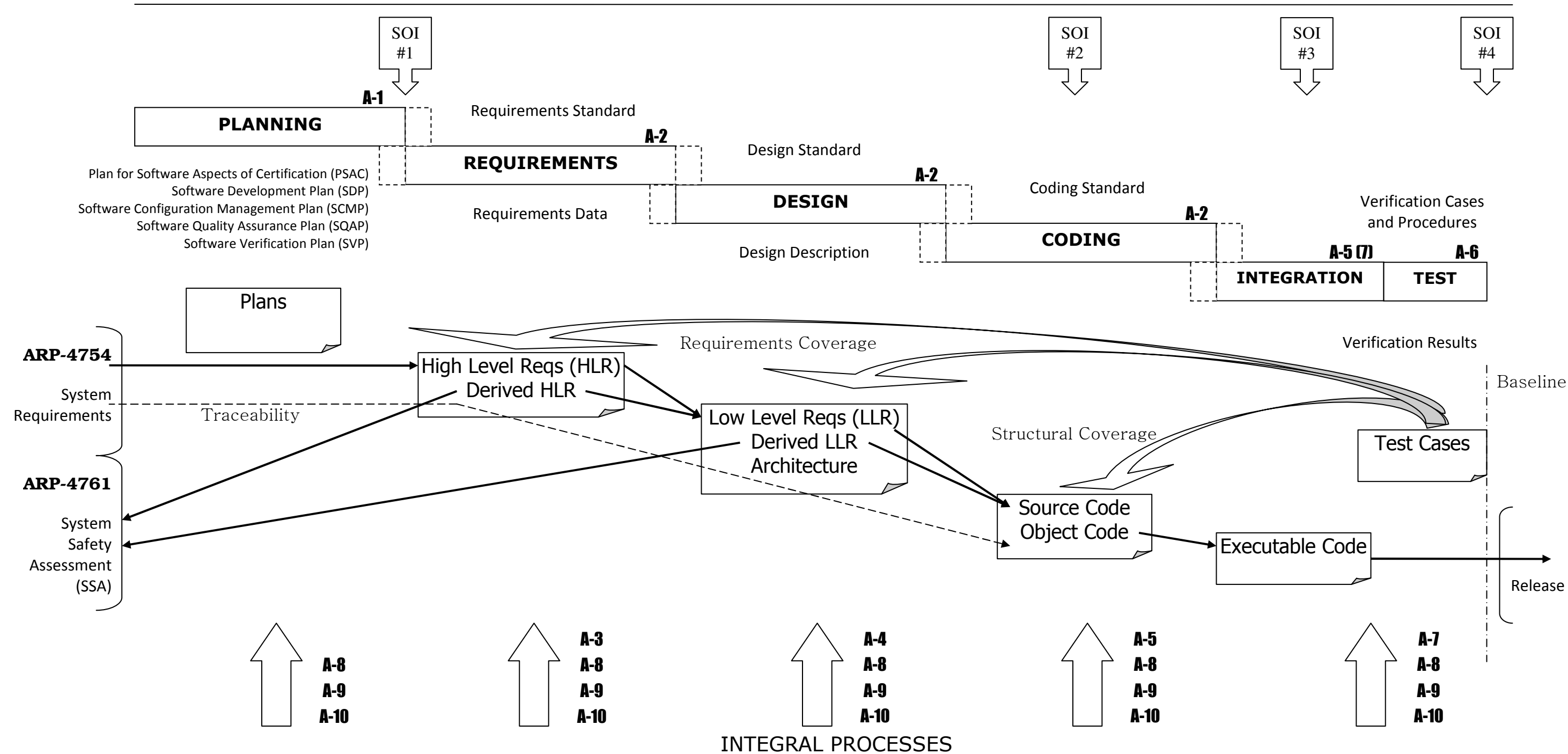


RTCA DO-178B Process Visual Summary

DEVELOPMENT AND TEST PROCESSES



Key:

Input Data Life Cycle

PROCESS

Output Data Life Cycle

Product

TABLE

Transition

VERIFICATION	A-3 A-4 A-5 A-7	Software Verification Results (SVR)
CONFIGURATION MANAGEMENT	A-8	Configuration Management Records, Problem Reports Software Life Cycle Environment Configuration Index (SECI)
QUALITY ASSURANCE	A-9	Software Quality Assurance Records
CERTIFICATION LIAISON	A-10	Plan for Software Aspects of Certification (PSAC) Software Configuration Index (SCI) Software Accomplishment Summary (SAS)

to Certification Authorities

Related Documents Quick Reference

FAA Advisory Circulars

- AC 20-115, RTCA, Inc., Document RTCA/DO-178B
- AC 20-148, Reusable Software Components
- AC 20-152, RTCA, Inc., Document RTCA/DO-254, Design Assurance Guidance for Airborne Electronic Hardware
- AC 21-33, Quality Assurance of Software Used in Aircraft or Related Products
- AC 21-35, Computer Generated/Stored Records
- AC 21-36, Quality Assurance Controls for Product Acceptance Software

FAA Orders

- 8110.49, Software Approval Guidelines
- 8110.105, Simple and Complex Electronic Hardware Approval Guidance (chg 1)

FAA Guidances

- Guidance and Job Aids for Software and Complex Electronic Hardware

Certification Authorities Software Team (CAST) papers

- CAST 1, Guidance for Assessing the Software Aspects of Product Service History of Airborne Systems and Equipment
- CAST 2, Guidelines for Assessing Software Partitioning/Protection Schemes
- CAST 3, Guidelines for Assuring the Software Aspects of Certification When Replacing Obsolete Electronic Parts Used in Airborne Systems and Equipment
- CAST 4, Object-Oriented Technology (OOT) In Civil Aviation Projects: Certification Concerns
- CAST 5, Guidelines for Proposing Alternate Means of Compliance to DO-178B
- CAST 6, Rationale for Accepting Masking MC/DC in Certification Projects
- CAST 7, Open Problem Report (OPR) Management for Certification
- CAST 8, Use of the C++ Programming Language
- CAST 9, Considerations for Evaluating Safety Engineering Approaches to Software Assurance
- CAST 10, What is a “Decision” in Application of Modified Condition/Decision Coverage (MC/DC) and Decision Coverage (DC)?
- CAST 11A, Criteria for Assuring Continuous and Complete Software Verification Processes
- CAST 12, Guidelines for Approving Source Code to Object Code Traceability
- CAST 13, Automatic Code Generation Tools Development Assurance
- CAST 14, Use of a Level D Commercial Off-the-Shelf Operating System in Systems with Other Software of Levels C and/or D
- CAST 15, Merging High-Level and Low-Level Requirements
- CAST 16, Databus Evaluation Criteria
- CAST 17, Structural Coverage of Object Code
- CAST 18, Reverse Engineering in Certification Projects
- CAST 19, Clarification of Structural Coverage Analyses of Data Coupling and Control Coupling
- CAST 20, Addressing Cache in Airborne Systems and Equipment
- CAST 21, Compiler-Supplied Libraries
- CAST 22, Reuse of Software Tool Qualification Data Across Company Boundaries
- CAST 23, Software Part Numbering
- CAST 24, Reliance on Development Assurance Alone when Performing a Complex and Full-Time Critical Function
- CAST 25, Considerations When Using a Qualifiable Development Environment (QDE) in Certification Projects
- CAST 26, Verification Independence
- CAST 27, Clarifications on the Use of RTCA Document DO-254 and EUROCAE Document ED-80, Design Assurance Guidance for Airborne Electronic Hardware
- CAST 28, Frequently Asked Questions (FAQs) on the Use of RTCA Document DO-254 and EUROCAE Document ED-80, Design Assurance Guidance for Airborne Electronic Hardware
- CAST 29, Use of COTS Graphical Processors (CGP) in Airborne Display Systems
- CAST 30, Simple Electronic Hardware and RTCA Document DO-254 and EUROCAE Document ED-80, Design Assurance Guidance for Airborne Electronic Hardware

EASA Memos

- SWCEH 01 Software Aspects
- SWCEH 02 Electronic Hardware Development Assurance
- SWCEH 03 Management of Open PRs
- SWCEH 04 Configuration Files
- SWCEH 05 Aeronautical Databases
- SWCEH 08 Model Based Development
- SWCEH 09 Object Oriented Techniques
- SWCEH 10 Use of Assembly Branch Coverage (ABC) for Equivalence to Modified Condition Decision Coverage (MCDC)
- SWCEH 11 Databuses

Standards

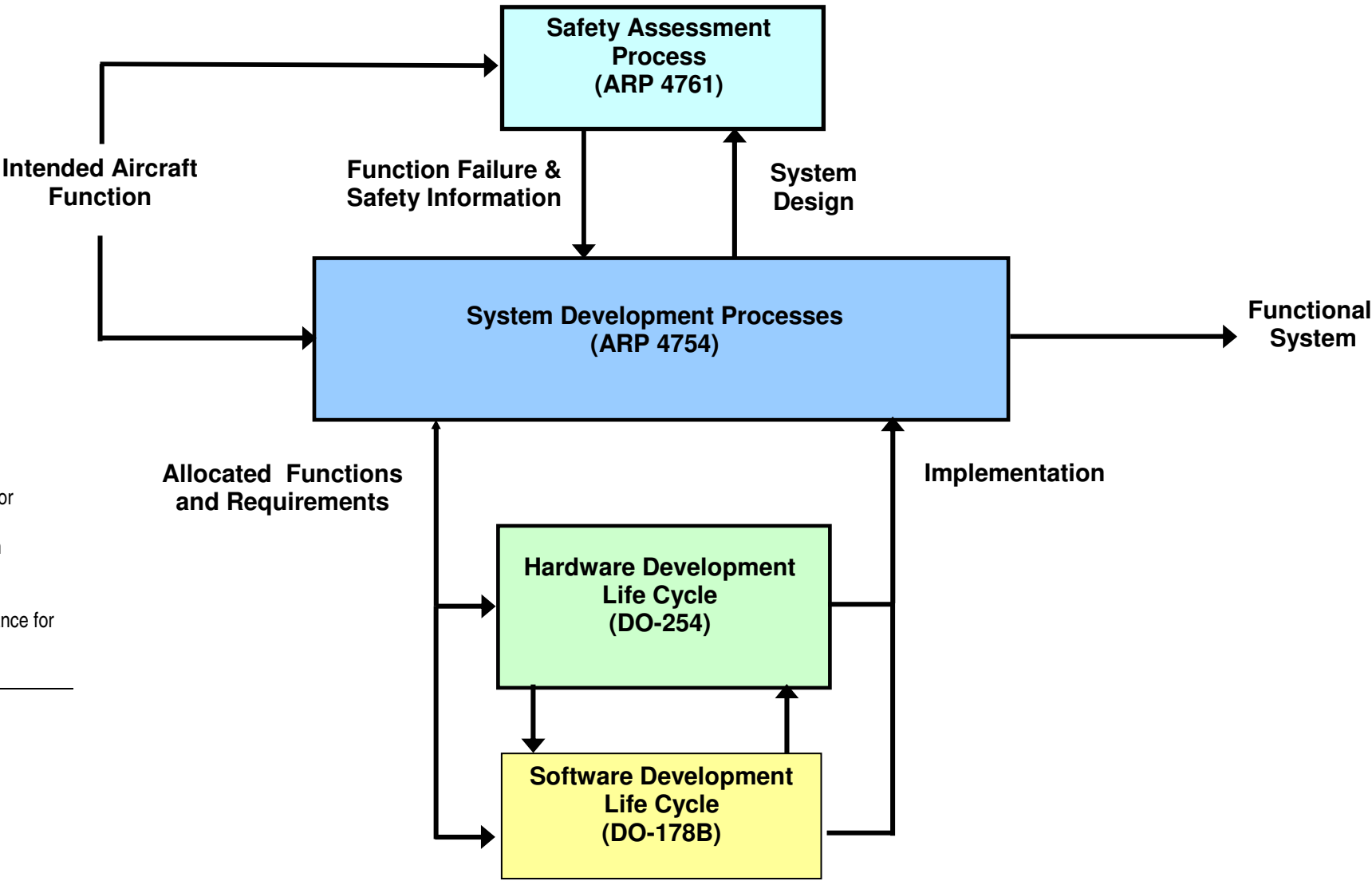
- DO-178B, Software Considerations in Airborne Systems and Equipment Certification
- DO-248B, Final Report for Clarification of DO-178B “Software Considerations in Airborne Systems and Equipment Certification”
- DO-254, Design Assurance Guidance for Airborne Electronic Hardware

- DO-200A, Standards for Processing Aeronautical Data
- DO-297, Integrated Modular Avionics (IMA) Development Guidance and Certification Considerations
- ARP-4754, Certification Considerations for Highly Integrated and Complex Aircraft Systems
- ARP-4761, Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and equipments

Relationship between criticality, Design Assurance Level (DAL) and DO 178B objectives

ARP-4761 Criticality	DO-178B DAL	DO-178B Objectives
Catastrophic	A	66
Hazardous	B	65
Major	C	57
Minor	D	28
No effect	E	N/A

Relationship between ARP-4754, ARP-4761, DO-178B and DO-254



By: Alessandro Nicoli de Mattos
Standards relationship diagram and list of documents by other authors
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