

ARINC Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 17-010A**
Supplement 19 to ARINC Specification 429: Digital Information Transfer System (DITS) Part 1 and,
Supplement 17 to ARINC Specification 429: Digital Information Transfer System (DITS) Part 2, Discrete Word Data Standards
- 1.1 Name of Originator and/or Organization**
AEEC Executive Secretary
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Suggested AEEC Group and Chairman**
Group: SAI Subcommittee - Staff activity using email and internet coordination
- 2.2 Support for the activity**
Airlines: **(AEEC ExCom Approved – October 18, 2018)**
Airframe Manufacturers: TBD
Suppliers: TBD
Others: TBD
- 2.3 Commitment for Drafting and Meeting Participation**
Airlines: TBD
Airframe Manufacturers: TBD
Suppliers: TBD
Others: TBD
- 2.4 Recommended Coordination with other groups**
AeroMACS, AGCS, DLK, GNSS, others as determined by new ARINC 429 labels
- 3.0 Project Scope**
- 3.1 Description**
ARINC 429 is the most widely used data transfer medium in aviation. The first version of ARINC 429 was released in 1977 as the so-called “digital aircraft” emerged in the front lines of service. ARINC 429 is a unidirectional bus; two bus pairs comprise a typical ARINC 429 data bus. The bus is viewed to be highly-reliable and relatively easy to implement in all types of avionics equipment. ARINC receives a steady flow of requests to add new ARINC 429 labels and the associated word formats. These requests typically come from airframe and avionics suppliers. They tend to be related to new airplane development

programs and retrofit programs. These changes are considered normal expansion of the standard. These changes do not change the fundamental protocol, the clocking, or any physical layer characteristic related to ARINC 429 interoperability.

3.2 **Planned usage of the envisioned specification**

- New aircraft developments planned to use this specification yes no
 Specify: Future aircraft
- Modification/retrofit requirement yes no
 Specify: future retrofit
- Needed for airframe manufacturer or airline project yes no
 Specify: Airbus, Boeing and other airplane programs
- Mandate/regulatory requirement yes no
 Program and date: No mandate
- Is the activity defining/changing an infrastructure standard? yes no
- When is the ARINC Standard required? 2018
- What is driving this date? The desire for clear communication with industry
- 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**

Update of ARINC Specification 429 is an AEEC staff activity:

- Collect and organize industry inputs from ARINC website and email
- Consider Global Aircraft Tracking (GAT) inputs as well as inputs from related ARINC Standards
- **Include GAT Discrete Word Definitions for ADT Trigger (Label 202) and Distress Transmitter Status (Label 201)**
- **Survey ARINC Standards produced since the last update to Part 2 (2004) for Discrete Words that should be captured in ARINC 429**
- Determine the appropriateness of requests.
 - Avoid ARINC 429 label duplication
 - Check word formats, bit assignments, LSBs, MSBs, etc. for accuracy
 - Cross-check with ARINC 700-series documents
- Arrange new material in the existing ARINC 429 document structure
- Post drafts to ARINC website and coordinate with industry
- Circulate final draft for comment in advance of the AEEC General Session and solicit comments

- Resolve any final comments over web conference and/or email coordination
- No in-person meetings necessary

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: Not applicable

Is this a software interface and protocol standard? yes no

Specify: ARINC 429

Product offered by more than one supplier yes no

Identify: TBD

4.2 **Specific project benefits (Describe overall project benefits.)**

4.2.1 **Benefits for Airlines**

The benefits to airlines are visible in the form of a standardized avionics data bus interface. This benefit is evident in new aircraft development and in retrofit.

4.2.2 **Benefits for Airframe Manufacturers**

Airframe manufacturers' benefit from standardized interwiring in the production of aircraft.

4.2.3 **Benefits for Avionics Equipment Suppliers**

The benefit to avionics equipment suppliers is to re-use a standardized bus interface on a multitude of avionics products and systems.

5.0 **Documents to be Produced and Date of Expected Result**

Supplement 19 to ARINC Specification 429: Digital Information Transfer System (DITS) in April 2018.

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
Supp 19 to ARINC 429 Part 1	0	0	Oct 2017	April 2018
Supp 17 to ARINC 429 Part 2	0	0	Oct 2018	Apr 2019

6.0 Comments

None

6.1 Expiration Date for the APIM

October [2019](#)

Completed forms should be submitted to the AEEC Executive Secretary and Program Director, Paul J. Prisaznuk (pjp@sae-itc.org)