AEEC

Together "We Set the Standard."

To	CDS Subcommittee	**Date**	January 13, 2020
From	Larry A. Hesterberg *larry.hesterberg@sae-itc.org* tel: +1-240-334-2586	**Reference**	20-999/SMA-162 lth

Subject **Meeting Announcement**
Cockpit Display Systems (CDS) Subcommittee

Co-Chairmen Brian Gilbert, Boeing
Sofyan Su, Airbus

When March 9-13, 2020, from 0900 to 1700

Host Thales is hosting the CDS Subcommittee meeting at their facility in Bordeaux, France.

Where Meeting Location

Thales AVS
75 Avenue Marcel Dassault
33700 Mérignac
France
Tel: +33 5 24 44 64 00
www.thalesgroup.com

Point of Contact:

Maxime Dechatre
Tel. +33 6 89 53 43 94
Email: *maxime.dechatre@fr.thalesgroup.com*

Meeting attendees must RSVP to Maxime Dechatre before **March 2, 2020**, to allow meeting logistics to be confirmed. Each participant needs to send the following information to Maxime:

- First and last name
- Company name
- Nationality
- Passport number (Identity Card number for French citizens)
- French visa number (if you have one)
- Indicate if you will have a rental car, in order to reserve visitors' parking slots.

For those requiring a French visa, please contact Maxime Dechatre at his address above as soon as possible for the required invitation letter.

The location of the Thales facility, its main entrance, and Visitors Parking, is included as Attachment 1 to this announcement.

Hotel

There are many hotels near the Thales facility to meet your budget and comfort needs. CDS Subcommittee attendees are welcome to make accommodations at the hotel of their choice. Be advised, however, that the further away from the Thales facility you are, traffic will become an issue.

A list of nearby hotels is included as Attachment 2.

Instructions

Please notify ARINC Industry Activities of your intention to attend by registering online at: *https://www.aviation-ia.com/events*.

The meeting is open to all interested parties. Individuals requesting time on the agenda should contact Larry A. Hesterberg (*larry.hesterberg@sae-itc.org*). Any material intended to be circulated prior to the meeting should be submitted before **March 2, 2020**. The agenda will be finalized one week prior to the meeting.

Activity Scope

The Cockpit Display Systems (CDS) Subcommittee develops ARINC 661, Cockpit Display System Interfaces to User Systems. It is being expanded to meet OEM requirements for new aircraft. ARINC 661 defines a Graphical User Interface (GUI) to displays. It also defines GUI objects. ARINC 661 will enable flight crews to interact with the CDS using a cursor control device. This guidance and requirements are documented in **ARINC Specification 661:** *Cockpit Display System Interfaces to User Systems, Part 1, Avionics Interfaces, Basic Symbology, and Behavior* and **ARINC Project Paper 661:** *Cockpit Display System Interfaces to User Systems, Part 2, User Interface Markup Language (UIML) for Graphical User Interfaces*. This activity is authorized by APIM 19-010. The APIM is included as Attachment 3.

Meeting Objectives

The CDS Subcommittee will meet March 9-13, 2020, in Bordeaux, France. The meeting will be hosted by Thales. The meeting will cover content and actions concerning the following:

Supplement 8 to ARINC Specification 661: *Cockpit Display System Interfaces to User Systems, Part 1, Avionics Interfaces, Basic Symbology, and Behavior*.

Supplement 8 will add new material as follows:

- Widget Structure Meta-Definition
- Three Dimensional Projection/Map 3D Management
- BroadcastReciever parameter types
- Harmonize Part 1 and Part 2 XML
- Other Action Items

ARINC Project Paper 661: *Cockpit Display System Interfaces to User Systems, Part 2, User Interface Markup Language (UIML) for Graphical User Interfaces*.

The following material will be discussed:

- Component structure definition
- Execution model
- Complex type - Syntax definition
- Meta data definition & Dynamic XSD tool kit
- Other Action Items

Travel Information

Airports/Train/Car Rental

The nearest airport to the Thales offices is Bordeaux–Mérignac Airport (BOD). The airport is approximately 2 mi/3.5 km, a 10-15 minute car ride, from the Thales offices.

Other major airports are:

- Paris – Orly (ORY) which has flights to and from Bordeaux Airport (BOD) multiple times a day.
- Paris – Charles de Gaulle (CDG) has some flights to and from Bordeaux Airport (BOD), which may be easier for people coming from outside Europe.

Also, there are multiple trains a day from and to Paris – Montparnasse train station (a 2 hour ride).

Major car rental companies are available.

Uber is also available.

Public/Private Transit around Bordeaux

Public transit is available via buses, taxis, and tramway.

Public transportation information (such as timetables) is available here: *https://www.infotbm.com*.

Bus Lianes 11 connects downtown Bordeaux to the Thales Facility. Bus Lianes 11 route maps are included as Attachment 4.

Uber services are available.

Visa Information

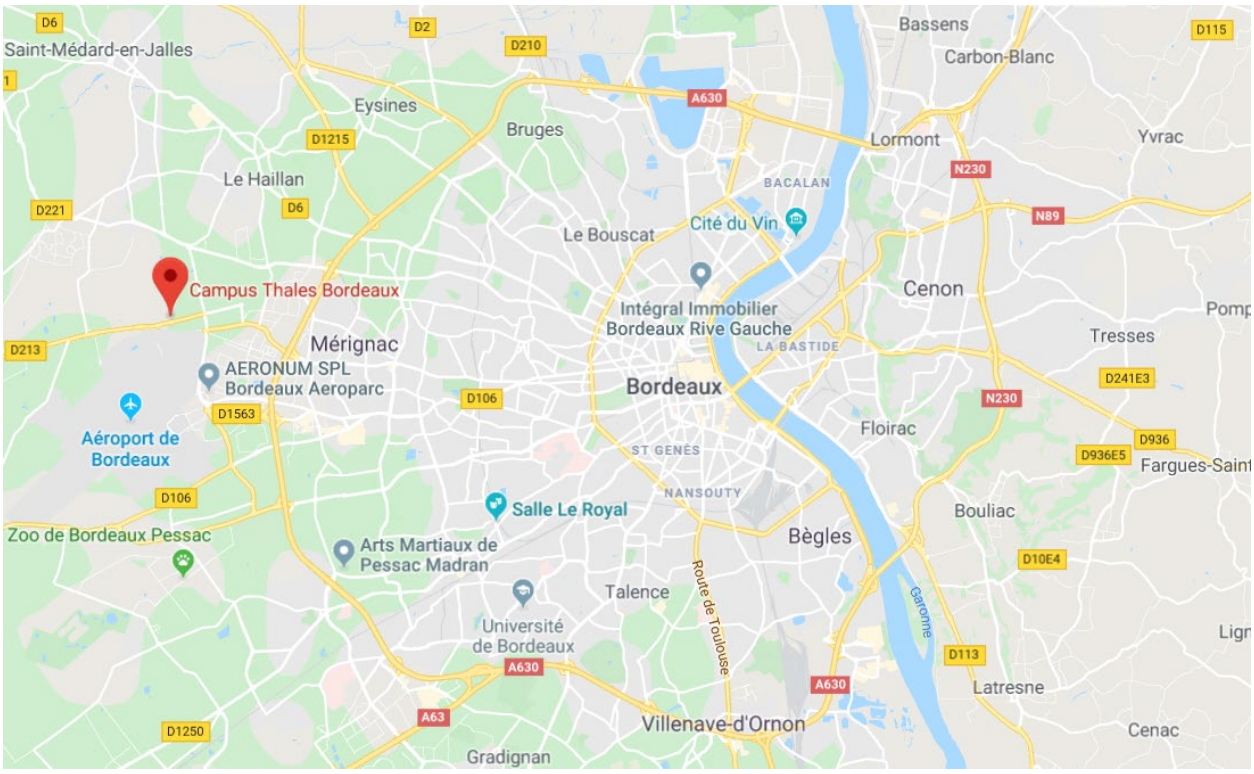
Visas are required for citizens of certain countries to enter France. All attendees are strongly encouraged to check the French visa policy for their country of citizenship and, if necessary, acquire a French visa.

cc SAI Subcommittee

Attachment 1

Attachment 1

Map of location of Thales facility.

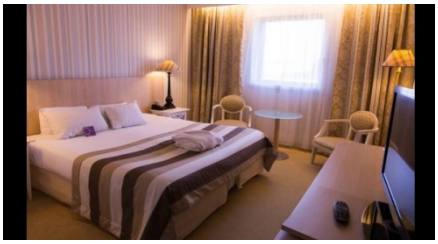


Aerial view of Thales facility, with the Main Entrance and Visitors Parking outlined.

Attachment 2

Attachment 2

Hotels near the Thales facility:

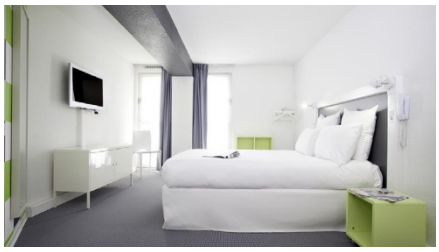


★★★★

Hôtel Mercure Aéroport
Av Charles Lindbergh
Mérignac
Tél. : 05 56 34 74 74

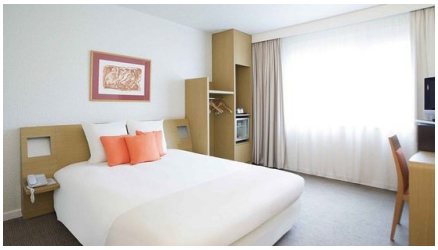
★★★★

Hôtel Quality Suites Aéroport
Avenue J. F. Kennedy
Mérignac
Tél. : 05 57 53 21 22



★★★

Hôtel Best Western Aéroport
Avenue Roland Garros
Mérignac
Tél. : 05 57 78 26 29



★★★

Hôtel Novotel Aéroport
80 Avenue J. F. Kennedy
Mérignac
Tél. : 05 57 53 13 30

Attachment 3

Attachment 3

ARINC Project Initiation/Modification (APIM)

1.0 Name of Proposed Project APIM 19-010

This APIM proposes development of two documents as follows:

Supplement 8 to ARINC Specification 661 Part 1: *Cockpit Display System Interfaces to User Systems - Avionics Interfaces, Basic Symbology, and Behavior*

ARINC Project Paper 661 Part 2: *Cockpit Display System Interfaces to User Systems - User Interface Markup Language (UIML) for Graphical User Interfaces*.

1.1 Name of Originator and/or Organization

Cockpit Display Systems (CDS) Subcommittee

2.0 Subcommittee Assignment and Project Support

2.1 Suggested AEEC Group and Chairman

Cockpit Display Systems (CDS) Subcommittee

Co-Chairman: Brian Gilbert, The Boeing Company

Co-Chairman: Sofyan Su, Airbus

2.2 Support for the activity (as verified)

Organizations: Airbus, Boeing, Dassault Aviation, Ansys, TP Group plc, GE Aviation, Garmin, Honeywell, Presagis, Collins Aerospace, Thales AVS, Elbit Systems, US Army, Safran Aerosystems.

2.3 Commitment for Drafting and Meeting Participation (as verified)

Organizations: Airbus, Boeing, Dassault Aviation, Ansys, TP Group plc, GE Aviation, Garmin, Honeywell, Presagis, Collins Aerospace, Thales AVS, US Army, Safran Aerosystems.

2.4 Recommended Coordination with other groups

The following AEEC Subcommittee activities are relevant to this topic:

- SAI Subcommittee

3.0 Project Scope (why and when standard is needed)

3.1 Description

Develop and maintain ARINC 661 flight deck display interface standards for new airplane development programs and for retrofit programs, including Airbus A380, A350, A400M, Boeing B787, B737 MAX, B777X, KC-46A, NMA, COMAC C919, Regional Aircraft, General Aviation (GA) and rotorcraft. Ensure growth for CNS/ATM applications that provide advanced operational concepts that will increase aviation safety, capacity, and efficiency.

ARINC 661 defines the basic building blocks through which a Graphical User Interface (GUI) to display systems can be developed. ARINC 661 is being expanded to meet OEM requirements for new airplane programs. ARINC 661 will enable flight crews to interact with the CDS using a cursor control device or touchscreen technology.

ARINC Specification 661 Part 1 will be updated through the preparation of Supplement 8 topics identified in Section 3.3, the material needed to describe Part 1 and Part 2, and the relation between the two parts.

ARINC Project Paper 661 Part 2 will define the User Interface Markup Language which will allow developers to specify the interface and the look and behavior of any graphical user interface, in particular ARINC 661 building blocks.

3.2 Planned usage of the envisioned specification

New aircraft developments planned to use this specification yes ☒ no ☐

Airbus: A380, A350, A400M

Boeing: B787, B737 MAX, B777X, KC-46A, NMA

Other: COMAC C919, Regional Aircraft, General Aviation (GA) and rotorcraft

Modification/retrofit requirement yes ☐ no ☒

Specify: N/A

Needed for airframe manufacturer or airline project yes ☐ no ☒

Specify: N/A

Mandate/regulatory requirement yes ☐ no ☒

Specify: N/A

Is the activity defining/changing an infrastructure standard? yes ☒ no ☐

Specify: ARINC 661

When is the ARINC standard required?

- Supplement 8 to ARINC 661 Part 1 is expected by April 2020.
- ARINC Project Paper 661 Part 2 is expected by April 2020.

What is driving this date?

Submission to General Session in May 2020.

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

If NO please specify solution:

Both projects are nearing completion.

Are Patent(s) involved? yes ☐ no ☒

If YES please describe, identify patent holder: _____

3.3 Issues to be worked

Start with ARINC 661-7 Part 1 Gray Cover and update the document to include:

- Metadata definition (full XML schema)
- Map3D widgets
- Update to PictureBlock for picture atlasing
- Column widget
- Scroll extensions
- StyleSetParameter extension
- Updates to Animation Widgets
- Other new widgets and extensions as warranted
- Harmonization with Part 2

ARINC Project Paper 661 Part 2 will include the following:

- Metadata definition (full XML schema)
- Popup primitive
- Focus Management
- Graphical Bounding box
- Styling
- Basic Scripting Definition
- Glossary

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: Aircraft installation interface may use any suitable protocol for data delivery, including ARINC 664 Ethernet.

Product offered by more than one supplier yes ☒ no ☐

Identify: Aircraft manufacturers, CDS application developers

4.2 Specific project benefits (Describe overall project benefits.)

4.2.1 Benefits for Airlines

Supplement 8 to ARINC Specification 661 Part 1 will define a common CDS interface data formats, graphical user interface (GUI). The idea is to support the widest possibilities of airplane types, for both forward fit and retrofit using common data interface. This document will enable benefits to be realized at lower costs to the airlines and with less risk to the suppliers.

ARINC Project Paper 661 Part 2 will define a language (UIML) that can be used by any airframe manufacturer on any kind of aircraft to specify graphical user interface look and behavior. This document will enable benefits to be realized at lower costs to the airlines and with less risk to the suppliers.

4.2.2 Benefits for Airframe Manufacturers

This standard will provide several benefits to Airframe manufacturers:

- The airframe manufacturers can define a common CDS interface for all aircraft implementations.
- Flexibility to add new CDS capabilities by adding to existing platforms.
- The airframe manufacturers can use a common language, from CDS mockups and prototyping, to maintenance and training, graphical user interfaces.
- Reduce the cost of development and management of the graphical user interface specification.
- Ability to specify modern user interface (data fusion, multi-touch, animation, 3D, Post WIMP interface).

4.2.3 Benefits for Avionics Equipment Suppliers

This standard will provide several benefits to Avionics Suppliers:

- Reduces CDS cost of development compared to non-standard platforms
- Allows for an open marketplace for manufacturers to supply interoperable equipment.

5.0 Documents to be Produced and Date of Expected Result

Supplement 8 to ARINC Specification 661 Part 1: *Cockpit Display System Interfaces to User Systems: Avionics Interfaces, Basic Symbology, and Behavior*. A mature document is expected in April 2020.

ARINC Project Paper 661 Part 2: *Cockpit Display System Interfaces to User Systems: User Interface Markup Language (UIML) for Graphical User Interfaces*. A mature document is expected in April 2020.

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
Supplement 8 to ARINC Specification 661 Part 1	2	10* (two 5-day mtgs)	06/2019	04/2020
ARINC Project Paper 661 Part 2				

* Note: Table shows in-person meetings. Additional web conferences will be held each month, one web conference for each document in work.

6.0 Comments

This activity is an extension of AEEC's Cockpit Display Systems (CDS) Subcommittee activity previously authorized by APIM 08-004.

6.1 Expiration Date for the APIM

April 2020

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

Attachment 4

Attachment 4