E-NNI registration protocol
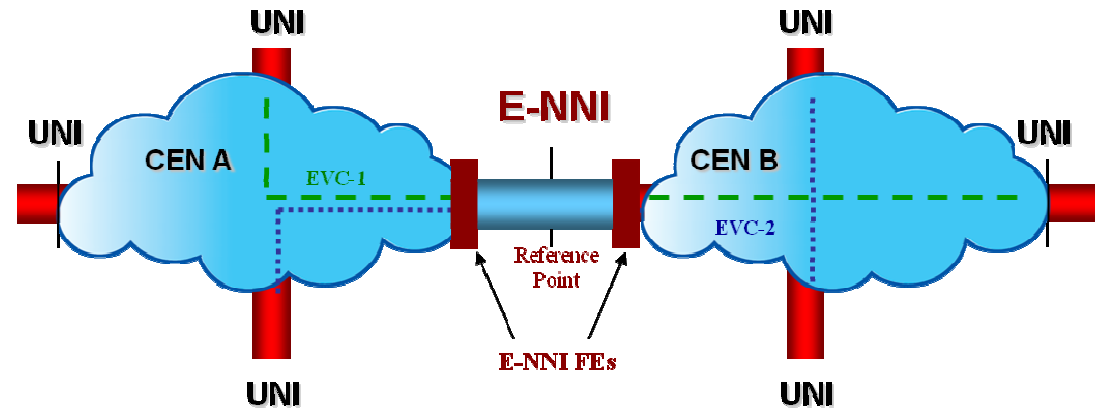
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3/2009

Ethos Networks

Agenda

- Background

- Motivation

- Problem definition

- Suggested new standard
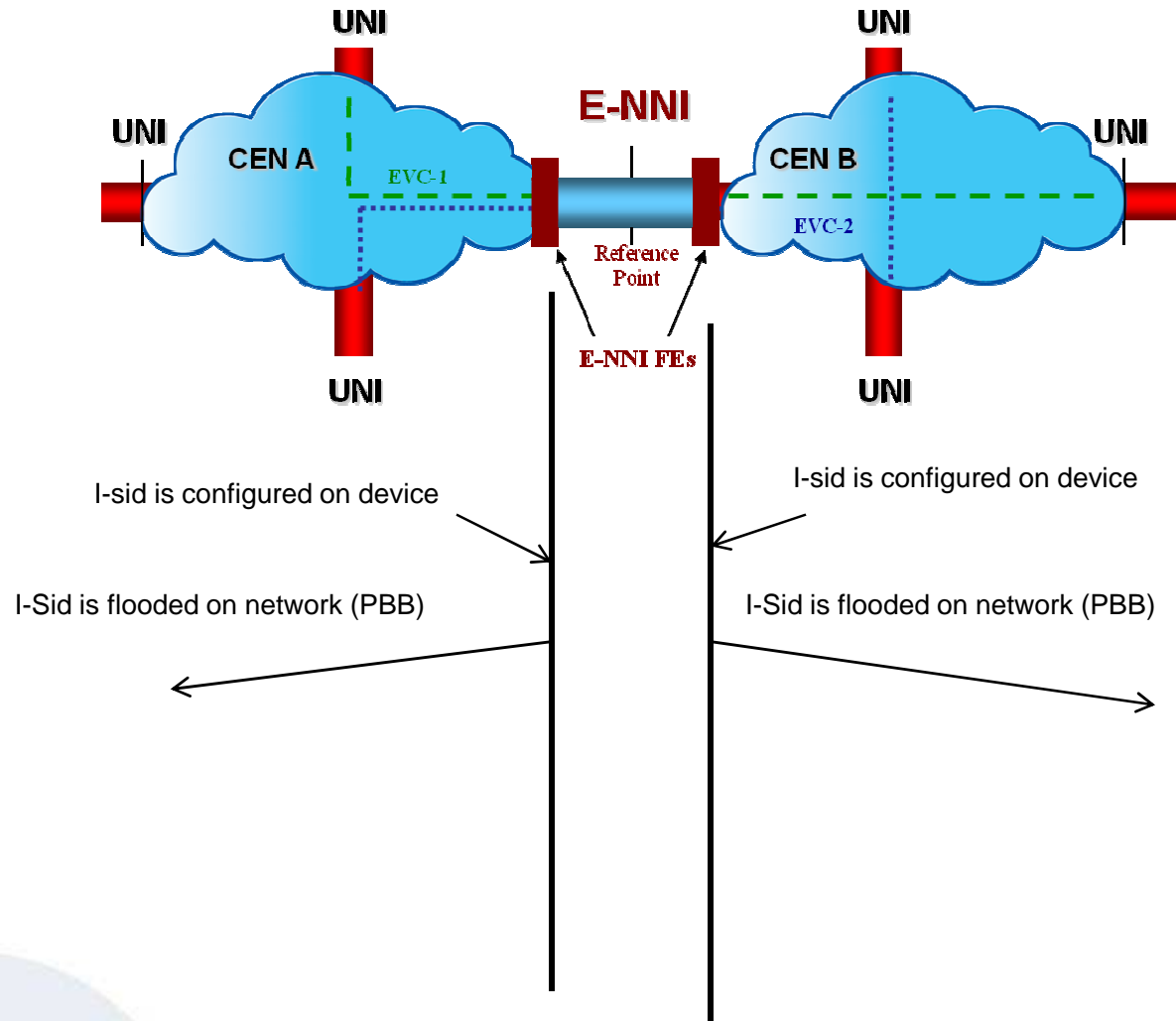
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Background

- 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

- Inter carrier (inter Domain) service provisioning automation is gaining place in carrier packet transport

- Ethos with NSN, BT,BGU & TKK are developing a solution for inter carrier Ethernet transport under the FP7 European research programs

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

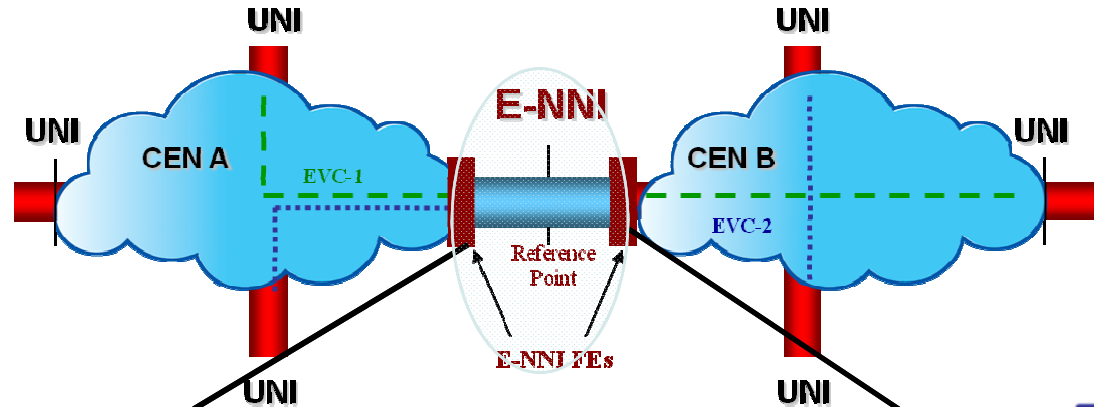- E-NNI must be supported at forwarding plane in order to enable automatic /TE service provisioning

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Current situation

UNI

UNI

CEN A

EVC-1

E-NNI

UNI

UNI

CEN B

EVC-2

UNI

Reference
Point

UNI

E-NNI FEs

I-sid is configured on device

I-sid is configured on device

I-Sid is flooded on network (PBB)

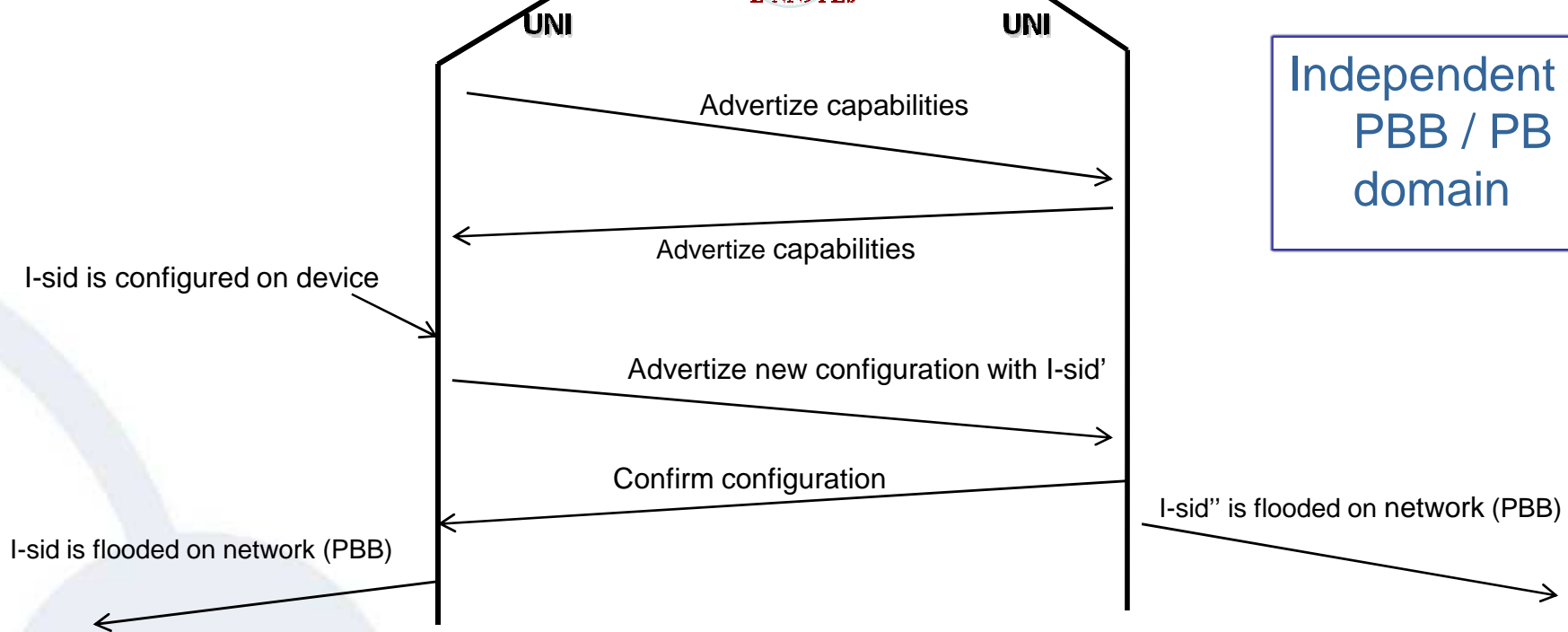I-Sid is flooded on network (PBB)

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Problem definition

- PBB-TE support only one domain - No support for E-NNI

- While PBB has an I interface, I interface peering is not defined in the data plane (no registration of I-SID *downstream* of provisioned port

- PBB-TE must rely on external agent to be configured. The inter-carrier case raises problems with:

  - NMS connectivity between two carriers
  - Authority over ports configurations
  - Configuration synchronization

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Suggested solution

UNI UNI CEN A EVC-1 E-NNI CEN B UNI UNI
Reference Point
E-NNI FEs
UNI UNI
EVC-2

Independent PBB / PB domain

Advertize capabilities

Advertize capabilities

I-sid is configured on device

Advertize new configuration with I-sid'

Confirm configuration

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

I-sid is flooded on network (PBB)

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Suggested solution

- Add E-NNI interface definitions to PBB-TE

- Add to standards the following capabilities:
  - A new registration protocol (based on GVRP) for I-SID / S-VLAN registration between two adjacent E-NNIs
  - Discovery and advertizing   of E-NNI functionality and configuration
  - Automatic I-sid (S-VLAN) reistration / stitching/ translation mechanisms within the data plane. (extend I/S interface functionality)

- Two modes:
  - Promiscuous (for I-NNI): Any I-sid information from adjacent port is automatically assumed trusted and thus registered and
  - Authorized - (for E-NNI) adjacent port is not assumed trusted. Any registration event causes and SNMP trap to request NMS authorization.