

Two-Port MAC Relay SNMP Impact

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v01

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Agenda

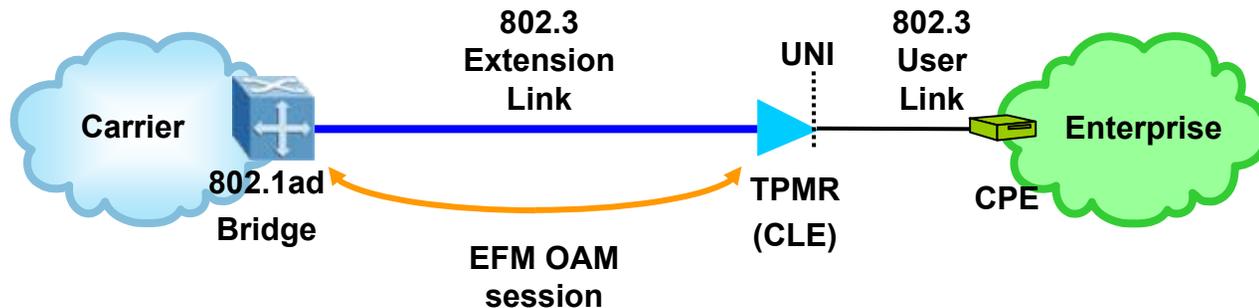
- **Recap From November**
- **Relative Application Space & Management Costs**
- **Summary**

Recap From November

- **Discussion of management methods:**
 - **EFM OAM w/extensions? (e.g., aj-martin-use-cases-0905)**
 - **SNMP?**
 - **Both?**
- **Two key questions raised:**
 - **What is the relative application space for single / multiple TPMRs?**
 - **What would be the relative cost for SNMP support?**
- **Relates to the “Broad Market Potential” and “Economic Feasibility” from the 5 Criteria**

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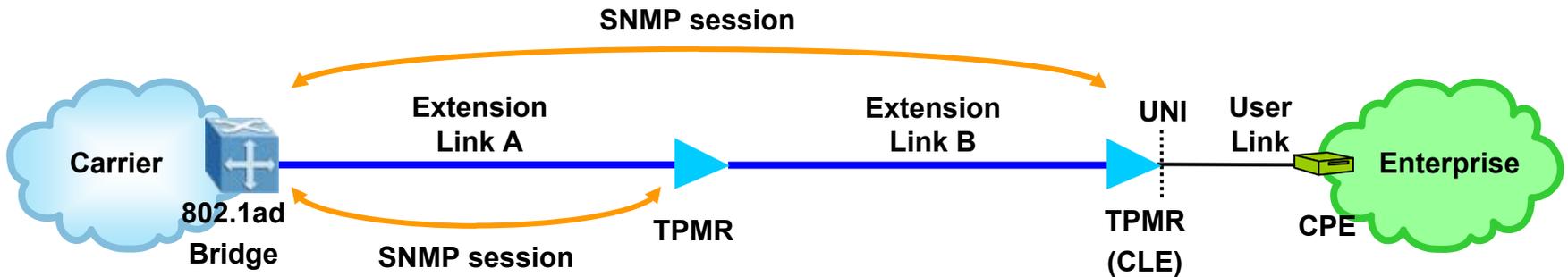
Single TPMP Example (EFM OAM w/extensions)



- **EFM OAM with extensions allows the edge Provider Bridge to:**
 - **Query the TPMP MIBs**
 - **Be notified of a User Link failure (“MAC Status Propagation”)**
 - **Put the TPMP into an intrusive loopback for OOS testing**
 - **Be notified of critical events**
 - **Be notified of Extension Link performance events**

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Multiple TPMRs Example (SNMP w/CFM)



- **SNMP allows the edge Provider Bridge to:**
 - Query the TPMR MIBs
- **With support for CFM (e.g., D1.1/comment #62), the edge PB could also:**
 - Put a TPMR into an intrusive loopback for OOS testing
 - Send a link trace message for fault isolation
 - Be notified by an SNMP msg of a connection mismatch – based on CCMs

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Management Functions Comparison

Management Functions	EFM OAM w/extensions	SNMP w/CFM
MIB access	√	√
MAC status propagation	√	*
Link loopback	√	
Critical events notification	√	
Performance events notification	√	
CFM loopback		√
CFM link trace		√
CFM CCM reception & alarm		√

* Would need the equivalent of the now dropped 'CFM AIS'

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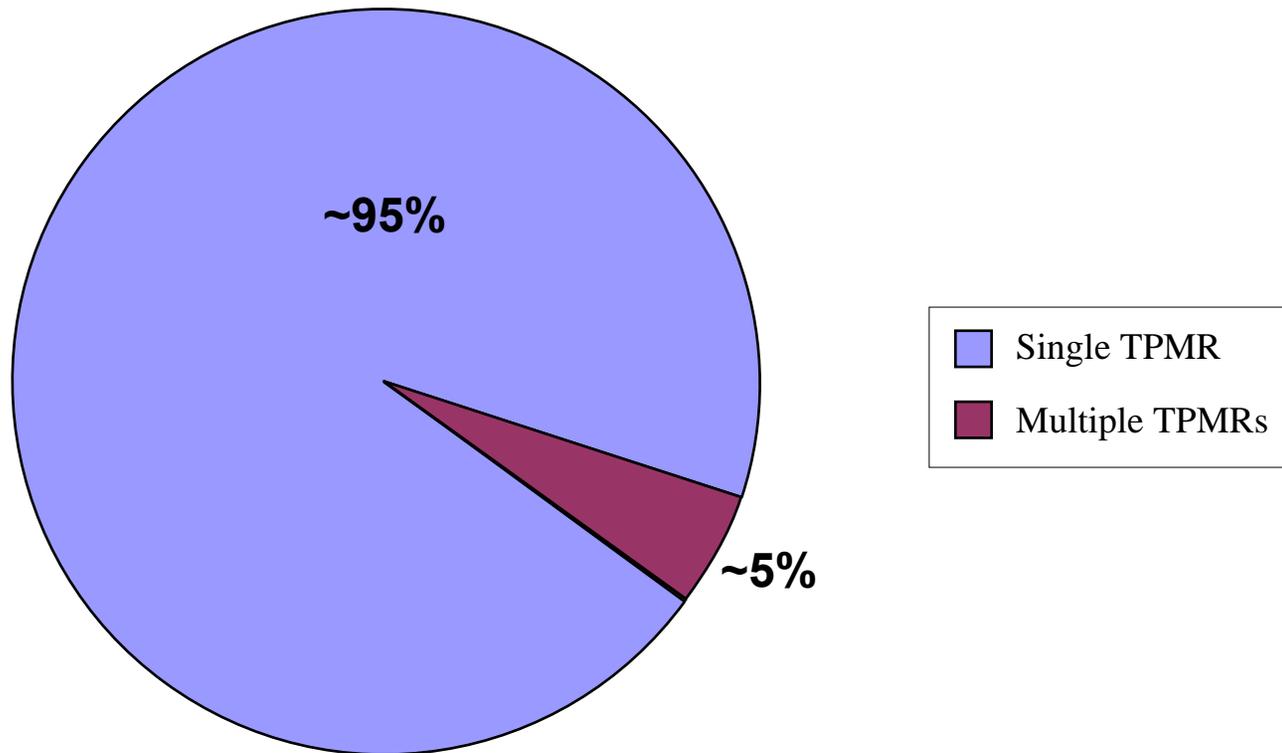
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TPMR Relative Application Space



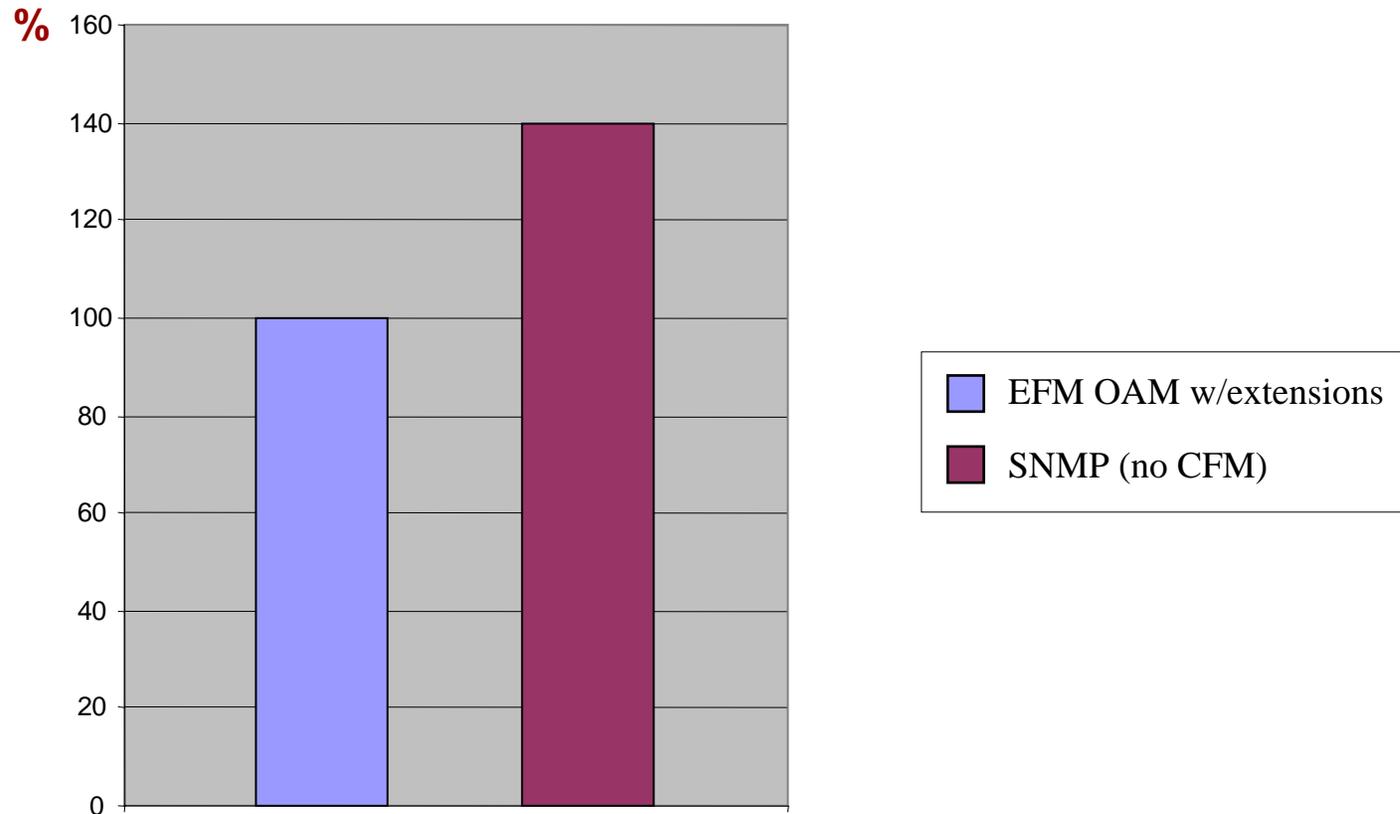
➤ Based on customer requests made to Nortel Networks during 2004-2005

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December 1, 2005 Light Reading Webinar

- **“Ethernet OAM & Demarcation Devices: Boxing Clever”**
- **Replay available from the archive at:**
 - http://www.lightreading.com/webinar_archives.asp
- **Sponsored by:**
 - **Covaro Networks**
 - **RAD Data Communications**
 - **Telco Systems**
- **Of note, in all the application scenarios only a single TPMR was shown**

TPMR Relative Management Costs



➤ Based on a development estimate from Nortel Networks



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Summary

- **The multiple TPMRs case represents only ~5% of the application space**
- **SNMP support to manage such cases would cost ~40% more than EFM OAM with extensions (and more again with CFM support to provide comparable management functions)**

➡ *Does the additional application warrant the incremental cost?*



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REFERENCE



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P802.1aj PAR Extract

13. Scope of Proposed Project:

This standard specifies the function of a MAC Relay with two MACs, and the protocols and procedures to support its operation. A MAC Relay is transparent to all frame-based media independent protocols except those explicitly addressed to this device. It is remotely manageable through at least one of its external MACs, and signals a failure of either MAC's LAN through the other MAC.

Is the completion of this document contingent upon the completion of another document? Yes

This standard is designed to support Provider Bridges (IEEE P802.1ad).

14. Purpose of Proposed Project:

The wide and growing deployment of Ethernet Provider Services has created a demand for simple two-port demarcation devices that connect two 802 media or 802 media emulations. The lack of standards for such devices, and particularly for link-loss signalling and remote diagnosis, is impeding the growth of this industry. This standard will greatly improve this situation.

14a. Reason for the standardization project:

Public networks represent a new and very broad application space for IEEE 802 technologies and specifically for Provider Bridges (P802.1ad) and Ethernet in the First Mile (802.3ah). Numerous vendors and potential users (the Service Providers) have expressed the need to integrate Ethernet link technologies with their existing infrastructure at a low cost, while providing the manageability and remote diagnostic capabilities traditionally offered by circuit switched technologies.

(Extracted from the P802.1aj PAR Form approval letter from the IEEE-SA Standards Board December 10, 2004)

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