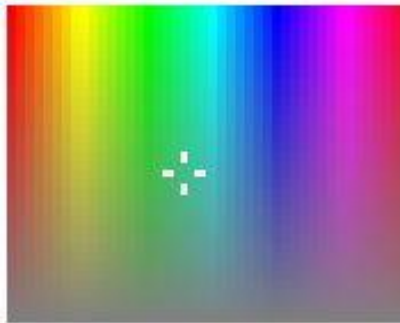




*Spectrum of
Design Expertise in
Video Surveillance Domain*



Video Surveillance Experience

IP Camera

- *Wireless and Wired IP Cameras*
- *Outdoor Zoom IP Camera*
- *PTZ IP Camera*
- *Day / Night IP Camera*

Video Management System

- *IP Video Management Software for Configuration, Live View & Recording, Playback, Event Reporting*

Video Analytics

- *Perimeter Protection*
- *Intrusion Detection*
- *Advanced Motion Detection*
- *Missing Object Detection*
- *Abandoned Object Detection*
- *Traffic Monitoring Analysis*
- *People Counting*
- *Many more...*

IP Camera

- *Wired and Wireless IP Camera*
 - *Media Processor from TI DM365/368*
 - *HD CMOS Sensor from Aptina*
 - *Realtek Wi-Fi Chipset for Wireless*
 - *TI Chipset for PoE*
 - *TI Chipset for Audio*
- *Outdoor Zoom IP Camera*
 - *Media Processor from TI DM365/368*
 - *HD CMOS Sensor from Aptina*
 - *18/36X Zoom lens from Tamron, Hitachi, Sony*

IP Camera

- *PTZ IP Camera*
 - *Media Processor from TI DM365/368*
 - *HD CMOS Sensor from Aptina*
 - *Integration with third party for Pan/Tilt motor assembly*
 - *Zoom lens from Tamron, Hitachi, Sony*

- *Day / Night IP Camera*
 - *Media Processor from TI DM365/368*
 - *HD CMOS Sensor from Aptina*
 - *Onboard IR circuit for night vision*

- *ONVIF Interface supported in all cameras*

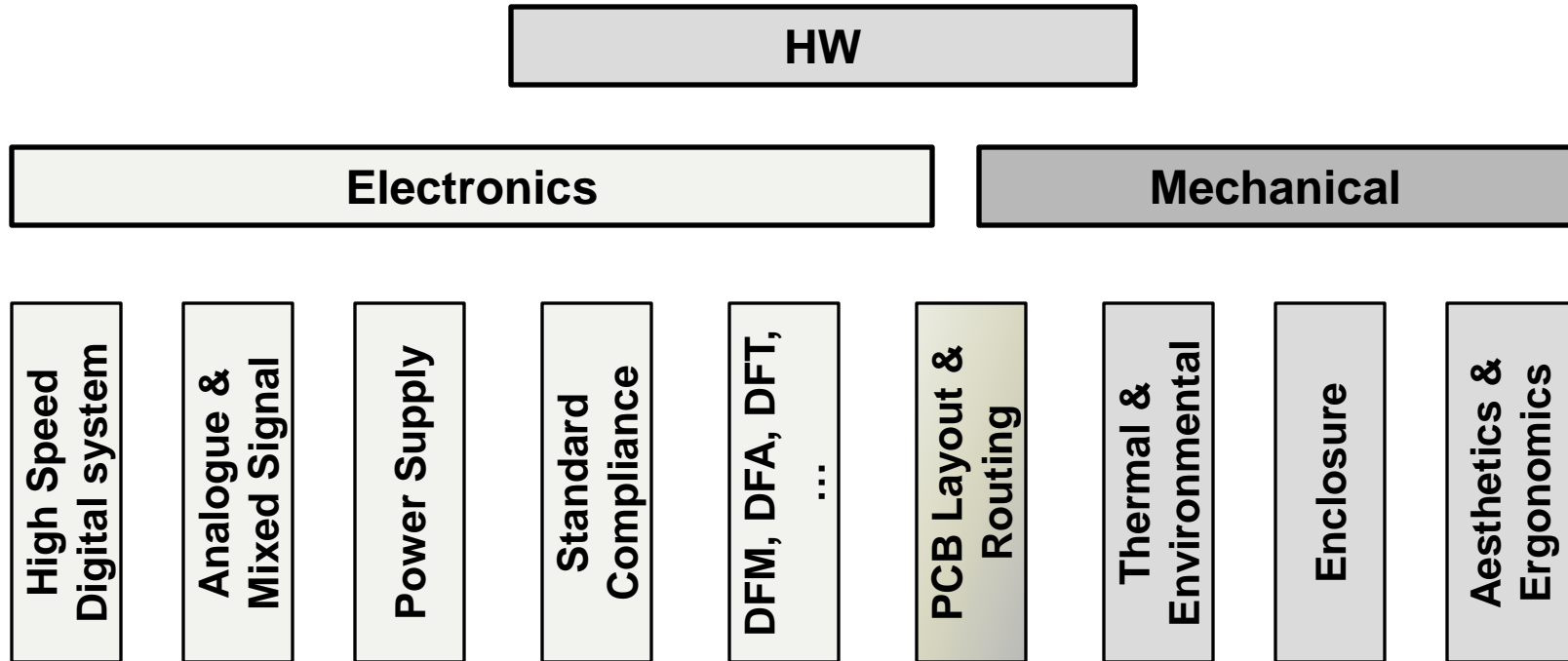
Video Management Software

- *IP Camera Integration*
 - *Sony, Bosch, Samsung, Axis, Panasonic, Zavio, Shyam etc*
- *Functional Modules*
 - *Live View & Recording, Playback, Configuration*
 - *Simultaneous 4 / 16 / 32 / 64 / 128 Cameras supported*
- *Integration with Video Analytics*
 - *Integration with in-house developed Video Analytics Engine*
 - *Event Reporting*
 - *Event based action supported*
- *Open Interfaces for integration with third party IP Camera and Video Analytics*
- *ONVIF Interface supported for interfacing cameras*

Video Analytics

- *Analytics developed so far:*
 - *Perimeter Protection*
 - *Intrusion Detection*
 - *Advanced Motion Detection*
 - *Missing Object Detection*
 - *Abandoned Object Detection*
 - *People Counting*
 - *Vehicle Counting and Classification*
- *IP Camera Integration*
 - *Open Interfaces for integration with third party IP Camera*
 - *Sony, Bosch, Samsung, Axis, Panasonic, Zavio, Shyam etc*
- *Based on OpenCV platform*

Embedded Hard-Ware



Mechanical -Electronics Co-Design

Electronics Design

- *High Speed Processor based designs*
 - *Single-core/ Multi-core Processors:*
 - *Davinci Media Processors*
 - *Peripheral I/Fs: PCI/ PCI-express/ USB/ SATA/*
 - *Network I/Fs: OC196/ XGigE/ GigE/ XFI/ XAUI/T1/E1...*
- *Media interfaces*
 - *CMOS/ CCD based Video sensors – HD & 5+ MP*
 - *Video Encoders/ Decoder, Graphics controllers*
 - *Analogue video, BT656, HDMI, DVI, VGA, LCD Interface etc.*
 - *Audio encoder/ decoder, SPDIF, I2S*
- *Board Power supplies and Power management*
- *Intelligent Platform Management Controllers*
- *Standard Platform based design*
 - *(Electronics/ PCB/ Mechanical etc..)*
 - *PCI / CPCI/ PCI Mezanine*
 - *ATCA / AMC/ uTCA (including IPMC)*
 - *ATX, PCMCIA, Mini-Card etc.*

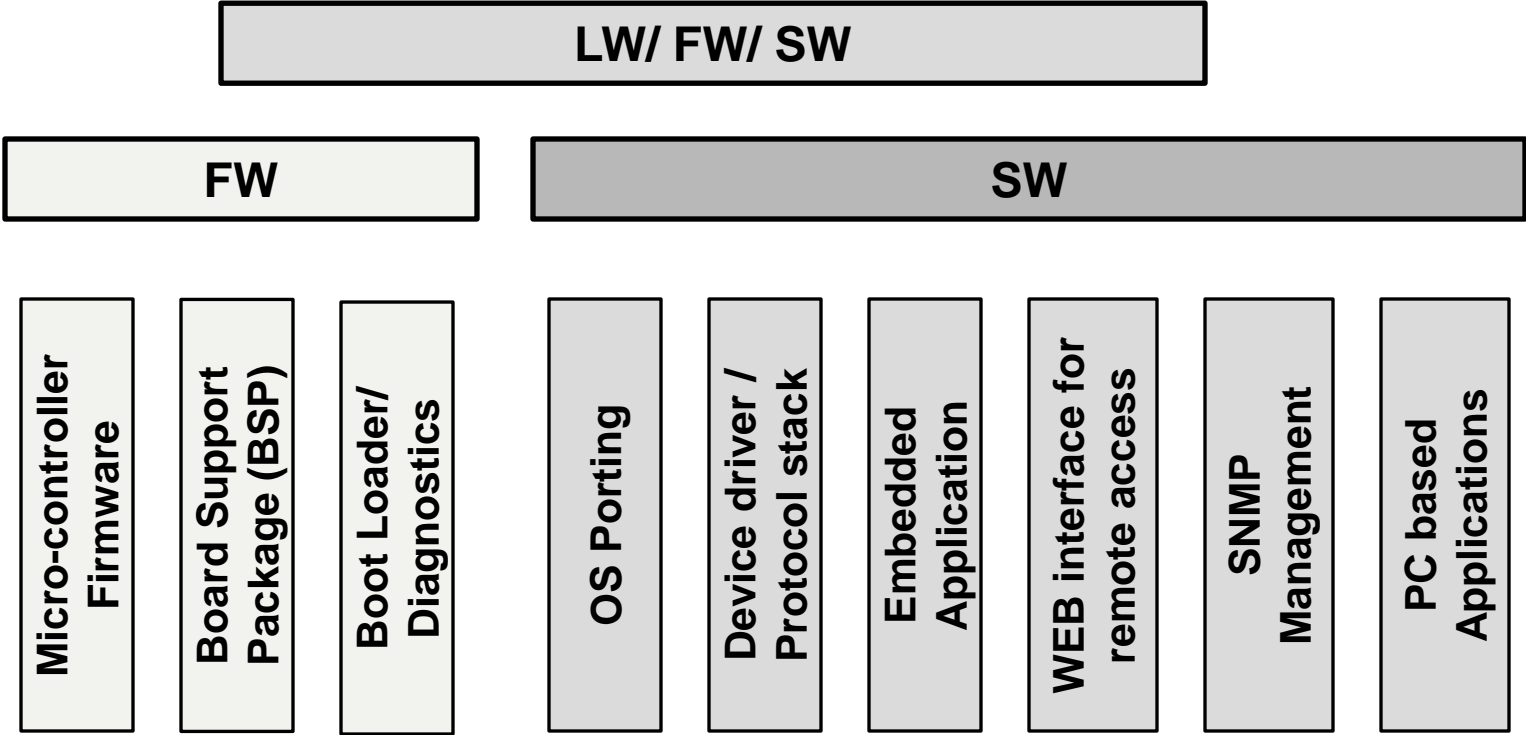
PCB Designs

- *Digital/ Analogue / RF and mixed PCBs*
- *Up to 24 Layer PCBs with 1500+ pin BGA devices*
- *Complete PCB design expertise – from Schematic to Gerber*
 - *Board stackup and controlled impedance*
 - *Layout /Routing analysis and optimization*
 - *Signal integrity analysis*
 - *EMCompatibility design*
 - *DFM/ DFA/ DFT*
 - *Power & Thermal design at Circuit & Board level*
- *EDA Tools: Altium & OrCAD*
- *Working Partnership with EMS for prototype & Volume production*

Mechanical Design

- *Mechanical design compatible for Standard platforms*
 - *PCI/ CPCI/ ATCA/ uTCA etc.*
 - *Custom enclosures / platform*
- *Complete Enclosure design / Tooling/ development support*
 - *PCB- Enclosure Co-design*
 - *Thermal & Environment aspects*
 - *Aesthetics and Ergonomics in design*
 - *DFM, DFA & Cost optimization*
- *CAD Tools: SolidWorks*
- *Mechanical Prototyping (Through Partners in India/ Taiwan)*
- *Tooling - Plastic / Metal options (Partners in India/ Taiwan)*
- *Production & Sub-assembly (Partners in India/ Taiwan)*

Software



LW/ FW/ SW/ HW Co-Design

Firmware

- *Firmware*
 - *Microcontroller FW development for different family devices*
 - *FW Applications like Platform/ Board/ Device management*
 - *BSP / Boot-loader/ Board diag etc for ARM/ MIPS/ PPC*
 - *Low level device driver/ bus driver etc.*

Software

- *OS porting to new platforms*
 - *Linux Porting on DSP based platforms*
- *Device driver /Protocol Development / Porting*
 - *Standard Bus based drivers – PCI / USB/ UART/ I2C etc.*
 - *Driver for Network devices: Ethernet/ Wi-Fi/ SFP/XFP*
 - *Drivers for media devices*
 - Video Sensors, Video & Audio CODEC, Display devices..*
- *Embedded and Application Software Development*
 - *Video management & Video Analytics*
 - *Embedded Web Servers & Associated applications*
 - *SIP, RTP, RTSP for audio/video transport on IP networks*
 - *SNMP, TR069, Soap XML*
 - *Test automation and test scripts*

Test System/ Tool Development

- *Test Platform (In house development)*
 - *Nail bed based Board PTS (for assembled PCBs)*
PTS hardware & Software Including Test Scripts
Test Automation Script (PERL, TCL)
Detailed test report / Statistics logging
Developed and deployed for Multiple products
 - *Product Level Testing*
Script based Functionality test, configuration check etc.
Serial number vise report logging



*A **Partner** you can count-on
for
all dimensions of
Embedded Product Development
life cycle*

*“**From Concept to Customer**”*