

## HxGN EAM Reality Viewer Activation and Technical Guide

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## Resources

Here below you may find the link for accessing OpenCAD resources:

### Documentation Site :

<https://docs.hexagonali.com/p/opencad>

### Hexagon University:

<https://universityhexagonali.360learning.com/paths/6515b495f8606307675dccc/home>

### OpenCAD videos

<https://vimeo.com/showcase/10666314>

## About this guide

This guide allows to get acquainted with the new reality Viewer and describes the main steps to activate and have it up and running within HxGN EAM.

## Introduction

The following are the considerations for the activation of HxGN EAM Reality Viewer.

- The hardware and software requirements are based on the hardware and software requirements of HxGN EAM;
- HxGN EAM Reality Viewer is indeed compatible to either HxGN EAM for Oracle or MS SQL Server;
- HxGN EAM Reality Viewer has been part of EAM since version 12.1.1 and is deployed in the Cloud. It is not available for on-premises installation.

## Product activation

### HxGN EAM Reality Viewer

- Insert the ORV Key (*CDKEYORV install parameter*). The KEY is provided by Order Management and Provisioning teams as an e-shipment (via email).
- **If you have already activated OpenCAD Cross-Browser or OpenCAD BIM, please do nothing.** If you have not yet activated 'OpenCAD Cross-Browser' or 'OpenCAD BIM' add the 'OpenCAD Reality Viewer Activation ' screen to a User Group: 'Administration' menu | 'Security' | 'User Groups'. Then select a User Group and click the 'Menus' Tab. Search for the 'OpenCAD Reality Viewer Activation' screen from the 'Available Screens' then drag and drop it in the Menu Details.  
OpenCAD Reality Viewer screen uses APPURL install parameters and then it is recommended to check its value.
- Click the activation button in the OpenCAD Reality Viewer Activation screen.

## EAM Reality Viewer Setup

See the dedicated chapter in the User Guide

## OpenCAD Utility App

HxGN EAM Reality Viewer does not use OpenCAD UtilityApp for providing drawings within EAM. The reality capture deliverables, which can be used within HxGN EAM, are stored in the Leica Truview account, which is required to make the EAM integration fully operational.

## Third-Party and Open-Source

OpenCAD integrates a range of third-party and open-source components to enhance functionality, improve performance, layout style and ensure a smooth and efficient interaction for users.

All third-party and open-source libraries are consolidated under the OpenCAD directory.

```
..\apache\web.war\resources\shared\scripts\opencad\assets\js
```

This structure ensures that external dependencies are organized in a single location, facilitating easier management, updates, and compliance with licensing requirements.

This section provides an overview of the key third-party and open-source software we use

Component	License Type	License	Description
jquery-3.3.1.min.js	<a href="https://jquery.com/license/">https://jquery.com/license/</a>	MIT License	This library is used thanks to its wide support across all browsers and to the capabilities of handling a variety of js events, animations, and object manipulation. It is used across all the OpenCAD's solution;
ext-all.js	<a href="https://www.sencha.com/legal/sencha-software-license-agreement/">https://www.sencha.com/legal/sencha-software-license-agreement/</a>	Commerical	This library is used following it's adoption in HxGN EAM. It provides a great variety of visual components used everywhere in OpenCAD, like for panels, threeviews, windows, page subdivision, modals, and prompts;
exporter-debug.js	<a href="https://github.com/eligrey/FileSaver.js/blob/master/LICENSE.md">https://github.com/eligrey/FileSaver.js/blob/master/LICENSE.md</a>	MIT License	This library is used to empower sencha libraries with the grid export in a varieties of formats including excel xls, csv, xml
mktree.js	<a href="https://www.npmjs.com/package/mktree">https://www.npmjs.com/package/mktree</a>	MIT License	This library is used to facilitate the interaction with sencha's tree view
webgl-utils.js	<a href="https://github.com/toji/gl-matrix/blob/master/LICENSE.md">https://github.com/toji/gl-matrix/blob/master/LICENSE.md</a>	MIT License	This library provides standardization that ensures WebGL properly functions across all browsers
gl-matrix.js	<a href="https://github.com/toji/gl-matrix/blob/master/LICENSE.md">https://github.com/toji/gl-matrix/blob/master/LICENSE.md</a>	MIT License	This library provides optimized functions for manipulating vectors and matrices, which is particularly useful for WebGL and other 3D graphics applications. It focuses on performance and low-level operations, enabling efficient mathematical computations in 2D and 3D spaces.
jspdf.js	<a href="https://artskydj.github.io/jsPDF/docs/index.html">https://artskydj.github.io/jsPDF/docs/index.html</a>	MIT License	This library handles the creation of PDF and the interaction with elements inside the document, like images, texts, and formatting. It is used across all OpenCAD's Moduli;
xbrowser.js	<a href="https://github.com/xBimTeam/XbimWebUI/blob/master/LICENSE.md">https://github.com/xBimTeam/XbimWebUI/blob/master/LICENSE.md</a>	CDDL License	This library complements xviewer.js by enhancing browser compatibility and interaction with the HTML Webpage and UI. This library was customized during time to further enhance capabilities and support mobile interaction.
svg.js	<a href="https://svgedotjs.github.io">https://svgedotjs.github.io</a>	MIT License	This library is used to handle svg models and to easily interact with the object present in the drawing, including creating shapes, and notations, and making objects interactive. It is adopted in OpenCAD in many Moduli, including OpenCAD SVG, EPC, OpenCAD Dashboard;
pdf.js	<a href="https://www.apache.org/licenses/LICENSE-2.0">https://www.apache.org/licenses/LICENSE-2.0</a>	Apache2.0	This library handles the creation of PDF and the interaction with elements inside the document, like images, texts, and formatting. It is used across all OpenCAD's Moduli;

Component	License Type	License	Description
pdf.viewer.js	<a href="http://www.apache.org/licenses/LICENSE-2.0">http://www.apache.org/licenses/LICENSE-2.0</a>	Apache2.0	This library enables to visualize PDF files in the EPC
svg.panzoom.js	<a href="https://github.com/bumbu/svg-pan-zoom/blob/master/LICENSE">https://github.com/bumbu/svg-pan-zoom/blob/master/LICENSE</a>	BSD	This library enables the panning and zooming of an SVG in an HTML document, with mouse events or custom JavaScript hooks. It is used in combination with svg.js library;
panzoom.min.js	<a href="https://github.com/bumbu/svg-pan-zoom/blob/master/LICENSE">https://github.com/bumbu/svg-pan-zoom/blob/master/LICENSE</a>	BSD	Panzoom is a small library to add panning and zooming functionality to an element. Rather than using absolute positioning or setting width and height, Panzoom uses CSS transforms to take advantage of hardware/GPU acceleration in the browser, which means the element can be <i>anything</i> : an image, a video, an iframe, a canvas, text...
map.js	<a href="https://truvviewdev.scrollhelp.site/tvsdk/?l=en">https://truvviewdev.scrollhelp.site/tvsdk/?l=en</a>	Commerical	This library is required for the correct functioning of the TruView site module(OpenCAD RV)
xviewer.js	<a href="https://github.com/xBimTeam/XbimWebUI/blob/master/LICENSE.md">https://github.com/xBimTeam/XbimWebUI/blob/master/LICENSE.md</a>	CDDL License	The xBIM Toolkit is an open-source BIM toolkit supporting IFC, enabling developers to read, create, and view BIM models with full geometric and topological operations, as well as COBie translation. xBimWebUI is a WebGL-based library for presenting BIM models in the browser, using the custom WexBIM format, which is particularly suited fo lightweight 3D models visualization and interaction.
xlsx.full.min.js	<a href="http://sheetjs.com">http://sheetjs.com</a>	Apache2.0	This library is required to work with spreadsheet excel files and to convert them to json
viewer.js	<a href="https://truvviewdev.scrollhelp.site/tvsdk/?l=en">https://truvviewdev.scrollhelp.site/tvsdk/?l=en</a>	Commerical	This library is required for the correct functioning of the TruView setup module(OpenCAD RV)

## Technical aspects which have impacts with HXGN EAM

HxGN EAM Reality Viewer will add these elements to the EAM database.

### Tables

Name	Description
OCAD_R5EXTMENUS	List menu items of R5 UserGroup installed in EAM by OpenCAD
OCADTRU_TKNS	ORV Token
OCADTRU_GEOTAGS	Contains the getogas information.
OCADTRU_JOIN	Reference between ORV and EAM
OCADTRU_CFGLEVEL	Contains the level of ORV configuration Tenant/Organization
OCADTRU_CFGGEOTAGS	Contains the configuration of the reference between ORV and EAM
OCADTRU_CFGEXCEL	Contains the additional EAM field for Excel file

### Views

Name	Description
U5OCADTRU_JGRIDOBJ	ORV U5View Grid - EAM Objects / GeoTags
U5OCADTRU_JGRIDOWO	ORV U5view Grid - EAM Work Orders / GeoTags

### Queries

None added.

### Queries and Custom Grids OpenCAD Parameters

The table below shows the list of parameters that have been used throughout the software's development, particularly for building EAM queries and EAM Custom Grids.

Name	Description	Custom Grid EAM	Query EAM
pSiteId	Current Site ID (ORV)	●	○
pSetupId	Current Setup ID (ORV)	●	○

### EAM Custom Grids

Below are the custom grids that lists the EAM objects and Truview geotags.

Default code	Description
OUC400	ORV Join
OUC401	GeoTags and Setups
OUC402	GeoTags
OUC420	EAM Objects / GeoTags
OUC421	EAM Work Orders / GeoTags
OUC430	EAM Objects / GeoTags filtered on Setup ID
OUC431	EAM Work Orders / GeoTags filtered on Setup Id

### User Defined Screens

Below are the User Defined Screen which have been involved with Reality Viewer.

Default code	Description
O UU004	Function Security
O UU005	Custom Grid

### Custom Tabs

Reality Viewer will add custom tabs to the following screens:

Screen	Tab	Url
OSOBJA	Reality Viewer	:appurl/eamdwg/DEPLOY_OCADTRUTAB.jsp?user=:user&org=:org
OSOBJP	Reality Viewer	
OSOBJS	Reality Viewer	
OSOBJL	Reality Viewer	
WSJOBS	Reality Viewer	

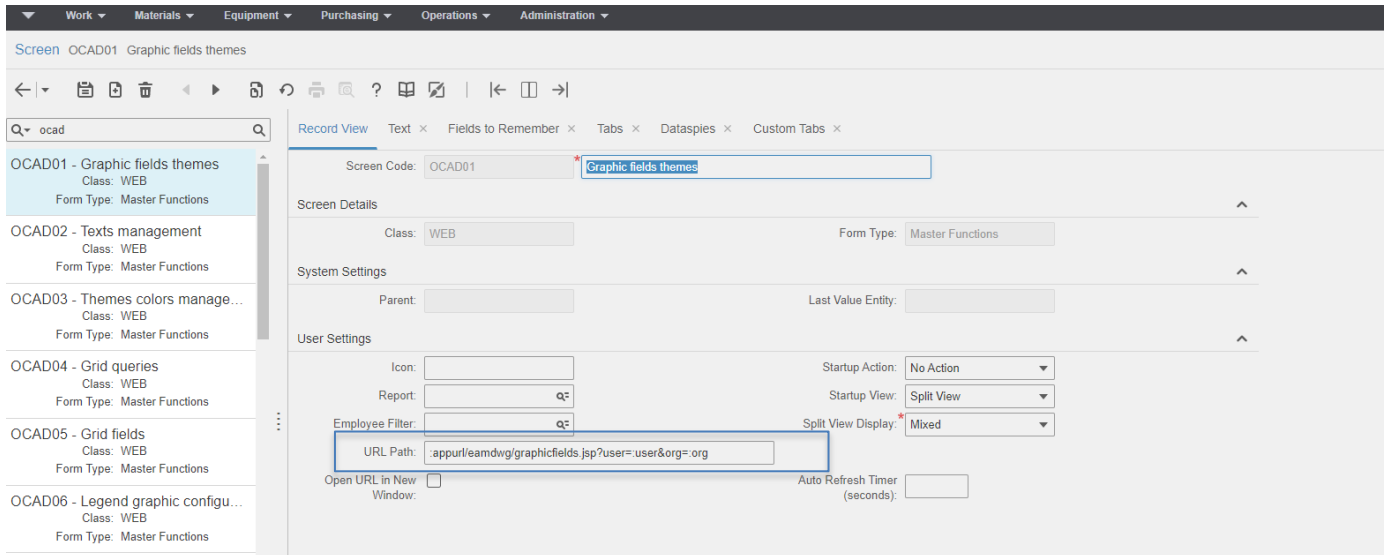
### Custom Fields

Entity	Name	Description	Content	Type	Association
Object	OCTRUSID	ORV-SiteID	String	Code + Description	OBJ

**Note:** The activation creates the custom field; the association phase to the OBJ entity must be performed manually.

## Custom Screens

Please follow the instructions below in order to view or modify the screens (as user R5):  
 From ADMINISTRATION menu >> SETUP >> SCREENS >> NEW RECORD (+) or RECORD VIEW



The screenshot shows the 'Screen' configuration page for 'OCAD01 - Graphic fields themes'. The 'URL Path' field is highlighted with a blue box and contains the text: `:appurl/eamdwg/graphicfields.jsp?user=:user&org=:org`. Other visible fields include 'Screen Code', 'Class', 'Form Type', 'Parent', 'Last Value Entity', 'Icon', 'Report', 'Employee Filter', 'Startup Action', 'Startup View', 'Split View Display', 'Open URL in New Window', and 'Auto Refresh Timer'.

Screen	Description	Url :appurl/eamdwg
OTRU01	OpenCAD Reality Viewer Activation	<code>../tru_activation.jsp?user=:user&amp;org=:org</code>
OTRU02	ORV-Truview Authentication	<code>../DEPLOY_TRUPARAMS.jsp?user=:user&amp;org=:org</code>
OTRU03	ORV-Dashboard	<code>../DEPLOY_OCADTRUDSH.jsp?user=:user&amp;org=:org</code>

## Install Parameters

Code	Description	Group
ORVCONFI	Define the configuration level of OpenCAD Reality Viewer. ORG for defining a configuration for each Organization. TENANT for defining a single configuration valid for the Tenant	ORV
CDKEYORV	The OpenCAD Reality Viewer Key is set during installation. This key must be valid in order to access OpenCAD ORV module.	ORV
ORVRELNU	OpenCAD ORV release number.	ORV

## Eam Database Oracle - Function, Stored Procedure, Triggers

### Functions

#	Function
1	CADCHECKOCADACTIVE
2	CADCHECKEXISTINGCOLUMN
3	CADCHECKEXISTINGTABLE
4	CADTABLECOLUMN
5	CADTABLECOLUMNPLUS
6	CADR5TABLES
7	CADCHECKEXISTINGVIEW

#	Function
8	CADUSERVIEWS
9	CADR5VIEWS
10	CADR5USERVIEWS
11	CADCALCTABUT
12	CADCHECKEXISTINGTAB
13	CADCUSTOMFIELD
14	CADCUSTOMFIELDASSOCIATION
15	CADCUSTOMFIELDVALUEDESCRIPTION
16	CADENABLECUSTOMGRID
17	CADFORMATFORSQL
18	CADINSERTBOILERTEXT
19	CADQUERY
20	CADQUERYFIELDSDATASPYEAM
21	CADREPLACESPECIALCHARACTERS
22	CADSCREENPERMISSION
23	CADSCREEN
24	CADSCREENNOUPDATEURL
25	CADSINGLEBOILERTEXTS
26	CADSINGLEBOILERTEXTS1
27	CADSINGLEBOILERTEXTSONLANFIELD
28	CADSINGLEBOILERTEXTSONLANGGRID
29	CADBOILERTEXTFORGRIDDESC
30	CADSINGLECOLOR
31	CADSINGLECOLORCTB
32	CADSINGLELAYSSPACECFG
33	CADCHECKUPDATEOLDTAB
34	CADSINGLETBSECURITY
35	CADSINGLESECCGRID
36	CADINSOUU003
37	CADSINGLECUSTOMGRID
38	CADSINGLEDATASPY
39	CADSINGLEDDFIELDNOTEXIST
40	CADFIELDFREETEXTNOTEXIST
41	CADSINGLEDDFIELD
42	CADSINGLEFUNCTIONTAB
43	CADSINGLEFUNCTIONUSERTABS
44	CADSINGLEGRIDFIELD
45	CADSINGLEGRIDFIELDNEW
46	CADSINGLEGRIDQUERY
47	CADSINGLEMENUITEM
48	CADSINGLEMENUITEMHIDE
49	CADSINGLEMENULANG
50	CADSINGLEOCADFUNCTION
51	CADSINGLEOCADBIMFUNCTION
52	CADSINGLEPARAMETER
53	CADSINGLEPARAMETERUPBREAND
54	CADSINGLEPERMISSION
55	CADSINGLEUDSPERMISSION
56	CADSINGLEQUERYFIELD
57	CADSINGLEQUERYFIELDPLUS
58	CADSINGLESCREEN
59	CADSINGLESCREENGRID
60	CADSINGLESCREENPERMISSION
61	CADSINGLETABPERMISSION
62	CADSINGLETEXT
63	CADSINGLEUOMS

#	Function
64	CADWRITEOCADR5GRID
65	CADALLLANGUAGES
66	CADALIGNMENTTEXT
67	CADALLLANGBOILERTEXT
68	CADBOILERTEXTFORFIELD
69	CADBOILERTEXTFORFIELDALLEXT
70	CADBOILERTEXTFORGRID
71	CADBOILERTEXTFORGRIDALLEXT
72	CADBOILERTEXTFORGRIDALL
73	CADCUSTOMFIELDVALUE
74	CADHYPERLINK
75	CADR5CONTENTTABLES
76	CADSINGLEDATASPYEAM
77	CADRECOVEROCADUTTAB
78	CADSINGLEMENULANGALLLANGS
79	CADR5EXTMENUXB
80	CADR5FUNCTION
81	CADR5FUNCTIONACTIVATION
82	CADR5FUNCTIONTABS
83	CADCODECGRID
84	CADCODECGRIDOU
85	CADCODECGRIDALLCASES
86	CADSINGLEUSERDEFINEDSCREEN
87	CADSINGLEWSPROMPTS
88	CADSINGLESCREENUDS
89	CADBOILERTEXTFORUDS
90	CADSINGLEBOILERTEXTSALLLANG
91	CADBOILERTEXTFORUDSALLEXT
92	CADBOILERTEXTFORUDSALLEXTBLOCK
93	CADBOILERTEXTUCADU03ALLEXTBLK
94	CADBOILERTEXTUCADU04ALLEXTBLK
95	CADBOILERTEXTUCADU05ALLEXTBLK
96	CADSINGLEPAGELAYOUT
97	CADSINGLEUDSFIELD
98	CADSINGLEWSPROMPTFIELDS
99	CADSINGLEFIELDGRR1
100	CADSINGLEFIELDGRR1ALIAS
101	CADUDSUCADU01FIELDSUPDATE
102	CADLABELSEPCUPDATE
103	CADUDSUCADU01LABELSUPDATE
104	CADUDSUCADU01FIELDS
105	CADUDSUCADU03FIELDS
106	CADUDSUCADU04FIELDSUPDATE
107	CADUDSUCADU04FIELDS
108	CADUDSUCADU05FIELDSUPDATE
109	CADUDSUCADU05FIELDS
110	CADR5GRIDS
111	CADR5UDFSCREENS
112	CADR5HYPERLINKS
113	CADR5CDKEYDWG
114	CADR5INSTALL
115	CADR5PROPERTIES
116	CADR5QUERIES
117	CADR5UOMS
118	CADEMNPARENTCHECK

#	Function
119	CADNOMENUITEM
120	CADSRULESET01PTWGRID
121	CADSINGLEOCADTRUTKNS
122	CADOCEMNCODE
123	CADR5EXTMENUDELMENUITEM
124	CADR5EXTMENUXBDEL
125	CADSINGLEOCADR5EXTMENUS
125	CADEMNCODEFROMSEQUENCE
127	CADR5EXTMENUXBSEQUENCE
128	CADCODEUDSOUU
<b>129</b>	<b>CADSINGLEURLPARAMETER</b>
<b>130</b>	<b>CADINSOUU003CGR</b>

### Procedure

#	Procedure
1	OPENCADACTIVATION

### Trigger

#	Trigger
1	PREUPD2_U5OCAD_PDF
2	PREUPD2_U5OCAD_SVG_SEC_CGRID
3	PREUPD2_U5OCAD_SVG_TB_SECURITY
4	PREUPD2_U5OCAD_PARAMS