IETF85
A framework for Point-to-Multipoint MPLS-TP

draft-hmk-mpls-tp-p2mp-oam-
framework-01.txt

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Background

➢ P2MP becomes increasingly important in terms of energy efficiency and efficient network resource usage.

➢ draft-fbb-mpls-tp-p2mp-framework will be a summary of whole features of MPLS-TP P2MP transport path

➢This document is related to the following liaison from ITU-T on MPLS-TP P2MP https://datatracker.ietf.org/liaison/1202/

Motivation

- Develop this document to see and study if additional detailed requirements and framework in parallel with draft-fbb-mpls-tp-p2mp-framework

- Focus on the case of no return path, assuming that OAM is applied in conjunction with EMS/NMS

- Does not preclude settings of return paths to head end
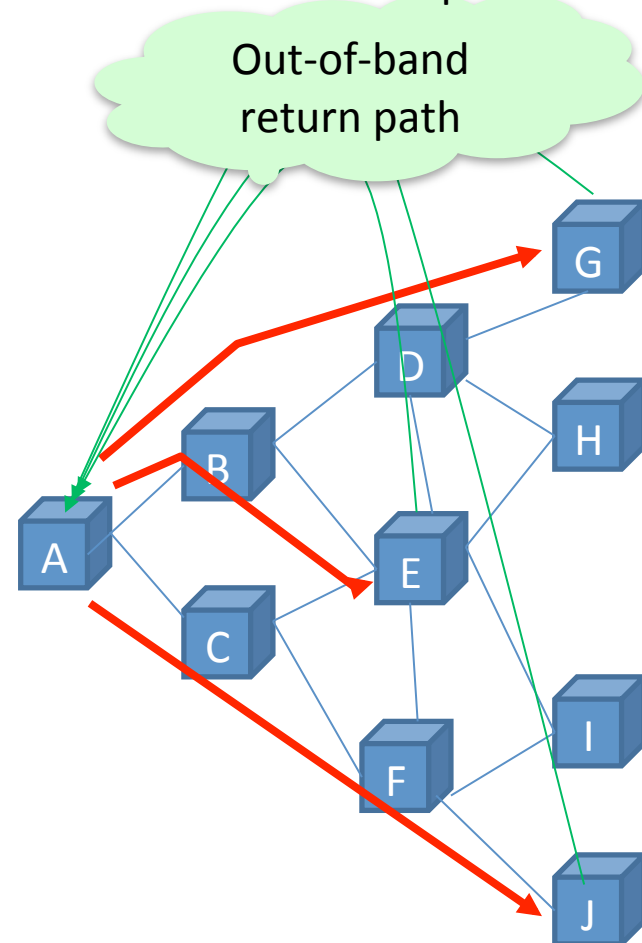
Initial focus : Return path to EMS/NMS

-Initial focus: return path(s) to EMS/NMS.

-Solicit comments on calling it "return path(s) to EMS/NMS"

1) RP-N: A return path to EMS/NMS through management interface(RP-N)
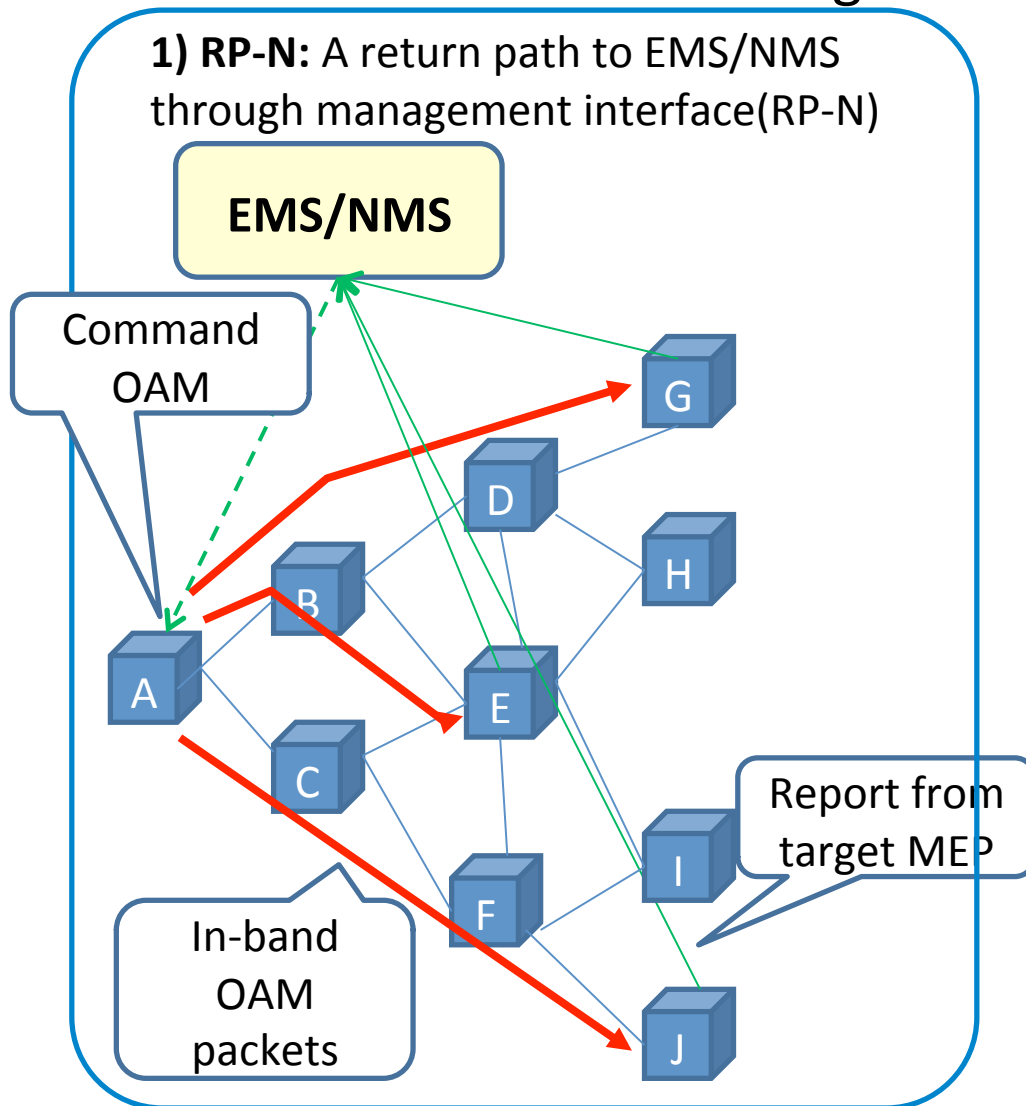
2) RP-HE A return path to a head end (root) of a P2MP path using any kind of out-of-band path


EMS/NMS

Command OAM

Report from target MEP

In-band OAM packets

Out-of-band return path

Updates from -00 to -01

- Changed the title of the draft reflecting the renaming of the model for initial focus

- Reconsidered the structure of the draft

  ➢ Added one clause for general aspects of p2mp OAM

  ➢ Differentiated requirements for equipment and those for configuration EMS/NMS

  ➢ Separated between clause on on-demand OAMs and that on proactive OAM
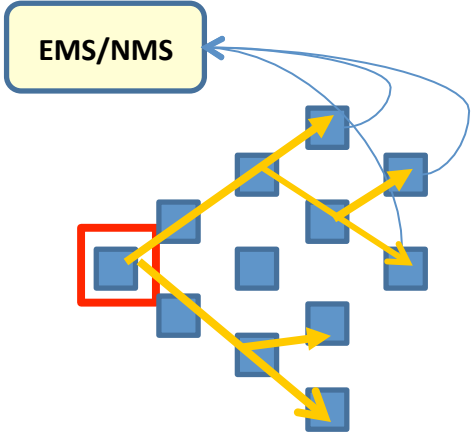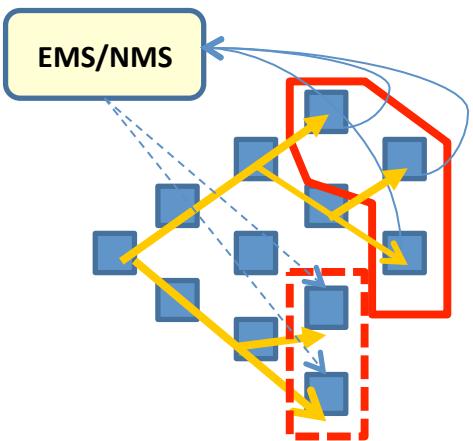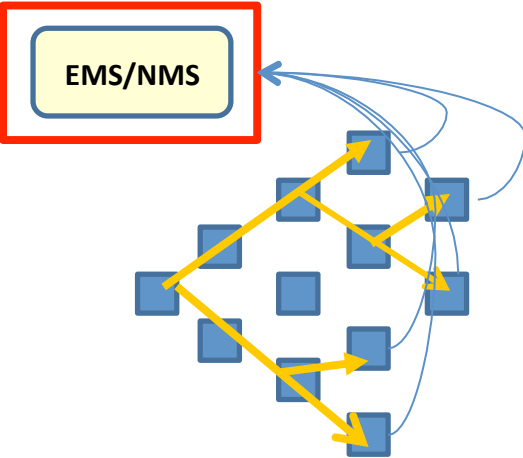
Updates from -00 to -01 (Contd.)

General aspects
1) Requirements for network elements
2) Requirements for EMS/NMS
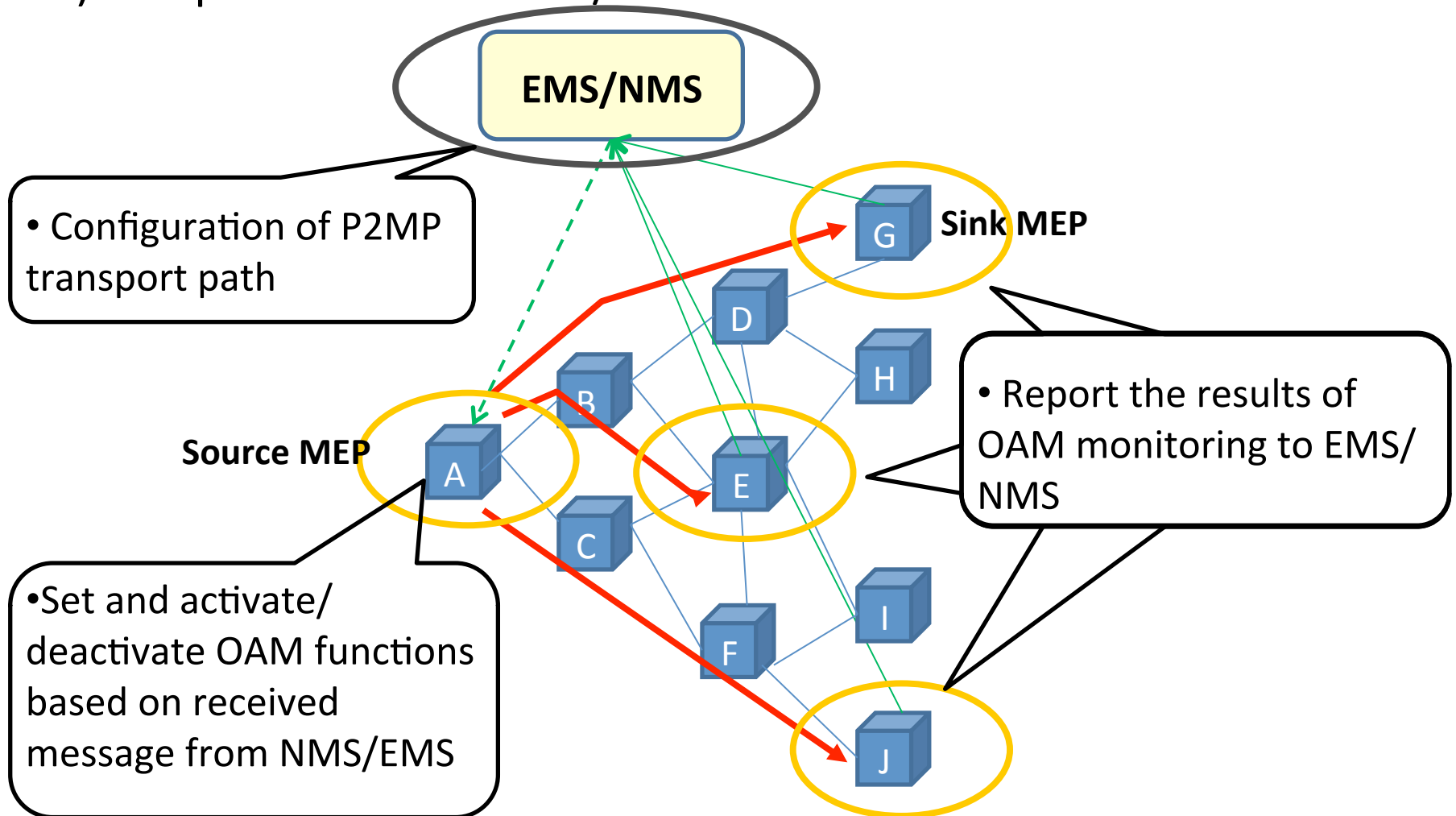
Updates from -00 to -01 (Contd.)

- To monitor only a subset of M leaves in on-demand OAM
- Need consistent approach because the interface and functions could be different

Scenario 1	Scenario 2	Scenario 3
OAM protocol extension (includes plural targeting MEP IDs: out of scope in RFC6371)	Extension of targeting NE (Filter reporting messages at NEs)	Extension of EMS/NMS (Filter reported messages at EMS/NMS)

Next step

- Solicit comments particularly on general aspects of OAM requirement in P2MP transport path: section 3.1
- Describe each OAM function in P2MP transport path respectively based on the requirements of general aspects
- Ask for WG poll

Thank you

OAM functional requirements in MPLS-TP (RFC5860)

- OAM functions are the key MPLS-TP technologies to achieve carrier grade operation in transport networks

	OAM functional requirement	Function	Contents
1	Continuity Checks	CC	Monitor liveliness of transport path
2	Connectivity Verifications	CV	Determine whether or not it is connected to specific end point(s) of transport path
3	Route Tracing	RT	Discover intermediate (if any) and end point(s) along transport path
4	Diagnostic Tests	DT	Conduct diagnostic tests on transport path (estimating bandwidth, performing loop-back (LB) function of all data and OAM traffic (data-plan LB))
5	Lock Instruct	LI	Instruct its associated end point(s) to lock transport path
6	Lock Reporting	LR	Report lock condition from intermediate point to end point of transport path
7	Alarm Reporting	AR	Report fault or defect condition to end point of transport path
8	Remote Defect Indication	RDI	Report fault or defect condition to its associated end point
9	Client Failure Indication	CFI	Propagate information pertaining to client defect or fault condition
10	Packet Loss Measurement	LM	Quantify packet loss ratio over transport path
11	Packet Delay Measurement	DM	Quantify delay of transport path (1-way and 2-way)