

ARINC Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 15-006**
Global Cabin Wireless Access Point (CWAP) Operational Management (GCOM)
- 1.1 Name of Originator and/or Organization**
KID
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Suggested AEEC Group and Chairman**
Cabin System Subcommittee (CSS)
Dale Freeman, Delta Air Lines
- 2.2 Support for the activity (as verified)**
Airlines: Lufthansa, Delta
Airframe Manufacturers: Airbus, Boeing
Suppliers: KID, VT Miltope, LH-Technik, Aruba Networks, Thales, Panasonic, Rockwell-Collins, Lumexis, ZII, Cisco
Others:
- 2.3 Commitment for Drafting and Meeting Participation (as verified)**
Airlines: Lufthansa, Delta
Airframe Manufacturers: Airbus, Boeing
Equipment Suppliers: KID, VT Miltope, LH-Technik, Thales, Panasonic, Rockwell-Collins, Lumexis, ZII, Cisco
Others:
- 2.4 Recommended Coordination with other groups**
NIS
- 3.0 Project Scope (why and when standard is needed)**
The growing importance of wireless connectivity services pushes the passenger expectation for Gate-to-Gate connectivity into the aviation industry, but with a major challenge: "Country specific Telecom regulation compliance". Today there is no standardization of aviation WiFi in the form of CWAPs flying over different telecom "regions". This project aims to evaluate and standardize certifiable technical implementation solutions for Global CWAP Operational Management (GCOM) for use on regional or international flights which are aligned with major Telecom certification requirements (from ECC, FCC, etc.).
- 3.1 Description**
Local Telecom authorities require compliance of the WAP to their country specific rules in terms of used frequencies, radiated power and operational modes which the equipment suppliers must ensure in a fixed, non-spoofable WAP configuration (the "Country or Region Code") to get the local type certificate. A cabin WAP moving over different regions during its journey from origin to destination country needs appropriate adaptation which is currently very

challenging and in some cases even impossible, resulting in a disruption of WiFi service.

Today, the big global WAP suppliers (like Cisco, Motorola, Aruba, etc.) deliver fixed, region specific equipment, because WAPs normally do not move (dynamically) over regions.

This leads to more than ten different “region codes” or CWAP product variants. Figure 1 below illustrates the problem in detail:

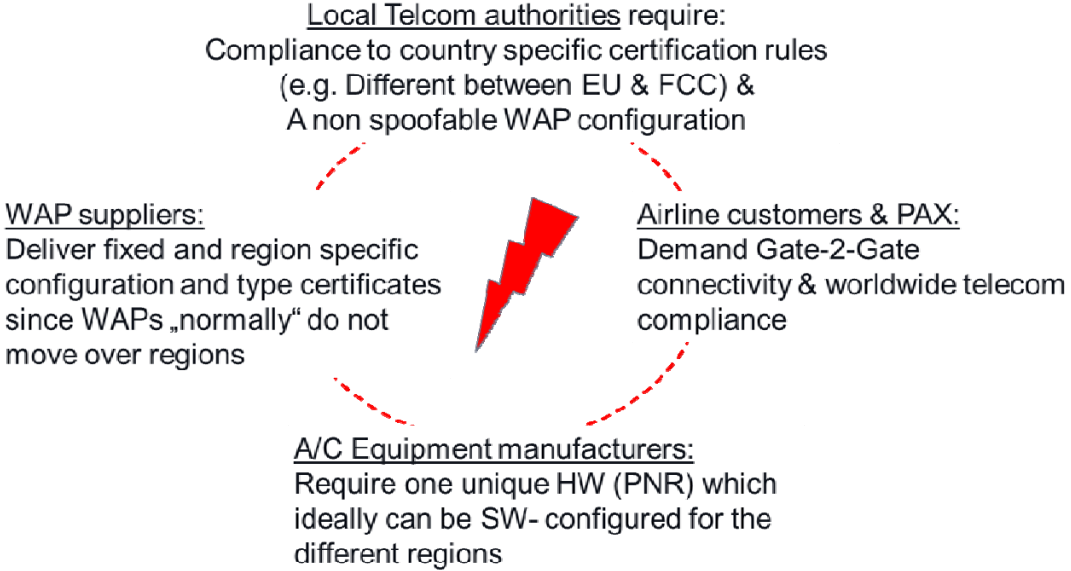


Figure 1

The current situation doesn't fit together and would require the support of a variety of product variants, costly and time consuming equipment re-certification in every customer country as well as unnecessary double qualification testing (e.g. EMI and electrical safety requirements for consumer products).

The purpose of the project is to develop and standardize certifiable technical implementation solutions for Global Management of Aviation CWAPs, in cooperation with big international WAP suppliers for discussion and approval by the US and EU Telecom authorities.

The GCOM feature is as well interesting for the WAP manufacturers itself, because it reduces their logistics and certification effort. The standardization of the aviation CWAP requirements will empower the suppliers to implement GCOM in their next product generations, to get easier access to the aviation market.

3.2 Planned usage of the envisioned specification

New aircraft developments planned to use this specification yes no

Specify: TBD

Modification/retrofit requirement yes no

Specify: Airlines are retrofitting wireless networks into their existing fleets to provide passenger and crew connectivity.

Needed for airframe manufacturer or airline project yes no

Specify: Boeing and Airbus airplane programs providing for connectivity

Mandate/regulatory requirement yes no

Program and date: No mandate

Is the activity defining/changing an infrastructure standard? yes no

Specify:

When is the ARINC Standard required? TBD

What is driving this date? TBD

Are 18 months (min) available for standardization work? yes no

If NO, please specify solution: Not applicable

Are Patent(s) involved? yes no

If YES please describe, identify patent holder: Not applicable

3.3 Issues to be worked

- Discuss and collect the major compliance requirements from FCC and ECC (ETSI) for CWAP global management
- Discuss and evaluate technical implementation solutions for Global CWAP Operational Management (Geo-position based intrinsic or external) without service interruption in cooperation with WAP suppliers Cisco, Motorola, Aruba, etc., define aircraft interface and data (API).
- Alignment with FCC and ECC technical compliance.
- Update ARINC 628P1, Section 17, Cabin Wireless Access Point (CWAP)

4.0 Benefits

4.1 Basic benefits

Operational enhancements yes no

For equipment standards:

(a) Is this a hardware characteristic? yes no

(b) Is this a software characteristic? yes no

(c) Interchangeable interface definition? yes no

(d) Interchangeable function definition? yes no

If not fully interchangeable, please explain: _____

Is this a software interface and protocol standard? yes no

Product offered by more than one supplier yes no

Identify:

4.2 Specific project benefits (Describe overall project benefits.)

The purpose of the project is to develop and standardize certifiable technical solutions for an Global CWAP Operational Management Feature for Aviation CWAPs in cooperation with the big WAP suppliers for discussion and approval by the US and EU Telecom authorities.

The project should be done to essentially reduce the required development, logistics, certification and maintenance efforts for CWAP products, to take pace

with the WiFi technology upgrades and provide the Airlines and passengers a reliable solution for a real Gate-to-Gate connectivity in the future.

4.2.1 Benefits for Airlines

Undisrupted WiFi service for crew operations and passengers that are offerable over different regions: Real Gate to Gate connectivity.

Choice between vendors by standardized interfaces and provisions

Lower Capex, lower logistics and maintenance effort by standardized equipment, Asset value kept when aircraft is sold.

4.2.2 Benefits for Airframe Manufacturers

Standardized products from a variety of suppliers

CWAP Line-fit offerability (since no restrictions for use in different regions)

4.2.3 Benefits for Avionics Equipment Suppliers

Use of reliable and mature COTS platforms from known international vendors

Reduced development, logistics and certification effort

Faster introduction of new WiFi technology

Standardized equipment for all aircraft manufacturers

Higher volumes and reduced equipment costs

5.0 Documents to be Produced and Date of Expected Result

Supplement 8 to ARINC 628P1, CWAP definition, Update of chapter “Country Specific Rule Compliance”

5.1 Meetings and Expected Document Completion

The following table identifies the number of meetings and proposed meeting days needed to produce the documents described above.

Activity	Mtgs	Mtg-Days (Total)	Expected Start Date	Expected Completion Date
Supplement 8 to ARINC 628P1	4	12	Nov 2015	March 2017

Meetings reflect ongoing CSS activities responsible for multiple ARINC Standards. In addition to the proposed meetings identified above, the CSS will have virtual meetings to develop Supplement 8.

6.0 Comments

None.

6.1 Expiration Date for the APIM

April 2017

Completed forms should be submitted to the AEEC Executive Secretary.