

## Robotics Smart Camera

## Reference Design

### Features:

- Color: Full RGB, YUV 4:2:2, Monochrome
- Resolution: up to 1.3Mpixels
- Speed: 10-90 frames/second
- Low Component and System Cost
- Full Intergrated Solution – No need for Host
- Connects to Ethernet/RS232/GPIO
- Available as:
  - Information pack: Design Description
  - Evaluation kit: Hardware with pre-instaleld SW
  - Development Kit: Source Code & Schematics

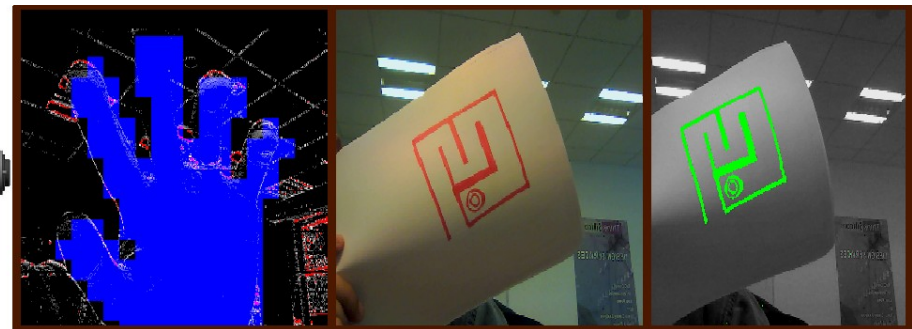
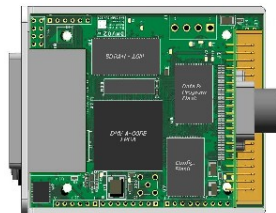
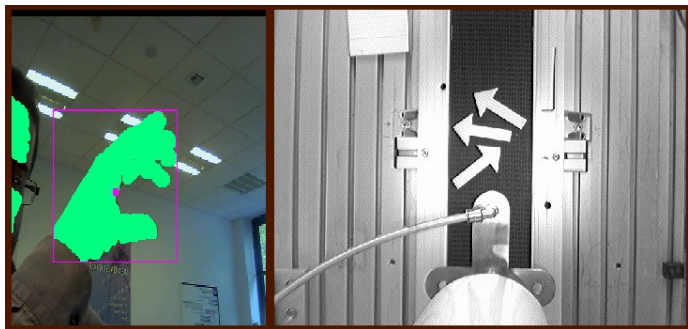
### Target Applications (templates available):

- Detection of Objects and Lines
- Tracking of Objects and Lines

- Guidance of Robotic Arms

### Components:

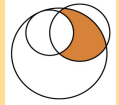
- CMOS Camera Head
- All-in-one Vision FPGA with:
  - Sensor Interface
  - BLOB extraction, Object Alignment etc. accelerators
  - Two RISC Cores (one for Vision, one for System)
  - Ethernet MAC
- Open source Software:
  - Linux
  - Simple GUI
  - Basic Vision Libraries
  - Application Configuration and Control



# Reference Design: Robotics Smart Camera

www.diaploous.com

DIAPLOUS – Components for Visual Perception  
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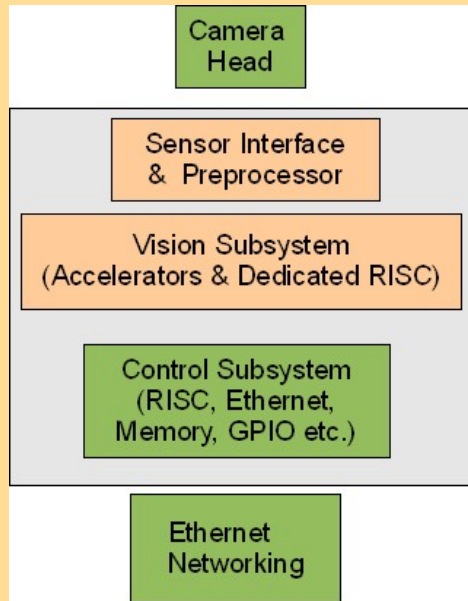


## Hardware:

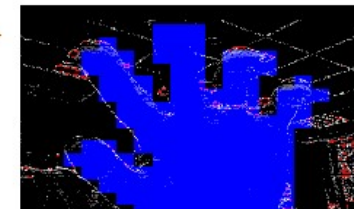
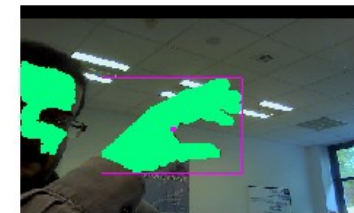
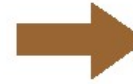
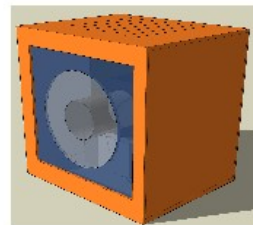
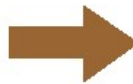
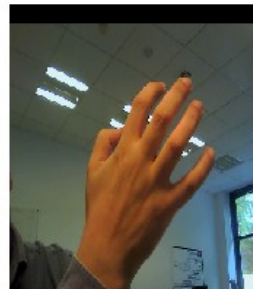
The main part is an FPGA which contains all the functional units. Standard modules are used for:

- Image Input
- Ethernet
- Power (PoE)
- Display

These parts can be replaced with others for various application needs.

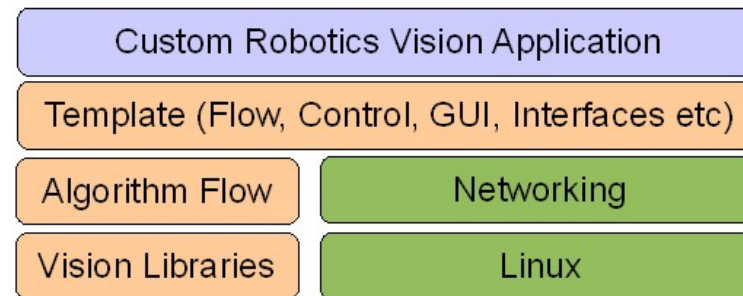


The system will see the items that need inspection via the CMOS image sensor.



## Software:

The software part is based on a combination of open-source (for the operating system and the network stack) with custom (but still royalty free) libraries to take advantage of the HW resources. Templates make it easy to create your own custom vision application.



The result can be seen on an optional OLED display or on a host PC.