

Key modules in CADISON E&I Designer 2021

- P **CADISON Project / Document Manager**
Module to create Project Structures and also to perform User Management for the project.
- E&I **CADISON E&I Designer**
Comprehensive solution for Schematic & Control Design, Sizing Calculations, 3D Cable Trays, Trenches, Conduits & Panel Layouts, etc. Automatic Report generation, BOM and MTO. It has integrated Report Generator, Work-flow Management, Status Review and Document Management.
- S **CADISON Support Structure**
Module to plan and create 3D structures and supports, generate BOM and BOQ.



Installation requirements of CADISON E&I Designer 2021

Operating system - Workstation:

Windows 10 Pro, Windows 10 Enterprise.
You may also need Citrix XenApp 7.6, Citrix XenDesktop® 7.6 for thin client environment.

CAD Applications:

AutoCAD 2020, 2021 or 2022 or AutoCAD 2020, 2021 or 2022 with Architecture Toolset or AutoCAD 2020, 2021 or 2022 with Mechanical Toolset (*Mechanical functionality will not be available with CADISON E&I Designer),
Navisworks 2020, 2021 or 2022 (As per AutoCAD version installed)

Supported Applications:

Microsoft Office 2016 (64-Bit or 32-Bit)
Microsoft Office 2019 (64-Bit or 32-Bit)

Installation Preparation:

At first, do run all required CAD Applications and supported programs that are necessary for CADISON E&I Designer 2021 to verify their correct operation, e.g., AutoCAD and Microsoft Office need to be pre-installed and run once. We recommend installing DWG TrueView also to preview drawings. You can download the DWG TrueView from the Autodesk's official website.

Refer to documents available in installation media or DVD for more details:

- 1) EAI_System_Requirement.pdf
- 2) Important_Information_for_Current_Release.pdf
- 3) EAI_Installation.pdf and 4) EAI_Licensemanager.pdf

Installation steps

Local Installation

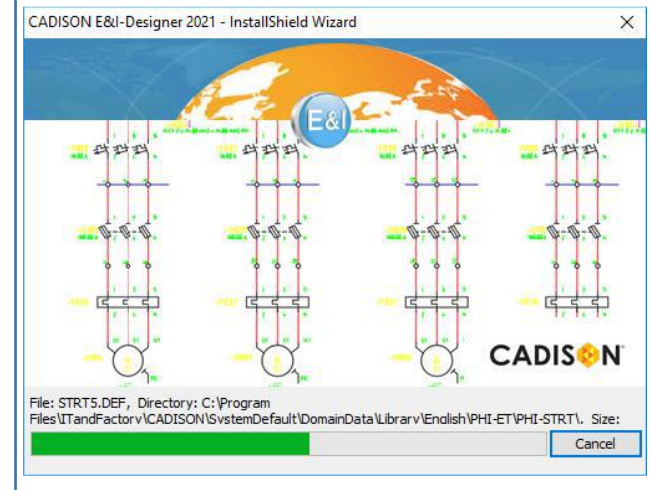
The installation runs automatically upon insertion of the DVD. You can also start the installation by executing **EAI_StartMenu.exe** in the root directory of the CADISON E&I Designer 2021 DVD.

Click button in the setup dialog box, and then click **CADISON E&I Designer 2021 Setup**.

Note: Ensure that you have Administrative Privilege rights on your system for installation.

Additional Information

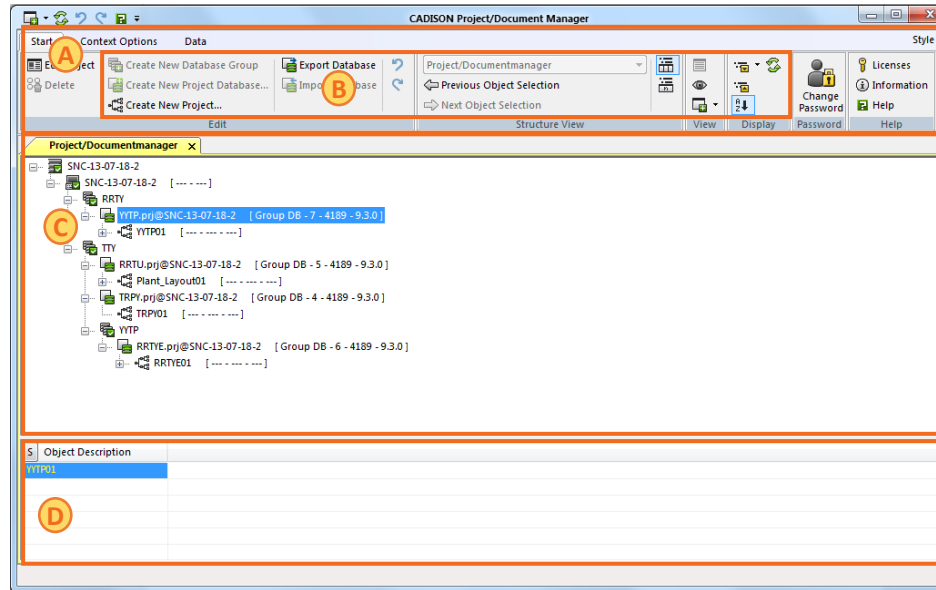
You can visit www.enidesigner.com or contact CADISON Hotline for additional information



Windows Start > CADISON E&I Designer 2021 > CADISON PDM, or use shortcut  created on Windows Desktop. Enter the login credentials.

The User Interface

- A. Ribbon Menu Bar:** Contains various commands in different tabs for getting started, User Management and Data modifications.
- B.** Contains commands to modify the display of Tree, and to edit an object "using graphical toolbar".
- C. Tree:** Allows to maintain the project and the user management structure
- D. Table:** Displays the details of the object selected in the tree.



Right-click an object in the Project Tree to view the shortcut menu for creating / modifying a project structure.

User Management Terminologies

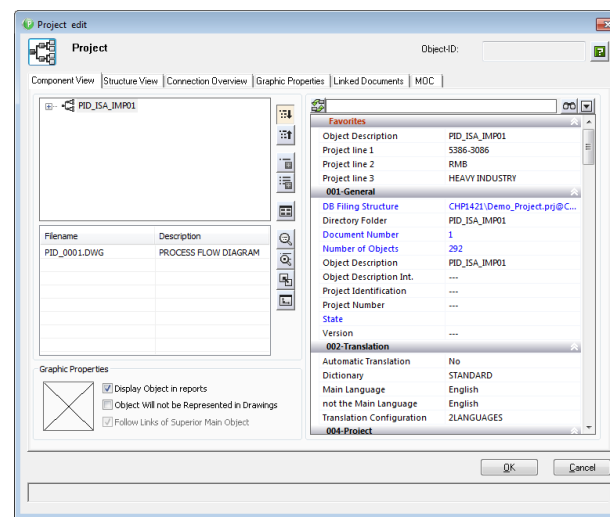
- **User:** Admin, User, Project Manager, etc. You can create a new user and assign roles and project state using the Edit User dialog box.
- **User Group:** Contains a group of users with same role. You can assign roles to the user group and the properties are inherited to the users in the group.
- **Role/Function:** Contains project state that is used to control roles of users or user groups.
- **Project State:** Contains a standard account that includes object class accounts which allows you to control specific object property.

In Context Options, Click **Open User Management**, to view the tree structure. Right-click a User object in the tree for creating / modifying any User information and Roles.

Edit Object

All the entities like Project, Document, User, etc. are considered as objects in CADISON. You can edit every object in CADISON to modify the object properties, links, and other metadata of the object. In PDM you can edit the objects in Project Structure and User Management.

Right-click an object and select **Edit**.



Project Structure Terminologies

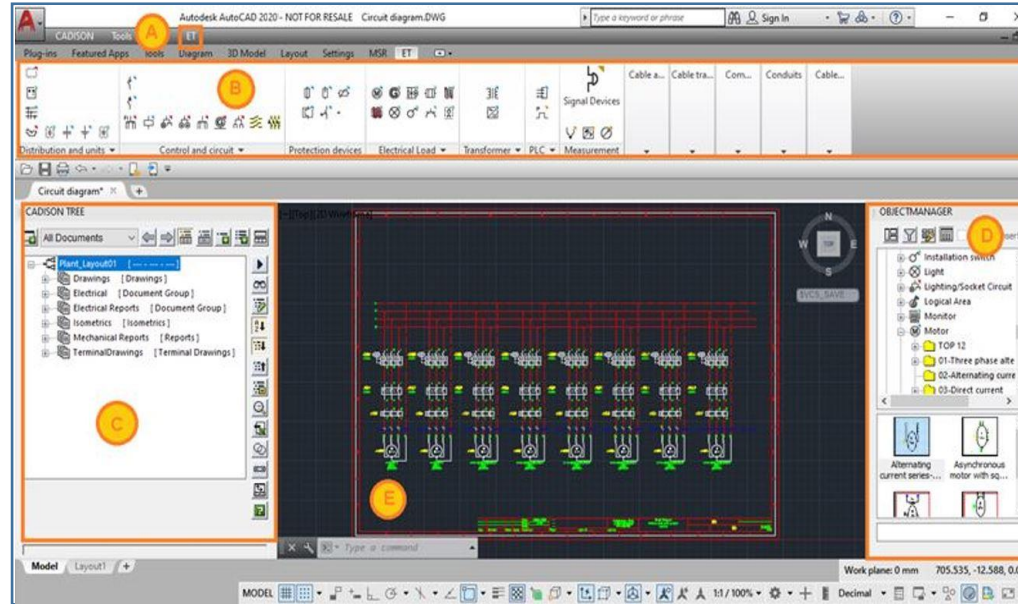
- **Database Domain and Computer:** Server on which the database structure is defined. The database domain and the computer names appear by default as defined by the administrator.
- **Database Group:** Directory to store project databases and projects. You can store multiple project databases and import project databases under the database group.
- **Project Database:** Container of projects and document groups in which all objects of a project are stored. A project database can be exported as a single database file. Every project should have its own database. It is also possible to have several projects under a single database.
- **Project:** First object in a database and the top-most level of the project structure. A project contains all the documents, drawings and objects related to a project.
- **Document Groups:** Contains segregated drawings or documents for a project.
- **Documents:** Drawings, Reports, BOM tables, User documents, etc. are stored.
- **Drawings:** Single Line Diagrams, Circuit Diagrams, Terminal Drawings, Electrical 3D Layouts, etc.

For more information on CADISON E&I Designer, visit: www.enidesigner.com

Windows Start > CADISON E&I Designer 2021> CADISON E&I Designer and enter the login credentials. In the **Project and Document** dialog box, open a drawing. **Electrical Designer** commands are available under the **ET ribbon** and **ET menu** and **Instrumentation** commands are available under the **MSR ribbon** and **MSR menu**.

The User Interface

- A. CADISON/Tools/ET:** Contains tools/Commands to Add/ Modify/ Edit /Display the objects in drawing.
- B. ET Ribbon:** Displays ET Object Symbols and can be placed in drawing by clicking on it.
- C. CADISON Tree:** Displays electrical objects by selecting structured view like KKS Structure, Energy distribution, Instrumentation and Cabinet details, etc.
- D. CADISON Object Manager:** Contains objects for Electrical Designer in the Energy supply and distribution, and Automation discipline.
- E. Model space:** Displays the objects which are drawn in the drawing area.



Terminologies in CADISON Electrical Designer

Electrical Symbols

The symbols are displayed on the ET ribbon and in the ET menu. Symbol library supports NFPA, IEEE, JIC, EN, ÖNORM, and ISA standards. **In the ET menu or ET ribbon, click on the object icon. The Object Manager appears to insert the objects in the drawing Catalogs**

You can attach technical data from vendors in Catalogs to the CADISON objects. This data is used to update object information and useful to generate BOM/BOQ/Reports. **Ctrl+Right-click an object in CADISON Tree, select Catalog > Attach Catalog Item**

Automatic PLC I/O Drawing

It will generate automatic PLC drawing according to the inputs given in the Excel sheet. **In ET menu>select PLC wizard tool > select I/O Excel sheet to create PLC I/O drawing**

Terminologies in CADISON Electrical Designer

3D Cable tray routing

Open 3D layout drawing & click the Cable Tray routing icon in the ribbon of ET and follow the commands. Similar to cable tray routing, cable trenches and conduits can also be routed.

Automatic Legend creation

Automatic generation of Legend table with a list of symbols representing the objects used in the drawing can be generated.

Sizing Calculations

By selecting particular objects (e.g., Transformers/ Cable, etc.) in CADISON tree, user can do **calculations** for:

- Transformer sizing
- Cable sizing
- Earthing
- UPS sizing

Getting Started

1. Insert a Title block

In the Layout ribbon, select Title-block settings. Or, In the CADISON menu, select Product & Document Manager > Title-block setting.

2. Graphic Key settings

In the CADISON menu, select Settings > Change Graphic-key.

3. Object placement

Click object icons from the ET ribbon, select the object from the object manager and insert it in the drawing.

4. Wire and Cable routing

In the Cables and wires section of the ET ribbon, select a wire type, and route a line using mouse-pointer in the drawing.

5. Automatic Tagging

It can be done project-wise or drawing-wise.

6. Reports

Right-click the project in the tree and select reports. In the Keyword section, select Electrical Engineering.

Types of Drawings

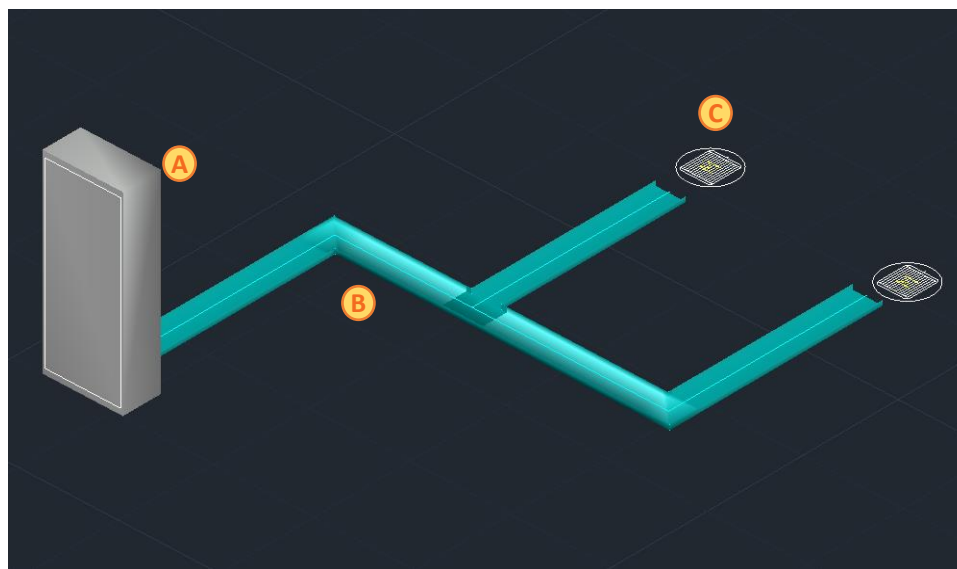
- Schematic & Control Diagrams.
- Single Line Diagrams (SLDs).
- Panel Layouts
- 3D Layout
- Automatic Terminal and PLC Diagrams

Cable Trays and Their Routing

Cable Trays: Cable trays are used to carry the cables for power and communication in a building. They can be drawn in the CADISON Electrical Designer.

Cable Tray Routing is an automatic routing mechanism which provides an innate and generic routing method. It provides intuitive display and selection of connecting components to be placed by interpreting the routing direction by cursor movements. User can route different types of cable tray components namely: Cable Tray (Straight), Cable Tray (Elbow), Cable Tray (Raiser), Cable Tray (Tee Seat On), Cable Tray (Reducer), Cable Tray (Tee), Cable Tray Bend (Inside), Cable Tray Bend (Outside), Cable Tray (Cross) and so on. The following image shows the routing of a cable tray.

Cable Scheduler



Trenches

A cable trench is a precast concrete system designed for the distribution of power cables and control cables.

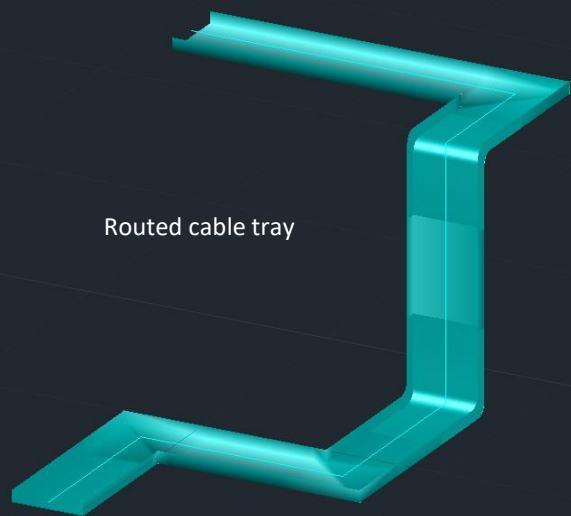
A. Cabinet: It contains the control circuits which are connected using the communication and power cables.

B. Trench: It contains the cables which are connected to cabinets and other objects.

Following calculations are performed for trenches in CADISON:

- Total Trench length
- Number of sections
- Number of supports
- Type of supports
- Range of internal and external bend radius of trench.

Cable Trays



Cable Scheduler for a Circuit

Cable Scheduler helps to define relationship between trays, cables, and other connected equipment. It also helps to calculate the cable and tray parameters like fill factor and gives the From-To list information for cables.

A. Cabinet: It contains the control circuit for the motors which are connected using the communication and power cables.

B. Cable Trays: The cable trays connect the control cabinet to the motors. The scheduler calculates the length of each cable in the tray and also shows the percentage area which is occupied by the cable in the tray.

C. Motor: The motor is connected to the cabinet using the correct size of cables.

Cable Trenches

