RSVP-TE Signaling Extension for Explicit Control of LSP Boundary in MRN/MLN

draft-fuxh-ccamp-boundary-explicit-control-ext-02.txt

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Changes since last version

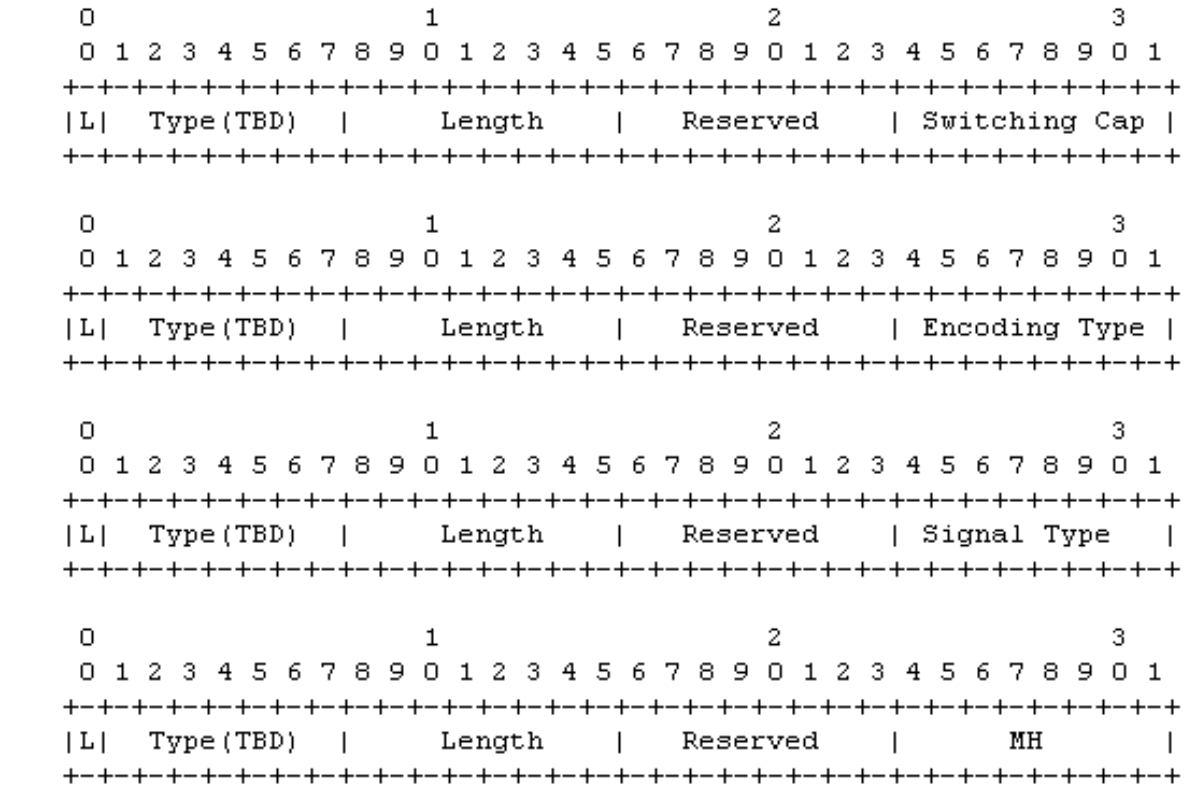
- Modifications to ERBO (Explicit Route Boundary Object)
- Adding four subobjects into ERBO
  - *Switching Capability, Encoding Type, Signal Type (ST) and Multiplexing Hierarchy (MH)*
- Adding three new subobjects into XRO
  - *Encoding Type, Signal Type (ST) and Multiplexing Hierarchy (MH)*
- Editorial changes

Explicit Route Boundary Object

- The format of a ERBO is the same as an ERO. It looks more like the SERO defined in rfc4873.
- One or more ERBOs may be carried in Path message. Multiple ERBOs could support cascading of FA easy.
  - An ERBO must contain at least two subobjects. The first and final one indicate the source and sink node of a FA or Composite Link which will be passed by one e2e LSP.
- Advantage:
  - The purpose is not to extend ERO and to limit the modifications to existing RSVP-TE procedures.
  - ERBO is a top object and parsed easy.
  - Many attributes could be inserted into ERBO in the future for other requirements.

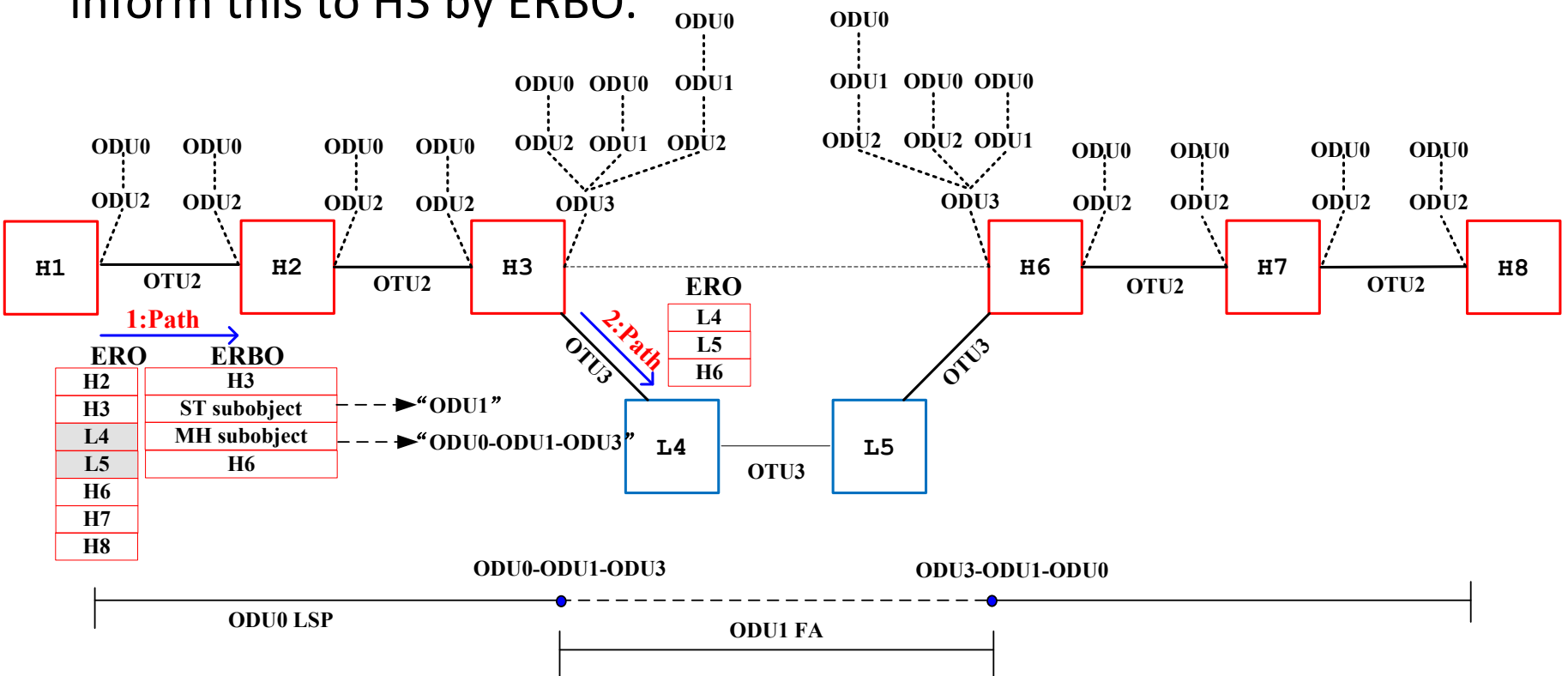
Subobject in ERBO

- This document defines four subobjects (Switching Cap, Encoding Type, Signal Type and Multiplexing Hierarchy) in ERBO. These subobjects may be inserted into ERBO between source and sink node to indicates how to select the FA/Component Link or create them.
  - L bit =0: indicates that the attribute specified MUST be included.
  - L bit =1: indicates that the attribute specified SHOULD be included.



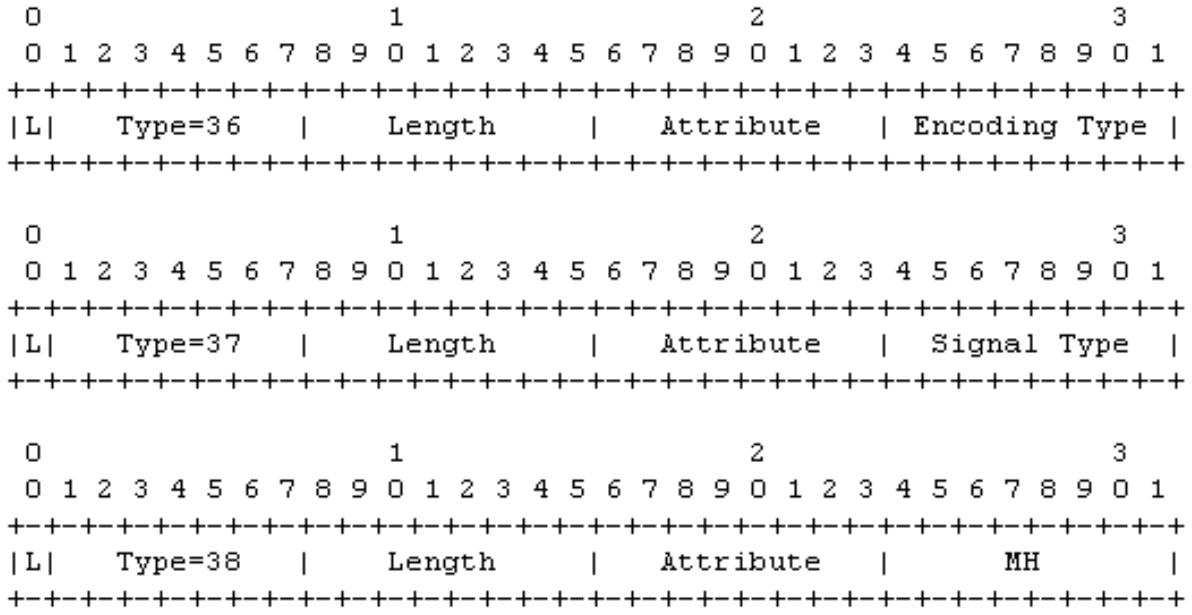
Explicit Route Boundary Control by ERBO

- L4 and L5 couldn't support ODU0 switching capability. For one e2e ODU0 connection from H1 to H8, ODU1 and ODU2 FA may be created between H3 and H6.
- If path computation entity decides to create ODU1 FA and selects ODU0-ODU1-ODU3 multi-stages multiplexing (MSM), H1 should inform this to H3 by ERBO.



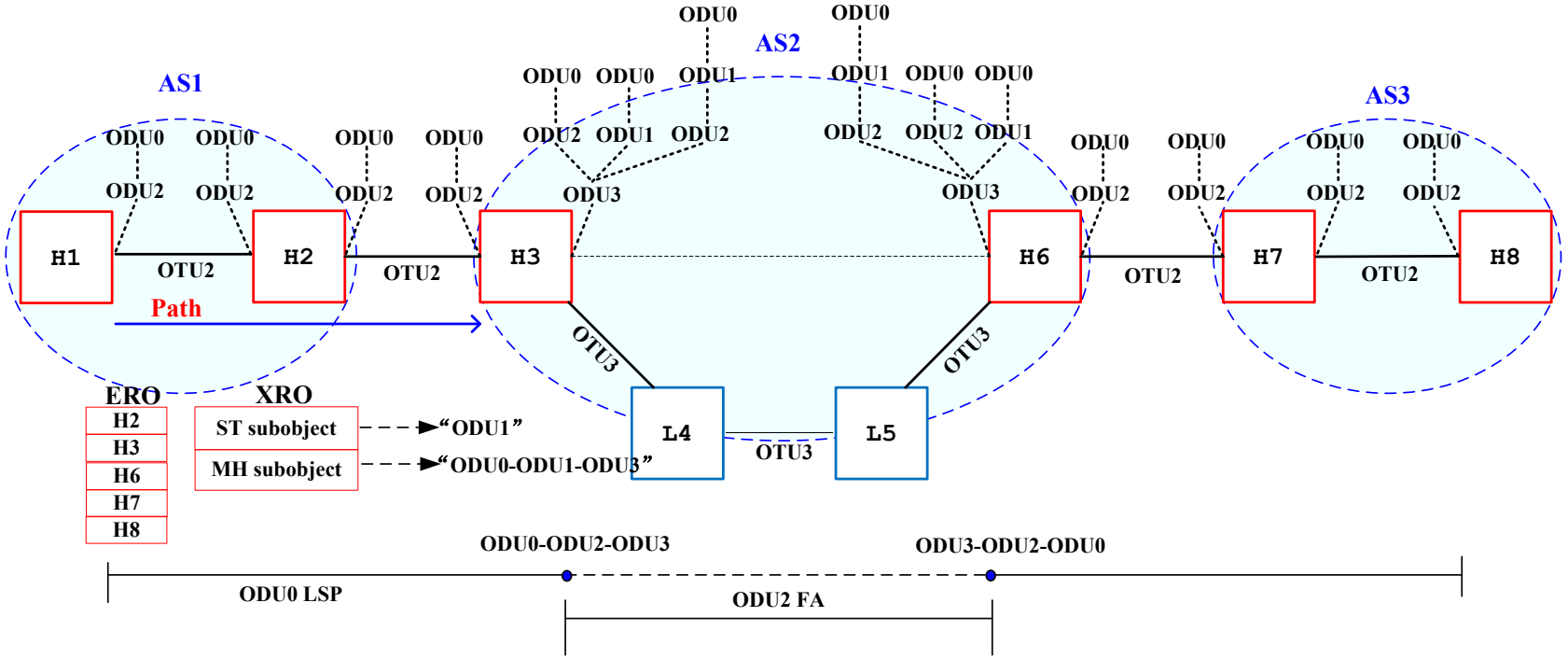
Subobject in XRO

- This document defines following subobject of the XRO defined in rfc4874.
  - Switching Capability: It has been defined in rfc6001
  - Encoding Type: explicitly indicates the encoding type should be excluded (e.g., SONET/SDH or G.709 in TDM)
  - Signal Type (ST) : explicitly indicates at least one ST have to be excluded from the resource selection.
  - Multiplexing Hierarchy (MH): explicitly indicates at least one MH have to be excluded from the resource selection.
  - L bit and Attribute is the same as the Switching Capability (SC) subobject defined in rfc6001



Explicit Route Boundary Control by XRO

- H1 may not explicitly control the ODUk FA creation in AS2, but it may desire to explicitly exclude some types of ODUk FA creation or MSM by XRO.
  - e.g., H1 may explicitly exclude ODU0-ODU1-ODU3 and ODU1 FA creation between H3 and H6.
  - Then ODU2 FA could be selected or created by H3 for e2e ODU0 connection between H1 and H8 based on information in XRO.



Next steps

- Refine the document according to the feedback of meeting and mailing list.