

Establishing a joint project between SAE AS-1A2 and IEEE 802 to develop TSN profile for aerospace

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IEEE 802.1 TSN TG meeting at IEEE 802 Plenary session
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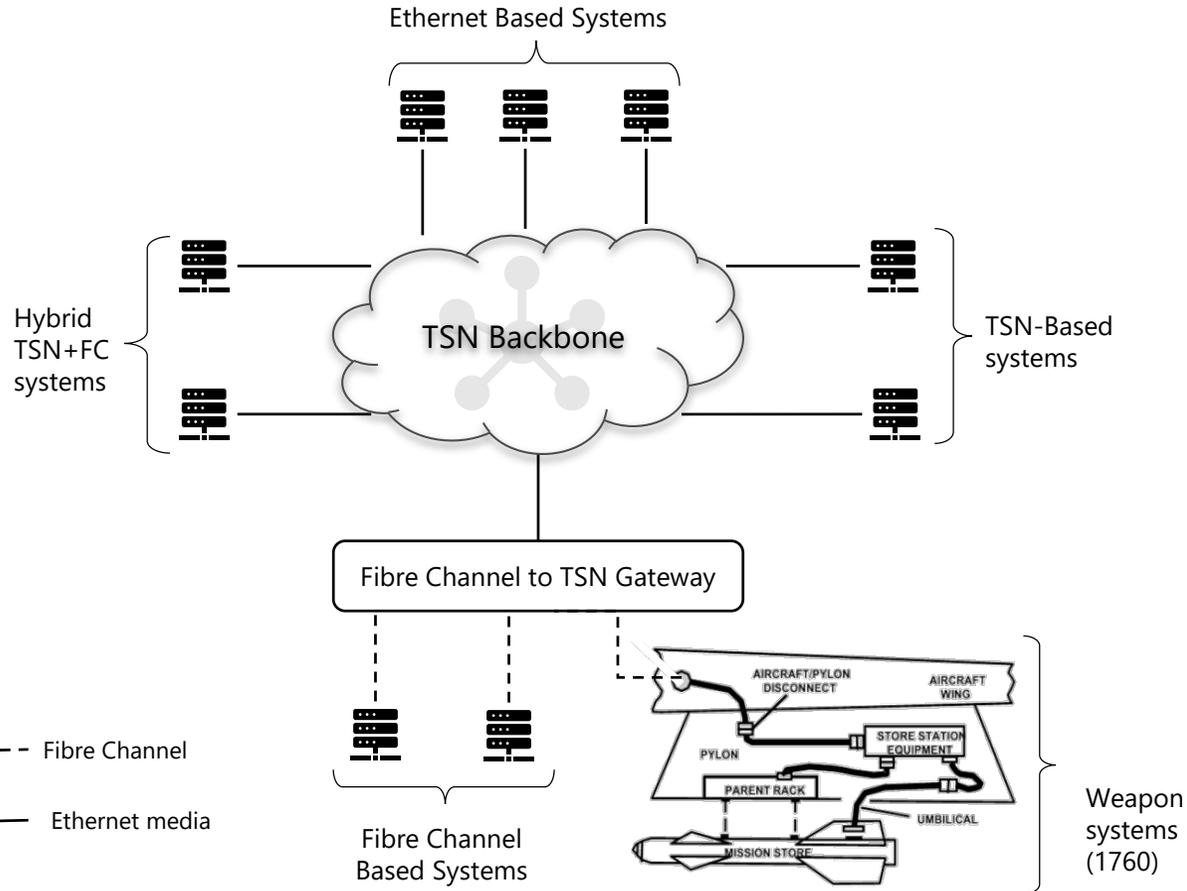
Background

Information from SAE AS-1 to IEEE 802.1 presentation:

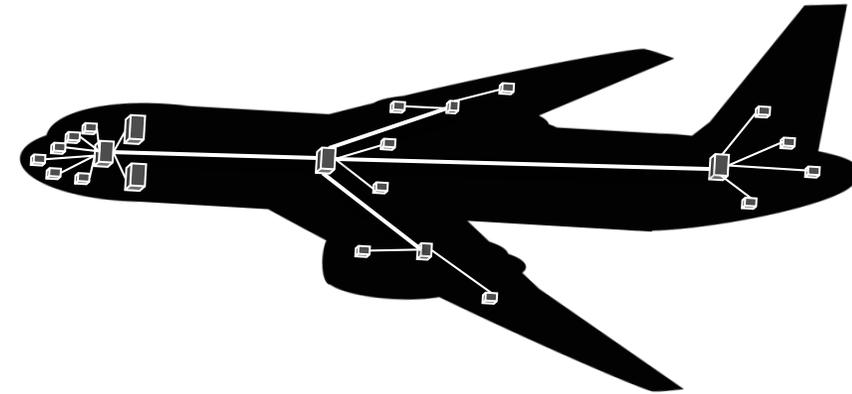
<http://www.ieee802.org/1/files/public/docs2020/new-Jabbar-TSN-for-Aerospace-0520-v01.pdf>

TSN Objectives in Aerospace Networks

Convergence of legacy buses on a deterministic, high performance backbone



Certifiable, standards-based, deterministic, high bandwidth network



Potential: Future aerospace networks primarily based on TSN

Current SAE AS-1A2 Standards Activity

Convergence of legacy buses on a deterministic, high performance backbone

AS6509 - CAIN

Title	C onverged A erospace I ntegrated N etwork
Objective	Converge Fiber Channel & COTS Ethernet into single network domain for military applications
Approach	Map FC and Ethernet on to TSN backbone
Status	In Progress; AS-1A2 Committee

Certifiable, standards-based, deterministic, high bandwidth network

AS6675 – ATP

A erospace T SN P rofile
Interoperable TSN networks suitable for aerospace applications
Profile TSN for aerospace applications
In progress; AS-1A2 Committee

TSN Profile for Aerospace

Objectives

- Meet aerospace network requirements (use cases and reqs in progress)
- Certifiability (reduced complexity and code)
- Interoperability
- Increased vendor base
- Lower “lifecycle” cost
- Security: neutral or positive impact
- Timely completion (AS6509 dependency, active programs and acquisitions)

Uniqueness

- Smaller number of use cases
- Smaller user community
- Smaller topologies
- Consensus driven by Integrators and certification
- Unique environment
- Long lifecycle (20yrs min, 50yrs expected)

Goal: Well defined TSN profile for aerospace – leading to cost effective certifiable solution for both civil and military use cases

Summary

- TSN is a good fit for next generation aerospace networks
- There is a need for TSN profile for aerospace
- SAE AS-1 group has domain expertise in avionics systems
- SAE AS-1A group has expertise in avionics networks
- IEEE 802.1 TSN TG has expertise in TSN and TSN profiles

Status of Organizational Agreements

Agreement is progressing to enable the joint project between SAE and IEEE SA

Proposal

Joint project between SAE and IEEE 802 to specify a “TSN Profile for Aerospace”

Proposed motion:

- 802.1 authorizes TSN Task Group electronic meetings to generate PAR and CSD for pre-circulation to the EC for a standard to specify TSN Profile for Aerospace.

Thank You!

