

The Teachers

Andrea MUSONE has about 20 years experience in software engineering and software quality. He contributed to the definition of software standards for large Space programs. Consultant to International Organizations and other relevant Companies. Teacher of ECSS and DO-178 standards. Team member for CMMI appraisals. He has also a large technical experience in several software domains, such as GIS, and Earth Observation. Several years consultant to Air Navigation Services in the frame of European Projects.



The Company

Since 1974, INTECS has been operating at the forefront of the software market, where safety, reliability, innovation, and quality are essential for success. INTECS provides leading-edge software technologies to support the major European and Italian organisations in the design and implementation of advanced electronic systems for Defence, Space, and Civilian markets.

Intecs is ISO-9000 certified since 1994. Currently it holds **ISO 9001:2008** quality certification for software development in Defense, Space, and Civilian domains. Moreover, Intecs Defence and ATC Divisions were positively appraised at **CMMI® Maturity Level 3**.



General Information

Location

Courses may be arranged in-house at the customer site upon request.

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**Training on the
DO-178C Standard**
A two-days intensive course



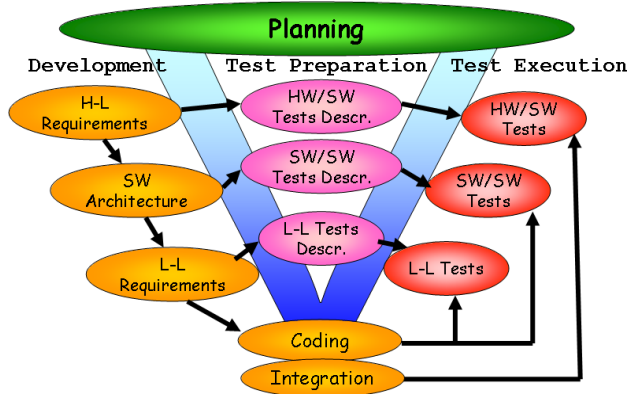
The DO-178C Standard

RTCA/DO-178B, published on 1992, was developed by the commercial Avionics Industry to establish software guidelines for avionics software. Although formally a guideline, DO-178B is actually a strict software engineering standard. Although developed for certifying Airborne software, it can be used as reference standard for any kind of safety-critical software. In particular, this standard has largely influenced the standards in other domains, such as Defense, Nuclear, Space, Automotive, and Medical.

RTCA/DO-178C is the latest edition, covering new software development methodologies and issues, namely Object-Oriented technologies, Model-Driven Engineering, Formal Methods, and Tool Qualification. These issues, resulting from some 20 years of advancement in hardware and software technology, are specifically covered in the DO-178C Supplements.

The Course

A comprehensive two-day course provides participants with all major features of the standard, together with an overview of the Supplements. The course is complemented by some examples and feedback from historical experiences.



Intended audience

Software Engineers (Development and Verification), Quality Engineers, Configuration Managers, Test Engineers, and Project Managers.

Course Outline

Day 1

Introduction to DO-178C

- Survey of contents
- System and software life-cycles

Survey of software life-cycle processes

Software Planning and Development Processes

- Software Planning
- Contents and examples of required plans:
 - Plan for Software Aspects of Certification (PSAC)
 - Software Development Plan (SDP)
 - Software Verification Plan (SVP)
 - Software Configuration Management Plan (SCMP)
 - Software Quality Assurance Plan (SQAP)

- Software Development
 - Software Requirements
 - Software Design
 - Software Coding
 - Software Integration

Software Integral Processes

- Software Verification
 - Reviews
 - Analysis
- Software Testing
 - Testing objectives
 - Requirements coverage
 - Code coverage

Day 2

Testing levels, methods, and techniques

- Unit test
- Software integration test
- HW/SW Integration test
- Performance test
- System test

Test documents

- Test plan, procedure, and reports

Configuration Management (CM) Process

- CM Plan, CM Index
- Baseline and change management
- Traceability requirements
- Control Category (CC) according to criticality

Quality Assurance (QA) Process

- Activities and deliverables
- Reviews and Audits

Certification Liaison Process

Activity and deliverable tables per criticality levels

Additional considerations

- Software reuse and COTS
- Alternative means of compliance

Overview of Supplements

- Software tool qualification
- Model-Based Development and Verification
- Object-Oriented Technology and related Techniques
- Formal Methods Supplement