

INTRODUCTION

WAVELET GROUP

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WHO ARE WE ?

WAVELET GROUP

- ✓ Domestic services of design and development of products using DSP / FPGA and digital image processing technologies.
- ✓ Supply of ready-to-use products based on these technologies.

SCI-COM SOFTWARE

- ✓ Overseas operations in image processing application software.

WAVELET TECHNOLOGIES

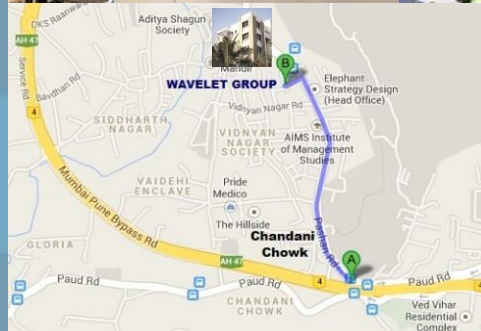
- ✓ Overseas and Domestic operations in DSP hardware, Firmware.
- ✓ Overseas operations in image processing application software.



WHO ARE WE ?

Location @ PUNE

- ✓ 150 Km south-east of the top Indian metro, MUMBAI
- ✓ Linked to India's main sea-port and air-port by 6-lane Expressway
- ✓ Region home to India's top industries, research centres, heritage sites



WHO ARE WE ?

Core values



Organizational Values

- Passion
- Excellence
- Innovation
- Effort
- Knowledge
- Honesty & Fairness
- Work Culture




WHO ARE WE ?

Team WAVELET

- ✓ Senior and experienced human resources
- ✓ Ph.D., Post Graduate and Graduate qualifications
- ✓ Individual experience ranging from 2 to 25 years
- ✓ Effective in-house training in skills and values

WAVELET GROUP

**WAVELET GROUP SPORTS EXPERTISE IN
DSP AND IMAGE PROCESSING TECHNOLOGIES.**



SERVICES

- HARDWARE, SOFTWARE AND FIRMWARE DESIGN
- FEASIBILITY ANALYSIS
- PROTOTYPING
- DESIGN VALIDATION
- CONSULTANCY AND TRAINING

Excellence Through Research

WHO ARE WE ?

Infra-structure

- ✓ 10000 sq-feet of modern office and works area
- ✓ 64 KVA DG Set with 20 KVA on-line UPS
- ✓ Lease line connectivity with intra-net
- ✓ Video conferencing setup
- ✓ Electronic design and SMD assembly tools, T&M setup
- ✓ DSP/FPGA design tools
- ✓ Imaging hardware, light sources, machine vision setup
- ✓ Work-stations for firmware and software development



WHO ARE WE ?

Business experience

- ✓ Sale of electronic design services and products
- ✓ Indian market
- ✓ Overseas markets
 - ✓ EU (Germany, UK, Italy)
 - ✓ U.S.A.
 - ✓ Japan

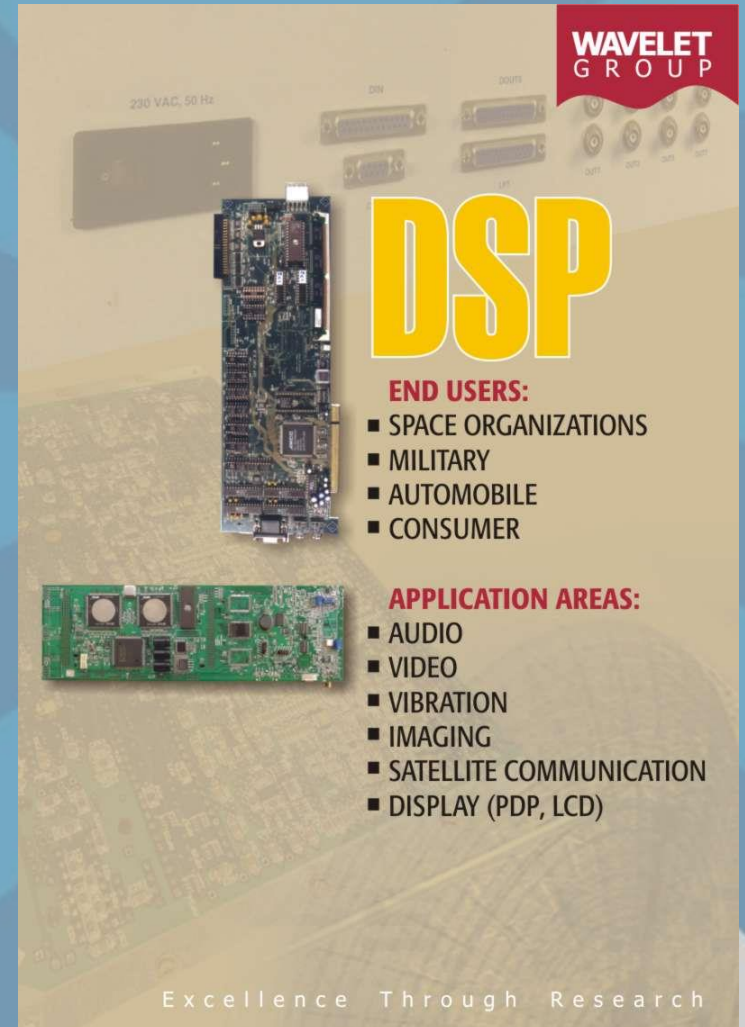


WHAT DO WE DO ?

Services in DSP

✓ Design and development

- ✓ Satellite communications,
- ✓ Noise and signal analyzer,
- ✓ Audio, video systems,
- ✓ Vibration controllers,
- ✓ Radar, ATE for radar,
- ✓ Sensor signal processors,
- ✓ Digital radio receivers,
- ✓ Wired / wireless networks,
- ✓ Navigation sub-systems,
- ✓ Motion controllers.



WAVELET GROUP

DSP

END USERS:

- SPACE ORGANIZATIONS
- MILITARY
- AUTOMOBILE
- CONSUMER

APPLICATION AREAS:

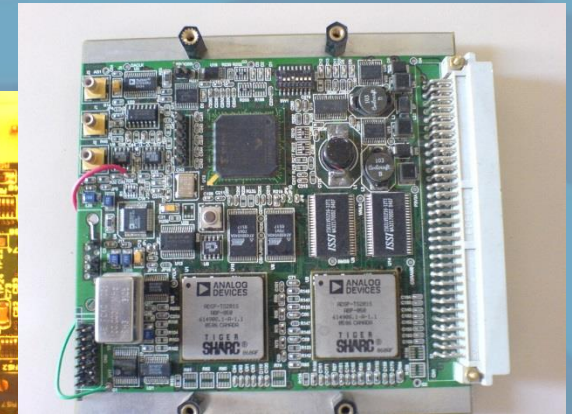
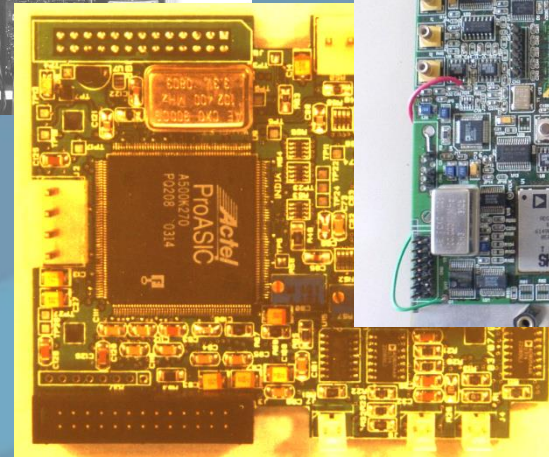
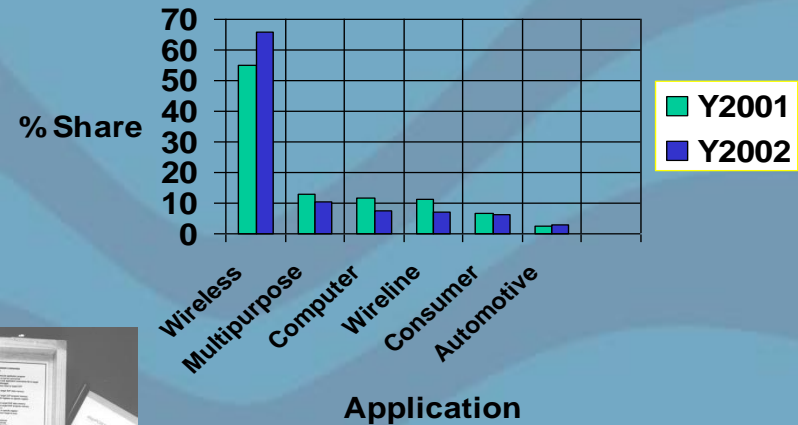
- AUDIO
- VIDEO
- VIBRATION
- IMAGING
- SATELLITE COMMUNICATION
- DISPLAY (PDP, LCD)

Excellence Through Research

WHAT DO WE DO ?

Products for signal processing

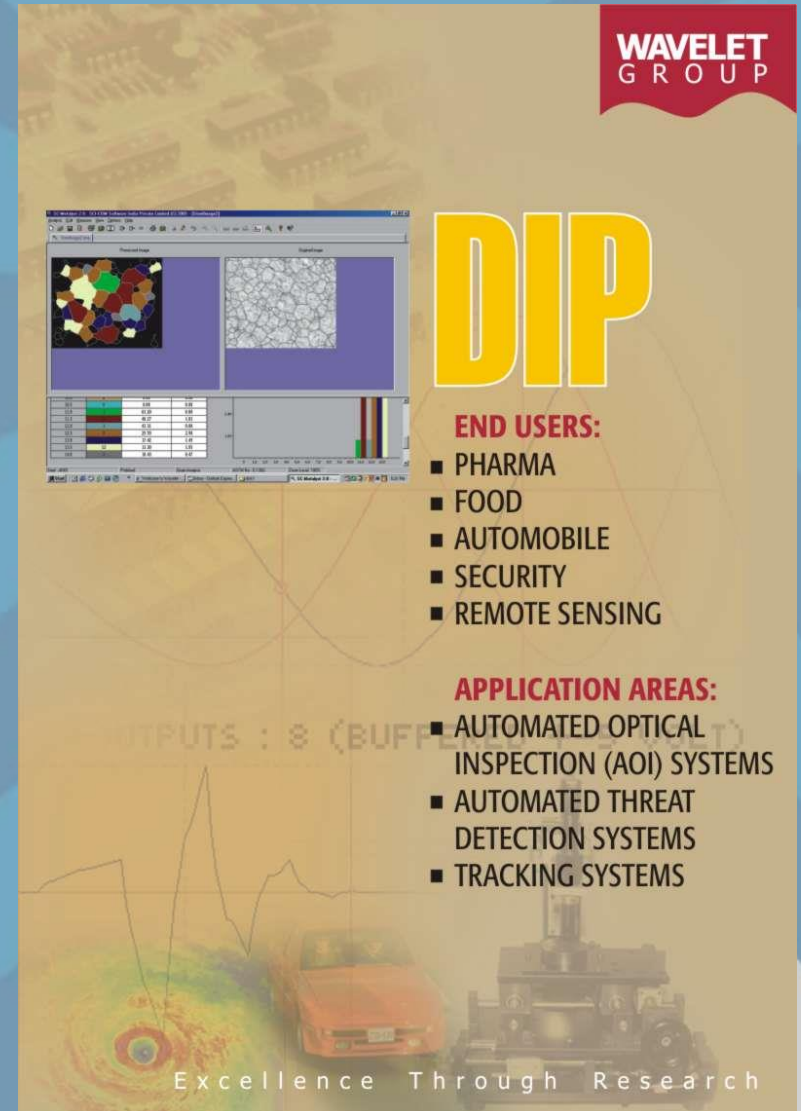
- ✓ Portable data loggers,
- ✓ Mobile sensor controllers,
- ✓ Radar Signal processors,
- ✓ Precision timing and waveform generators,
- ✓ Video signal processors,
- ✓ Ready-to-use DSP /FPGA modules,
- ✓ DSP and FPGA codes
 - ✓ FFT, CORDIC, BPSK, FEC,
- ✓ DSP domain algorithms
 - ✓ Telecommunications,
 - ✓ Vibration, Audio, video.



WHAT DO WE DO ?

Products in image processing

- ✓ Ready-to-use imaging boards and systems
- ✓ LED light sources
- ✓ Packaged application software for imaging
 - ✓ WG-Deja Vu
 - ✓ WG-AutoLux
 - ✓ WG-FragLyst



WAVELET GROUP

DIP

END USERS:

- PHARMA
- FOOD
- AUTOMOBILE
- SECURITY
- REMOTE SENSING

APPLICATION AREAS:

- AUTOMATED OPTICAL INSPECTION (AOI) SYSTEMS
- AUTOMATED THREAT DETECTION SYSTEMS
- TRACKING SYSTEMS

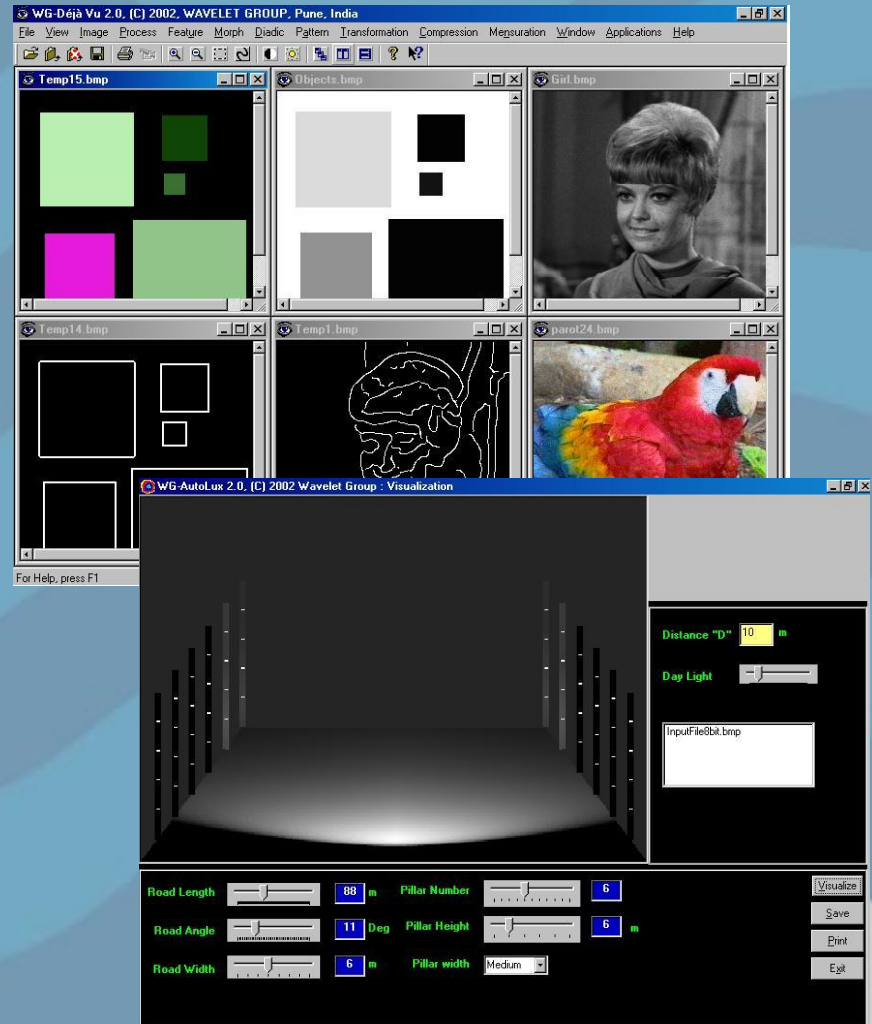
Excellence Through Research

The image shows a screenshot of the DIP software interface, which includes a main window with two panels displaying image processing results, a color calibration bar, and a histogram. The background of the slide features a collage of images related to image processing, including a car, a microscope, and a thermal image.

WHAT DO WE DO ?

Products in image processing

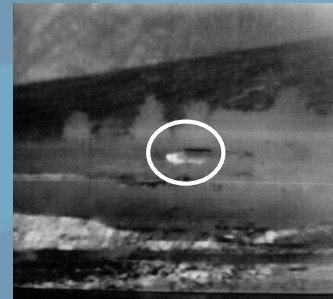
- ✓ DIP domain algorithms
 - ✓ Enhancement
 - ✓ Segmentation
 - ✓ Feature extraction
 - ✓ Stereo imaging for 3D
 - ✓ Picto-metry
 - ✓ Artifact reduction
 - ✓ Automated alignment



WHAT DO WE DO ?

Services in image processing

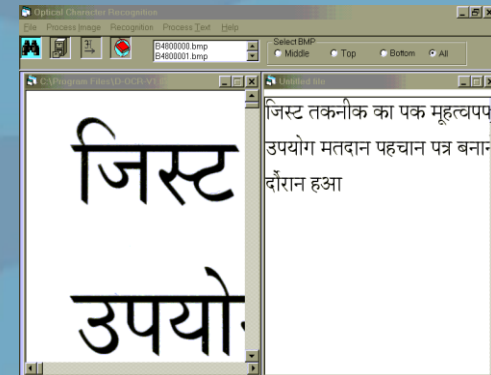
- ✓ Design and development of DIP domain products
 - ✓ Thermal imaging
 - ✓ Optical inspection
 - Automobile
 - Electronic components
 - Textile, Pharmaceutical
 - ✓ PDP, LCD displays
 - ✓ Automotive guidance



Thermal
imaging

3-TON AT 1.2 km TIME:10 PM

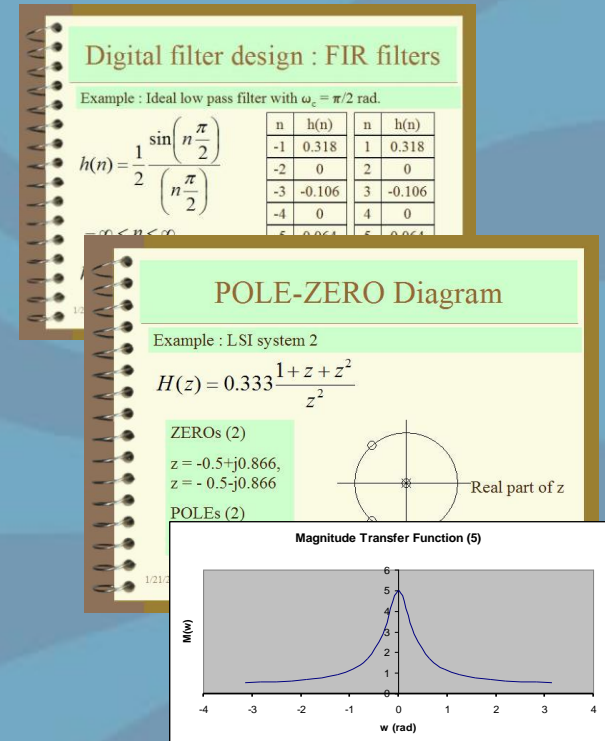
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WHAT DO WE DO ?

Training services

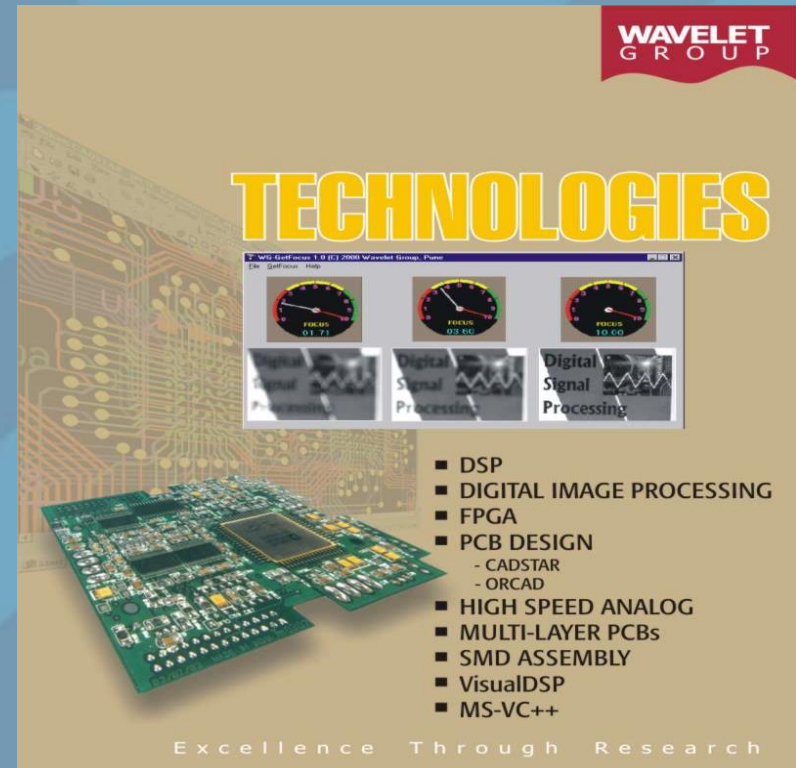
- ✓ DSP training
 - ✓ Basic theory and concepts
 - ✓ Practical DSP usage
 - ✓ Application oriented approach
- ✓ Image processing training
 - ✓ Imaging standards
 - ✓ Algorithms in image processing
 - ✓ Coding for image processing



OUR KNOWLEDGE BASE

Techniques

- ✓ DSP/FPGA based design
- ✓ Precision analog design
- ✓ RF design
- ✓ Power management design
- ✓ Multi-layer PCB design
- ✓ Multi-processing
- ✓ DSP/DIP domain algorithms
- ✓ Comm. Protocol based design
 - ✓ Serial, CAN, Ethernet, GPRS/GSM
- ✓ Product / system design
- ✓ Certification standards
 - ✓ IEC61326, JSS55555, MIL461E



OUR SKILLS SET

Tools

- ✓ VisualDSP, CodeComposer
- ✓ Xilinx, Altera, Actel, Cypress
- ✓ OrCAD, CADSTAR (SI, EMC)
- ✓ SMD assembly
- ✓ Test and measurement
 - ✓ DSO (HF), LSA, SA (RF)
- ✓ MS-VC++ and MS-VB
- ✓ MATLAB simulation
- ✓ Screening, ENTEST



HOW DO WE WORK ?

Process

✓ ISO 9001:2008



Quality Policy

*"We are passionate to establish ourselves
as world leaders in Digital Signal Processing
and Digital Image Processing Technologies
through continual improvement, innovation, commitment
and total customer satisfaction "*

Vishwas Udpikar
President
Wavelet Group
February 2, 2004

**WAVELET
GROUP**



HOW DO WE WORK ?

Research and Development

- ✓ Repeatable R & D process
- ✓ Project team NDAs for IPR protection
- ✓ Development process documentation
 - ✓ Requirement specs
 - ✓ Design document
 - ✓ Acceptance test plan, Acceptance test report
 - ✓ User reference manual



HOW DO WE WORK ?

Manufacturing

- ✓ Multi-level quality control
- ✓ Standards for safety in manufacturing
- ✓ Environment friendly processes in manufacturing
- ✓ User documentation
 - ✓ User instruction manual
 - ✓ Trouble-shooting manual
 - ✓ Warranty policies



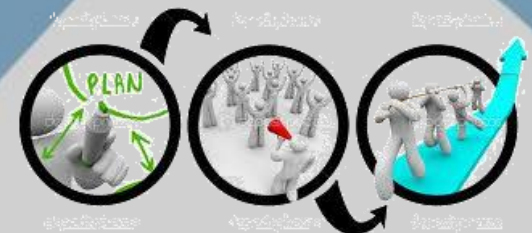
HOW ARE WE ORGANIZED ?

Group	Knowledge	Skills
Project Management	Project management, business development	Estimation, feasibility analysis, PoC creation, documentation
Embedded System Design	Analog, digital HW design, uC and DSP and FPGA based HW design	Schematic, PCB CAD, SI, T&M, uC toolsets, documentation
VLSI Design	FPGA based firmware design, FPGA algorithms	VHDL, VERILOG coding, documentation
DSP Design	ADI, TI DSP based firmware design, DSP algorithms	DSP coding, simulation, documentation
SW Design	Application SW design, RTOS, image processing	MS-VC++, MS-VB, DSP coding, documentation
Product Engineering	Product sales, product manufacturing (procurement, inward QC, assembly), testing	Soldering, re-work, mech. Assembly, T&M, documentation
Office Admin.	Accounting, banking, customs, legal and government processes	Accounting, negotiations

WHAT IS OUR OFFER ?

Design and development services

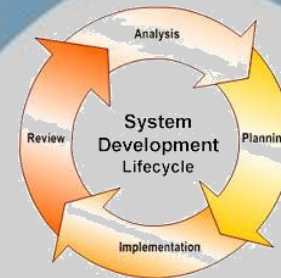
- ✓ Hardware design and development
 - ✓ High speed electronic hardware with DSPs and FPGAs
- ✓ Firmware design and development
 - ✓ Firmware for DSPs, FPGAs and micro-controllers
- ✓ Application software design and development
 - ✓ C/C++, MS-VC++ and MS-VB application software
- ✓ Algorithm design, characterization
 - ✓ DSP and image processing algorithms simulation and benchmarking



WHAT IS OUR OFFER ?

Turn-key total solutions

- ✓ System design, development, installation and commissioning
 - ✓ DSP domain systems
 - ✓ Codecs (Audio, Video),
 - ✓ Controllers (Motion, Vibration, Acoustic noise)
 - ✓ Automated test equipment (Electronic products)
 - ✓ Telemetry (Radar, Thermal imaging, Software radio)
 - ✓ Navigational electronics (GPS data logging, sensor signal processing)



WHAT IS OUR OFFER ?

Turn-key total solutions

- ✓ System design, development, installation and commissioning
- ✓ Image processing domain systems
 - ✓ Optical inspection systems,
 - ✓ Medical imaging systems,
 - ✓ Security systems,
 - ✓ Biometric systems.



WHAT IS OUR OFFER ?

Ready-to-use products

- ✓ DSP and FPGA based general purpose hardware
- ✓ DSP and FPGA based IP for a variety of algorithms
- ✓ LED light sources for vision systems
- ✓ Application software for image processing



WHAT IS OUR USP ?

- ✓ Advanced design and development services under one roof
- ✓ Total IP protection of customer specific development
- ✓ Domain expertise in DSP and image processing
- ✓ Long experience of delivering turn-key solutions
- ✓ Committed after sales warranty support for upgrades
- ✓ Low cost of design services and products



Thank You !

Wavelet Group

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