



To NIS Subcommittee **Date** December 6, 2016
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Subject **Meeting Announcement**
Network Infrastructure and Security (NIS) Subcommittee

Chairman Steve Arentz, United Airlines

When January 24-26, 2017 (Tuesday – Thursday)
from 0900 to 1700

Where Meeting Location/Hotel Information

Hilton Cocoa Beach Oceanfront
Sand Dollar/Sundial Room
1550 N. Atlantic Avenue
Cocoa Beach, Florida 32931 USA

tel + 1 321 799-0003

fax + 1 321 799-0344

<http://www.hiltoncocoabeach.com>

A special rate of **\$149.00** per night has been negotiated. Complimentary Wi-Fi and parking are included.

The hotel reservation cutoff for the group rate and amenities is **January 7, 2017**.

To reserve your room online at the negotiated rate,

1. Go to: <http://www3.hilton.com/en/hotels/florida/hilton-cocoa-beach-oceanfront-CCBCHHF/index.html>
2. Input your arrival and departure within the range of January 23 to January 27, 2017.
3. Click on the blue text link to “Add special rate codes”
4. Input “SAEITC”
5. Click the button to Check Rooms & Rates

If you chose to call the hotel directly, you will need to mention the group rate of “SAEITC”.

Travel information is provided later in this meeting announcement.

ARINC Project Initiation/Modification (APIM)

1.0 Name of Proposed Project **APIM 17-001**

Step 1) ARINC Project Paper xxx: Roadmap for IPv6 Transition in Aviation

Step 2) Update ARINC Standards:

Future update to ARINC Specification 664P3: Aircraft Data Network Part 3 Internet-based protocols and services

Future update to ARINC Specification 822A: On-Ground Aircraft Wireless Communication

1.1 Name of Originator and/or Organization

Airbus

2.0 Subcommittee Assignment and Project Support

2.1 Suggested AEEC Group and Chairman

Network Infrastructure and Security (NIS) Subcommittee (TBC)

United Airlines: Steve Arentz

2.2 Support for the activity (as verified)

Airlines: TBD

Airframe Manufacturers: Airbus, TBD

Suppliers: TBD

Others: TBD

2.3 Commitment for Drafting and Meeting Participation (as verified)

Airlines: TBD

Airframe Manufacturers: Airbus, TBD

Suppliers: TBD

Others: TBD

2.4 Recommended Coordination with other groups

Data Link User Forum

Data Link Subcommittee

Internet Protocol Suite for Aeronautical Safety Services Subcommittee (IPS)

SAI Subcommittee

3.0 Project Scope (why and when standard is needed)

3.1 Description

Current ARINC Standards for airborne equipment and air-ground interoperability are based on IP (Internet Protocol) Version 4 (e.g. ARINC 664, ARINC 822A, etc.)

Nevertheless, IP Version 6 deployment is growing in all domains:

- IPv4 addresses are all distributed in major part of the world
- Addresses can be obtained on a second-hand market only, currently growing

- More than 10% of worldwide traffic is now full IPv6 (2016) against less than 1% 4 years ago (2012)

Current aircraft systems are IPv4 capable only, when ground equipment migration to IPv6 could impact aircraft to ground communication (service provider network to connect radios, ground network services to exchange data). Airborne communication systems will need to be modified to ensure connectivity with a mixed IPv4/IPv6 ground infrastructure.

Even if the exact migration date is not known, IPv6 is coming and support could be mandatory tomorrow (e.g. when an airline will not be able to get a public IPv4 address for its ground servers)

A two steps approach is proposed:

- Step 1: A common IPv6 strategy for aircraft connectivity should be defined to:
 - o Anticipate now the capability in the coming product developments
 - o Better manage the transition (including IPv4 remaining addresses and “second hand market”), monitor the situation and maintain roadmaps
 - o Be ready when the sunset date is reached
- Step 2: Update the relevant ARINC Standards for a full IPv6 support.
 - o ARINC Specification 664
 - o ARINC Specification 822A
 - o Others to be confirmed in Step 1

Notes:

- IPS (IP protocol for safety services) is expected to be IPv6 only
- Non-safety air-ground network interface (PP848 will need to support IPv6)

3.2 Planned usage of the envisioned specification

Note: New airplane programs must be confirmed by manufacturer prior to completing this section.

- New aircraft developments planned to use this specification yes no
 Airbus: (aircraft & date)
 Boeing: (aircraft & date)
 Other: (manufacturer, aircraft & date)
- Modification/retrofit requirement yes no
 Specify: (aircraft & date)
- Needed for airframe manufacturer or airline project yes no
 Specify: (aircraft & date)
- Mandate/regulatory requirement yes no
 Program and date: (program & date)
- Is the activity defining/changing an infrastructure standard? yes no
 Specify (IPv4 is envisioned to replace IPv6 in the medium term)

When is the ARINC standard required? _____(month/year) _____

What is driving this date? _____ (state reason) _____

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

If NO, please specify solution: _____

Are Patent(s) involved? yes no

If YES please describe, identify patent holder: _____

3.3 Issues to be worked

Step 1:

- Definition of IPv6 strategy
- Draft recommendations to answer Airlines questions on IPv6
- Identification of requirements:
 - o Mixed V4/V6 capability
 - o Data security requirements
 - o Identification of standard to be updated for a full support of IPv6

Step 2:

- Update ARINC 664 to support IPv6 compatible nodes
- Update ARINC 822A to support a full IPv6 Airport infrastructure
- Other ARINC Standards TBD

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

Specify: _____

Product offered by more than one supplier yes no

Identify: (company name)

4.2 Specific project benefits (Describe overall project benefits.)

4.2.1 Benefits for Airlines

The aircraft being now a node in the overall network, a full IPv6 capability will simplify the configuration and management of the end-to-end communication services. A full IPv6 capability may also offer better performances than IPv4-IPv6 mixed solutions (encapsulation or translation).

4.2.2 Benefits for Airframe Manufacturers

Similar to airline benefits

4.2.3 Benefits for Avionics Equipment Suppliers

Similar to airline benefits

5.0 Documents to be Produced and Date of Expected Result

TBD

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
Prepare IPv6 Roadmap Document (Step 1)	3	3	May 2017	May 2018
Update ARINC Standards (Step 2)	TBD	TBD	TBD	TBD

This effort will be discussed in monthly web conferences. A portion of each Subcommittee meeting will be dedicated to preparing an IPv6 Roadmap (full complement of meetings shown). This APIM will be updated for Step 2.

6.0 Comments

(Insert any other information deemed useful to the committee for managing this work.)

6.1 Expiration Date for the APIM

October 2018

Completed forms should be submitted to the AEEC Executive Secretary.

Instruction To accurately plan for your attendance, please notify ARINC Industry Activities of your intention to attend by registering online at: <http://www.aviation-ia.com/events/>.
The meeting is open to all interested parties. Individuals requesting time on the agenda should contact Vanessa Mastros. Any material intended to be circulated prior to the meeting should be submitted before **January 13, 2017**. The agenda will be finalized one week prior to the meeting.

Meeting Objectives

The objectives of the meeting are to:

1. Review proposed content for inclusion in Draft 1 of Supplement 2 to ARINC Report 842: Guidance for Usage of Digital Certification
2. Review proposed content for inclusion in Draft 1 of **ARINC Project Paper 848: Broadband Network Interface for Non-Safety Services**
3. Reach industry consensus on the content of **ARINC Project Paper 852: Guidance for Security Data Logging in an IP Network Environment**
4. Review APIM 17-001 proposing a roadmap for the deployment of IPv6.

Meeting Schedule

January 24, 2017

- Introductions, Agenda Review
- Policies and Procedures
- ARINC Report 842, Supplement 2
 - Review Suggested Inputs Received
 - Prepare Draft 1
 - Action Item Review

January 25, 2017

- ARINC Project Paper 852
 - Review Comments and Proposed Inputs
 - Prepare Draft 6
 - Progress Assessment/Adoption Action Readiness Review
- Draft APIM 17-001 - IPv6
 - Briefing: Luc Emberger, Airbus
 - Discovery Discussion
 - Framework
 - Level of Effort
 - Review APIM 17-001 in anticipation of future work on IPv6

January 26, 2017

- ARINC Project Paper 848
 - Discuss and Review Suggested Input
 - Prepare Draft 1 of Project Paper 848
- Subcommittee Work Plans/Future Meetings
- Action Item Review

Travel Information

Please arrange your own ground and air transportation.

The Hilton Cocoa Beach Oceanfront Hotel is about 45 miles from the Orlando, Florida Airport. There is not a courtesy shuttle to the hotel.

There are, however, a few transportation services that provide a shuttle between Orlando and Cocoa Beach.

The following are a few that serve this route:

- <http://www.cbshuttle.com/cocoa-beach-rates.htm>
- <http://www.aroundtheclockusa.com/1601300.html>
- <http://www.cocoabeachshuttle.net/>

Orlando International Airport

Distance from hotel: 45 miles

Drive time: 45 minutes

Directions: Take SR 528 East (Bee Line) for 40 miles until it becomes A1A South at Port Canaveral. Go 5 miles on A1A South through Cape Canaveral and into Cocoa Beach. The Hilton hotel is located 1 mile south of Ron Jon's and is on the left.

Note: SR 528 (Bee Line) is a toll road, so you will need to have **Sun Pass** or cash.

Melbourne International

Distance from hotel: 25 miles

Drive time: 40 minutes

Directions: Turn left onto Nasa Blvd to US 1; turn left onto US 1 North to SR 404 (Pineda Cswy). Turn right onto 404 East to Hwy A1A; turn left onto A1A North and go 8 miles. The Hilton hotel is located on the right side of the road.

cc

EFB, KSAT, SDL