

EMS Oneline Topology Diagrams in PowerWorld



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Translation



- Areva EMS users have ability to write out a CSV file that represents a model of the case
 - Using hdbexport command
- The EMS engineers then maintain 100s (even 1000s) of substation topology diagrams for use with this model
 - Areva ESET file (*.ddl text file) provides the formatting for how various objects are drawn
 - Areva DSET file (*.ddl text file) contains the diagrams
- PowerWorld can import these files
 - Manual translation of ESET into a PowerWorld AUX format to provide mapping between the two formats
 - Only diagrams using the ESETs that have been translated can be loaded into PowerWorld Simulator or Retriever
 - The “oneline” is then the DSET file

Translation



```
DATA (AREVADISPLAYMAPPING, [ArevaDisplaySet, ArevaKeyword, ArevaKeywordParam])
{
  "" "display" ""
  <SUBDATA ArevaTranslation>
    AddScreenObject "PWFormOptions" "THESE_OPTIONS_ARE_APPLIED_TO_THE_CURRENT_DISPLAY"
    ChangeSGField "CaseInfoBackgroundColor" "$000000"
    ChangeSGField "OOAFshow" "No"
    ChangeSGField "OOSnapToGrid" "No"
    AddScreenObject "ScreenLayer" "__HIDDEN"
    ChangeSGField "SLShown" "No"
  </SUBDATA>
  "PSST_ONELINES" "gab" "AFTER_LINKED_BUS_BAR"
  <SUBDATA ArevaTranslation>
    AddScreenObject "" ""
    ChangeSGField "SOColor" "$0000FF"
    ChangeSGField "SOwidth" "0"
    ChangeSGField "SOThickness" "5"
    ChangeSGField "FontName" "Courier New"
    ChangeSGField "SOFontSize:1" "-14"
    ChangeSGField "FontColor" "$0000FF"
  </SUBDATA>
  "PSST_ONELINES" "gab" "AFTER_LINKED_LINE"
  <SUBDATA ArevaTranslation>
    AddScreenObject "" ""
    ChangeSGField "SOColor" "$0000FF"
    ChangeSGField "SOwidth" "0"
    ChangeSGField "SOThickness" "2"
    ChangeSGField "FontName" "Courier New"
    ChangeSGField "SOFontSize:1" "-14"
    ChangeSGField "FontColor" "$0000FF"
  </SUBDATA>
  .. .. .. .. ..
  .. .. .. .. ..
}
```

Areva keyword describing a drawing or formatting action

Areva ESET

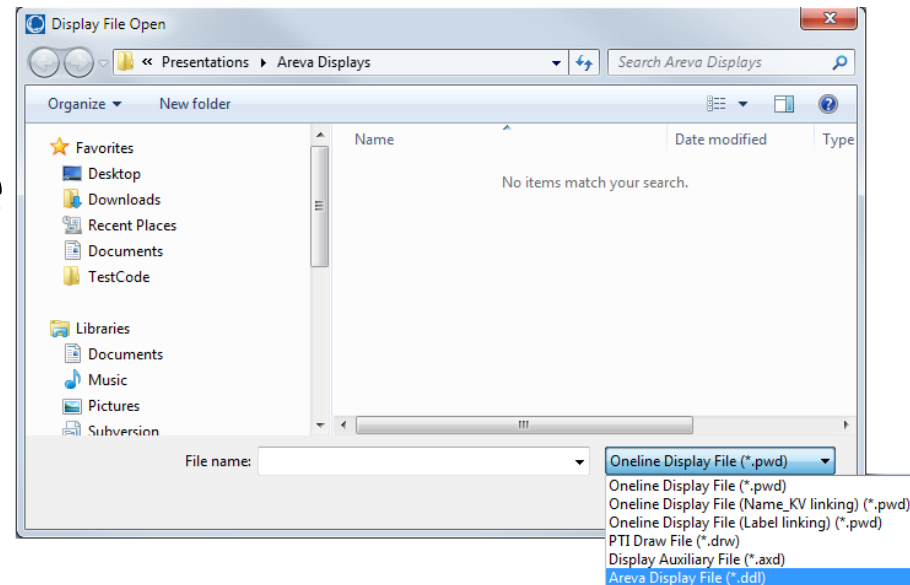
Areva parameter describing a particular action

Instructions on how PowerWorld will format or draw an object

Loading an Areva Diagram



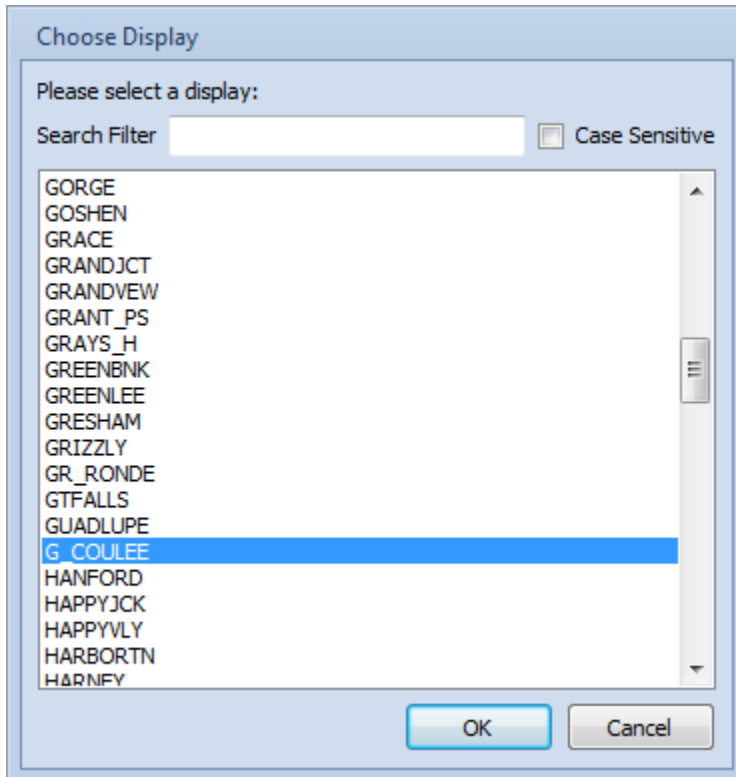
- Open EMS power flow case
 - PowerWorld generates labels when reading Areva diagram files and those labels must match the labels used in the EMS model
- Load in translation AUX
- Open Areva Display File (*.ddl)



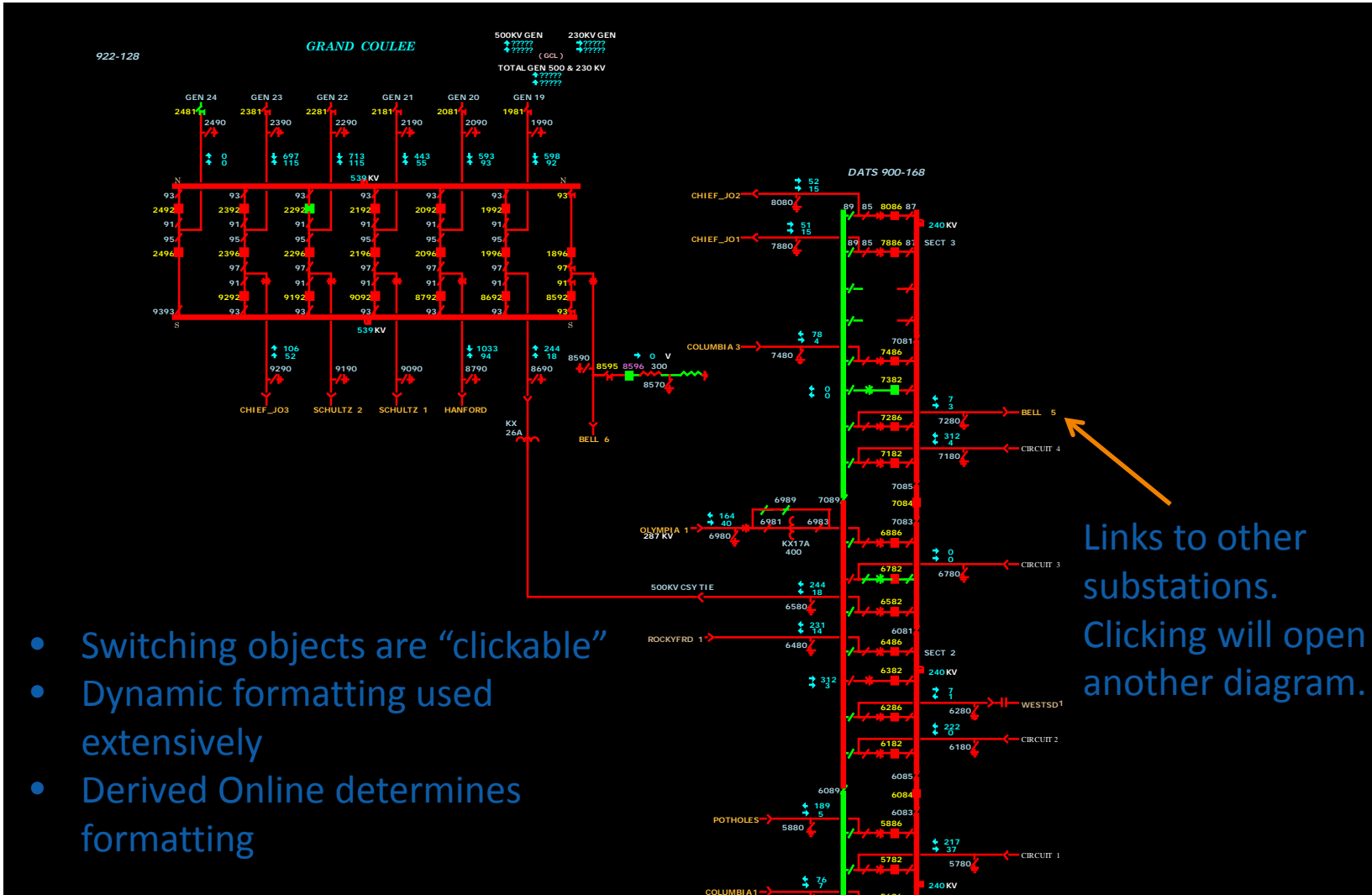
Loading an Areva Diagram



- Select a DSET (*.ddl) file
 - Each DSET file can contain multiple diagrams



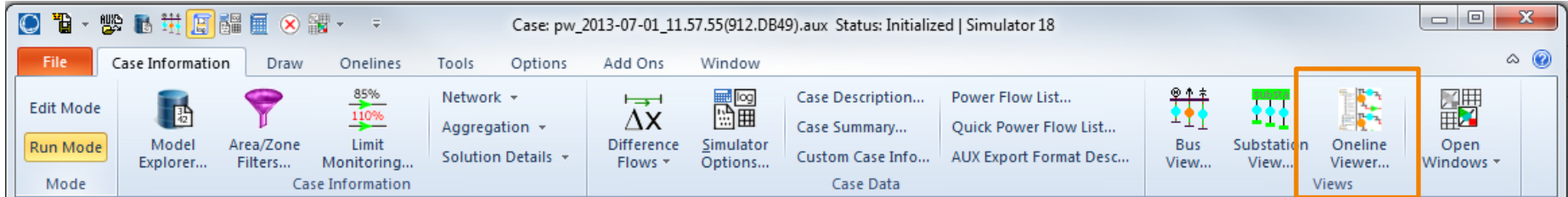
Loading an Areva Diagram



- Switching objects are “clickable”
- Dynamic formatting used extensively
- Derived Online determines formatting

Links to other substations.
Clicking will open another diagram.

Online Viewer



- Manage and browse through a large list of diagrams
- Works with all diagram formats that PowerWorld supports

Online Viewer



Open diagrams to browse

Specify folder to search for diagrams

List of available diagrams.
Double-click to open in a tab.