

JCMB Provides Substation Automation for Northeast Utilities

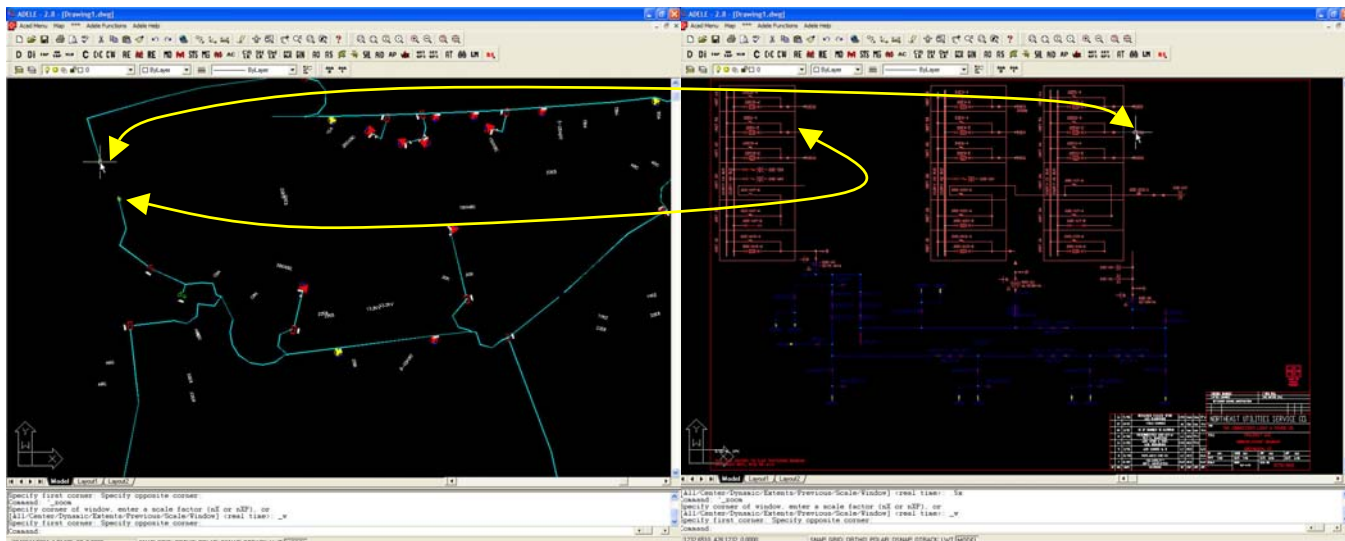
JCMB was called upon by Northeast Utilities (NU) to assist them with the task of modeling their substation internals so that they may be included within their Distribution Network Model. This effort is being undertaken within the context of deploying an updated version of their Outage Management System (OMS)—Centricity.

JCMB's technicians have delivered over 300 substations using multiple source data (including schematic paper drawings, DXF and DWG files) provided by NU.

Including substation internals within the OMS allows NU to run trace functions originating from any substation device. When congested areas prohibit substations to be modeled to scale, “hypernodes” are used to allow connectivity to “jump” from the latest substation point (such as a feeder breaker) to the next point, which may be located anywhere in the Model.

Figure 1 illustrates a hypernode point embedded within a Model (left-side screen); when the node is selected, the substation view appears (right-side screen) centered about the corresponding substation node.

Figure 1:

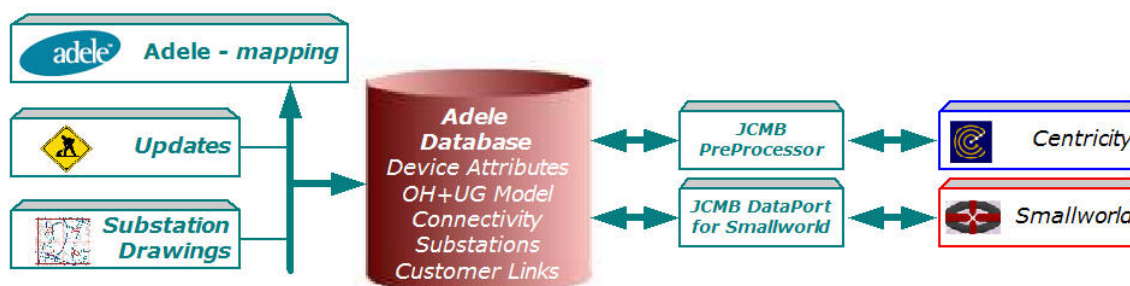


What is the process involved in the Modeling task?

Using the JCMB Pre-Processor for Centricity, the source data is captured and converted to the OMS-specific Model Build (.MB) file. NU-specific data and symbols are incorporated into the model. The attributes will be archived within the Pre-Processor (which runs Oracle) to maintain both the data and the connectivity. NU has the option of either forwarding all or part of the available attributes to the OMS for any given object type.

The entire task is managed by the Pre-Processor which is built on JCMB's automated mapping tool (Adele).

Figure 2:



By using Adele, all modifications like circuit updates, phase designation and device nominal status assignments may be applied, graphically enhanced and validated prior to committing the substation to the OMS. Once all the edits are complete, the Pre-Processor module then generates the .MB file (as stipulated by the OMS object definitions in the workbook).

What are the Benefits of Modeling Substations for NU?

- Validation of substation circuit data
- Unification of various substation schematics
- Creation of standardized hard copies
- Simulations on load shedding and restoration
- Visualization of real-time DSCADA control information