EcoStruxure Augmented Operator Advisor
Quick Start Guide

09/2019

www.schneider-electric.com
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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

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Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

⚠️ The addition of this symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

⚠️ This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠️ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠️ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠️ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

⚠️ NOTICE

NOTICE is used to address practices not related to physical injury.
PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.
About the Book

At a Glance

Document Scope
This document describes how to get started with EcoStruxure Augmented Operator Advisor. It is recommended that you undertake an EcoStruxure Augmented Operator Advisor training course before using the product.

Validity Note
This document is valid for Version 2.4 of EcoStruxure Augmented Operator Advisor. For product compliance and environmental information (RoHS, REACH, PEP, EOLI, etc.), go to www.schneider-electric.com/green-premium.

The technical characteristics of the devices described in the present document also appear online. To access the information online:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Go to the Schneider Electric home page <a href="http://www.schneider-electric.com">www.schneider-electric.com</a>.</td>
</tr>
</tbody>
</table>
| 2    | In the Search box type the reference of a product or the name of a product range.  
|      | • Do not include blank spaces in the reference or product range.  
|      | • To get information on grouping similar modules, use asterisks (*). |
| 3    | If you entered a reference, go to the Product Datasheets search results and click on the reference that interests you.  
|      | If you entered the name of a product range, go to the Product Ranges search results and click on the product range that interests you. |
| 4    | If more than one reference appears in the Products search results, click on the reference that interests you. |
| 5    | Depending on the size of your screen, you may need to scroll down to see the datasheet. |
| 6    | To save or print a datasheet as a .pdf file, click Download XXX product datasheet. |

The characteristics that are presented in the present document should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the document and online information, use the online information as your reference.
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- Firefox™ is a registered trademark of The Mozilla Foundation.
- iOS™ and iPad™ are registered trademarks of Apple.
- Samsung Galaxy™ is a registered trademark of Samsung Electronics Co Ltd.

Related Documents

<table>
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<tr>
<th>Title of documentation</th>
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<tbody>
<tr>
<td>EcoStruxure Augmented Operator Advisor Builder User Manual</td>
<td>EIO00000003006 (ENG) EIO00000003007 (FRE) EIO00000003008 (GER) EIO00000003009 (SPA) EIO00000003011 (CHS) EIO00000003033 (JPN) EIO00000003564 (KOR)</td>
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<tr>
<td>EcoStruxure Augmented Operator Advisor Manager User Manual</td>
<td>EIO00000003606 (ENG) EIO00000003607 (FRE) EIO00000003608 (GER) EIO00000003609 (SPA) EIO00000003610 (ITA) EIO00000003611 (CHS) EIO00000003612 (JPN) EIO00000003613 (KOR)</td>
</tr>
<tr>
<td>EcoStruxure Augmented Operator Advisor App User Manual</td>
<td>EIO00000003598 (ENG) EIO00000003599 (FRE) EIO00000003600 (GER) EIO00000003601 (ESP) EIO00000003602 (ITA) EIO00000003603 (CHS) EIO00000003604 (JPN) EIO00000003605 (KOR)</td>
</tr>
</tbody>
</table>

You can download these technical publications and other technical information from our website at [www.schneider-electric.com/en/download](http://www.schneider-electric.com/en/download).
Product Related Information

The application of this product requires expertise in the design and operation of control systems.

⚠️ WARNING

LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and overtravel stop.
- Separate or redundant control and monitoring paths must be provided for critical control functions.
- System control and monitoring paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link.
- EcoStruxure Augmented Operator Advisor must not be used as a primary means of monitoring critical control functions.
- Each EcoStruxure Augmented Operator Advisor implementation must be individually and thoroughly tested for proper operation before being placed into service.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠️ WARNING

PROCEDURE NOT COMPLETED

Before starting a procedure, ensure that your battery is sufficiently charged to complete the operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠️ WARNING

UNINTENDED EQUIPMENT OPERATION

- Allow only authorized personnel with expertise in the design and operation of control systems to program, install, alter, and apply this product.
- Follow local and national safety codes and standards.

Failure to follow these instructions can result in death, serious injury, or equipment damage.
Important Information

The following algorithms are used for encryption: RSA, AES, SHA-256.

CAUTION

FALSE SCENE DETECTION

- Use tags in situations where similar equipment and/or environments could result in false scene detection.
- Attach tags firmly to the equipment with sufficient protection against damage or deterioration of the tag.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

UNAUTHORIZED OPERATOR ACCESS

- Keep user names and passwords secret.
- Protect tablet and runtime device access with a password or other security mechanism.
- Do not share access with others.
- Change default passwords upon first connection.
- Regularly update passwords.
- Apply relevant local IT rules.
- Do not save confidential information in post-its or notebooks.
- Do not attach confidential or sensitive user documents in projects.

Failure to follow these instructions can result in equipment damage.
Presentation of EcoStruxure Augmented Operator Advisor

Overview

EcoStruxure Augmented Operator Advisor uses a technology called augmented reality to optimize the operation and maintenance of industrial sites and equipment:

- The operator points a tablet computer at the site or equipment to be monitored.
- EcoStruxure Augmented Operator Advisor uses special image comparison techniques to match the scene visible in the field of view of the tablet camera with previously stored photographs of the same scene.
- When a match is made, markers called points of interest are overlaid on the live scene visible on the tablet.
- The operator taps the point of interest markers to display information. A wide variety of information can be displayed, including:
  - Process variables
  - Values extracted from an SQL database
  - Documents, instruction sheets or wiring diagrams
  - Web pages
  - Videos
  - Audio
  - Procedures
EcoStruxure Augmented Operator Advisor introduces a number of other key concepts:

- An area is a zone within each site or building (such as production lines, plant rooms, storage areas, workshops, laboratories, and office areas) that you want to monitor using EcoStruxure Augmented Operator Advisor.
  
  **NOTE:** The number of areas you can monitor depends on the type of license you purchase *(see page 20)*.

- Scenes are things to monitor within an area, for example, machines, electrical cabinets, or production lines.

- Subscenes are a part of a scene, typically a close up view of a particular area of the scene. A subscene can contain its own points of interest.

- A project is a container for all the information in areas, scenes, and subscenes.

- Procedures are a set of instructions that the operator must perform.

**Components of EcoStruxure Augmented Operator Advisor**

EcoStruxure Augmented Operator Advisor is made up of the following main components:

- EcoStruxure Augmented Operator Advisor Builder, a Web-based application.
- EcoStruxure Augmented Operator Advisor Runtime, a server-based Windows software.
- EcoStruxure Augmented Operator Advisor App, an application running on a tablet computer.

For the EcoStruxure Augmented Operator Advisor App to be able to communicate with the EcoStruxure Augmented Operator Advisor Runtime component, both must be connected to the same WiFi network or 3G/4G mobile network.

To view the real-time values of process variables produced by the equipment being monitored, one of the following applications must also be installed:

- Node-RED *(see page 16)*
- EcoStruxure Operator Terminal Expert (or Pro-face BLUE) *(see page 17)*

The solution also includes a Web-based management tool, EcoStruxure Augmented Operator Advisor Manager.
EcoStruxure Augmented Operator Advisor Builder

The EcoStruxure Augmented Operator Advisor Builder is a Web-based application. The user creates projects, within which areas, scenes and procedures are defined.

- A scene is a high-resolution photograph, onto which points of interest are positioned and the information to be displayed is configured.
- A procedure is a set of instructions that the operator must perform. Instructions can include scenes that must be recognized by the EcoStruxure Augmented Operator Advisor App using augmented reality. This ensures that the operator responds correctly to instructions and is performing the procedure on the correct equipment.

**NOTE:** Procedures are only available with particular license types *(see page 20)*.

When all scenes have been defined, the project must be built and then uploaded to the device where the EcoStruxure Augmented Operator Advisor Runtime is installed.

EcoStruxure Augmented Operator Advisor Runtime

EcoStruxure Augmented Operator Advisor Runtime is installed on a Magelis HMIG5U Open Box PC, Magelis iPC / Industrial PC, or standard Windows PC. It gathers together all the information to be displayed in the points of interest and sends it to the tablet to be displayed by the EcoStruxure Augmented Operator Advisor App. It also manages the database containing the photographs of scenes and equipment contained in the uploaded project.
EcoStruxure Augmented Operator Advisor App

The EcoStruxure Augmented Operator Advisor App views reality (what the operator sees using the camera integrated in the tablet) and compares it to photographs of scenes stored in the EcoStruxure Augmented Operator Advisor project. The scene being viewed by the camera and the stored image must match for detection to occur. User interface controls and points of interest associated with the scene are then displayed:
<table>
<thead>
<tr>
<th>Legend</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjust pointing circle size</td>
<td>Tap and drag up or down to adjust the size of the pointing circle in the middle of the scene. When this pointing circle is moved over a point of interest, it is opened automatically (or you can tap on the point of interest to open it). The larger the circle, the easier it is to match a point of interest. A smaller circle may be needed if points of interest are close together.</td>
</tr>
<tr>
<td>2</td>
<td>Favorites</td>
<td>Tap to display or hide the <strong>Favorites</strong> bar at the top of the screen. Information about the scene is updated in the <strong>Favorites</strong> bar even when the scene is frozen (see below), or if the point of interest is closed, or if another scene is being viewed.</td>
</tr>
<tr>
<td>3</td>
<td>Point of interest customization</td>
<td>Tap to display the point of interest customization menu. The menu allows you to select the style and the font size.</td>
</tr>
<tr>
<td>4</td>
<td>List point of interest</td>
<td>Tap to display a list of information items, such as process variables or documents, with each list item separately configurable. Tap the star (*) next to the point of interest to add the information item to the <strong>Favorites</strong> bar at the top of the screen.</td>
</tr>
<tr>
<td>5</td>
<td>Menu</td>
<td>Tap to return to the menu.</td>
</tr>
<tr>
<td>6</td>
<td>Connection to the runtime device</td>
<td>Indicates whether the App is connected to the runtime device (white icon on a green background) or not connected (flashes red).</td>
</tr>
<tr>
<td>7</td>
<td>Subscene</td>
<td>Tap to display the selected subscene.</td>
</tr>
<tr>
<td>8</td>
<td>Freeze</td>
<td>Tap to freeze the display, allowing the operator to put down or lower the tablet and still see the scene and points of interest. Project actions continue and the <strong>Favorites</strong> bar continues to be updated.</td>
</tr>
<tr>
<td>9</td>
<td>Note</td>
<td>Tap to add a note on the scene. This can be used, for example, to leave information for other operators.</td>
</tr>
<tr>
<td>10</td>
<td>Display point of interest content</td>
<td>Tap to display the content of the point of interest contained in the adjustment circle in the middle of the screen.</td>
</tr>
<tr>
<td>11</td>
<td>Show/hide controls</td>
<td>Tap to show or hide the group of controls in the bottom right or bottom left corner of the screen.</td>
</tr>
<tr>
<td>12</td>
<td>Variable point of interest</td>
<td>Tap to display the real-time value of a process variable. Tap the star (*) next to the point of interest to add the information item to the <strong>Favorites</strong> bar at the top of the screen. <strong>NOTE:</strong> Points of interest can change color or blink depending on their status.</td>
</tr>
<tr>
<td>13</td>
<td>List of procedures</td>
<td>Tap to display the list of procedures. This gives the operator the choice to launch different procedures (see <em>EcoStruxure Augmented Operator Advisor, App, User Manual</em>).</td>
</tr>
<tr>
<td>14</td>
<td>Notification center icon</td>
<td>Indicates a message from the Notification center. Tap to display the notification messages.</td>
</tr>
</tbody>
</table>
Node-RED is an open source, visual programming tool that requires few or no programming skills. Instead, it uses pre-programmed, reusable blocks of code called nodes. Nodes are wired together to create flows of data.

Node-RED is included with EcoStruxure Augmented Operator Advisor Manager on the runtime device. With it, you can easily connect Node-RED flows to points of interest to display SQL database values in your augmented reality applications.

Legend

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Favorite bar</td>
<td>Regroups all your favorite points of interest and allows you to quickly access your information. <strong>NOTE:</strong> Information displayed in the favorite bar is not updated by points of interest settings such as font size, color, or theme.</td>
</tr>
<tr>
<td>16</td>
<td>Document point of interest</td>
<td>Tap to display the associated document in a separate window.</td>
</tr>
<tr>
<td>17</td>
<td>Image point of interest</td>
<td>An image overlaid on the scene image.</td>
</tr>
</tbody>
</table>

Node-RED
EcoStruxure Operator Terminal Expert (or Pro-face BLUE)

EcoStruxure Operator Terminal Expert is human machine interface (HMI) configuration software that enables you to create and edit application panels to control automation systems for the Magelis HMI range, for example, the GTU terminal (Premium and Open boxes) and Magelis industrial PCs (panel and box).

You can display values from EcoStruxure Operator Terminal Expert / Pro-face BLUE variables in EcoStruxure Augmented Operator Advisor.

Supported versions are EcoStruxure Operator Terminal Expert / Pro-face BLUE v3.1.
Getting Started

Overview

Proceed as follows to start using EcoStruxure Augmented Operator Advisor:

1. **Specifications & Requirements**

2. **1. Install Hardware & Software**
   - Set up and test hardware components and network connections
   - Install the EcoStruxure Augmented Operator Advisor App and EcoStruxure Augmented Operator Advisor Runtime.

3. **2. Prepare Scenes and Equipment**
   - Take photographs
   - Prepare tags
   - Identify sources of information for POIs

4. **3. Create Project in Builder**
   - Create and configure areas, scenes, and procedures

5. **4. Copy built project to runtime device**
   - Build project to runtime device

6. **5. Commission**
   - Run project in App on tablet

Operations and Maintenance

**Step 1: Install Hardware and Software**

First, ensure that the required environment is operational:

- Set up and test hardware components and network connections
- Install the EcoStruxure Augmented Operator Advisor App and EcoStruxure Augmented Operator Advisor Runtime.

Refer to Installing EcoStruxure Augmented Operator Advisor *(see page 20)* for details.
Step 2: Prepare Scenes and Equipment

The next step is to take high-resolution photographs of all the sites, buildings, and items of equipment to be monitored.

Refer to Guidelines for Taking Photographs (see EcoStruxure Augmented Operator Advisor, Builder, User Manual) for details.

Some of the scenes or equipment may not be easily identifiable due to:

- Physically identical or very similar items of equipment that need to be monitored separately.
- Poorly or very brightly lit scenes that prevent taking the required high-contrast photographs.

To avoid potential identification errors, you can attach unique tags to these items of equipment or place a tag somewhere visible in the scene. When the EcoStruxure Augmented Operator Advisor App running on the tablet scans the item of equipment or scene, it scans and identifies the tags and displays the corresponding points of interest.

Refer to Tagging Equipment (see EcoStruxure Augmented Operator Advisor, Builder, User Manual) for details.

At this stage, you also need to identify all the external sources of information (documents, external programs, process variables, and SQL database fields) that are to be monitored. This information will be needed when configuring points of interest in the EcoStruxure Augmented Operator Advisor Builder project (see the next step).

Step 3: Create EcoStruxure Augmented Operator Advisor Project

Next, create a project using EcoStruxure Augmented Operator Advisor Builder.

EcoStruxure Augmented Operator Advisor Builder is software that you use to:

- Organize and structure the areas, scenes, subscenes, and points of interest in a project
- Create and position the points of interest on photographs
- Define what happens when the operator taps the point of interest
- Build procedures to explain a set of tasks the operator must carry out

Refer to the EcoStruxure Augmented Operator Advisor Builder User Manual for details.

Step 4: Deploy the Project to EcoStruxure Augmented Operator Advisor Runtime Device

Only authorized users are allowed to deploy the project.

When the project is complete, perform a build that will create a signed zip file of the project (see EcoStruxure Augmented Operator Advisor, Builder, User Manual).

Then copy the built project zip file to the project folder on the EcoStruxure Augmented Operator Advisor Runtime device. The project folder can be found on the runtime device as follows: select Start → EcoStruxure Augmented Operator Advisor → Project Folder.

When extracting the zip file on the runtime device, accept all extract operations. Partial extraction will result in the project being inoperational.
Step 5: Commission

Finally, create user accounts (see page 30) and test the project using the EcoStruxure Augmented Operator Advisor App running on a tablet. If necessary, fine-tune the solution by modifying the EcoStruxure Augmented Operator Advisor project, retaking photographs, adding tags to scenes or subscenes, and so on.

When all scenes and items of equipment are being recognized by the EcoStruxure Augmented Operator Advisor App and the correct items of information are appearing in all points of interest, the solution can be put into operation.

Installing EcoStruxure Augmented Operator Advisor

License Requirements

Trial versions of EcoStruxure Augmented Operator Advisor Runtime and EcoStruxure Augmented Operator Advisor Builder are available. They are free to download and use for up to 42 days. At any time during the trial period, you can purchase licenses and activate the software.

The following license types are available:

<table>
<thead>
<tr>
<th>License Type</th>
<th>Maximum number of...</th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Areas</td>
<td>Points of interest</td>
<td>Procedures</td>
<td></td>
</tr>
<tr>
<td>EcoStruxure Augmented Operator Advisor Builder</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trial</td>
<td>Unlimited(1)</td>
<td>Unlimited(1)</td>
<td>Unlimited(1)</td>
<td></td>
</tr>
<tr>
<td>Essential</td>
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<td>Unlimited</td>
<td>0</td>
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</tr>
<tr>
<td>Performance</td>
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<td>Unlimited</td>
<td>Unlimited</td>
<td></td>
</tr>
<tr>
<td>EcoStruxure Augmented Operator Advisor Runtime</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Trial</td>
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<td>Unlimited</td>
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</tr>
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<td>Essential Level 1</td>
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<td>20</td>
<td>0</td>
<td></td>
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<td>Essential Level 2</td>
<td>1</td>
<td>50</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Essential Level 3</td>
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<td>Unlimited</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Performance Level 1</td>
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<td>20</td>
<td>10</td>
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<td>Performance Level 2</td>
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<td>50</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Performance Level 3</td>
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<td>Unlimited</td>
<td>Unlimited</td>
<td></td>
</tr>
<tr>
<td>Multi-area</td>
<td>Unlimited</td>
<td>Unlimited</td>
<td>Unlimited</td>
<td></td>
</tr>
</tbody>
</table>

(1) The EcoStruxure Augmented Operator Advisor Runtime Trial license has no limitation on the number of areas, points of interest, and procedures and remains active until the trial period expires. It is recommended that you return the Trial license when you activate a new license to avoid exceeding the license capabilities.
License Activation

Use the License Manager to activate the license for the EcoStruxure Augmented Operator Advisor Runtime. Remember to return any Trial licenses before activating a new license.

The license for the EcoStruxure Augmented Operator Advisor Builder is an online license that must be activated from the EcoStruxure Augmented Operator Advisor Builder itself.

**NOTE:** Do not register or activate any EcoStruxure Augmented Operator Advisor Builder license from the License Manager.

EcoStruxure Augmented Operator Advisor App

The EcoStruxure Augmented Operator Advisor App is compatible with:

- iPads running iOS:
  - Compatible with: iPad Air 2, Air Mini 4, Pro
  - Supported OS: iOS V11.4 or greater

- Tablet PCs running Android:
  - Compatible with: Samsung Galaxy Tab S4 and S5
  - Supported OS: Android version 7.0 or greater

- Tablet PCs running Windows:
  - Compatible with: Microsoft Surface Pro 3 and Pro 6 (12-inch display, m3, i5, and i7 processors), Panasonic Toughpad FZ-G1 (10-inch display)
  - Supported OS: Windows 10 64-bit

The EcoStruxure Augmented Operator Advisor App does not require a license.

For iOS and Android, it is available from the application store:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Search for <em>EcoStruxure Augmented Operator</em>.</td>
</tr>
<tr>
<td>2</td>
<td>Follow the download and installation instructions.</td>
</tr>
<tr>
<td>3</td>
<td>After installation is complete, launch the App. This will create the necessary local folders on your device.</td>
</tr>
</tbody>
</table>
For Windows:

EcoStruxure Augmented Operator Advisor Builder

The EcoStruxure Augmented Operator Advisor Builder is a web-based application, no installation is required. The PC running EcoStruxure Augmented Operator Advisor Builder must have Internet access.

Any of the following web browsers can be used:
- Google® Chrome™ (version 75 or higher)
- Microsoft® Internet Explorer™ (version 11 or higher)
- Mozilla® Firefox™ (version 68 or higher)
- Microsoft® Edge™ (version 17 or higher)

To run EcoStruxure Augmented Operator Advisor Builder:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Make sure that you have administrator rights on the tablet PC.</td>
</tr>
<tr>
<td>2</td>
<td>Go to the URL <a href="http://www.schneider-electric.com">http://www.schneider-electric.com</a> and search for EcoStruxure Augmented Operator Advisor.</td>
</tr>
<tr>
<td>3</td>
<td>Click Download Software and follow the instructions to download EcoStruxure Augmented Operator Advisor App for Windows.</td>
</tr>
<tr>
<td>4</td>
<td>Unzip the downloaded file for EcoStruxure Augmented Operator Advisor App.</td>
</tr>
<tr>
<td>5</td>
<td>Launch Setup.exe file located in the root of the installation package.</td>
</tr>
<tr>
<td>6</td>
<td>Follow the installation instructions to complete the installation process.</td>
</tr>
<tr>
<td>7</td>
<td>Click Finish to exit the installer after the installation process is completed.</td>
</tr>
<tr>
<td>8</td>
<td>After installation is complete, launch the App. This will create the necessary local folders on your device.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Start a web browser and enter the following URL: <a href="https://app.schneider-electric.com/ecostruxure-augmented-operator-advisor">https://app.schneider-electric.com/ecostruxure-augmented-operator-advisor</a>.</td>
</tr>
<tr>
<td>2</td>
<td>Log in using email address and password, or request a new login by clicking Sign up.</td>
</tr>
</tbody>
</table>
Installing the EcoStruxure Augmented Operator Advisor Runtime

Overview
The EcoStruxure Augmented Operator Advisor Runtime can be installed on any of the following:
- Magelis HMIG5U, HMIG5U2 Open Box
- Magelis iPC: HMIBSU, HMIBMI, HMIBMO, HMIBMU, HMIBMP, HMIPSP / Industrial PC
- Standard Windows PC

Prerequisites
The following minimum requirements must be met:
- Operating system: Windows 7 or Windows 10
- Hard disk space: 600 MB (minimum)
- RAM: 2 GB
- Screen resolution: 320 x 240 (minimum)
- Microsoft .NET Framework version 4.6.1 or higher
Any of the following web browsers can be used:
- Google® Chrome™ (version 75 or higher)
- Microsoft® Internet Explorer™ (version 11 or higher)
- Mozilla® Firefox™ (version 68 or higher)
- Microsoft® Edge™ (version 17 or higher)
The following prerequisites must be satisfied before installing the EcoStruxure Augmented Operator Advisor Runtime:
- The EcoStruxure Augmented Operator Advisor Runtime must be installed only by a user with administrator rights on the runtime device.
- All folders and files installed and used by the software must be stored in a location where administration rights are required.
- Only authorized users are allowed to deploy the project.
- Before installing the software on Windows 7 embedded system WES x64, make sure that the EWF protection feature is disabled and that Microsoft Redistributable KB2999226 has been manually installed.

NOTE: The EWF protection feature must remain disabled after installation, otherwise all user data and notes and procedure history will be deleted.
Installing EcoStruxure Augmented Operator Advisor Runtime

NOTE:
- The OS logging can trace the access to the device.
- There is no specific mechanism to store events linked to deployment.
- The EcoStruxure Operator Terminal Expert signature is used to ensure consistency between the runtime device and EcoStruxure Operator Terminal Expert Runtime.

To install the EcoStruxure Augmented Operator Advisor Runtime:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Go to the URL <a href="http://www.schneider-electric.com">http://www.schneider-electric.com</a> and search for EcoStruxure Augmented Operator Advisor.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Download Software</strong> and follow the instructions to download the EcoStruxure Augmented Operator Advisor Runtime.</td>
</tr>
<tr>
<td>3</td>
<td>Unzip the downloaded file.</td>
</tr>
<tr>
<td>4</td>
<td>On the runtime device, launch <strong>Setup.exe</strong> file located in the root of the installation package. <strong>Result:</strong> The installation wizard starts.</td>
</tr>
</tbody>
</table>
| 5    | Follow the installation wizard instructions to complete the installation process. When choosing the destination folder, you can click **Next** to install to default destination folder or **Change** to change the destination folder. If a message appears during installation, proceed as follows:
  - If the message indicates that the Microsoft Visual C++ installation has failed, click **Yes** to continue. The installation will continue normally.
  - If the message indicates an issue with the cabinet file Data1.cab, then close the message window and stop the installation. Restart the installation procedure again at step 3. However, when unzipping, install to a different destination folder, or if possible, install to a different disk drive on your device. |
| 6    | Click **Finish** to exit the installer after the installation process is completed. |
| 7    | Apply relevant local IT rules and best practices to secure and backup your device. If you are going to use a secure connection (HTTPS), you must install an SSL certificate (see page 25). |

EcoStruxure Augmented Operator Advisor Runtime is started automatically each time the runtime device is restarted. When you close the runtime user interface, you can choose to stop the runtime background services, or to leave them running. To manually start EcoStruxure Augmented Operator Advisor Runtime, choose **EcoStruxure Augmented Operator Advisor** → **Augmented Operator Advisor** from the list of installed Windows programs.
Installing the SSL certificate

To use a secure connection (HTTPS), you must install an SSL certificate. You need to use the certificate file and key file provided by your certificate authority.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Windows menu, choose:  
|      | • For Windows 7: Schneider Electric → EcoStruxure → Augmented Operator Advisor  
|      | • For Windows 10: EcoStruxure Augmented Operator Advisor |
| 2    | Open the **Certificate** folder. |
| 3    | Remove **server.crt** and **server.key** files. |
| 4    | Copy the certificate and associated key files provided by your certificate authority in this folder. |
| 5    | Rename the certificate file to **server.crt** and the key file to **server.key**. |
| 6    | Launch the EcoStruxure Augmented Operator Advisor Runtime. |
| 7    | Select **Settings** tab. |
| 8    | Define the **Nginx** port to 443 and click **Apply**. |
## Testing the Configuration

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>Launch the EcoStruxure Augmented Operator Advisor → Augmented Operator Advisor from the list of installed Windows programs, and click <strong>Settings</strong>.</td>
</tr>
<tr>
<td></td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
</tbody>
</table>
| **2** | Click **Check** to verify if the configuration is running correctly. If you use a secure connection (HTTPS), you must check or define the following:  
- the **Nginx** port is set to 443  
- the **HTTPS** box is checked  
If you modify, click **Apply** and wait until the confirmation message appears. |
|       | ![Image](image2.png)  
Verify that both Nginx and Python are indicated as **Connection successful**.  
Node Red and Vijeo XD need to be started separately. |
3 If any port is not available it is highlighted in red and the process using that port is indicated. Close the Check ports window. You can then change the specific ports manually.

Click Apply and wait until the confirmation message appears. Click OK to close the confirmation window. Click Check to verify if the newly requested ports are available.

4 Take note of the Nginx port number. This will be required by the operator user when configuring the application on the tablet (see EcoStruxure Augmented Operator Advisor, App, User Manual).

5 To verify the secure connection, open a web browser and type this URL: https://localhost:<PORT>
where <PORT> is the port number configured for Nginx in Settings.

If the SSL connection and the certificate installation are successful, a lock icon 🗝️ appears beside the URL address field.
Configuring the Windows Firewall

To configure the firewall when using the Windows Firewall, follow this procedure to open the required TCP port:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the Windows Start menu, open Control Panel.</td>
</tr>
<tr>
<td>2</td>
<td>Select Windows Firewall.</td>
</tr>
<tr>
<td>3</td>
<td>Select Advanced settings in the left column of the Windows Firewall window.</td>
</tr>
<tr>
<td>4</td>
<td>Select Inbound Rules in the left column of the Windows Firewall with Advanced Security window.</td>
</tr>
<tr>
<td>5</td>
<td>Select New Rule in the right column.</td>
</tr>
<tr>
<td>6</td>
<td>Select Port in the New Inbound Rule Wizard and then click Next. <strong>NOTE:</strong> You must create a Port rule. Do not create a Program rule.</td>
</tr>
<tr>
<td>7</td>
<td>Select which protocol this rule will apply to TCP, select Specific local ports, type the port number configured for Nginx (see page 26) in Settings, and then click Next.</td>
</tr>
<tr>
<td>8</td>
<td>Select Allow the connection and then click Next.</td>
</tr>
<tr>
<td>9</td>
<td>Select when this rule applies (check all of them for the port to always stay open) and then click Next.</td>
</tr>
<tr>
<td>10</td>
<td>Give this rule a name and then click Finish to add the new rule.</td>
</tr>
</tbody>
</table>

If you are using a firewall other than the Windows Firewall, consult the documentation of the manufacturer.
### Configuring Node-RED

You need to configure Node-RED using the EcoStruxure Augmented Operator Advisor Manager, that is a web-based application installed locally on the runtime device.

To run EcoStruxure Augmented Operator Advisor Manager:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>If not already running, launch <strong>EcoStruxure Augmented Operator Advisor</strong> → Augmented Operator Advisor from the list of installed Windows programs. <strong>Result:</strong> The EcoStruxure Augmented Operator Advisor window will open.</td>
</tr>
<tr>
<td>2</td>
<td>Click on <strong>AOA Manager</strong> to launch the EcoStruxure Augmented Operator Advisor Manager.</td>
</tr>
<tr>
<td>3</td>
<td>Log in using the default user name and password (admin/admin). <strong>NOTE:</strong> For additional security, you must change the default password immediately. Record the password in a safe location and provide appropriate protection.</td>
</tr>
<tr>
<td>4</td>
<td>Click the <strong>NODE-RED</strong> tab. Start the Node-red engine by clicking the <strong>Start</strong> button, and launch the Node-RED editor by clicking the <strong>Launch</strong> button. To automatically start Node-red each time the server starts, click the <strong>Autostart</strong> button.</td>
</tr>
<tr>
<td>5</td>
<td>Follow the procedure to deploy sample flows in Node-RED (see <strong>EcoStruxure Augmented Operator Advisor, Manager, User Manual</strong>).</td>
</tr>
</tbody>
</table>
Configuring Users and Security Settings

Overview

There are three types of users of EcoStruxure Augmented Operator Advisor:

- Builder users
- Runtime/Manager administrators
- Operator users

Builder users are those who will access EcoStruxure Augmented Operator Advisor Builder. Users without credentials can sign-up in the builder login screen.

Runtime/Manager administrators are those who are responsible for configuring users and security settings using the EcoStruxure Augmented Operator Advisor Manager. Runtime/Manager administrators must have administrator rights (maximum security level).

Operator users are those who will use the EcoStruxure Augmented Operator Advisor App. Based on their user rights (security level) they will have access to different objects in the app. In the builder project, objects are attributed with a security level numerical value. Operator users with a security level numerical value equal to or greater than the objects security level may view and interact with the object. Otherwise, the object is hidden or not accessible.

You now need to create operator users for your project (see EcoStruxure Augmented Operator Advisor, Manager, User Manual).

Frequently Asked Questions (FAQs)

Can I upgrade to EcoStruxure Augmented Operator Advisor from Vijeo 360 version 1?

There is currently no conversion tool available: solutions created using Vijeo 360 Version 1 cannot be migrated to EcoStruxure Augmented Operator Advisor.
What can I do if the tag is not detected properly?

Follow these rules when using tags:

- Place the tag on a solid flat surface or on a window.
- Do not use a tag in an environment with a grill or a mesh: the detection can be very slow or impossible, as the software will have difficulty differentiating between the tag and the grill/mesh.
- Reference photos must be taken directly in front of the tag. The photo plane must be parallel to the tag plane for best results.
- The detection camera plane must be also parallel to the tag plane. If a tag is placed at the top of a scene, consider tilting the tag downward to respect this parallelism. Any deviation from parallel of this photo will reduce the probability of tag detection.
- When identifying the tag placement in the images, use the four corners of the tag itself, as indicated as follows:

If the tag is not detected properly, do the following:
1. Print the tag in matt (non-glossy) finish.
2. Make sure the tag is attached on a flat surface of uniform color.
3. Try using a larger tag.
4. Try using a different tablet for tag detection.

Why are some characters missing in the field entries?

The EcoStruxure Augmented Operator Advisor Builder software does not recognize special characters, such as \, /, :, ?, <, >, or |.

Why am I not able to install EcoStruxure Augmented Operator Advisor Runtime?

To be able to install the EcoStruxure Augmented Operator Advisor Runtime:

- You must have administrator rights on your system.
- You must configure the Windows Firewall correctly (see page 28).
- You must activate your license key.
- You must check if the TCP port is free (see page 26).
Why does my trigger fail?
   If the trigger action does not occur when you expect an event, display the variable in a point of interest to check that the conditions of the trigger are fulfilled.

Why do I get a low memory warning from my web browser?
   This can happen when Node-RED is running at the same time as EcoStruxure Augmented Operator Advisor Manager. Close the Node-RED editor, or some of its flows, to free additional memory.

When PLC communication loss occurs, why do I not see the [Bad Quality] symbol for my EcoStruxure Operator Terminal Expert / Pro-face BLUE variables?
   All EcoStruxure Operator Terminal Expert / Pro-face BLUE variables must be declared as ‘animated’ variables in the runtime of the EcoStruxure Operator Terminal Expert / Pro-face BLUE project.
   This includes, but is not limited to, being part of one of the following groups:
   ● Alarm group
   ● Data logging group
   ● Displayed on an active HMI screen
   Refer to the relevant EcoStruxure Operator Terminal Expert / Pro-face BLUE documentation for more details.

Why do I see a decrease in performance of detection and tracking?
   Verify if your tablet has switched to power save mode. Reboot or switch back to normal mode to increase performance.

Why do some points of interest not react when I touch them?
   Verify if you need to recalibrate the touch area of your tablet. Switch between landscape and portrait orientation, then retry touching the point of interest.
Glossary

A

area
An area is a zone within each site or building (such as production lines, plant rooms, storage areas, workshops, laboratories, and office areas) that you want to monitor using EcoStruxure Augmented Operator Advisor. If you have the appropriate license type, you can create an area for each part of the site to monitor within an EcoStruxure Augmented Operator Advisor project.

augmented reality
Technology that superimposes a computer-generated image on a user view of the real world, providing a composite view of the image with points of interest superimposed.

E

EcoStruxure Operator Terminal Expert
EcoStruxure Operator Terminal Expert is human machine interface (HMI) configuration software that enables you to create and edit application panels to control automation systems for Magelis GTU terminal (Premium and Open boxes) and Magelis industrial PCs (Panel and Box).

I

IIoT
Industrial Internet of Things. The application of IoT to the manufacturing industry. Also called the Industrial Internet or Industry 4.0.

IoT
Internet of Things. A network of intelligent devices that collect and share data.

N

Node-RED
Node-RED is an open source, visual programming tool that requires few or no programming skills. Instead, it uses pre-programmed, reusable blocks of code called nodes. Nodes can be wired together to create flows of data.
P
point of interest
A point of interest is a position in an area, scene or subscene for which additional diagnostic or technical information is available. Various types of points of interest can be defined, including technical documentation, design drawings, information contained in a spreadsheet, and the real-time values of process variables generated.

procedure
A procedure is a set of task steps that the operator must carry out in a predefined order to complete the task.

process variable
A process variable is the measured value of a particular part of a process being monitored or controlled, for example, temperature, pressure level, or flow rate.

project
An EcoStruxure Augmented Operator Advisor project is made up of areas, scenes and procedures. Build the project and then copy it to the EcoStruxure Augmented Operator Advisor Runtime. The operator can then access the project on a tablet running the EcoStruxure Augmented Operator Advisor App.

S
scene
A scene corresponds to an image overlaid with points of interest.

SQL
Structured Query Language.

subscene
A part of a scene, typically a close up view of a particular area of the scene. A subscene can contain its own points of interest.

T
tag
A two-dimensional matrix. Tags can be printed and attached to items of equipment that are physically identical or very similar. The tags are scanned as part of a scene by the EcoStruxure Augmented Operator Advisor App and the correct points of interest for the item of equipment displayed.
U

URI
Uniform Resource Identifier. This is used to point to an object such as a file, and defines which application is used to open it. This may require the installation of third party applications.

V

variable
A variable is a type of a point of interest that is replaced by the real-time value of a software object from a process or database, for example, a system bit, when the scene containing the variable is displayed on the tablet.