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Generic Stream Identification functions: way forward

IEEE 802.1 TSN, November ‘17, Orlando

Background

- Current situation
  - Stream identification functions in 802.1CB rely on:
    - A set of Ethernet header fields
    - A set of Ethernet payload fields
  - The set of Ethernet header field does not include the Ethertype field
  - The set of Ethernet payload fields is limited to IP, UDP/IP, TCP/IP and SCTP/IP

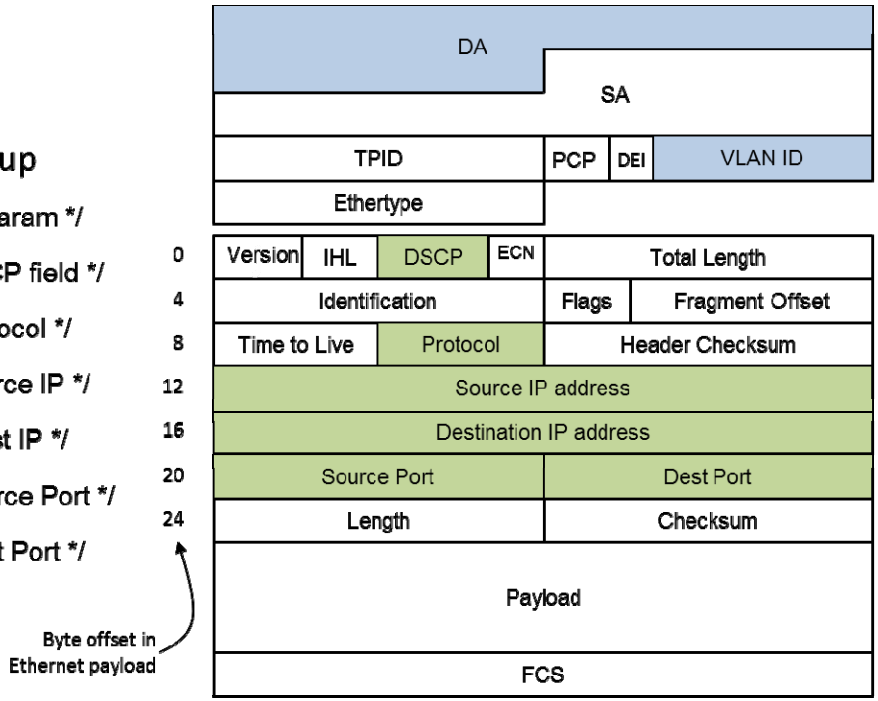
Background

- Issues
  - Handling of non-TSN stream at TSN network boundaries (e.g. UNI) is limited
    - Untagged, non-IP “streams” are not supported…
      - … which are what a large installed base of Industrial Real-Time Ethernet networks generates
  - TSN functionalities affected by this limitation:
    - Transformation (encapsulation) of non-TSN into TSN streams
    - Ingress policing
    - Stream-based shaping (802.1Qcr)

Background

- A generic stream identification function has been proposed:
  - Similar to a pattern-matching function
  - Input pattern = combination of:
    - Ethernet header fields (Layer-2 group)
    - Configurable set of Ethernet payload fields (Upper-layer group)

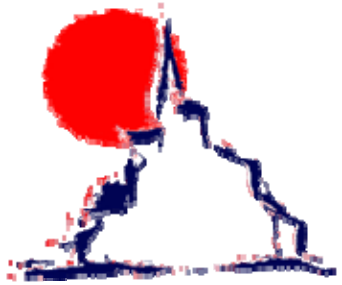
- Layer-2 group
  {1,0,0,1,0}
- Upper-layer group
  {6; /* Nb param */
  (1,6), /* DSCP field */
  (9,8), /* Protocol */
  (12,32), /* Source IP */
  (16,32), /* Dest IP */
  (20,16), /* Source Port */
  (22,16)} /* Dest Port */

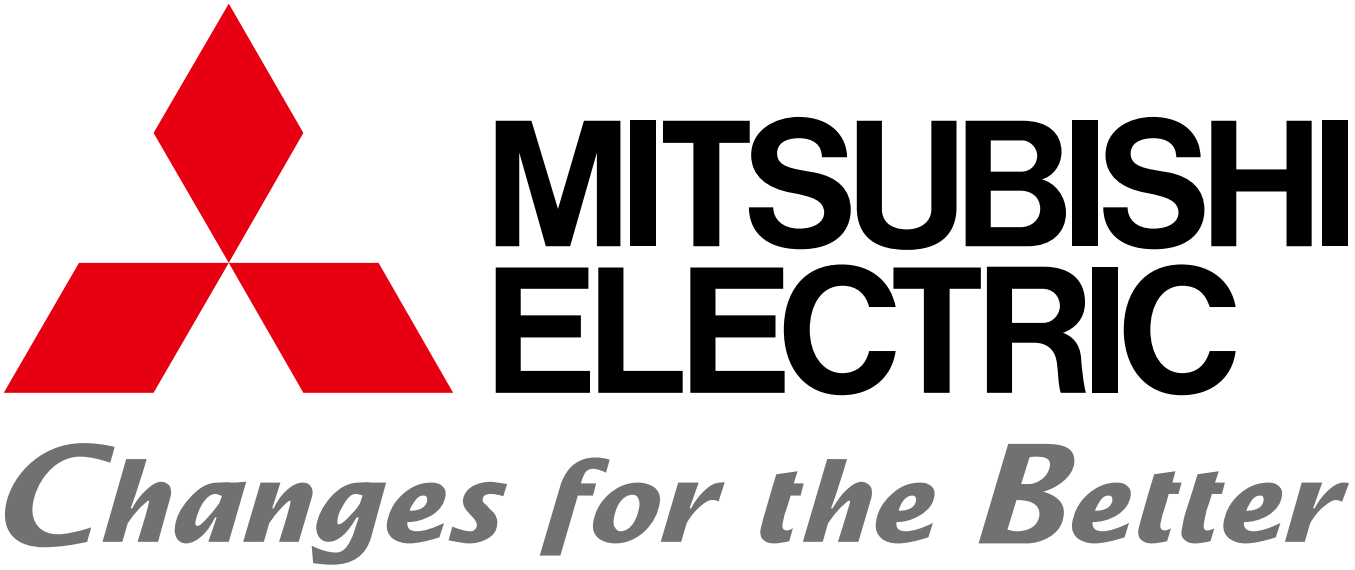


Discussion

- Are there other potential justification for the extension of the stream identification functions ?
  - Are there other (future) TSN applications that require the extension of the stream identification functions ?
    - DetNet encapsulation ?
- Is the proposed generic identification an acceptable item for a new project ?
  - If yes,
    - 802.1CB amendment ?
    - Included in another new standard ?

Thank you for your attention

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