



RTCA DO-178B is still the foremost standard for the development and maintenance of safety-related systems in aircraft. This internationally recognised standard covers techniques and methods used for the management and development of software for airborne digital computer based equipment and systems.

This course will provide delegates with:

- Knowledge of the practices and procedures required to achieve compliant, certifiable systems
- Invaluable guidance if you are involved in the development or maintenance of software for safety-related systems
- The beneficial opportunity to be informed about the progress being made in updating the standard to DO-178C.

### Your programme

#### Day one

- 08:45** Registration and refreshments
- 09:00** **Introduction and course overview**
- 09:15** **Overview of DO-178B/ED-12B**
- History and status
  - Structure, purpose and scope
  - Related software guidance material
  - Finding your way in the document
  - High-level review of the document's objectives.
- 09:45** **System aspects relating to software development**
- System considerations and failure conditions
  - System safety targets and AMC 25.1309
  - Software level definitions and determination
  - Relationship to SAE ARP 4761 and ARP 4754.
- 10:30** Refreshments
- 11:00** **System architectural considerations for software**
- Fault avoidance, fault tolerance and accommodation
  - Software partitioning
  - Multi-version programming and dissimilarity
  - Safety monitoring.
- 11:45** **Software lifecycle and planning processes**
- Examples of software lifecycles
  - Planning process objectives, data items as process outputs
  - Software development environment
  - Language and compiler considerations
  - Standards and assurance.
- 12:30** Lunch
- 13:15** **Software requirements process**
- Requirements process objectives and activities
  - Properties of high, derived and low-level requirements
  - Traceability.
- 14:00** **Software development processes**
- Architectural considerations
  - Deactivated and dead code
  - Option selectable and user modifiable software
  - Software patches.

#### 14:30 Software verification process

- Techniques: reviews, analysis and testing
- Checklists and test case selection
- Verification related to software level
- Test coverage analyses
- Independence issues.

#### 15:15 Refreshments

#### 15:45 Software configuration management

- Managing change and terminology
- Problem report tracking and corrective action
- Data control categories.

#### 16:15 Review and general discussion

16:30 Close.

#### Day two

08:45 Refreshments

#### 09:00 Day two overview

#### 09:15 Achieving certification

- What is certification?
- Technical standard orders
- Quality assurance
- Certification liaison and deliverables
- Software audits by the certification authority
- The Certification Authorities Software Team (CAST)
- EASA Design and production approval.

10:15 Refreshments

#### 10:45 Additional considerations

- Use of previously developed software
- Tools qualification
- Alternative methods.

#### 11:15 Formal methods

- An explanatory overview.

#### 12:00 In-service experience

- Resource over-run
- Ariane 5
- A320 Warsaw, Predator unmanned aircraft.

#### 12:30 Course review

- Summary and key aspects
- The future: DO-178C
- Discussion.

13:00 Close and course feedback.

### Ever thought about in-company training?

This course can be delivered at your site. To discuss your training requirements, please call the Events Team on +44 (0)1372 367439.



## Your speakers



### Clive Lee - Senior Safety Consultant, ERA Technology Ltd

Clive has over 30 years experience in the 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.



### Dan Hawkes - Independent Consultant, Avionic Systems and Software Engineering

Dan recently retired from the UK Civil Aviation Authority (CAA) after 34 years service. In his current role as an independent consultant, he is assisting EUROCONTROL in a number of air traffic management projects, including safety assurance of navigation databases, safety monitoring of operations in airspace with reduced vertical separation, unmanned aerial vehicles and security of communications.

## 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

Name <small>Dr Mr Mrs Miss</small>
Job Title
Organisation
Address
Postcode
Telephone
Fax
E-mail
VAT number <small>(EU customers only)</small>
<input type="checkbox"/> Please tick if you are happy to receive further information about ERA Technology Ltd via e-mail. It is our policy NOT to supply your details to third parties.

### Bookings

I wish to make a firm booking for:

#### Software Development for Aircraft Systems using RTCA DO-178B/EUROCAE ED-12B

7-8 December 2011 Ref: 31148  23-24 May 2012 Ref: 31217

### Fees\*

Fee rate	Fee	VAT@20%	Total	Please tick
Early Booking Rate	£585.00	£117.00	£702.00	
Standard Rate	£650.00	£130.00	£780.00	

\*AccessERA subscribers and additional delegates receive a 10% discount on these rates. If you subscribe to AccessERA and would like to use your AccessERA credits to attend, please contact the Events Team on: +44 (0)1372 367439. For more information on booking rates, please go to: <http://shop.era.co.uk>.

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 Project No 40003.....  
 BC12..... Date.....

### Venue:

Your course will take place at ERA Technology Ltd, Cleeve Road, Leatherhead, Surrey KT22 7SA, UK. It is a 15 minute walk from Leatherhead main-line station. Visitor car parking is available on-site. A location map and directions are available at: [www.era.co.uk/location](http://www.era.co.uk/location).

### Early booking rates:

Early booking rates are valid up to one calendar month before the date of the course and can only be claimed at the time of booking.

### Additional booking rates:

Additional booking rates are applicable to second and subsequent delegates and may only be claimed at the time of booking.

### Did you know?

An AccessERA subscription is an excellent way of accessing technical advice and information in the right format at the right time. All AccessERA subscribers receive a 10% discount on the current course price at time of booking when the booking is made directly with the Events Team. To find out more, please call us on: +44 (0)1372 367439 or e-mail: [events@era.co.uk](mailto:events@era.co.uk).

### Ways to book:

- <http://shop.era.co.uk>  
Total security is assured and normal booking conditions apply.
- +44 (0)1372 367439 - please be prepared to quote a purchase order number or supply us with credit card details.
- +44 (0)1372 367321\*
- The Events Team, ERA Technology Ltd, Cleeve Road, Leatherhead, Surrey KT22 7SA.

\* Please note that booking forms received without payment will be considered binding and invoiced automatically.

### Enquiries:

Please contact the Events Team by calling: +44 (0)1372 367439 or e-mail: [events@era.co.uk](mailto:events@era.co.uk).

### How to pay:

Payment must be made before attendance at the event and must be made in £ sterling only. Acceptable methods of payment are by cheque (payable to ERA Technology Ltd), credit card or bank transfer. Bank transfers, free of all charges, can be made to ERA Technology Ltd via: HSBC, 9 The Boulevard, Crawley, RH10 1UT; sort code: 40-18-22, account no. 22178095. When paying by bank transfer, please quote the relevant course, reference number and the delegate and company name.

### Cancellations and transfers:

Cancellations and transfers must be received in writing to the following address: the Events Team, ERA Technology Ltd - AccessERA, Cleeve Road, Leatherhead, KT22 7SA. Cancellations and transfers received up to the 15th working day prior to the event will be subject to a charge of 20% of the invoiced course fee + VAT or 20% of the AccessERA credits charged. After this 15 day deadline, transfers cannot be accepted and cancellations will be subject to payment in full or 100% of the AccessERA credits charged. Substitutions can be made at any time.

### ERA Technology Ltd:

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