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SIEMENS

NX CAD Electrical Routing Wiring Harness Advance Course

Instructor-Led Online Training

Course Curriculum (Duration: Lectures: 20 Hrs. / Practicals: 20 Hrs)

Chapter 1: UG NX Advanced Electrical Routing

1.1] Create a new part for the wiring harness subassembly

1.2] Import an existing connection and component list into the harness subassembly

1.3] Manually WAVE link Device Ports into the harness subassembly or let NX automatically link the ports as you select the devices to route to

1.4] Using Place Part, attach and lock qualified components to the WAVE linked ports in the harness subassembly

1.5] Assign the unique identifiers to the components using the component list functionality

1.6] Create wire paths using Routing Electrical path creation tools. As you generate paths, some automatic WAVE linking may occur

1.7] Route the wires using the connection list functionality

1.8] Create terminal wires if required

1.9] Add overstock, such as insulating sleeving

1.10] Perform clearance analysis using assemblies software

1.11] Run batch design rule checks (if available)

1.12] Correct the design as needed

1.13] Analyze wiring connectivity

1.14] Export the connection list:

This step is necessary if you need to pass the connection list back to a schematics package in order to back annotate the schematic drawing with wire lengths, or to pass the information to an Electrical analysis package.

Chapter 2: Electrical Routing assembly models with types of harnesses

2.1] Assembly making

a. You can perform an analysis and display the results in the Clearance Browser using the interactive analysis mode. Use this mode to:
b. Have an overall look at the interferences in your assembly.
c. Isolate an individual interference for a closer look.
d. Modify how the interferences are displayed.
e. Define how to perform further analyses.

2.2] Adding and modifying connectors

a. Create types of connectors
b. Taking standard connectors
c. Modify the properties of the hardware's
d. Develop new hardware's

2.3] Creating harnesses

e. Create high voltage harnesses
f. Types of color code cables
g. Adding colors to the cables and properties
h. Route manually the cables through wire ways

2.4] Live Case study with existing models

a. Study the existing assemblies
b. Recreate the assemblies
c. Create the connection points for various connectors
d. Call the connectors into the assembly
e. Auto route and manual route the cables

2.5] Large assembly electrical routing

a. Study the circuit diagram and follow the same procedure
b. Identify the components
c. Reroute the cables and harnesses
d. Identify the unique id's of the ports and connectors
e. Place all the hardware and electrical components.
f. Create connection points for other components

2. 6] Interactive check
   f.   You can perform an analysis and display the results in the Clearance Browser using
        the interactive analysis mode. Use this mode to:
   g.   Have an overall look at the interferences in your assembly.
   h.   Isolate an individual interference for a closer look.
   i.   Modify how the interferences are displayed.
   j.   Define how to perform further analyses.

Chapter 3: Form board/ Harness drawings

3.1] Form board drawings

   a.   Form board allows Routing Electrical users to create a manufacturing drawing for
        Routing Electrical harnesses.
   b.   A form board model is a flattened representation of a 3D electrical model of a cable
        or wiring harness. An electrical model appears in a form board as if you took it out of
        3D space and placed onto a 2D plane and pulled until it becomes straight.

3.2] Exercise and Workshops