Why should you care about Topology?

“Network topology is the arrangement [connectedness] of the various elements (links, nodes) of a communication network.”*

- **Topology** is a key functional component for many support and service aspects in SDN/NFV/legacy networks (hybrids).
- **Topology** enables true root cause analysis and fault isolation.
- **Topology** enables accurate service verification and fulfillment.
- **Topology** enables SLA verification and optimal path computation and selection.
- Differentiation between Inventory and Topology. Inventory are a set of objects. Topology is the association of these object in a meaningful representation – i.e., graph.

* Wikipedia definition.
API Driven Approach

• Topology is a common pattern/construct that exists at all LSO layers.
• Graph DB for persistent store of topology elements is key in order to represent communication networks and handling volume of client requests.
• Visualization of topology enhances the users ability to understand and make decisions.
• MEFs agile approach to defining standards with development prototypes is key to validating the implementation of standards.
  – Epics, User Stories, Use Cases have been built.
  – Time to build the model and leverage at any LSO IRP.
LSO Layered Network Topology – Discovery is first step

**POST /discovery/baContext/{contextId}**

**POST /discovery/sofContext/{contextId}**

**POST /discovery/icmContext**

**POST /discovery/icmContext**
LSO Layered Network Topology – Retrieve the Topology

Business Application View

Service Orchestration Functionality View

Infrastructure Control and Management View

GET /topology/baContext

GET /topology/sofContext

GET /topology/icmContext

GET /topology/icmContext
LSO Layered Network Topology – Retrieve the Connectivity Service
GraphDB (Neo4J) Representation of Network Topology
Presto NRM/NRP Topology and Service Association

NRP Connectivity Service

MEF Resource Model

PRESTO NRP API
MEF Resource Model (W89) – Network Topology & Connectivity