



RoE Control Channel considerations

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May 19, 2015

About RoE Control Channel

□ Used for:

- Link setup between one SA/DA pair.
- Transport structure aware mapper auxiliary information such as CPRI control words.
- Transport native RoE data streams related control data.
- Transport “alien” protocols..

□ Assumptions:

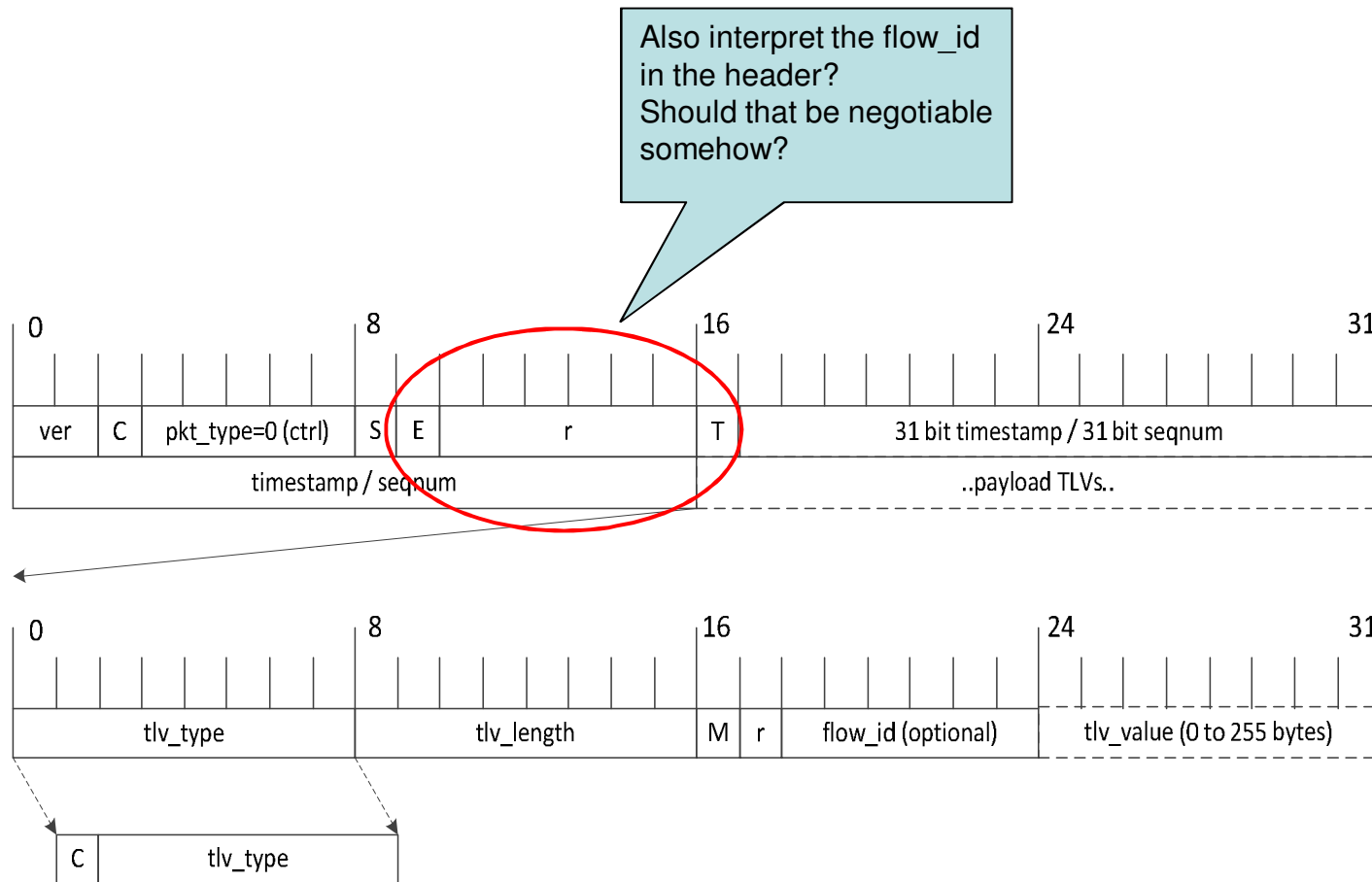
- TLV-based payload.
- TLVs can be interleaved across multiple RoE Control packets.
- RoE Control packets are sent over the same path as the RoE data packets -> also shares the same timing constraints and interleaved among the data packets.

Issues:

- ❑ If the link (bandwidth) budget is tight, even transporting RoE Control packets entails considerable buffering at the ends -> to “collect” a packet worth room to send the control packet.
- ❑ RoE Control packets compete available “remaining” capacity with other important non-data traffic – example IEEE 1588 PTP and SyncE SSM packets -> some bandwidth must be reserved for those “by some means”.

Control message multiplexing

- Should we also allow multiplexing control messages at the RoE header level??





Link setup algorithm

- ❑ When the link comes up between the end points the “master port” starts negotiation – unless everything has been preconfigured statically.
- ❑ Two step approach:
 - Discovery.
 - Parameter negotiation.
- ❑ Involves a small state machine:
 - Discovery->negotiation->active states
 - Details TBD.
- ❑ Ethernet level autonegotiation takes place earlier using Ethernet specified mechanisms.

Link setup – discovery

- ❑ Each “master” multicasts (address TBD) a BOOTSTRAP_QUERY TLV.
 - Contains capabilities..
- ❑ Each “slave” who wishes to communicate with the “master” unicasts a BOOTSTRAP_REPLY TLV:
 - Contains common capabilities etc..
- ❑ May be repeated (with different capabilities) if no or too few “slave” responds.
- ❑ ToDo: agree on the timeout..

Link setup - negotiation

- ❑ Each “master” unicasts a TLVs to selected “slaves”.
 - Contains capabilities to agree on..
- ❑ Each “slave” who wishes to communicate with the “master” unicasts a reply with common capability TLVs
 - Can also disagree and drop off from the “association”.
- ❑ After a positive reply the “slave” is in “active” state.
- ❑ After the “master” has collected answers from all who replied to initial query it moves to “active” state.

Sequence numbers during link setup

- During link setup use only sequence numbers:
 - Sequence numbers are reset to 0.
 - “slaves” echo the sequence number from “master” sent message they respond to.
 - When the “master” or “slave” move to active state the sequence number gets reset to 0x40000000.
- If the link setup is static:
 - Sequence numbers are reset to 0x40000000.

Motion #8

- The channel/link setup algorithm should include “slave” discovery/insertion and RoE parameter negotiation (not exclusively). Examples of these features are discussed in document [tf3_1506_korhonen_3a.pdf](#).

- Jouni Korhonen making the motion
- Second by Raz Gabe

- Technical motion (>2/3)

- Yes: 9 No: 0 Abstain: 1