

Avionics Software and Hardware Engineering Services

Engineering Capabilities

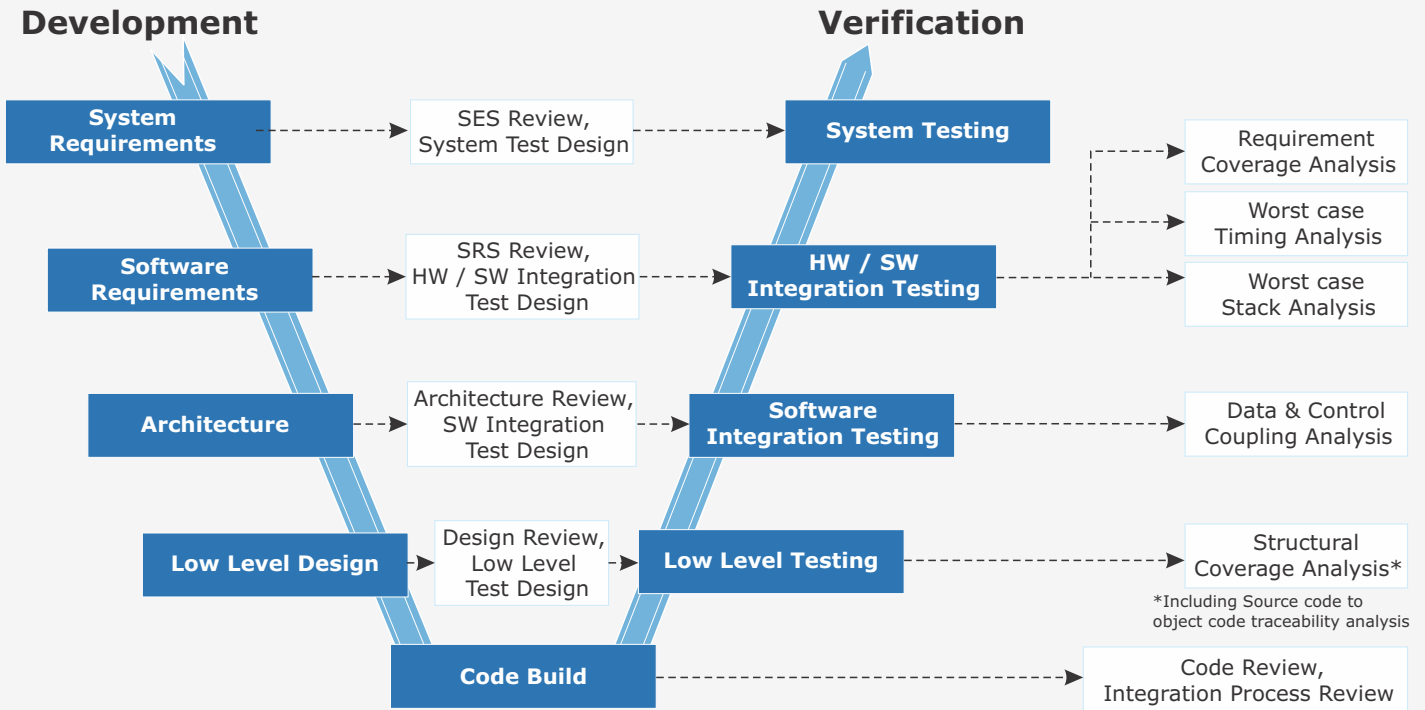
- ❖ Full life cycle development - as per DO-178B/C, DO-254, DO-160F/G at DAL - A to D
- ❖ Software Development and V&V services (DO-178B/C and DoD-2167A)
- ❖ Development and Verification of complex Electronics Hardware (DO-254)
- ❖ Certification activities such as Low Level Requirements generation and reviews
- ❖ Obsolescence Engineering
- ❖ Environmental Qualification of airborne electronic hardware (DO-160F/G)
- ❖ Development of ATE (Automated Test Equipment)

With more than 6,000 person years of experience in Avionics domain, Accord can assist you in all phases of development life cycle. Accord can offer quick ramp-up of team to meet your changing program schedules. Our excellent track record from the prestigious programs reflects our commitment to quality and schedule.

Engineering Services Profile



V-Model



We can assist you during

Planning

- ❖ Plan for software and hardware aspects of certification
- ❖ Plan for development, verification, configuration management and quality assurance
- ❖ Documents produced
 - Plan for Software Aspects of Certification (PSAC)
 - Plan for Hardware Aspects of Certification (PHAC)
 - Hardware Development Plan (HDP)
 - Software Verification Plan (SVP)
 - Hardware Verification Plan (HVP)
 - Quality Assurance Plan (QAP)
 - Configuration Management Plan (CMP)

Design

- ❖ Generate Architecture design, low-level requirements and derived low-level requirements
- ❖ Documents produced
 - Software Design Document (SDD)
 - Hardware Design Document (HDD)

Integration

- ❖ Link and load the executable object code into the target hardware

Quality System

- AS 9100 Rev C
- CMMI Level 5
- ISO 9001:2008 & TickIT

Requirements Analysis

- ❖ Generate high-level requirements and derived high-level requirements
- ❖ Documents produced
 - Hardware Requirements Specification (HRS)
 - Software Requirements Specification (SRS)

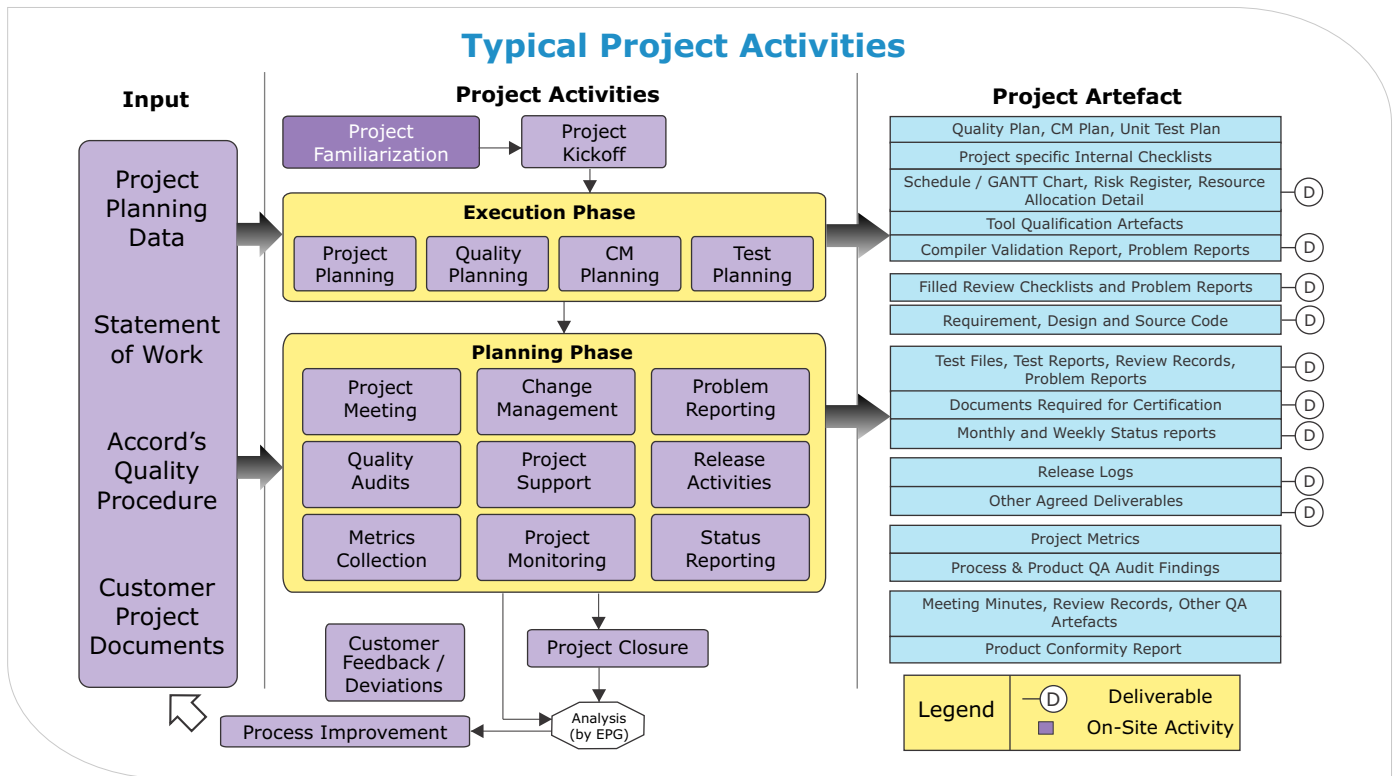
Implementation

- ❖ Generate source code and Hardware item

Verification

- ❖ Perform reviews of requirement, design and code
- ❖ Perform analysis like control and data flow analysis, stack depth analysis, timing throughput analysis and requirements and structural coverage analysis
- ❖ Design, develop and execute requirements based tests
 - Unit, Integration and System tests for software
 - Behavioral and place and route tests for PLDs
- ❖ Production
 - Production of Avionics Subsystems





Partial List of Aerospace Programs

Airbus A400m

- Full life cycle development according to DO-178B/C standard (Level A and Level D) for the Data loader software based on ARINC 615A



Airbus A380

Verification and Validation (DO-178B/C) :

- Cockpit Display Systems (Level B)
- Doors and Slides Management System (Level A)
- Integrated Modular Avionics (Level A)
- Slats and Flaps Control Computer (Level A)
- Onboard Airport Navigation System (Level D)
- Secured Communication interface (Level B)

Boeing 787 Dreamliner

- Verification and Validation, Compiler validation, Tool qualification of Wing Ice Protection System in accordance with DO-178B/C, Level A
- Code validation for audio subsystem in accordance with DO-178B/C Level C



NH 90 Helicopter

- Smart Multifunction Display Unit (SMD) verification and validation activities

TEJAS (Light Combat Aircraft)

- Implementation and Verification of Flight Control System Software (DoD-2167A)
- Requirements Analysis, Design and Verification of Mission Computer (DoD-2167A) Software
- Development of Real-time Avionics Line Replaceable Units Simulator, Pilot-machine Interface for Cockpit Evaluator and Multifunction Display Software for Cockpit Evaluator

Tools Capability

Life Cycle Tools

- ❖ Requirements Management
 - DOORS
 - ReMa (Accord)
- ❖ Software Design
 - Mentor Graphics Case Tool
 - Rhapsody
 - Teamwork/Ada
 - Easy Case
- ❖ Software Testing
 - RTRT
 - IPL Cantata
 - VectorCAST C/C++
 - LDRA
 - SmartTester for C (Accord)
 - SmartAct for assembly (Accord)
 - IPL AdaTEST
 - Logiscope and Lint
- ❖ Coverage Analysis
 - C-Cover
 - Logiscope
 - VectorCAST Cover
 - CodeTrax for C (Accord)
- ❖ Project Management
 - MS-Project
 - Smartworks Project Planner (Accord)

Configuration Management

- ❖ ClearCase
- ❖ CVS
- ❖ RCS
- ❖ PVCS
- ❖ SVN

Software Engineering Tools

- ❖ RTOS
 - GreenHills Integrity
 - VxWorks
 - MS-WinCE
 - DSP-OS
 - VDK
 - MicroC/OS
- ❖ Compilers
 - C/C++/Ada 83 Compilers for various hardware platforms (Power PC, TI DSP, ADSP etc.)

FPGA Tools

- ❖ Front end design
 - XST, SynplifyPro, ispLEVER, VIVADO
 - Eclipse EDK for Zynq Devices
- ❖ Back end design
 - Xilinx ISE
 - Actel's Libero SOC
 - Altera's QUARTUUI
 - Vivado
- ❖ Simulation and Coverage
 - Questa-Core
 - Modelsim PE/SE
 - Vivado Simulator
- ❖ Coverage Analysis
 - TransEDA VN-Cover

Hardware Engineering Tools

- ❖ Python
- ❖ GNSS Constellation Simulator
- ❖ High-density FPGA boards for ASIC prototyping
- ❖ High-speed DAC Interfaces
- ❖ Eclipse EDK for Embedded Programming
- ❖ Spectrum Analyzer
- ❖ Signal Generators
- ❖ Logic Analyzer
- ❖ Digital Oscilloscopes
- ❖ Multifunction Counters
- ❖ Development tools and ICE for all ADI DSPs, TI DSPs, ARM Processor, PowerPC
- ❖ Orcad, Cadstar Viewer, Allegro, PspiceT
- ❖ Matlab
- ❖ Temperature & Humidity Chamber
- ❖ Network Analysis
- ❖ Arbitrary wave form generators
- ❖ Automated test equipment
- ❖ PXI based RF test instrumentation



Accord Global Technology Solutions Pvt. Ltd.

#37, K.R. Colony, Domlur Layout,
Bangalore - 560 071, INDIA
Tel : +91 - 80 2535 0105/0136/0138
Fax : +91 - 80 2535 2723

URL : www.accord-global.com
Email : contact.us@accord-soft.com