCAnalogTimeSelector component the OnTimeChanged event gets triggered when the time has changed. Similarly, the OnSecondChanged/OnMinuteChanged/OnHourChanged event gets triggered when the second/minute/hour has changed.

In the TMSFNCAnalogTimePicker component the OnTimeSelected event gets triggered when a time is selected.

TMSFNCDigitalTimeSelector / TMSFNCDigitalTimePicker



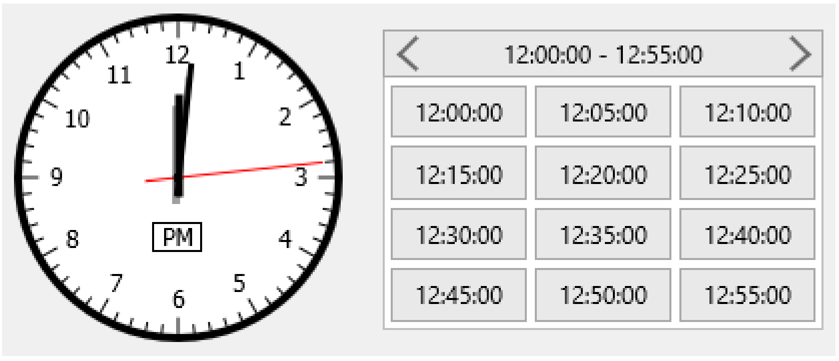
The TMSFNCDigitalTimeSelector and TMSFNCDigitalTimePicker are components that display a grid of selectable time values. The header is used for navigating between the pages of these values. In both components the OnTimeSelected/OnTimeDeselected event gets triggered when a time gets selected/deselected.

If you would like to change the amount of selectable times that is being displayed on one page, you can use the Rows and Columns properties to set the number of rows and columns.

Navigation

In the TMSFNCDigitalTimeSelector there are a few methods and properties that can be accessed programmatically.
Only the currently displayed times are stored in a collection, so if you need to jump to a specific time, you can use the InitializePage(ATime: TTime) method, which will clear out the currently stored times and set the new ones based on the start time, time interval, interval unit and of course, the ATime parameter.

```
procedure TForm1.FormCreate(Sender: TObject);
begin
  TMSFNCAnalogTimeSelector1.Settings.Auto := True;
  TMSFNCDigitalTimeSelector1.InitializePage(Now);
end;
```

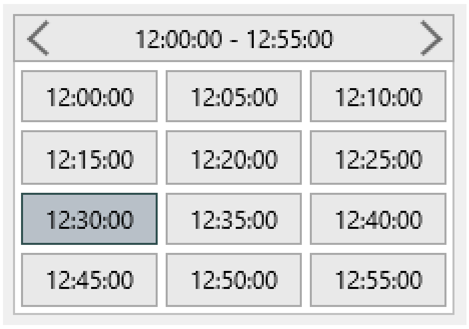


To navigate between the pages, you can use the NavigateBack and NavigateForth methods.

Time selection

To access the currently stored/displayed times, use the Items property. Setting and accessing the selected time can be done via the SelectedTime property, as you can see in the example code shown below:

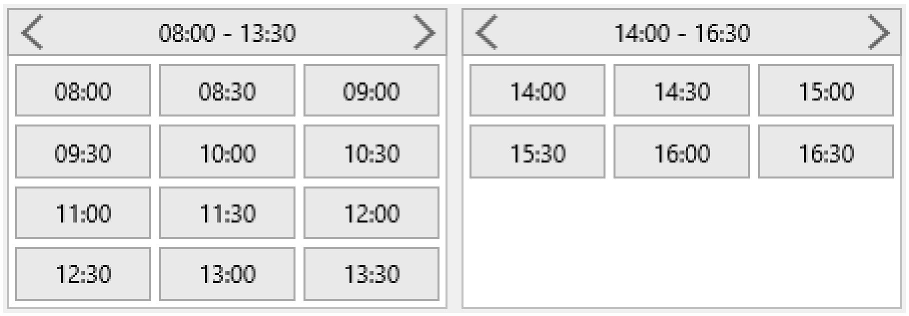
```
procedure TForm1.FormCreate(Sender: TObject);
begin
  TMSFNCDigitalTimeSelector1.InitializePage(Now);
  TMSFNCDigitalTimeSelector1.SelectedTime := StrToTime('12:30:00');
end;
```



Configuration

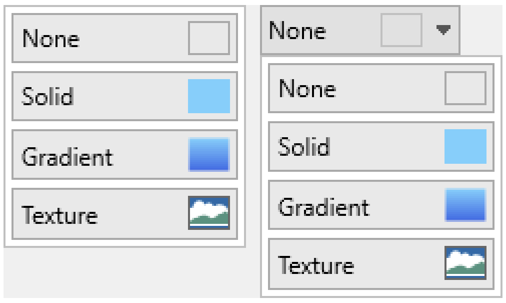
In both components you can use the StartTime and EndTime properties to set the selectable time range. By defult, there's a 5 minute interval between each time item, but this can be easily reconfigured with the TimeInterval and IntervalUnit properties. You can set the IntervalUnit to tsuMilliseconds, tsuSeconds, tsuMinutes and tsuHours. The TimeInterval property requires an Integer value. The default time format is hh:nn:ss, but it can be changed via the TimeFormat property.

```
procedure TForm1.FormCreate(Sender: TObject);
begin
  TMSFNCDigitalTimeSelector1.StartTime := StrToTime('08:00:00');
  TMSFNCDigitalTimeSelector1.EndTime := StrToTime('16:30:00');
  TMSFNCDigitalTimeSelector1.TimeInterval := 30;
  TMSFNCDigitalTimeSelector1.TimeFormat := 'hh:nn';
end;
```



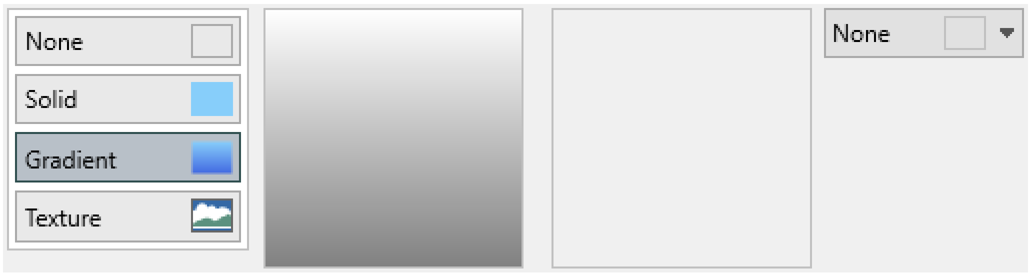
The TMSFNCDigitalTimePicker has an Editable property. With the Editable enabled, you can write the time you'd like to select, and clicking the dropdown will automatically set the grid to the time that's written into the field.

TMSFNCFillKindSelector / TMSFNCFillKindPicker

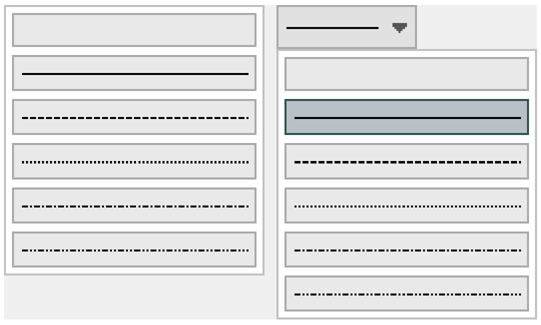


The TMSFNCFillKindSelector and TMSFNCFillKindPicker are components that display a list of TMSFNCGraphicsFillKind values. You can select a fill kind by implementing the OnFillKindSelected event and/or programmatically retrieving the selected fill kind with the TMSFNCFillKindSelector.SelectedFillKind or TMSFNCFillKindPicker.SelectedFillKind property.

```
procedure TForm1.TMSFNCFillKindPicker1FillKindSelected(Sender: TObject;
  AFillKind: TTMSFNCGraphicsFillKind);
begin
  TMSFNCPanel2.Fill.Kind := AFillKind;
end;

procedure TForm1.TMSFNCFillKindSelector1FillKindSelected(Sender: TObject;
  AFillKind: TTMSFNCGraphicsFillKind);
begin
  TMSFNCPanel1.Fill.Kind := AFillKind;
end;
```



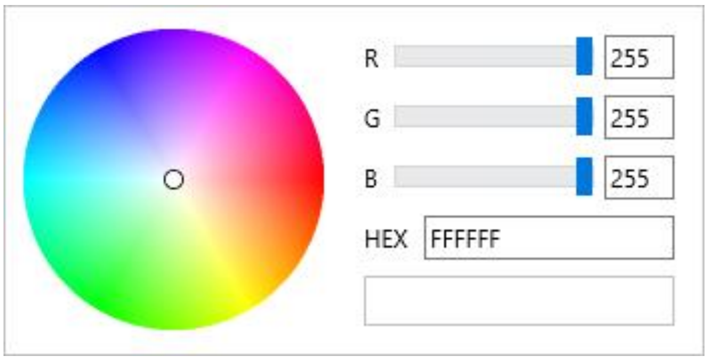
TMSFNCStrokeKindSelector / TMSFNCStrokeKindPicker



The TMSFNCStrokeKindSelector and TMSFNCStrokeKindPicker are components that display a list of TMSFNCGraphicsStrokeKind values. You can select a stroke kind by implementing the OnStrokeKindSelected event and/or programmatically retrieving the selected stroke kind with the TMSFNCStrokeKindSelector.SelectedStrokeKind or TMSFNCStrokeKindPicker.SelectedStrokeKind property.

```
procedure TForm1.TMSFNCStrokeKindPicker1StrokeKindSelected(Sender: TObject;
  AStrokeKind: TTMSFNCGraphicsStrokeKind);
begin
  TMSFNCPanel2.Stroke.Kind := AStrokeKind;
end;

procedure TForm1.TMSFNCStrokeKindSelector1StrokeKindSelected(Sender: TObject;
  AStrokeKind: TTMSFNCGraphicsStrokeKind);
begin
  TMSFNCPanel1.Stroke.Kind := AStrokeKind;
end;
```

TMSFNCColorWheel



The TMSFNCColorWheel is a component for color selection. It includes the color wheel itself, sliders and edit fields for the R, G and B values and a HEX edit field as well.

Properties

BValue	The BValue property can be used to set/retrieve the B value of the currently selected color.
GValue	The GValue property can be used to set/retrieve the G value of the currently selected color.
HEXValue	The HEXValue property can be used to set/retrieve the HEX value of the currently selected color.
RValue	The RValue property can be used to set/retrieve the R value of the currently selected color.
SelectedColor	The SelectedColor property can be used to set/retrieve the selected color.

Methods

ColorToBValue(AColor: TTMSFNCGraphicsColor)	Returns the B value of the AColor parameter.
ColorToGValue(AColor: TTMSFNCGraphicsColor)	Returns the G value of the AColor parameter.
ColorToRValue(AColor: TTMSFNCGraphicsColor)	Returns the R value of the AColor parameter.
RGBToGraphicsColor(R, G, B: Integer)	Returns a TTMSFNCGraphicsColor that is defined by the R, G and B parameter values.

Events

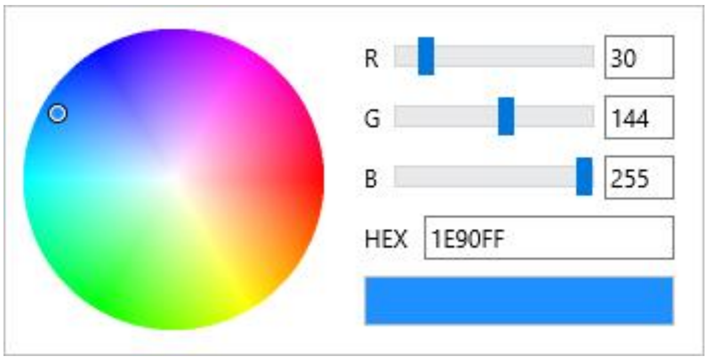
OnColorSelected	Event called when the selected color has changed.
OnBValueChanged	Event called when the B value has changed.
OnGValueChanged	Event called when the G value has changed.
OnRValueChanged	Event called when the R value has changed.

Color selection

Selecting a color can be done in multiple ways. You can either click and drag the mouse on the color wheel, use the RGB sliders and/or RGB edit fields or write a HEX value inside the given edit field. You can also preselect a color during design time via the SelectedColor property, and you can change the RValue, GValue and BValue properties too.

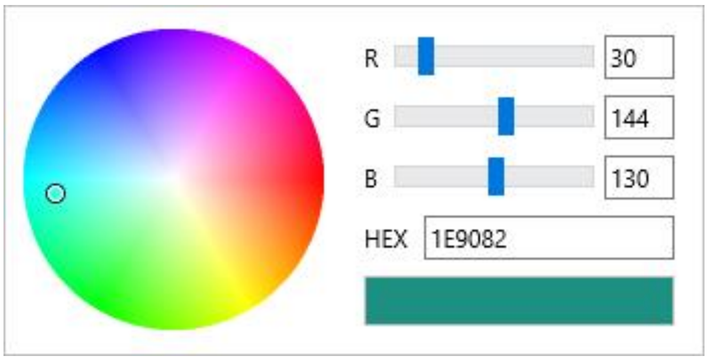
To access the selected color programmatically, you can use the TMSFNCColorWheel.SelectedColor property:

```
procedure TForm1.Button1Click(Sender: TObject);
begin
  TMSFNCColorWheel1.SelectedColor := gcDodgerblue;
end;
```



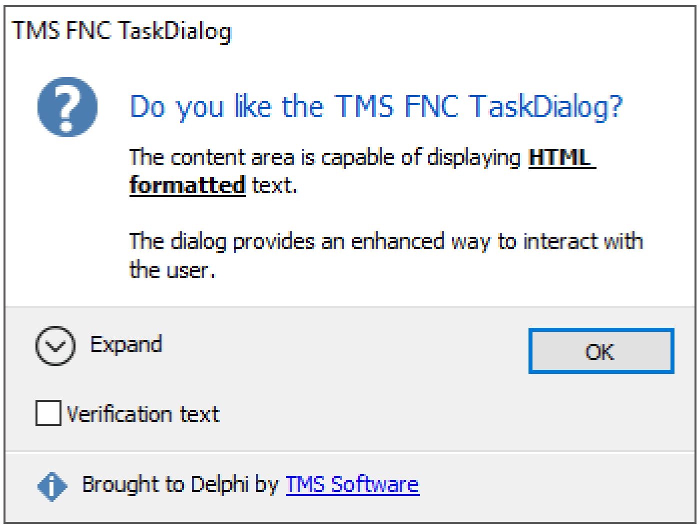
If only the R, G or B value needs to be changed then the RValue, GValue and BValue properties can be used:

```
procedure TForm1.Button2Click(Sender: TObject);
begin
  TMSFNCColorWheel1.BValue := 130;
end;
```



You can retrieve or set the HEX value via the TMSFNCColorWheel.HEXValue property.

TMSFNCTaskDialog


TMS FNC TaskDialog

Do you like the TMS FNC TaskDialog?

The content area is capable of displaying **HTML formatted** text.

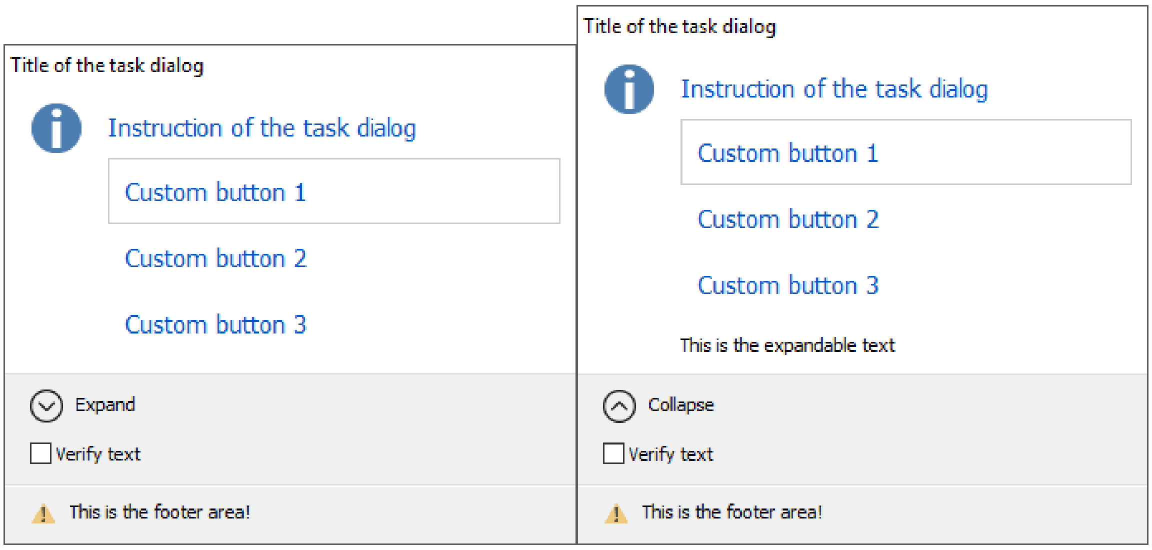
The dialog provides an enhanced way to interact with the user.

The TMSFNCTaskDialog is a component with expandable text, footer and input. Additionally a progress bar, a list of radio buttons, custom buttons or command links can be displayed.

Setting the dialog

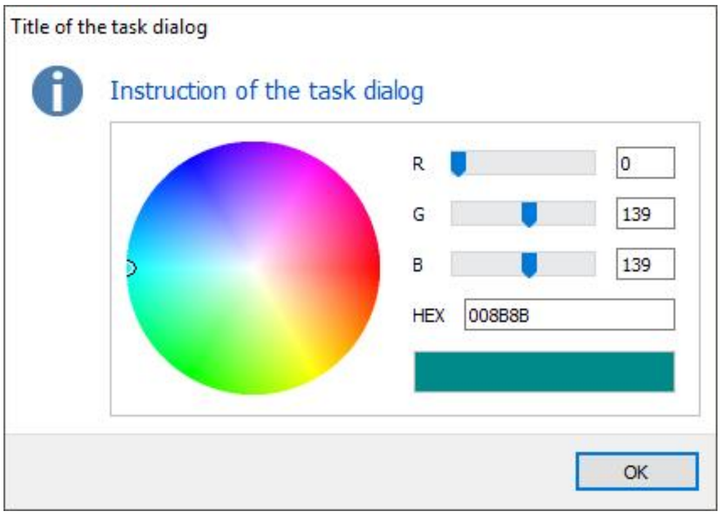
Setting up the dialog can be done with the provided properties both at designtime and programmatically. You can find a list of these properties further below, but here are a few examples:

```
procedure TForm1.Button1Click(Sender: TObject);
begin
  TMSFNCTaskDialog1.Execute;
end;

procedure TForm1.FormCreate(Sender: TObject);
begin
  TMSFNCTaskDialog1.Title := 'Title of the task dialog';
  TMSFNCTaskDialog1.Instruction := 'Instruction of the task dialog';
  TMSFNCTaskDialog1.Icon := tdiInformation;
  TMSFNCTaskDialog1.Options := TMSFNCTaskDialog1.Options + [tdoCommandLinks,
tdoCommandLinksNoIcon];
  TMSFNCTaskDialog1.CustomButtons.Add('Custom button 1');
  TMSFNCTaskDialog1.CustomButtons.Add('Custom button 2');
  TMSFNCTaskDialog1.CustomButtons.Add('Custom button 3');
  TMSFNCTaskDialog1.ExpandedText := 'This is the expandable text';
  TMSFNCTaskDialog1.ExpandControlText := 'Expand';
  TMSFNCTaskDialog1.CollapseControlText := 'Collapse';
  TMSFNCTaskDialog1.Footer := 'This is the footer area!';
  TMSFNCTaskDialog1.FooterIcon := tdiWarning;
  TMSFNCTaskDialog1.VerifyText := 'Verify text';
end;
```



Example of setting a custom input control and predefining its value:

```
procedure TForm1.Button1Click(Sender: TObject);
begin
  TMSFNCTaskDialog1.Execute;
end;

procedure TForm1.FormCreate(Sender: TObject);
begin
  TMSFNCTaskDialog1.Title := 'Title of the task dialog';
  TMSFNCTaskDialog1.Instruction := 'Instruction of the task dialog';
  TMSFNCTaskDialog1.Icon := tdiInformation;
  TMSFNCTaskDialog1.InputType := titCustom;
  TMSFNCTaskDialog1.InputControl := TMSFNCColorWheel1;
end;

procedure TForm1.TMSFNCTaskDialog1DialogCreated(Sender: TObject);
begin
  TTMSFNCColorWheel(TMSFNCTaskDialog1.InputControl).SelectedColor := gcDarkcyan;
end;
```



Executing the dialog and retrieving the results

Executing the dialog can be done in multiple ways for each platform. Calling TMSFNCTaskDialog.Execute will show the dialog in every platform, but due to the differences in them, retrieveing the result may vary. However, you can retrieve the results with one code base **everywhere** with the use of the OnDialogResult event:

```
procedure TForm1.Button1Click(Sender: TObject);
begin
  TMSFNCTaskDialog1.Execute;
end;

procedure TForm1.TMSFNCTaskDialog1DialogResult(Sender: TObject;
  AModalResult: TModalResult);
begin
  case AModalResult of
    mrOk: ShowMessage ('OK clicked');
    mrYes: ShowMessage ('Yes clicked');
    mrNo: ShowMessage ('No clicked');
    mrCancel: ShowMessage('Cancel clicked');
  else
    ShowMessage('Value returned: ' + IntToStr(mr));
  end;
end;
```

There are properties such as VerifyChecked and RadioButtonResult to return the state of the verify box and the selected radio button. For a predefined input field the InputText property can be used to return the value after closing the dialog. In case of a custom input control you have to take care of the custom control's results yourself via the TMSFNCTaskDialog.OnDialogClosed event and InputControl propery.

```
procedure TForm1.TMSFNCTaskDialog1DialogClosed(Sender: TObject);
begin
  Label1.Caption := TTMSFNCColorWheel(TMSFNCTaskDialog1.InputControl).HEXValue;
end;
```

If you are targeting one platform only, it's nice to mention the following possibilities of the TMSFNCTaskDialog:

In **VCL, FMX non-mobile and LCL** calling the TMSFNCTaskDialog.Execute function will stop the code from further processing until the dialog is closed. The Execute function will return with a TModalResult value.

```
procedure TForm1.Button1Click(Sender: TObject);
var
  mr: TModalResult;
begin
  mr := TMSFNCTaskDialog1.Execute;

  case mr of
    mrOk: ShowMessage('OK Clicked');
    mrYes: ShowMessage('Yes Clicked');
    mrNo: ShowMessage('No Clicked');
    mrCancel: ShowMessage('Cancel Clicked');
  else
```

```
    ShowMessage('Value returned: ' + IntToStr(mr));
  end;
end;
```

In **FMX mobile**, the Execute method is a bit different because it cannot be a blocking call. Therefore it's implemented as TMSFNCTaskDialog.Execute(const ResultProc: TProc<TModalResult>). It uses an anonymous method which will be executed after the TMSFNCTaskDialog gets closed.

```
procedure TForm1.Button1Click(Sender: TObject);
begin
  TMSFNCTaskDialog1.Execute(
    procedure(ModalResult: TModalResult)
    begin
      case ModalResult of
        mrOk: ShowMessage('OK Clicked');
        mrYes: ShowMessage('Yes Clicked');
        mrNo: ShowMessage('No Clicked');
        mrCancel: ShowMessage('Cancel Clicked');
      else
        ShowMessage('Value returned: ' + IntToStr(ModalResult));
      end;
    end);
end;
```

Similarly to FMX mobile, in the **WEB** the Execute method is also a bit different. Due to the async nature of the web, the Execute method will not stop the code from further executing, so a TDialogResultProc parameter is needed where the given AProc procedure will execute after the dialog is closed. The results can be processed in this method, with a similar code that was used in the other frameworks:

```
procedure TForm2.WebButton1Click(Sender: TObject);
  procedure DialogProc(AValue: TModalResult);
  begin
    case AValue of
      mrOK: ShowMessage('OK Clicked');
      mrYes: ShowMessage('Yes Clicked');
      mrNo: ShowMessage('No Clicked');
      mrCancel: ShowMessage('Cancel Clicked');
    else
      ShowMessage('Value returned: ' + IntToStr(AValue));
    end;
  end;
begin
  TMSFNCTaskDialog1.Execute(@DialogProc);
end;
```

<u>Properties</u>

AutoCloseTimeOut	Sets the auto closing timeout of the dialog. 1000 = 1 second.
CollapseControlText	Sets the collapse text that is being displayed next to the expand button.
Content	Sets the content text of the dialog. It's HTML formatting compatible.
CustomIcon	Sets a custom icon to be displayed next to the

	instruction.
DefaultRadioButton	Sets the default selected radio button.
DialogPosition	Sets the dialog's position to the owner form's center or the screen's center.
ExpandControlText	Sets the expand text that is being displayed next to the expand button.
ExpandedText	Sets the expandable text of the dialog. It's HTML formatting compatible.
Footer	Sets the footer text of the dialog. It's HTML formatting compatible.
FooterIcon	Sets the footer icon type of the dialog.
Icon	Sets the instruction icon type of the dialog.
InputControl	Sets the custom input control of the dialog.
InputItems	Sets the input items of the dialog (for titMemo and titComboList).
InputText	Sets and return the input text of the dialog.
InputType	Sets the input type of the dialog.
Instruction	Sets the instruction text of the dialog.
RadioButtonResult	Returns an integer which indicates the selected radio button. Index starts from 0.
Title	Sets the title of the dialog. By default it's the application's name.
VerifyResult	Returns the verify checkbox result of the dialog.

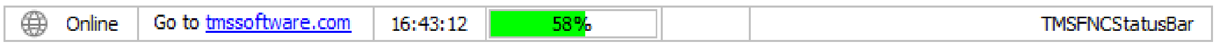
Methods

Execute	Runs the modal and it's accessible in every framework. Stops the code from further executing in VCL, FMX non-mobile and LCL, and returns a TModalResult value.
Execute(const ResultProc: TProc<TModalResult>)	Runs the modal, the result can be captured via an anonymous method. Accessible only in FMX mobile.
Execute(AProc: TDialogResultProc)	Runs the modal, the result can be captured via the parameter method. Accessible only in the WEB.

Events

OnAutoClose	Event called when the dialog closes automatically.
OnDialogButtonClick	Event called when a button is clicked.
OnDialogClosed	Event called after the dialog is closed.
OnDialogCreated	Event called after the dialog is created.
OnDialogProgress	Event called when the dialog's OnTimer event is called. The position of the progress bar can be set via the event's Pos property.
OnDialogRadioClick	Event called when a radio button is clicked.
OnDialogResult	Event called when the dialog gets its ModalResult set.
OnDialogTimer	Event called when the dialog's OnTimer event is called.
OnDialogVerifyClick	Event called when the verify checkbox is clicked.

TMSFNCStatusBar



The TTMSFNCStatusBar is a component for displaying different styles of panels. These styles include simple text, ellipse text, HTML text, images, date, time, progress bar and custom drawing can be made too.

Custom panel

There are various styles of panels, but drawing your custom panel is also possible. You can achieve this by implementing the OnDrawCustomPanel event.

```
procedure TForm1.FormCreate(Sender: TObject);
var
  p: TTMSFNCStatusBarPanel;
  I: Integer;
begin
  TMSFNCStatusBar1.BitmapContainer := TMSFNCBitmapContainer1;
  for I := 0 to 3 do
    TMSFNCStatusBar1.Panels.Add;

  p := TMSFNCStatusBar1.Panels.Items[0];
  p.Style := spsOwnerDraw;
  p.Width := 100;
end;

procedure TForm1.TMSFNCStatusBar1DrawCustomPanel(Sender: TObject;
  AGraphics: TTMSFNCGraphics; ARect: TRectF; APanel: TTMSFNCStatusBarPanel);
begin
  AGraphics.DrawEllipse(ARect);
end;
```

Images

It’s also possible to show images in a panel with the use of a TMSFNCBitmapContainer. You can set the panel style to spsImage or spsImageList. The spsImage can be used if a single image and optional text have to be shown. The spsImageList will display a given amount of images (Panel.ImageCount) from the desired index (Panel.ImageIndex).

```
p := TMSFNCStatusBar1.Panels.Items[0];
p.Style := spsImage;
p.ImageIndex := 0;
p.Text := 'Cursor';
p.AutoSize := True;

p := TMSFNCStatusBar1.Panels.Items[1];
p.Style := spsImageList;
p.ImageIndex := 1;
p.ImageCount := 3;
```

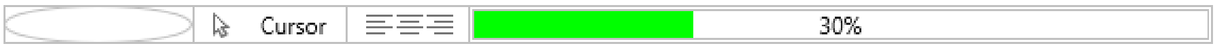
Progress bar

Every single panel has a Progress property which includes many options for the progress bar to be set. There are 4 levels you can play around with and set them to your own preference. The limit of the levels can be set via the Panel.Progress.Level1Perc and Level2Perc properties.

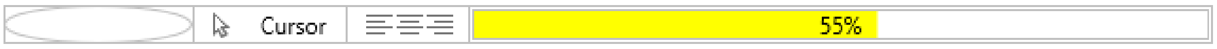
Level 0 goes from Panel.Progress.Min to Panel.Progress.Level1Perc.
Level 1 goes from Panel.Progress.Level1Perc to Panel.Progress.Level2Perc.
Level 2 goes from Panel.Progress.Level2Perc to Panel.Progress.Max - 1.
Level 3 equals to Panel.Progress.Max.

To increment the progress bar by 1, the Panel.Progress.StepIt procedure can be called.

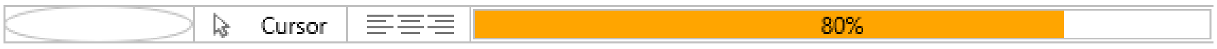
```
p := TMSFNCStatusBar1.Panels.Items[3];
p.Style := spsProgress;
p.Progress.Level1Perc := 50;
p.Progress.Level2Perc := 75;
p.Progress.Position := 30;
```



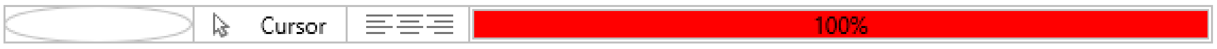
```
p.Progress.Position := 55;
```



```
p.Progress.Position := 80;
```



```
p.Progress.Position := 100;
```



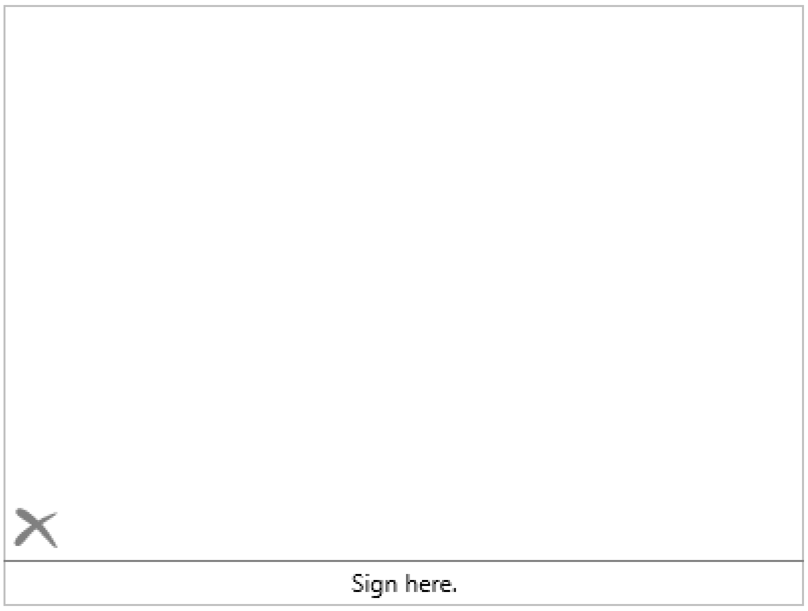
Methods

XYToPanel(AX, AY: Single): TTMSFNCStatusBarPanel	Returns the panel at the given X, Y coordinates.
GetPanelRect(Index: Integer): TRectF	Returns the panel rectangle at the given index.

Events

OnAfterDrawPanel	Event called after drawing a panel item.
OnAnchorClick	Event called when an anchor is clicked.
OnBeforeDrawPanel	Event called before drawing a panel item.
OnDrawCustomPanel	Event called when drawing a custom panel item.
OnPanelLeftClick	Event called when a panel item is clicked with the left mouse button.
OnPanelRightClick	Event called when a panel item is clicked with the right mouse button.

TMSFNCSignatureCapture



The TMSFNCSignatureCapture is a component for capturing signatures that are made by the user. The signature can be cleared and saved in different file formats.

Clearing the signature

The signature is created by the user, similarly to when they are signing something on paper – but in this case by using their mouse. If the user clicks the clear icon it will clear the signature so they can recreate it to their liking. However, the signature can also be cleared programmatically by setting the TMSFNCSignatureCapture.Empty property to True.

Saving the signature

There are multiple ways to save the signature that has been created by the user. These methods include saving to a TMemoryStream, to a file or to an image.

To save the signature to a TMemoryStream, you can call the SaveToStream(AStream: TMemoryStream) method:

```
TForm1 = class(TForm)
  TMSFNCSignatureCapture1: TTMSFNCSignatureCapture;
  Button1: TButton;
  procedure FormCreate(Sender: TObject);
  procedure Button1Click(Sender: TObject);
private
  ms: TMemoryStream;
end;

procedure TForm1.FormCreate(Sender: TObject);
begin
  ms := TMemoryStream.Create;
end;

procedure TForm1.Button1Click(Sender: TObject);
```

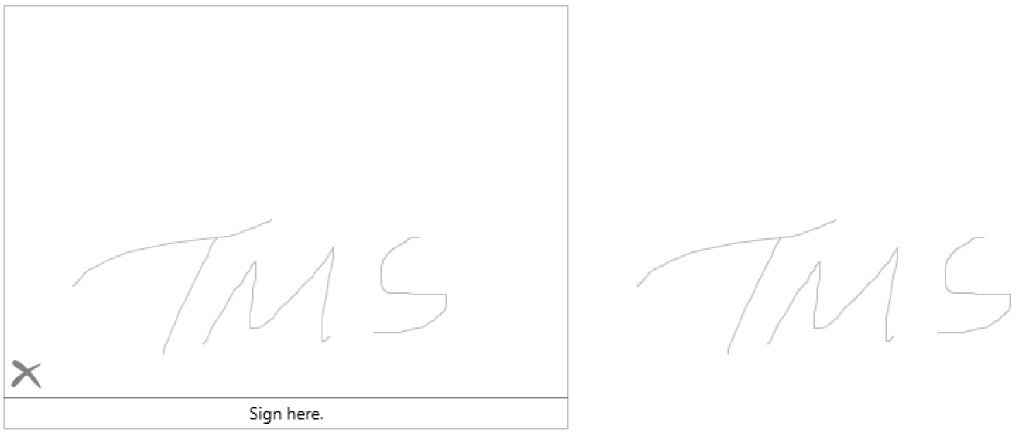
```
begin
  TMSFNCSignatureCapture1.SaveToStream(ms);
end;
```

To save the signature to a file, you can call the SaveToFile(FileName: string) method:

```
procedure TForm1.Button2Click(Sender: TObject);
begin
  TMSFNCSignatureCapture1.SaveToFile('signature.txt');
end;
```

And finally, to save a signature to an image, you can call the SaveToImageFile(FileName: string) method:

```
procedure TForm1.Button3Click(Sender: TObject);
begin
  TMSFNCSignatureCapture1.SaveToImageFile('signature.png');
end;
```



Loading the signature

You can load a signature to the TMSFNCSignatureCapture component from a TMemoryStream if you have saved a signature to that stream. To do this, you can use the LoadFromStream(AStream: TMemoryStream) method:

```
procedure TForm1.Button4Click(Sender: TObject);
begin
  TMSFNCSignatureCapture1.LoadFromStream(ms);
end;
```

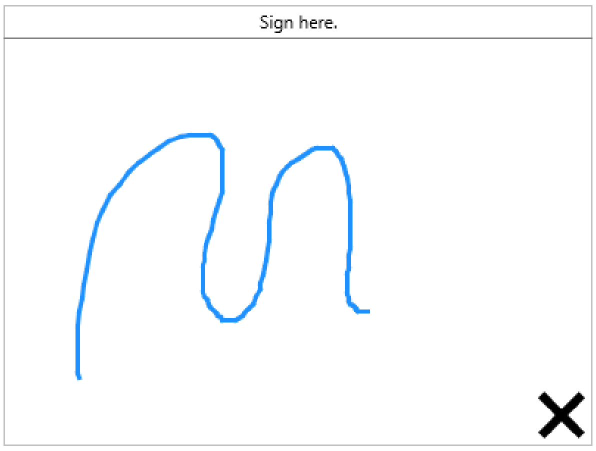
If you have saved a signature to a file, then you can load it from a file as well by calling the LoadFromFile(FileName: string) method:

```
procedure TForm1.Button5Click(Sender: TObject);
begin
  TMSFNCSignatureCapture1.LoadFromFile('signature.txt');
end;
```

Configuration

By default a 'Sign here.' text is displayed at the bottom of the TMSFNCSignatureCapture. To change this text, you can use the Text property. To change the position of this text, use the TextPosition property.
To change the clear icon, use the ClearSig.Image property and to change its position, use the ClearSig.Position property.

The pen's color, width and kind can also be changed via the Pen property.



The text, the clear icon and the pen can be configured during design time or programmatically with the mentioned properties.

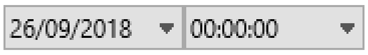
Properties

ClearSig	The clear icon can be modified via the ClearSig property.
Empty	Determines if the signature is empty. It can also clear the signature if it's set to True programmatically.
Pen	The pen that is used for signing can be modified via the Pen property.
Text	The text that is being shown. The default value is 'Sign here.'.
TextPosition	The position of the text can be changed via the TextPosition property.

Methods

GetBase64Img	Only accessible in the WEB. Returns the signature in Base64 format.
LoadFromFile(FileName: string)	Not acccessible in the WEB. Loads a signature from a file that is given as a parameter.
LoadFromStream(AStream: TMemoryStream)	Not acccessible in the WEB. Loads a signature from a TMemoryStream that is given as a parameter.
SaveToFile(FileName: string)	Not acccessible in the WEB. Saves the signature to the given file.
SaveToImageFile(FileName: string)	Not acccessible in the WEB. Saves the signature to the given image file.
SaveToStream(AStream: TMemoryStream)	Not acccessible in the WEB. Saves the signature to the given TMemoryStream.

TMSFNCDateTimePicker



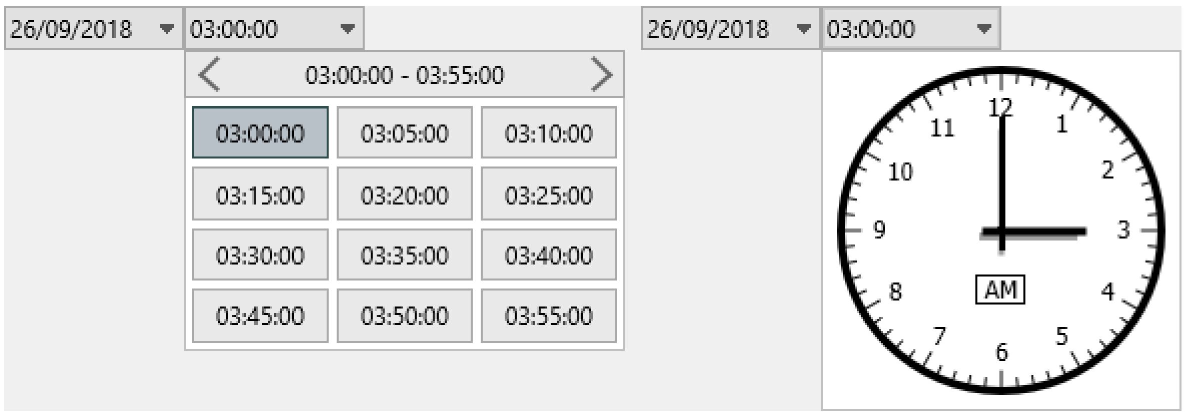
The TMSFNCDateTimePicker is a component for selecting date and time at once.

The TMSFNCDateTimePicker uses TMSFNCCalendar, TMSFNCAnalogTimePicker and TMSFNCDigitalTimePicker.

With the use of the TMSFNCDateTimePicker.SelectedDateTime property, the selected DateTime can be set and retrieved at designtime and at programmatically.

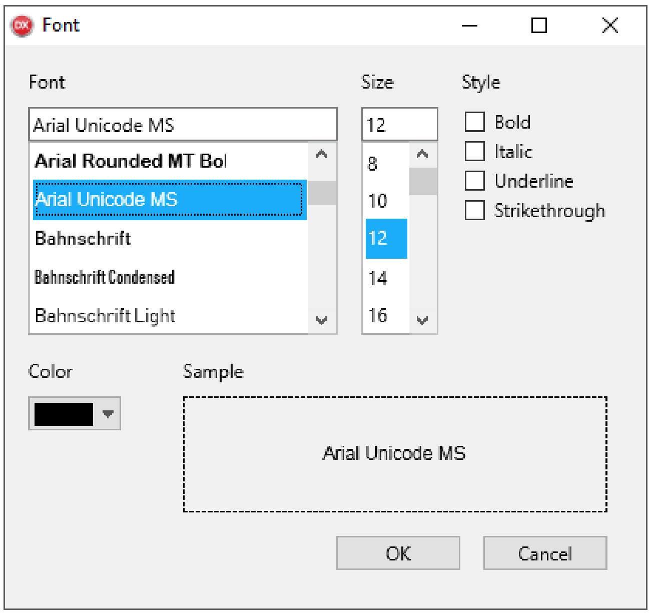
Label1.Caption := DateTimeToStr(TMSFNCDateTimePicker1.SelectedDateTime);

You can use TMSFNCDateTimePicker.TimePickerMode to switch between the analog and the digital time picker.



The date and time picker parts are available separately as a public read-only property, via the DatePicker, AnalogTimePicker and DigitalTimePicker propreties.

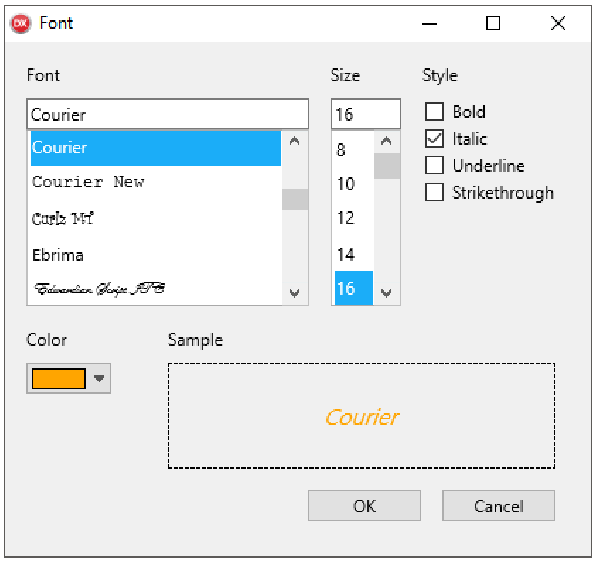
TMSFNCFontDialog



The TMSFNCFontDialog is a component with a listbox filled with the available font names, a listbox filled with sizes, options for styles and a color picker. The sample area is in the bottom right corner, which shows the changes immediately.

Before executing the TMSFNCFontDialog, the font name, the size, the color and the sizes can be set. After the dialog is closed, the results can be retrieved via the same properties. These are the following: FontName, FontSize, FontColor, BoldSelected, ItalicSelected, UnderlineSelected, StrikethroughSelected.

```
procedure TForm1.Button1Click(Sender: TObject);
begin
  TMSFNCFontDialog1.Execute;
end;

procedure TForm1.FormCreate(Sender: TObject);
begin
  TMSFNCFontDialog1.FontName := ‘Courier’;
  TMSFNCFontDialog1.FontSize := 16;
  TMSFNCFontDialog1.FontColor := gcOrange;
  TMSFNCFontDialog1.ItalicSelected := True;
end;
```



Executing and retrieving the results

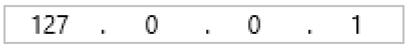
Executing the TMSFNCFontDialog can be done with a single line of code in every platform:

```
TMSFNCFontDialog1.Execute;
```

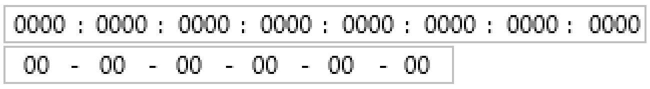
Keep in mind, that different platforms have different behaviour. Tipically on the desktop, the code will stop from further executing until the dialog is closed, while in the WEB and on mobile platforms, it's an async call. Therefore, use the OnDialogResult event to handle the results of the dialog.

```
procedure TForm1.TMSFNCFontDialog1DialogResult(Sender: TObject;
  AModalResult: TModalResult);
begin
  case AModalResult of
    mrOK: TMSFNCHTMLText1.Text := 'OK clicked';
    mrCancel: TMSFNCHTMLText1.Text := 'Cancelled';
  end;

  TMSFNCHTMLText1.Font.Name := TMSFNCFontDialog1.FontName;
  TMSFNCHTMLText1.Font.Size := TMSFNCFontDialog1.FontSize;
  TMSFNCHTMLText1.Font.Color := TMSFNCFontDialog1.FontColor;

  if TMSFNCFontDialog1.BoldSelected then
    TMSFNCHTMLText1.Font.Style := TMSFNCHTMLText1.Font.Style + [TFontStyle.fsBold];

  if TMSFNCFontDialog1.ItalicSelected then
    TMSFNCHTMLText1.Font.Style := TMSFNCHTMLText1.Font.Style + [TFontStyle.fsItalic];

  if TMSFNCFontDialog1.UnderlineSelected then
    TMSFNCHTMLText1.Font.Style := TMSFNCHTMLText1.Font.Style + [TFontStyle.fsUnderline];

  if TMSFNCFontDialog1.StrikethroughSelected then
    TMSFNCHTMLText1.Font.Style := TMSFNCHTMLText1.Font.Style + [TFontStyle.fsStrikeOut];
end;
```

TMSFNCIPEdit


127 . 0 . 0 . 1

The TMSFNCIPEdit is a component that consists of multiple TMSFNCEdit fields. Each octet has its own field. 3 address types are supported: IPv4, IPv6 and MAC. To configure this, use the TTMSFNCIPEdit.IPAddressType property.


0000 : 0000 : 0000 : 0000 : 0000 : 0000 : 0000 : 0000

00 - 00 - 00 - 00 - 00 - 00

You can retrieve the IP address as a string via the TMSFNCIPEdit.IPAddress property, or use the TMSFNCIPEdit.IPv4Address and TMSFNCIPEdit.IPv6Address public properties to retrieve the IP address as an integer value.

TMSFNCCheckBox

The TMSFNCCheckBox is a component that is working like a TCheckBox, but it also introduces other capabilities such as HTML formatting compatible text, widget position and more.

With the TMSFNCCheckBox.Checked property, you can set and retrieve the checked state both at designtime and programmatically.

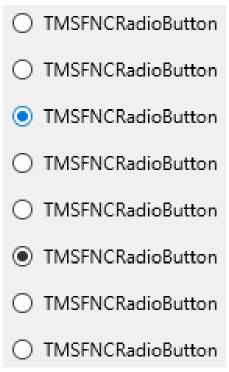
The widget position can be changed via the TMSNFCCheckBox.WidgetPosition property.
It's also supported to use your own images for the widget. For that, you'll need a TMSFNCBitmapContainer assigned to the TMSFNCCheckBox's BitmapContainer property. After that, use the TMSFNCCheckBox.BitmapName property to set the name of the bitmap you'd like to use.

TMSFNCRadioButton

The TMSFNCRadioButton is a component that is working like a TRadioButton, but it also introduces other capabilities such as HTML formatting compatible text, widget position and more.

With the TMSFNCRadioButton.Checked property, you can set and retrieve the checked state both at designtime and programmatically. If there are multiple TMSFNCRadioButtons on the form, only one of them can be in a checked state at a time if they share the same parent. You also have the possibility to set GroupNames for the radio buttons that are sharing the same parent.

```
procedure TForm2.FormCreate(Sender: TObject);
var
  rb: TTMSFNCRadioButton;
  I, t: Integer;
begin
  t := 50;
  for I := 0 to 3 do
  begin
    rb := TTMSFNCRadioButton.Create(Self);
    rb.Parent := Self;
    rb.GroupName := '1';
    rb.Left := 50;
    rb.Top := t;
    t := t + 30;
  end;

  for I := 0 to 3 do
  begin
    rb := TTMSFNCRadioButton.Create(Self);
    rb.Parent := Self;
    rb.GroupName := '2';
    rb.Left := 50;
    rb.Top := t;
    t := t + 30;
  end;
end;
```



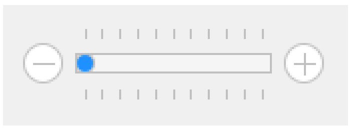
Setting the widget position and custom widget works just like in TMSFNCCheckBox.

TTMSFNCTrackBar

The TTMSFNCTrackBar is a component that works like a TTrackBar, but also introduces other capabilities such as orientation, optionally visible and positionable text, plus/minus buttons and more.

The Thumb, TickMarks, plus/minus Buttons, and the Line are all customizable via the Appearance property:

```
procedure TForm1.Button1Click(Sender: TObject);
begin
  TMSFNCTrackBar1.Appearance.LineWidth := 10;
  TMSFNCTrackBar1.Appearance.LineFill.Color := gcWhitesmoke;
  TMSFNCTrackBar1.Appearance.ThumbShape := tsEllipse;
  TMSFNCTrackBar1.Appearance.ThumbWidth := 10;
  TMSFNCTrackBar1.Appearance.ThumbHeight := 10;
  TMSFNCTrackBar1.Appearance.ThumbFill.Color := gcDodgerblue;
  TMSFNCTrackBar1.Appearance.ButtonShape := bsRounded;
  TMSFNCTrackBar1.Appearance.TickMarkPosition := tmpBoth;
  TMSFNCTrackBar1.Appearance.TickMarkDivision := 10;
end;
```



Properties

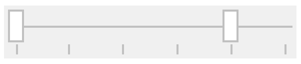
Appearance	Property for various appearance settings.
Interaction	Property for various interaction settings: Frequency, RepeatClick and RepeatInterval.
Max	Maximum value of the TTMSFNCTrackBar.
Min	Minimum value of the TTMSFNCTrackBar.
Value	The current value/position of the TTMSFNCTrackBar.

Events

OnAfterDrawButton	Event called after drawing the plus/minus button.
OnAfterDrawThumb	Event called after drawing the thumb.
OnAfterDrawTickLabel	Event called after drawing the tick labels.
OnafterDrawTickMarks	Event called after drawing the tick marks.
OnAfterDrawTrackLabel	Event called after drawing the track label.
OnAfterDrawTrackLine	Event called after drawing the track line.
OnBeforeDrawButton	Event called before drawing the plus/minus button.
OnBeforeDrawThumb	Event called before drawing the thumb.
OnBeforeDrawTickLabel	Event called before drawing the tick labels.
OnBeforeDrawTickMarks	Event called before drawing the tick marks.
OnBeforeDrawTrackLabel	Event called before drawing the track label.

OnBeforeDrawTrackLine	Event called before drawing the track line.
OnValueChanged	Event called when the value has changed.

TTMSFNCRangeSlider



The TTMSFNCRangeSlider is a component that shares the same core functionality with TTMSFNCTrackBar. Instead of a single thumb, it has 2 thumbs so a range can be selected instead of a single value.

Properties

Appearance	Property for various appearance settings.
Interaction	Property for various interaction settings: Frequency, RepeatClick and RepeatInterval.
Max	Maximum value of the TTMSFNCRangeSlider.
Min	Minimum value of the TTMSFNCRangeSlider.
ValueLeft	The current left value/position of the TTMSFNCRangeSlider.
ValueRight	The current right value/position of the TTMSFNCRangeSlider.

Events

OnAfterDrawThumb	Event called after drawing the thumb.
OnAfterDrawTickLabel	Event called after drawing the tick labels.
OnafterDrawTickMarks	Event called after drawing the tick marks.
OnAfterDrawTrackLabel	Event called after drawing the track label.
OnAfterDrawTrackLine	Event called after drawing the track line.
OnBeforeDrawThumb	Event called before drawing the thumb.
OnBeforeDrawTickLabel	Event called before drawing the tick labels.
OnBeforeDrawTickMarks	Event called before drawing the tick marks.
OnBeforeDrawTrackLabel	Event called before drawing the track label.
OnBeforeDrawTrackLine	Event called before drawing the track line.
OnValueChanged	Event called after one of the values has changed.

TTMSFNCSpinEdit

The TTMSFNCSpinEdit is a component that works like a TSpinBox but also introduces other capabilites. For example the value editing can be disabled, and orientation setting is also available.

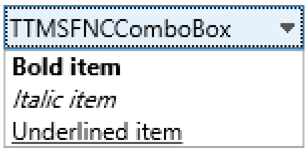
Properties

Appearance	Property for various appearance settings.
Interaction	Property for various interaction settings: Frequency, RepeatClick and RepeatInterval.
Max	Maximum value of the TTMSFNCSpinEdit.
Min	Minimum value of the TTMSFNCSpinEdit.
Value	The current value of the TTMSFNCSpinEdit.

Events

OnAfterDrawButton	Event called after drawing the plus/minus button.
OnAfterDrawValue	Event called after drawing the value.
OnBeforeDrawButton	Event called before drawing the plus/minus button.
OnBeforeDrawValue	Event called before drawing the value.
OnValueChanged	Event called when the value has changed.

TTMSFNCComboBox

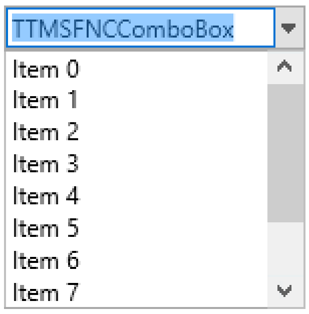


The TTMSFNCComboBox is a component that works like a TComboBox from VCL, but it also supports HTML formatted texts. It uses TTMSFNCDefaultPicker and TTMSFNCTreeView under the hood.

By default the TTMSFNCComboBox.Style is set to csDropDown which makes it editable.

Items can be added at designtime via the Items property or programmatically:

```
procedure TForm3.Button1Click(Sender: TObject);
var
  I: Integer;
begin
  for I := 0 to 10 do
    TMSFNCComboBox1.AddItem('Item ' + IntToStr(I));
end;
```



Properties

AutoCloseUp	Property to automatically close the dropdown if the written text matches an item from the list.
AutoComplete	Property to enable autocompletion.
AutoCompleteDelay	Defines the delay between 2 keystrokes during autocompletion. Only applies if the Style is set to csDropDownList
AutoCompleteNumChar	Defines the numer of characters that are necessary for autocompletion to trigger. Only applies if the Style is set to csDropDown.
AutoDropDown	Property to automatically open the dropdown when typing. Relies on the AutoCompleteNumChar if the Style is set to csDropDown.
CaseSensitive	Enable or disable case sensitivity.
DropDownCount	Maximum number of items to be shown in the dropdown.
Items	A string list of items.
ItemIndex	Selected item index.

Style	The 2 possible values are csDropDown and csDropDownList. It’s affecting the editability of the combobox.
Text	Returns the text that is displayed in the combobox.

Events

OnItemSelected	Event called when an item is selected from the dropdown.

TTMSFNCSwitch

The TTMSFNCSwitch is a component that works like TSwitch. When the layout is set to sloExtended, then the On/Off text becomes visible, and it provides a smoother experience by making the TTMSFNCSwitch's button draggable.

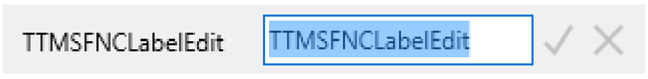
Properties

AppearanceOff	Appearance settings for the Off state.
AppearanceOn	Appearance settings for the On state.
ButtonAppearance	Appearance settings for the button.
Checked	Public property to return the checked state.
Layout	The 2 values are sloSimple and sloExtended. The Off/On text is only visible in the sloExtended layout.
Orientation	Property for enabling or disabling the splitter drawn in between the panels.
Rounded	Boolean property to set the corner rounding.
State	Off/On state of the switch.

Events

OnBeforeDrawSwitch	Event called before drawing the switch's background.
OnAfterDrawSwitch	Event called after drawing the switch's background.
OnBeforeDrawSwitchButton	Event called before drawing the switch's button.
OnAfterDrawSwitchButton	Event called after drawing the switch's button.
OnStateChange	Event called when the state of the switch has changed.

TTMSFNCLabelEdit



The TTMSFNCLabel is a label with a built-in inplace editor with HTML text support. It inhertis from TTMSFNCHTMLText and it also uses TTMSFNCEdit and TTMSFNCImage under the hood. The edit mode can be set programatically via the TTMSFNCLabel.EditMode property.

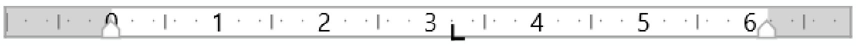
Properties

AcceptButton	Assing a custom image for the accept button.
AcceptButtonStroke	Stroke settings for the accept button if no image is assinged.
CancelButton	Assign a custom image for the cancel button.
CancelButtonStroke	Stroke settings for the cancel button if no image is assinged.
Edit	Access to the TTMSFNCEdit edit field object.
EditMode	Programatically set the edit mode.
Text	Get or set the label text.

Events

OnAccept	Event triggered when text has been changed via the edit field.
OnCancel	Event triggered when the edit field is exited without changing the text.
OnEditEnd	Event triggered when the editing ends.
OnEditExit	Event triggered when the edit field is exited.
OnEditKeyDown	Event triggered when a key is pressed down in the edit field.
OnEditStart	Event triggered when the editing starts.

TTMSFNCRichEditorHorizontalRuler



TTMSFNCRichEditor has a ruler control that can be connected to it. This control has the intuitive handling that you are familiar with from the advanced text editors.
With this ruler you can easily set a left and right margin. Set indents and add tabs to give a better structure to your text. With the addition of the outlining, the look of the document will get to a higher level.

Properties

Appearance	Property for various appearance settings for the ruler, indents, margins tabs and tickmarks.
Layout	Can be used to set the margins, which indents to show and the tickmark settings.
Levels	Collection that can be used to change the progress on specific values. Each TTMSFNCProgressBarLevel has an active font, fill, stroke and LevelPosition.
RichEditor	The TTMSFNCRichEditor which is linked to the ruler.
LeftIndent	The position of the left indent based on the left margin.
RightIndent	The position of the right indent based on the right margin (from right to left).
Tabs	Collection of the tabs. (These have an Indent property.)

Events

OnBeforeDrawHangingBox	Event triggered before drawing the box of the hanging indent.
OnAfterDrawHangingBox	Event triggered after drawing the box of the hanging indent.
OnBeforeDrawHangingIndent	Event triggered before drawing the hanging indent.
OnAfterDrawHangingIndent	Event triggered after drawing the hanging indent.
OnBeforeDrawLeftIndent	Event triggered before drawing the left indent.
OnAfterDrawLeftIndent	Event triggered after drawing the left indent.
OnBeforeDrawRightIndent	Event triggered before drawing the right indent.
OnAfterDrawRightIndent	Event triggered after drawing the right indent.
OnBeforeDrawLeftMargin	Event triggered before drawing the left margin.
OnAfterDrawLeftMargin	Event triggered after drawing the left margin.
OnBeforeDrawRightMargin	Event triggered before drawing the right margin.
OnAfterDrawRightMargin	Event triggered after drawing the right margin.
OnBeforeDrawTickLabel	Event triggered before drawing a tickmark label.
OnAfterDrawTickLabel	Event triggered after drawing a tickmark label.
OnAppearanceChanged	Event triggered when one of the Appereance properties is changed.
OnLayoutChanged	Event triggered when one of the Layout properties is changed.
OnTickMarksChanged	Event triggered when one of the TickMarks

	properties is changed.
OnHangingIndentChange	Event called before the hanging indent will change.
OnHangingIndentChanged	Event called when the hanging indent was changed.
OnLeftIndentChange	Event called before the left indent will change.
OnLeftIndentChanged	Event called when the left indent was changed.
OnRightIndentChange	Event called before the right indent will change.
OnRightIndentChanged	Event called when the right indent was changed.
OnLeftMarginChange	Event called before the left margin will change.
OnLeftMarginChanged	Event called when the left margin was changed.
OnTabChange	Event called before a tab indent will change.
OnTabChanged	Event called when a tab indent was changed.
OnTabAdded	Event called when a tab was added to the collection.
OnTabRemoved	Event called when was removed from the collection.

TTMSFNCSplitter

TTMSFNCSplitter divides the client area of a form into resizable panes. Add a splitter to a form between two aligned controls to allow users to resize the controls at runtime. The splitter sits between a control aligned to one edge of the form and the controls that fill up the rest of the client area. Give the splitter the same alignment as the control that is anchored to the edge of the form. When the user moves the splitter, it resizes the anchored control.

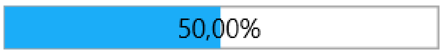
Properties

Appearance	Property for various appearance settings for the ruler, indents, margins tabs and tickmarks.
MinSize	The minimum size of the anchored control.
ResizeStyle	Move the splitter Continuous or just Once after releasing.
ShowIndicator	Show the indicator in the middle of the splitter.
SplitterIndicator	The shape of the indicator: one circle, three circles, one square, three squares, a line or an image.

Events

OnAppearanceChanged	Event triggered when the one of the Appereance properties is changed.
OnSplitterMove	Event called before the position of the splitter changes.
OnSplitterMoved	Event called when the position of the splitter was changed.

TTMSFNCProgressBar



TTMSFNCProgressBar provides users with visual feedback about the progress of a procedure within an application.

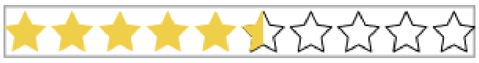
Properties

Appearance	Property for various appearance settings. DefaultLevel values, Fill, Font, Stroke and Stacked property.
Layout	Can be used to set the number of blocks, text settings, rounding and minimum and maximum images.
Levels	Collection that can be used to change the progress on specific values. Each TTMSFNCProgressBarLevel has an active font, fill, stroke and LevelPosition.
Maximum	The maximum value of the progress.
Minimum	The minimum value of the progress.
Value	The current value of the progress.

Events

OnBeforeDrawBlock	Event triggered before drawing the progress block. (This is for each separate block.)
OnAfterDrawBlock	Event triggered after drawing the progress block. (This is for each separate block.)
OnBeforeDrawValue	Event triggered before drawing the value. (This is for the background font and each active font.)
OnAfterDrawValue	Event triggered after drawing the value. (This is for the background font and each active font.)
OnAppearanceChanged	Event triggered when the one of the Appereance properties is changed.
OnLayoutChanged	Event triggered when the one of the Layout properties is changed.

TTMSFNCRating



TTMSFNCRating is used to set a rating to a scale. Images or a progress can be used for this.
It inherits from TTMSFNCProgressBar.

Properties

Appearance	Property for various appearance settings. DefaultLevel values, Fill, Font, Stroke and Stacked property.
Interaction	Property for various interaction settings: ReadOnly, SnapToValue, SlideToValue and Keyboard interaction.
Layout	Can be used to set the number of blocks, text settings, rounding and minimum and maximum images.
Levels	Collection that can be used to change the progress on specific values. Each TTMSFNCProgressBarLevel has an active font, fill, stroke and LevelPosition.
Maximum	The maximum value of the progress.
Minimum	The minimum value of the progress.
Value	The current value of the progress.

Events

OnBeforeDrawBlock	Event triggered before drawing the progress block. (This is for each separate block.)
OnAfterDrawBlock	Event triggered after drawing the progress block. (This is for each separate block.)
OnBeforeDrawValue	Event triggered before drawing the value. (This is for the background font and each active font.)
OnAfterDrawValue	Event triggered after drawing the value. (This is for the background font and each active font.)
OnAppearanceChanged	Event triggered when the one of the Appereance properties is changed.
OnLayoutChanged	Event triggered when the one of the Layout properties is changed.
OnKeyboardValueChange	Event called before the value will change because of keyboard interaction.
OnKeyboardValueChanged	Event called when the value was changed because of keyboard interaction.
OnSlideValueChange	Event called before the value will change because of sliding interaction.
OnSlideValueChanged	Event called when the value was changed because of sliding interaction.
OnSnapValueChange	Event called before the value will change because of clicking interaction.
OnSnapValueChanged	Event called when the value was changed because of clicking interaction.
OnValueChange	Event called before the value will change.

OnValueChanged	Event called when the value was changed.

TTMSFNCWaitingIndicator

An indicator for illustrating an indefinite waiting time for a task that is in progress.

Properties

Active	Activates the animation.
Appearance	Property for various appearance settings.
AnimationSpeed	Can be used to set the duration of an animation cycle.
OverlayParent	If enabled, the indicator is shown with an overlay over the complete parent.

Events

OnAppearanceChanged	Event triggered when the one of the Appereance properties is changed.
OnBeforeDrawIndicator	Event triggered before drawing the indicator(s).
OnAfterDrawIndicator	Event triggered after drawing the indicator(s).
OnBeforeDrawOverlay	Event triggered before drawing the overlay if OverlayParent is true and the control is Active.
OnAfterDrawOverlay	Event triggered after drawing the overlay.

TTMSFNCHotSpotImage

An image that has different areas (TTMSFNCHotSpot further referred to as hotspot) which can be hovered or selected and each with an individual appereance.

Properties

Bitmap	The standard image of the component
DefaultHotSpotAppearance	The appearance settings used for newly added hotspots
HotSpotNameLocation	Where you want to show the name of the hotspots
HotSpots	The different areas that are defined, here you can select to show them on hover, down or selected state and if you want to show the name of the hotspot and the specific appearance for each of these states.
HoverBitmap	An image that will be placed over the full standard image, and where the hotspots will be cut out from, when in a hovered state.
MultiSelect	If you want to select more than one hotspot.
SelectedBitmap	An image that will be placed over the full standard image, and where the hotspots will be cut out from, when in a selected state.
SelectedHotSpot	The hotspot that is selected. (In case of multiselect the last one that was selected.)

Events

OnHoveredHotSpotChange	Event triggered before the hovered hotspot is changed.
OnHoveredHotSpotChanged	Event triggered after the hovered hotspot is changed.
OnSelectedHotSpotChange	Event triggered before the selected hotspot is changed.
OnSelectedHotSpotChanged	Event triggered after the selected hotspot is changed.
OnHotSpotAppearanceChanged	Event triggered when one of the Appereance properties is changed in a hotspot.
OnHotSpotShapeChanged	Event triggered when the polygon of a hotspot is

	changed.
OnBeforeDrawDownHotSpot	Event triggered before drawing the hotspot polygon in down state.
OnAfterDrawDownHotSpot	Event triggered after drawing the hotspot polygon in down state.
OnBeforeDrawHoveredHotSpot	Event triggered before drawing the hovered hotspot polygon.
OnAfterDrawHoveredHotSpot	Event triggered after drawing the hovered hotspot polygon.
OnBeforeDrawSelectedHotSpot	Event triggered before drawing the polygon of the selected hotspots.
OnAfterDrawSelectedHotSpot	Event triggered after drawing the polygon of the selected hotspots.
OnBeforeDrawHotSpotName	Event triggered before drawing the hotspot name.
OnAfterDrawHotSpotName	Event triggered after drawing the hotspot name.

How to add a hotspot via code

The coordinates given for the shape should be in relation to the original image size.
The component will adjust the size of the polygon, so that it will be placed on the correct spot if the image is drawn with other dimensions.

Adding a hotspot can be done in a couple of ways depending on shape that you want to add.
First of all you can just use the collection and 'Add' a hotspot.
This will add a hotspot with an empty polygon.

If you immmediately want to add a shape you can use these calls:

- TTMSFNCHotSpotImage.AddEllipseHotSpot(ABounds: TRectF);
- TTMSFNCHotSpotImage.AddRectangleHotSpot(ARect: TRectF);
- TTMSFNCHotSpotImage.AddPathHotSpot(APath: TTMSFNCGraphicsPath);
- TTMSFNCHotSpotImage.AddPolygonHotSpot(APolygon: TTMSFNCGraphicsPathPolygon);

All of these calls can be overloaded with the name of the hotspot and a TTMSFNCHotSpotAppearance.

An example to add an ellipse:

```
procedure TForm1.AddHotSpotClick(Sender: TObject);
var
  hs: TTMSFNCHotSpot;
begin
  //Add a hotspot with an elliptical shape and a name
  hs := HotSpotImage. AddEllipseHotSpot(RectF(50,100,200,150), 'HotSpot Name');
  hs.DataString := 'Additional information';

  hs.ShowOnHover := False;
  hs.Selected := True;

  //Set the fill color when the hotspot is selected to green
  hs.Appearance.SelectedFill.Color := gcGreen;
end;
```

If the hotspot was already created and you want to change the shape, you can do this on hotspot level with the functions TTMSFNCHotSpot.SetEllipse, SetRectangle and SetPath. For the polygon you can just assign this to the property TTMSFNCHotSpot.HotSpotPolygon

Other properties that can be set are, 'Selectable' which indicates if the hotspot can be selected and with the 'Selected' property you can set the hotspot to a selected or unselected state.

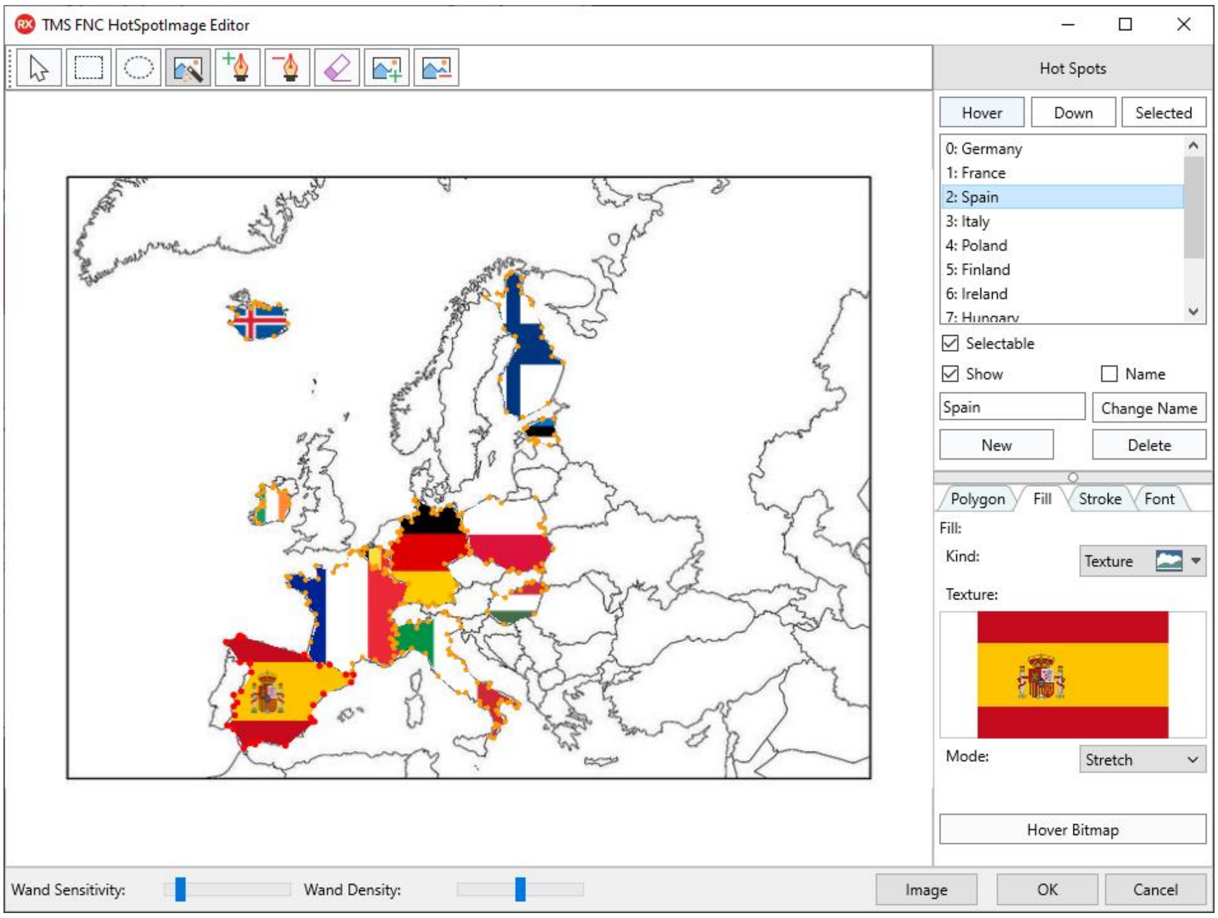
You can also choose if you want to show the polygon when hovered, down or selected and if you want to show the name of the hotspot. The name is also linked to the property HotSpotNameLocation of the TTMSFNCHotSpotImage, if that property is set to none, then the name will not be shown as well.

Using the events

The events can be used to manipulate if a hotspot should be hovered or selected, or to change or check the hotspot settings before or after drawing them.
This is an example to change the color or to not draw the hotspot at all, based on the 'DataString' property.

```
procedure TForm1.HotSpotImageBeforeDrawHoveredHotSpot(Sender: TObject;
AGraphics: TTMSFNCGraphics; AIndex: Integer; ABoundsRect: TRectF;
APolyogn: TTMSFNCGraphicsPathPolygon; ABitmap: TTMSFNCBitmap;
var AAllow, ADefaultDraw: Boolean);
begin
  //Change the fill color
  if HotSpotImage.HotSpots[AIndex].DataString = 'yes' then
    AGraphics.Fill.Color := gcRed;

  //Don't draw the hotspot
  if HotSpotImage.HotSpots[AIndex].DataString = 'no' then
    AAllow = False;
end;
```

TTMSFNCHotSpotImageEditor



This is the editor which can be used to change the TTMSFNCHotSpotImage. It is available in designtime via the context-menu when you rightclick on the TTMSFNCHotSpotImage or the editor, or by a double click on the TTMSFNCHotSpotImage. Additionally, the editor is available when editing the 'HotSpots' property for TTMSFNCHotSpotImage in the object inspector. It is also available as a component which can be opened in runtime.

The code that can be used for this:

```
procedure TForm1.ButtonClick(Sender: TObject);
var
  hie: TTMSFNCHotSpotImageEditor;
begin
  hie := TTMSFNCHotSpotImageEditor.Create(Self);
  hie.HotSpotImage := HotSpotImage;
  hie.Execute;
end;
```

The different tools in the toolbar that you can use to manipulate the polygons:

Select: Will select a hotspot if you click in a polygon and also can give you the ability to select and move specific points of a selected hotspot.

Rectangle: Will create a rectangle hotspot from a mouse down to a mouse up.

Ellipse: Will create an ellipse hotspot from a mouse down to a mouse up.

Wand: With the magic wand you can select an area with a similar color. You can finetune this with the sliders in the bottom panel.

Add point: You can add the points as you want by clicking on the image. And in this way create your polygon.

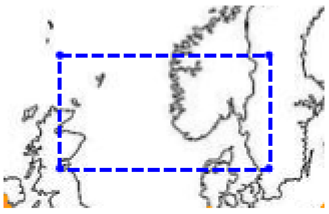
Delete point: Let's you remove the selected or last point in the polygon.

Eraser: Clears the polygon.

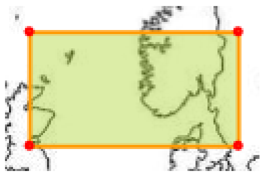
Create hotspot: Create a new hotspot.

Delete hotspot: Remove the selected hotspot.

There are two ways to create a new hotspot. As long as no hotspot is selected in the listbox, you can start creating a shape with the 'Rectangle', 'Ellipse', 'Wand' or 'Add Point' tools. This will show the temporary shape in a blue dashed line.

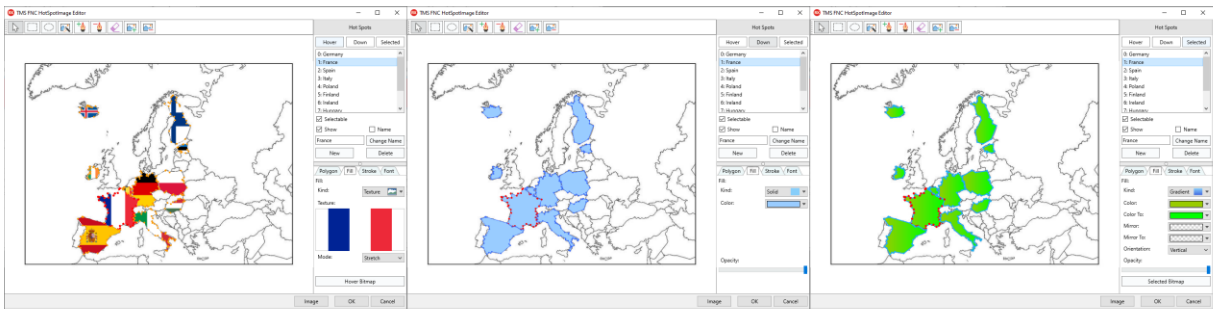


Once the hotspot shape is as wanted, they can be created with the 'Create hotspot' button in the toolbar or the 'New' button on the right side. This will add the hotspot and fill the appearance with the default appearance.



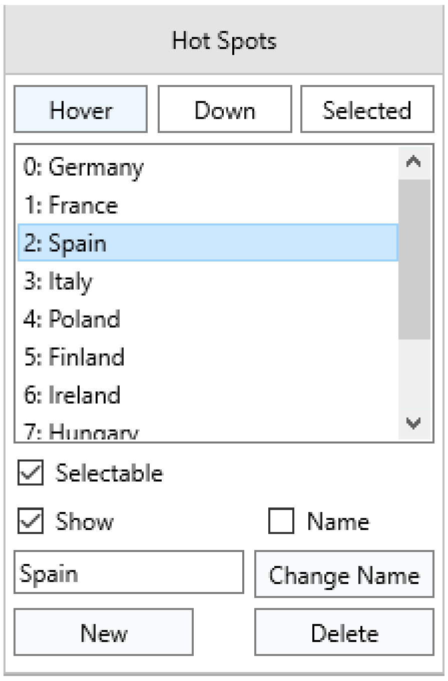
If one of the hotspots is selected in the listbox, these tools will change the previous hotspot shape.

To check and change the appearance on the different states you can switch between the **'Hover'**, **'Down'** and **'Selected'** buttons on the right side.

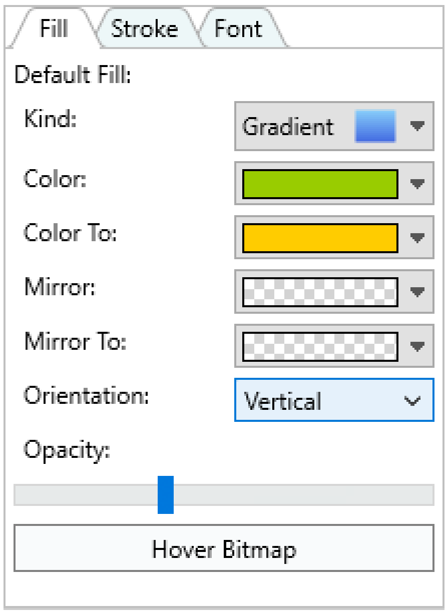


Below the listbox there is the ability to toggle if the hotspot is 'Selectable', if it should show the polygon and/or the name in the chosen state and you can change the name if any hotspot is selected.

At the bottom of that panel you can create a new hotspot as mentioned before or delete the selected. (These last two have the same behavior as the buttons on the toolbar.)



Then there is the pager that gives you the ability to set the appearance of the hotspots.
In the different pages you can see the different points of the polygon in the'Polygon' tab and change the fill, stroke and font. In case none of the hotspots are selected, you can change the default appearance otherwise you change the appearance of the specific hotspot.



Default Fill:

Kind: Gradient

Color: 🟩

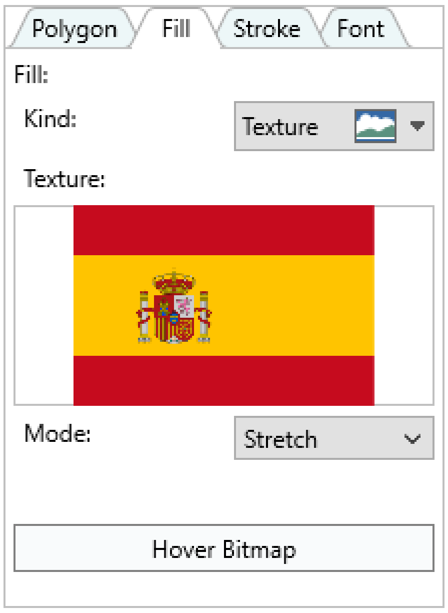
Color To: 🟨

Mirror:

Mirror To:

Orientation: Vertical

Opacity:



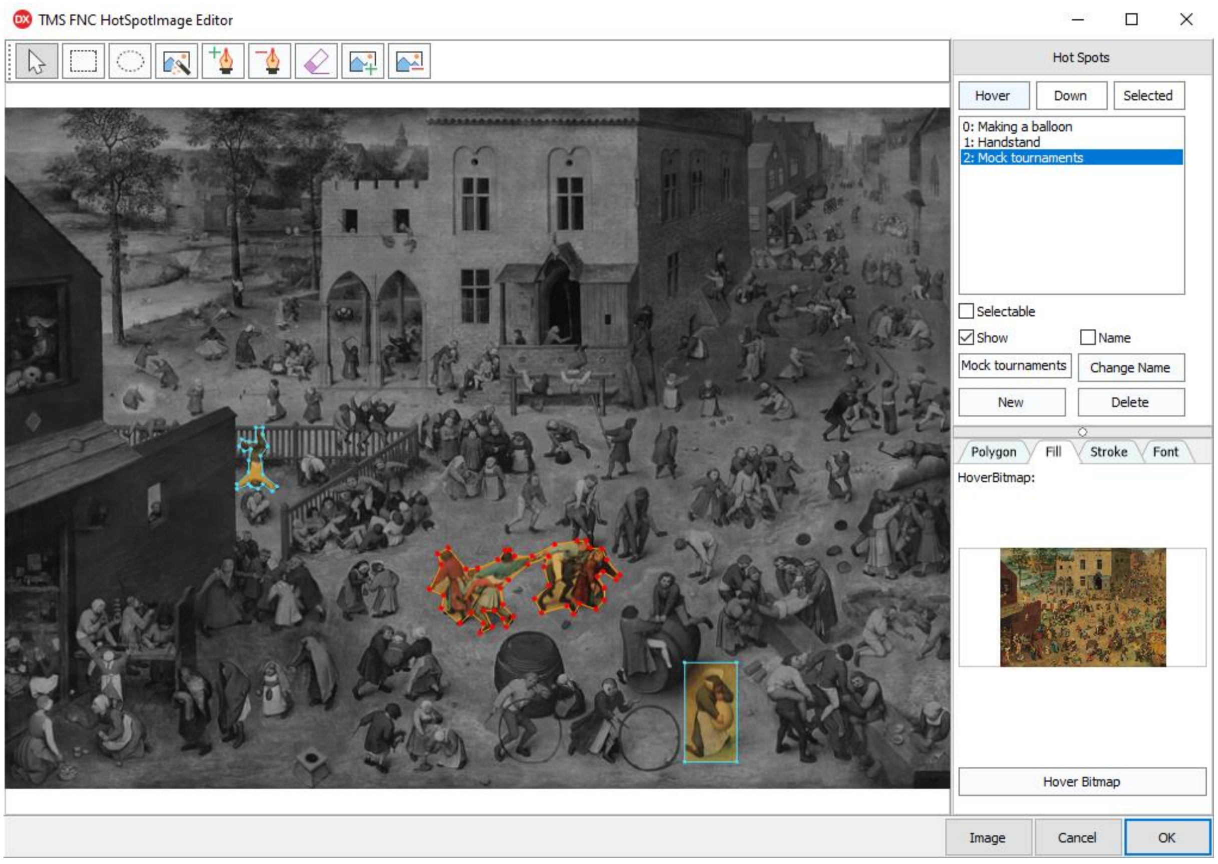
Fill:

Kind: Texture

Texture:

Mode: Stretch

Another way to fill the hotspots is via the hover or selected bitmap. Which can be set with the button on the bottom of the 'Fill' page. This will cut out the respective part of the hotspot from the image.



0: Making a balloon
1: Handstand
2: Mock tournaments

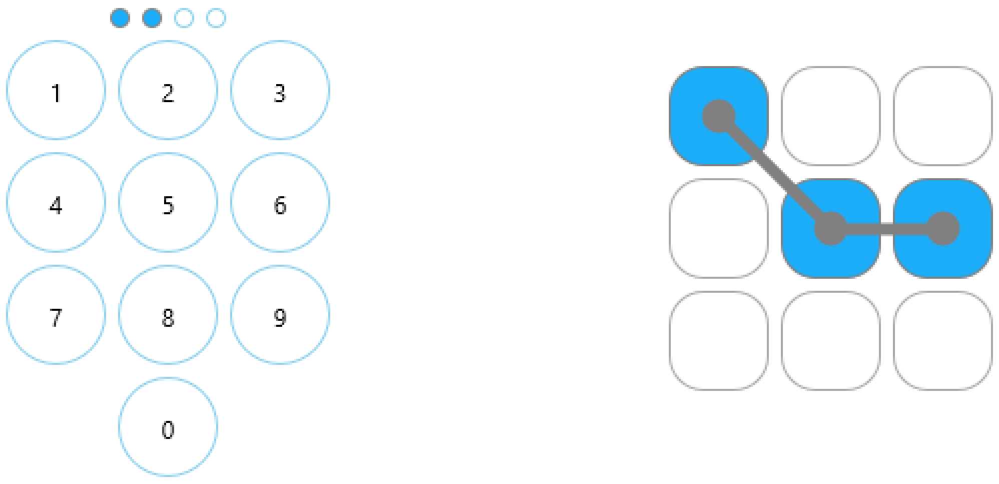
☐ Selectable

☑ Show ☐ Name

Mock tournaments

HoverBitmap:

TTMSFNCPassLock



The TTMSFNCPassLock gives you the ability to add password protection to your application. This can be done with a numpad or a pattern.

Properties

ButtonAppearance	Down, hover and normal fill, stroke and font of the buttons in the numpad or pattern. And the maximum size of the buttons.
EntryAppearance	Down and normal fill and stroke of the entry indicators in the numpad. And the maximum size of the entry indicators.
Options	Can set the type of passlock (numpad or pattern), to show the 'OK' (in case you want the ability to use a variable password length) and 'CE' (to clear the last value added to the entry) button in numpad and to enable the learn mode (to set a new password) and enable the keyboard input.
PasswordEntry	Is the current combination that is entered at the moment.
PasswordLength	The length of the password that is set *(Read-Only)*.
PasswordValue	The current password that is set, is a numerical value according to the index of the button. *(Eg. for the pattern it is '156' in the image above.)*

Events

OnBeforeDrawBackground	Event triggered before drawing the Fill and Stroke.
OnAfterDrawBackground	Event triggered after drawing the Fill and Stroke.
OnBeforeDrawButton	Event triggered before drawing the button.
OnAfterDrawButton	Event triggered after drawing the button.
OnBeforeDrawButtonValue	Event triggered before drawing the button value.
OnAfterDrawButtonValue	Event triggered after drawing the button value.
OnBeforeDrawEntry	Event triggered before drawing the password entry.
OnAfterDrawEntry	Event triggered after drawing the password entry.
OnBeforeDrawPattern	Event triggered before drawing the pattern line.

OnAfterDrawPattern	Event triggered after drawing the pattern line.
OnBeforeDrawPatternCircle	Event triggered before drawing the pattern circle.
OnAfterDrawPatternCircle	Event triggered after drawing the pattern circle.
OnButtonAppearanceChanged	Event triggered when the button appearance is changed.
OnButtonDownChanged	Event triggered when the button in down state is changed.
OnButtonHoverChanged	Event triggered when the hovered button is changed.
OnButtonUpChanged	Event triggered when the button in up state is changed.
OnConfirmPassword	Event triggered when password is set for the second time in learn mode.
OnEntryAppearanceChanged	Event triggered when the entry appearance is changed.
OnLearnPassword	Event triggered when password is set for the first time in learn mode.
OnNewPassword	Event triggered when new password is set.
OnOptionsChanged	Event triggered when the options settings are changed.
OnPasswordCheck	Event triggered when the entry and password are compared.
OnPasswordEntryChanged	Event triggered when the entry is changed.
OnPatternEntryChanged	Event triggered when the entry of the pattern is changed.
OnPatternEntryEnd	Event triggered when the entry of the pattern is ended.

If you want the user to set a new password you can do this with the **LearnMode** property in **Options**. This enables the user to enter the password that they want (**OnLearnPassword** event). To set the new password, the user needs to enter the same one for a second time (**OnConfirmPassword** event). In case these are both similar, then you will have set a new password (**OnNewPassword** event), otherwise the password will need to be set for the first time again.

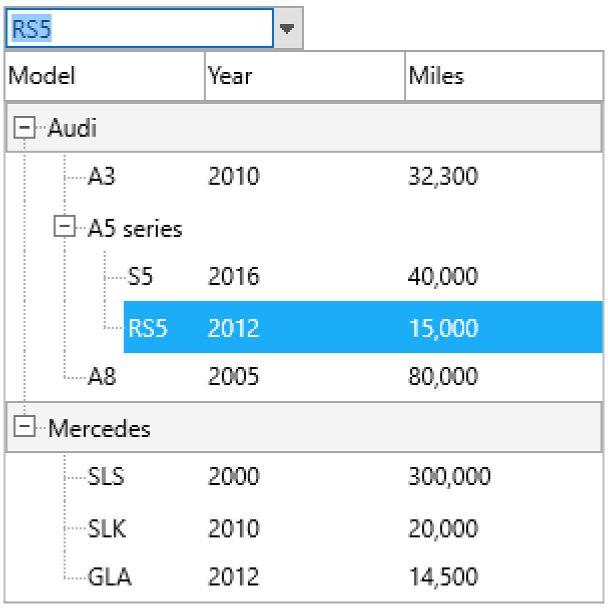
The TMSFNCPassLock will center the buttons and the entry indicators automatically based on the size of the component. To block the underlying components it is possible to set the control client alligned and set the size of the buttons and the indicators with the **MaxSize** property in the appearances. In case you want them to take the full space, you can set the value to **-1**.

When you don’t want to show the password length you can set the **ShowPasswordLength** property to false. This will check the password only after the ‘OK’ button was clicked. Which will initially be shown when you set the **ShowPasswordLength** property to false.

TTMSFNCControlPicker

The TTMSFNCControlPicker helps you to create a dropdown variant of your control.

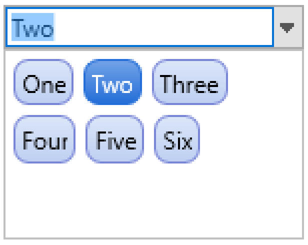
TTMSFNCTreeView:



RS5

Model	Year	Miles
Audi		
A3	2010	32,300
A5 series		
S5	2016	40,000
RS5	2012	15,000
A8	2005	80,000
Mercedes		
SLS	2000	300,000
SLK	2010	20,000
GLA	2012	14,500

TTMSFNCListEditor:



Interface

Base Interface: ITMSFNCControlPickerBase

PickerGetContent	Function that returns the content for the picker edit

Items Interface: ITMSFNCControlPickerItems (ITMSFNCControlPickerBase as base class)

PickerSelectItem	Implementation to set the item index of the component.
PickerGetSelectedItem	Function that returns the selected item index.
PickerGetVisibleItemCount	Function that returns the number of visible items. Used when the width or height are set by the number of items.
PickerGetItemCount	Function that returns the number of items. Used for checks if the itemindex is within the range.
PickerGetItemHeight	Function that returns the item height. Used when the height is set by the number of items.
PickerSetItemHeight	Procedure that sets the item height. Used when the height must be changed in the component.
PickerGetItemWidth	Function that returns the item width. Used when the width is set by the number of items.
PickerSetItemWidth	Procedure that sets the item width. Used when the width must be changed in the component.
PickerGetNextSelectableItem	Function that returns the next item index, based on the current. Used when the keyboard bindings are used.

PickerGetPreviousSelectableItem	Function that returns the previous item index, based on the current. Used when the keyboard bindings are used.
PickerGetFirstSelectableItem	Function that returns the first item index. Used when the keyboard bindings are used.
PickerGetLastSelectableItem	Function that returns the last item index. Used when the keyboard bindings are used.

Full Interface: ITMSFNCControlPickerFull (ITMSFNCControlPickerItems as base class)
This interface can be used when you want to use filtering and autocompletion.

PickerApplyFilter	Implementation for the interface to apply the filter that has a condition string as a parameter.
PickerLookupItem	Function that returns a TTMSFNCControlPickerFilterItem record that has an item index and text of the lookup string you are checking.
PickerResetFilter	Implementation to clear the filters of your component.

Properties

AutoCloseUp	Property to automatically close the dropdown if the written text matches an item from the list.
AutoComplete	Property to enable autocompletion.
AutoCompleteDelay	Defines the delay between 2 keystrokes during autocompletion. Only applies if the Style is set to csDropDownList.
AutoCompleteNumChar	Defines the numer of characters that are necessary for autocompletion to trigger. Only applies if the Style is set to csDropDown.
AutoDropDown	Property to automatically open the dropdown when typing. Relies on the AutoCompleteNumChar if the Style is set to csDropDown.
CaseSensitive	Enable or disable case sensitivity.
Control	The control that will be used in the picker for the dropdown.
DropDownControlHeight	The height of the dropdown window, when the mode is set to chmDropDownHeight.
DropDownControlWidth	The width of the dropdown window, when the mode is set to chmDropDownWidth.
DropDownHeightMode	Different ways to set the height of the dropdown window. Can be set to the DropDownControlHeight, the height of the control or based on the visible item count and the item height.
DropDownWidthMode	Different ways to set the width of the dropdown window. Can be set to the DropDownControlWidth, the width of the control or based on the visible item count and the item width.
ItemIndex	Selected item index.
Style	The 2 possible values are csDropDown and csDropDownList. It’s affecting the editability of the combobox.
Text	Returns the text that is displayed in the combobox.

Events

OnAdjustDropDownHeight	Event triggered before changing the dropdown height of the window.
OnAdjustDropDownWidth	Event triggered before changing the dropdown width of the window.
OnAfterDrawPickerContent	Event triggered after drawing the text of the picker.
OnBeforeDrawPickerContent	Event triggered before drawing the text of the picker.
OnItemSelected	Event triggered when the item index is set.
OnSetContent	Event triggered before you set the content of the picker.

It is possible to achieve some of the functionality of the control picker with the use of the events without implementing the interface.

To help you with keeping the control in the picker up-to-date to user interaction, you can use the following procedures:

- **CallItemClicked(AItemIndex: Integer);** This will update the picker text, clear the filter and set the selected item to the AItemIndex value and will close or open the dropdown window. *(This procedure should be called after you selected another item with user interaction.)*

- **UpdateDropDown;** This will update the picker text and will close or open the dropdown window.

- **UpdatePickerContent;** This procedure will set the text of the picker based on the retrieved value of the interface or with the DoSetContent event.

- **UpdatePickerDropDownSize;** Will set the dropdown height and width. This is based on de the dropdown mode and can be altered in the OnAdjustDropDownHeight or width event.

Persistence

Each component in the TMS FNC UI Pack is capable of saving its published properties (settings), to a file or stream. The format that is being used is JSON. To save a specific component, use the code below.

```
MyFNCComponent.SaveSettingsToFile();
MyFNCComponent.SaveSettingsToStream();
```

To load an existing settings stream/file use the following code.

```
MyFNCComponent.LoadSettingsFromFile();
MyFNCComponent.LoadSettingsFromStream();
```

Each component additionally exposes events to control which properties need to be saved to the settings file. In some circumstances, it might be required to only save a specific set of properties. The OnCanLoadProperty and OnCanSaveProperty events are responsible for this. Below is a sample that excludes a property ‘Extra’ from the persistence list.

```
procedure TForm1.MyFNCComponentCanLoadProperty(Sender, AObject: TObject;
  APropertyName: string; APropertyType: TTypeKind; var ACanLoad: Boolean);
begin
  ACanLoad := ACanLoad and not (APropertyName = ‘Extra’);
end;

procedure TForm1.MyFNCComponentCanSaveProperty(Sender, AObject: TObject;
  APropertyName: string; APropertyType: TTypeKind; var ACanSave: Boolean);
begin
  ACanSave := ACanSave and not (APropertyName = ‘Extra’);
end;
```

Please note that the above AND operation is crucial to maintain the existing exclusion list. Returning a true for each property will additionally save its default published properties such as Align, Position and many more.

Undo / Redo

Each component exposes a public UndoManager property that is capable of loading a previous state of the component. To push a state, use the following code:

```
MyFNCComponent.UndoManager.PushState('default state');
MyFNCComponent.ChangeText;
MyFNCComponent.UndoManager.PushState('text changed');
MyFNCComponent.UndoManager.Undo;
```

This code will set a default state with the original text, and restore the text changed with the ChangeText method via the MyFNCComponent.UndoManager.Undo; to go forward in the stack list use MyFNCComponent.UndoManager.Redo; The default maximum amount of undo/redo operations is 20 ,which can be increased per component with the MaxStackCount property.

TMS Mini HTML rendering engine

Another core technology used among many components is a small fast & lightweight HTML rendering engine. This engine implements a subset of the HTML standard to display formatted text. It supports following tags :

B : Bold tag
<B> : start bold text
</B> : end bold text

Example : This is a <B>test</B>

U : Underline tag
<U> : start underlined text
</U> : end underlined text

Example : This is a <U>test</U>

I : Italic tag
<I> : start italic text
</I> : end italic text

Example : This is a <I>test</I>

S : Strikeout tag
<S> : start strike-through text
</S> : end strike-through text

Example : This is a <S>test</S>

A : anchor tag
<A href="value"> : text after tag is an anchor. The 'value' after the href identifier is the anchor. This can be an URL (with ftp,http,mailto,file identifier) or any text.
If the value is an URL, the shellexecute function is called, otherwise, the anchor value can be found in the OnAnchorClick event </A> : end of anchor

Examples : This is a <A href= "mailto:myemail@mail.com ">test</A>
This is a <A href="http://www.tmssoftware.com">test</A>
This is a <A href="somevalue">test</A>

FONT : font specifier tag
<FONT face='facevalue' size='sizevalue' color='colorvalue' bgcolor='colorvalue'> : specifies font of text after tag.
with

- face : name of the font
- size : HTML style size if smaller than 5, otherwise pointsize of the font
- color : font color with either hexidecimal color specification or color constant name, ie gcRed,gcYellow,gcWhite ... etc
- bgcolor : background color with either hexidecimal color specification or color constant name </FONT> : ends font setting

Examples: This is a <FONT face="Arial" size="12" color="gcRed">test</FONT>
This is a <FONT face="Arial" size="12" color="#FF0000">test</FONT>

P : paragraph
<P align="alignvalue" [bgcolor="colorvalue"] [bgcolorto="colorvalue"]> : starts a new paragraph, with left, right or center alignment. The paragraph background color is set by the optional bgcolor parameter. If bgcolor and bgcolorto are specified,
a gradient is displayed ranging from begin to end color.
</P> : end of paragraph

Example : <P align="right">This is a test</P>
Example : <P align="center">This is a test</P>
Example : <P align="left" bgcolor="#ff0000">This has a red background</P>
Example : <P align="right" bgcolor="gcYellow">This has a yellow background</P>
Example : <P align="right" bgcolor="gcYellow" bgcolorto="gcRed">This has a gradient background</P>*

HR : horizontal line
<HR> : inserts linebreak with horizontal line

BR : linebreak
<BR> : inserts a linebreak

BODY : body color / background specifier
<BODY bgcolor="colorvalue" [bgcolorto="colorvalue"] [dir="v|h"] background="imagefile specifier"> : sets the background color of the HTML text or the background bitmap file

Example : <BODY bgcolor="gcYellow"> : sets background color to yellow
<BODY background="file://c:\test.bmp"> : sets tiled background to file test.bmp
<BODY bgcolor="gcYellow" bgcolorto="gcWhite" dir="v"> : sets a vertical gradient from yellow to white

IND : indent tag
This is not part of the standard HTML tags but can be used to easily create multicolumn text
<IND x="indent"> : indents with "indent" pixels

Example :
This will be <IND x="75">indented 75 pixels.

IMG : image tag
<IMG src="specifier:name" [align="specifier"] [width="width"] [height="height"] [alt="specifier:name"] > : inserts an image at the location

specifier can be: name of image in a BitmapContainer

Optionally, an alignment tag can be included. If no alignment is included, the text alignment with respect to the image is bottom. Other possibilities are: align="top" and align="middle"

The width & height to render the image can be specified as well. If the image is embedded in anchor tags, a different image can be displayed when the mouse is in the image area through the Alt attribute.

Examples :
This is an image <IMG src="name">

SUB : subscript tag
<SUB> : start subscript text
</SUB> : end subscript text

Example : This is <SUP>9</SUP>/<SUB>16</SUB> looks like 9/16

SUP : superscript tag
<SUP> : start superscript text
</SUP> : end superscript text

UL : list tag
<UL> : start unordered list tag
</UL> : end unordered list

Example : <UL>
<LI>List item 1
<LI>List item 2
<UL>
<LI> Sub list item A
<LI> Sub list item B
</UL>
<LI>List item 3
</UL>

LI : list item
<LI [type="specifier"] [color="color"] [name="imagename"]>: new list item specifier can be "square", "circle" or "image" bullet. Color sets the color of the square or circle bullet. Imagename sets the PictureContainer image name for image to use as bullet

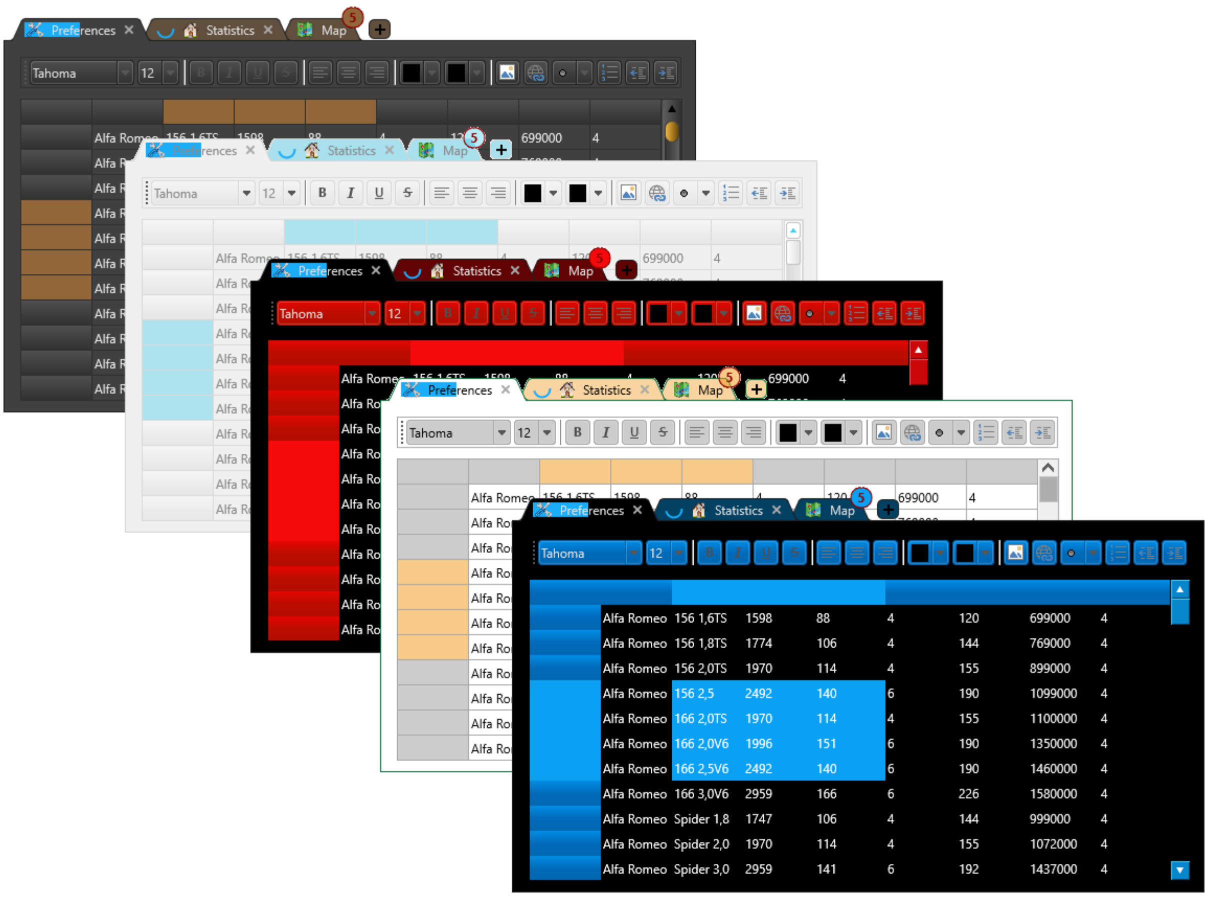
SHAD : text with shadow
<SHAD> : start text with shadow
</SHAD> : end text with shadow

Z : hidden text
<Z> : start hidden text
</Z> : end hidden text

Special characters
Following standard HTML special characters are supported :
&lt; : less than : <
&gt; : greater than : >
&amp; : &
&quot; : "
&nbsp; : non breaking space
&trade; : trademark symbol
&euro; : euro symbol
&sect; : section symbol
&copy; : copyright symbol
&para; : paragraph symbol

Styling

Each control in the TMS FNC UI Pack supports styling on FMX and VCL. When setting the AdaptToStyle property to true, the style loaded in the application will be applied to the control. Below is a sample after applying styles to the TTMSFNCTabSet/TTMSFNCPageControl.



Alfa Romeo	156 1,6TS	1598	88	4	120	699000	4
Alfa Romeo	156 1,8TS	1774	106	4	144	769000	4
Alfa Romeo	156 2,0TS	1970	114	4	155	899000	4
Alfa Romeo	156 2,5	2492	140	6	190	1099000	4
Alfa Romeo	166 2,0TS	1970	114	4	155	1100000	4
Alfa Romeo	166 2,0V6	1996	151	6	190	1350000	4
Alfa Romeo	166 2,5V6	2492	140	6	190	1460000	4
Alfa Romeo	166 3,0V6	2959	166	6	226	1580000	4
Alfa Romeo	Spider 1,8	1747	106	4	144	999000	4
Alfa Romeo	Spider 2,0	1970	114	4	155	1072000	4
Alfa Romeo	Spider 3,0	2959	141	6	192	1437000	4