

# Complex Hardware Development for Aircraft Systems using RTCA DO-254/EUROCAE ED-80

# COBHAM

12 May and 30 September 2010

Cobham Technical Services  
ERA Technology AccessERA



## Developed and presented in association with the CAA.

RTCA DO-254/EUROCAE ED-80 Design Assurance Guidance for Airborne Electronic Hardware provides a standard for the development and certification of Programmable Logic Devices (PLDs) for civil aerospace applications.

The use of PLDs is becoming increasingly prevalent in military and commercial systems. RTCA DO-254 has been given recognition for civil aerospace applications by the FAA (Federal Aviation Administration) as a result of Advisory Circular 20-152. This provides the certification requirements (and hence development) of PLDs such as FPGAs (Field Programmable Gate Arrays), CPLDs (Complex Programmable Logic Devices) and ASICs (Application Specific Integrated Circuits).

This course will provide an overview of the processes required to integrate design assurance into the development of systems which include complex electronic hardware. The emphasis of the course will be on the processes by which the design assurance is gained and will also detail certification strategies and guidance.

### Your programme

08.45 Registration and refreshments

09.00 **General introduction**

09.15 **Overview of 'Airborne Electronic Hardware' in DO-254/ED-80**

- Introduction to programmable logic
- Distinguishing features and capabilities of CPLDs, FPGAs and ASICs
- Issues of PLDs e.g. signal integrity, SEUs.

09.45 **System safety**

- Introduction to civil aviation approach to system safety
- Failure conditions; random and systematic failures
- Design assurance levels
- Certification considerations.

10.30 **Overview of DO-254/ED-80**

- Document overview
- Use of complex hardware CRI (Certification Review Item).

10.45 Refreshments

Thales Air Defence Ltd, delegate spring 2009  
"Opened up the subject matter for me successfully"

11.00 **Using DO-254/ED-80**

- Hardware design life cycle
- Hardware planning
- Hardware requirements
- Hardware development
- Configuration management
- Quality assurance
- Life cycle data
- Certification considerations.

12.30 Lunch

13.30 **Verification and validation**

- Review, analysis and testing
- Worked example.

14.45 **Achieving certification**

- The certification process
- Type of development including STC and TC considerations.

15.30 Refreshments

15.45 **Achieving certification continued**

- Product service experience
- Previously developed hardware & COTS
- Tool qualification
- Microcontrollers.

16.30 **Discussion**

17.00 Close.

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## Your speakers



### Clive Lee - Senior Consultant, Cobham Technical Services

Clive has over 30 years experience in software development and software assessment of both real time, embedded systems and IT applications. Since 1991, Clive has been involved in software and safety assessment and consultancy in a variety of industry sectors such as military (all forces), railways, process chemical, nuclear, and ship classification.



### Pippa Moore - Secretary of the Certification Authorities Software Team (CAST), Civil Aviation Authority (CAA)

Pippa has been an Avionic Systems Design Surveyor with the CAA for 12 years. In that time Pippa has worked as a CAA, JAA & EASA systems specialist on civil aircraft certification projects such as the Boeing 737 and 767, A330/340 and A380. She has also worked on numerous engine certification and validation projects. Pippa is also a member of EUROCAE WG71 assisting in the development of ED-12C and DO-178C for airborne software approval considerations.

## Booking form

Please photocopy this form if you wish to register more than one delegate. Send a second person at a discounted price!

### Delegate details

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Job Title
Organisation
Address
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Telephone
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### Bookings

I wish to make a firm booking for:

**Complex Hardware Development for Aircraft Systems using RTCA DO254/EUROCAE ED-80**

12 May 2010 Ref: 31010       30 September 2010 Ref: 31032

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Fee rate	Fee	VAT@15%	Total	Please tick
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\* Please note that booking forms received without payment will be considered binding and invoiced automatically.

### Enquiries:

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