mobics

INNOVATION THAT WORKS

ABOUT MOBICS

Mobics Ltd is an SME based in Athens, specializing in the design, development and provision of innovative applications and value added services for mobile, web and pervasive environments, with an emphasis on geographic and contextual information.

As a spin-off company of the **National and Kapodistrian University of Athens** (Department of Informatics and Telecommunications), Mobics invests in people and know-how to offer superior, cutting-edge technology products.
The Mobics research team is led by world-class researchers, with a long record of research contributions and practical, real world product development experience.

Mobics Ltd has been involved in the development of many international, national and regional R&D projects by joining forces with well-known organizations all over Europe including Fraunhofer, CSEM, VTT, Prisma Electronics, Space Hellas.

About ploigos

ploigos.gr

ploigos.gr is the most popular web site for geographical information retrieval in Greece.
Ploigos provides facilities such as address retrieval, routing, categorized points-of-interest and special interest applications (e.g., pharmacies on duty, public transport visualizations, traffic conditions). As a geo-advertisement platform, Ploigos serves non-intrusive, geographically-targeted advertisements.

i-CiTi platform for smart cities

i-CiTi

The i-CiTi platform provides mobile and web facilities for supporting and managing urban environments, through the exploitation of existing city data, typically stored in GIS systems, and sensor infrastructure, where available. Using state-of-the-art data aggregation techniques, implemented by the Sentixi platform, and voluntary participation of end-users, i-CiTi can provide a rich, real-time view of day-to-day city functions and behavioural patterns, leading to improved efficiency and citizen satisfaction.

i-CiTi functionality covers areas such as the following:

- Mobility with private and public transportation systems (traffic & parking indications, routing)
- Environmental monitoring of pollution indicators, noise levels, energy consumption
- Safety emergency event management
- Tourist content and services
- e-Government, direct democracy, consultation, public participation
- Geo-advertising for promotion of local business activities

The functionality of the platform is built in a modular way, so that each municipality can configure it according to its requirements.

Stereo vision technology

mobiXeyes
STEREO VISION TECHNOLOGY

mobiXeyes™ is a computer stereo vision system used for extraction of 3D information from digital images obtained by CCD cameras. By comparing frames from two cameras, 3D information can be extracted by examination of the relative positions of objects in the two images, similar to the biological process of stereopsis.

Applications

- People tracking
- Mobile robotics
- Industrial automation
- 3D object location
- Volume measurement
- Object speed measurement
- Security and surveillance
- Intelligent transportation systems (ITS) and traffic imaging
- Sport training assistant and statistics

Benefits

- Non-intrusive solution with passive sensors that do not affect the monitored environment
- No beaming out laser or radar waves
- Avoids detection
- Unaffected by stray laser or radar beams
- Standard accuracy

Specifications

- Two 1/3", progressive scan CCD image sensors
- Resolution of 640x480
- Variable focal length lenses: 5-50 mm
- Up to 205 FPS at full resolution
- Higher FPS with reduced ROI
- Trigger and sync I/O
- Up to 150 cm baseline for high stereo accuracy
- Gigabit Ethernet interface (GigE Vision®).

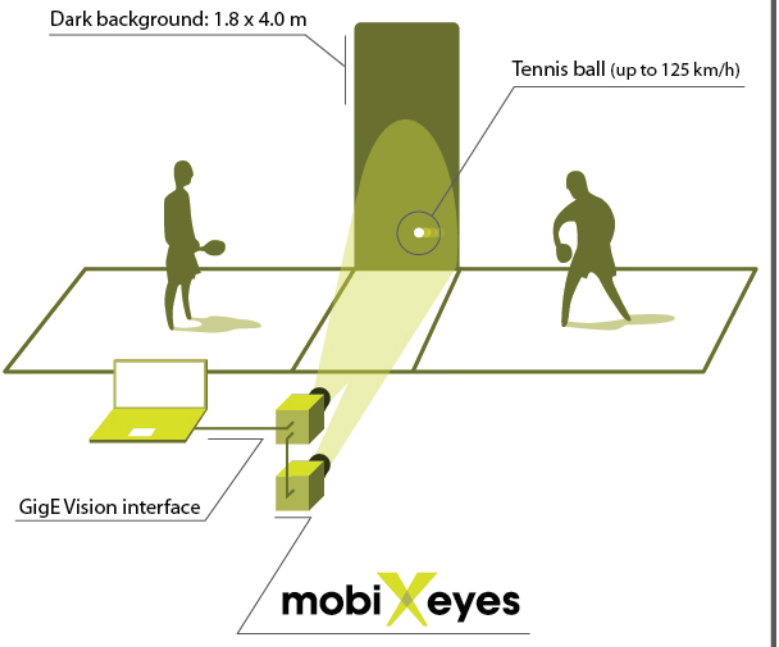
Use case – Beach-Racket

The Challenge: Accurate speed measurement.
The system is able to operate at the beach in extreme weather conditions such us high temperature, a lot of dust and direct exposure to sunlight for more than 8 hours, without power-off periods.

The Solution: mobiXeyes™
mobiXeyes™ captures images at 130 FPS. This is the minimum frame rate required in order to capture at least 2 frames of the ball at maximum velocity at the center of the court, and then calculate its speed with average error of ± 1%.

National tournaments
The system is successfully used in competitions of the Hellenic Association of Beach-Racket.

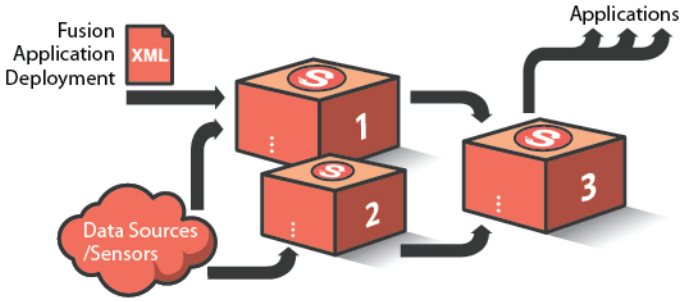
Beach Racket Speed Sensor



Multi-purpose sensor information fusion platform

Sentixi

The **Sentixi** platform provides a versatile environment for the processing of multiple, high rate data streams and the generation of high level, high quality data indicators. **Sentixi** can be effortlessly configured to meet the requirements of a wide spectrum of demanding data processing applications.



Features

- Fusion of information from heterogeneous data sources
- Highly scalable platform (enterprise grade) based on the Java EE suite
- Workflow-driven operation model
- Case specific customization through an XML Domain Specific Language
- Standardized interfaces for sensor data feed and fused data delivery (OGC SWE, OASIS CAP)
- Extensive and expandable pool of stream processing algorithms: Opinion Pool, Voting, Aggregation, Missing Value Substitution, Event/Novelty Detection, Probabilistic Fusion
- Cascade connectivity for large scale deployments and massive streams
- Administrative GUI for fusion workflow deployment

Use cases

- ✓ Fire detection
- ✓ Environmental monitoring
- ✓ Site surveillance
- ✓ Health monitoring for industrial equipment and facilities

Data collection and event detection for smart city sensing infrastructures

Selected projects

MARIBRAIN*: the main goal of this national project is to design a smart wireless sensor network platform for monitoring the status of a ship on a 24/7 basis, and to develop condition based maintenance models and services for maritime companies.

MITOS: an experiment on smart-city transport services over the future Internet experimental research facility developed by the SmartSantander European project (FP7 - ICT)

GINSEC: this European project (FP7 – Research for the benefit of SMEs) aims to improve the positioning and navigation technologies used in unmanned vehicles (drones).

Meleagros*: the objective of this national project is to deliver an integrated platform for fire detection and protection.
It investigates machine vision and sensor fusion algorithms in order to improve the accuracy of event detection. The platform provides all the tools required for civil protection, such as fire simulators and a crisis management console.

Busfinder*: an integrated ITS platform for optimal transportation with public transport. The project provides a mobile application, an open interface for fleet management systems, as well as algorithms for optimal routing and prediction of bus arrival and travel times.

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COMPETITIVENESS AND ENTREPRENEURSHIP
OPC II

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Ministry of Education and Religious Affairs, Culture & Sports
OSRT Management and Implementation Agency for RTD and Innovation Activities

mobics

www.mobics.gr
27 Kifissias Avenue
Athens, 11523 Greece
Tel: (+30)210 6433525
Fax: (+30)210 6433407
Email: info@mobics.gr