Extending PBB-TE to multi-domain

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Motivation

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

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

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Agenda

- Background
- Problem definition
- Suggested new amendment to standard

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Background

- PBB-TE was developed with restriction to a single domain
- Its main purpose is to provide Ethernet transport to carriers
- Carriers require inter domain / inter carrier enabled transport
- There is a need to extend PBB-TE to multi domain

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Problem Definition

- The TESI definition has local vs. global meaning
- PBB-TE is based on traffic engineered paths configured by NMS / PCE etc.
- No definition or support for E-NNI in PBB-TE
- No definition of Management to Management interfaces

Issues with the Inter carrier case

The inter carrier case raises the following issues :

- Global definition of TESI
- Coordination Traffic engineering definitions and provisioning
- Management to management interfaces are no defined and difficult to implement due to ambiguity of authorization over E-NNI

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Suggested solution

- Add E-NNI definition to PBB-TE
- Option 1
  - Rely on MIRP (Multi I-TAG Registration Protocol)
  - Messages will be based on CFM format
- Option 2
  - Extend 802.1Qat (stream reservation) to support both PBB-TE and E-NNI

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Basic Message format

- The usage of CFM enables the following:
  - Identification of Carrier (MAID)
  - Sending TLVs (with optional Sub TLVs) that describe
    - Required service identifier (I-Sid)
    - Required TE facilities (QoS, BW reservation, protection, OAM, PM etc.)
    - END points of service in current domain
    - Address of E-NNI port in current domain connected to the to next domains with nested Sub TLVs for each domain

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