

PANORAMA

Ultra Wide Context Aware Imaging

PANORAMA Project Overview

Robert Hofsink
Project Coordinator
May 18th 2012



παν (*pan*) = "all"
ὄραμα (*horama*) = "view"

Content

- Project rationale
- Goal
- Consortium overview

Imaging trends

- Exponential increase in the use of images and video
- Sophisticated image analysis technology in many applications
- Move from 'single-view' to 'multi-view' imaging
- Substantial growth in the generation and real-time handling of images

Similarity in challenges across applications

Medical imaging, broadcasting and surveillance each face:

1. A huge increase in amount of data that needs to be processed
2. An increase in the complexity of image processing and image analysis algorithms
3. Tight real time requirements for image based control systems
4. Representation of “holistic” image data.

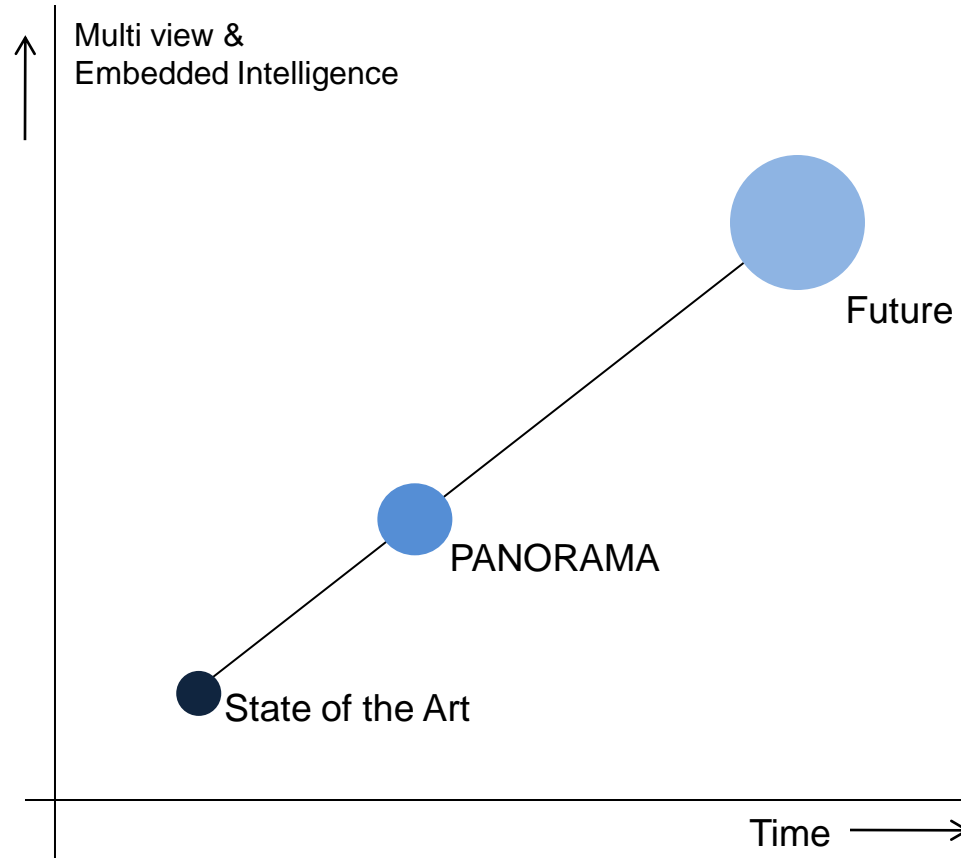


PANORAMA Rationale

- We see three main developments in the imaging applications of the future, in this project they are referred to as:
 - **Ultra Wide Imaging**
 - Multiple imaging sources and images from different angles
 - Multi modalities
 - Inter camera calibration
 - Algorithms to merge many views to a panorama or 3D representation
 - **Content Aware Imaging**
 - What: More intelligent image acquisition about what data to acquire (e.g. automatic ROI)
 - How: and how to optimally image the material of interest by analyzing the video content.
 - **Context Aware Imaging**
 - Cameras become aware of higher-level user needs and the existence of other cameras
 - Jointly optimized imaging in multi-camera systems.
 - Combine multiple video streams in a more useful and drastically simplified representation.

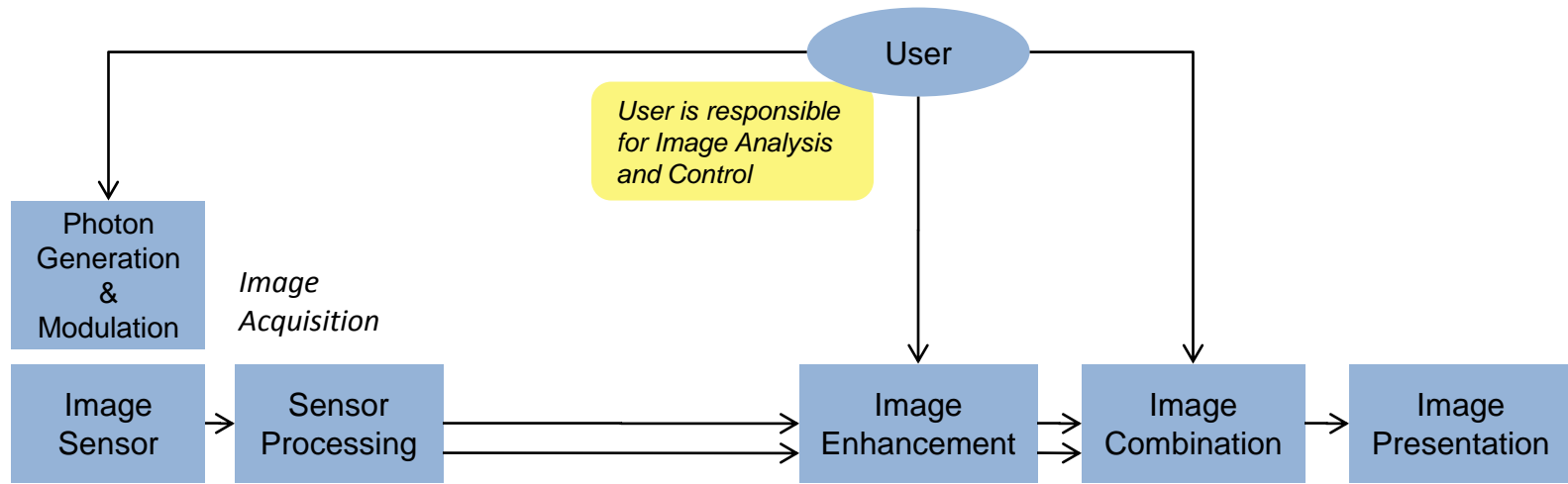


PANORAMA roadmap



State of the Art for Professional Imaging

Discrete Imaging Components, User supervised



Photon Generation & Modulation:

X-ray imaging

- X-ray generation
- Beam shaping

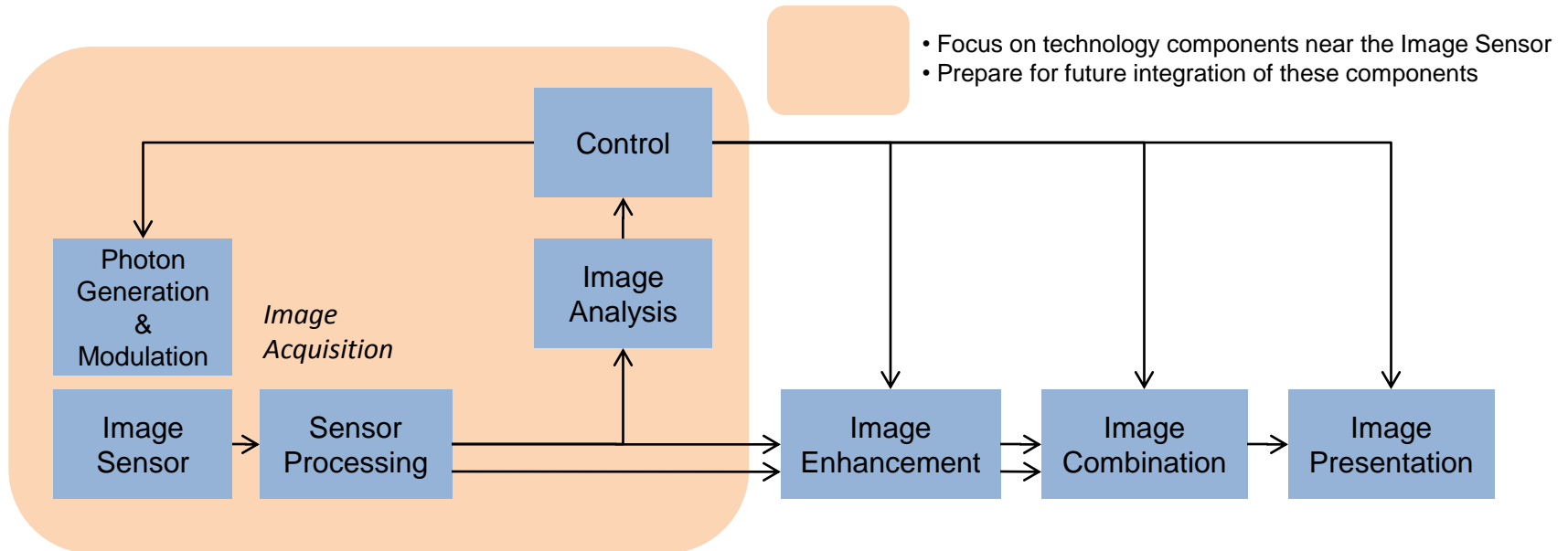
Optics

- Light (sun, lamp)
- Lens
- Diaphragm
- Filters (e.g. Neutral Density)



PANORAMA

Discrete Intelligent Imaging Components



Goal:

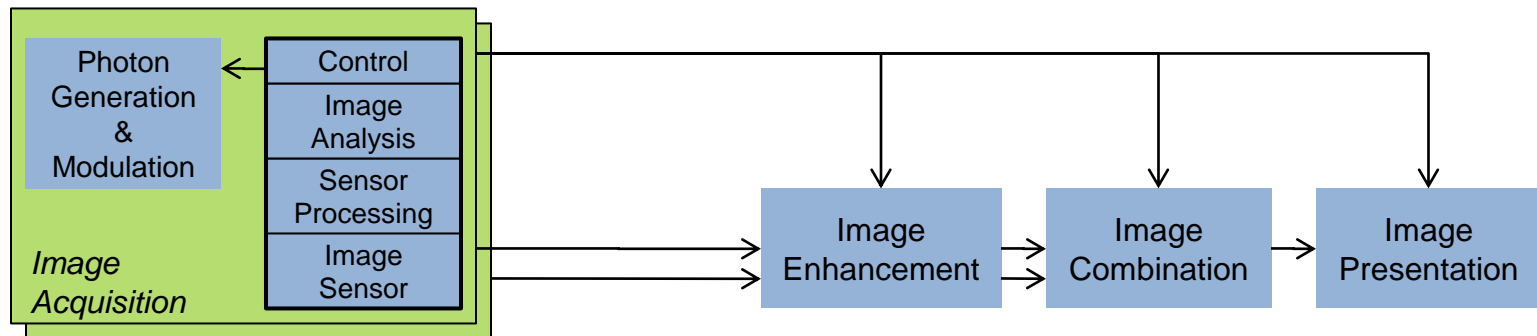
Autonomous image acquisition, tightly coupled to the image sensor.

This will allow the user to work more efficiently and concentrate on the primary task of the application.

Beyond PANORAMA

Integrated Intelligent Imaging Components

SiP / SoC Imaging Component



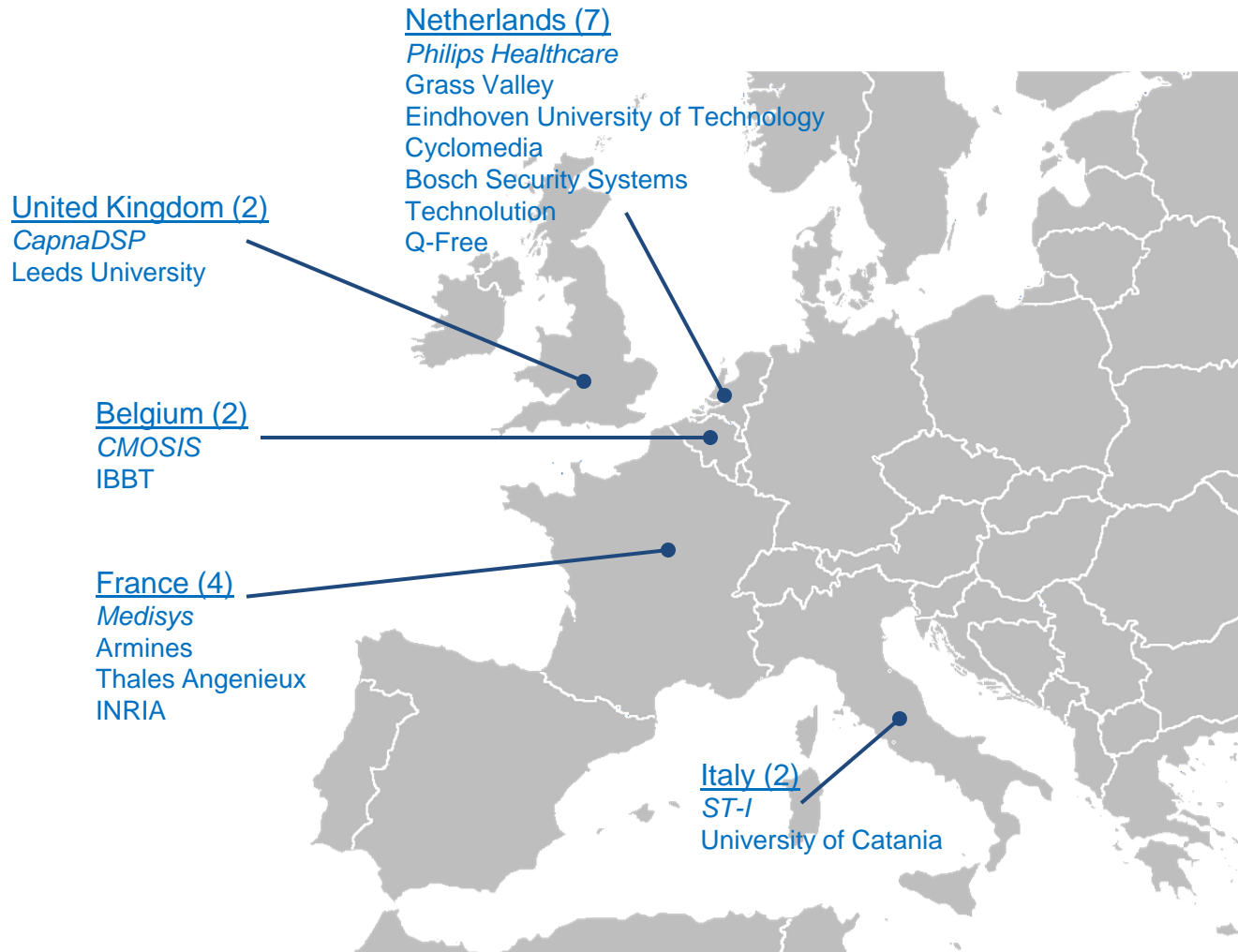
SiP / SoC enables:

- Ultra low latency performance
- Ultra high band width data throughput
- Ultra complex image analysis algorithms in a closed loop to control the sensor

Consortium key figures

- 3 application domains: Healthcare, Broadcasting, Security
- 17 partners
- 5 countries: NL, BE, FR, UK, IT
- Total budget: 22.8 M€
- Total funding: 9.4 M €
- Start date: April 1, 2012
- Duration: 3 years
- Total person months: 2084 \approx 58 person years / year

Consortium geographical overview



Partner logo's and links















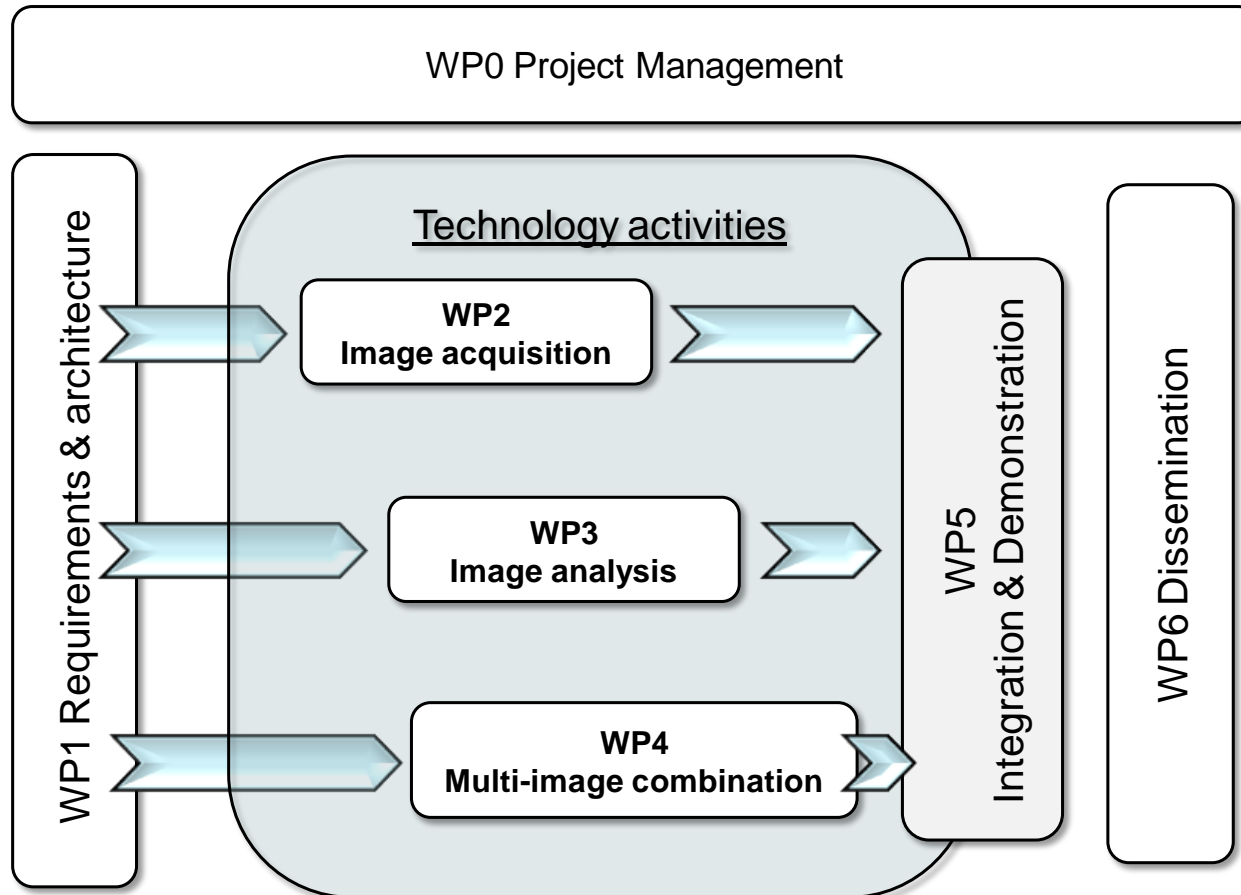




Links to partner websites:

- 1 PHILIPS www.philips.com
- 2 GVN www.grassvalley.com
- 3 TUE www.tue.nl
- 4 CYC www.cyclomedia.com
- 5 BOSCH www.boschsecurity.nl
- 6 TECH www.technolution.eu
- 8 QFREE www.q-free.com
- 9 MEDISYS www.research.philips.com
- 10 ARMINES cmm.ensmp.fr
- 11 TAGX www.angenieux.com
- 12 INRIA www.inria.fr
- 13 UNIVLEEDS www.leeds.ac.uk
- 14 CAPNA www.capnadsp.com
- 15 IBBT telin.ugent.be
- 16 CMOSIS www.cmosis.com
- 17 ST-I www.st.com
- 18 UNICT iplab.dmi.unict.it

PANORAMA Work Packages



Project organization

