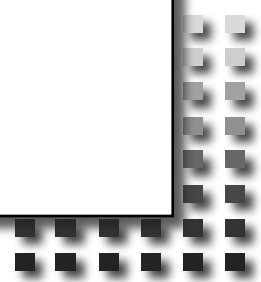




# **SIMAP Hackathon Result**

**NMOP - IETF 123  
July 23st 2025  
Madrid, Spain**

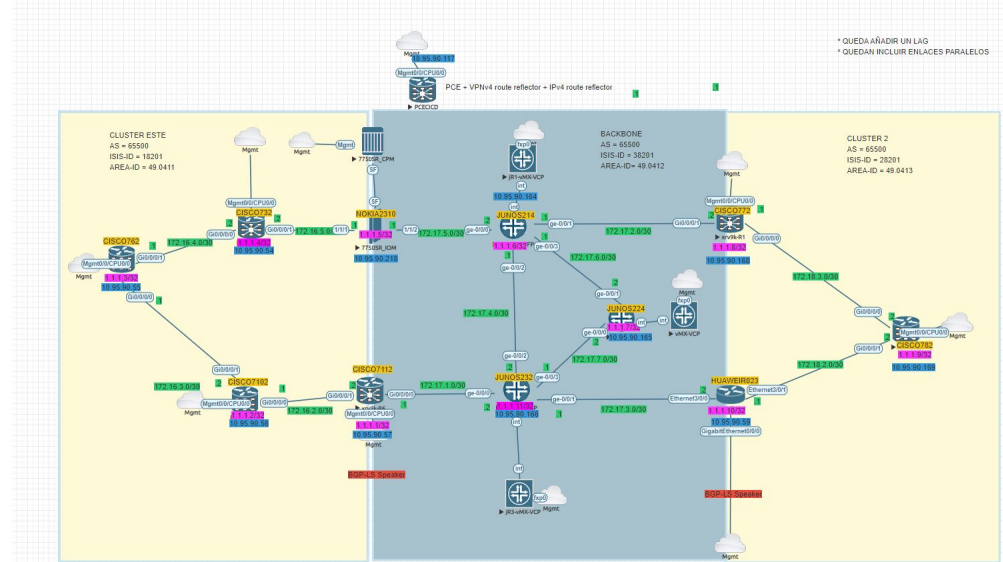
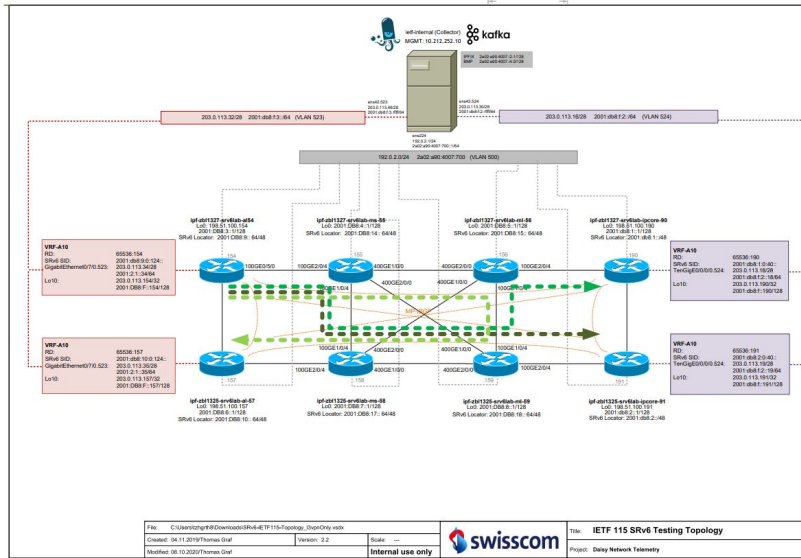


# SIMAP: Hackathon Plan

- IETF 121 Hackathon:
  - Filling RFC8345 gaps for ISIS
  - Prototype of adding external references to topological elements
- IETF 122 Hackathon:
  - Explore options for adding external references about topological elements (Templates)
  - Start modelling SRv6 for SIMAP
- Templates design ⇒ **draft-vivek-simap-external-relationship-00**
- IETF 123 Hackathon:
  - Add VPN Services transported with SRv6 to SRv6 models
  - Support of draft-vivek-simap-external-relationship-00 in the code

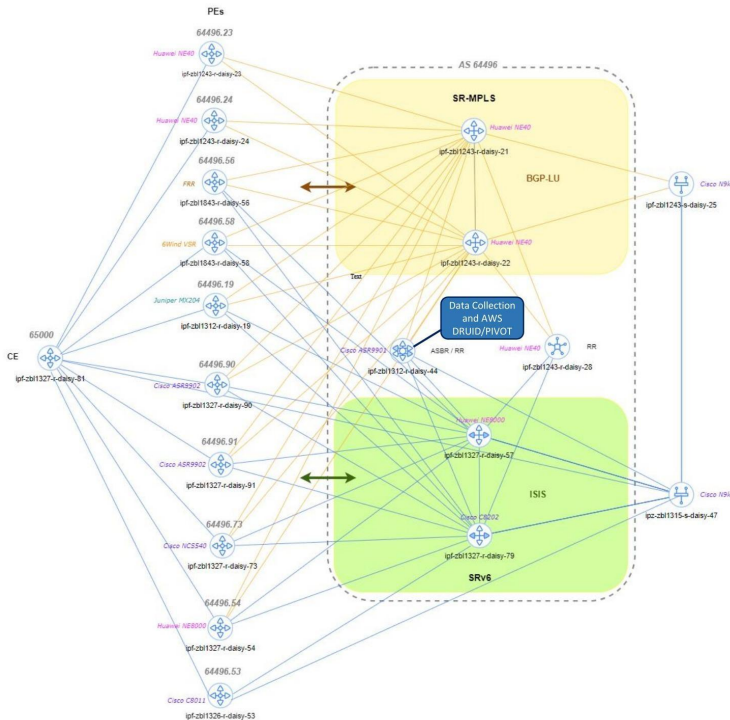
# SIMAP: Previous Labs

- We were using the lab from Swisscom and Telefonica

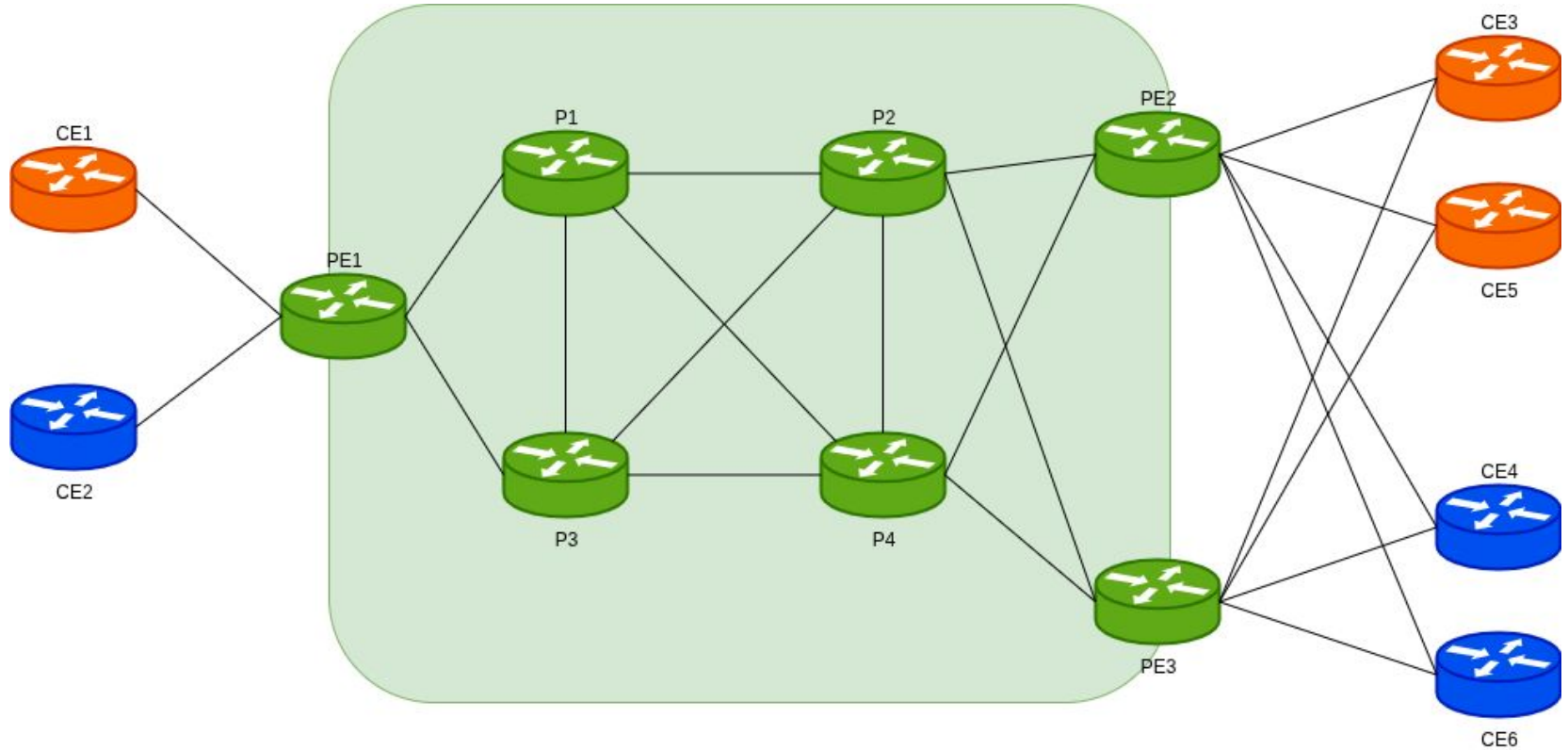


# SIMAP: New Labs

- We added more labs, the SRv6 lab from Swisscom + Virtual labs



# SIMAP: Hackathon Lab



# SIMAP: What we achieved

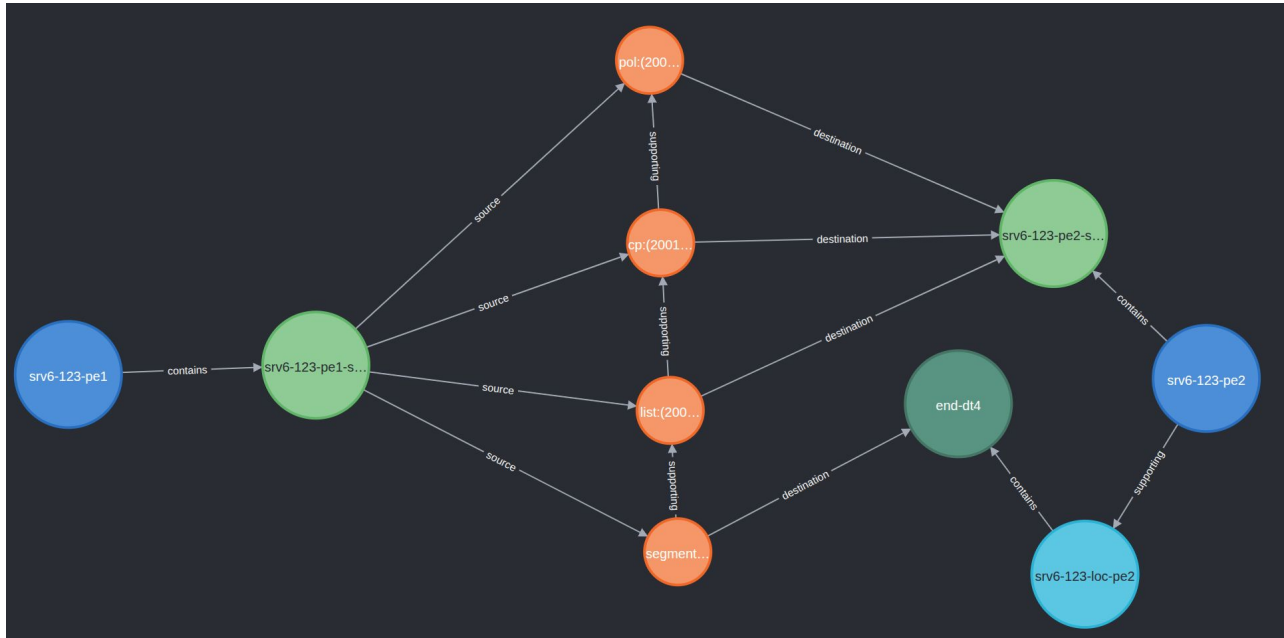
- Added SRv6 modeling for
  - segments,
  - segment lists,
  - candidate paths,
  - policies
- Added L3VPN over SRv6 to SIMAP
- Based on Ad-hoc models (slides)

# SIMAP: What we achieved

- Linking topological entities to external models/data
  - Documented in draft-vivek-simap-external-relationship-00
  - Implemented in a library
- Rely on templates to query information from the net
  - L3: operational state of interface
  - ISIS: lsp timer configuration

# SIMAP

## SRv6 PE Sub-layer + End.DT4 Sub-Layer

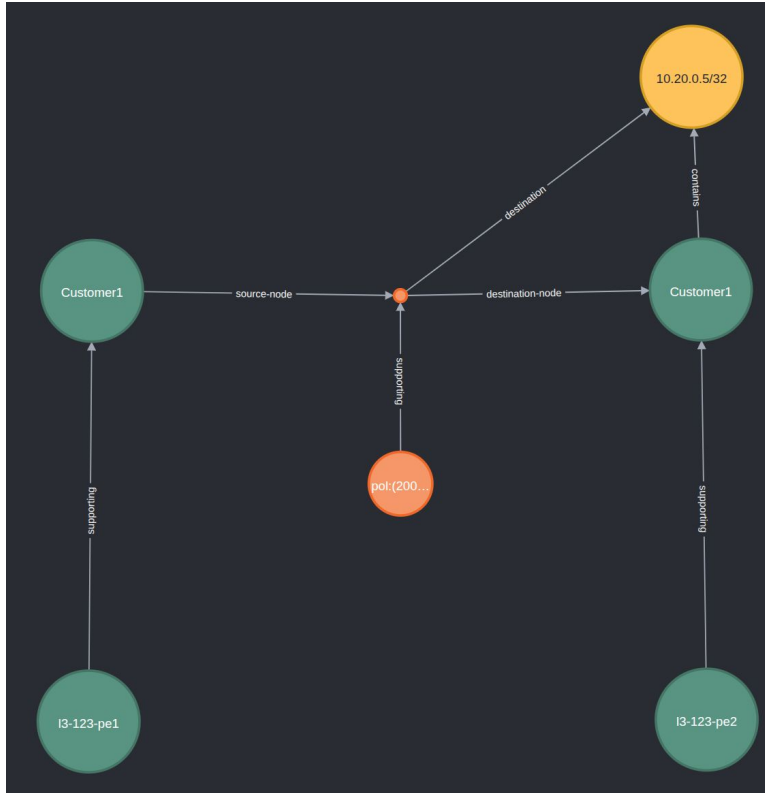


### Node labels

- \* (10)
- srv6-node (2)
- source-address (2)
- srv6-locator (1)
- segment (1)
- sid-list (1)
- srv6-cp (1)
- srv6-pol (1)
- sid (1)

# SIMAP

## L3 VPN / SRv6 Layer



### Node labels

\* (7)

I3-node (2)

vrf-node (2)

I3vpn-prefix (1)

I3vpn-link (1)

srv6-pol (1)

Model how a prefix is reached from a given VRF

VRF Source

+

Prefix

⇒

VRF Dest

+

Policy

# SIMAP:

## draft-vivek-simap-external-relationship-00

### Template with parameters

```
1 {
2   "template-id": "interface-oper-state",
3   "description": "check oper state of an interface",
4   "template-type": {
5     "base": "STATE",
6     "is-historical": false,
7     "extra-label": [
8       "interface",
9       "oper",
10      "state"
11    ]
12  },
13  "parameter": [
14    {
15      "param-id": "interface-name",
16      "description": "interface name"
17    },
18    {
19      "param-id": "router-name",
20      "description": "router name for nokia"
21    }
22  ],
23  "request": [
24    {
25      "request-type": "NETCONF-IETF",
26      "request-builder": {
27        "subtree": "<interfaces-state xmlns=\"urn:ietf:params:xml:ns:yang:ietf-interfaces\"><interface><name>{interface-name}</name><oper-status></interface></interfaces-state>"
28      }
29    },
30    {
31      "request-type": "NETCONF-NOKIA",
32      "request-builder": {
33        "subtree": "<state xmlns='urn:nokia.com:sros:ns:yang:sr:state'><router><router-name>{router-name}</router-name><interface>interface-name{interface-name}</interface></state>"
34      }
35    }
36  ]
37 }
```

# SIMAP:

## draft-vivek-simap-external-relationship-00

```
1 l3_relation_example = l3_relations_repository.get_relation_by_relation_id("interface-oper-state-l3-123-pe1-to-p3")
2 netconf_request_example = l3_relation_example.get_request("NETCONF", templates_repository)
3 result = netconf_request_example.execute(l3_relation_example.values(), **get_netconf_cfg("clab-srv6-sros-pe1"))
```

parameter is  
automatically  
replaced for the  
request

```
1 {
2   "@xmlns": "urn:ietf:params:xml:ns:netconf:base:1.0",
3   "@xmlns:nc": "urn:ietf:params:xml:ns:netconf:base:1.0",
4   "state": {
5     "@xmlns": "urn:nokia.com:sros:ns:yang:sr:state",
6     "router": {
7       "router-name": "Base",
8       "interface": {
9         "interface-name": "to-p3",
10        "oper-state": "up"
11      }
12    }
13  }
14 }
```

# SIMAP: What next

- Get feedback on the “Ad-hoc” SRv6 models
  - Turn SRv6 models into SIMAP models and submit them to NMOP
  - Adapt the code to feedback from NMOP
- Support steering of SRv6 L3VPN services over SRv6 Policy-driven paths
- Bootstrap the SIMAP based on draft-vivek-simap-external-relationship-00
- Align with SIMAP modeling (draft-havel-nmop-simap-yang)

# SIMAP: Team Members

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