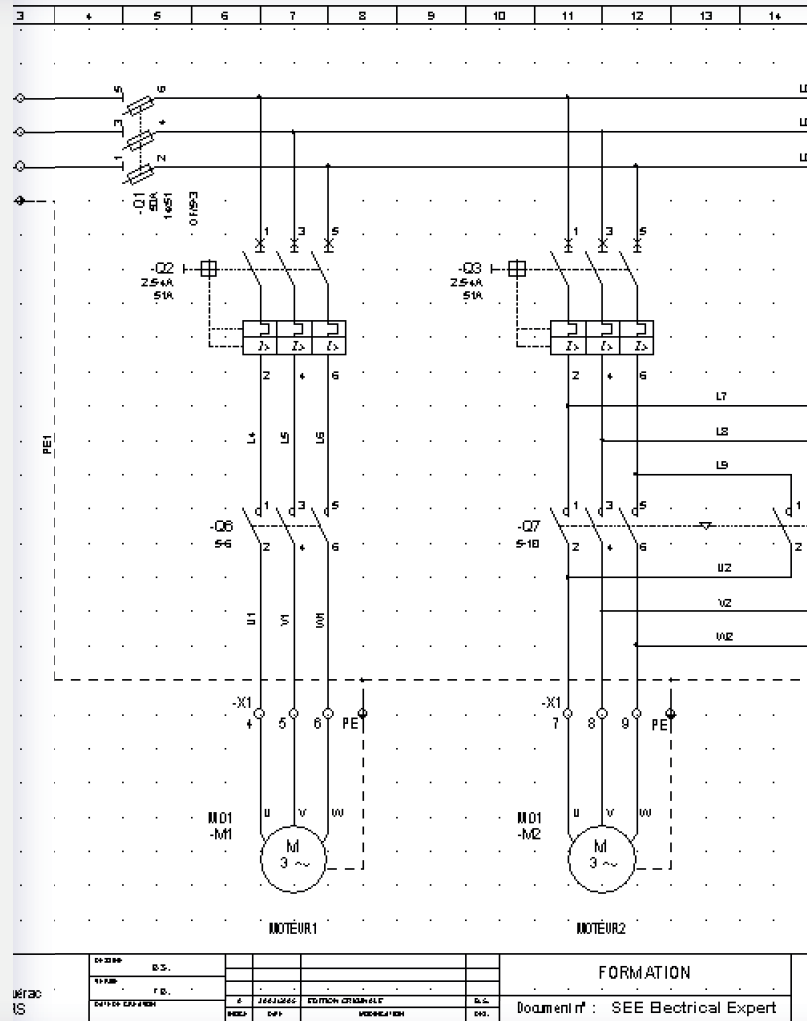
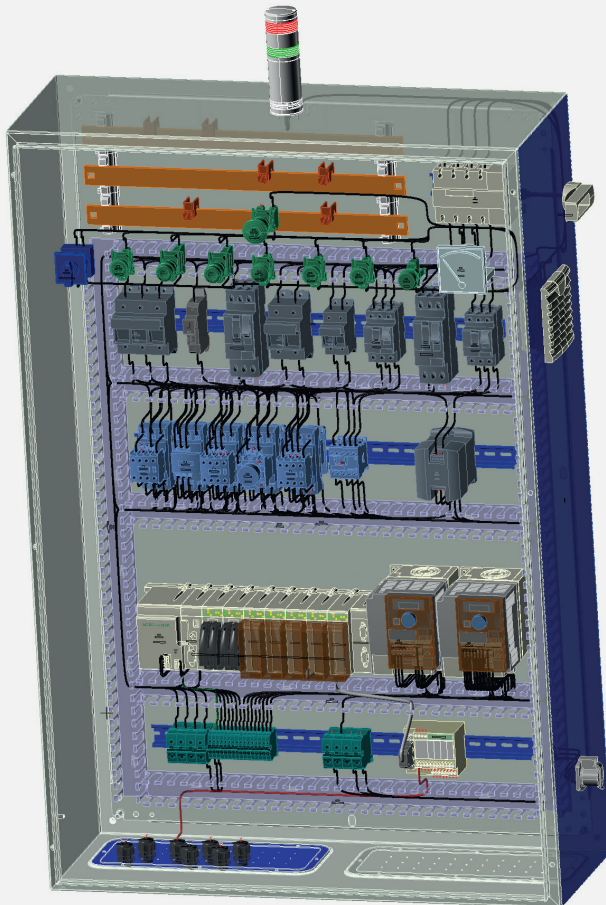




# SEE Electrical Expert

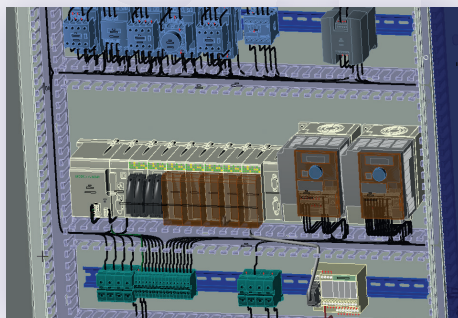


All the power of Electrical CAD dedicated to  
Industrial Automation & Electrical Harnesses

## Thanks to IGE+XAO's 30 years of experience, **SEE Electrical Expert** is a reference in the world of electrical design

### Innovation

An opening to innovation  
with the modules:



#### CONCURRENT ENGINEERING

All the power of collaborative  
work in one single module.

#### 3D PANEL+

3D electrical panel design.

#### HARNESS DOCUMENTATION

For designing 2D harnesses and  
automatic routing the wires and cables  
in accordance with the schematics  
with maximum reliability.

#### OPEN DATA

Rapid modification of project data.

#### OPTIONS & VARIANTS

Electrical project numbering as  
well as change time reduction.

#### AUTOMATIC DIAGRAM GENERATION, SEE GENERATIVE VIEW, SEE COMPODATA

Innovative solutions for automatic  
generation of electrical projects.

### Communication



#### Interfaces with other key software packages:

- Mechanical CAD (Catia, SolidWorks, Creo, NX, Inventor AutoCAD, etc.)
- PDM (SmarTeam, Windchill, TeamCenter, Solidworks PDM, etc.)
- ERP (SAP, etc.)
- Automation and manufacturing software (PLC programming, labelling, panel manufacturing, cable manufacturing, documentation, archiving, cost calculation, etc.)

#### 100% unicode environment.

### Efficiency

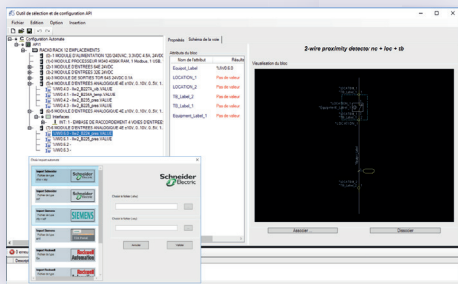
A complete environment for  
an immediately operational  
business package:

More than 1,000 electrical standardized  
symbols (IEC, IEEE, etc.)

Online electrical equipment catalogue  
(SEE Web Catalogue) with over  
700,000 (and growing) parts from over  
900 manufacturers including ABB,  
Legrand, Eaton, Phoenix Contact,  
Rockwell Automation – Allen Bradley,  
Schneider Electric, Siemens, Socomec,  
Wago and Weidmüller, etc.)

Many built in design templates  
(motor starters with corresponding  
controls, drives, PLC cards, etc.)

Hundreds of working methods  
provided for symbol tagging, wire  
numbering formats, terminal  
strip layouts, connectors, cables,  
management of interconnections,  
part list templates, terminal and cable  
lists, XLS and XML export formats.



## Packages and functionalities

### ESSENTIAL

Single and multi-line schematics creations and modifications
Automatic component tagging
Automatic wire numbering
Real-time cross-referencing
Navigation between related components and signals
Fast editing with copy/paste and modify tools
Cable insertion
Intelligent equipment selection (automatic & customizable filtering)
Schematics annotated from the equipment catalogue data (contact numbers, voltage, current, etc.)
Object and text hyperlinks
Automatic bill of materials generation
Automatic table of contents generation (sheet list)
Project management (by location, function and subset)
Electrical data explorer
Revision management
Error checking
Layer management (project data display control)
“Intelligent” PDF export
DWG/DXF export
Tag export for label markers
Customizable professional environment: <ul style="list-style-type: none"> <li>• symbol editor,</li> <li>• equipment catalogue editor,</li> <li>• title block and schematics background editor,</li> <li>• working methods editor,</li> <li>• block management (whole circuits stored to speed up future work).</li> </ul>

### PREMIUM

Includes <b>ESSENTIAL</b>
Customizable automatic parts list generation: <ul style="list-style-type: none"> <li>• equipment list,</li> <li>• components list,</li> <li>• cables list,</li> <li>• cabling list,</li> <li>• wire numbers list,</li> <li>• and more.</li> </ul>
Connector and terminal editor: <ul style="list-style-type: none"> <li>• terminal automatic numbering,</li> <li>• stacked terminal management,</li> <li>• bridge and neutral management,</li> <li>• management of end stops and separators,</li> <li>• cable choice assistance.</li> </ul>
MS Excel or TXT export
Automatic generation of connectors and terminal drawings
Automatic generation of cable and connection drawings
Automatic insertion of connector pins on schematics

### ENTERPRISE

Includes <b>PREMIUM</b>
Parts list management (difference between 2 revisions)
Importing equipment list to populate the project
SEE Web Catalogue download from an MS Excel equipment list
Synoptic cabling editor
Automatic creation of terminals defined in the synoptic
Automatic cabling between terminals defined in the synoptic
Automatic insertion (back annotation) of connections on the schematics
Management of separate wires and potentials
Advanced cabling management
Automatic wire creation and update
Automatic wiring connection according to cabling direction

## Additional modules

### PLC

#### PREMIUM/ENTERPRISE

- PLC configuration management
- Network and field bus management (remote I/O)
- Automatic generation of racks and I/O card schematics
- Direct PLC configuration import from Schneider Electric, Siemens and Allen-Bradley
- Address and descriptions list import from MS Excel

### MULTI-LANGUAGES

#### ESSENTIAL/PREMIUM/ENTERPRISE

- Multi-lingual project edition
- Automatic translation tool
- Dictionary of terms editor

### DXF/DWG IMPORT

#### ESSENTIAL/PREMIUM/ENTERPRISE

- DXF and DWG (AutoCAD) import

### OPEN DATA

#### ESSENTIAL/PREMIUM/ENTERPRISE

- Data export for quick and easy editing of project data with MS Excel or another spreadsheet package
- Data imported back with consistency control

### SIMULATION CONNECT

#### ESSENTIAL/PREMIUM/ENTERPRISE

- Logical behaviour generation as Boolean equations
- Model export to simulation software packages (Prosyst Simac)

### 2D PANEL+

#### PREMIUM/ENTERPRISE

- 2D equipment placement
- Associative dimensioning
- Enclosure selection assistance
- Navigation between panel layout and schematics
- Auto wire routing in the Cabinet Layout layout
- Drilling layout generation

### 3D PANEL+

#### PREMIUM/ENTERPRISE

- Schematic and 3D panel design integration
- Collision detection
- Consistency check with the schematic diagram
- Import/export support for DWG, DXF, IGES, STEP and STL
- Advanced 3D wire routing features
- Wireway fill calculation
- Optimal wire lengths calculated
- Manufacturing reports (drilling plans, wire cut lists, etc.)
- Direct output for CNC tools

### CABINET THERMAL CALCULATION

#### PREMIUM/ENTERPRISE

- Checking the thermal properties of cabinets
- Power dissipation calculation of all equipment
- Ventilation or cooling calculation required to maintain temperature within user defined range

### HARNESS DOCUMENTATION

#### PREMIUM/ENTERPRISE

- Logical and physical electrical harnesses design
- Positioning of accessories
- Automatic routing of cables and wires into the harness according to the schematics
- Automatic calculation of harness wire and cable lengths and branch diameters

### JIGBOARD

#### PREMIUM/ENTERPRISE

(Includes the module **HARNESS DOCUMENTATION**)

- Scaled harness drawing to insert into production tables (formboard/jigboard)
- Control of the bend radius of the branches
- Formboard table splitting into different areas
- Wire grid insertion at the harness extremities
- Branch diameter display

### END FITTING

#### PREMIUM/ENTERPRISE

- Definition of equipment required for wire end fittings

### OPTIONS & VARIANTS

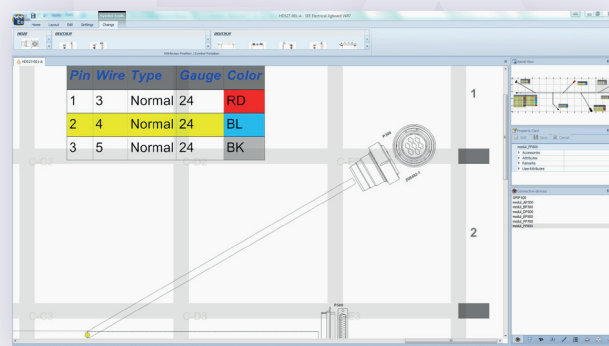
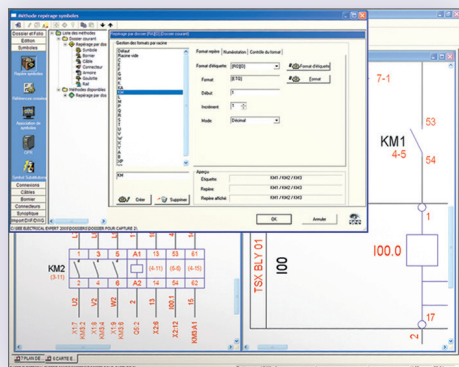
#### PREMIUM/ENTERPRISE

- Single project created containing multiple configurations
- Validity tagging for symbol connections or connection points
- Hierarchical options/variants; validity defined as a Boolean expression
- Schematics and data export filtering

### AUTOMATIC DIAGRAM GENERATION

#### ESSENTIAL/PREMIUM/ENTERPRISE

- Automatic generation of electrical projects from a MS Excel file



## Additional modules

### ENVIRONMENT MANAGER

#### ESSENTIAL/PREMIUM/ENTERPRISE

- Environment management
- “Local environment” updated according to “reference environment” (stored on server)
- Bidirectional environment synchronization
- Environment merging
- Environment differences detection
- Project object control in relation to those defined in the environment

### CONCURRENT ENGINEERING

#### PREMIUM/ENTERPRISE

(Includes the module **ENVIRONMENT MANAGER**)

- Multiple users working in the same project simultaneously
- Conflict management (simultaneous access to data)
- Modifications made by other users are instantly seen
- Online discussions (chat) tools

### PLM CONNECT

Generic interface for **SEE Electrical Expert** to communicate with PDM / PLM / ERP tools (PTC-Windchill, ARAS, SAP, etc.)

- **ESSENTIAL** level available for the packages **ESSENTIAL/PREMIUM/ENTERPRISE**
  - Document integration (schematics, part lists and associated documents)
- **PREMIUM** level (includes **ESSENTIAL**) available for the packages **PREMIUM/ENTERPRISE**
  - Project data integration (mechatronic components, equipment, cables, etc.)
  - Equipment catalogue synchronization
  - Configuration management (Options & Variants)

### PLM CONNECT TEAMCENTER

Enhanced interface for **SEE Electrical Expert** to work with Siemens TeamCenter.

- **ESSENTIAL** level available for the packages **ESSENTIAL/PREMIUM/ENTERPRISE**
  - Document integration (schematics, part lists and associated documents)
- **PREMIUM** level (includes **ESSENTIAL**) available for the packages **PREMIUM/ENTERPRISE**
  - Project data integration (mechatronic components, equipment, cables, etc.)
  - Equipment catalogue synchronization
  - Management of configurations (Options & Variants)

### PLM CONNECT SMARTTEAM

#### PREMIUM/ENTERPRISE

Enhanced interface for **SEE Electrical Expert** to work with Enovia Smartteam.

- Document integration (schematics, part lists and associated documents)

### PLM CONNECT SOLIDWORKS PDM

#### PREMIUM/ENTERPRISE

Enhanced interface for **SEE Electrical Expert** to work with Solidworks PDM.

### CAD CONNECT (CATIA, SOLIDWORKS, CREO, NX OR INVENTOR)

#### ENTERPRISE

- Equipment and cabling list export

### DATA EXTRACTOR

#### PREMIUM/ENTERPRISE

- XML, XLS format customized data export

## Additional service

### SEE Web Catalogue

- Online equipment catalogue with more than 700,000 equipment codes and 20,000 specific equipment symbols

## Additional packages

### SEE Viewer and SEE Viewer Premium

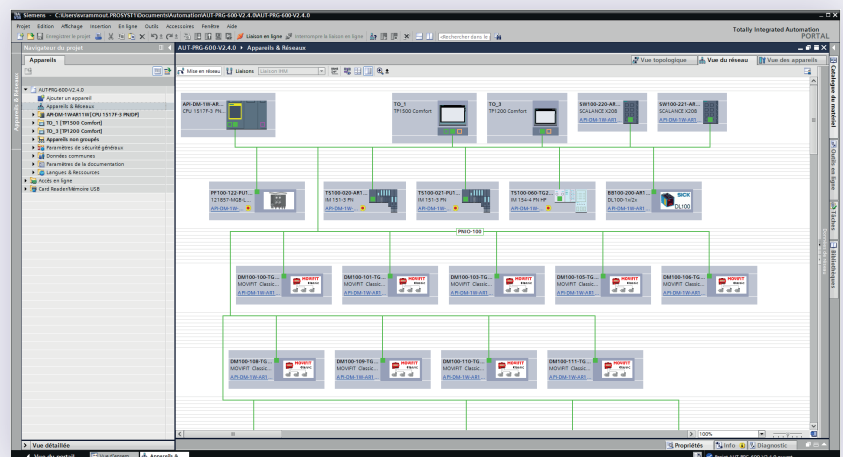
- Document viewing and printing

### SEE Generative View

- Equipment cabling schematics generation from logical harnesses data

### SEE Project Manager and SEE Project Manager LT

- Document management
- Project user right management





## IGE+XAO Group



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- 33 years of experience
- More than 91.000 licences sold
- 30 locations in 20 countries
- 360 employees

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