Extending PBB-TE to multi-domain

Hayim Porat – Ethos Networks
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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.
Agenda

• Background
• Problem definition
• Suggested new amendment to standard
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
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 not defined and difficult to implement due to ambiguity of authorization over E-NNI
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
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