

YANG Data Models for IS-IS and OSPF topologies

[draft-ogondio-opsawg-isis-topology-01](#)

[draft-ogondio-opsawg-ospf-topology-01](#)

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OPSA WG Meeting

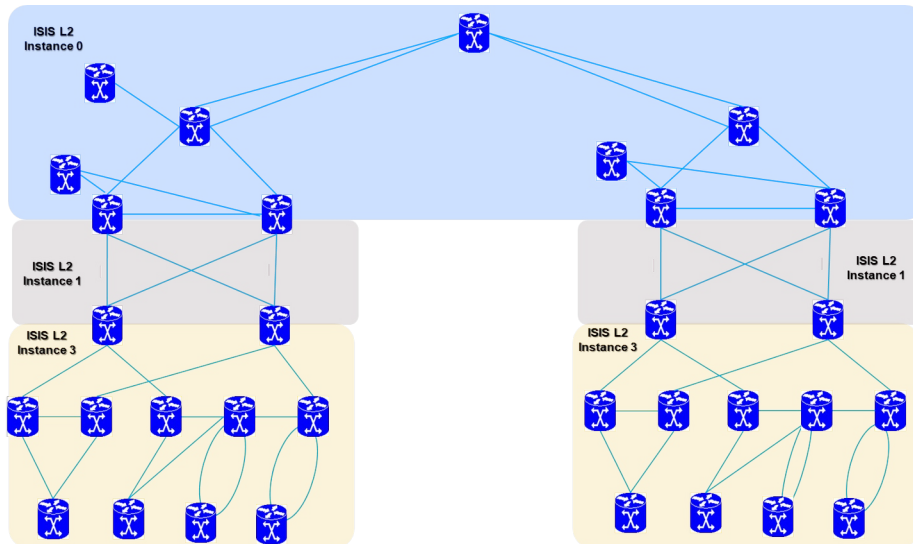
8th November 2023, Prague IETF#118

Rationale of the work (reminder)

- Network operators perform the **capacity planning** for their networks and run regular **what-if scenarios** analysis based on **representations of the real network**.
- What-if analysis and capacity planning processes require a **topological view** (domains, nodes, links, network interconnection) of the deployed network.
- Building a digital map and feed a digital twin requires, among other information, accurate topology views
- **Goal of the work:** How to use IETF topology model to represent a real carrier network based on IS-IS domains and OSPF domain for planning/simulation purposes
- 2 documents:
 - draft-ogondio-opsawg-isis-topology-01: Focus on IS-IS domains
 - draft-ogondio-opsawg-ospf-topology-01: Focused on OSPF domain

draft-ogondio-isis-topology Updates from -00

- Editorial review done
- Updated relation with digital map
- Enhanced explanation of the content of the Data model
- Updated Yang model:
 - Alignment with IETF IS-IS device model defined in RFC 9130
 - Model imported and types used when needed
- Issues tracked in <https://github.com/oscarddd/draft-ogondio-opsawg-isis-topology/issues>



Principles of the draft:

- One IETF-Network per domain
- Build on top of existing topology RFCs
- Add just the necessary information

Sample topology with multiple domains

draft-ogondio-ospf-topology

- Has a similar scope as IS-IS draft, but focused on modeling OSPF domains
- One instance of IETF network per OSPF domain.
- A network can have both OSPF and IS-IS domains (one instance per domain)

```
module: ietf-l3-ospf-topology
```

```
augment /nw:networks/nw:network/nw:network-types:
```

```
+--rw ospfv2-topology!
```



Indicates the network runs OSPF

```
augment /nw:networks/nw:network/nw:node/
```

```
l3t:l3-node-attributes:
```

```
+--rw ospf-timer-attributes
```

```
+--rw wait-timer? uint32
```

```
+--rw rapid-delay? uint32
```

```
+--rw slow-delay? uint32
```

```
+--rw timer-type? enumeration
```



Timers (part of the node)

```
augment /nw:networks/nw:network/nt:link/
```

```
l3t:l3-link-attributes:
```

```
+--rw ospfv2-termination-point-attributes
```

```
+--rw interface-type? identityref
```

```
+--rw area-id? area-id-type
```

```
+--rw metric? uint64
```

```
+--rw is-passive? boolean
```



OSPF information per link

Next Steps and questions

- Keep improving the Yang models.
- Include examples based on early implementations.
- Current model augments 8435 model and inherits the “limitations”. Follow up efforts on enhancing the base topology constructs.
- Request WG participants to read and review the documents
- Is OPSAWG Working Group interested in these works?
- Request Feedback from routing area WG.
- Questions & Suggestions are welcome