



## Software Metrics Working Group

### Standardization of Avionics Software Performance and Reliability Metrics

January 17, 2017

# AEEC Software Metrics Working Group

- ▶ Software Metrics Working Group of the SAI Subcommittee
  - Chairman: Reinhard Andreae, Lufthansa: Reinhard.Andreae@dlh.de
- ▶ APIM 16-001 calls for the development of software reliability metrics that will improve the performance of avionics software, i.e., software equivalent of MTBF or MTBUR.
- ▶ Goal: Define measurable parameters that can be used to improve the reliability and overall performance of avionics systems.
  - Software type inclusive, e.g., software used in Aircraft Control (AC), Airline Information Systems (AIS) and Passenger Information and Entertainment Systems (PIES) domains.
- ▶ Subscribe to SAI mail list:
  - <http://mailman.sae-itc.org/mailman/listinfo>
- ▶ ARINC: Paul Prisaznuk: [pjp@sae-itc.org](mailto:pjp@sae-itc.org)

# AEEC Software Metrics Working Group

- ▶ Phased approach as follows:
- ▶ Phase 1: “Define the Problem Space” -- December 2017
  - Investigate categories of software failures to monitor, define potential software quality metrics, and agree to the scope of the proposed standard.
  - Phase 1 will identify the proposed metrics and provide recommendations as to how they might be captured.
  - APIM 16-001 will be updated at the end of Phase 1 - status report provided to AEEC Executive Committee
- ▶ Phase 2: Prepare the ARINC Standard

# Organization and Meeting Plan

<b>Product/Activity</b>	<b>Mtgs</b>	<b>Mtg-Days (Total)</b>	<b>Expected Start Date</b>	<b>Expected Completion Date</b>
Phase 1 kickoff / work plan	Three 2-day meetings	6	Jan 2017	Dec 2017
Phase 2 (TBD) as determined by Phase 1	TBD			

**Next web conference: Tues, March 7**

**First in-person meeting: 3 days**

Frankfurt, Germany - hosted by Lufthansa

March 14-16, 2017

# AEEC Software Metrics Working Group

▶ Briefings for today:

- [Boeing – Launa Molsberry](#)
- [Etihad – Marc-Christian Reichle](#)
- [GE Aviation – Matt Rossmiller](#)
- [Honeywell – Tom Snider and Amy Rahr](#)
- [Rockwell-Collins – Johnson Wang and Richard Hackett](#)
- Others TBA

## ARINC point of contact ...

**Paul J. Prisaznuk**

Executive Secretary & Program Director  
Airlines Electronic Engineering Committee (AEEC)  
ARINC Industry Activities

1-240-334-2579 (desk)

1-443-254-0528 (cell)

[pjp@sae-itc.org](mailto:pjp@sae-itc.org)

[www.aviation-ia.com/aeec](http://www.aviation-ia.com/aeec)

# Thank You

Subscribe to SAI mail list: <http://mailman.sae-itc.org/mailman/listinfo>

# Backup Slides

# Industry Editors and the AEEC Consensus Process

- ▶ *Industry Editors* are an important extension of the ARINC Industry Activities staff. Drafts are prepared using established guidelines that ensure due process.
- ▶ You are encouraged to *support your Industry Editors* by providing timely inputs, participating in web conferences, etc.
- ▶ In return the Industry Editors provide material for review that *reflects the consensus* of industry.
- ▶ These drafts are *subject to review* by the Subcommittee and/or Working Group.





# **AEEC | AMC 2017**

**May 1-4, 2017**  
**Milwaukee Convention Center**  
**Hilton Hotel**



**AEEC Executive Committee**  
 Chairman – James McLeroy, UPS  
 Executive Secretary, Paul Prisaznuk



# 12 Projects Approved - AEEC Mid-Term Session

1. APIM 16-001 - New ARINC 6xx, Standardization of Avionics Software Performance and Reliability Metrics
2. APIM 16-009 - ARINC 653, Application Software Standard Interface
3. APIM 16-010 - ARINC 620, Datalink Ground System Standard and Interface
4. APIM 16-011 - New ARINC 8xx, Next Generation Cabin Data Bus (ARINC 485 replacement)
5. APIM 16-013 - ARINC 743, GNSS Sensor, GNSS Landing System Sensor Unit (GLSSU) and ARINC 755 MMR
6. APIM 16-014 - New ARINC 8xx, Broadband Network Interface for non-Safety Services
7. APIM 16-015 - New ARINC 8xx, eEnabled Aircraft Ground System for Managing and Distributing Software Parts
8. APIM 16-007A - ARINC 622, ATS Data Link Applications over ACARS – *ATS Winds for Advanced Interval Management*
9. APIM 13-014B - ARINC 800, Cabin System Connectors and Cables
10. APIM 12-004C - ARINC 664, Fiber Optic 10 GbE Cabling and Connectors for Cabin
11. APIM 08-011B - New ARINC 836A, Cabin Standard Enclosures
12. APIM 10-013B - ARINC 631, VDL-2 Implementation Provisions

**NOTE: This list yields 16 additional ARINC Standards in work (43 + 16 = 59)**



Thank You