Interoperability Protocols
Common Information Model
(IEC 61970, IEC 61968 & IEC 62325)
Common Information Model

- Abstract, generalized, platform and context-independent representation
- Used to establish common semantics among stakeholders
- Helps in standardization of information exchange
- Domain Model represents a vocabulary of basic terms
- Represented using Unified Modeling Language (UML)
- Easy for humans to understand

Common Information Model

- Information exchange among computers using XML documents
- Profiles specify subset of CIM classes & attributes for specific business context
- Implementation technologies, such as XML to create serialized files & messages
  - Standards for power system models
  - Standards for information message payloads
- CIM UML can be extended
  - Standard extensions for new functional areas
  - Private extensions for specific utility requirements
- Data encapsulated inside CIM XML tags.
- CIM XML tags standardize the way data to be exchanged.
- Sample CIM XML File -

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<rdf:RDF xmlns="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:cim="http://iec.ch/TC57/2006/CIM-schema-cim10#"
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">

    <cim:Substation rdf:ID="Substation_1">
        <cim:Substation.MemberOf_SubControlArea rdf:resource="#SubControlArea_1"/>
        <cim:Naming name>abc</cim:Naming.name>
    </cim:Substation>

    <cim:BusbarSection rdf:ID="BusbarSection_1">
        <cim:IdentifiedObject name>abc main bus 1</cim:IdentifiedObject.name>
        <cim:ConductingEquipment.Terminals rdf:resource="#Terminal_1"/>
        <cim:Equipment.MemberOf_EquipmentContainer rdf:resource="#Substation_1"/>
    </cim:BusbarSection>

</rdf:RDF>
```