



Elektrobit

EB GUIDE product line

Release notes

Version 6.10.0.200602120856



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1. Migrating from 6.9 to 6.10

NOTE



Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

Migration is performed automatically, when opening a project that was saved with a previous version.

EB GUIDE Studio

Renamed properties and widget features for PBR GGX material

Properties and widget features for PBR GGX material were renamed and are migrated automatically.

Changed properties of Screen space ambient occlusion

Properties of **Screen space ambient occlusion** have been changed and are migrated automatically.

Linking to conditional scripts

In EB GUIDE Studio version 6.8 it was possible to link user-defined properties or datapool items of type conditional script. This is not possible any more. When EB GUIDE models are migrated to version 6.-10, links to conditional scripts are removed and a new comment in the new scripted value is added: `// migrated from conditional script id`

EB GUIDE GTF

Renamed function `parse` in `ConfigurationImporter`

In interface `ConfigurationImporter` function `parse` was renamed to `parseFile`. New function `parseText` was added. Adapt your EB GUIDE project manually for this change.

Extensions using the renderer API

For extensions that use the renderer API link to both `GtfGui.lib` and `GtfCore.lib`.

2. New or changed in 6.10

This chapter lists new or changed features of EB GUIDE.

EB GUIDE Studio

Templates from existing widgets

It is now possible to create widget templates from existing widgets. In the **Navigation** component, right-click a widget and select **Create template**.

Export of skins and languages

It is now possible to select specific languages and skins to be exported with an EB GUIDE model. For instructions, see the EB GUIDE Studio user guide sections "Creating an export set for languages" and "Creating an export set for skins".

New parameters for the console were also added. For instructions, see the EB GUIDE Studio user guide section "Command line options".

New widget feature Anisotropy for PBR GGX material

Widget feature **Anisotropy** is available for PBR GGX material.

New widget feature Circular text

Widget feature **Circular text** is available. It can be used to create curved text along a circular path. Consider that there are some limitations for the usage of this feature. For more information, see the EB GUIDE Studio user guide section "Placing text along a circular path".

Custom label shape

New extension example `LabelShapePlugin` is provided. It demonstrates how custom label shapes can be created. Download the EB GUIDE extension examples from <https://github.com/Elektrobit/eb-guide-examples>. For instructions, see the `readme.md` files enclosed.

Bezier curve for animations

Extension example `BezierCurveExample` is available. It provides the animation curve **Bezier curve** and shows how to implement this feature in EB GUIDE Studio. You can use **Bezier curve** the same way you use the default animation curves. Download the EB GUIDE extension examples from <https://github.com/Elektrobit/eb-guide-examples>. For instructions, see the `readme.md` files enclosed.

Transition starting at any point of the state border

Transitions can now be created at any point of state borders without pre-defined drag points. For instructions, see the EB GUIDE Studio user guide section "Adding a transition between two states".

Transition labels can be moved

Transition labels can now be moved and rotated. For instructions, see EB GUIDE Studio user guide section "Moving transition labels".



Choice transition priority change

The priority of choice transitions can now be changed by changing the order in the widget tree. For instructions, see EB GUIDE Studio user guide section "Changing the priority of choice transitions".

New tag filters in Events and Datapool components

In the **Events** and **Datapool** components, it is now possible to use tags to filter the list of elements. The tag filters also support tags for model interfaces

Text filters support ! operator

Text filters in components and overlays now support the ! operator to exclude strings, for example `Blue red !rectangle`.

Adding multiple elements to model interface

It is now possible to add multiple elements at once to a model interface. If an element cannot be added to the model interface a notification is prompted.

End of support for Windows 7 and Windows 8

EB GUIDE does not support Windows 7 and Windows 8 anymore. It is recommended to use Windows 10 instead.

New message during reference search

While a reference search is ongoing the search field displays the message **Searching...** instead of **No search results**.

New help page

The help page was redesigned and now provides more links to helpful information. To see the help page, open EB GUIDE Studio, go to the project center, and click **Help**.

Changed properties of Screen space ambient occlusion

The following properties of **Screen space ambient occlusion** have been changed. Migration for EB GUIDE models is done automatically.

Table 2.1. Renamed properties for **Screen space ambient occlusion**

Old	New
Not implemented in earlier releases	enabled
Radius	radius
Fall Off	fallOff
Samples	samples

Renamed properties and widget features for PBR GGX material

The following properties and widget features for PBR GGX material were renamed:

Table 2.2. Renamed properties for PBR GGX material

Old name	New name
diffuse	base color

Old name	New name
specular	reflectance

Table 2.3. Renamed widget features for PBR GGX material

Old name	New name
Diffuse texture	Base color texture
Specular texture	Reflectance texture

Improved GUI performance

The performance of the EB GUIDE Studio GUI was improved due to a refactoring.

Improved move to namespace performance

Moving of large numbers of elements to a namespace is faster.

Improved EB GUIDE Script parsing performance

The EB GUIDE Script parsing performance was improved.

Improved Events component performance

Loading time is shorter. Performance of adding events and scrolling through the list was improved.

EB GUIDE version in `model.json`

When an EB GUIDE model is exported, the `model.json` contains an entry that specifies the EB GUIDE version for which the model is exported. For example `gtf.model.export_format_version = "6.-10.0.0"`.

User-defined properties column width

The column width of the **User-defined properties** table can be resized to display long property names.

Changed entry for Windows 10 Start menu

In the Windows 10 Start menu the entry for EB GUIDE Studio was moved and can now be found under **EB GUIDE Studio 6.10**.

Improved user guide for animations

Instructions and background information for animations has been improved. See EB GUIDE Studio user guide section "Animations".

EB GUIDE Monitor

Layout changes are persistent

Changes to the layout like changes to the width of components or menus in EB GUIDE Studio or EB GUIDE Monitor are saved persistently. They are reproduced when EB GUIDE Studio or EB GUIDE Monitor is restarted. To reset the layout of EB GUIDE Studio and EB GUIDE Monitor go to the project editor and select **Layout > Reset to default layout**.

EB GUIDE GTF

Hooks for framebuffer swap

EB GUIDE GTF provides two callback hooks that notify about the framebuffer swap: `preSwap` and `postSwap`. They can be used, for example, to determine the duration of the framebuffer swap. The callbacks are available through the EB GUIDE GTF API class `gtf::displayfactory::DisplayHooks`. The extension example `BufferSwapHooksExample` demonstrates the usage. Download the EB GUIDE extension examples from <https://github.com/Elektrobit/eb-guide-examples>. For instructions, see the `readme.md` files enclosed.

Refactored `gtf::osal::Time`

`gtf::osal::Time` was refactored.

Upgrade to Android NDK r21 and API level 28

EB GUIDE GTF now supports Android NDK r21 with API level 28.

EB GUIDE GTF can run on Raspberry Pi 4

EB GUIDE GTF can now run on a Raspberry Pi 4 using Raspbian OS.

Additional traces for `ActionInterpreter`

Additional traces were added to `ActionInterpreter`. See the EB GUIDE GTF API `gtf::script::ActionInterpreterInterface`.

EB GUIDE GTF configuration from string

It is now possible to provide the configuration for EB GUIDE GTF through a string in JSON format. New function `parseText` is available in interface `ConfigurationImporter`. It is still possible to provide a `.json` configuration file but the functions name in the `ConfigurationImporter` interface was changed from `parse` to `parseFile`. For instructions, see the EB GUIDE TF user guide section "Using a custom `.json` file to define configuration items".

EB GUIDE model storage on Android devices

EB GUIDE Model Chooser does not automatically create a storage directory for EB GUIDE models on Android devices. The directory must be created manually in the primary external storage directory of the device and it must be called `Android/data/com.elektrobit.guide_models/files`.

Downscaling images

EB GUIDE GTF provides an interface to downscale images to a preferred size. For this purpose class `EncodedMemImage` has been expanded with class `ScaleInfo`, function `getScaleInfo`, and function `setScaleInfo`. For more information, see the EB GUIDE GTF API.

Extension example `DownscalingWidgetFeature` shows how to implement a widget feature to use this interface in EB GUIDE Studio. Download the EB GUIDE extension examples from <https://github.com/Elektrobit/eb-guide-examples>. For instructions, see the `readme.md` files enclosed.

Removed Vivante SDK

The Vivante SDK has been removed from the installer. If you require the Vivante SDK, please contact us at: <https://www.elektrobit.com/ebguide/contact-us/>.

Changed renderer API

Renderer-specific export symbols have been moved from `GtfCore.lib` to `GtfGui.lib`.

New interface for label shape

A new interface is provided that allows to create custom shapes for labels.

- ▶ `gtf::scdr::LabelShape`
- ▶ `gtf::scdr::DynamicPropertyAdder`
- ▶ `gtf::scdr::DynamicFeatureCollection`

For an extension example, see `LabelShapePlugin`. Download the EB GUIDE extension examples from <https://github.com/Elektrobit/eb-guide-examples>. For instructions, see the `readme.md` files enclosed.

3. Known issues and limitations in 6.10

The following list contains issues and limitations known at the time of release.

Summary	getTextHeight provides wrong results when multifont is enabled
Description	getTextHeight provides the height of the default font although multifont support is enabled and some fonts may have a larger height.
Workaround	A workaround for this issue is not available.
Summary	Simulation and export not possible due to properties with multifont support
Description	If a model has properties with multifont support and there are too many character ranges defined, the font is considered invalid. In edit mode, the default font is used instead. During the simulation and export of such model an exception is thrown.
Workaround	To be able to locate the source of the range problem, export the model and check the error log at C:\Users\ <name>\AppData\Roaming\Elektrobit\EB GUIDE Studio\6.-10.0.</name>
Summary	Wrong animation target links after migration from version 6.6
Description	When migrating a scene graph with different Transformation widget properties, a separate scene graph node is created for every property. After migration, animations may be linked to a target property that is in a wrong scene graph node.
Workaround	Manually change the target property so that it links to the correct scene graph node.
Summary	Unexpected behavior of EB GUIDE GTF runtime in a multi-core environment
Description	The EB GUIDE GTF runtime behaves as follows in a multi-core environment: <ul style="list-style-type: none">▶ In the Datapool component, datapool items can have different values in different cores. Scalar datapool values are synchronized between the different cores.▶ In the Events component, events from user-defined contexts are routed to all cores, for example from EB GUIDE Monitor. System events such as a default event group are sent to the connected core, for example from EB GUIDE Monitor.
Workaround	A workaround for this issue is not available.
Summary	Unexpected behavior when assigning the same ID to multiple displays in sceneID for screenshots
Description	If the same ID is assigned to multiple displays in EB GUIDE Script and screenshots are captured in EB GUIDE Monitor with sceneID, EB GUIDE Studio behaves unexpectedly.
Workaround	If using multiple displays in EB GUIDE GTF, assign a different ID to each display in EB GUIDE Script.

Summary	9-patch images are not scaled correctly
Description	If 9-patch images are used with alpha mask, the 9-patch image is not scaled correctly.
Workaround	Do not use alpha mask with 9-patch images.

Summary	Views in focusable dynamic state machines must have the Focused widget feature
Description	If a view in a dynamic state machine must be focused when it is visible, or if a view contains focusable widgets, the view must have the Focused widget feature.
Workaround	Add the Focused widget feature to the view.

Summary	Division of integer value by zero
Description	When an integer value is divided by zero, as result the maximum integer value of 2 147 483 647 is shown. When simulating the model EB GUIDE Monitor provides a log that informs about the division by zero.
Workaround	A workaround for this issue is not available.

Summary	Image file is not displayed
Description	An image file with a size bigger than 16 MB is not displayed.
Workaround	Reduce the size of the image file to less than 16 MB.

Summary	Output to <code>stdout</code> on Windows 10
Description	Windows 10 does not show standard output (<code>stdout</code>). For example the command line parameter <code>GtfStartup.exe --version</code> does not show the version number.
Workaround	To see the output of EB GUIDE GTF and EB GUIDE GTF plugins on Windows 10, redirect <code>stdout</code> and use additional tools to show the output. For example the following command line shows the version number of EB GUIDE GTF: <code>GtfStartup.exe --version more.</code>

Summary	EB GUIDE Monitor: <code>.dll</code> file locked by the Scripting component
Description	<code>.dll</code> files that are used in the EB GUIDE Monitor Scripting component are locked by EB GUIDE Monitor.
Workaround	To unlock, close EB GUIDE Monitor.

Summary	EB GUIDE Monitor shows only one instance of a dynamic state machine
Description	EB GUIDE Monitor only shows one dynamic state machine in the state machine component and it shows only the last state whenever one of the dynamic state machine instance's states was changed.
Workaround	A workaround for this issue is not available.



Summary	State machine changes in GTF are not updated
Description	EB GUIDE Monitor registers for state machine changes in EB GUIDE GTF only for the first communication context (core-runtime), so state machine changes in other contexts are not updated to EB GUIDE Monitor.
Workaround	A workaround for this issue is not available.

Summary	No rendering in edit mode
Description	No rendering in edit mode, when GPU memory is smaller than the size of used IBL file.
Workaround	Make sure your GPU memory is big enough

Summary	Error messages are not showing in Logger component
Description	If a project is simulated with a newer version for the first time, error messages are not shown in Logger component of EB GUIDE Monitor.
Workaround	Normal function when the simulation is started a second time.

4. Fixed issues in 6.10

The following list contains fixed issues known at the time of release:

EB GUIDE Studio

Error after removing language or skin support

Fixed an issue where an object reference error occurred when skin or language support was removed from a datapool item.

Slow export with multifont support

Fixed an issue where export would take up to several seconds when an EB GUIDE model contains large number of multifont definitions.

Datapool items with the same name

Fixed an issue where it was possible to move datapool items with identical names to the same namespace. Datapool item names must be unique per namespace.

Improved performance for renaming of template interfaces

The performance for the renaming of properties in a template interface has been improved.

No model interface export of events in internal event groups

Internal even groups cannot be used with model interfaces. Otherwise there will be validation errors when model interfaces are exported. For more information about internal event groups, see the EB GUIDE Studio user guide section "Events".

EB GUIDE GTF

Removing state machine causes access violation

Fixed an issue where removing the main state machine from the simulation profile caused an access violation error when the simulation was started.

Trigger script does not react

Fixed an issue where a trigger script would not react on a datapool item change.

Unexpected result from `widgetGetChildCount`

Fixed an issue where EB GUIDE Script function `widgetGetChildCount` did not provide the expected result.

Race condition at start-up causes reset of datapool items to initial values

Fixed an issue where datapool items have been unexpectedly reset to the initial values during the EB GUIDE GTF start-up.

5. API changes in 6.10

The following list contains API changes known at the time of release.

5.1. EB GUIDE GTF API changes

File	gtf\version\config.h
Interface	config.h
Change	Changed
Description	Updated constants for version and build to release 6.10.

File	gtf\utils\smartptr\RefCountedPtr.h
Interface	gtf::utils::smartptr::RefCountedPtr
Change	Optimization
Description	Improved performance.

File	gtf\utils\math\vector4.inl
Interface	gtf::utils::math::vector4
Change	Bugfix
Description	Fixed operators *= and +=.

File	gtf\utils\math\vector2.inl gtf\utils\math\vector2.h
Interface	gtf::utils::math::vector2
Change	Added
Description	Added operator < and removed <code>cross()</code> .

File	gtf\scdr\gpu\GPUExecutionContext.h
Interface	gtf::scdr::gpu::GPUExecutionContext
Change	Optimization
Description	Changed parameter to <code>const</code> .

File	gtf\scdr\RenderObjectUtils.h
Interface	gtf::scdr::RenderObjectUtils

Change	Added
Description	Changed parameter lists of <code>CalculateWidgetTransformationMatrices</code> functions.

File	<code>gtf\scdr\LabelShape.h</code>
Interface	<code>gtf::scdr::LabelShape</code>
Change	Added
Description	Can be used for custom glyph placement. Is used for widget feature Circular text .

File	<code>gtf\scdr\DynamicPropertyAdder.h</code>
Interface	<code>gtf::scdr::DynamicPropertyAdder</code>
Change	Added
Description	Can be used to add label shapes to widgets. See extension example <code>LabelShape-Plugin</code> .

File	<code>gtf\scdr\DynamicFeatureCollection.h</code>
Interface	<code>gtf::scdr::DynamicFeatureCollection</code>
Change	Added
Description	Can be used to add label shapes to widgets. See extension example <code>LabelShape-Plugin</code> .

File	<code>gtf\properties\Property.h</code>
Interface	<code>gtf::properties::Property</code>
Change	Optimization
Description	Improved performance.

File	<code>gtf\properties\Properties.h</code>
Interface	<code>gtf::properties::Properties</code>
Change	Optimization
Description	Improved performance.

File	<code>gtf\properties\Link.h</code>
Interface	<code>gtf::properties::Link</code>
Change	Optimization
Description	Improved performance.

File	<code>gtf\pluginloader\PluginLoader.h</code>
------	--

Interface	<code>gtf::pluginloader::PluginLoader</code>
Change	Added
Description	Added <code>gtf_get_plugin_version_string()</code> .

File	<code>gtf\model\PrepareStage.h</code>
Interface	<code>gtf::model::PrepareStage</code>
Change	Bugfix
Description	Changed name of <code>PrepareStageStageHandle</code> to <code>PrepareStageHandle</code> .

File	<code>gtf\metainformation\ResourceDescriptor.h</code>
Interface	<code>gtf::metainformation::ResourceDescriptor</code>
Change	Added
Description	Removed member for <code>type</code> .

File	<code>gtf\metainformation\PropertyDescriptor.h</code>
Interface	<code>gtf::metainformation::PropertyDescriptor</code>
Change	Added
Description	Removed member for <code>type</code> .

File	<code>gtf\metainformation\DescriptorProvider.h</code>
Interface	<code>gtf::metainformation::DescriptorProvider</code>
Change	Added
Description	Macro <code>RESOLVE_PROPERTIES</code> changed. <code>type</code> is not needed anymore. Removed <code>getProviderName()</code> and <code>getProviderVersion()</code> .

File	<code>gtf\launcher\Launcher.h</code>
Interface	<code>gtf::launcher::Launcher</code>
Change	Added
Description	Added <code>stop()</code> .

File	<code>gtf\ipc\service\Service.h</code>
Interface	<code>gtf::ipc::service::Service</code>
Change	Optimization
Description	Improved performance.

File	<code>gtf\eventsystem\Event.h</code>
------	--------------------------------------

Interface	<code>gtf::eventsystem::Event</code>
Change	Optimization
Description	Improved performance.

File	<code>gtf\displayfactory\DisplayHooks.h</code>
Interface	<code>gtf::displayfactory::DisplayHooks</code>
Change	Added
Description	Added framebuffer preswap and postswap hooks.

File	<code>gtf\decoder\EncodedMemImage.h</code>
Interface	<code>gtf::decoder::EncodedMemImage</code>
Change	Added
Description	Added for the downscaling of images.

File	<code>gtf\datapool>ListLinkItemIndex.h</code>
Interface	<code>gtf::datapool::ListLinkItemIndex</code>
Change	Added
Description	Added <code>getFinal()</code> .

File	<code>gtf\datapool>ListLinkConstIndex.h</code>
Interface	<code>gtf::datapool::ListLinkConstIndex</code>
Change	Added
Description	Added <code>getFinal()</code> .

File	<code>gtf\datapool\Link.h</code>
Interface	<code>gtf::datapool::Link</code>
Change	Added
Description	Added <code>getFinal()</code>

File	<code>gtf\datapool\Item.h</code>
Interface	<code>gtf::datapool::Item</code>
Change	Optimization
Description	Improved performance.

File	<code>gtf\datapool\Datapool.h</code>
Interface	<code>gtf::datapool::Datapool</code>

Change	Added
Description	Improved performance and added <code>updateAndCommit()</code> .

File	<code>gtf\coreruntime\CoreRuntime.h</code>
Interface	<code>gtf::coreruntime::CoreRuntime</code>
Change	Added
Description	Added <code>getLastTimeStamp()</code> and <code>getLastMonotonicTime()</code> .

File	<code>gtf\container\Array.inl</code> <code>gtf\container\Array.h</code>
Interface	<code>gtf::container::Array</code>
Change	Optimization
Description	Improved performance.

File	<code>gtf\configurationimporter\ConfigurationImporter.h</code>
Interface	<code>gtf::configurationimporter::ConfigurationImporter</code>
Change	Added
Description	Replaced <code>parse()</code> with <code>parseFile()</code> . Added <code>parseText()</code> .

5.2. EB GUIDE Studio SDK API changes

File	<code>Guide.UI.Docking.dll</code>
Interface	<code>Elektrobit.Guide.Ui.Docking.ViewModels.WorkbenchPartId</code>
Change	Moved
Description	Moved from <code>Studio.UI.Workbench.Contract.dll</code> .

File	<code>Guide.UI.Shell.dll</code>
Interface	<code>Elektrobit.Guide.Ui.Controller.ToastNotifierExtensions</code>
Change	Added
Description	

File	<code>Guide.UI.Shell.dll</code>
Interface	<code>Elektrobit.Guide.Ui.Controls.TagFilter.Control.TagItemControl</code>
Change	Added

Description	
-------------	--

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Controls.TagFilter.ITagItem
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Controls.TagFilter.ITagItemSource
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Controls.TagFilter.ITagItemSourceProvider
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Tools.DesignTimeResourceDictionary
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Tools.ResourceLocation
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Tools.IResourceProvider
Change	Changed
Description	Renamed GetResourceUris to GetResourceLocations. Changed return type to IEnumerable<ResourceLocation>.

File	Studio.Core.dll
Interface	Elektrobit.Guide.Studio.OfficialVersion
Change	Changed

Description	Added <code>Version69</code> constant.
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File	<code>Studio.Export.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Exporter.ExportConfiguration</code>
Change	Changed
Description	Added property <code>Languages</code> . Added property <code>Skins</code> .

File	<code>Studio.Export.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Exporter.ExportConfiguration.ForFullModel</code>
Change	Changed
Description	Changed parameters to accept <code>ExporterConfiguration</code> instead of <code>IConfigurationProfile</code> and target directory.

File	<code>Studio.Export.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Exporter.ExporterConfiguration</code>
Change	Added
Description	

File	<code>Studio.Export.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Exporter.Model.DpItemExport</code>
Change	Changed
Description	Changed type of properties <code>ItemTargetTypeId</code> and <code>ValueTargetTypeId</code> from <code>int</code> to <code>TypeId</code> .

File	<code>Studio.Export.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Exporter.Model.EventParameterExport</code>
Change	Changed
Description	Changed type of property <code>TargetTypeId</code> from <code>int</code> to <code>TypeId</code> .

File	<code>Studio.Export.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Exporter.Model.ITypeMapper</code>
Change	Changed
Description	Changed return type of method <code>GetTargetTypeIdForStudioTypeName</code> from <code>int</code> to <code>TypeId</code> .

File	<code>Studio.Model.Actions.dll</code>
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Interface	Elektrobit.Guide.Studio.Model.Actions.Datapool.IDatapoolService
Change	Changed
Description	Added CanConvertToScript(), CanDeleteDatapoolItems(), and CanEdit-DatapoolLink().

File	Studio.Model.Actions.dll
Interface	Elektrobit.Guide.Studio.Model.Actions.Events.IEventService
Change	Changed
Description	Added CanDeleteEvents().

File	Studio.Model.Actions.dll
Interface	Elektrobit.Guide.Studio.Model.Actions.Project.IExportSetService
Change	Added
Description	

File	Studio.Model.Actions.dll
Interface	Elektrobit.Guide.Studio.Model.Actions.Project.IModelInterfaceService
Change	Changed
Description	Added CanAllBeRemovedFromModelInterface() and CanAllBeRemovedFromModelInterface(). Changed return type of method CreateDefaultModelInterface from void to IModelInterface.

File	Studio.Model.Actions.dll
Interface	Elektrobit.Guide.Studio.Model.Actions.Project.IProjectConfigurationService
Change	Changed
Description	Removed unused parameter isDefault from method CloneConfigurationProfile.

File	Studio.Model.Actions.dll
Interface	Elektrobit.Guide.Studio.Model.Actions.Project.IProjectService
Change	Changed
Description	Changed parameter of method ExportProject to ExporterConfiguration.

File	Studio.Model.Actions.dll
Interface	Elektrobit.Guide.Studio.Model.Actions.State.IStateService

Change	Changed
Description	Added <code>CanMoveChoiceTransition()</code> , <code>MoveChoiceTransition()</code> , <code>SetTransitionLabelOffset()</code> , and <code>SetTransitionLabelRotationAngle()</code> .

File	<code>Studio.Model.Actions.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Actions.Widget.IWidgetService</code>
Change	Changed
Description	Added <code>CanExtractTemplateFrom()</code> , <code>ExtractTemplate()</code> , and <code>SetPosition()</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.ExportSet.IExportSet<T></code>
Change	Added
Description	

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.ExportSet.ILanguageExportSet</code>
Change	Added
Description	

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.ExportSet.ISkinExportSet</code>
Change	Added
Description	

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.IModelPartHierarchyVisitor</code>
Change	Changed
Description	Added <code>VisitEnter(UnresolvedReferencePart)</code> and <code>VisitExit(UnresolvedReferencePart)</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.IModelPartProperty</code>
Change	Changed

Description	Added <code>Accept()</code> .
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File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.IModelPartPropertyVisitor<TContext></code>
Change	Added
Description	

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.IModelPartVisitor</code>
Change	Changed
Description	Added methods <code>VisitEnter(UnresolvedReferencePart)</code> and <code>VisitExit(UnresolvedReferencePart)</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.INamedElement</code>
Change	Changed
Description	Interface now implements <code>IModelPart</code> and <code>IDisposable</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.IProject</code>
Change	Changed
Description	Added properties <code>LanguageExportSets</code> and <code>SkinExportSets</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.ModelInterfaceExtension</code>
Change	Added
Description	

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.NamespaceExtension</code>
Change	Changed
Description	Added <code>GetDirectDpItems()</code> , <code>GetDirectEvents()</code> , and <code>GetNamespaceName-OrProjectName()</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.ReferencePart</code>

Change	Changed
Description	<code>Equals</code> and <code>GetHashCode</code> are now overridden.

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.StateMachine.IChoiceTransition</code>
Change	Changed
Description	Interface now implements <code>IExternalTransition</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.StateMachine.IDefaultTransition</code>
Change	Changed
Description	Interface now implements <code>IExternalTransition</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.StateMachine.ITransition</code>
Change	Changed
Description	Interface now implements <code>IExternalTransition</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.StateMachine.IExternalTransition</code>
Change	Added
Description	Introduced common base interface for <code>IChoiceTransition</code> , <code>IDefaultTransition</code> and <code>ITransition</code> .

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.UnresolvedReferencePart</code>
Change	Added
Description	

File	<code>Studio.Model.Elements.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Model.Elements.Value.AbstractPropertyLinkModelValue</code>
Change	Added
Description	New base class for property links.

File	Studio.Model.Elements.Contract.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.Value.InterfaceLinkModelValue
Change	Changed
Description	Changed base class to AbstractPropertyLinkModelValue.

File	Studio.Model.Elements.Contract.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.Value.PropertyLinkModelValue
Change	Changed
Description	Changed base class to AbstractPropertyLinkModelValue.

File	Studio.Model.Elements.Contract.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.Value.PropertyListLinkModelValue
Change	Changed
Description	Added new constructor to create an instance from a PropertyLinkModelValue.

File	Studio.Model.Elements.Contract.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.Widget.WidgetExtensions
Change	Changed
Description	Added GetFeature().

File	Studio.Model.Elements.Contract.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.Widget.WidgetPropertyExtensions
Change	Changed
Description	Added IsHidden().

File	Studio.Model.Elements.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.DefaultName.IDefaultNameGenerator
Change	Changed
Description	Added forceCounter parameter to FindUniqueName method.

File	Studio.Model.Elements.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.ExportSet.ExportSet

Change	Added
Description	

File	Studio.Model.Elements.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.ExportSet.LanguageExportSet
Change	Added
Description	

File	Studio.Model.Elements.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.ExportSet.SkinExportSet
Change	Added
Description	

File	Studio.Model.Elements.dll
Interface	Elektrobit.Guide.Studio.Model.Elements.StateMachine.Specialized.ExternalTransition
Change	Added
Description	

File	Studio.Model.TargetTypes.dll
Interface	Elektrobit.Guide.Studio.TargetTypes.TypeManagerWidgetExtensions
Change	Changed
Description	Added FindWidgetFeatureType() and FindWidgetType().

File	Studio.Storage.Migration.dll
Interface	Elektrobit.Guide.Studio.Migration.Declarative.ObjectActions
Change	Changed
Description	Added ChangeChildTypeTo(), CreateObject(), and CreateType().

File	Studio.Storage.Migration.dll
Interface	Elektrobit.Guide.Studio.Migration.Declarative.Predicates
Change	Changed
Description	Added IsTypeEqual() and WhereType().

File	Studio.Storage.Migration.dll
Interface	Elektrobit.Guide.Studio.Migration.Declarative.PropertyActions

Change	Changed
Description	Removed <code>ChangePropertyValue()</code> . Added <code>ChangeValue()</code> and <code>MovePropertyToEnd()</code> .

File	<code>Studio.Storage.Migration.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Migration.DefinedMigrationVersions</code>
Change	Changed
Description	Added <code>SourceVersion69</code> constant.

File	<code>Studio.Target.Integration.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Target.Integration.Descriptor.TypeId</code>
Change	Added
Description	

File	<code>Studio.UI.Workbench.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Workbench.IDockablePartFactory</code>
Change	Changed
Description	Added parameter <code>guid</code> to method <code>CreatePart</code> .

File	<code>Studio.UI.Workbench.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Workbench.ViewModels.IWorkbenchViewModel</code>
Change	Changed
Description	Added <code>Cursor</code> property. Added <code>StageTransitionCompleted()</code> .

File	<code>Studio.UI.Workbench.Contract.dll</code>
Interface	<code>Elektrobit.Guide.Studio.Workbench.WorkbenchPartId</code>
Change	Moved
Description	Moved to <code>Guide.UI.Docking.dll</code> .

5.3. EB GUIDE Monitor API changes

File	<code>Guide.UI.Docking.dll</code>
Interface	<code>Elektrobit.Guide.Ui.Docking.ViewModels.WorkbenchPartId</code>
Change	Moved

Description	Moved from Studio.UI.Workbench.Contract.dll.
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File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Controller.ToastNotifierExtensions
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Controls.TagFilter.Control.TagItemControl
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Controls.TagFilter.ITagItem
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Controls.TagFilter.ITagItemSource
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Controls.TagFilter.ITagItemSourceProvider
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Tools.DesignTimeResourceDictionary
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Tools.ResourceLocation
Change	Added
Description	

File	Guide.UI.Shell.dll
Interface	Elektrobit.Guide.Ui.Tools.IResourceProvider
Change	Changed
Description	Renamed GetResourceUris to GetResourceLocations. Changed return type to IEnumerable<ResourceLocation>.

6. Third-party components in EB GUIDE GTF and EB GUIDE Studio

6.1. ANGLE

Name	Version	Comments / usage	Target device
ANGLE	2.1.0.- df73a8e5ffdb	OpenGL ES 2.0 PC emulation for Windows	

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6.2. ANTLR C#

Name	Version	Comments / usage	Target device
ANTLR C#	4.7	Speech grammar parsing, EB GUIDE Script parsing	

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6.3. Autodesk FBX SDK

Name	Version	Comments / usage	Target device
Autodesk FBX SDK	2017.1	Support for the Autodesk FBX file format	



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10.1 Rendering.

10.1.1 With regard to the Rendering Software (defined below), in addition to any other license granted in this Agreement, Licensee may allow the Rendering Software to be Installed or Accessed on a Networked Basis, solely for Licensee's Internal Business Needs, specifically to render files created with the Software. However, if the Rendering Software is mental ray, and the Software is provided with a finite number of mental ray rendering nodes, then with regard to mental ray the foregoing is restricted to that number of mental ray rendering nodes.

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10.1.4 With regard to the mental ray Satellite (defined below) for each of Autodesk 3ds Max, Autodesk Maya and Autodesk Softimage Software each mental ray Satellite executable(s) may run on one (1) or more host no more than four (4) client Computing Devices. With regard to mental ray Satellite, any reference in the Agreement to Computer is hereby deleted and “Computing Device(s)” substituted therefor.

10.1.5 Definitions.

- (1) “mental ray Standalone” means the mental ray Standalone client/server executable, including the mental ray standard shader libraries and utility programs, used specifically for rendering files created with the Software.
- (2) “Rendering Software” means a subset of the Software used specifically for rendering files created with the Software.
- (3) “mental ray Batch Software” means a subset of the Software used:
 - (i) specifically for rendering files created with the Software or
 - (ii) by the Rendering Software specifically for rendering files created with the Software.
- (4) “mental ray Satellite” means the mental ray Satellite server executable, including the mental ray standard shader libraries. mental ray Satellite is functionally equivalent to the mental ray Standalone server executable, used specifically for rendering files created with the Software except it is not able to read and write files in the complete mi2 format.
- (5) “Computing Device” means (i) a single electronic assembly with a maximum of: (a) four (4) CPUs (regardless of the number of cores in each CPU) each CPU having one or more microprocessors, (b) four (4) discrete GPU-based computing boards; or (ii) a software implementation of the single electronic assembly, (a so-called ‘virtual machine’) described in (i) above, which single electronic assembly accepts information in digital or similar form and manipulates the information for a specific result based on a sequence of instructions.

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6.4. Apache Log4net

Name	Version	Comments / usage	Target device
Apache Log4net	2.0.3	Logging functions in EB GUIDE Studio	



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6.5. AvalonEdit

Name	Version	Comments / usage	Target device
AvalonEdit	5.0.2	WPF control for EB GUIDE Script editor	

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6.6. CommonServiceLocator

Name	Version	Comments / usage	Target device
CommonServiceLocator	1.3.0	WPF programming	



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6.7. DirectXMesh

Name	Version	Comments / usage	Target device
DirectXMesh	VS 2017	algorithms for mesh optimizations	

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6.8. dlmalloc

Name	Version	Comments / usage	Target device
dlmalloc	2.8.6	Needed for implementing the Nuance heap, as replacement for the vocon_ext_heap.dll sample library from Nuance	x

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6.9. DynamicData

Name	Version	Comments / usage	Target device
DynamicData	6.10.0.2604	User interface development	

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6.10. Extended WPF Toolkit

Name	Version	Comments / usage	Target device
Extended WPF Toolkit	3.5.1	Used for UI controls in EB GUIDE Studio	

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6.11. FluentCommandLineParser

Name	Version	Comments / usage	Target device
FluentCommandLineParser	1.5.0.20	.NET C# command line parser	

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6.12. FreeType

Name	Version	Comments / usage	Target device
FreeType	2.9	Text rendering solution	x

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6.13. HarfBuzz

Name	Version	Comments / usage	Target device
HarfBuzz	1.4.8	support for OpenType font layouts	x

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6.14. ICU4C

Name	Version	Comments / usage	Target device
ICU4C	60.2	Used to process bidirectional text with the algorithm defined in the Unicode Standard Annex #9	x

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6.15. Json.NET

Name	Version	Comments / usage	Target device
Json.NET	9.0.1	Serializing and deserializing of JSON data structures / files	

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6.16. Khronos OpenGL-Registry

Name	Version	Comments / usage	Target device
Khronos OpenGL-Registry	16.06.2019	OpenGL types and definitions	

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6.17. Khronos OpenGL-Registry

Name	Version	Comments / usage	Target device
Khronos OpenGL-Registry	16.06.2019	Platform-specific types and definitions for OpenGL ES 3.X	

Further information

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6.18. LanguageExt.Core

Name	Version	Comments / usage	Target device
Language-Ext.Core	3.1.14	Programming support library	

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6.19. libjpeg-turbo

Name	Version	Comments / usage	Target device
libjpeg-turbo	1.5.3	Reading of jpg images	x

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6.20. libpng

Name	Version	Comments / usage	Target device
libpng	1.6.35	PNG decoding	x

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6.21. Microsoft Blend for Visual Studio SDK for .NET 4.5

Name	Version	Comments / usage	Target device
Microsoft Blend for Visual Studio SDK for .NET 4.5	4.5		

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6.22. Nothings stb_easy_font

Name	Version	Comments / usage	Target device
Nothings stb_easy_font	1.0 (03.03.2017)	Bitmap font handling for 3D rendering	x

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6.23. Nothings stb_image

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Nothings stb_image	2.21	Image loading	x

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6.24. ParaType TrueType font PT Sans

Name	Version	Comments / usage	Target device
ParaType True-Type font PT Sans	2.003	As example TTF font in the demo projects and as default font for new projects in EB GUIDE Studio as well as default font for new projects used by EB GUIDE GTF on the target device.	x

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6.25. Prism

Name	Version	Comments / usage	Target device
Prism	6.2	WPF programming	

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6.26. RapidJSON

Name	Version	Comments / usage	Target device
RapidJSON	1.1.0	JSON parser for C++	x

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6.27. ReactiveUI

Name	Version	Comments / usage	Target device
ReactiveUI	9.16.9	User interface development	

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6.28. ReactiveUI.WPF

Name	Version	Comments / usage	Target device
ReactiveUI.WPF	9.16.9	User interface development	

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6.29. Splat

Name	Version	Comments / usage	Target device
Splat	7.2.1	User interface development	

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6.30. System.Collections.Immutable

Name	Version	Comments / usage	Target device
System.Collections.Immutable	1.1.37	Utility functions in EB GUIDE Studio	

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6.31. System.Reactive

Name	Version	Comments / usage	Target device
System.Reactive	4.1.2	Programming support library	

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6.32. System.Threading.Tasks.Extensions

Name	Version	Comments / usage	Target device
System.Threading.Tasks.Extensions	4.5.1	Programming support library	

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6.33. System.ValueTuple

Name	Version	Comments / usage	Target device
System.ValueTuple	4.5.0	Programming support library	



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6.34. The Impossibly Fast C++ Delegates

Name	Version	Comments / usage	Target device
The Impossibly Fast C++ Delegates	17.07.2005	C++ delegates	x

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6.35. Windows 7 API Code Pack - Shell

Name	Version	Comments / usage	Target device
Windows 7 API Code Pack - Shell	1.1.0	Used for directory browsing in EB GUIDE Studio	

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6.36. Windows 7 API Code Pack - Core

Name	Version	Comments / usage	Target device
Windows 7 API Code Pack - Core	1.1.0.0	Used for directory browsing in EB GUIDE Studio	

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6.37. zlib

Name	Version	Comments / usage	Target device
zlib	1.2.11	libpng dependency	x

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Appendix A. Release notes previous versions

A.1. Release notes 6.9

A.1.1. Migrating from 6.8 to 6.9

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the **Problems** component. Start migration only when no errors and warnings occur anymore.

Migration is performed automatically, when opening a project that was saved with a previous version.

After migrating an EB GUIDE project from version 6.8 to version 6.9, the following changes apply.

Migration log

A migration log is provided with the information about the number of migration operations.

Wrong animation target links after migration from version 6.6

When migrating a scene graph with different **Transformation** widget properties, a separate scene graph node is created for every property. After migration, animations may be linked to a target property that is in a wrong scene graph node. You need to manually change the target property so that it links to the correct scene graph node.

Deprecated EB GUIDE Script functions `language` and `skin`

EB GUIDE Script functions `language` and `skin` are deprecated and replaced by new functions. These functions are not migrated automatically. The following new functions are provided:

- ▶ `setSkin`
- ▶ `setLanguage`
- ▶ `getSkin`
- ▶ `getLanguage`
- ▶ `getAllSkins`
- ▶ `getAllLanguages`
- ▶ `getSkinName`
- ▶ `getLanguageTag`

multisampling renamed to antiAliasing

The `multisampling` scene property is renamed to `antiAliasing` in an automatic migration step.

GtfInputCommon, GtfInputDevice, and GtfInputMapper moved to inputmapper

The new namespace `gtf::displayfactory::inputmapper` now provides the functionality for sending external input events. This is not migrated automatically.

Model interface

An empty model interface is created for models that are migrated to 6.9. To find it, in the project center select **Configure > Model interfaces**. There you will find a default model interface with an empty datapool items list and an empty events list. This interface is added to folder `$GUIDE_PROJECT_PATH/<project_name>/modelinterfaces`.

Renamed lineGap property

The `lineGap` property that belongs to the **Multiple lines** widget feature is renamed to `lineOffset` in an automatic migration step.

Fixed inconsistent processing of touchMoved reaction

A `touchPressed` property now always additionally triggers the execution of the `touchMoved` property. The return value of a `touchMoved` property can now always cause consuming the event. Existing EB GUIDE models may need manual adaptation to this changed behavior.

GtfUtils moved to the new namespace gtf::utils

The EB GUIDE GTF API elements in the following table are not migrated automatically.

Old namespace and files	New namespace and files
TfDelegate	gtf.utils.delegate
interface/gtf/utils/Delegate.h	interface/gtf/utils/delegate/Delegate.h
interface/gtf/utils/DelegateGen.h	interface/gtf/utils/delegate/DelegateGen.h
TfMath	gtf.utils.math
interface/gtf/utils/math/bbox.h	interface/gtf/utils/math/bbox.h
interface/gtf/utils/math/bbox.inl	interface/gtf/utils/math/bbox.inl
interface/gtf/utils/math/conversions.h	interface/gtf/utils/math/conversions.h
interface/gtf/utils/math/conversions.inl	interface/gtf/utils/math/conversions.inl
interface/gtf/utils/math/functions.h	interface/gtf/utils/math/functions.h
interface/gtf/utils/math/matrix4x4.h	interface/gtf/utils/math/matrix4x4.h

Old namespace and files	New namespace and files
interface/gtf/utils/math/matrix4x4.- inl	interface/gtf/utils/math/matrix4x4.- inl
interface/gtf/utils/math/quaternion.h	interface/gtf/utils/math/quaternion.h
interface/gtf/utils/math/quaternion.inl	interface/gtf/utils/math/quaternion.inl
interface/gtf/utils/math/ray.h	interface/gtf/utils/math/ray.h
interface/gtf/utils/math/ray.inl	interface/gtf/utils/math/ray.inl
interface/gtf/utils/math/Rotation.h	interface/gtf/utils/math/Rotation.h
interface/gtf/utils/math/Scaling.h	interface/gtf/utils/math/Scaling.h
interface/gtf/utils/math/Shearing.h	interface/gtf/utils/math/Shearing.h
interface/gtf/utils/math/Translation.h	interface/gtf/utils/math/Translation.h
interface/gtf/utils/math/triangle.h	interface/gtf/utils/math/triangle.h
interface/gtf/utils/math/triangle.inl	interface/gtf/utils/math/triangle.inl
interface/gtf/utils/math/vector2.h	interface/gtf/utils/math/vector2.h
interface/gtf/utils/math/vector2.inl	interface/gtf/utils/math/vector2.inl
interface/gtf/utils/math/vector3.h	interface/gtf/utils/math/vector3.h
interface/gtf/utils/math/vector3.inl	interface/gtf/utils/math/vector3.inl
interface/gtf/utils/math/vector4.h	interface/gtf/utils/math/vector4.h
interface/gtf/utils/math/vector4.inl	interface/gtf/utils/math/vector4.inl
TfMisc	gtf.utils.misc
interface/gtf/utils/minmax.h	interface/gtf/utils/misc/minmax.h
interface/gtf/utils/swap.h	interface/gtf/utils/misc/swap.h
TfSmartPointer	gtf.utils.smartptr
interface/gtf/utils/smartptr/RefCountedPtr.h	interface/gtf/utils/smartptr/RefCountedPtr.h

Old namespace and files	New namespace and files
interface/gtf/utils/smartptr/RefCountBase.h	interface/gtf/utils/smartptr/RefCountBase.h
interface/gtf/utils/smartptr/WeakPtr.h	interface/gtf/utils/smartptr/WeakPtr.h

A.1.2. New or changed in 6.9

This chapter lists new or changed features of EB GUIDE.

EB GUIDE Studio

Model interfaces

It is now possible to export and import model interfaces. This is a new feature that is accompanied by multiple new functions. For more information, see the EB GUIDE user guide section "Model interfaces".

- ▶ You can create model interfaces and export them.
- ▶ You can add datapool items and events to be shared between models through model interfaces.
- ▶ You can import interfaces from other models.

It is not possible to delete event groups that are used by model interfaces

When you import a model interface with event groups, ownership of event groups is shared with the model where the interface is imported. So event groups have a special handling in connection with model interfaces. For more information, see the EB GUIDE Studio user guide section "Model interfaces".

Reference search supports model interfaces

The search results now display the model interface where an element is included. To jump into the search box, press **Ctrl+F**.

EB GUIDE Monitor supports model interfaces

In EB GUIDE Monitor you can now separate datapool items and events that are added to a model interface from elements that are not added to a model interface. Whether an event or datapool item is part of a model interface, is indicated by a colored bar on the left side of the element.

EB GUIDE API

The EB GUIDE API is now available. It provides better access to features of EB GUIDE. The documentation is available in the installation directory.

- ▶ EB GUIDE Studio API: \$GUIDE_INSTALL_PATH\doc\studio\studio_api.chm
- ▶ EB GUIDE Monitor API: \$GUIDE_INSTALL_PATH\doc\monitor\monitor_api.chm
- ▶ EB GUIDE GTF API: \$GUIDE_INSTALL_PATH\doc\gtf\gtf_api\index.html

No linking for conditional scripts

From now, linking is not allowed for conditional scripts in user-defined properties and in datapool items.

Moved Template component

The **Template** component is not bound to the **Navigation** component any more. It is now a separate component that is open in the default view.

Font metrics widget feature

Added a new widget feature called **Font metrics**. This widget feature improves the font display when the multifont support is added. Consider that the **Multiple lines** widget feature also provides a property that influences the line gap. **Font metrics** widget feature allows you to overwrite the following font values:

`ascender`

A font's maximum distance above the baseline. The vertical, upwards strokes of lowercase letters that rise above the x-height.

`descender`

The part of lowercase letters (such as y, p, and q) that descends below the baseline of the other lowercase letters in a font face. In some typefaces, the uppercase J and Q also descend below the baseline.

`lineGap`

Changes the internal line spacing that is contained by default in every typeface. The **Multiple lines** widget feature, provides a `lineOffset` property. The `lineOffset` property is a line spacing that is added on top of the `lineGap` property.

Project center displays loaded plug-ins

It is possible to see which plug-ins have been loaded by EB GUIDE Studio. Open the project center and click **Plug-ins**.

State editor improvements

In the state editor it is now possible to drag transitions lines like splines to have a better overview of the transitions and states. You can now zoom in and out, by pressing **Ctrl** and rotating the wheel button, **Ctrl** and **+**, or **Ctrl** and **-**.

Examples for EB GUIDE Studio extensions

New examples for EB GUIDE Studio extensions are available on the EB GUIDE website: <https://www.elektrobit.com/ebguide/examples/>. The following extensions are available:

- ▶ `AnnotationsPlugin`
- ▶ `CommandLinePlugin`
- ▶ `ExportStatisticsPlugin`
- ▶ `MenuActionPlugin`
- ▶ `ProjectMetadataPlugin`
- ▶ `ValidationPlugin`

Improved performance of multifont support

The performance of EB GUIDE models that use multifont support was improved.

Jump to linked target

It is now possible to jump to the target that is linked to a widget property. Right-click the property and select **Jump to linked target**. You can also select the property and press **F4**. The following targets can be linked:

- ▶ Widget property of the same widget
- ▶ Widget property of a different widget
- ▶ A datapool item

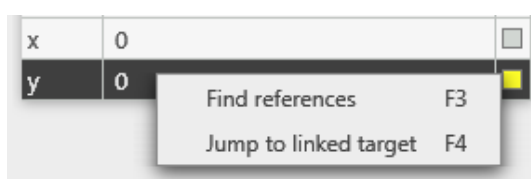


Figure A.1. Jump to linked target

multisampling renamed to antiAliasing

The `multisampling` scene property is renamed to `antiAliasing`. To find this property, in the project center click **Configure > Profiles**.

Added Clear coat widget feature for PBR materials

EB GUIDE Studio now provides the **Clear coat** widget feature for PBR GGX material and PBR Phong material.

Anti-aliasing can be configured separately for scene graphs

It is possible to disable or enable anti-aliasing for the whole scene, but at the same time you can override the global anti-aliasing configuration by enabling and configuring anti-aliasing for an individual scene graph. This includes the new option to use the FXAA anti-aliasing algorithm.

Camera bloom widget feature

The **Camera bloom** widget feature is now available for the camera widget.

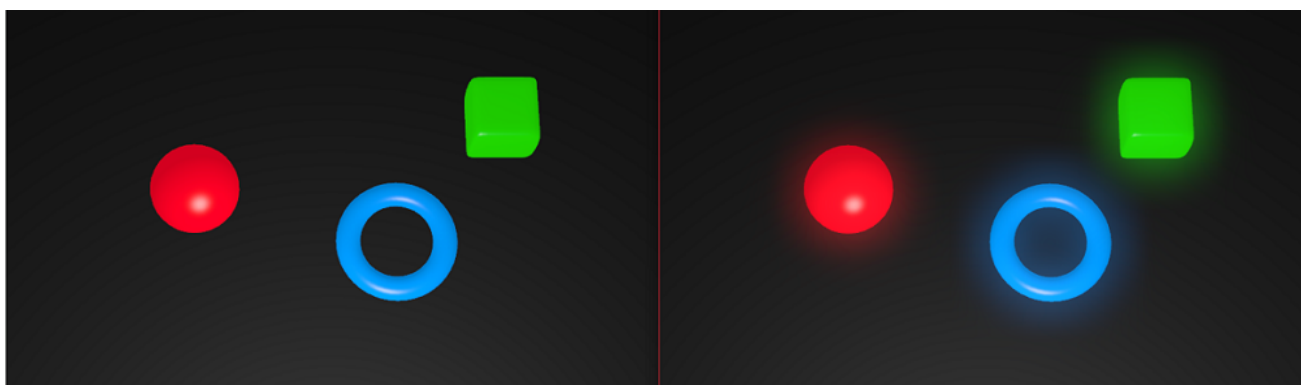


Figure A.2. Example for objects without bloom effect (left) and with bloom effect (right)

Depth of field widget feature

The **Depth of field** widget feature is now available for the camera widget.

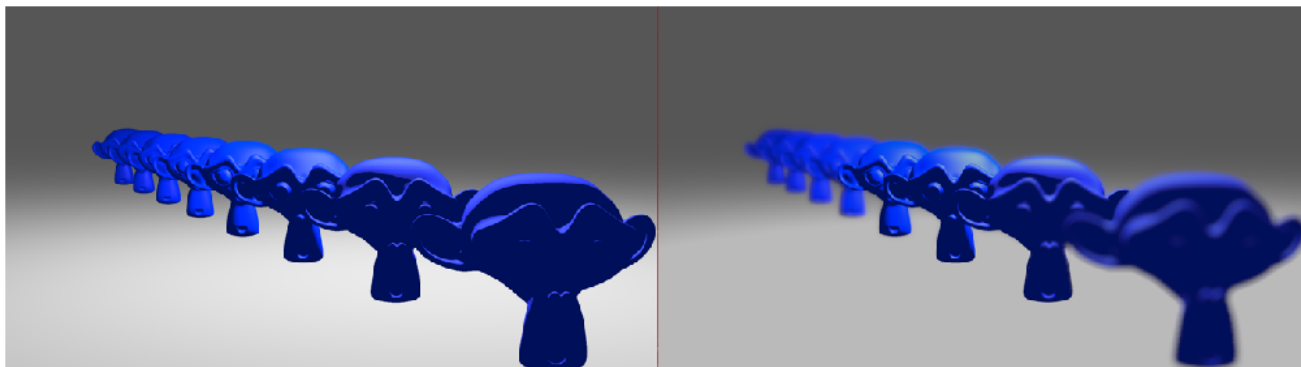


Figure A.3. Example for objects with depth of field effect off (left) and with depth of field effect on (right)

IBL visualization

IBL (Image-based light) visualization is a new functionality that is an addition to the image-based light widget and it makes possible to project the image-based light on the environment of a 3D object. For this use the new widget property `environmentMap`. This widget property belongs to the Image-based light widget that is available for scene graphs.

Exporting into `.ebmesh`

The `.ebmesh` file format is now optimized automatically when the file is written. This makes `.ebmesh` files smaller and faster to render. It is not necessary to use `VertexWelder` for this purpose any more.

Screen space ambient occlusion

Screen space ambient occlusion (SSAO) widget feature is now available for scene graphs.

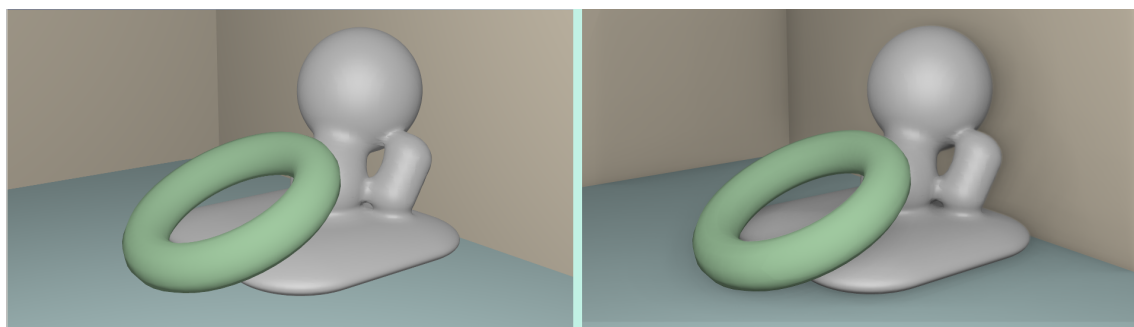


Figure A.4. Example for objects with screen space ambient occlusion off (left) and on (right)

EB GUIDE GTF

Synchronizing aspects in EB GUIDE model and core

It is now possible to synchronize the aspects skin and language for an EB GUIDE model and core. That means, it is possible to set the aspects for model and core separately. EB GUIDE Script functions `language` and `skin` are replaced by new functions. The following new functions are provided:

- ▶ `setSkin`
- ▶ `setLanguage`
- ▶ `getSkin`
- ▶ `getLanguage`
- ▶ `getAllSkins`
- ▶ `getAllLanguages`
- ▶ `getSkinName`
- ▶ `getLanguageTag`

Added configuration items for aspects

New configuration items have been added for the aspects language and skin. The following items have been added:

For language:

`gtf.ipc.service.language.acceptChanges`

`gtf.ipc.service.language.reactOnMissing`

`gtf.ipc.service.language.shareChanges`

`gtf.ipc.service.language.preferredLanguageOnMissingLanguage`

For skins:

`gtf.ipc.service.skin.acceptChanges`

`gtf.ipc.service.skin.reactOnMissing`

`gtf.ipc.service.skin.shareChanges`

`gtf.ipc.service.skin.preferredSkinOnMissingSkin`

Added `getParent` method to `DependencyResolver`

The new `getParent` method is available through the `DependencyResolver` and allows to get the handle of a parent container.

File lookup is now possible through the OSAL interface

File lookup is now possible through the OSAL interface. See `gtf::osal::filesystem::PathHandle` in the EB GUIDE GTF API.

Rewritten EB GUIDE GTF user guide

The EB GUIDE GTF user guide has been rewritten.

Added reloadable skins to EB GUIDE GTF SDK

Skins are now reloadable in the EB GUIDE GTF SDK. Source files are `ResourceDecoder.h` and `ResourceLoader.h`. See namespace `gtf::resourceloader` in the EB GUIDE GTF API.

Retrieving VisualScenes

`VisualScenes` can now be retrieved. `VisualScene.h` was added to the interface. See class `gtf::displaymanager::VisualScene` in the EB GUIDE GTF API.

Added possibility to find out whether a property is linked to EB GUIDE GTF SDK

It is now possible to find out through the EB GUIDE GTF SDK interface whether a property is linked. See class `gtf::properties::Link` in the EB GUIDE GTF API.

Textengine.h added to EB GUIDE GTF SDK interface

`Textengine.h` was added to EB GUIDE GTF SDK. It provides access to the layout calculation.

Improved instantiator performance

The instantiator behavior with long lists was improved.

Removed Functors and FunctorTasks

Classes `Functors` and `FunctorTasks` are removed. Use classes `gtf::utils::Delegate` and `gtf::osal::DelegateTask` instead.

Multiple render targets for the framebuffer

It is now possible to have multiple render targets configured for the `framebuffer`. This is configured in the EB GUIDE GTF API in `gtf::scdr::FramebufferDescriptor`.

A.1.3. Fixed issues in 6.9

The following list contains fixed issues known at the time of release:

EB GUIDE Studio

Deinstallation of EB GUIDE deletes everything

When EB GUIDE is deinstalled, folders that existed before the installation are not deleted.

Cannot load model with only a logic state machine

Fixed an issue where it was not possible to have an EB GUIDE model with only a logic state machine configured in the scene configuration.

EB GUIDE Studio stops working with non-renderable widget templates

Fixed an issue where EB GUIDE Studio would stop working when an instance of a non-renderable widget template was added to a scene graph. This affects widgets from the 3D widgets category, excluding scene graphs.

Simulation does not update resources

Fixed an issue where the simulation would use old resources although the resource files have been updated.

Low performance when multifont support is included

Fixed an issue where the performance during export was low because multifont support was added to many properties.

EB GUIDE GTF**`strtok()` method is not thread safe**

`strtok()` method that is used in `settingsImpl.cpp` is now thread safe.

State machine exits pop-up twice

Fixed an issue where a state machine would close a dynamic-state machine twice.

Exit animations are not executed for dynamic state machines

Fixed an issue where an exit animation was not executed when a dynamic state machine was closed.

Black screen after graphics driver change

Fixed an issue where a black screen occurs due to a binary shader not being loaded, when the graphics driver is changed.

Resource system decoding does not synchronize with active tasks on shutdown

Fixed an issue where the resource system decoding would not synchronize with active tasks on shutdown.

Label is not displayed with multifont, truncation, and particular font size

Fixed an issue where a label was not displayed when a specific font size was configured, and while multifont and truncation were enabled.

Simulation fails with small `softlimit` and `hardlimit` value

Fixed an issue where the simulation failed, when the platform configuration items `softlimit` and `hardlimit` were set to small values.

EB GUIDE GTF fails with empty image list entries

Fixed an issue where EB GUIDE GTF failed when IPC communication was attempted while a model contained an image list with empty entries.

Missing commit of initial default datapool values

Fixed a missing commit of initial default datapool values. With this issue also the performance was improved for use cases with many datapool items.

Absolute layout is not updated

Fixed an issue where the absolute layout was not updated when the dimensions were changed while the simulation was running.

Focus handling does not work in feature demo

Fixed an issues where the focus was not displayed correctly in the feature demo.

Improved dynamic state machine behavior

Dynamic state machines are not popped in nested structure

Fixed an issue where not all dynamic state machines were exited, when they have been pushed by another dynamic state machine.

Dynamic state machine changes priority when VTA is started

Fixed an issue where the priority of a dynamic state machine was changed to highest priority while the VTA was running.

Dynamic state machine is not displayed consistently

Fixed an issue where a dynamic state machine is sometimes visible when it should not be visible.

Nested dynamic state machine is not displayed on top

Fixed an issue where a dynamic state machine that is nested in another dynamic state machine was not displayed on top.

Dynamic state machine is closed when the view changes

Fixed an issue where a dynamic state machine was closed when the view was changed.


Fixed performance issue in Navigation component

When the filter box in the **Navigation** component was used, the **Navigation** component did not react on mouse scrolling for several seconds. This issue is fixed.

A.2. Release notes 6.8

A.2.1. Migrating from 6.7.4 to 6.8

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the **Problems** component. Start migration only when no errors and warnings occur anymore.

Migration is performed automatically, when opening a project that was saved with a previous version.

► Migration for namespaces

After migration all events and datapool items belong to the default root namespace. All state machines and templates belong to the default namespaces.

► Functor replaced with Delegate

Module `Functor` was removed from the EB GUIDE GTF API. It is replaced by `gtf::utils::Delegate`. For more information, see the EB GUIDE GTF user guide section "Delegates".

► DirectX replaced by OpenGL ES 3.0

This migration step is done automatically. If you have custom made renderers, they need to be migrated manually.

► Default decoding

Default decoding information is added to all profiles in this migration. Comments in the platform part of the configuration cannot be migrated automatically. Remove them for the migration. You can add them manually afterwards. The default decoding information looks as follows:

```
"gtf": {
  "resourcesystem": {
    "defaultdecoding": [
      {
        "inputformat": "gtf::decoder::ImagePath",
        "outputformat": "gtf::decoder::EncodedMemImage"
      },
      {
        "inputformat": "gtf::decoder::MeshPath",
        "outputformat": "gtf::decoder::EncodedMeshData"
      },
      {
        "inputformat": "gtf::decoder::IBLPath",
        "outputformat": "gtf::decoder::EncodedIBLData"
      },
      {
        "inputformat": "gtf::decoder::EncodedMemImage",
        "outputformat": "gtf::decoder::MemImage"
      },
      {
        "inputformat": "gtf::decoder::DescriptorResource::font",
        "outputformat": "gtf::decoder::FontData"
      },
      {
        "inputformat": "gtf::decoder::DescriptorResource::image",
        "outputformat": "gtf::decoder::ImagePath"
      },
      {
        "inputformat": "gtf::decoder::DescriptorResource::ibl",
        "outputformat": "gtf::decoder::IBLPath"
      },
      {
        "inputformat": "gtf::decoder::DescriptorResource::mesh",
        "outputformat": "gtf::decoder::MeshPath"
      },
    ],
  },
}
```

```

    {
      "inputformat": "gtf::decoder::MemImage",
      "outputformat": "gtf::scdr::decoder::NinePatchImage"
    },
    {
      "inputformat": "gtf::scdr::decoder::NinePatchImage",
      "outputformat": "gtf::scdr::decoder::DefaultMemImage"
    }
  ],
  "residentformats": [
    "gtf::decoder::FontData",
    "gtf::decoder::IBLPath",
    "gtf::decoder::ImagePath",
    "gtf::decoder::MeshPath"
  ]
}
}

```

A.2.2. New or changed in 6.8

This chapter lists new or changed features of EB GUIDE.

EB GUIDE Studio:

► Multiple models

EB GUIDE now supports multiple models. Multiple models can be run using only one EB GUIDE GTF core. Models can be started and stopped independent from each other. Inter-process communication is possible. The interface is implemented in the EB GUIDE GTF API. For the interface, see class `gtf::model::ModelService`.

► Namespaces

Namespaces can now be used in your EB GUIDE model. You can add events or datapool items to namespaces. To open the **Namespaces** component, in the command area click **Layout** and select **Namespaces**. For more information, see the EB GUIDE user guide section "Namespaces". For instructions, see section "Working with namespaces".

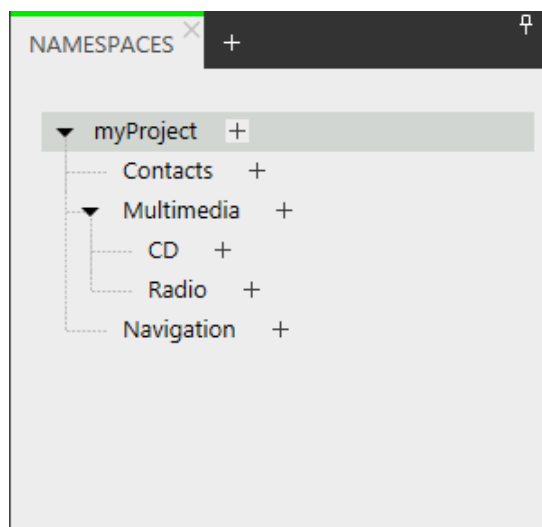



Figure A.5. Namespaces component

- ▶ Update of open source components:
 - ▶ ParaType TrueType font PT Sans

- ▶ Multifont support

You can now combine multiple fonts into one font object. To enable this feature, for example, select a `font` property, right-click  and select **Add multifont support**. Multifont support is available for the following elements:

- ▶ Properties of type font and entries of font list
- ▶ User-defined properties of type font and entries of font list
- ▶ Datapool items of type font or entries of font list

When you are working with multiple fonts, the baseline of the default font is used as baseline of every used font. This might lead to overlaps when widget feature **Multiple lines** is enabled.

For more information, see the EB GUIDE Studio user guide section "Multifont support".

- ▶ Importing Photoshop files (.psd)

Importing Photoshop files now also supports importing labels from Photoshop files, with the properties, color, rotation, size, and font. For more information, see the EB GUIDE Studio user guide section "Photoshop file format support".

- ▶ Storage file format (.gdata)

The storage file format of the `.gdata` is improved. For more information about the storage format, see EB GUIDE Studio user guide section "Storage format".

► Jump to origin template

When you are using templates, it is now possible to go directly from a model element to its template. In the **Navigation** component right-click a model element and select **Jump to origin template**.

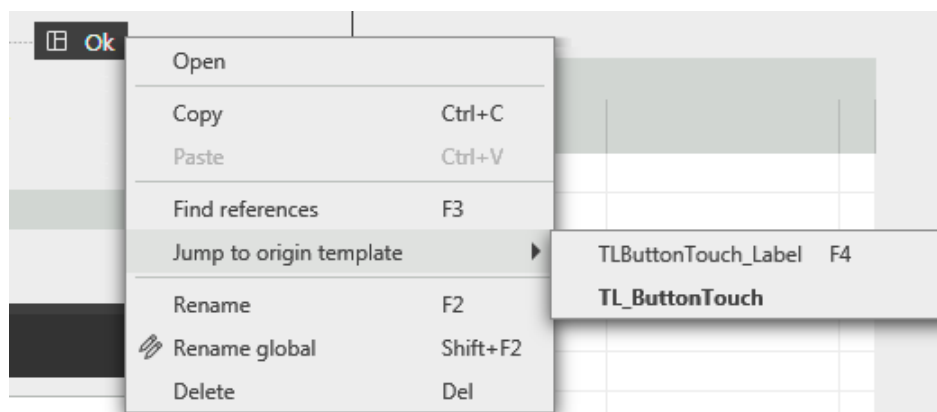


Figure A.6. Jump to origin template

► 64-bit support

EB GUIDE Studio is now available in 64-bit.

► Model export

Exporting of EB GUIDE models is faster and therefore the simulation start is faster, as well. This especially improves the simulation of larger models.

► Selecting multiple elements

It is now possible to select multiple datapool items or events in the **Datapool** and **Events** components in EB GUIDE Studio and EB GUIDE Monitor. Use **Ctrl+A** to select all elements or hold down **Ctrl** and select elements individually.

► Master image alignment

The master image is now aligned to the top left of the view.

► Triggers

Improved the handling of triggers in the EB GUIDE Script editor. When you are in the EB GUIDE Script editor click **Add available triggers to list** and all triggers will be listed. Triggers in a script are also highlighted.

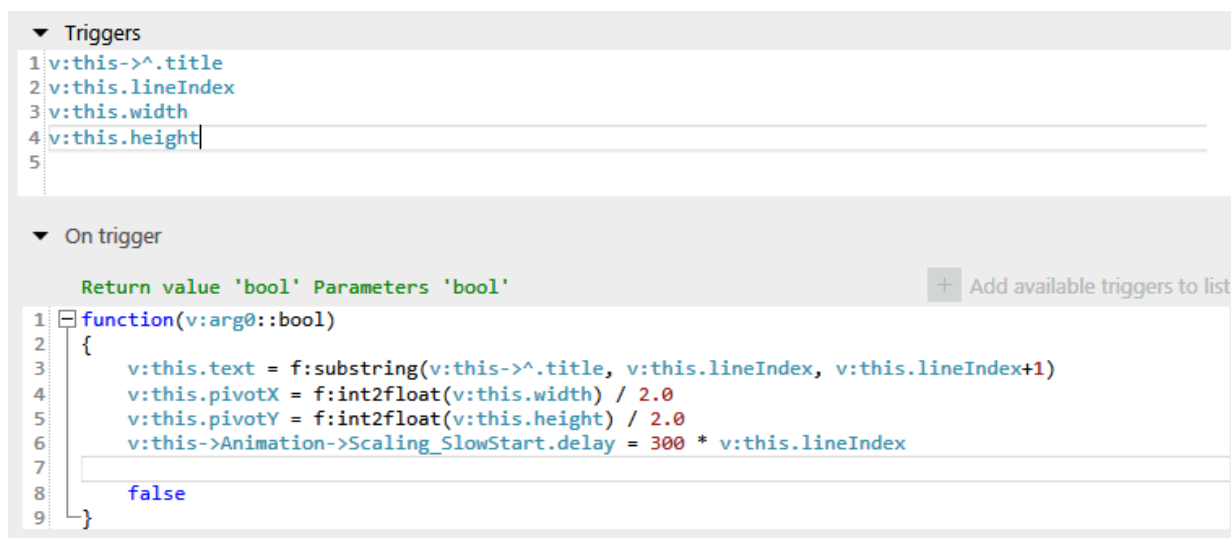


Figure A.7. Triggers in the EB GUIDE Script editor

When you add a Trigger you can either create a new event or select an event from a namespace directly in the context menu.

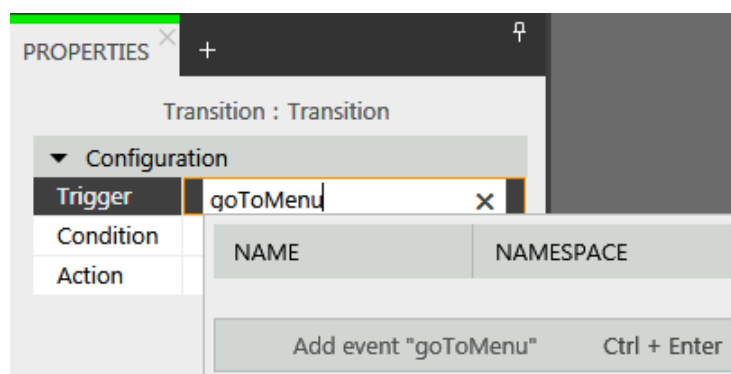


Figure A.8. Triggers for transitions

► Improved component performance


Improved the performance of the components **Datapool**, **Properties**, and **Events**.

► Improved keyboard input

The keyboard input is improved in the components **Datapool**, **Properties**, and **Events**.

► Sortable tables

Elements in tables can now be sorted by name in the **Search results** window, **Properties** component, **Events** and **Datapool** components in EB GUIDE Studio and EB GUIDE Monitor. Click one of the following

icons to change the sorting: . You can also change the arrangement of the columns in the **Datapool** and **Events** components. To do this, select the head row of a column and drag it to the position where you want to have it.

► Multiple elements in EB GUIDE Monitor

In the EB GUIDE Monitor it is now possible to add multiple events and datapool items to the watchlist.

► Warnings for namespace move

When you move a datapool item or an event to a namespace where the name already exist, a warning is prompted in a pop-up window.

► Auto-complete in EB GUIDE Script

Auto-complete functionality in the EB GUIDE Script editor is improved for triggers. EB GUIDE Script also comes with new icons:

► Keywords: 

► Functions: 

► Variables: 

EB GUIDE GTF

► EB GUIDE GTF resource handling

EB GUIDE GTF resource handling is improved through multithreading, shared resources, and resource caching. These options are enabled in the **platform.json**. For more information, see the EB GUIDE GTF user guide section "`platform.json` configuration file".

► Font caching

The number of cached fonts can be configured in EB GUIDE GTF. For more information, see EB GUIDE GTF user guide section "`model.json` configuration file". The configuration item is `gtf.model.text-engine.fontCacheThreshold`.

► Revisited EB GUIDE GTF user guide

The EB GUIDE GTF user guide is rewritten following a new concept.

► C++ 11

EB GUIDE GTF now supports C++ version 11.

► Start-up language and start-up skin

Now you can configure the start-up language and start-up skin in EB GUIDE GTF. This is configured in the `model.json` file. For more information, see the EB GUIDE GTF user guide section "`model.json` configuration file".

► **Functor replaced with Delegate**

Module `Functor` was removed from the EB GUIDE GTF API. It is replaced by `gtf::utils::Delegate`. For more information, see the EB GUIDE GTF user guide section "Delegates".

► **Improved lifecycle of EB GUIDE GTF interfaces**

Improved lifecycle of some EB GUIDE GTF interface instances to avoid unexpected side effects during the EB GUIDE SDK usage.

► **ANGLE**

DirectX and Direct3D are replaced with ANGLE.

► **Gamma correction**

You can now adjust the gamma correction for scene graphs with the new `gamma` property. For more information, see the EB GUIDE Studio user guide section "Gamma-correct rendering".

► **Texture coordinate transformation**

It is now possible to arrange the textures for materials. This widget feature is available for material, PBR Phong material, and PBR GGX material. Using this widget feature it is possible to manipulate a texture as shown in the following examples:



Figure A.9. Examples for texture coordinate transformation

► **Anti-aliasing for ellipse**

The ellipse is now rendered with anti-aliasing.

► **libpng version 1.6.35**

libpng is updated to version 1.6.35.

► **Renderer API**

The renderer API in namespace `gtf::scdr` is improved. For more information, see the implementation examples that are provided on the EB GUIDE website in the `EB_GUIDE_Examples.zip`. For instructions, see `EB-GUIDE-Studio-Howto-Using-examples-in-EB-GUIDE-Studio.pdf`.

A.2.3. Fixed issues in 6.8

The following list contains fixed issues known at the time of release:

▶ Access violation for images

Fixed an access violation issue when images were switched in the IPC (inter-process communication).

▶ Reentering state

Fixed an issue where a crash occurred when a state with a running dynamic state machine was reentered.

▶ Script curve with colors

Fixed an issue where the script curve when it was applied to colors would provide the wrong value to a target property.

▶ Access violation for projects

Fixed an access violation issue when opening or creating projects.

▶ Child button behavior

Touching a child button does not affect the parent button any more.

▶ Access violation onGestureHold

Fixed an access violation when `onGestureHold` was used.

▶ Broken links

Fixed an issue where EB GUIDE Studio would stop working when a linked datapool item or linked user-defined property was removed.

▶ Improved template editor

The template editor used to have performance issues when a large number of templates was handled. No performance issues remain in the template editor.

▶ Focus issues

Fixed several issues with the **Focus** widget feature category.


▶ `lineMapping` property

Fixed an issue where EB GUIDE Studio would stop working when `lineMapping` had a link to a user-defined property that was removed.

A.3. Release notes 6.7.4

A.3.1. Migrating from 6.7.3 to 6.7.4

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

Migration is performed automatically, when opening a project that was saved with a previous version.

A.3.2. Fixed issues in 6.7.4

The following list contains fixed issues known at the time of release:

► Fixed missing notifications and initializations

Fixed wrong initial layouting with instantiators. The initialization of the instantiator and the **Layout** widget features are now deferred to prevent double processing. The evaluation of the binary scene description is optimized.

► Fixed `f:getLineCount` script function

The `getLineCount` calculation now also uses the **Multiple lines** widget feature properties.


► Not renderable widget template

Fixed an issue where EB GUIDE Studio would crash when a template of a template of a widget was created, when the widget is not a renderable widget. Widgets that are not renderable are all of the 3D widgets except for the scene graph.

A.4. Release notes 6.7.3

A.4.1. Migrating from 6.7.2 to 6.7.3

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

Migration is performed automatically, when opening a project that was saved with a previous version.

A.4.2. New or changed in 6.7.3

This chapter lists new or changed features of EB GUIDE.

EB GUIDE Studio:

► Search box shortcuts

You could already find every reference of an element, when you select an element and press **F3**. Now, when you already closed the search box with the result, you can bring it back with shortcut **Ctrl+F**.

► Improved model export

The performance is improved when you export an EB GUIDE model or start a simulation.

► libpng

Updated libpng from 1.6.32 to 1.6.35.

► Font caching

You can configure the size of the font cache. The font cache improves the performance of label rendering when the font is changed. The font cache is configured in the `model.json` configuration file. For more information, see section "model.json configuration file" in the EB GUIDE Studio user manual, table "TextEngine configuration items", item `gtf.model.textengine.fontCacheThreshold`.

EB GUIDE GTF

► Framebuffer attachment

It is now possible to get a color attachment from framebuffer. This feature, for example, could be used to generate a dynamic alpha mask at runtime. For more information on `gtf::scdr::Framebuffer::getColorAttachment()`, see API.

A.4.3. Fixed issues in 6.7.3

The following list contains fixed issues known at the time of release:

► Improved template creation

When you create templates of templates, the performance of the template context menu as well as the **Navigation** component is improved.

► Android device orientation

Orientation changes of Android devices are now handled correctly.

► Hold gesture

Fixed the behavior of the hold gesture when you click and hold during the simulation. When you are in a simulation and event `onGestureHold` is fired, and you move the cursor outside of the window and back in, event `onGestureHold` is now fired as expected.

► Path gesture

Path gestures are now recognized even if the cursor moves outside of the simulation window.

► Missing notifications

Fixed an issue where some notifications were not prompted.

► On screen transitions memory leak

Fixed a memory leak issue in EB GUIDE GTF that occurred during high frequency screen transitions.

► System events and IPC

The EB GUIDE GTF inter-process communication (IPC) is not affected by Android system events any longer. System events are now filtered through the `Eventsystem` module. For more information on `gtf::eventsystem`, see API.

► Memory usage updates


EB GUIDE Monitor now provides updates about the memory usage. This feature is not enabled by default. For instructions on how to enable this feature, see the EB GUIDE GTF user manual section "Evaluating memory usage". When this feature is enabled you receive messages, looking like the following example message:

```
[08:36:24.685] [INFO] System memory allocated by EB GUIDE TF: 1280 KiB (maximum
1280 KiB), Memory Mapped: 15 KiB (maximum 15 KiB)
```

A.5. Release notes 6.7.2

A.5.1. Migrating from 6.7.1 to 6.7.2

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

Migration is performed automatically, when opening a project that was saved with a previous version.

A.5.2. New or changed in 6.7.2

This chapter lists new or changed features of EB GUIDE.

EB GUIDE Studio:

► Out of memory issue

Fixed an out of memory issue by enabling the large memory usage flag.

► No duplication of binary scripts

Scripts with the same binary representation but different context widgets used to be duplicated. Now such scripts are written only once.

► No creation of exporter binary files

Exporter binary files used to be written to memory before being available. Now these files are not written anymore.

EB GUIDE GTF:

► `AnimationBase.h` is now part of the EB GUIDE SDK

You can write your own animation curve widgets and add them to the EB GUIDE model for better performance.

► New traces

New traces are added that allow to measure the shader compilation. EGL start-up traces are changed from `Debug` to `Info`.

A.5.3. Fixed issues in 6.7.2

The following list contains fixed issues known at the time of release:

▶ Smartwatch demo model

Fixed an access violation in gestures.

▶ Fixed a memory read issue in the EB GUIDE GTF workloop.

▶ Datapool integer list issue

Fixed an issue where a list value from a datapool integer list remained in the memory after it was discarded.

▶ Flow layout behavior

Fixed an issue where label position was not adjusted after a text change.

▶ Fixed an issue where binary shaders did not load.

▶ Visibility flag issue

Fixed an issue where a widget does not disappear when the visibility flag is connected to a datapool item.


▶ Issue during the configuration import

Fixed an issue where the configuration import could not handle an `ObjectList` with `Objects` having multiple items inside

A.6. Release notes 6.7.1

A.6.1. Migrating from 6.7 to 6.7.1

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

Migration is performed automatically, when opening a project that was saved with a previous version.

A.6.2. New or changed in 6.7.1

EB GUIDE Studio:

- ▶ The datapool integration is improved to fit the model life cycle better.
- ▶ User-defined properties can be sorted

You can now sort user-defined properties alphabetically using the new button in the **Properties** component. It is also possible to leave the properties unsorted, i.e. in the order they were initially added to your EB GUIDE model.

- ▶ Changes in touch behavior for widgets

With **Touch release** widget feature, touch events can now be consumed by touch reactions.

- ▶ Changes for master image

When you add a master image, the master image is now aligned top left in a view.

- ▶ More configuration options for `GtfFileOutput`

It is now possible to enforce flushing the traces after each trace message with the configuration item `gtf.tracing.PeriodicOutputFlush` set to 0. You can now also disable forced flushing of the messages using the value -1. Any other number greater than 0 sets the time interval for the flushes.

- ▶ Naming of threads

All threads generated from EB GUIDE GTF have a common name convention. All threads end with `@GTF`. If you request `TaskDispatcher` and run it with `runAsync`, you can specify a custom name. The resulting name is `<yourName>@GTF` with `<yourName>` being the name that you specified. Note that it depends on the platform how, if, and where you can observe the name of the thread.

A.6.3. Fixed issues in 6.7.1

The following list contains fixed issues known at the time of release:

- ▶ The output of the scripted curve fixed

Now the output of the scripted curve for colors that uses alpha values is produced correctly. The output does not change with each execution of the same scripted curve.


- ▶ EB GUIDE GTF does not crash anymore while re-entering the state machine that includes a dynamic state machine list and view transition animations.
- ▶ Changing the priority of dynamic states is not ignored by the focus management anymore.
- ▶ The issue with datapool items solved

If a resource datapool item list with language or skin support has undefined resource files, you can now jump to the corresponding items from the **Problems** component by clicking the warnings links.

A.7. Release notes 6.7

A.7.1. Migrating from 6.6 to 6.7

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

After migrating an EB GUIDE project from version 6.6 to version 6.7, the following changes apply.

Migration of EB GUIDE projects with added custom widgets

It is not possible to migrate an EB GUIDE project with added custom widgets from one EB GUIDE version to another. If your project contains custom widgets, update them with the correct version and then migrate your project.

Accessing scene graph nodes in EB GUIDE Script

The structure of the imported scene graph nodes has changed. If in an EB GUIDE Script function you access a property of a scene graph node, you have to manually update the path to the corresponding scene graph node.

New concept of VTAs (view transition animations)

The 6.7 EB GUIDE version introduces the VTA expert mode. Due to incompatibility issues, the VTA types that were available in the EB GUIDE 6.6 version cannot be migrated and therefore are removed during migration. If you have VTAs in your EB GUIDE project, note that during the migration all VTAs, which were included in your EB GUIDE project, are removed. Make sure to recreate the removed VTAs.

New life cycle concept of EB GUIDE GTF

If you have custom applications, consider the following:

- ▶ If you used the `Runnable` concept, you must switch to the current core stages concept.
- ▶ For more information on the stage concept, see the EB GUIDE TF user's guide, section "5.1.2 Life cycle".
- ▶ For an example, see the EB GUIDE SDK example `CoreStageExample`.

New `Scenes` module

If you have custom applications, consider the following:

- ▶ The EB GUIDE SDK interfaces for working with scenes changed.
- ▶ For more information on the `Scenes` module, see the EB GUIDE TF user guide, section "5.4.1 Scenes and Properties".
- ▶ For an example, see the EB GUIDE SDK examples.

New `Properties` module

If you have custom applications, consider the following:

- ▶ The EB GUIDE SDK interfaces for working with widget properties changed.
- ▶ For more information on the `Properties` module, see the EB GUIDE TF user guide, section "5.4.-1 Scenes and Properties".
- ▶ For an example on how you can access widget properties within new interfaces, see the EB GUIDE SDK examples `ExtendedContainerWidget` or `FocusedWidgetFeature`.

A.7.2. New or changed in 6.7

This chapter lists new or changed features of EB GUIDE.

EB GUIDE Studio:

- ▶ New **VTA** component

In the **VTA** (view transition animations) component, it is possible to define view transition animations for views and view templates.

- ▶ Separate directory for view transition animations

All VTAs are stored in the `vtas` directory. Each VTA and each VTA configuration has its own file in the `vtas` directory.

- ▶ By means of a master image, it is possible to align elements

The master image itself is a presentation template which can be displayed (on / off). When it is displayed, you can:

- ▶ Model the view according to the template (master image)
- ▶ Set the position of the widgets according to the template (master image)

- ▶ It is possible to define background colors of states

That means, you have the possibility to set the background color of a state in the state diagram to group states logically.

- ▶ It is possible to comment in `.json` files

Now it is possible to add comments with `//` to `.json` files.

- ▶ New image-based light 3D widget

Now it is possible to illuminate virtual 3D objects with image-based lighting.

EB GUIDE Monitor:

- ▶ Startup messages and error messages are now transferred and cached

On EB GUIDE GTF startup, trace messages are cached until the EB GUIDE Monitor is connected.

- ▶ It is possible to export and import watch lists of datapool items and events

You can export watch lists to files that can be shared with somebody else. Or you can import watch list files that are shared by someone else.

- ▶ It is possible to load model configuration in EB GUIDE Monitor UI in stand-alone use case

In stand-alone use case, EB GUIDE Monitor offers you now a menu option to load the model configuration.

EB GUIDE GTF:

- ▶ It is possible to load precompiled shaders

To reduce EB GUIDE model startup times, it is now possible to load precompiled shaders in EB GUIDE GTF.

- ▶ New EB GUIDE GTF EB GUIDE Script functions:

- ▶ `lerp` (linear interpolation)
- ▶ `smoothstep`
- ▶ `frac`
- ▶ `fmod`
- ▶ `min`
- ▶ `max`
- ▶ `clamp`
- ▶ `saturate`
- ▶ `bool2String`
- ▶ `getConfigItem`
- ▶ `getLineHeight`
- ▶ `getFontAscender`
- ▶ `getFontDescender`
- ▶ `getFontLineGap`
- ▶ `getLabelTextWidth`
- ▶ `getLabelTextHeight`
- ▶ `getImageWidth`
- ▶ `getImageHeight`
- ▶ `getProductString`
- ▶ `getVersionString`

- ▶ `focusMoveTo`
- ▶ `isWidgetOnActiveStatemachine`
- ▶ Command line tool `IBLGenerator` for image-based lighting

It is now possible to use the command line tool `IBLGenerator` to create image-based lighting.
- ▶ It is possible to create screenshots from the currently active runtime EB GUIDE model

EB GUIDE SDK provides the possibility to create screenshots from an active EB GUIDE model.
- ▶ New `Scenes` module that replaces `GtfViewFactory`
- ▶ New `Properties` module that replaces `GtfPropertyContainer`, `GtfWidgetModel` and `GtfWidgetFeatureModel` classes

A.7.3. Fixed issues in 6.7

The following list contains fixed issues known at the time of release:

- ▶ Widgets within templates can now be globally renamed again

The global rename of widgets within a template seemed to work, but were actually only shown in the UI and were not renamed. This is now working again.
- ▶ The issue with `GtfIpc` connection solved

Now the `GtfIpc` reconnects successfully if the connection gets lost.
- ▶ The issue with `strokeThickness` larger than 720 pixels solved

Now EB GUIDE supports `strokeThickness` up to a value of 786 pixels.
- ▶ The issue with `getTextWidth` EB GUIDE Script functions solved

Now it is possible to use `getTextWidth` EB GUIDE Script functions with multiple threads.
- ▶ Unexpected behavior of color animations solved

Color animations in curves such as sinus, linear or quadratic are now shown as expected.
- ▶ The issue with with event triggers in datapool description file solved

Now events are only executed as trigger for a scripted value if these are configured in a trigger list.
- ▶ Comments possible in JSON files

Now it is possible to add comments with `//` to JSON files such as `model.json` and `platform.json`.
- ▶ The issue with reverse animations solved

Reverse animations now remain at the end when the animation is finished as expected.

- ▶ Widget with **Moveable** and **Touch move** widget features behaves as expected

If a widget has the **Moveable** and the **Touch move** widget features with its `touchMoved` property set to true, it now remains stationary when you click it.


- ▶ The issue with configurable scenes for logic state machines solved

It is not possible any longer to configure scenes for logic state machines.

A.8. Release notes 6.6

A.8.1. Migrating from 6.5.1 to 6.6

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

After migrating an EB GUIDE project from version 6.5.1 to version 6.6, the following changes apply.

Microsoft Visual Studio 2017

To build EB GUIDE GTF plugins, use Microsoft Visual Studio 2017.

Structure of datapool and event system header files

Due to the changes in the structure of datapool and event system header files that are generated during the export of an EB GUIDE model, note the following:

- ▶ Adapt all `#include` directives to the new file paths.
- ▶ Update all usages of event and datapool IDs in the `#define` directives to the changed names. For more details, see the exported header files and [chapter 2, “New or changed in 6.10”](#).

A.8.2. New or changed in 6.6

This chapter lists new or changed features of EB GUIDE.

EB GUIDE Studio:

- ▶ Update of open source components:
 - ▶ LibJPEG Turbo 1.5.3
 - ▶ PowerVR SDK 2017 R2

- ▶ ICU4C 60.2
- ▶ FluentCommandLineParser 1.5.0.20
- ▶ FreeType 2.9
- ▶ ANTLR C# 4.7
- ▶ New basic widget alpha mask

EB GUIDE Studio offers a new basic widget that allows to modify the alpha value of child widgets using an image.

- ▶ Global renaming of states, state machines, views, widgets and event parameters is now possible.
- ▶ Template interface

It is now possible to rename properties that are added to a template interface.

- ▶ Zoom in/out feature

It is now possible to magnify or reduce the content of a view.

- ▶ New animation editor

Animations and curves are no longer available in the **Toolbox** and are not displayed in the **Navigation** area. EB GUIDE Studio now offers the new animation editor in the content area. The following features are added:

- ▶ Preview of curves is available in the content area.
- ▶ You can change the duration of curves using preview handles.
- ▶ You can animate properties and add curves in one dialog.
- ▶ A widget can contain multiple animations of the same property.

EB GUIDE GTF:

- ▶ Support of sRGB color space added

You can select the sRGB color space in the Project center. The sRGB color space can be applied to 2D and 3D content and it works with multisampling.

- ▶ Support of bitmap fonts is added.
- ▶ New **Stroke** widget feature

EB GUIDE Studio offers the new **Stroke** widget feature. You can apply this widget feature to labels with TrueType fonts.

- ▶ Cook-Torrance lighting model added

To achieve more realistic rendering results, in EB GUIDE GTF the Cook-Torrance lighting model is implemented. New 3D widgets are added:

- ▶ PBR GGX material
- ▶ PBR Phong material
- ▶ Ambient light
- ▶ If remote framebuffer for a scene is activated, EB GUIDE GTF memory consumption increases due to caching the active scene. This behavior is used for taking screenshots with EB GUIDE Monitor scripts.
- ▶ Changes in the header files of the exported EB GUIDE model

The following changes apply to datapool and event system header files:

- ▶ The structure of the export directory now looks as follows:


```
/export/include/global|local/datapool/
/export/include/global|local/events/
```
- ▶ The file names now include the names of the event groups and not the event group IDs.
- ▶ A unique `#define` directive is added for the exported event groups.
- ▶ All `#define` directives are in upper case letters.
- ▶ Comments with names of the elements and type information are added.

For migration instructions, see [chapter 1, “Migrating from 6.9 to 6.10”](#).

EB GUIDE Monitor:

- ▶ EB GUIDE Monitor shows the currently selected language and skin.
- ▶ Interaction with state machines is improved.
- ▶ It is now possible to run script for EB GUIDE Monitor from the command line.
- ▶ The new **State machine** component is available.

The **State machine** component shows the active state and state machine.

- ▶ EB GUIDE Monitor plugin interface

EB GUIDE Monitor now has a plugin interface. The EB GUIDE Monitor API is available.

A.8.3. Fixed issues in 6.6

The following list contains fixed issues known at the time of release:

- ▶ Fixed problem with the synchronize button

The ⇌ synchronize button in the **Navigation** component stays active after the state is updated due to the selection changes in the content area.

► Solved datapool issues in EB GUIDE GTF plugins

The fault tolerance of the initialization of the datapool items is improved. Datapool items can now be initialized even if the `datapool.gtf` file contains resources and the EB GUIDE GTF resource management is not running.

► Fixed the touch behavior of invisible widgets

If a widget has any touch widget feature added and is set to invisible with the **Viewport** widget feature, the widget does not react to touch input.

► Fixed the `types.bin` file issue

If the `types.bin` file is missing, the exported EB GUIDE model starts as expected.

► Fixed issue in the **Logger** component of EB GUIDE Monitor

In EB GUIDE Monitor, in the **Logger** component events are not listed multiple times any more.

► Added information to logfile

If an EB GUIDE GTF plugin fails to load, the corresponding information is added to the EB GUIDE Studio logfile.

► Solved issue with TortoiseSVN client


If the TortoiseSVN client in version 1.6 is used to create the project directory, the simulation of an EB GUIDE model starts as expected.

A.9. Release notes 6.5.1

A.9.1. Migrating from 6.5 to 6.5.1

NOTE



Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

Migration is performed automatically, when opening a project that was saved with a previous version.

A.9.2. Fixed issues in 6.5.1

The following list contains fixed issues known at the time of release:

- ▶ Key navigation in the **Assets** component fixed

In EB GUIDE Studio, if the **Assets** component is not completely visible, the navigation inside the component using arrow keys does not lead EB GUIDE Studio to freeze.

- ▶ Fixed linear color animation behavior on ARM SoCs operating systems

On ARM SoCs target operating systems the linear animation of color values generate correct results.

- ▶ Connection issue of EB GUIDE Monitor solved

Disconnecting and reconnecting EB GUIDE Monitor during the simulation is now possible.

- ▶ Fixed background display color on Android systems

The background of a display on Android system has now black color.

- ▶ Unexpected reset of datapool values during start-up fixed

During start-up, applications do not overwrite values of datapool items that already exist.

- ▶ Datapool and event system integration problem fixed

In EB GUIDE models with multiple state machines and different communication contexts, datapool and event systems are connected now.

- ▶ Issue on language settings during start-up solved

If an EB GUIDE model has a conditional script in a datapool item and this script changes the language, on start-up the language changes as expected.

- ▶ Missing symbols are included in the EB GUIDE GTF SDK files

Code in EB GUIDE GTF SDK files is corrected for required export symbols.

- ▶ Issue with a parameter in the configuration file fixed

The parameter `gtf.model.scenes.<scenename>.hwLayerId` is now evaluated correctly.

- ▶ Event duplication fixed

When multiple state machines with different communication contexts and threads are used, the unexpected behavior of events does not occur any more.

- ▶ EB GUIDE Studio layout issue solved

When on Windows operating systems a double-sized task bar is used, EB GUIDE Studio layout is depicted correctly.

- ▶ Issue with `ExternalInput.h` in the EB GUIDE GTF SDK fixed

`ExternalInput.h` in the EB GUIDE GTF SDK is adapted and can now be used with the new event system implementation.

► Concurrent datapool access fixed

During the simulation of an EB GUIDE model when the datapool must be updated very often, the datapool access works as expected without errors.

► Evaluation of command line parameters for EB GUIDE Studio fixed

The command line parameter `-n` now works as expected.

► Custom stage provider issue solved

In the EB GUIDE model scope, the custom stage provider can be used as expected.


► Performance issue in EB GUIDE Studio fixed

When opening an EB GUIDE model that has many images in the resource directory, EB GUIDE Studio reacts as expected.

A.10. Release notes 6.5

A.10.1. Migrating from 6.4 to 6.5

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

After migrating an EB GUIDE project from version 6.4 to version 6.5, the following changes apply.

Migration of EB GUIDE projects with added custom widgets

It is not possible to migrate an EB GUIDE project with added custom widgets from one EB GUIDE version to another. If your project contains custom widgets, update them with the correct version and then migrate your project.

A.10.2. New or changed in 6.5

This chapter lists new or changed features of EB GUIDE.

EB GUIDE Studio:

► New EB GUIDE Monitor

With EB GUIDE Monitor you can observe and control an EB GUIDE model during the simulation. EB GUIDE Monitor includes mechanisms for the communication with datapool, the event system, and the state machines of the EB GUIDE model. The monitor is started automatically in EB GUIDE Studio during the EB GUIDE model simulation but can also be used as stand-alone application.

- ▶ Update of open source components:
 - ▶ Prism 6.2
 - ▶ RapidJSON 1.1.0
 - ▶ PowerVR SDK 2017 R1
 - ▶ Json.Net 9.0.0.0
 - ▶ Command Line Parser Library 1.9.1971
 - ▶ PSD FileType Plugin for Paint.NET
 - ▶ Extended WPF Toolkit 3.0.0
 - ▶ zlib 1.2.11
 - ▶ FreeType 2.8
 - ▶ LibJPEG Turbo 1.5.2
 - ▶ HarfBuzz 1.4.8
 - ▶ LibPng 1.6.32
- ▶ .ppm file format

EB GUIDE Studio no longer supports the image format `.ppm`.

- ▶ New basic widget ellipse

EB GUIDE Studio offers a new basic widget that allows drawing a colored ellipse with the dimensions and coordinates of the widget into a view. In addition, the widget can also be used to draw a sector or an arc.

- ▶ Global renaming of datapool items and events

The new functionality **Rename global** offers the possibility to rename the selected datapool item or event and also its occurrences in the EB GUIDE model.

- ▶ Dockable components

Now it is possible to dock all components of the project editor and in EB GUIDE Monitor as tabs or undock them as floating components. The default layout can be restored in the command area using **Layout > Reset to default layout**.

- ▶ Support for OpenGL ES version 3.1

To display 3D graphics, EB GUIDE Studio now supports the OpenGL ES version 3.1 renderer.

- ▶ Command line

The following improvements were realized:

- ▶ Command line validation

It is now possible to validate an EB GUIDE model using the command line. The result is saved to a logfile.

- ▶ Language import

It is now possible to import language-dependent texts using the command line.

- ▶ Skin support

It is now possible to define values in datapool items for the EB GUIDE model using skin support functionality. When skin support is added to a datapool item, all available skins in the EB GUIDE model are displayed in the **Properties** component in a table. Skins can be added and removed.

Language and skin support for datapool items are mutually exclusive.

- ▶ Events and event system

The following improvements were realized for events:

- ▶ Events are now displayed in the new **Event** component. Here you can also add new events, edit and search for events and jump directly to them.
- ▶ The event system has a new API based on `UUIDs`.

- ▶ Datapool

- ▶ The event system has a new API based on `UUIDs`.
- ▶ New **Datapool** component is added to the project editor. The **Datapool** component allows adding **Datapool** items and editing **Name** and **Value** properties. The following properties are removed from the datapool:

- ▶ Reader ID
- ▶ Reader context
- ▶ Writer ID
- ▶ Writer context
- ▶ Windowed

- ▶ **Assets** component

New **Assets** component is added to the project editor. The **Assets** component allows adding resources such as images, fonts, and `.ebmesh` files using drag-and-drop. All resources from the `$GUIDE_PROJECT_PATH\resources` directory and its subdirectories are displayed in the preview area of the component.

- ▶ Import of `.psd` images

The **Assets** component allows adding .psd images. An image with multiple layers is displayed in the view state with multiple widgets, whereas each layer is represented by a widget.

- ▶ EB GUIDE script function for shutdown changed:

The script function `f:request_runlevel(...)` was removed. The new script function `f:shutdown()` shuts down the system and, depending on the system integration, also the display.

EB GUIDE TF:

- ▶ New life cycle concept

EB GUIDE TF offers two different life cycle concepts:

- ▶ The core life cycle drives the start-up of the framework.
- ▶ The EB GUIDE model life cycle drives the start-up of an HMI model.

The EB GUIDE model life cycle offers the functionality to add a custom stage at any point during the EB GUIDE model life cycle.

- ▶ Android APK system requirements

The minimal system requirements for the Android APK are updated to Android 5.0 (API Level 21).

- ▶ Datapool

Implemented new concept for datapool.

EB GUIDE Monitor:

- ▶ Scripting in EB GUIDE Monitor


EB GUIDE Monitor offers the **Scripting** component to start scripts. The **Scripting** component is not in the default layout. The component is added by clicking **Layout > Scripting**.

A.11. Release notes 6.4.1

A.11.1. Migrating from 6.4 to 6.4.1

NOTE



Before you migrate a project, make sure your project is free of errors. To do so, open your project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when no errors and warnings occur anymore.

Migration is performed automatically, when opening a project that was saved with a previous version.

A.11.2. New or changed in 6.4.1

This chapter lists new or changed features and solved issues of EB GUIDE.

► Wrong calculation of `getTextHeight` solved

Negative font size values in some cases have led to a wrong calculation of the text height. If the font size is set to a negative value, it is now always treated as 0.

► Animated view transitions fixed

If an EB GUIDE Studio model contains a dynamic state machine and two or more views with an animated view transition, but with no corresponding entry and/or exit animation, memory layout problems do not occur anymore.

► EB GUIDE GTF problems with animations solved

When an animation was played and reversed and this animation was then disabled in the project, EB GUIDE GTF does not crash anymore when the simulation is started anew.

► Behavior of object lists in templates fixed

When a template containing an object list is used in an instantiated template and EB GUIDE Studio is restarted, the list in the template instance now contains the correct number of objects.


► Coloration effect for animations fixed

The **linear interpolation curve** now works correctly when changing the color.

A.12. Release notes 6.4

A.12.1. Migrating from 6.3 to 6.4

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open the project with your current EB GUIDE Studio version and click  in the problems area. Start migration only when the number of errors and warnings is reduced to zero.

After migrating an EB GUIDE project from version 6.3 to version 6.4, the following changes apply.

Shearing widget feature

The *x* and *y* properties of the **Shearing** widget feature are now applied correctly to the corresponding *x* and *y* values. After the migration, check and change all *x* and *y* values that belong to the **Shearing** widget feature in your EB GUIDE Studio model.

A.12.2. New or changed in 6.4

EB GUIDE Studio:

- ▶ 3D widgets

EB GUIDE Studio offers a new 3D widget set that allows importing 3D graphics as a scene graph and editing it. Configurable sub-elements of a scene graph are meshes, cameras, spot lights, point lights, directional lights, scene graph nodes and materials.

3D model widget as well as widget properties and datapool items of type `3D model` are no longer available.

In addition, it is possible to add reflection cube maps using the **Reflection texture** widget feature for materials.

- ▶ Search functionality

The new search box in the command area offers the possibility to search for the following elements:

- ▶ All kinds of model elements such as views, templates, and datapool items
- ▶ Text within EB GUIDE Scripts

Clicking a model element and pressing **F3** starts a reference search: It lists all occurrences of the model element in the EB GUIDE model.

- ▶ EB GUIDE project structure

As of version 6.4, EB GUIDE introduced a new project structure, which provides a better overview about the EB GUIDE model. There are dedicated directories for views, state machines, templates, resources and configuration. Datapool items and events are stored in the files `datapool.gdata` and `events.gdata` respectively.

EB GUIDE projects that were created with an older version of EB GUIDE are automatically adapted to the new structure during migration.

- ▶ Copy and paste of model elements

It is possible to copy and paste the following model elements via shortcuts and context menu:

- ▶ Widgets
- ▶ States

- ▶ EB GUIDE Script functions

The following EB GUIDE Script functions are removed from the EB GUIDE Script standard library:

- ▶ `formatInteger`
- ▶ `formatFloat`

For details, see the EB GUIDE Studio user guide, section **References**.

► **Shearing** widget feature

In previous versions, the **Shearing** widget feature applied the value of the `shearingYbyX` property to `shearingXbyY` and the value of the `shearingXbyY` property to `shearingYbyX`. This issue has been fixed.

► OpenVG renderer

OpenVG renderer is not supported any more.

► `.svg` file format

EB GUIDE Studio no longer supports images in the `.svg` file format.

► **Appearance** widget feature category

The following widget features are no longer available:

► **Rounded**

► **FillPattern**

► **LinearFillGradient**

► **RadialFillGradient**

► EB GUIDE GTF SDK

EB GUIDE GTF SDK no longer includes `GtfInternalInputEvent.h`.


EB GUIDE GTF SDK now contains `GtfStaticAssert.h`.

A.13. Release notes 6.3

A.13.1. Migration from 6.2 to 6.3

After migrating an EB GUIDE project from version 6.2 to version 6.3, the following changes apply.

NOTE

Before you migrate a project, make sure your project is free of errors. To do so, open your project with EB GUIDE Studio 6.2 and click  in the problems area. Start migration only when the number of errors and warnings is reduced to zero.

-
- For the **Touched** widget feature the `touchBehavior` property is available. The value `Visible pixels` (=1) is replaced by the value `Whole area` (=0) for labels and 3D graphics. Therefore it also effects the classes `GtfLabel` and `GtfModel`.

- ▶ The `normalized` property is deleted from the `3D graphic extension widget` feature.

A.13.2. New or changed in 6.3

In addition to what is described in user documentation, EB GUIDE offers the following features.

Migration:

For migration issues from previous versions please contact your sales representative.

- ▶ Language import and export

To display EB GUIDE models in different languages, EB GUIDE supports exporting, editing, and importing all language dependent texts.

You export texts to an `.xliff` (XML Localization Interchange File Format) file and forward the file to a translation agency. After importing the translated file back into EB GUIDE Studio, the texts that are displayed in your EB GUIDE model are available in a different language.

- ▶ Improved usability

For a better usability the **Properties** panel and the **Toolbox** are arranged on the left side of the screen.

Additionally a breadcrumb navigation is introduced to the content area, which displays the hierarchy of the selected model element.

- ▶ Copy and paste of model elements

It is possible to copy and paste the following model elements via shortcuts and context menu:

- ▶ View states
- ▶ Templates
- ▶ Events
- ▶ Datapool items
- ▶ EB GUIDE Script functions

EB GUIDE Script offers the following new functions:

- ▶ `format_float`
- ▶ `format_int`

The following EB GUIDE Script functions are now deprecated:

- ▶ `formatInteger`
- ▶ `formatFloat`

For details, see the EB GUIDE Studio user guide, section **References**.

- ▶ The `currentLineCount` widget property of the **Multiple lines** widget feature is no longer available.
- ▶ Support for Filmbox files

For 3D graphics, Filmbox (`.fbx`) is now the preferred file format. In addition to that, Collada files (`.dae`) are still supported.


A.14. Release notes 6.2

A.14.1. Migration from 6.1 to 6.2

After migrating an EB GUIDE project from version 6.1 to version 6.2, the following changes apply.

NOTE



Before you migrate a project, make sure your project is free of errors. To do so, open your project with EB GUIDE Studio 6.1 and click  in the problems area. Start migration only when the number of errors and warnings is reduced to zero.

- ▶ The following widget features have been renamed:
 - ▶ **State enabled** is now called **Enabled**.
 - ▶ **State selected** is now called **Selected**.
 - ▶ **State focused** is now called **Focused**.
 - ▶ **State pressed** is now called **Pressed**.
 - ▶ **State touched** is now called **Touched**.
 - ▶ **Multi-state** is now called **Child visibility selection**.
 - ▶ **Button group** is now called **Selection group**.
 - ▶ **Rotary button** is now called **Spinning**.
 - ▶ **Line template index** is now called **Template index**.
 - ▶ **Multi-line** is now called **Multiple lines**.

After migrating an EB GUIDE project, the above widget features are displayed with the new names.

- ▶ After migration, animation templates that were added to a project in version 6.1 are still displayed, even though animation templates cannot be added with version 6.2.
- ▶ If there is a link from a language-dependent datapool item to another datapool item, the source datapool item is no longer language-dependent after migration.

- ▶ The **Border** widget feature is removed from images and labels.
- ▶ If the `model` property of a 3D graphic contains a file with a different file type than `.dae`, the value of the `model` property is deleted.

A.14.2. New or changed in 6.2

In addition to what is described in user documentation, EB GUIDE offers the following features.

Migration:

For migration issues from previous versions please contact your sales representative.

EB GUIDE Studio:

- ▶ View transition animation

You can define a moving or fading animation for entering or exiting a view. You define view transition animations for view templates.

- ▶ EB GUIDE Script operator precedence

In EB GUIDE Script, handling of operator precedence and associativity has been improved.

- ▶ 3D widgets

The following widgets and their corresponding widget features are no longer available:

- ▶ Light and material effect
 - ▶ Cube texture
 - ▶ Diffuse texture
 - ▶ Normal texture
 - ▶ Second light source
- ▶ Light effect
 - ▶ Second light source
- ▶ Material effect
 - ▶ Cube texture
 - ▶ Diffuse texture
 - ▶ Normal texture
- ▶ No lighting effect
- ▶ New property type `Function () : bool`

It is possible to add a user-defined widget property of type `Function () : bool`. The new property is a function that has no parameters and returns a boolean value. You call the function in EB GUIDE Script in the way you address widget properties.

Example:

```
v:this."FunctionTestName"()
```

- ▶ It is not possible to add a template of type animation.
- ▶ The **Border** widget feature is no longer available for images and labels.

A.15. Release notes 6.1

A.15.1. Migration from 6.0 to 6.1 and compatibility

After migrating an EB GUIDE project from version 6.0 to version 6.1, the following changes apply.

- ▶ After migration, the following data is removed from EB GUIDE project files:
 - ▶ The **Toggle button** widget feature
 - ▶ The **Virtual layer** widget feature
 - ▶ The `lineSeparator` property of the **Multi-line** widget feature
 - ▶ The `activate_trigger` property and the `deactivate_trigger` property of dynamic state machines
- ▶ Language identifiers are removed.

In EB GUIDE languages are addressed by their names. After migration, using language identifiers causes an error.



Example A.1. Language change

See the difference between addressing a language in EB GUIDE Studio 6.0 and EB GUIDE Studio 6.1.

```
f:language(1)           // language change in EB GUIDE Studio 6.0

f:language(1:English) // language change in EB GUIDE Studio 6.1
```

► Equality operators for resource data types

Events and resource data types, for example 3D graphics, fonts and images, do not support the equality operators (==) and (!=). These equality operators cause an error after migration.

A.15.2. New or changed in 6.1

In addition to what is described in user documentation, EB GUIDE offers the following features.

Migration:

For migration issues from previous versions please contact your sales representative.

EB GUIDE Studio:

► Comment column for libraries and messages

It is possible to add comments for libraries and messages in the profiles of an EB GUIDE model.

► The widget feature dialog does not open in the **Properties** panel anymore. An additional panel for widget features is available.

► `textTruncation` widget feature

For the `textTruncation` widget feature, the `truncationPolicy` property can assume one of the following values:

► `trailing`

► `leading`

The option `center` is no longer available.

Non-linked widget feature property values are migrated.

► Bidirectional text in labels

The handling of bidirectional text in labels has been improved. Now it complies to Unicode 8.0.

► Widget features

The following widget features are no longer supported by EB GUIDE Studio:

► **Toggle button**

► **Virtual layer**

► Availability of equality operators

Events and resource data types, for example 3D graphics, fonts and images, do not support the equality operators (==) and (!=).

► EB GUIDE Script data types

The following data types are no longer supported by EB GUIDE Script:

- int8 and int8 list
- int16 and int16 list
- int64 and int64 list
- uint8 and uint8 list
- uint16 and uint16 list
- uint32 and uint32 list
- uint64 and uint64 list

► EB GUIDE Script

The following functions are no longer supported:

- `getProviderVersion`
- `getProviderName`

► Parameter for `ActionDescriptor`

The parameter `action flag` is no longer supported.

► EB GUIDE Script function for dynamic state machine

For dynamic state machine modeling, EB GUIDE Script offers a new function:

- `IsDynamicStateMachineActive`

EB GUIDE TF:

► While displaying a text the following characters are replaced:

The sequence `\\ '\\` is replaced by `\\`. The sequence `\\ 'n'` is replaced by `\\n`. In case the text is displayed in one line, `\\n` is replaced by `' '` additionally.

A.16. Release notes 6.0

A.16.1. Migrating from 5.5.3 to 6.0

The following chapter provides instructions on the steps needed to migrate to a newer version of EB GUIDE.



Exporting data from EB GUIDE 5.5.3

Step 1

Start EB GUIDE Studio 5.5.3.

Step 2

Open a project.

Step 3

Go to the bottom-center of the main window and click the **Problems** tab.

Step 4

In the **Problems** component, click the **Check** button.

Step 5

Resolve the problems and warnings before you continue.

Step 6

From the **Plugins** menu, select **Plugin list**.

Step 7

Select **5To6Migrator** and click **OK**.

Step 8

From the **Plugins** menu, select **EB GUIDE 5 to 6 export > Start data export**.

A dialog opens.

Step 9

Select a directory for the export of project files.

Step 10

Confirm with **OK**.

The export starts.



Migrating data to EB GUIDE 6.0

Step 1

Start EB GUIDE 6.0.

Step 2

In the project center, select the **OPEN** tab.

Step 3

Select the directory to which you exported the project from EB GUIDE 5.5.3.

Step 4

Click the **OPEN** button.

NOTE
The EB GUIDE 5To6Migrator plugin does not preserve customized start-up settings

The migrated project gets a default simulation and edit configuration, which contains settings for the main state machine and the default set of libraries and messages. Check and adapt the configurations if necessary.

A.16.2. New or changed in 6.0

In addition to what is described in user documentation, EB GUIDE offers the following features.

Migration:

For migration issues from previous versions please contact your sales representative.

EB GUIDE Studio:


► Undo/redo functionality

In EB GUIDE Studio, click  to repeat your last action and  to undo your last action.


► Language switching

To add a language to your EB GUIDE model, go to the project center and click **CONFIGURE > Languages**. In the content area you add or delete languages and define the default language.

► List editor

Datapool items of list types such as integer lists or image lists can be edited as follows. Select the datapool item. In the **PROPERTIES** panel go to the **Value** property and click . In the dialog that opens, you add, delete, clone, and modify list items.

► Type conversion

Datapool items can be converted to scripted values as follows. Select a datapool item in the navigation area. In the **PROPERTIES** panel go to the **Value** property and click the  icon next to the property. In the context menu, click **Convert to script**. To convert the datapool item back to a plain value, click **Convert to plain value**.

► Dynamic state machines

Dynamic state machines are not automatically started at system start. They run in parallel to other state machines and can be started (pushed) and stopped (popped) during run-time.

For dynamic state machine modeling, EB GUIDE Script offers the following functions:

► Push dynamic state machine

- ▶ Pop dynamic state machine
- ▶ Remove all dynamic state machines
- ▶ Change priority

To use the above mentioned EB GUIDE Script functions, do the following:

- ▶ Add a dynamic state machine to your EB GUIDE model.
- ▶ In the navigation area select a state machine, view state or compound state to which you want to run in parallel the dynamic state machine.
- ▶ In the the **PROPERTIES** panel, select the **Dynamic state machine list** check box .

With these prerequisites done, you use EB GUIDE Script functions that are related to dynamic state machines.

▶ **EB GUIDE Script data types**

The following data types are no longer supported by EB GUIDE Script:

- ▶ int8 and int8 list
- ▶ int16 and int16 list
- ▶ int64 and int64 list
- ▶ uint8 and uint8 list
- ▶ uint16 and uint16 list
- ▶ uint32 and uint32 list
- ▶ uint64 and uint64 list

EB GUIDE TF:

- ▶ While displaying a text the following characters are replaced:

The sequence '\\' '\\' is replaced by '\\'. The sequence '\\' 'n' is replaced by '\\n'. In case the text is displayed in one line, '\\n' is replaced by ' ' additionally.