FUJITSU

PBB-TE
Protection

Usage scenario for in-band signalling
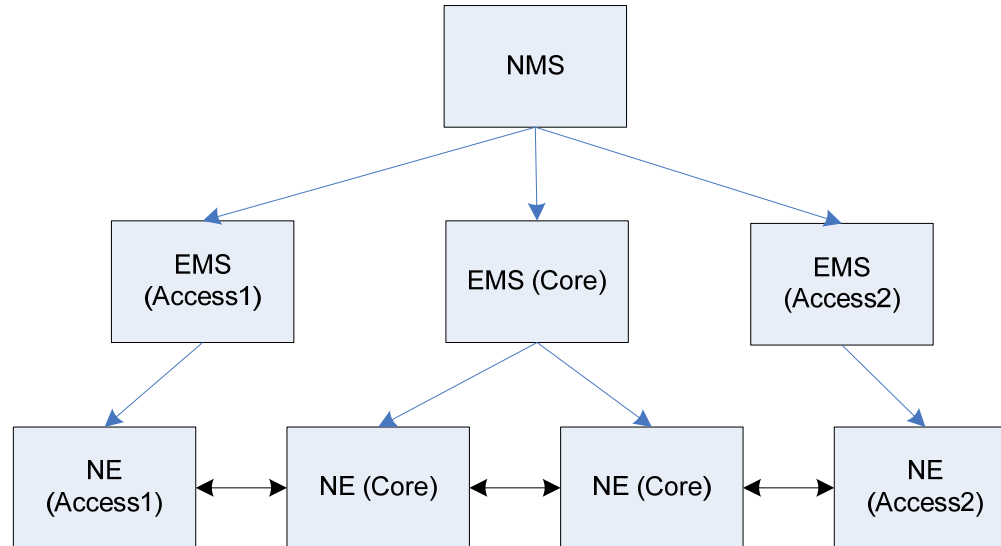of operator requests

Oliver Thorp

Overview

- This contribution provides the motivation for supporting in-band signalling of operator requests

- The issue of how to enforce bi-directional protection switching is related, but not addressed directly by this contribution.

12/03/2008   IEEE 802.1 – Orlando 2008

FUJITSU

Multi-layered management environment

- Telecommunications management network functions are commonly partitioned into logical layers of Operations Systems
- This contribution considers the following management layers:
  - Network Management Systems (NMS)
  - Element Management Systems (EMS)
  - Network Elements (NE) e.g. CLI

FUJITSU

NMS operator requests

- Management operations may be performed at different layers of the management network
- An NMS operator request could occur during maintenance action on the path of one of the ESPs in a protection group
  - The request is propagated down to the NE at both ends of a protected PBB-TE service instance
  - This is currently the only model supported by 802.1Qay

FUJITSU
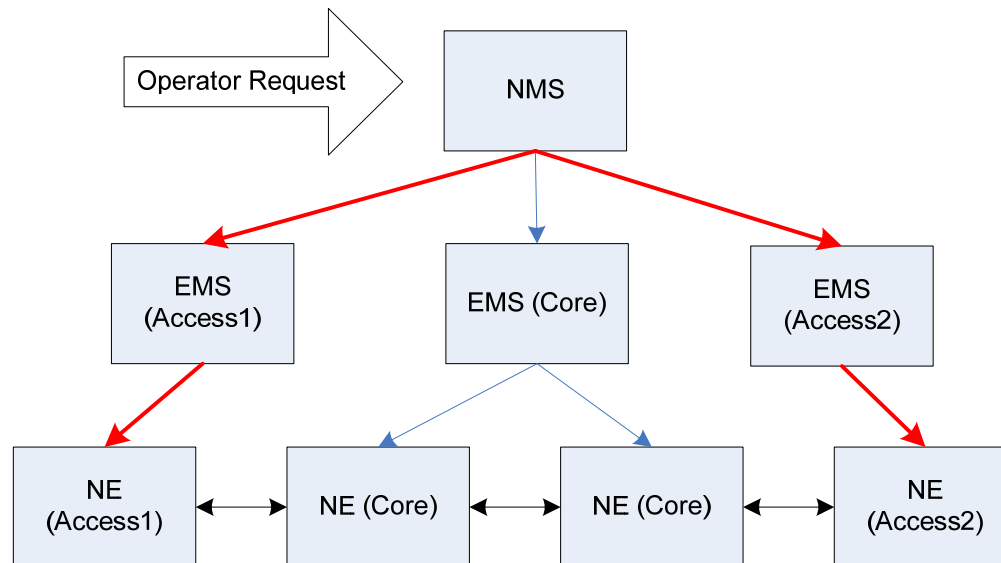
NMS operator requests - issues

- Speed
  - There aren't normally performance guarantees on NMS transactions

- Reliability
  - What happens if the management link to one of the Access NEs terminating the PBB-TE service instance is not available?

- Infrastructure
  - Assumes that the NMS supports this feature

- Operational
  - Requires co-ordination between on-site engineer and OSS staff

     12/03/2008   IEEE 802.1 – Orlando 2008

FUJITSU

EMS / NE Operator requests

- Operator requests can also originate from the NE / EMS
  - E.g. As part of a maintenance action during a software / hardware upgrade
- The request can only be sent to the NE at one end of the protected PBB-TE service instance
  - To accommodate this you need to communicate the operator request in-band over the PBB-TE service instance

FUJITSU
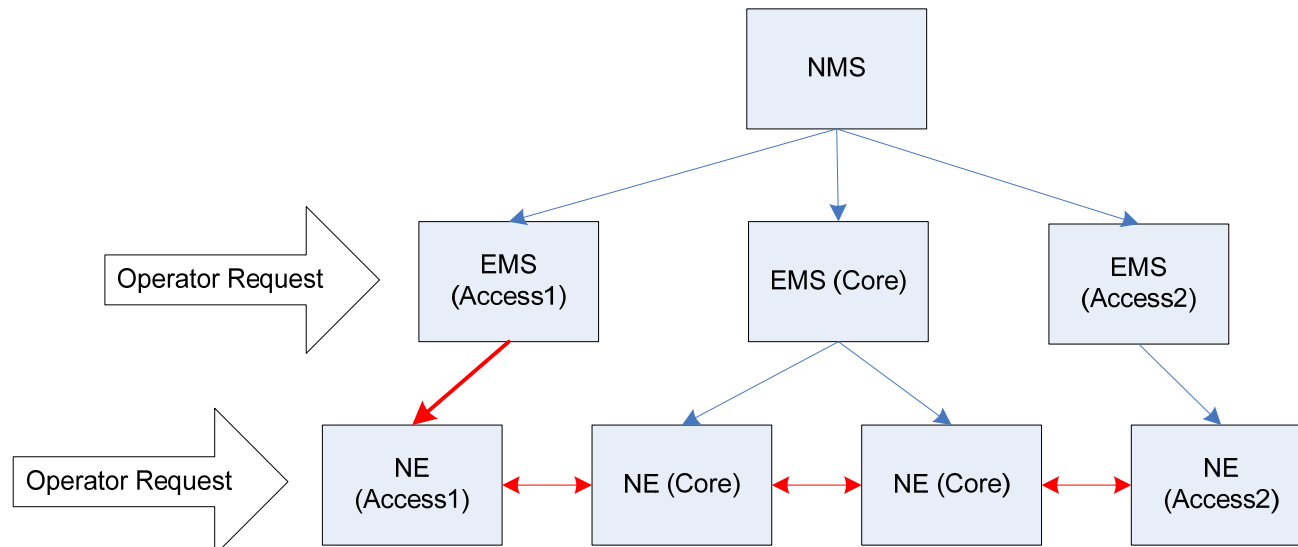
Recommendation

- 802.1Qay should support in-band signalling of operator requests over a PBB-TE protection group

- Pick one of the two possible mechanisms that have been proposed to support this:
  - Use of G.8031 APS PDUs and state machine
  - Use of an additional TLV in ESP continuity check messages

12/03/2008   IEEE 802.1 – Orlando 2008

FUJITSU

References

- ITU-T Rec. M.3010-2000
    - Principles for a telecommunications management network
- ITU-T Rec. G.8031-2006
    - Ethernet Protection Switching
- Josef Roese, T-Systems – November 2007– Contribution to IEEE 802.1
    - Applications of Protection Mechanisms in Provider Networks

     12/03/2008   IEEE 802.1 – Orlando 2008

FUJITSU