IETF 115 – CCAMP Meeting

draft-meuric-ccamp-tsvmode-signaling

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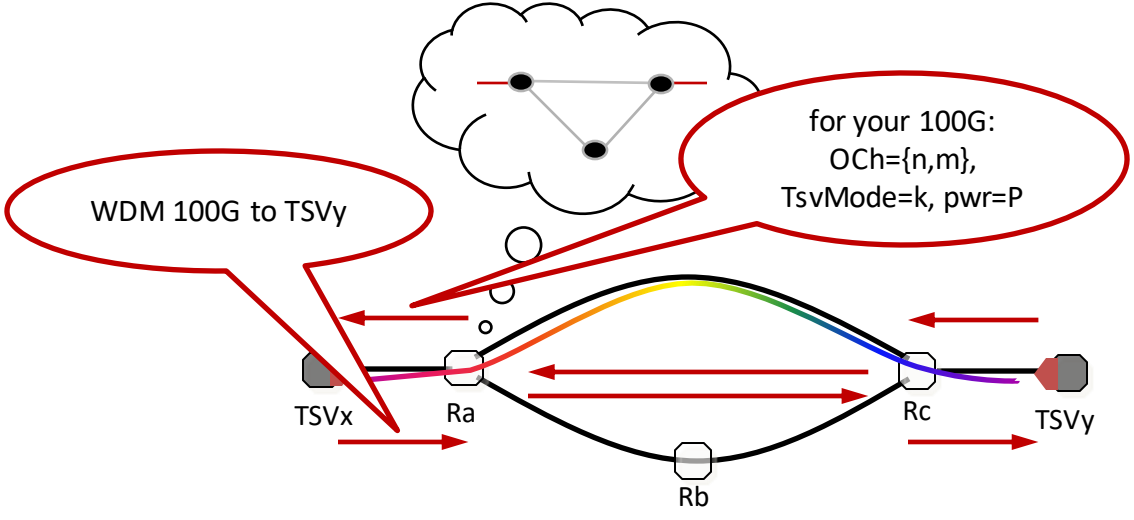
Problem Statement

- Some optical transceivers support multiple modulation formats, baud-rates, FECs, etc.
  - a set of values for these parameters is usually referred to as a "**mode**".
- RWA typically happens **before** the signaling leaves the ingress ROADM:
  - RWA may rely on embedded path computation or external PCE,
  - The signaling needs to carry the mode information down to the egress transceiver.
- In case of alien transceivers (in shelves independent from the ROADMs):
  - Mode selection may be performed:
    - Statically before ingress transceiver,
    - Dynamically at ingress ROADM, which implies providing info the optical line;
  - The selected mode must be exchanged between the line and transceivers at both ends.

Solution Principle

- RSVP-TE Path/Resv convey the required channel info end-to-end
  - I.e. to both the optical line and the egress transceiver
- The 1st Path message may be the path computation trigger (“alien” case)



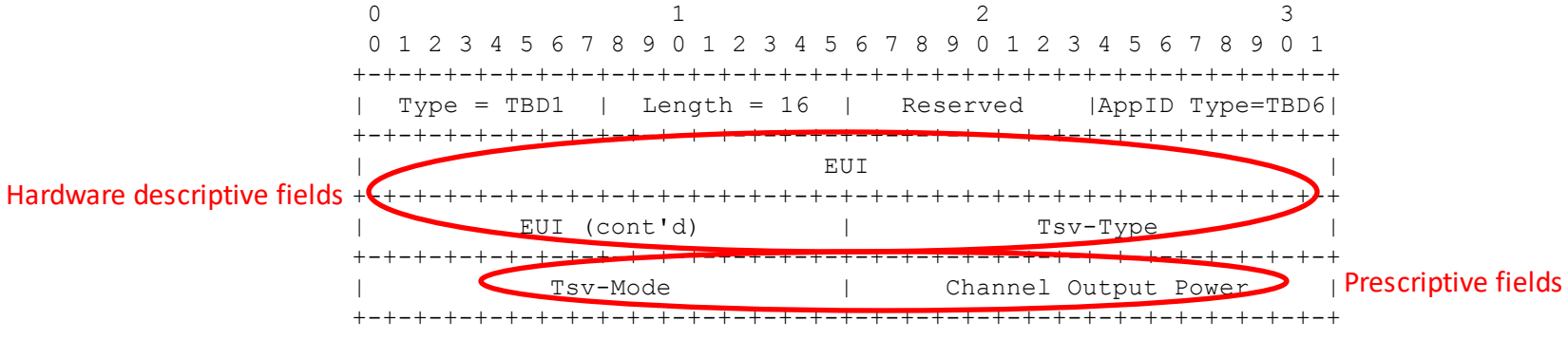
TSVx/TSVy: transceiver shelves; Ra/Rb/Rc: ROADMs

Short-Term Encodings

- The path computation entity (ingress ROADM or external PCE) uses a mapping table containing transceiver info
  - operator-configured or learnt by LMP

Tsv-Type	Tsv-Mode	Parameter Set
Board-X	1	baud-rate=B, modulation=M, symbol-rate=S, FEC-ID=F…
Board-X	2	…
Board-Y	1	…

- Proposed TLV (using *AppID* from draft-ietf-ccamp-dwdm-if-lmp):



Mid-Term Encodings

- RSVP-TE messages carry detailed parameter set
  - instead of opaque identifier to be looked up in a table,
  - enables the optical line to compute a feasible path.

- Proposed TLV will be adjusted to reflect the output from other drafts:
  - draft-ietf-ccamp-optical-impairment-topology-yang
  - draft-ietf-ccamp-dwdm-if-param-yang

- Some fields may be relevant to...
  - provide transceiver info to line (e.g., Baud-rate, Min OSNR, Carrier Spacing...),
  - send back configuration from the line to the transceivers (e.g., power, label).

Main Changes from -02

- *WDM-Transceiver-Mode* sub-TLV
  - Add a *Channel Output Power* field
    - Allows to suggest the power target from the optical line to the transceivers,
    - FFFF means unallocated, i.e. let the TLV receiver (optical line or transceiver) in charge.
- *WDM-Transceiver-Param* sub-TLV
  - Clarify that there is no intent to define yet another set of parameters
    - Will follow the consensus once the existing WG I-Ds are fully stable,
  - Add an *Operational Mode* field
    - To ensure applicability in more cases,
    - E.g., may be ignored by the optical line while meaningful between transceivers.
- Drop the proposed registries for Modulation and FEC
  - Could be considered later in the process, if consensus is there.

Next Steps

- Keep alignment on:
  - draft-ietf-ccamp-optical-impairment-topology-yang
  - draft-ietf-ccamp-dwdm-if-param-yang
  - draft-ggalimbe-ccamp-flexigrid-carrier-label
- Focus on the short-term sub-TLV
  - Keep the details about the mid-term sub-TLV for a 2nd step
- Consider WG adoption