

Hardware Timestamp Insertion to aid Certification

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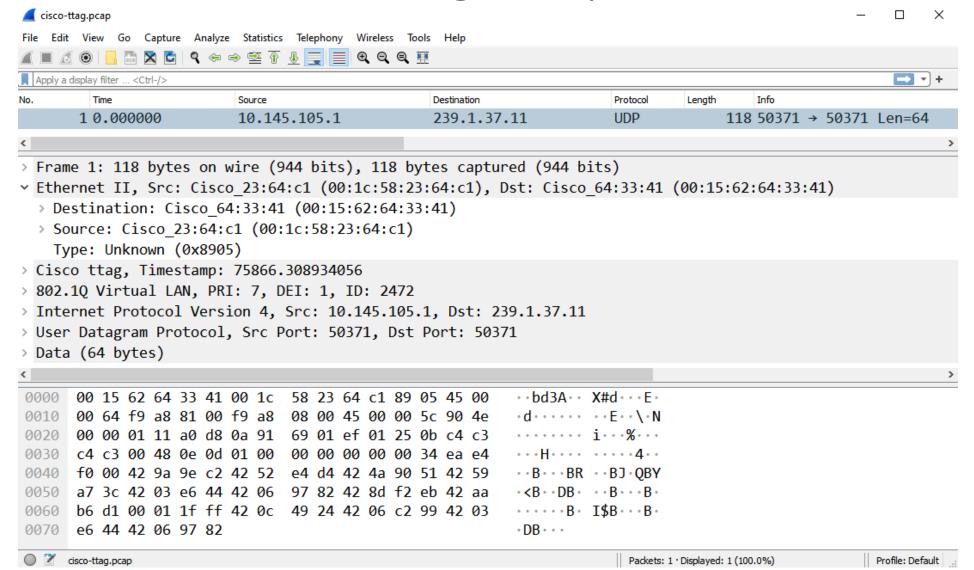
Objective

- Prior ethernet based time scheduled aerospace networks (such as TTP – Time Triggered Protocol) required specialized test infrastructure to capture timestamps "on the wire"
 - Ethernet timestamp is necessary but not sufficient
 - Complements software payload timestamp / metadata
- Propose hardware timestamp insertion by bridges and end points

Existing Implementations

- Vendor locked layer 1 schemes
 - Extends layer 1 preamble / FCS / trailer
- IEEE standardized layer 2 header chaining
 - i.e., Cisco ttag (Ethertype 0x8905)
- Timestamp insertion should be as close to wire as possible
 - After gate control

Wireshark Cisco ttag sample



Proposal

- Consider specifying timestamp insertion in aerospace profile
- Could be optional feature ("may"), but needs to be defined in the standard for interoperability.
- Last resort informative annex as guidance?
- Discussion/feedback?