NMM Planning Model Alignment

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What is Alignment

- Using a single model to produce multiple different model structures.
- Historically, EMS uses breaker model and other models use a bus/branch model
- Goal of an Aligned model
  - One electrical model for EMS, Planning and Protection
  - Control naming conventions for both models
  - Model driven calculation of single set of thermal ratings
  - Engineering constants from single source and vetted in in real time environment
- Major decisions to be made
  - How the buses must be split
  - Which Switches must be retained
  - EMS and planning will need to add new buses to accommodate ratings and measurements

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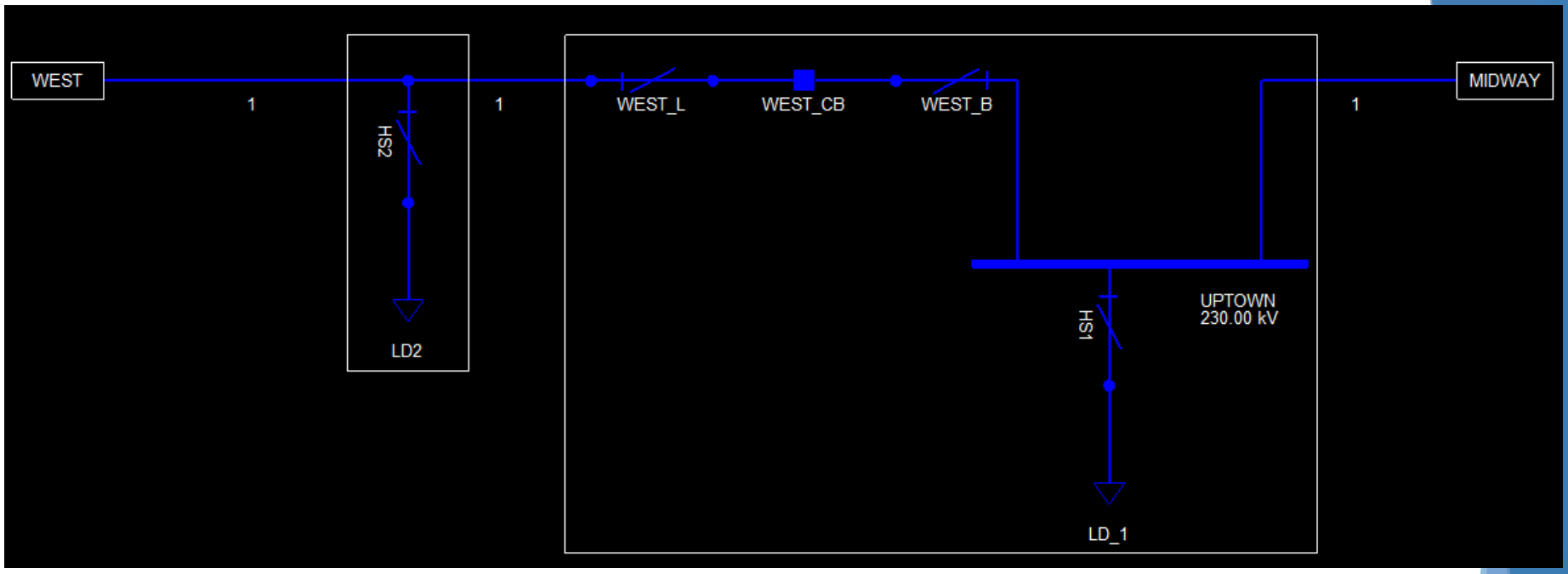
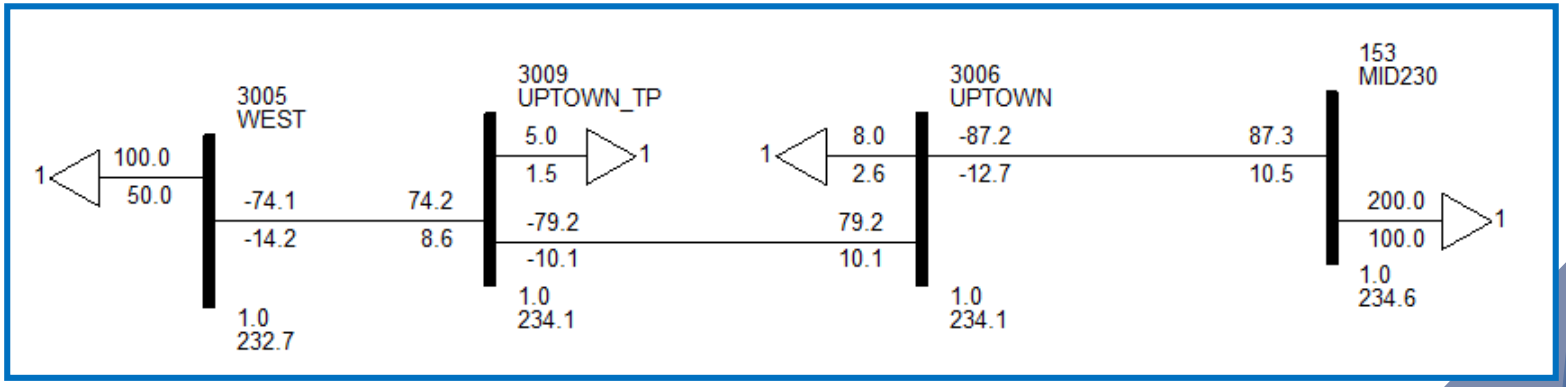
Given EMS Model – Export Planning Model





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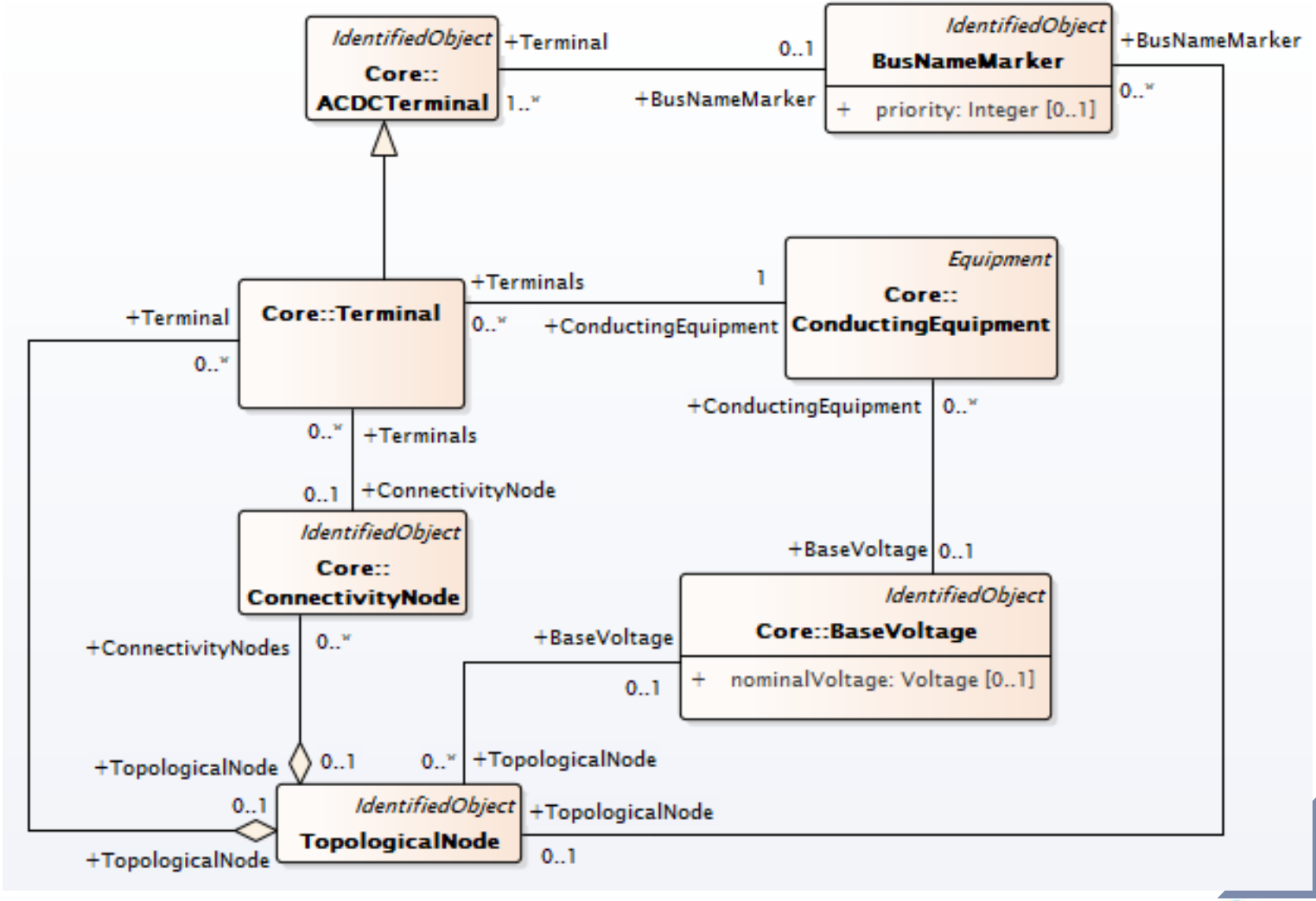
TopologicalNode vs BusNameMarker



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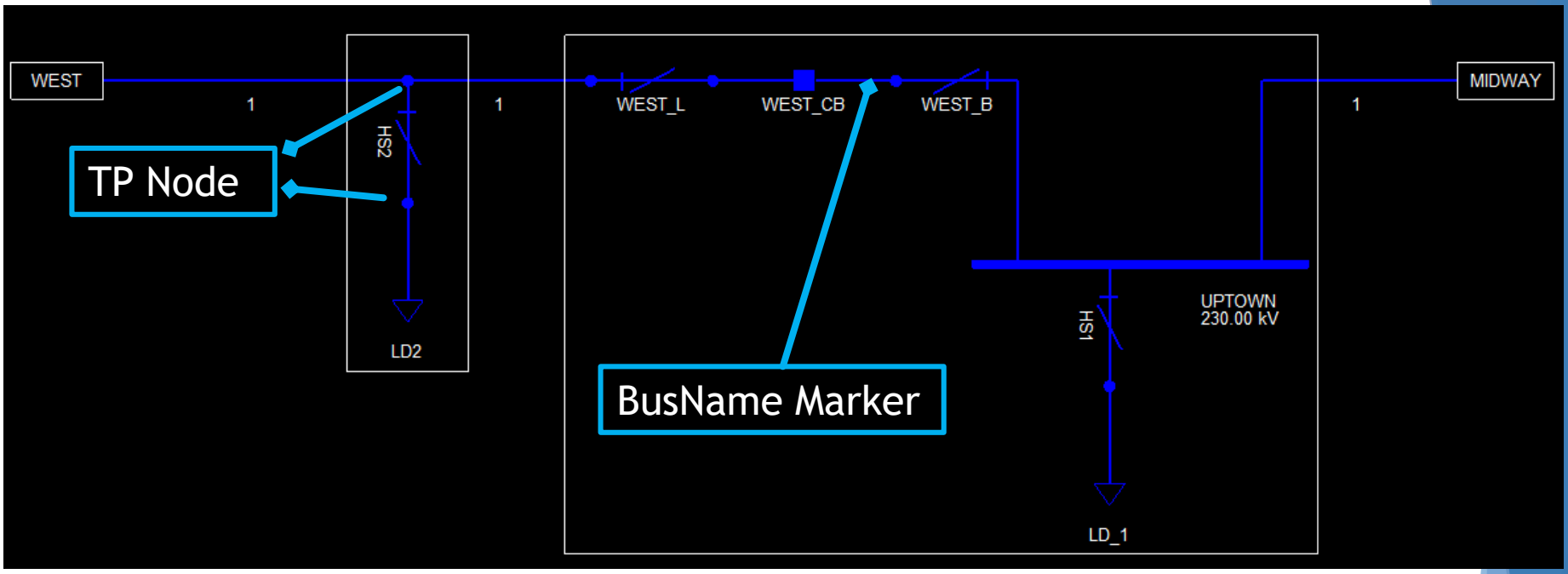
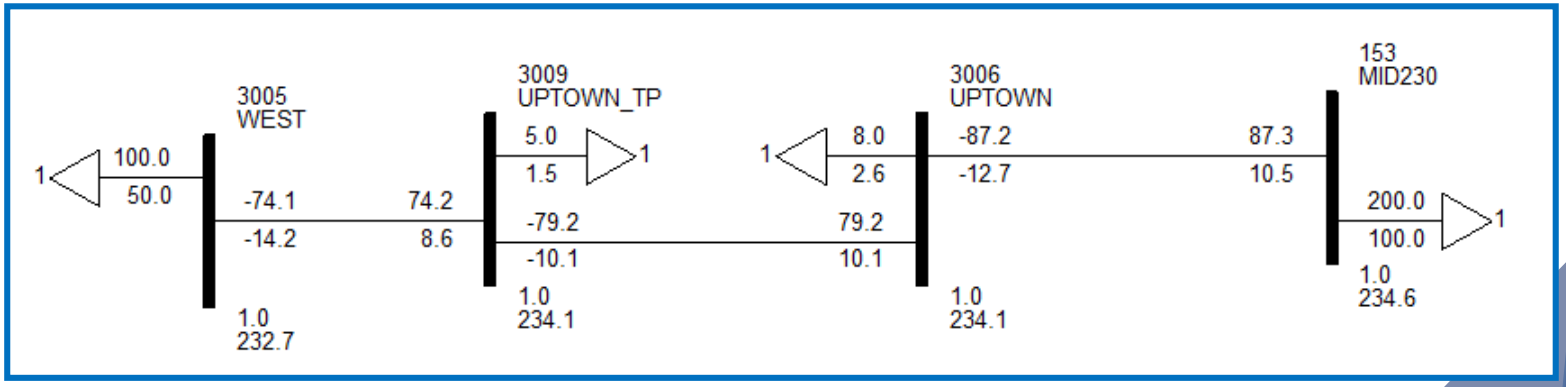
Detailed Breaker Model – Bus Model





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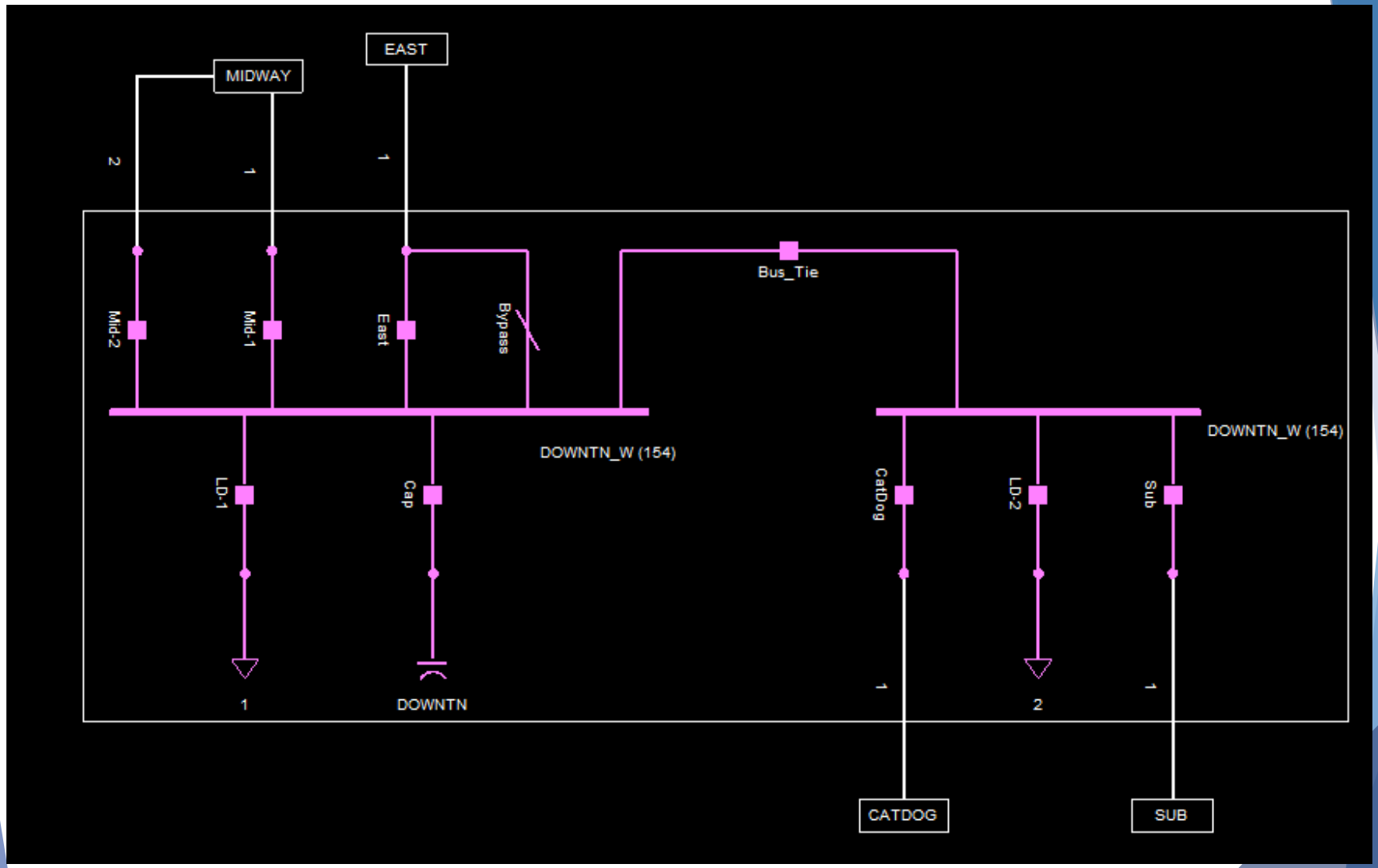
Node Breaker



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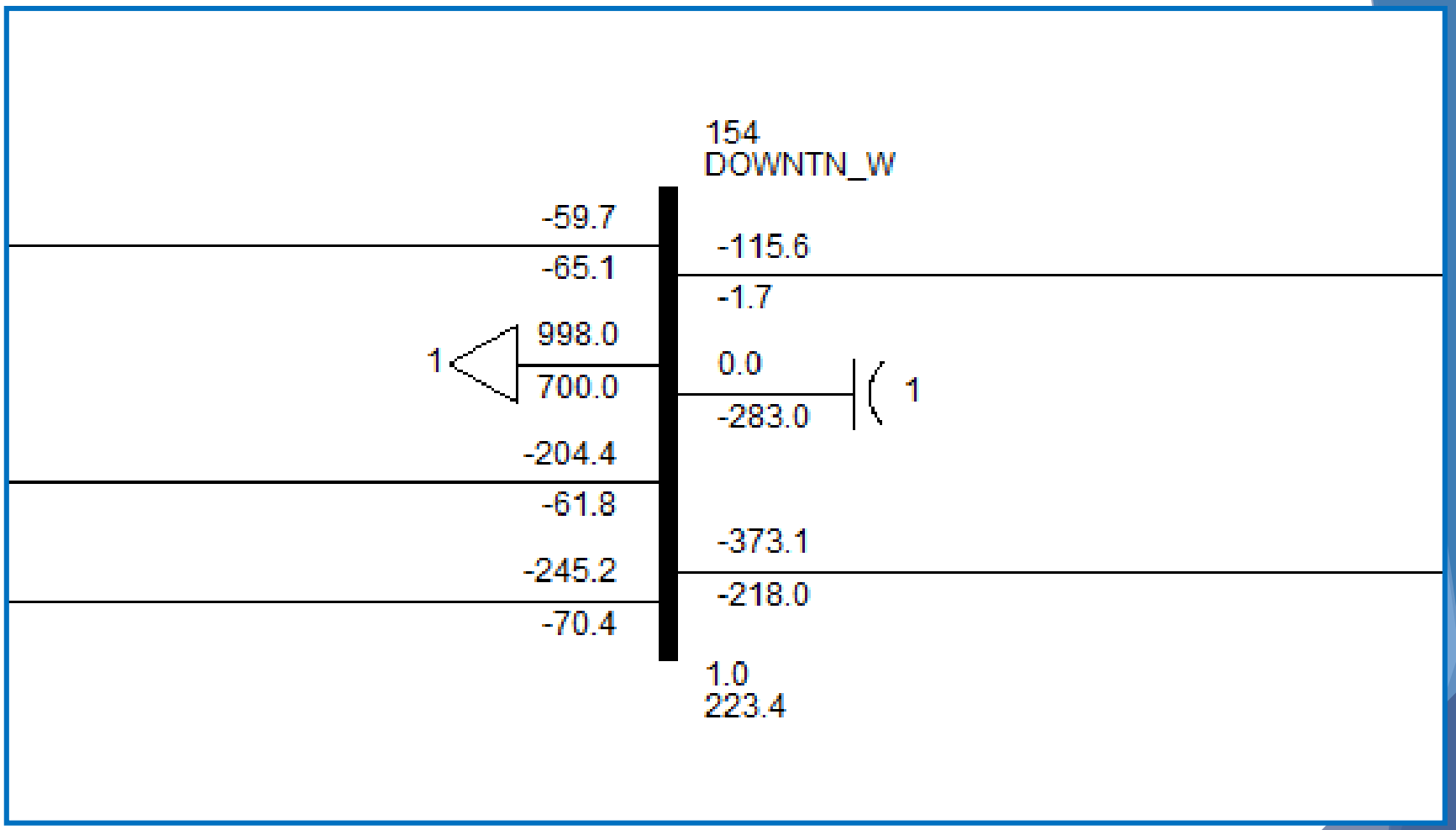
Bus-Branch



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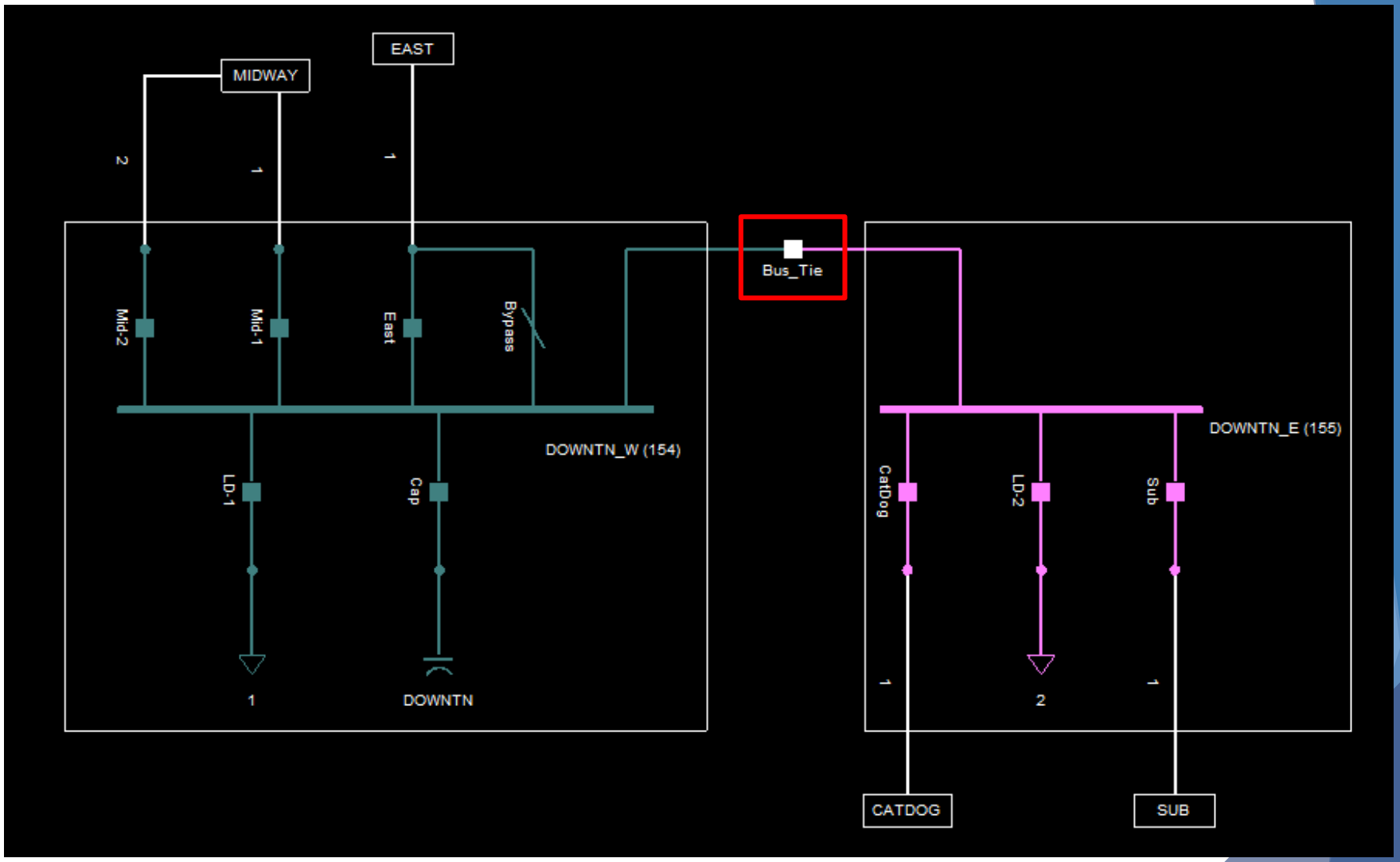
Retained Breaker – Switch.retained



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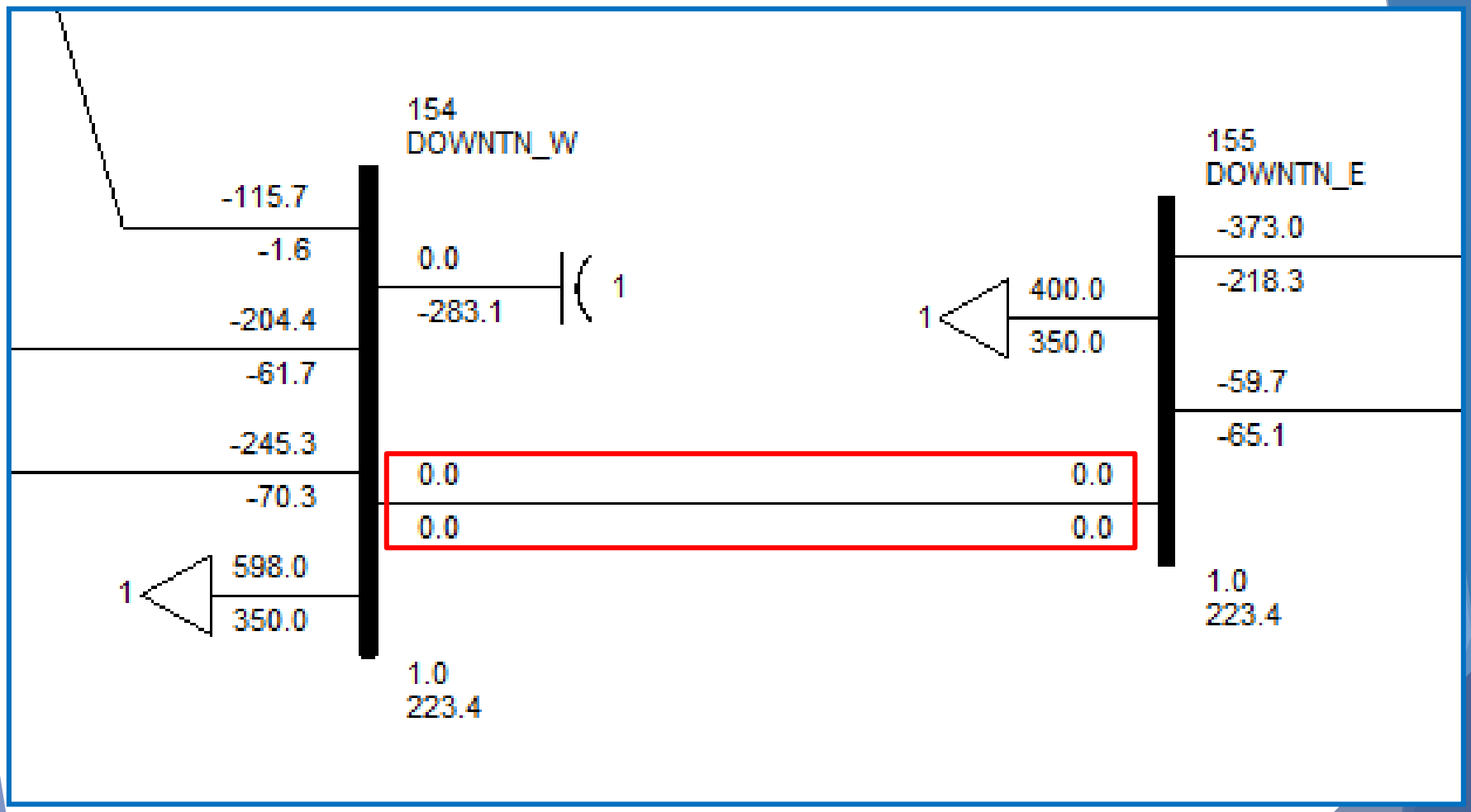
Creates Zero Impedance Branch



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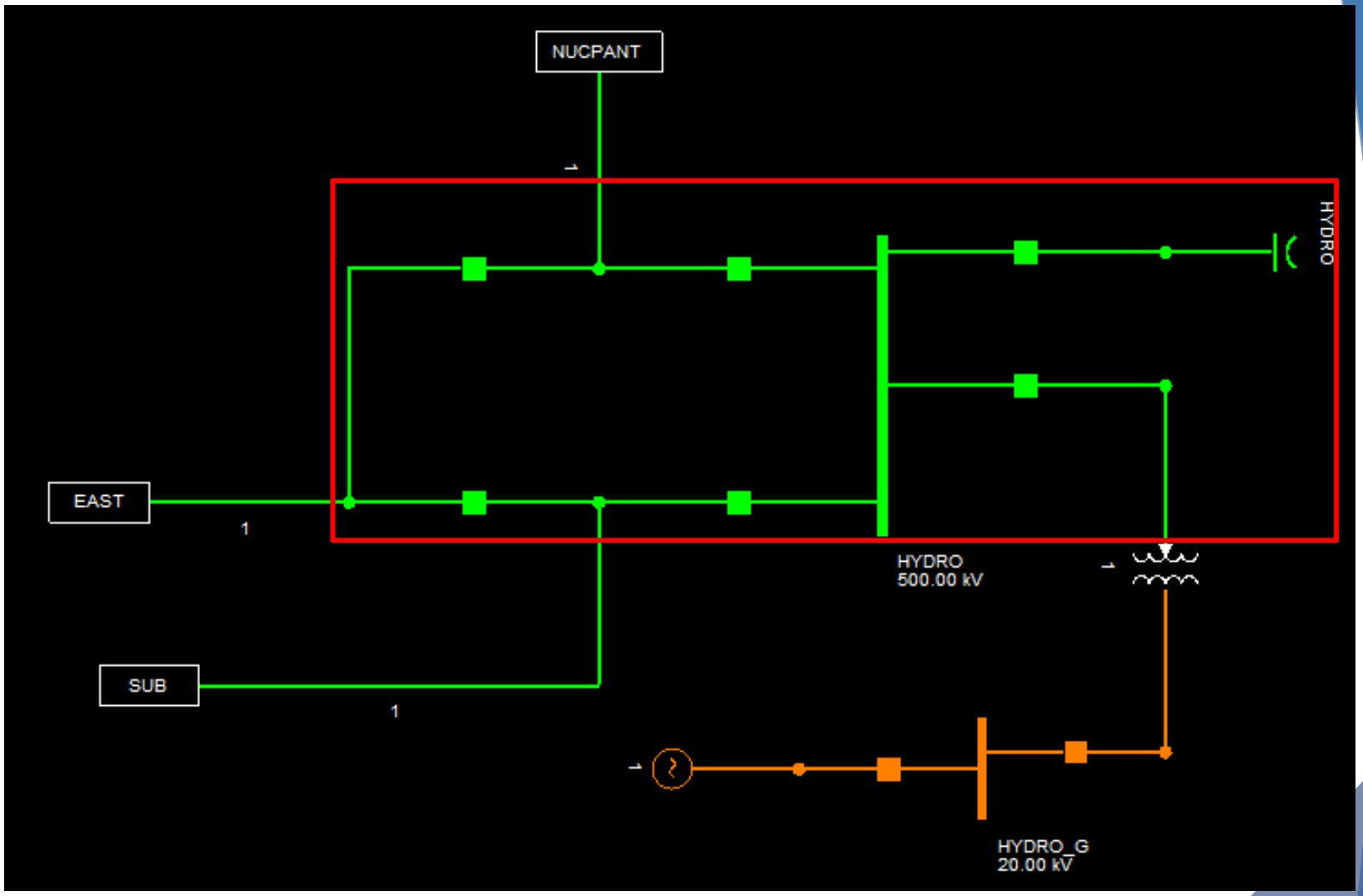
Ring Bus



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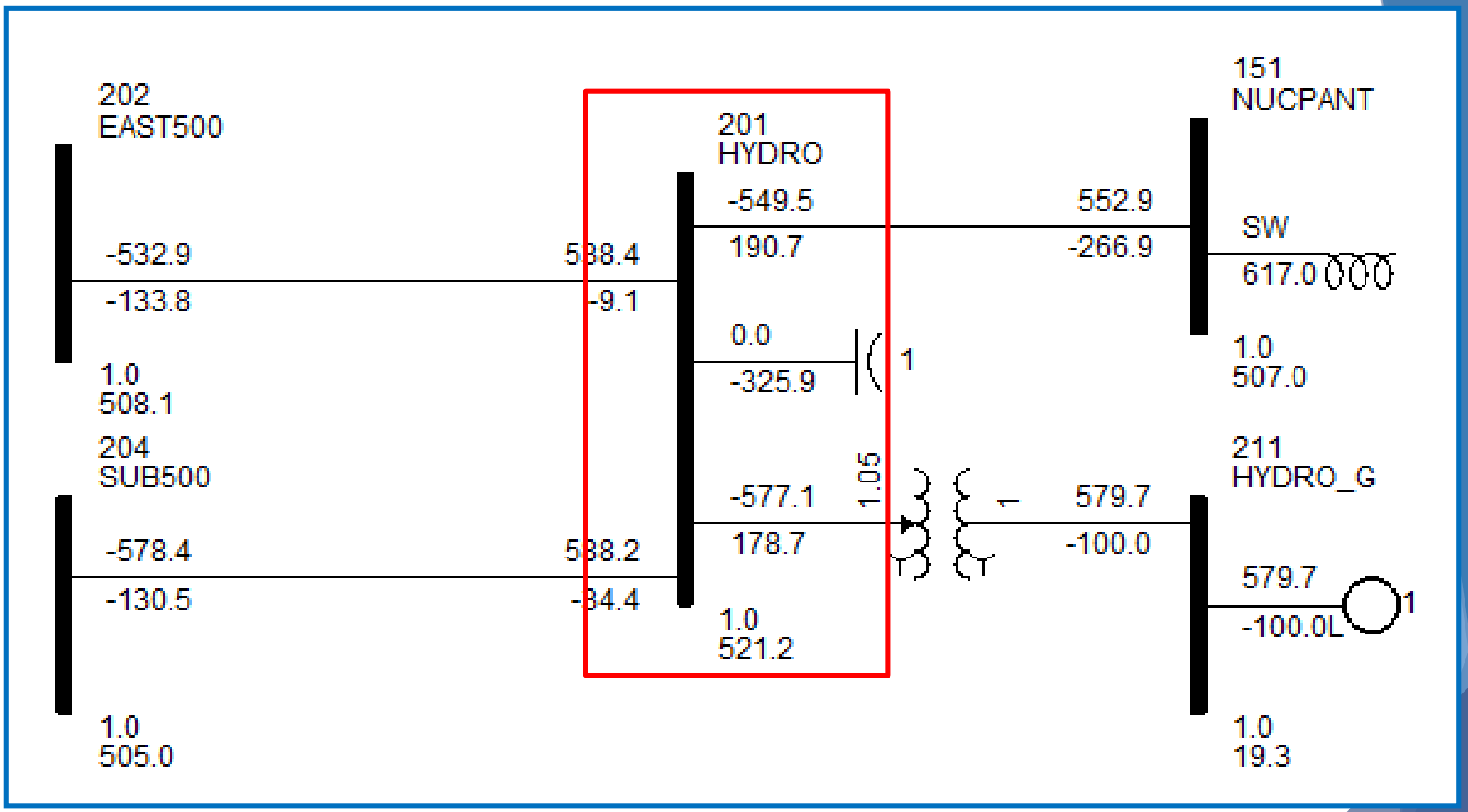
Single PSSE Bus



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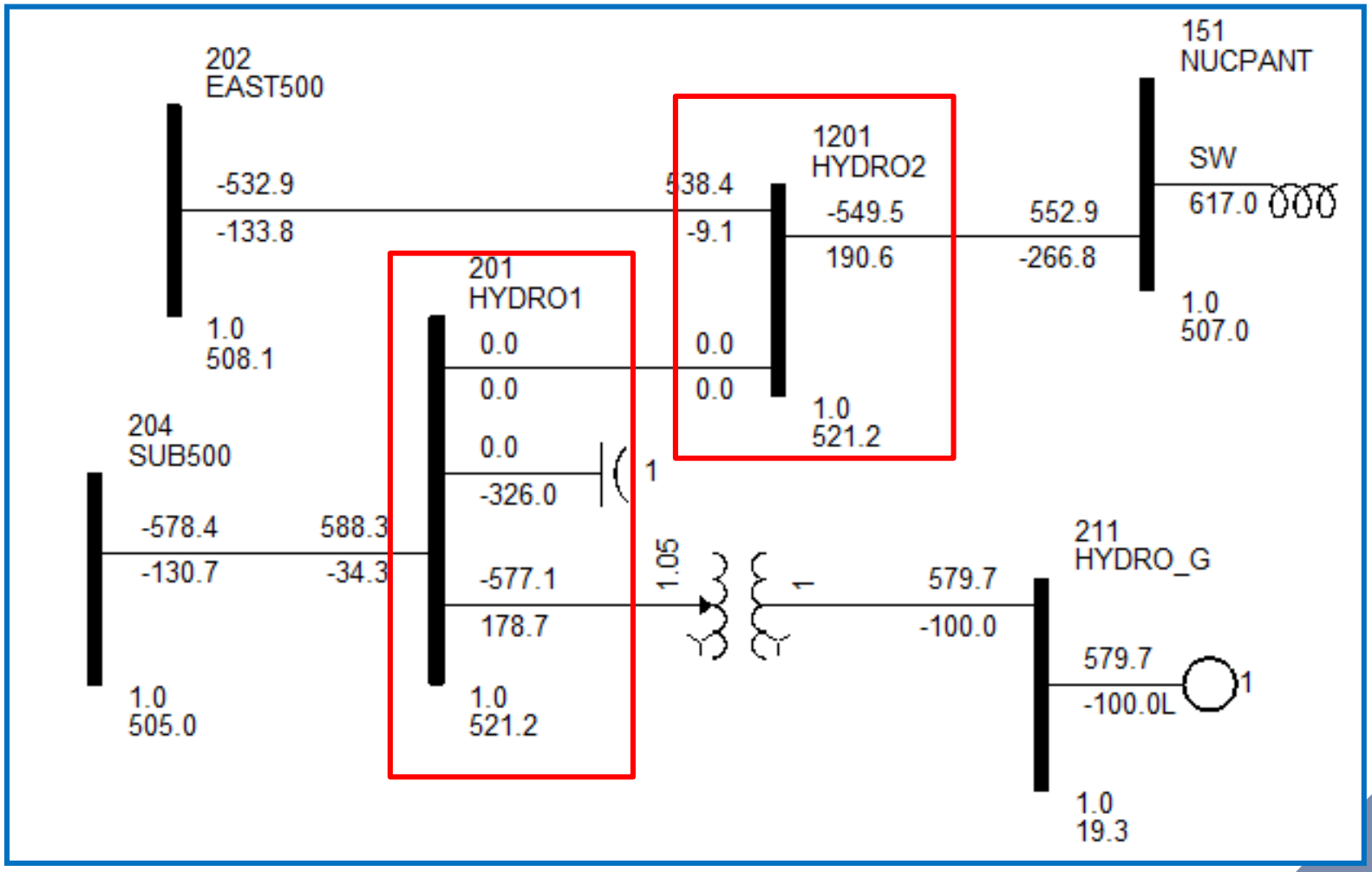
Double PSSE Bus



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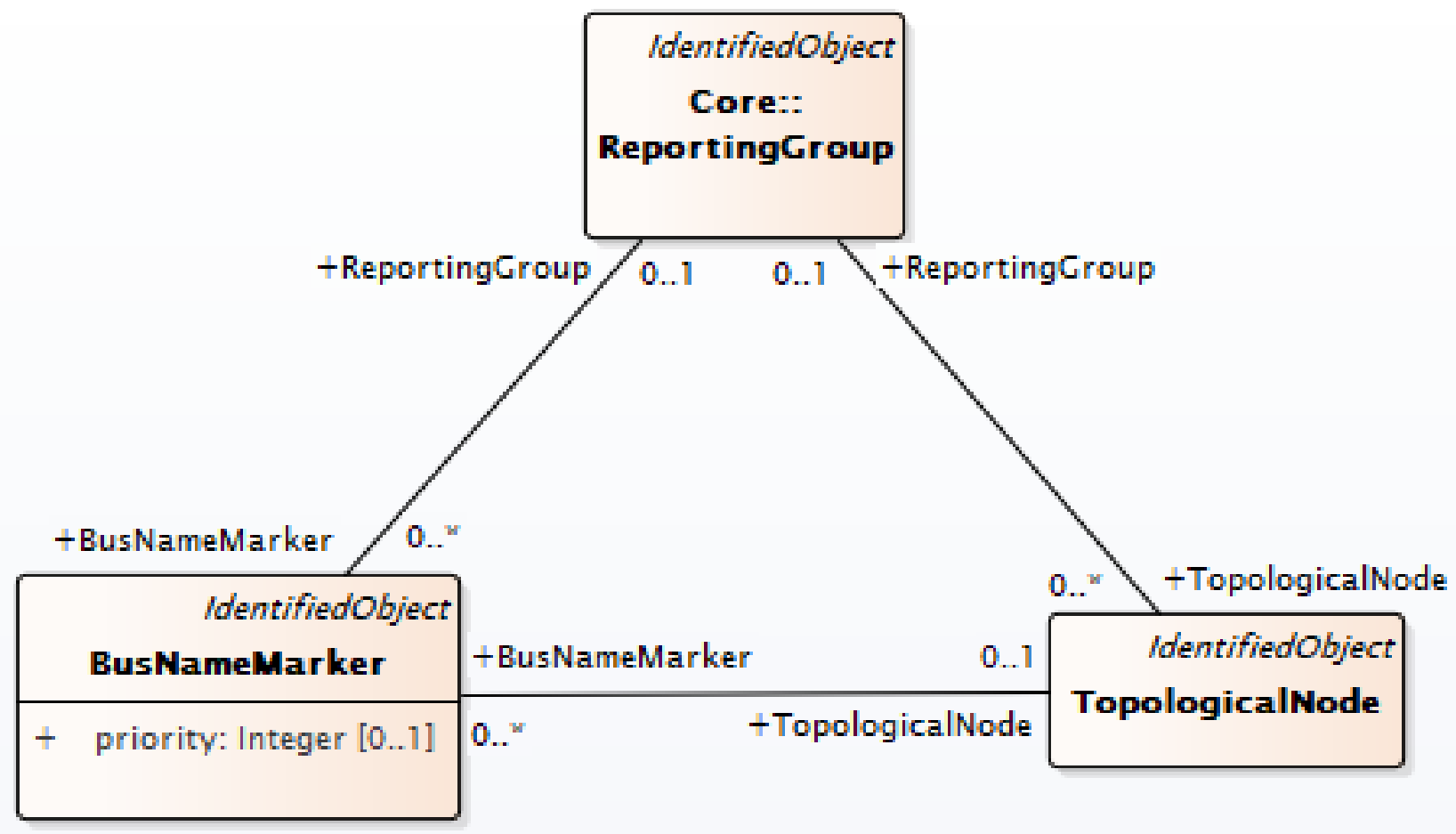
Geographical and SubGeographical Regions



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Bus Naming

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Naming

- TopologicalNode
  - IdentifiedObject.name
  - May need an extension for Bus Number
- Device Naming
  - IdentifiedObject.AliasName
  - ACLineSegment, EnergyConsumer, ShuntCompensator, SynchronousMachine…
- Area/SubArea Naming
  - IdentifiedObject.Name

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Getting ID's to Bus/Branch model

- Once the model is exported and loaded into the application
- Post Processing
  - Make sure uniqueness is maintained where necessary
  - Do not forget to maintain identifiers within NMM
  - Validation before export

- Footnote
  - Address Other non-CIM special data

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Thanks!

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