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:
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.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Mtgs</th>
<th>Mtg-Days (Total)</th>
<th>Expected Start Date</th>
<th>Expected Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplement 8 to ARINC 628P1</td>
<td>4</td>
<td>12</td>
<td>Nov 2015</td>
<td>March 2017</td>
</tr>
</tbody>
</table>

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 AECC Executive Secretary.*