Hardware Design Services

Aboutus

Apollo Microsystems Pvt. Limited, estd in 1985 has a rich heritage of advancing technology in the field of industrial automation, Automotive, Defense and Aerospace Electronic systems. AMS is a Dynamic and fast diversifying company, engaged in execution of turnkey projects with track record of 29 years.

What do we do

Our hardware design team has extensive industry experience and expertise in designing hardware and software; including packaging of electronic hardware for various verticals. Our competent board design and engineering practices make us a unique choice for our customers. We have immense working knowledge on various controllers, processors, DSPs, FPGAs etc. With a combined industry experience of over 1000 man years, the Company has a niche in the market and is the leading service provider in board design for the ADS markets. The broad spectrum of experience which we have built over a period of 29 years enables us offer end to end solutions as a composite package, all under one roof.

Services

Hardware Design & Engineering

- Board & system design: Concept to complete product development
- DSP/FPGA based design, Single Board Computers
- Design, Circuit Simulation, Analysis & Prototyping
- Diagnostics, BSP, Driver Development
- Re-engineering and miniaturization

Embedded Software Design Development & Sustenance

- Complete Software Life Cycle Support
- Software Requirement Specifications Generation
- Modeling and Simulation
- High Level and Detailed Design Implementation
- Host Interface Development
- Platform Development
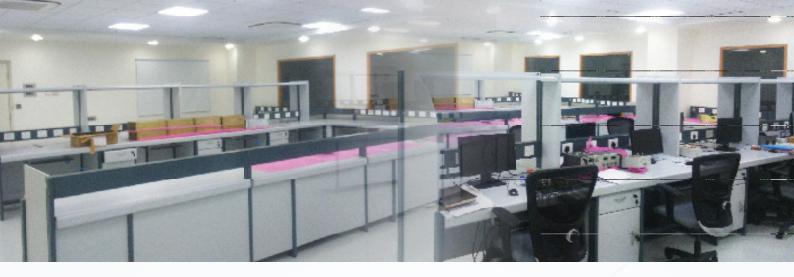- Re-Platforming

Testing and Analysis Services

- Code Reviews
- Inspection of software development and test documents
- Functional and structural coverage and testing
- Integration testing [software-software and software hardware]
- Reliability Analysis
- MTBF Analysis
- Signal Integrity Analysis
- Power Analysis
- Timing Analysis
- Loading Analysis

Testing Services

- Software test plan for software and hardware integration testing
- Test process for software and hardware integration testing
- Functional and structural coverage & testing
- Test reports for software and its testing
- Test case and test reports as per Verification & Validation requirements

Embedded System Development Engineering Services

INDUSTRIES AND MARKETS	Aerospace, Defence & Space	Industrial Automation, Automotive & Railways	Utility, Energy & Power	Homeland Security

DESIGN FOR CERTIFICATION
CE, FCC, EMI / EMC, MIL, IEC, ROHS, DNV, and ATEX Certification

MIDDLEWARE LAYER
Codecs & DSP/GPU Algorithm Development for Various Audio, Video and Images | Open Source Application Integration and Customs Back-End Application Development

APPLICATION LAYER
Application Framework Porting & Integration, UI Design and 3rd party Application Integration | Protocol Library, Application Framework, Services for CAN, USB, RS232/485, Ethernet, Wireless LAN, Blue tooth RFID,2G / 3G-GSM/GPRS, 2G / 3G Software Stack,1553B, ARINC

BSP LAYER
Board Design Bring Up, Boot Loader and File Development, Real Time Operating System, Device Driver and OS Porting Services | RTOS Porting: Linux Windows CE, Android, QNX and VX Works

EXPERTISE
Instrumentation Systems, Signal Processing, Control Electronics, Power Electronics, RF | Telemetry Systems, Automotive & Telematic Systems

INTERFACES
Audio / Video, Display, Camera, LCD, Touch Screen, Fingerprint scanner, Joystick, IR Remote, GPS, NFC, Storage, Sensors, Others

CONNECTIVITY
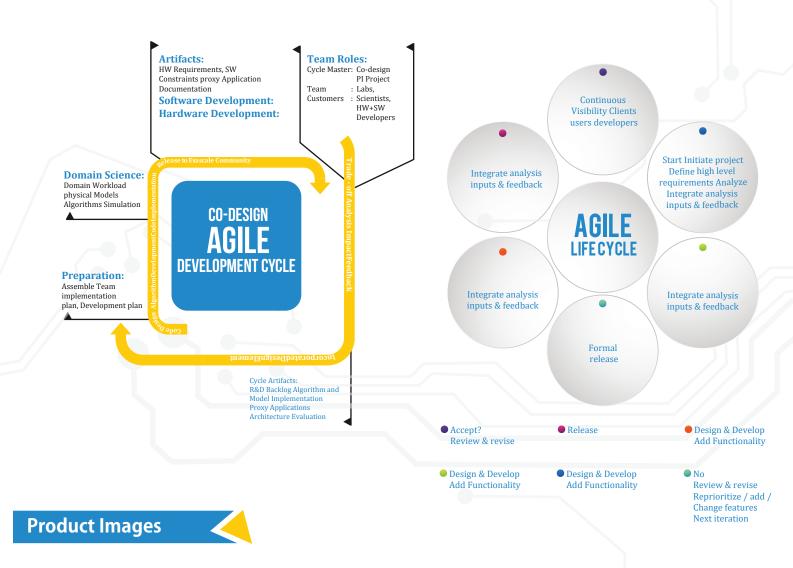Ethernet, GigE, USB, VME, PCI, cPCI, PCIe, MODBus, profi-Bus, CAN, MOST, PMC, WiFi, Blue Tooth, GSM

ARCHITECTURE
MCUs-8051,PIC, 196, 386, 486, ARM | MPUs-ARM, TI, Renesas, Freescale, DI, Broadcom, Intel, CORTEX, Net Silicon | TI and ADI DSPs | FPGAs-Xilinx, Altera, Atmel, Lattice, Actel

Co-Design Agile Development Cycle

Artifacts:
HW Requirements, SW Constraints proxy Application Documentation
Software Development:
Hardware Development:

Team Roles:
Cycle Master: Co-design PI Project
Team : Labs,
Customers : Scientists, HW+SW Developers

Domain Science:
Domain Workload physical Models Algorithms Simulation

Preparation:
Assemble Team implementation plan, Development plan

Release to Exascale Community
AlgorithmDevelopmentCodeImplementation
Code Design
Incorporated DesignElement
Trade - off Analysis ImpactFeedback

CO-DESIGN AGILE DEVELOPMENT CYCLE

Cycle Artifacts:
R&D Backlog Algorithm and Model Implementation Proxy Applications Architecture Evaluation

AGILE LIFE CYCLE

Continuous Visibility Clients users developers

Start Initiate project Define high level requirements Analyze Integrate analysis inputs & feedback

Integrate analysis inputs & feedback

Integrate analysis inputs & feedback

Integrate analysis inputs & feedback

Formal release

● Accept? Review & revise
● Release
● Design & Develop Add Functionality
● Design & Develop Add Functionality
● Design & Develop Add Functionality
● No Review & revise Reprioritize / add / Change features Next iteration

Product Images

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