



icenter

Media Documentation

Technical description

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Modification management

Version	Date	Name	Dept.	Modifications	State
0.1	10.07.2014	EPT	SW	Initial draft	Draft
0.2	11.07.2014	EPT	SW	Changed document according to Review from LEF	Draft
0.3	04.12.2014	EPT	SW	Updated Figure 2 Added chapters 3.4, 3.5, 3.6, 3.11, 3.20 Updated existing feature list chapters (3.x) to meet the correct handling Removed chapter 2.3 (Messaging) Removed deep explanation of the different controllers in chapter 2.2.1 (not interesting for POs)	Draft
0.4	28.01.2015	EPT	SW	Added chapter 6.2	Draft
1.1	23.09.2015	EPT	SW	Updated diagram in chapter 2.2 Added chapters 3.12, 3.22, 3.23, 3.24, 3.25, 6.3 Reworked chapter 3.2 (added sub chapters) Added missing keyboard shortcuts in chapter 6.2 Updated chapter 3.8 with the CodeConversion formula	Draft

Review

Version	Date	Name	Dept.	Remarks
0.1	11.07.2014	LEF	SW	<ul style="list-style-type: none"> - 2.2.5: Automatic cleanup is missing - Appendix with differences between 3.0 and 3.2 is missing - Spelling
0.4	29.01.2015	LEF	SW	Ok
1.1	08.10.2015	OCS	SW	- commented the appendix

Release

Version	Date	Name	Dept.	Remarks
1.0	29.01.2015	EPT	SW	1 st release
2.0	09.10.2015	EPT	SW	2 nd release

1 Introduction

1.1 Scope

This document is a technical description of icenter.media 3.4. It gives all information to Gorba internal people to be able to work with this product.

This document is not intended to be a user manual.

1.2 Intended Audience

This document is written to be understood by project managers and software developers.

2 Product Overview

2.1 System Overview

The following figure shows how icenter.media fits into the Center architecture.

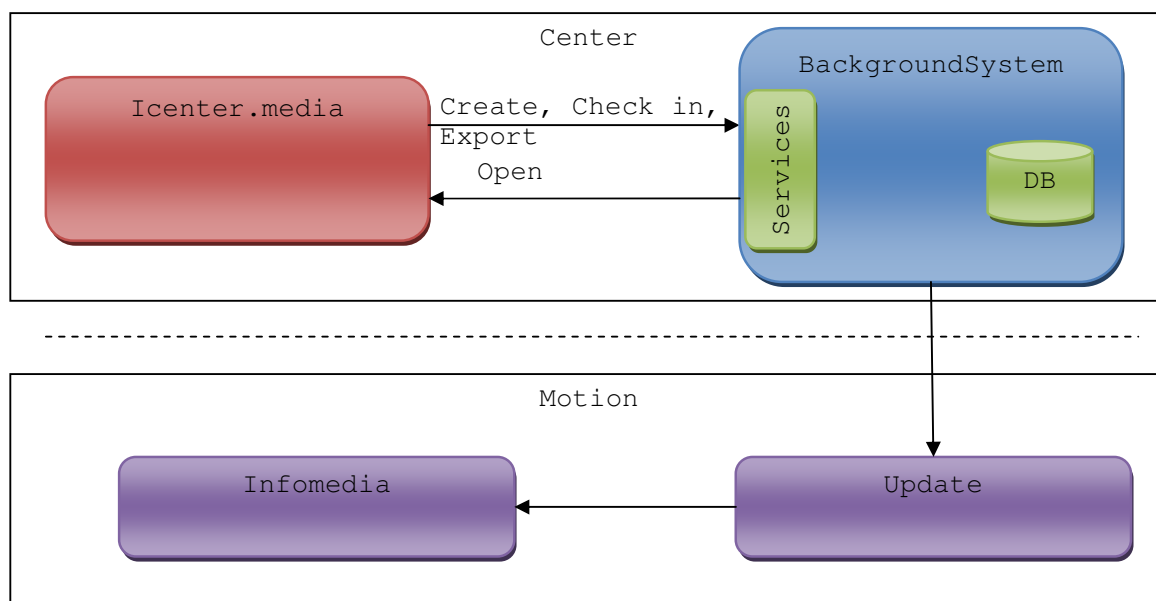


Figure 1 – System overview

2.2 Components

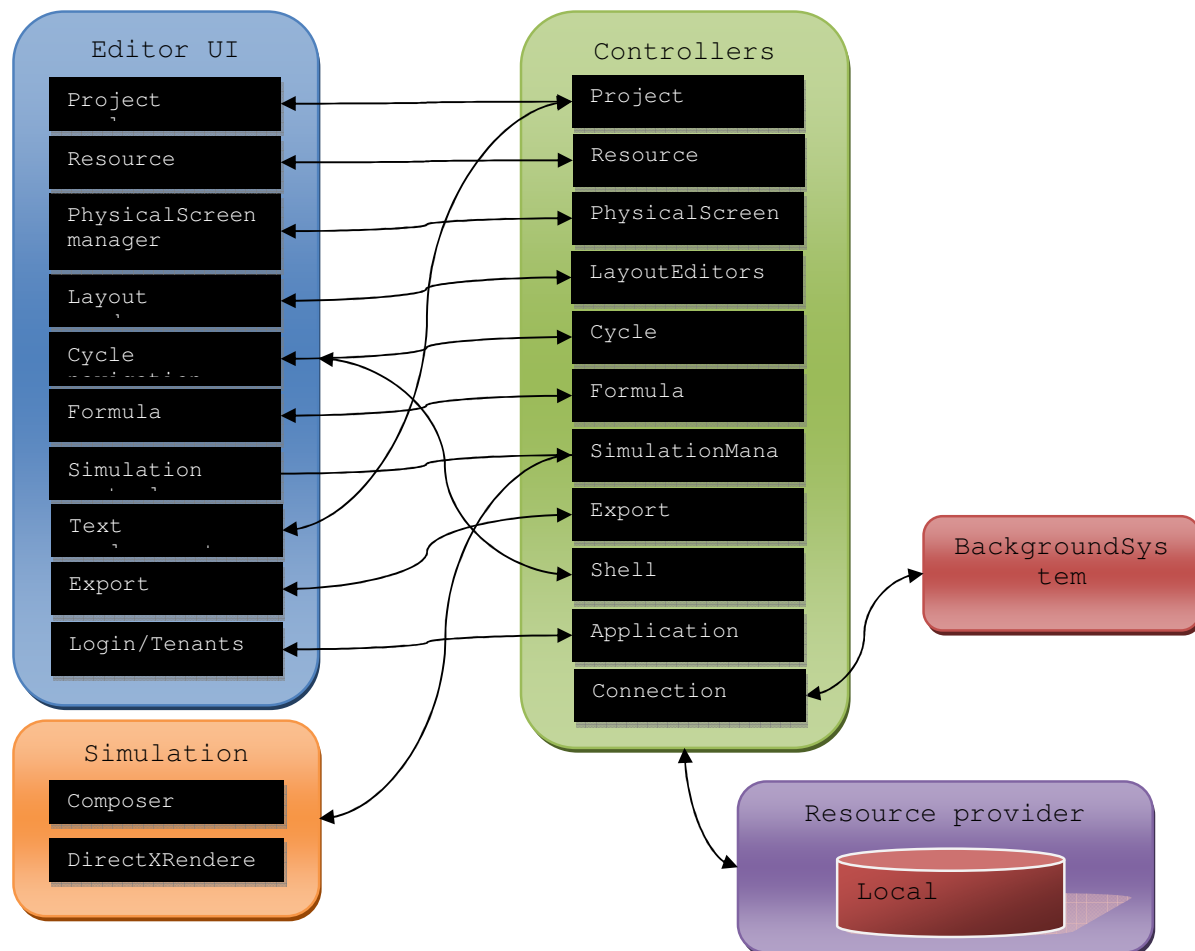


Figure 2 – Overview of icenter.media components

2.2.1 Controllers

This component represents the business logic of the application. The controllers are also responsible to communicate with the Server (BackgroundSystem)

2.2.2 Simulation

This component is a real infomedia running in a separate window. The update of the window is done from the simulation manager every time a property changes in the current layout/cycle or if a test event is raised, e.g. to test an event cycle.

2.2.3 Editor UI

This component contains the views for the user. All user interactions are handled in the related views or passed to the controllers, if the interaction is not only UI related like expanding a property group. The features are described in chapter 3.

2.2.4 Resource provider

This component handles local resources. If a resource within the project file is not locally available, it creates a copy on the local system to decrease the time for loading a project. Local resources that don't belong to the currently loaded project are cleaned up automatically after a configurable time period, or if the maximum used disk space has been reached. An explanation of the configuration file can be found in chapter 4.1.

3 Function Description

The following features are introduced in icenter.media 3.2 and above:

3.1 Physical screen administration

The user has the possibility to manage multiple physical screens. This means he/she can select, add, remove physical screens or edit the properties (name, description, identifier). A physical screen can be a TFT, LED or Audio screen. Virtual displays are created automatically when a new physical screen is added. How many virtual displays a physical screen has can be selected while creating a screen by selecting a predefined master layout.

3.2 Cycle navigation

The cycle navigation bar allows the user to navigate to cycle packages, cycles or sections within the current project (Left part of the bar). The middle part of the bar shows the list of elements of the selected type. The right part of the bar shows the properties of the selected element.

3.2.1 Navigation part

On the left side of the bar is a Tree View showing all cycle packages, cycles and sections grouped by physical screen type. The user can navigate to the cycle package/cycle/section he/she wants and the layout bound to the section will be shown. Also the other parts of the navigation bar will change according to the selected element.

The user can duplicate a cycle or create a reference per drag and drop by dragging the cycle from the Tree View to the list of cycles (Middle part of the navigation bar). Only drag will create a reference, pressing Ctrl while dragging will create a duplicate.

3.2.2 Cycle package

Cycle packages are created automatically for each virtual display. They contain a set of cycles (Event and/or standard cycles). The user has the possibility to change the name of the package or add / remove (Standard and Event) cycles to a selected package.

3.2.3 Cycle

Within a cycle package, the user can add or remove event and/or standard cycles. Event cycles need a trigger on which a cycle will become active.

3.2.4 Section

A cycle contains one or more sections that are played in the order the user defines them. Each section contains a layout that is shown when the user navigates to the section

3.3 Project explorer

This feature allows the user to manage projects stored in database. This means the user can clone an existing project, see the details (number of layouts, resources, size,...), add a description or delete a project as long as he/she has the permission to do so. The user can also open a change an earlier project version. For faster access the explorer is split into recent projects and all others on the server. The recent projects will be loaded first, so that the user can already open one of them while the other projects are still loaded from the server.

3.4 Login/Tenants

This feature forces the user to login and select a tenant (if the user has access to more than one) before he/she can work on a project. After login, the user has the possibility to logout or change the tenant without closing and reopening the application.

3.5 Save/Check in

This feature allows the user to save a project locally or check it in. As long as a project is not checked in, the user can't open another project or create a new one. When the user checks in a project, all resources that are not already existing on the server are uploaded and a new version of the project structure is created (This could be used later to restore an old version).

Additionally the resources of a project will be saved locally to decrease the time needed to load a project. Local resources will be deleted automatically if a resource has not been used for a while. This time is configurable in MediaConfiguration.xml.

3.6 Import

This feature allows the user to import an existing project created with icenter.media 3.0 and above to the server.

3.7 Formulae manager

This feature allows the user to manage custom formulas that are selectable in the formula editors. The user can create, delete or edit the custom formulas within the manager.

3.8 Textual replacements

This feature allows the user to manage the global text replacements. These replacements are written into the file "codeconversion.csv" when the project is exported. The user can either replace the value of a dictionary cell with a text or with a picture if the user uses the "CodeConversion" formula.

3.9 Project consistency

This feature will check the consistency of the current project and informs the user about warnings and errors with an indicator in the status bar. Also before doing an export of the project, the check is done and the user has to confirm the export if the project has warnings or errors.

Example of an error: "Cycle package is not linked to a virtual display".

3.10 Local Export

The export of a project can be done locally as it was in 3.0. This will create the complete directory structure on the destination location and copy all needed resources.

3.11 Export to Server

This feature allows the user to export a project to the server. A project must always be checked in before an export can be done. The export to server will not create a local directory structure anymore. It will upload the exported main.im2 and optionally also the generated codeconversion.csv files as resources instead. After that, icenter.media creates all needed update parts and commands according to the selected update groups. The BackgroundSystem will then send the update commands and resources through the selected update methods to the units of the selected update groups. In icenter.admin the user can later also do an export to USB stick.

3.12 Transfer project

This feature allows the user to save a complete project (including all resources) to disk as *.icm. This file can later be imported on another tenant or another system.

3.13 Local fonts export

This feature automates the export of fonts that are not installed on the TFT. So if there are special fonts used in the project and the user exports the project locally, these special fonts are automatically copied to the "Fonts" folder and references are added to the .im2 file.

3.14 Snap-in feature

This feature allows the user to align layout elements quickly with the mouse. When the user drags a layout element and the element is near another one, the element "snaps" to the nearest edge of the other element. This feature can be enabled or disabled in the "View" menu.

3.15 Animations

This feature allows the user to assign an animation and its duration to some properties. E.g. an image element can have an animation to fade in within 2 seconds when it gets visible.

3.16 Multi-trigger for event cycles

This feature allows the user to set multiple triggers for an event cycle. These triggers have an OR conjunction.

3.17 Undo/Redo for Media management

This feature enables Undo and Redo for resources like images, videos, symbols.

3.18 Simulation

This feature extends the simple preview of icenter.media 3.0 with the possibility to simulate text rotations too.

3.19 Audio Editor

This feature allows the user to configure the audio. The user can add, remove, edit or reorder audio files, text to speech elements and the silence between multiple elements.

3.20 LED Editor (previously AlphaNt)

This feature allows the user to configure the interior and exterior LED sign resolutions of a vehicle and define texts and pictures that are used by them. Each sign is represented as a physical screen and each destination (if not dynamically received) is a single layout with its section and cycle.

3.21 Copy & Paste

This feature allows the user to copy & paste layout elements across different layouts for the same physical screen type or within the same layout.

3.22 CSV file manager

This feature allows the user to create, import, edit or remove csv files that can be selected in a "CsvMapping" formula. The editor has no validation so the user is responsible that the content of the file is valid. On an export, the csv files are generated and uploaded as resources to the system.

3.23 Multi font selection

This feature allows the user to select multiple fonts for a text element on an LED layout. This allows the AHDLC renderer to "scale" the text shown on the exterior sign by selecting the best font.

3.24 Project compatibility

This feature checks the compatibility of the project according to the software package versions defined in the unit configurations of the selected update groups. It informs the user about compatibility issues in the same component where the consistency warnings and errors are shown if the user wants to export an incompatible project.

Example for an incompatible project:

Selected Composer version in the unit configuration (icenter.admin):
2.4.x.x

Icenter.media project has an RSS feed ticker which needs Composer version 2.6.x.x or above

⇒ On export the compatibility message "Usage of unsupported feature: RSS ticker element" is shown.

3.25 Options dialog

This feature allows the user to change the

- application language
- number of days local resources are stored on disk
- text mode, font quality and video mode used in the simulation

3.26 License

TBD.

4 Configuration

4.1 MediaConfiguration

The configuration file MediaConfiguration.xml is located in the application folder.

```
@XmlDoc(xsd=..\Source\Core\Configuration\MediaConfiguration.xsd;incXsd=.\..\..\Common\Configuration\Source\Infomedia\DirectXRenderer\DirectXRenderer.xsd;xml=..\Source\Core\Configuration\MediaConfiguration.xml)
```

5 Installation

From version 3.2 on icenter.media will be available on the Gorba server as a ClickOnce application. The user can download the application from the server and use it in a sandbox. That means the application has no access to the local system outside the users domain.

A quick summary of ClickOnce can be found on the Wiki

<https://tfsgorba.gorba.com/sites/teamsoftware/Wiki/ClickOnce.aspx>.

The complete documentation about ClickOnce can be found on

[http://msdn.microsoft.com/en-us/library/t71a733d\(v=vs.100\).aspx](http://msdn.microsoft.com/en-us/library/t71a733d(v=vs.100).aspx).

6 Appendix

6.1 Differences between 3.0 and 3.2

The features from version 3.0 to 3.2 are described in this document, because of the fundamental changes. Smaller changes in further versions are described in the VD document.

Component	Version 3.0	Version 3.2
Project explorer	–	New
Formula manager	–	New
Screen navigation	–	New
Simulation control (UI)	–	New
Text replacement	–	New
Project controller	Only local file storage	Project is checked in on the server. While working on a project the user can save it locally. A copy of the resources from a project are locally saved and cleaned up after a configurable time. See chapter 4.1
Export controller	Local export with file structure. This can be manually packed in an Update package and transferred to a USB stick.	Local export is still available, but a project can also be exported to the server. The final update of the targets is done by the BackgroundSystem or by an USB update created by icenter.admin.
Simulation manager	Listens to property changes of the current selected layout and updates simulation window.	Also text rotation can be enabled.
Cycle navigation	1 unchangeable cycle package per project. In the navigation bar only the cycles and sections are shown.	1 cycle package per virtual display. The current selected package is shown in the cycle navigation bar. The tree view on the left can be used to navigate to cycle packages, cycles or sections
MediaConfiguration.xml	Resource settings and resolutions	Resource settings, resolutions per

		physical screen type (TFT, LED, Audio), DirectXRenderer settings (used to be able to enable the text rotation in simulation: Change TextMode to "Gdi")
Application	Startup application and use it.	The user MUST login and select a tenant. Depending on the permissions the user can only view existing projects or manipulate them.
Installation	Copy application to local disk and use it	ClickOnce approach.

6.2 Keyboard shortcuts

6.2.1 Defaults

DELETE	Deletes Elements (e.g. Layout Elements)
Ctrl + S	Save the current project locally
Ctrl + Shift + S	Check-in project
F12	Check-in as new project
Ctrl + Z	Undo last action
Ctrl + Y	Redo last action
Ctrl + A	Selects all Layout elements
Ctrl + C	Copy selected Layout elements
Ctrl + V	Paste Layout elements from Clipboard
Ctrl + X	Cut selected Layout elements
Ctrl + N	Create new project
Ctrl + O	Open project
Ctrl + I	Import project
Ctrl + E	Export or transfer a project
Alt + F4	Exit the application

6.2.2 Layout Manipulation

Layout Element = LE

Arrow_Left	Move LE Left 1 Pixel
Arrow_Right	Move LE Right 1 Pixel
Arrow_Up	Move LE Up 1 Pixel
Arrow_Down	Move LE Down 1 Pixel
Arrow_Left + CTRL	Move LE Left 10 Pixel
Arrow_Right + CTRL	Move LE Right 10 Pixel
Arrow_Up + CTRL	Move LE Up 10 Pixel
Arrow_Down + CTRL	Move LE Down 10 Pixel
Arrow_Left + CTRL + SHIFT	Move LE Left 50 Pixel

Arrow_Right + CTRL + SHIFT	Move LE Right 50 Pixel
Arrow_Up + CTRL + SHIFT	Move LE Up 50 Pixel
Arrow_Down + CTRL + SHIFT	Move LE Down 50 Pixel
Arrow_Left + CTRL + SHIFT + ALT	Move LE Left 100 Pixel
Arrow_Right + CTRL + SHIFT + ALT	Move LE Right 100 Pixel
Arrow_Up + CTRL + SHIFT + ALT	Move LE Up 100 Pixel
Arrow_Down + CTRL + SHIFT + ALT	Move LE Down 100 Pixel
SPACE	Temporarily select Pan tool
V	Select the Move tool
Z	Select the Zoom tool
H	Select the Pan tool
T	Select the Static Text tool (TFT, LED, Audio)
I	Select the Image tool (TFT, LED)
D	Select the Dynamic Text tool (TFT, LED, Audio)
M	Select the Video tool (TFT)
F	Select the Frame tool (TFT)
L	Select the Image List tool (TFT)
R	Select the RSS ticker tool (TFT) Select the Rectangle tool (LED)
J	Select the Live Stream tool (TFT)
C	Select the Analog Clock tool (TFT)
A	Select the Audio file tool (Audio)
S	Select the Silence tool (Audio)
F10	Enable/Disable Edge Snap tool (TFT)

6.2.3 Navigation

HOME	Reset Navigation and Zoom
Scroll_Up	Move the Layout up
Scroll_Down	Move the Layout down
Scroll_Up + CTRL	Move the Layout left
Scroll_Down + CTRL	Move the Layout right
Scroll_Up + ALT	Zoom out
Scroll_Down + ALT	Zoom in
TAB	Move to the next property
TAB + Shift	Move to the previous property
F5	Show resource manager
F6	Show textual replacements
F7	Show formula manager
F9	Show simulation

6.3 Feature compatibility list

This list shows the minimum required software package versions (only major and minor number) running on the unit to be able to use a specific feature in icenter.media. Not listed features are compatible with all versions.

	Applications					
	Media	Protran	Composer	DxRenderer	AudioRenderer	AhdlcRenderer
Multiple fonts	3.4	–	–	–	–	2.6
RSS Ticker element		2.6	2.6	2.6	–	–
Live Stream element		–	2.6	2.6	–	–
Special fonts for LED (Unicode, cux)		–	2.6	–	–	2.6
RingScroll		–	2.6	2.6	–	2.6
CodeConversion formula (Will automatically be converted into a CsvMapping formula if the Composer version is too low)			2.6			