Release Notes

SEE Electrical Expert
V4R3 (4.80/A)

SERVICE DELIVERY

TRAINING

Training on our products is provided every week.

Training on our software is conducted at our different training centres:

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- Email: supportna@ige-xao.com

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WEB SITES

IGE+XAO group Web sites: **www.ige-xao.com**

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A   CHANGES AND ENHANCEMENTS MADE IN SEE ELECTRICAL EXPERT V4R3 (4.80/A)

A.1.   ADDED IN V4R3 (4.80/A), COMPARED TO V4R2 SERVICE PACK 7 (4.47/A)

SEE Electrical Expert Configuration:

- *SEE Electrical Expert* V4R3 is a multi-language version: you have to select a language during the installation. However, it is possible to change the software language even after the installation. To do so, open the *SEE Electrical Expert Configuration*, and in the **Editor Appearance** category (**General** section) select the desired language.
- Possibility to manage high-DPI resolution: The **Turn on support for high-DPI resolutions** option (located in the *SEE Electrical Expert Configuration* window **> General** section **> Editor Appearance** category) allows you to enable/disable the support for high DPI resolutions.
- Possibility to release licenses when closing the application: The new **Release licenses when closing the application** option, located in the **Security** section **> Protection Settings** category of *SEE Electrical Expert Configuration* window, allows you to define whether to release the licenses when the application is closed. The option is available only for Software (internet) and Software (local) protection types.
- Possibility to use **Undo**/**Redo** commands in Multi User mode: The new **Allow multiuser undo** option, located in the **Multi-User** category **> General Settings** section of *SEE Electrical Expert Configuration* window, allows you to enable/disable the Undo/Redo functionality in Multi User mode.
- Possibility to define the length of the operation history: The new **Length of operation history** dropdown list, located in the **Multi-User** category **> General Settings** section of *SEE Electrical Expert Configuration* window, allows you to define for how long the operation history in Multi User mode will be kept.
- Skype integration is no longer used in *SEE Electrical Expert.*

Project:

- Possibility to generate and extract Part lists, without having an environment: The equipment codes are now stored in the project, which allows you to generate/extract Part lists without having an environment linked to the currently opened project.

Symbol Editor:

- New behavior/functions: The "Not Electric/Chanel", "Not Electric/Line Group" and "Cable/Composed cable" behavior/functions have been added.
The "Not Electric/Chanel" and "Not Electric/Line Group" behavior/functions allow propagation of attributes via equipotential.

- New system attributes: The "NEAR TO" and "DISTANCE" system attributes have been added. They replace the user attributes with the same names.
- New metacommands: The $NEAR TO, $DISTANCE, $PARENT TAG, $COL:CP_FROM and $COL:CP_TO metacommands, dedicated for Harness Tables, allow displaying the number of the connection point where wires are connected.
- New connection point attribute: The "Default_Contact_Order" connection point attribute has been added. Its value is assigned to wire extremities connected to the connection point.
- New connection point metacommand: The $PIN_ROLE metacommand has been added. Its value is propagated to the $PIN_ROLE connection points of other symbols connected to the same equipotential.
- "Connection point/Contact" are available on neutral symbol.
- New contact types:
  ✓ *The "Multiple_States" and "Signal_Continuity" contact types are used for simulation.*
  ✓ *The "Pin" contact is dedicated to Neutral symbols, especially for symbol splices having more than two connection points. The "Pin" contact allows grouping of these connection points in two "Pin" contacts, corresponding to both sides of the splice.*
- Creation of Sub-Contacts: It is possible to create sub-contacts on the following contact types:
  ✓ *"TTINV";*
  ✓ *"TRINV";*
  ✓ *"INV_CH";*
  ✓ *"Multiple_States";*
  ✓ *"Reversing Switch".*
- Symbols with "Slave/End Cap" behavior/function can be created with one or two connection points.
- Symbols with "Terminal Strip & Connector/Cavity" behavior/function can be created with one connection point.

Symbol Explorer:

- New contextual menu in *Symbols Explorer:* The **Export > Format of SEE Electrical JIGBOARD** pop-up command, available in the *Symbols Explorer*, allows you to export symbols or symbol families to XML format, which can be opened and used by *SEE Electrical Jigboard* application*.*

Wire Connectivity Project:

- Possibility to migrate a Standard project to Wire Connectivity project even if the standard project contains:
  ✓ *superposed symbols;*
  ✓ *not connected wires;*
  ✓ *group of connections with more than two extremities;*
  ✓ *OPR Source and Destination symbols.*
- Automatic creation of pins when you insert cable on existing connector.

Sheet Explorer:

- The new toolbar icon - allows you to display only Texts and Attributes in the sheet preview.

Improvements common to Schematic/Synoptic/Harness and Layout sheets:

- Executing **File > Update According to the Environment** command (with the **Methods** checkbox ticked) also updates the **Category** and **Technology** attributes, defined in the **Signals** method.
- The **Tools > Update symbols, illustrations and connections inserted in sheets** command opens a window, which allows you to update the following signals:
  ✓ *Line Style;*
  ✓ *Voltage;*
  ✓ *Gauge;*
  ✓ *Segregation;*
  ✓ *Type;*
  ✓ *Signal attributes defined in the **Signals** tab of the **Attributes** method.*
- The **Edit > Search** command, applies a zoom on the searched element.
- The **File > Export JSON File(s)** command allows you to export sheets to JSON format.
- The new *Visibility* toolbar icon - highlights the text and attributes within the currently active sheet.

Improvements in the Schematic Sheet:

- New option making the connection point selection easier: The **Connection points selection area** option (available in the *Settings* window **> Coordinates & Cursor** section **> Schematic** sheet type) allows you to define the selection area around the connection points of the symbols, within which the connection point can be selected.
- Possibility to use a keyboard key to rotate symbol at 90° during its insertion:
  ✓ *The default shortcut for symbol rotation at 90° is **Q**.*
  ✓ *You can change the default shortcut by assigning a new shortcut to the **Increase angle of inserting symbol** option (available in the **Customize** window **> Keyboard** tab **> Other** category).*
- Symbols with behavior/function "Not Electric/Channel" and "Not Electric/Line Group":
Symbols with such behavior/function are generally inserted inside black boxes. The goal is their frame-boxes to include the connection points of symbols connected to black boxes (as connector pins).

Those symbols collect in their CAD Properties not only the attributes belonging to pins/terminals and symbol's connection points, but also the signal's attributes connected to those pins/terminals and symbol's connection points. Those attributes are:
  ✓ *Pins/Terminals Number;*
  ✓ *"Pin Role" connection point attribute;*

- ✓ *"Line" signal attribute;*
- ✓ *"Line Group" signal attribute collected only by symbols with "Not Electric/Channel" function/behavior.*

The values of these attributes are propagated via equipotential from the collected symbol's connection points to connections and symbols connected to the same equipotential.

- ▪ Symbols with "Slave/End Cap" behavior/function: Those can be linked to other symbols via the **Select Near to** pop-up command.
- ▪ Possibility to define the black box selection method: The new **Black Box Selection** dropdown list, located in the **Coordinates & Cursor** section **> Schematic** sheet type, allows you to define if the black box will be selected when you within it, or only when you click on its borders.
- ▪ Ability to use Wiring Diagram Assistant also in Wire Connectivity projects.
- ▪ The new **File > Export Simulation File** command generates an XML file for SIMAC.

Improvements in the Harness Sheet:

- ▪ New harness working mode: The new "Manufacturing mode" defined in the **Harness** method allows you to:
- ✓ *specify the position of the symbol's accessories on the branch, by defining the distance to the branch extremity;*
- ✓ *specify the distance between the harness protection extremity and the branch extremity;*
- ✓ *highlight the accessories and the harness protection extremities, which have inconsistency between their distance to the branch extremity and the branch length.*
- ▪ Automatic tagging of the harness nodes: the nodes created at branches derivations are tagged separately in each harness, with a sequential number following the insertion order.
- ▪ Improvements in the **Splice list** field: The number of digits of the **Splice list** field (*CAD Properties* window of a Splice area) has been increased to 256.
- ▪ The **Tools > Launch See Electrical Jigboard** command, allows you not only to launch *SEE Electrical Jigboard* directly from *SEE Electrical Expert*, but also to export the accessories and harness protections with their exact position on the branch.
- ▪ The import of Geometrical Harness (**File > Import Geometrical Harness** command) allows you to import the position of the accessories and harness protection extremities on the branches.

Improvements in the Layout Sheet:

- ▪ New feature improving the Panel Wiring: The *Cable Installation Panel* (available by executing the **Tools > Cable Installation Panel** command) allows you to:
- ✓ *check the cabling process;*
- ✓ *mark the installed or not installed cables;*
- ✓ *save the cabling progress and generate a report;*
- ✓ *measure the time consumed by cabling tasks.*
- ▪ Possibility to print routes.

Tagging:

- Notion of internal and external tagging:
  - ✓ *internal tag is a tag calculated or entered in SEE Electrical Expert project.*
  - ✓ *external tag is a tag imported from another software (as Wire Numbering process or from CIRCE).*
- New options/frames in the **Settings** window:
  - ✓ *the "**Recalculate Order in case of tag modification**" option (available in the **Edit** section of Schematic, Synoptic, Harness and Terminal Strip sheet types) allows you to choose whether to calculate the Tag Order.*
  - ✓ *the "**Do not the cables/wires on connection insertion**" option (available in the **Edit** section of Schematic sheet type) allows you to insert cables without tag, no matter of the active tagging mode (in Wire Connectivity projects only).*
  - ✓ *the **Tag status color** frame (available in the **View** section of Schematic, Harness and Terminal Strip sheet types) allows you to define different color appearance for the differently defined tags (frozen, external, manual).*

Copy/Paste:

- During Copy/Paste of a terminal block or terminal block pin, the content of the *"Shunt Name"* field is removed.

Blocks and Standard Diagrams:

- Possibility to migrate blocks and standard diagrams from a Standard project to a Wire Connectivity project.

Connectors/Pins:

- The **Change to BackShell** pop-up command (available by right-clicking on a pin) allows you to replace a standard pin by a shielded pin.
- Possibility to define logical connector without distortion.
- Possibility to define attributes inheritance or synchronization of attributes between pieces of equipment and connectors.
- Possibility to get spare pins from PLM Application server.
- Automatic creation of pins when you insert wires on a connector (available in Wire Connectivity projects only).

Cables/Wires:

- Wire visibility: Wires connected to "EndCap" symbols are shown as not connected.
- Cables with marker function "Family Marker":
  - ✓ *have the connection points of their markers automatically connected;*
  - ✓ *can possess the "NEAR TO" attribute.*
- Inserting a "Wire" symbol on a connection in which the cable has no tag opens the **CAD Properties** window (in Wire Connectivity projects only).
- Spare wires of cables are not created in the project database; only the inserted wires are created in the project database (in Wire Connectivity projects only).

- Possibility to launch the insertion of wire symbols (in Wire Connectivity projects only).
- New rule keeps the cables after their connections are cut by insertion of new symbols (in Wire Connectivity projects only):
  ✓ *in case of horizontal connections, the existing cables are kept on the left side of the inserted symbols;*
  ✓ *in case of vertical connections, the existing cables are kept above the inserted symbols.*

End Fittings:

- New attributes: The "Soldered Extremity" and "Extraction Information" attributes have been added (***Wire Extremities*** window).
- The following new metacommands have been added:
  ✓ *$CODE_ENDFITTING*
  ✓ *$CONTACT_TYPE*
  ✓ *$CONTACT_NUMBER*
  ✓ *$CONTACT_ORDER*
  ✓ *$EXTREMITY_SOLDERED*
  ✓ *$EXTREMITY_INFO*
- When the ***Wire Extremities*** window is opened from symbol's connection point, only the extremities connected to this connection point are displayed.
- When the **Contact Type** field in the ***Wire Extremities*** window is set to "Simple", the **Contact Number** field is not available.
- The "Contact Order" attribute can inherit its value from the "Default Contact Order" connection point attribute of a symbol.
- The "End_Fitting" attributes can be displayed through the $F, $T and $N wiring diagram attributes.

Electric Data Explorer:

- Two new tabs have been added in the ***Electric Data Explorer***:
  ✓ ***Sheets*** *tab – it contains a list of the existing sheets in the currently opened project; the sheets can be opened from this tab.*
  ✓ ***Errors*** *tab – it displays the errors detected by the controls. The errors can be managed in this tab as in an error explorer.*
Note: as errors are stored in this tab, the Error Explorer is removed.

- The new options allow you to:
  ✓ *define the visibility of the tabs in the Electric Data Explorer;*
  ✓ *define the position of the tabs in the Electric Data Explorer – at the bottom or at the top of the explorer.*
  ✓ *sort the errors by error type or by error sheet.*

Improvements in the Methods window:

Project section:
- The **Name** attributes, located in the **Sheets and Attributes** method **> Attributes** category **>** *Project Attributes* tab, can now be selected from a dropdown list.

- The **Attribute** field, located in the **Sheets and Attributes** method **> Attributes** category **>** *Display Filter* tab, allows you to use the project attributes as filter.
- New types of lines with specific graphics are available in the **Line and Color** method.
- The **Standards** method allows you to import a new conversion table that uses Metric or AWG.
- New method called **Controls** has been added. It allows you to:
  - ✓ *select the priority level of the controls (Error or Warning);*
  - ✓ *define some controls as mandatory;*
  - ✓ *launch some of the controls during project closing.*

Symbols section:
- Possibility to use "SPM_FGn_TAG" in cable tagging format (**Symbol Tagging** method **> Cable** category **>** *Tagging Format* tab).

Connections section:
- The "Cross-Ref" and "Shielding Pick-up" categories have been added in the **Signals** method (**Category** field).
- New fields in the **Signals** method allow defining the default Section, default Segregation and default Type.
- New options in the **Signals** method allow you to enable/disable overlap connections control (on Wire Connectivity project only).
- New options in the *OPR Selection* tab of the **Signals** method allows you to insert cable symbols on not connected wire extremities (Wire Connectivity projects only).

Harness section:
- Two harness working modes are available:
  - ✓ *"General mode": current mode in current version.*
  - ✓ *"Manufacturing mode": allow you to define the position of Accessories and Harness Protections on the branches.*
- The new tab *Automatic Insertion of Connective Equipments* allow you to specify the settings for the automatic insertion of Connective Equipments in Harness sheets.
- Ability to enter decimal values in the **Length increase coefficient** field.

Cables section:
- New fields in the **Type Definition** method allows you to define the cable gauge and wire color.
- New option in the **Type Definition** method allows you to optimize the Overbraid cable size.

Connectors section:
- The Connector and Pin Association for Insertion method allows you to:
  - ✓ *define connector symbols without distortion;*
  - ✓ *define synchronization or inheritance of attributes between pair of connectors or between connector and its equipment.*

Title Blocks:

- The new "$SYMBOL:SymbolName.FamilyName" metacommand allows you to insert a symbol in the Title Block (on the place of the metacommad).

Navigation:

- End Cap Navigation – possibility to navigate to the symbol defined in the "NEAR TO" attribute.
- Possibility to Navigate from a symbol to the 3D Panel.

Options & Variants:

- Possibility to assign validity to:
  - ✓ *Drawings;*
  - ✓ *Texts;*
  - ✓ *Graphical Locations;*
  - ✓ *Symbols without connection points;*
  - ✓ *OPR symbols.*
- Possibility to define the Options & Variants directly in *SEE Electrical Expert* (without importation of XML file).

PLC:

- The new window allows you to define the PLC configuration.
- PLC configuration can be defined by two modes:
  - ✓ *SLF files (as in the previous version).*
  - ✓ *Block Association: the ability to assign blocks able to retrieve the attributes of each element to Racks, Modules and Inputs/Outputs. The blocks can be assigned manually in the PLC dialog, or retrieved by their equipment code. The new fields in the Equipment Catalog allows you to enter the name of the block.*
    The blocks also allow you to define the schema connected to the Input/Output.
- The net is dedicated at a module; the goal is to know which module drives the net.
- Ability to generate PLC sheets either by SLF files or by Blocks
- The SLF generation takes into account the Blocks dedicated to a schema connected to Inputs/Outputs.

3D Panel:

- Possibility to create (via the **Sheet Explorer**) 3D Panel sheets directly in SEE Electrical Expert.

Other Topics:

- Ability to launch *SEE Electrical Jigboard* from *SEE Electrical Expert*.

- Ability to retrieve all user attributes from *SEE Device Manager* and from *SEE Generative View.*
- Ability to copy from *SEE Viewer* to *SEE Electrical Expert.*
- The Auto ABK process can function with or without a progress bar.

Pin Booking (PLM Application):

- The options in the **SEE Electrical Harness PLM** section of the *SEE Electrical Expert Configuration* allows you to use Pin booking:
  - ✓ *only with the list of booked pins.*

Or
  - ✓ *with the list of booked and new pins.*

Wire Numbering (PLM Application):

- Ability to launch Wire Numbering by contextual menu on cables/wires or connectors/pins.
- Ability to manage Overbraid cables.
- Ability to manage End Cap symbols with one or two connection points.

Plug-in/API:

- Ability to define new Control(s) via a plug-in. The plug-in displays these controls in the existing **Control Process** window.
- Ability to launch Plug-in with Events, without having the VBA 7.1 protection module.
- Ability to define icon for the menu created by the Plug-in.
- Ability to use Plug-in command in the toolbars.
- Ability to convert Metric standard to AWG and vice versa via an API.

Print:

- New information messages appear if you try to print a selected area, but you have not defined this area.

SEE Viewer:

- Ability to use *SEE Access Control* in *SEE Viewer.*

A.2. *LIMITATIONS AND RESTRICTIONS*

A.2.1. SEE ELECTRICAL EXPERT

SEE Electrical Expert V4R3 needs version equal or higher to version 11.14.02 of Flex LM to use this type of protection. The "**Visual C++ Redistribute for Visual Studio 2015**" component must be installed on the server where the Flex LM is installed. Normally this component is automatically installed with the Windows Update.

The maximal size of the project is 1.8 GB.

The project multi language features are protected with the "Translation" license.
  - ▪ In case the user has the "Translation" module on his/her license, the user is allowed to edit text or attributes in every project language.
  - ▪ In case the user does not have the "Translate" module on his/her license, the user can consult every language in the project, but can only edit the "main" language.

The migration process does not recreate the hyperlinks of projects created in V4R1 or previous version of *SEE Electrical Expert*. To recreate the hyperlinks of the migrated project you have to rebuild the cross reference and to generate the part list and table of contents again.

PDF Export: To activate the hyperlinks in Adobe Acrobat Pro, navigate to the **Edit** menu and select the **Preferences…** command. In the *Preferences* window that appears, select the **Documents** category on the left hand side. Navigate to the *View documents in PDF/A mode* option and chose **Never** from the dropdown menu on the right.

SEE workspace (SWS file / Windows, Toolbars, Menu customization) saved with versions less or equal to V4R1 are not supported by V4R3.

SEE Equipment Database supports MS SQL Server 2008, 2012 and 2014 ("Part List Manager" license is required).

Versions greater or equal to V4 no longer support MS SQL or Oracle database for parts list processes.

A.2.2. SEE ELECTRICAL 3D PANEL MODULE

SEE Electrical 3D Panel module is not supported on Windows XP.
SEE Electrical 3D Panel module is not installed with the *SEE Electrical Expert* installer. It has its own installer.

A.2.3. CABINET THERMAL CALCULATION MODULE

Cabinet Thermal Calculation module is not supported on *Windows XP*.

A.2.4. SEE AUTOMATIC DIAGRAM GENERATION MODULE

SEE Automatic Diagram Generation module is not installed with the *SEE Electrical Expert* installer. It has its own installer.
SEE Automatic Diagram Generation module is protected by a license.
SEE Automatic Diagram Generation module needs *MS Excel*. It is compatible with the 32 and 64 bits versions of MS Excel 2010, 2013 and 2016.
It is not possible to add variables in Block Param Editor for blocks of layout or harness.

A.2.5. CONCURRENT ENGINEERING MODULE (MULTI-USER MODE)

Concurrent Engineering module (Multi-User mode) works with MS SQL Server 2012 and 2014 databases to store projects.
Concurrent Engineering module needs *SEE User Access*.
The **Close project without saving** functionality does not work in Multi-User mode (*Concurrent Engineering* module).

A.2.6. OPEN DATA MODULE

Open Data module needs MS Excel.

A.2.7. END FITTING MODULE

To migrate the data stored in cable attributes (until V4R1) to the new extremity attributes in V4R3, the plugin "End Fitting Migration to V4R3 (4.80)" must be installed and activated.

A.2.8. 3D PANEL FOR SOLIDWORKS MODULE

The old *3D Panel for SolidWorks* module is no longer supported by *SEE Electrical Expert* versions greater or equal to V4R3.
A 3D panel layout created with the old *3D Panel for SolidWorks* (before V4R3) cannot be migrated to the new *3D Panel* module.

A.2.9. MACRO

VBA version 7.1 (32 bits) must be installed to execute a macro in *SEE Electrical Expert* versions greater or equal to V4R3.

A.2.10. SMARTEAM INTEGRATION MODULE

The SmarTeam Integration module of *SEE Electrical Expert* (V4, V4R1, V4R2, and V4R3) supports the SmarTeam releases from V5R19 until V5R27.

A.3. COMPATIBILITY WITH IGE+XAO PRODUCTS

A.3.1. SEE PROJECT MANAGER

SEE Electrical Expert V4R3 (4.80/A) is supported by SEE Project Manager V8R2 SP 7 Patch K or Patch L, V8R3 Patch C.

A.3.2. SEE ACCESS CONTROL

SEE Electrical Expert V4R3 (4.80/A) supports only version 4.50/E of *SEE User Access*.
If a customer uses an old version of *SEE User Access*, s/he will have to migrate the database with *SEE User Access Admin Tool*.

A.3.3. SEE AUTOMATIC DIAGRAM GENERATION

SEE Electrical Expert V4R3 (4.80/A) supports V4.80/A of *SEE Automatic Diagram Generation*.

A.3.4. SEE ELECTRICAL 3D PANEL

SEE Electrical Expert V4R3 (4.80/A) supports the version V1R3 Service Pack 1 of *SEE Electrical 3D Panel*.

A.4. SYSTEM REQUIREMENTS

A.4.1. ADVISED SYSTEM CONFIGURATION

For Mono-User Mode:

- Microsoft Windows 7 Home Premium, Professional, Ultimate, Enterprise (64 bits Operating System installed on 64 bits computer).
- Processor: i3 class, 2 GHz.
- RAM: 4 GB.
- 500 MB of free disk space required for the installation.
- Graphic Card: 1280 x 1024.

For Multi-User Mode (Concurrent Engineering):

There are different requirements for the Server and for the Client.

For the Server:
- Microsoft Windows Server 2008 R2 (64 bits) or newer.
- Microsoft SQL Server 2008 R2 (PROFESSIONAL version strongly recommended; it is also possible to run on EXPRESS EDITION version, but with some limitations).
- Processor: i7 class, 3 GHz.
- RAM: 12 GB (+ 1 GB by client).
- 200 GB of free disk space required for the installation.
- LAN (Network Card): 1 GB.

For the Client:
- Microsoft Windows 7 (64 bits).
- Processor: i3 class, 2 GHz.
- RAM: 4 GB.
- 500 MB of free disk space required for the installation.
- Network Card: 1 GB.
- Graphic Card: 1280 x 1024.

For 3D Panel:

- Microsoft Windows 7 Home Premium, Professional, Ultimate, Enterprise.
- Processor: i5 class, 2 GHz.
- RAM: 4 GB.
- 1 GB of free disk space required for the installation, together with the 3D Parts library, provided by default.
- Graphic Card: must have full support of OpenGI, as well as 1 GB of dedicated memory.

A.4.2. WINDOWS COMPATIBILITY

SEE Electrical Expert V4R3 supports:
- ✓ Microsoft Windows 10 Pro (32 and 64 bits), as well as Microsoft Windows 10 Enterprise (32 and 64 bits).
- ✓ Microsoft Windows 8 and Microsoft Windows 8.1 (except for the RT version for mobile devices).
- ✓ Microsoft Windows 7.

SEE Electrical Expert V4R3 does not support Microsoft Windows XP.

A.4.3. VIRTUAL SOLUTIONS COMPATIBILITY

SEE Project Manager and *SEE Electrical Expert* are compatible with Microsoft App-V and VMWare virtual solutions.

Microsoft App-V or VMWare

There are no compatibility issues with those two virtual solutions.