

March 25, 2009

## Report of the AOC **Teleconference 44** held on **24 March 2009**

In attendance were:

Dirk Zschunke, Lufthansa	Robert Popov, Lufthansa Systems
Frederic Durand, Airbus	Ulf Jahr, Lufthansa Systems
Beka Teklu, Boeing	Mike Russo, IA Staff
Bruce Arnold, Data Systems & Solutions	Doug Mikus, Boeing

### **Introduction**

Dirk Zschunke moderated a 2-hour teleconference concerning the development of draft Supplement 1 to ARINC Standard 633. The objective of the discussion was to develop the presentation of the AOC SC report to the 2009 AEEC General Session to be made on 31 March in Minneapolis, MN. Discussion of the working papers regarding Strawman 23 was deferred as the group expended all of its time on the report.

### **Agenda**

<b>Item</b>	<b>Topic</b>
1	Status Report
2	AOC Report to AEEC
3	Next Meeting (with ELPT?)
4	Working Papers from Telecon 43
5	Action Items status
6	Close

### **Review of Draft Presentation**

Dirk led the participants in a review of the draft presentation to be made to the AEEC Executive Committee at the upcoming AEEC General Session. The report will highlight the loss of backward compatibility between Version 1 of the eFF schema (ARINC 633) and Version 2 (draft Supplement 1 to ARINC 633). It is worthy of note that the primary area of impact is in the FlightPlan schema, a part of the eFF. A considerable amount of time was devoted to clarifying the alternatives before the AOC SC and explaining the implications of these choices. A timeline was developed as well. A copy of the presentation is attached.

### **Schedule: Next Telecon/Next Meeting**

Airbus has an action to deliver a draft revision of Strawman 23, structured to be backward compatible with Version 1 of ARINC 633 eFF schema on 10 April.

The next AOC telecom (AOC Telecon 45) will be held on the normal schedule of the second Tuesday of each month: 14 April. The objective will be complete the disposition of outstanding

working papers on Strawman 23 and to review Strawman 23 at a detail level. There may be some discussion of the Airbus Strawman as well. The ATA ELPT has asked for a joint meeting in the June time frame in Seattle, Washington. However, during the December 2008 meeting it was proposed to have the next AOC meeting be held in Central Europe. Due to the long discussion on the presentation, no decision was taken. The issue will be discussed on at telecom 45.

The next telecom will be AOC Telecon 46 to be held as previously scheduled (during Telecon 43) on 21 April. The objective will be to evaluate the Airbus proposal for modifications to the schema that will increase its backward compatibility. A final recommendation to support continued development of Strawman 23 as is or to adapt Strawman 23 to a format conforming to the Airbus requirements for backward compatibility is to be made by 30 April.



## AOC message standardization

March 30-31, 2009 – Minneapolis, Minnesota



### AOC Subcommittee

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#### Scope:

To define standardized air-ground and ground-ground messages (Project Paper 633) for CMU and EFB hosted AOC applications, that can be used by ...

- airframe manufacturers, (the original driver was the Airbus A380)
- EFB or avionics vendors

... to allow easy integration of ground and onboard IT.

## AOC Subcommittee

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### **Benefit:**

Through the standardization of data structures, it becomes easier to develop applications, opening up the EFB software market.

By standardizing the full ACARS and XML/IP message stack, it is possible to supply vendor "A" EFB with data from vendor "B" without help or tools from company "C".

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## XML Coordination: AEEC, ATA, and IATA

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For eFF (ARINC 633) and eLB (ATA),

- AEEC developed **eFF/FlightPlan** XML Elements and Attributes
- ATA developed **eLB** XML Elements and Attributes
- The AEEC AOC SC has met jointly with the ATA Electronic Logbook Project Team (ELPT) twice to harmonize the assignments and their content. Another meeting is being contemplated.
- AOC SC coordination with ATA and IATA is underway regarding Fueling applications.

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## AOC Standardization Project Schedule

**APIM:** 04-008

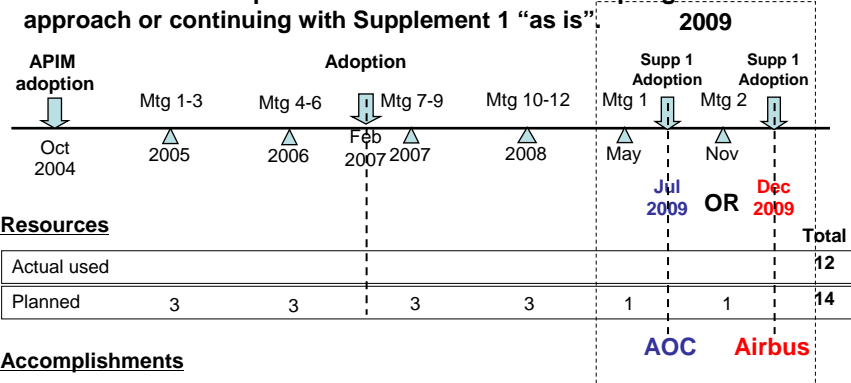
Progress: eFF/eLB & Fuel Coordination	<u>Yes</u>
Schedule compliance (set by SC)	<u>No</u>
Resources/Budget as planned	<u>Yes</u>
APIM scope / compliance (new apps)	<u>Yes</u>
Issues / Challenges / Risks	<b><u>One</u></b>
Consensus in Subcommittee	<b><u>Not Yet</u></b>
Involvement of other IA group(s)	<u>Yes</u>
ExCom adoption requested	<u>No</u>

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## Progress/Schedule/Resources

### Schedule

The SC has set 30 April at the decision date on accepting the Airbus approach or continuing with Supplement 1 "as is"



The SC has developed numerous clarifications and improvements that are recognized by all as beneficial. Revisions nearly complete.

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## Issue Description

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**Transition from one eFF software version to its replacement version is NOT seamless as anticipated. Airbus agrees with all functional changes in Supplement 1. Airbus has asked for:**

- 1) No XML Elements are to be removed**
- 2) No new (added) Elements can be 'Mandatory'**
- 3) Structural improvements are to be deferred.**

**Airbus asked for time to develop an alternative to the changes in Supplement 1 in a format that would be backward compatible.**

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## Background

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**Initially the intent was to retain backward compatibility in Supplement 1. In March, 2008, the AOC SC recognized challenges to retaining backward compatibility:**

- The structure of the first version was not efficient**
- The schema is incomplete: various scenarios are not supported**
- Certain schema errors need to be corrected**
- Numerous Mandatory new elements being defined**

**Airbus was not present for the March 2008 decision, but raised the compatibility issue in January 2009 with a focus on suppressed elements and schema structure, particularly relative to the FlightPlan.**

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## Resolution Considerations

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**Airbus A380 customers (e.g., Emirates and Singapore) are using the V1 eFF application. The next full update is planned for 2012.**

**Boeing is currently developing its eFF application per Supplement 1 (V2). Any significant revision or delay will adversely impact them.**

**Other Application suppliers and Data suppliers are developing products for delivery based on A633. Supplement 1 (V2) is their preferred basis for development.**

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## Issue Resolution/Status

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**Alternatives for resolution:**

- 1. Accommodate Airbus proposal**
  - **Alternative structure derived from V1**
  - **Alternative treatment of suppressed elements**
  - **Alternative treatment of Mandatory elements**
- 2. Complete Supplement 1 as planned**
- 3. Define item 1 above as Supplement 1 and item 2 as Supplement 2**

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## Implications

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### If Supplement 1 is completed “as is”:

- The completion date will be set as July, 2009
- The AOC SC must develop XSLT
- Time and cost added to existing users and products to adopt the new structure

### If the Airbus plan is followed:

- A new completion date for Supplement 1 (Strawman delivered in May 2009) will be December, 2009
- Clarification of ambiguous definitions is deferred until a future Supplement.
- Application and Data suppliers developing to Supplement 1 will be impacted

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## Project Schedule

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### Planned Meetings 2009:

2 meetings per year (formerly 3) of 3 days each

- Focus Supplement 1 work on omissions, corrections and clarifications to ARINC 633; complete new applications
- The level of effort is in excess of our initial projection.
- In 2008 the plan was to adopt Suppl 1 today. Draft Supplement 1 is now pending resolution of Airbus objections to impact on existing installed software.

### Coordination with other groups:

- Work is ongoing with the ATA ELPT including joint meetings.
- Coordination with IATA on Fueling is being performed on a liaison basis.

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## A Final Comment

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The implementation of the AOC applications relies on the timely definition of a standardized wireless/(physical) IP **Transport Layer** and application interface definition (per the MAGIC and AGIE APIMs). Without this work, the goal of interchangeability between the airborne and the ground entities can not be fully achieved. The AOC SC has noted some omissions in the cumulative architecture and intends to influence these activities to accommodate their needs. Currently Use Cases are being developed to transfer this information.

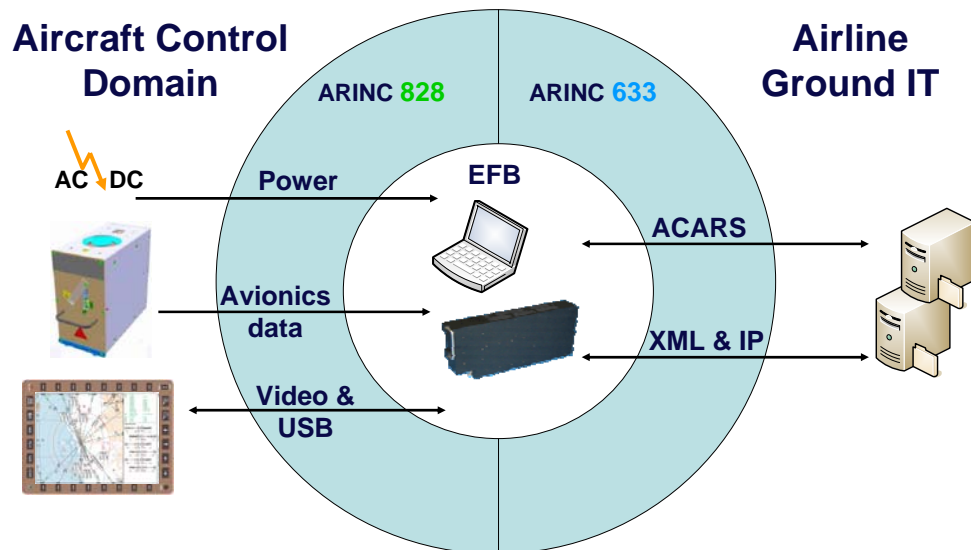
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## Questions?

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## ARINC 828 & 633 EFB connections



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## Fuel Coordination: AEEC, ATA and IATA

- For refueling,
- AEEC developed air/ground messages
  - can be used ground-ground as well
- IATA defined the transaction record (fuel bill)
  - intended to be a ground-ground message
- ATA is defining a maintenance record
  - to be used as ground-ground

