

# 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

## Software Engineering Tools

- ❖ RTOS
  - GreenHills Integrity
  - VxWorks
  - OASYS-653 (Accord)
  - 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, Synplify, SynplifyPro, Precision Synthesis, ispLEVER
- ❖ Back end design
  - Xilinx ISE 9.1.03i
  - Actel's Libero 6.0
  - Altera's MAXPlusII
- ❖ Simulation
  - Xilinx ISE 9.1.03i
  - Actel's Libero 6.0
  - Altera's MAXPlusII
- ❖ Coverage Analysis
  - TransEDA VN-Cover

## Hardware Tools

- ❖ 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



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# Avionics Software and Hardware Engineering Services

## Capabilities

- ❖ Full life cycle development (Avionics standards DO-178B, DoD-2167A and DO-254)
- ❖ Software verification services (DO-178B and DoD-2167A)
- ❖ Verification of complex hardware involving programmable devices (DO-254)
- ❖ Certification activities (DO-178B) such as Low Level Requirements generation and various reviews
- ❖ Re-engineering of software and electronic hardware for Obsolescence Management as per DO-178B and DO-254
- ❖ Environmental qualification of airborne electronic hardware (DO-160F)

With more than 800 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.

## RTCA DO-178B and DO-254 Services

We plan, design, develop, implement and verify your product according to DO-178B and DO-254 standards using refined processes and advanced tools. Our experience with DO-178B and DO-254 ranges from Level A through D, over a wide variety of platforms and domains. We offer services both offshore and on-site based on clients' needs.

## Software Engineering Skills

- Programming Languages: Ada, C, C++, ASSEMBLY languages
- Operating Environments: UNIX, Linux, Windows, VAX/VMS, Real Time Operating Systems
- Hardware platforms: ADI DSPs, TI DSPs, ARM, PowerPC

## Standards

- ARINC 653, ARINC 615A, ARINC 665, ARINC 743, ARINC 429
- MIL 1553B

## Embedded Systems Engineering Skills

- Design and Engineering of real time embedded systems with FPGAs, ASICs, Microprocessors and Digital Signal Processors
- Design and Engineering of analog as well as highspeed digital circuits
- Algorithm development for customized Software radios, Spread Spectrum communication Systems, hybrid navigation systems
- Engineering Systems to meet stringent environmental specifications
- Engineering for mass manufacture

# Project Management

With our mature project management processes we ensure the projects are always completed on schedule within budget and with the highest quality. For project Management we use SmartWorks Project Planner and Microsoft Project™.

# Resource Management

Avionics projects often require ramping up of resources to complete projects on schedule. Accord has a large pool of talented and trained resources, which can be mobilized for projects at short notice.

Our team members have been extensively trained by FAA- DERs in DO-178B And DO-254.

# Quality System

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

# 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)

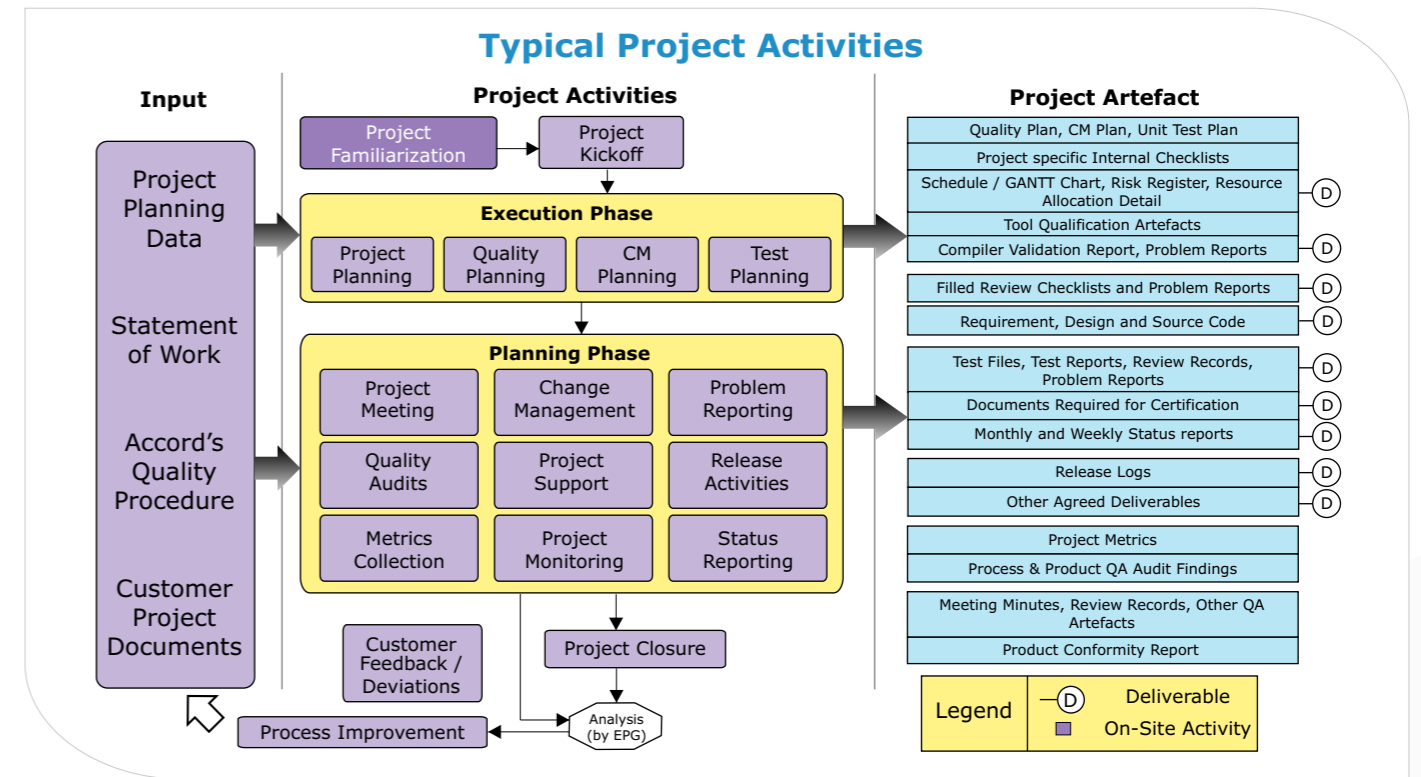
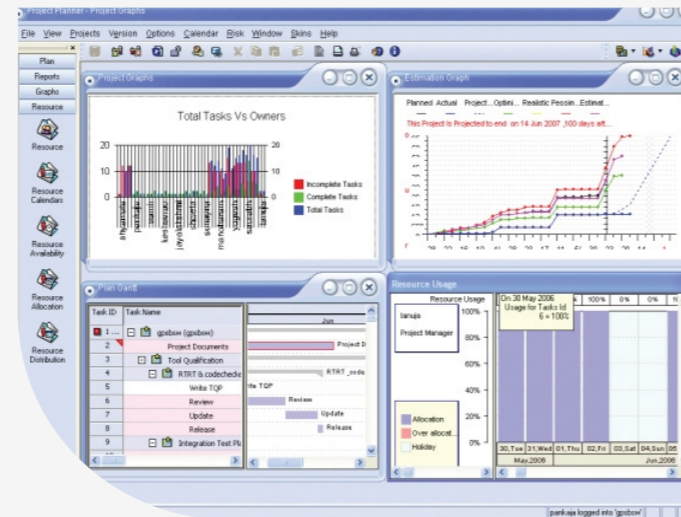
## Integration

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

# Risk Management

Risk Management process at Accord comprises of:

- Planning for the risk management
- Identifying the risks (using a Global Risk Database)
- Analyzing the risks with Probability Impact Matrix
- Prioritizing the risks by quantitative risk analysis
- Planning the risk responses
- Monitoring and controlling the risks
- Updating the Global Risk Database



# Partial List of Aerospace Programs

## Airbus A400m

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



## Airbus A380

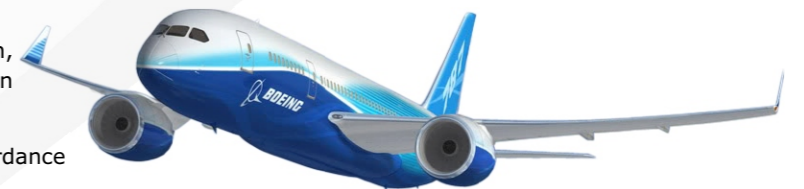
Verification and Validation (DO-178B) :

- 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, Level A
- Code validation for audio subsystem in accordance with DO-178B 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