



# 'Eyes of Things' European project – Innovation on 'computer vision'

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 643924



# Introduction

H2020-ICT-2014-01 European project [GA n°643924]

- Topic: Smart cyber-physical systems
- Innovation Action (i.e. “Novel applications with old solutions”\*)

Started on 1<sup>st</sup> of January 2015

Duration: 3 years

Budget: 5 M€ (EU contribution: 3,8 M€)

8 partners, 7 countries

- Cf. table →

\* HW platform under study with Myriad2 processor

N°	Partner name	Role	Country
1	Universidad de Castilla-La Mancha	Coordinator Leader of WP1 ‘Management’, W3 ‘Platform SW’, WP5 ‘Communication & Dissemination’	Spain
2	Awaiba Consultadoria, Desenvolvimento e Comercio De Componentes Microelectronicos, Lda.	Camera and sensor supplier	Portugal
3	Camba.tv Ltd (EVERCAM)	Leader of demonstrator 3: Cloud computing	Ireland
4	Deutsches Forschungszentrum Fuer Kuenstliche Intelligenz GmbH (DFKI)	Software development co-leader Leader of WP4 ‘Integration & demonstration’	Germany
5	Movidius Ltd	Leader of WP2 ‘Platform hardware’ Myriad2 processor supplier	Ireland
6	Thales Communications & Security SAS	Software development Leader of demonstrator 1: Surveillance	France
7	Fluxguide Ausstellungssysteme OG	Leader of demonstrator 2: Augmented reality (museum)	Austria
8	nViso SA	Leader of demonstrator 4: Perceptual computing (doll)	Switzerland

# 'Eyes of Things' Consortium

**evercam.io**  
cameras unleashed

**Movidius**

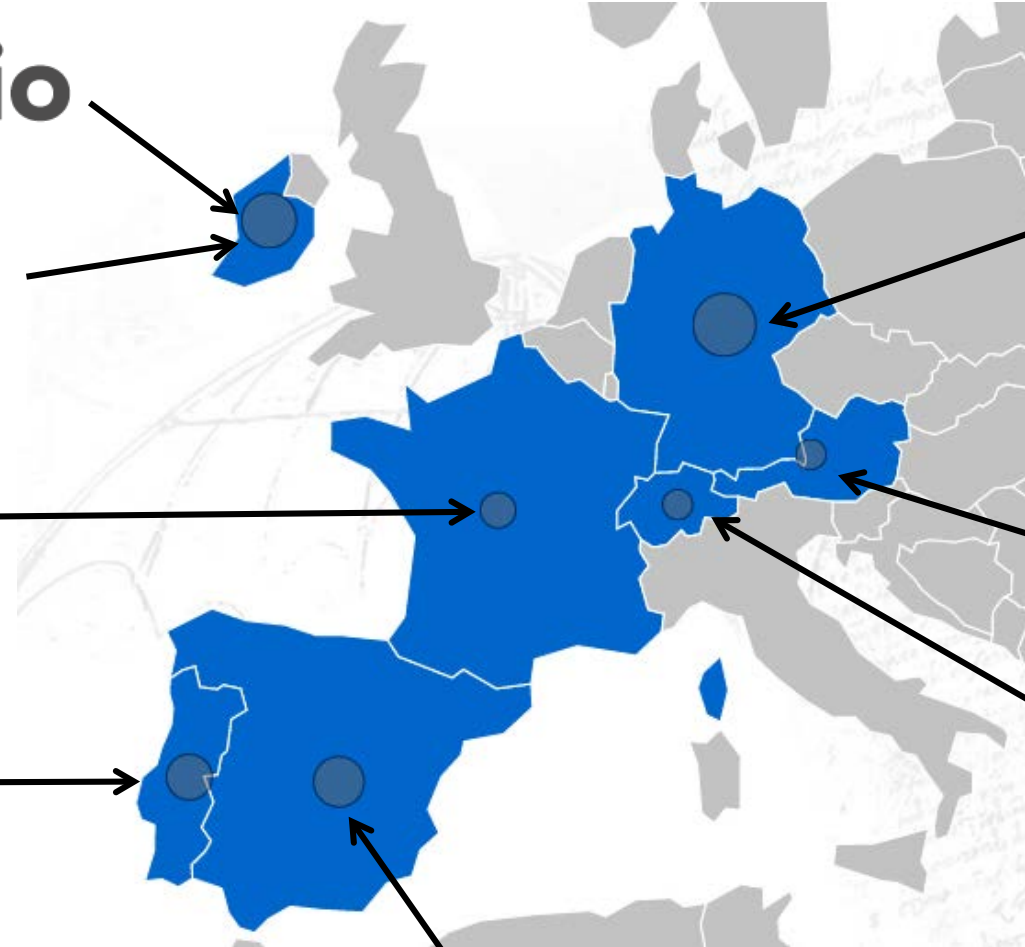
**THALES**

**AWAIBA**



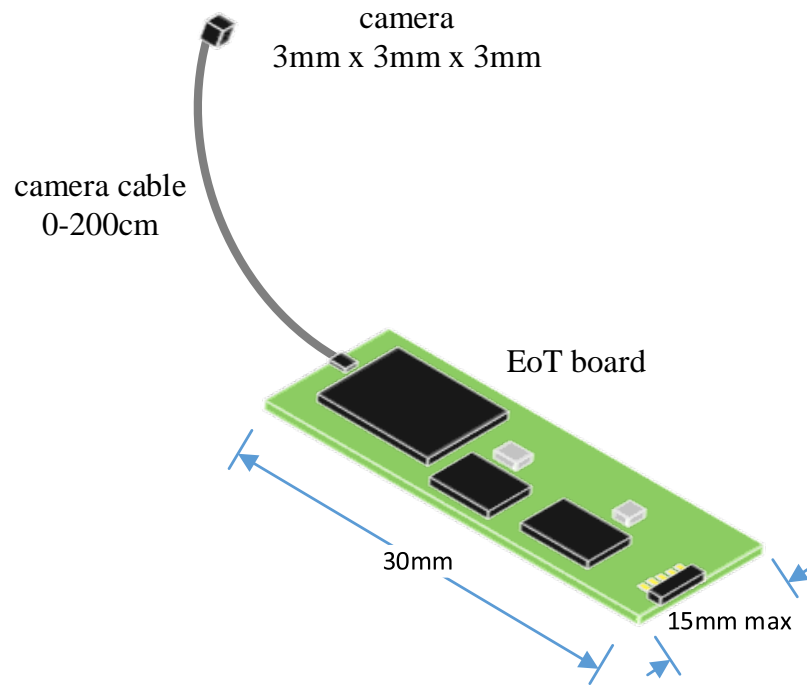
**NVISO**

**fluxguide**  
living technology | inspiring spaces



- Vision is our most advanced sensor
  - Embedded vision is everywhere
- Vision practitioners do not have a versatile mobile platform
- Smartphones and tablets are good, but:
  - They can't be used to develop new products
  - They do not allow 'always-on' vision

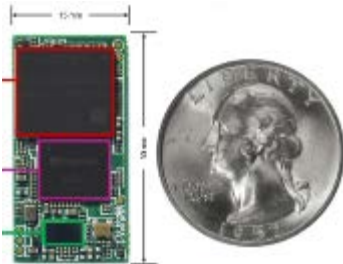
# The idea



- Build a generic vision system that can be used standalone but also embedded in more complex artifacts
- Optimize power consumption, size and cost
- Demonstrate that it can be effectively used to develop vision-based products (4 demonstrators)

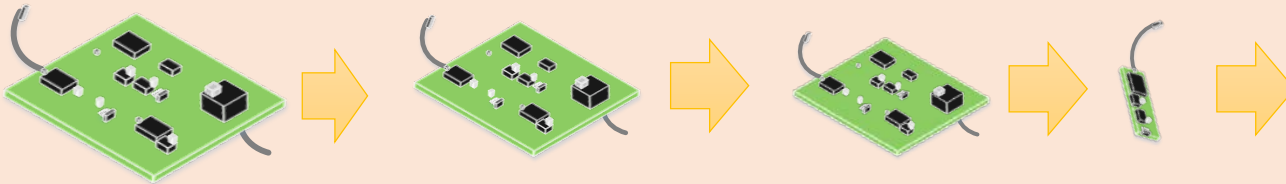
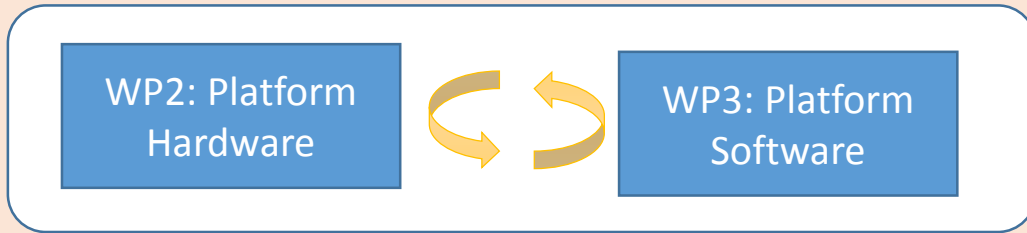
# Similar devices

- Similar devices:
  - WaRPboard, Ambarella, Intel EDISON, Ingenu Newton2, Nixie







- Most of these systems are realized with scalar sensors
  - Accelerometers, gyroscopes, temperature, pressure...
- NONE has been designed from bottom-up with vision in mind!

# Project organisation



**WP4: Integration & Demonstration**

- T4.1: Demonstrator 1**  
Surveillance 
- T4.2: Demonstrator 2**  
Augmented reality 
- T4.3: Demonstrator 3**  
Cloud computing 
- T4.4: Demonstrator 4**  
Perceptual computing 

WP1: Project management

WP5: Communication, Dissemination & Exploitation

# Demonstrator 1: Surveillance

- Application on a peephole allowing the owner to be alerted on his Smartphone with pictures and qualified events: movements, suspicious activities, etc.
- Leader: THALES



1. Attach



2. Configure



3. Receive alarms



# Demonstrator 2: Augmented reality

- Application on a museum audio tour with automatic recognition of paintings in order to provide additional audio information
- Leader: Fluxguide



# Demonstrator 3: Cloud computing

- Application of 'Vision as a Service' (VaaS)
  - Ex: "lifelogging" camera
- Leader: EVERCAM



# Demonstrator 4: Perceptual computing

- Application on a doll detecting and recognizing child's emotion in order to react accordingly (with audio feedback)
- Leader: nViso



# Conclusion

'Computer vision' connected platform

- Foreseen for September 2016

Demonstrators

- Foreseen end of 2017

...

→ An important stake with potential numerous applications!



Thank you!

Website: <http://eyesofthings.eu/>