P802.1DP Editors Update

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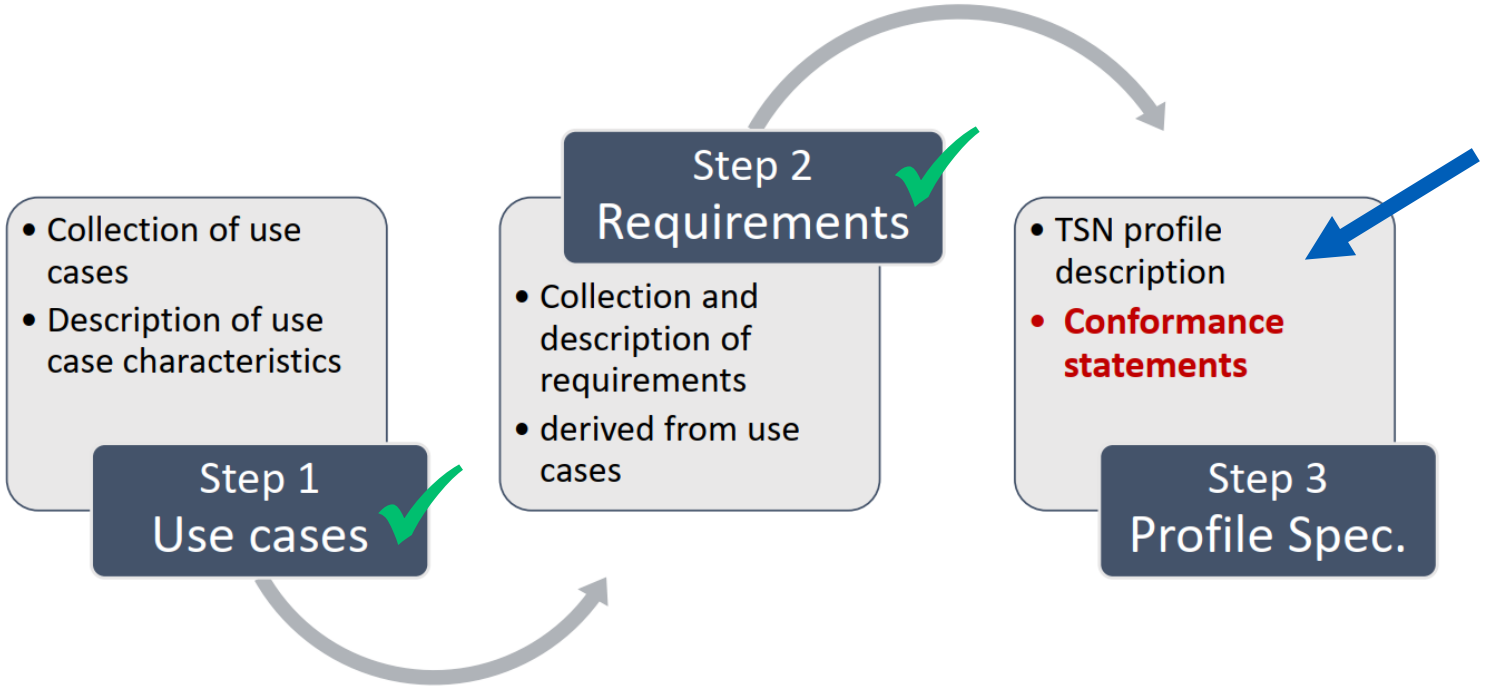
Objective

- ***Review progress of aerospace profile development***
- ***Status check***

Are we there yet?
TSN Aerospace Profile Development



The Group is at step 3: working through TSN features for the profile

Reference: IEEE 802.1 TSN Profiles, Janos Farkas
https://www.ieee802.org/1/files/public/docs2021/dp-farkas-TSN-profiles-0221-v01.pdf

Status Summary

- Use cases collected and requirements derived
- Two profile approach is being adopted – Synchronous Profile and Asynchronous Profile
- Functions needed for aerospace networks are identified
- TSN features/standards necessary to support the necessary functions are being discussed
- Attention is being paid to the safety critical nature of aerospace and regulatory certification needs
- Scope, direction, and approach are well aligned with the aerospace industry and committee participants
- Initial draft specification in progress

Aerospace Profile Progress

Functions	Profile Specification	Open Items/Issues
Time Synchronization	802.1AS-2020*	Availability and integrity
Egress Traffic Shaping	Credit Based Shaper Time Aware Shaper*	No significant open issues
Redundancy	Frame Replication and Elimination	FRER for integrity by sending multiple frames to the application
Ingress Policing	Per-Stream Filtering and Policing	No significant issues. Small differences in the filters compared to A664.
Stream Separation	Stream identification, transformation, and separation	Issue on the number of stream identification, policing, filtering entries needed to support aerospace isolation requirements
Configuration	Fully centralized, Yang models	CBS and Talker/Listener configuration. Device Data Sheets
Forwarding	Per-stream forwarding	TSN stream forwarding
Management and Monitoring	Required error, fault, and performance metrics	Not Yet Discussed

* Only applicable to Synchronous profile

Aerospace Profile Progress – Topics on Interim Agenda

Functions	Profile Specification	Open Items/Issues
Time Synchronization	802.1AS-2020*	**Availability, integrity, certifiability**
Egress Traffic Shaping	Credit Based Shaper Time Aware Shaper*	No significant open issues
Redundancy	Frame Replication and Elimination	Minor: FRER for integrity by sending multiple frames to the application
Ingress Policing	Per-Stream Filtering and Policing	No significant issues. Small differences in the filters compared to A664.
Stream Separation	Stream identification, transformation, and separation	**Number of bridge entries needed to support aerospace isolation requirements**
Configuration	Fully centralized, Yang models	**CBS and Talker/Listener configuration.** Device Data Sheets
Forwarding	Per-stream forwarding	**TSN stream forwarding**
Management and Monitoring	Required error, fault, and performance metrics	Not Yet Discussed

* Only applicable to Synchronous profile

References

- **Detailed use cases captured**
  https://www.ieee802.org/1/files/public/docs2021/dp-Jabbar-et-al-Aerospace-Use-Cases-0321-v06.pdf
- **Traffic Characterized**
  https://www.ieee802.org/1/files/public/docs2021/dp-Jabbar-et-all-Aerospace-Traffic-Characterization-0421-v02.pdf
- **Unique aerospace requirements captured**
  https://www.ieee802.org/1/files/public/docs2021/dp-zaehring-Introduction-to-Aerospace-Network-Certification-JAR25-1309-CS25-0321-v01.pdf
- **Two profile approach proposed**
  https://www.ieee802.org/1/files/public/docs2021/dp-Jabbar-two-profile-approach-0521-v01.pdf
- **Specification outline proposed**
  https://www.ieee802.org/1/files/public/docs2021/dp-jabbar-profile-outline-0721-v02.pdf
- **Profile features discussed**
  Shaping, redundancy, policing

Next Steps

- Address remaining features
  Calling for contributions
- Need proposal to address options and gaps.
  Calling for contributions
- Editor’s draft 0.1