E-NNI registration protocol

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Agenda

- Background
- Motivation
- Problem definition
- Discussion

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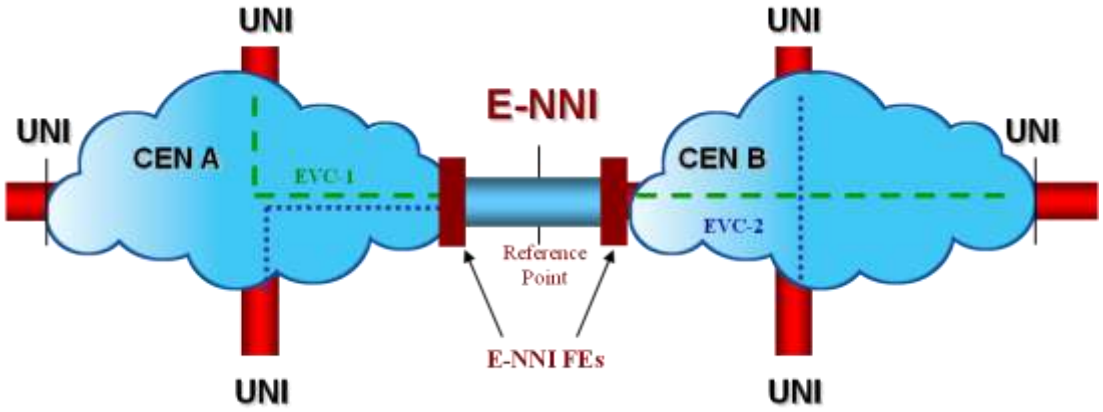
Background



- In order for two carriers (domains) to peer, there is a need for an external NNI.
- E-NNI is a reference point where two Service Providers meet in support of specified MEF Services.
- The E-NNI reference point is defined to exist between control domains

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Motivation

- MEF had defined the E-NNI as a building block for inter carrier Ethernet transport (currently static and only S-VLAN)

- E-NNI registration needs be supported at control plane in order to enable automatic /TE service provisioning

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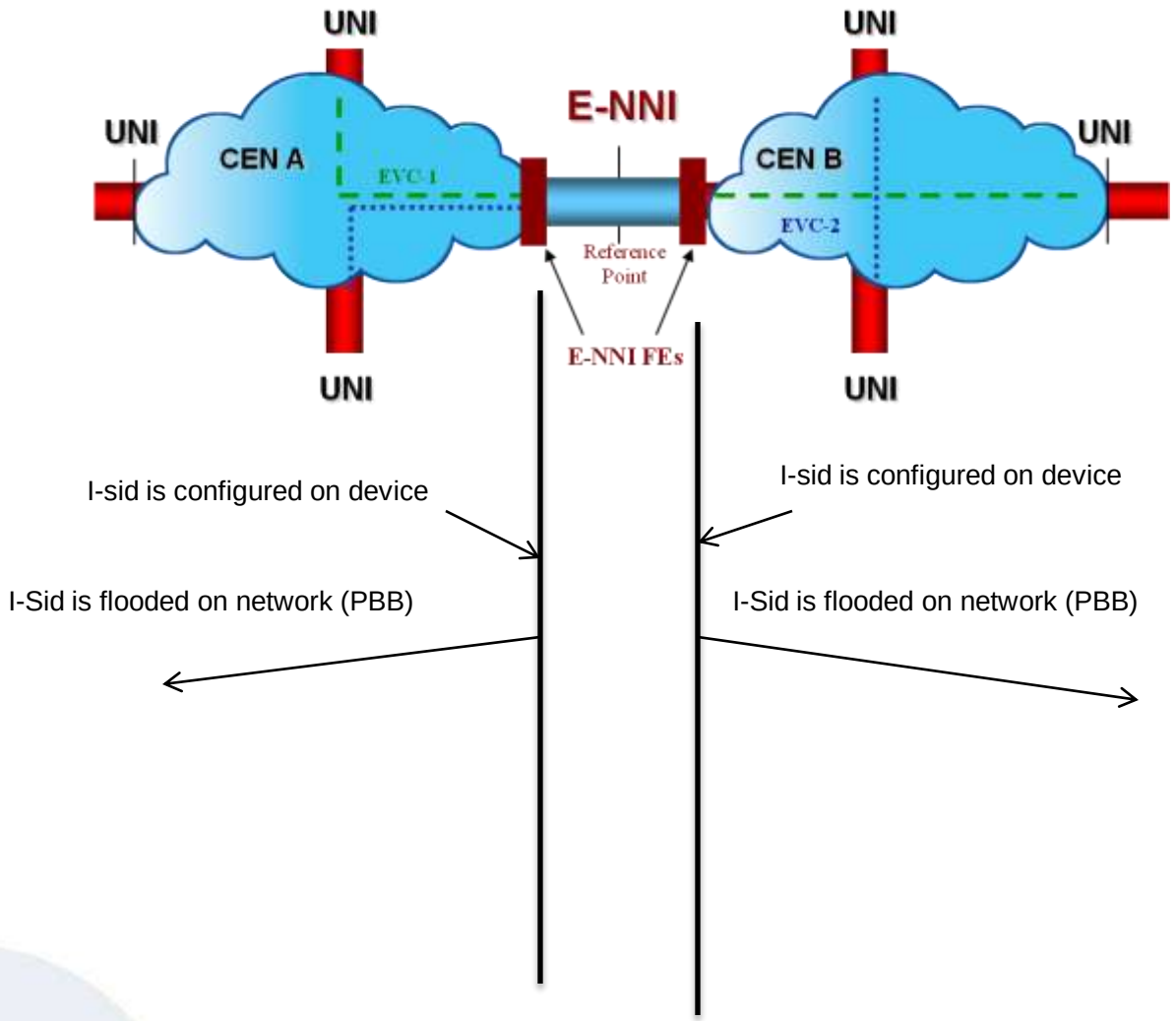
Current situation



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Problem definition

- There is I interface based E-NNI definition for PBB but registration of unknown I-tag on the peered E-NNI port is not defined.
- No protection or restoration on the E-NNI
- PBB-TE does not supports PBBN peering
- No solution for inter provider connectivity for configuration verification
- The inter-carrier case raises problems with:
  - NMS connectivity between two carriers
  - Authority over ports configurations
  - Configuration synchronization

Scenarios

There are Three scenarios:

1. Same provider with inter connected PBBNs (Global I-Sid meaning)
2. Different providers with inter connected PBBNs (Local I-Sid meaning)
3. Different providers with inter connected PBB-TENs (Local I-Sid meaning)

Scenario 1 – I-NNI registration

- Carrier has two or more domains
- Services may span several domains
- Want to configure only UNIs in order for service to be configures
- Need mechanism to configure the I-NNI

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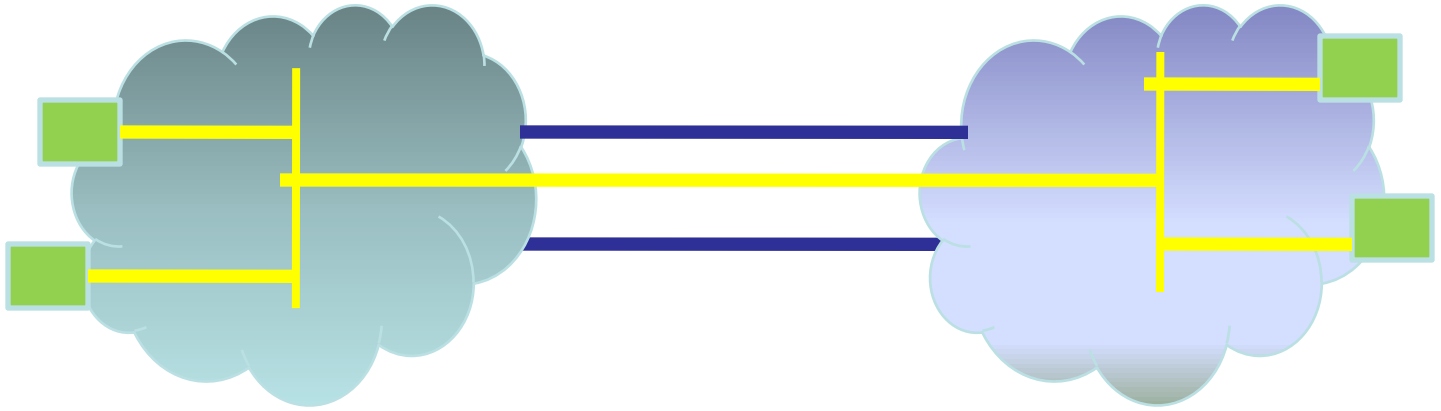
Scenario 1



- Highlights:
  - Same carrier
  - Same global I-Sid
  - Need to configure only UNIs to establish service across domains
- Issues
  - Load balancing of traffic
  - Protection of E-NNI

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Scenario 2– E-NNI configuration

- Two peering carriers
- Both peering over PBB based E-NNI
- Carrier 1 bought a service space and BW from carrier 2 and wants to add another I service within the service space
- Carrier 1 configure its own side of the E-NNI
- This information needs to be propagated and configured at carrier 2 side of the E-NNI

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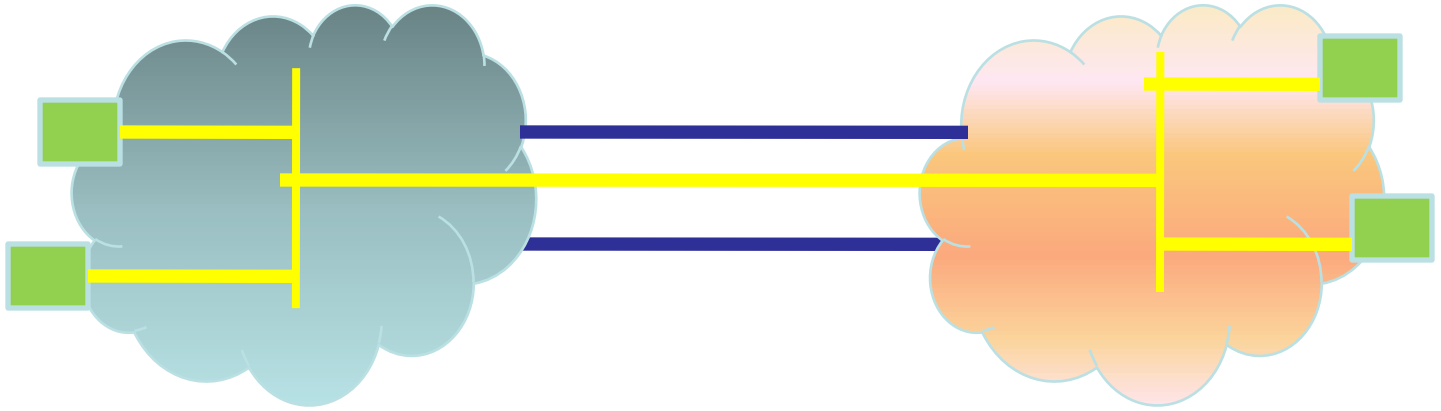
Scenario 2



- Highlights:
  - Different carriers
  - I-sid translation required
  - Need to configure only UNI and E-NNIs s to establish service across domains.
  - No ability to establish Management PPI to verify configurations
- Issues
  - Detect adjacent carrier
  - Load balancing of traffic
  - Protection of E-NNI

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Scenario 3 – PBB-TEE-NNI configuration

- Two peering carriers
- Both peering over PBB-TE based E-NNI
- Carrier 1 bought a BW and service space from carrier 2 and wants to add another I service within BW and service space
- Carrier 1 configure its own side of the E-NNI
- This information needs to be propagated and configured at carrier 2 side of the E-NNI (including end points at carrier 2 network)

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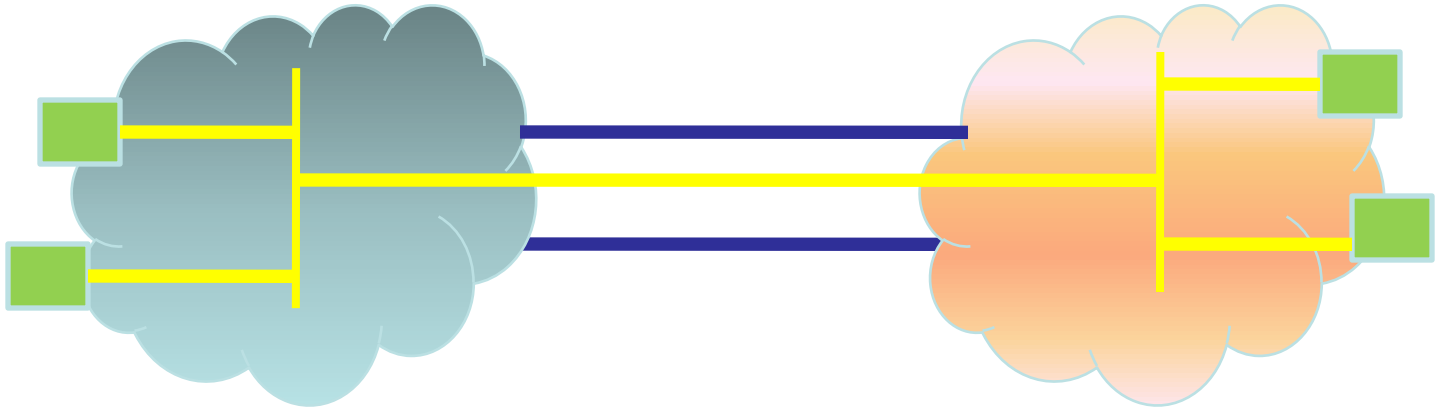
Scenario 3



- Highlights:
  - Different carriers
  - I-sid translation required
  - Need to configure only UNI and E-NNIs s to establish service across domains.
  - No ability to establish Management PPI to verify configurations
- Issues
  - Detect adjacent carrier
  - Defining TE TLVs

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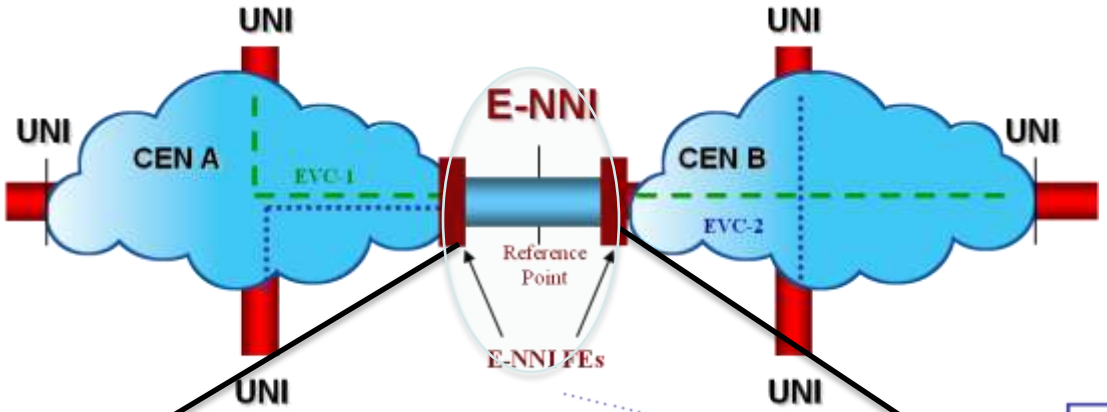
Suggested solution

- Add multi domain and E-NNI interface definitions to PBB-TE
- Add to E-NNI functionality the following capabilities:
  - Discovery and advertizing of E-NNI functionality and configuration
  - Automatic I tag registration /translation mechanisms within the data plane by invoking external agent for unknown I-tag at E-NNI

Suggested solution



Independent PBB / PB domain

Advertize capabilities

Advertize capabilities

I-sid is configured on device

Advertize new configuration with I-sid'

Invoke external agent

Get authorization and configuration

Confirm configuration

I-sid is flooded on network (PBB)

I-sid'' is flooded on network (PBB)

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Is MIRP the correct solution?

- MIRP is defined as an intra domain flushing protocol
- No database as of now
- No MAID context