



LEONIDAS IBS & MS: Protecting Homeland...



A Partner. Forever.

MAIN TARGET



- ▶ Support the country in reaching full situational awareness at their external borders
- ▶ Increase the reaction capability of country's law enforcement authorities
- ▶ Reduce the number of illegal immigrants entering the country undetected
- ▶ Provide complete security to the internal entry points of the country
- ▶ Reduce the threat of terrorism, including preventing cross-border movement of persons, weapons and funds connected with terrorist and other criminal activity;

MAIN TARGET



- ▶ Promote high standards in border services
- ▶ Promote free and secure movement of persons, goods, services and investments;
- ▶ Prevent and repress transnational organized crime, corruption and trafficking in weapons, drugs and human beings
- ▶ Promote dignified treatment of all individuals wanting to cross borders
- ▶ Create beneficial conditions for social, economic and cultural development
- ▶ Foster common spaces of freedom, security and justice in the area
- ▶ Ensure security of the international transport circuit for supply of commodities

KEY CONCEPT



Border Surveillance

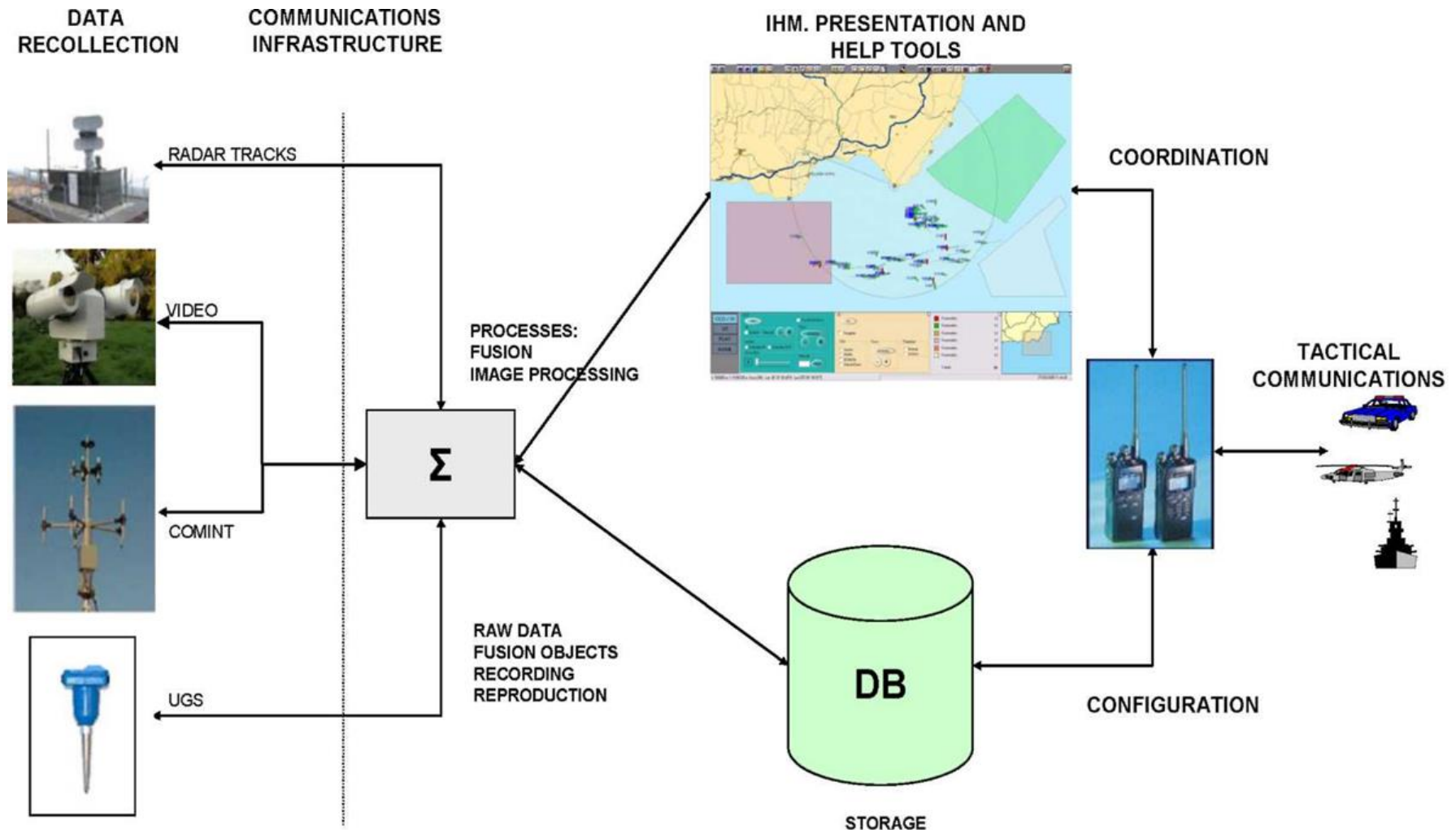
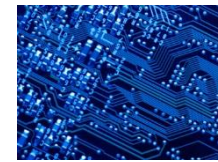


Border Management

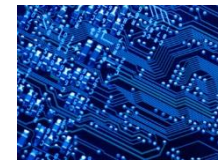


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SYSTEM DESCRIPTION



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Complete Border Surveillance
Solution

SYSTEM DESCRIPTION



- ▶ Fixed and mobile command & control systems which incorporate specialized centralized data fusion & management software (indigenously developed by ONEX)
- ▶ Sophisticated fixed-based and mobile surveillance systems with motion detection, object tracking, threat classification, information fusion capabilities and integration with various sensors:
 - ❑ Short range electro-optical (EO) systems (Day/night TV camera, Thermal Imaging, Laser Range Finder, North Finder)
 - ❑ Long range systems (Radar)
- ▶ Unattended Ground Sensors (UGS) systems
- ▶ Perimeter intrusion detection systems
- ▶ Secure terrestrial wireless, wired and satellite communications systems

SENSORS



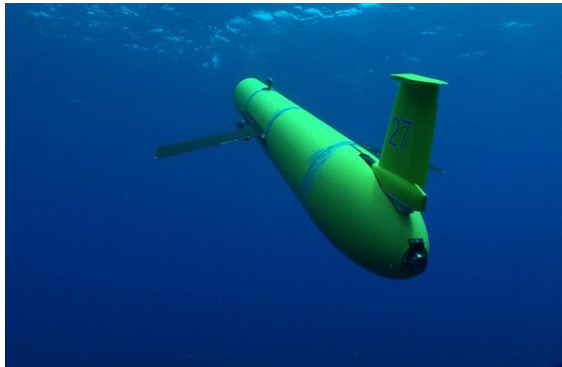
Aerial Surveillance Systems

□ Unmanned Aerial Systems (UASs)

- Micro & Mini UAVs
- Hexacopters
- Tactical UAVs
- MALE UAVs



SENSORS

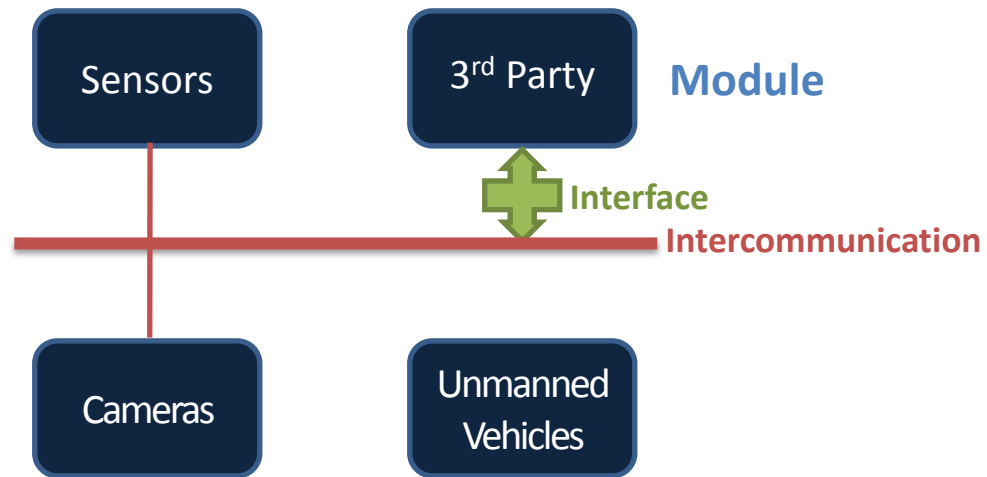


Naval Surveillance Systems

- ☐ Vessel Control (Underwater Inspection System)
- ☐ Coastal Surveillance Radars
- ☐ Unmanned Underwater Vehicles



Software





- ▶ The whole software is divided in separate functional modules
- ▶ 3rd party modules can be added through the use of Interfaces (special software)
- ▶ Key Characteristics:
 - ▶ Modular
 - ▶ Multi-tier Client/Server
 - ▶ Open Architecture

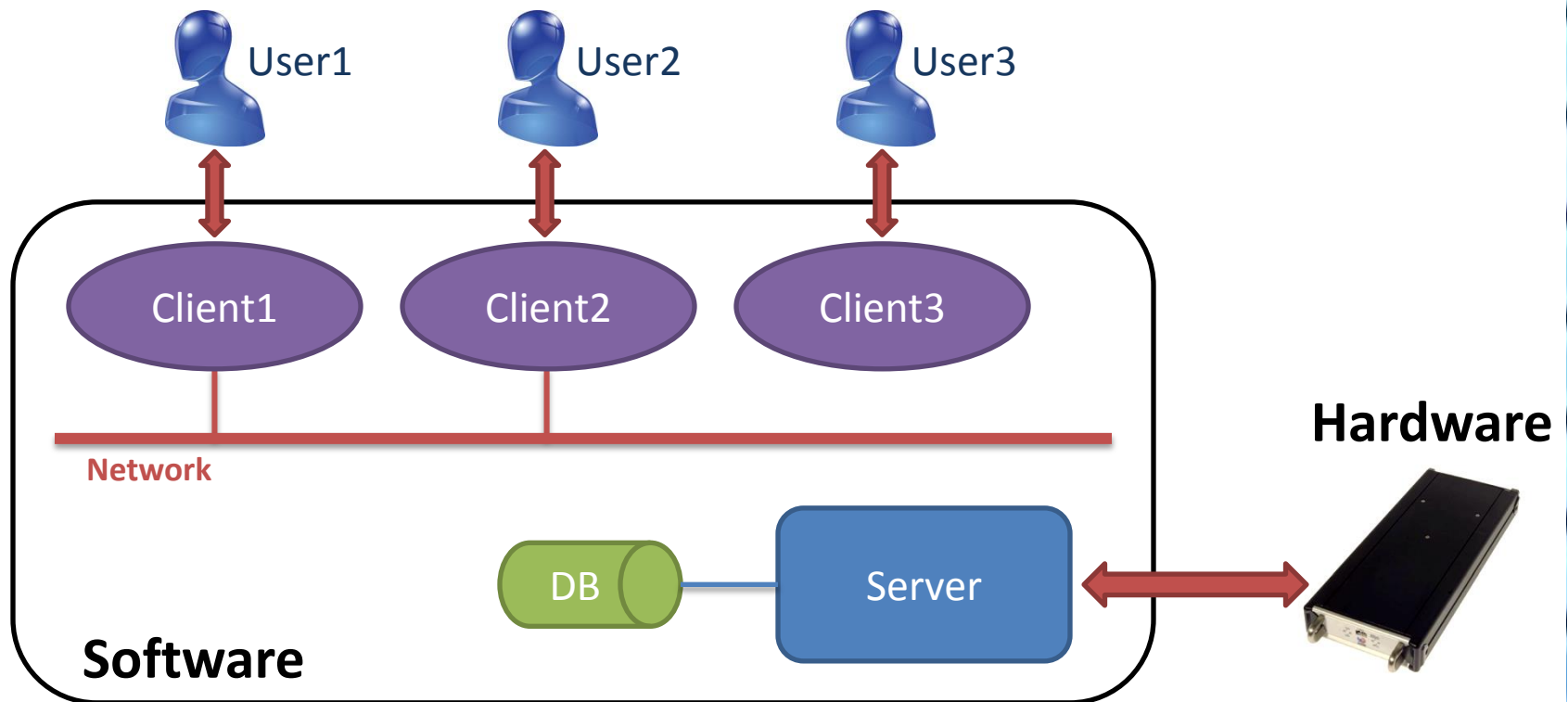


ADVANTAGES

- ▶ Provides easier maintainability, because each module is simpler than a single application
- ▶ Modules can be modified, upgraded, removed, added without affecting the availability or operability of the rest of the system
- ▶ Allows the system to support different kinds of sub-systems
- ▶ All system components operate as one single system

The whole software system is divided into three levels:

Server - Client - Database





1. Server

- ☐ Handles transactions between the clients and the database
- ☐ Controls user rights
- ☐ Distributes working load evenly
- ☐ Controls back-ups
- ☐ Communicates with hardware

2. Client

- ☐ Handles all interaction with the users
- ☐ Adjusts functionality according to user rights
- ☐ Many clients can operate simultaneously

3. Database

- ☐ Relational database system
- ☐ Stores all data from subsystems
- ☐ Stores user information

C2 SOFTWARE System Snapshot



1

Esc-Main Screen F4-Events F6-Settings F7-System F8-Data Bank

ASPIS

Main Settings Help

Main Alerts Events Users Parameters Access control Cameras Designer Reports System Maintenance NBC Protection

OK

Current User
Konstantinos
Papadopoulos

29-Nov-2009 19:43:48

Ack <Enter>

System Tools

RBtec
IA5500w

ON-LINE

New Shift

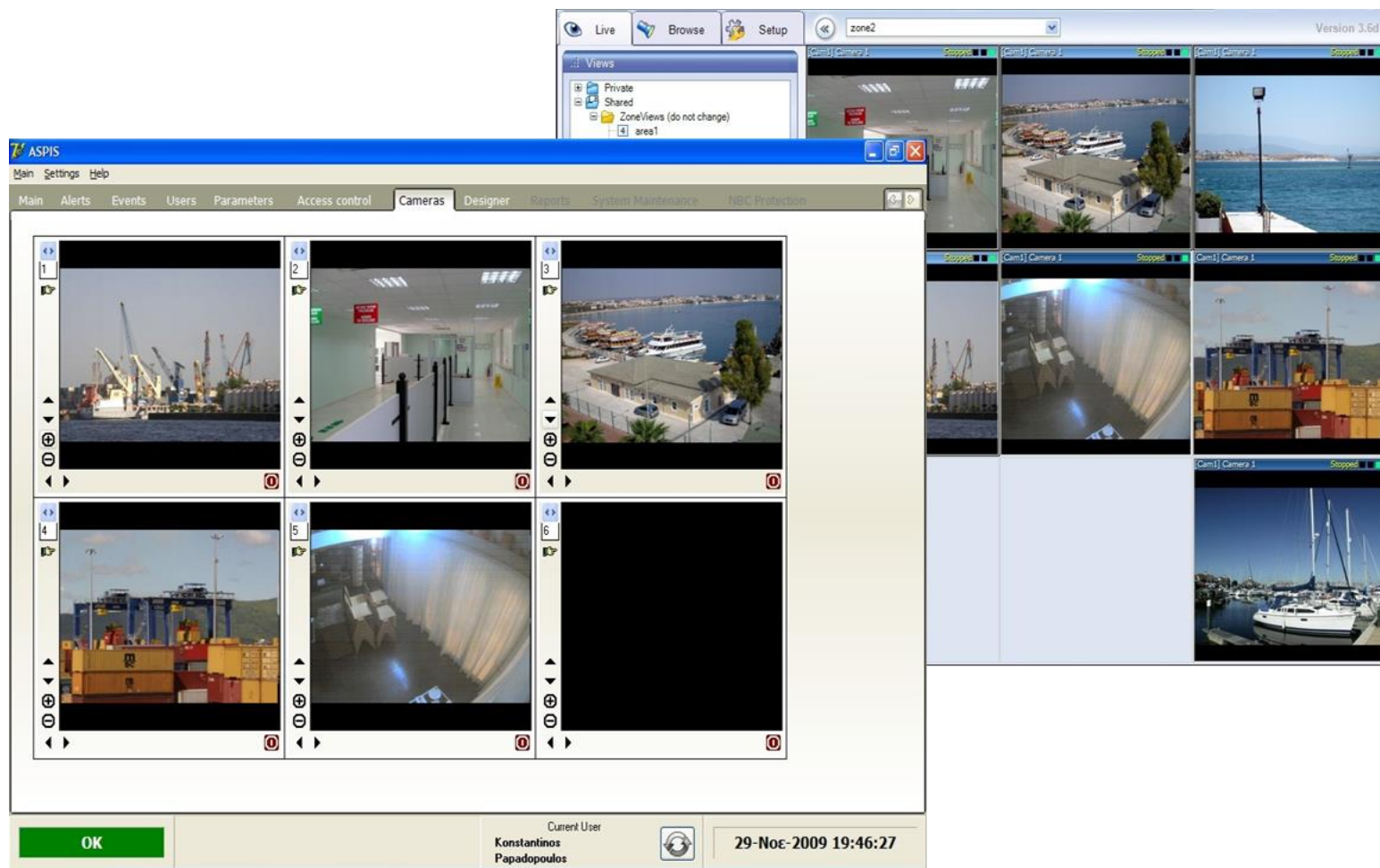
Help

IntrudAlert5500w Date 29-11-2009 Time 19:08:26

C2 SOFTWARE System Snapshot



2



C2 SOFTWARE System Snapshot



3

Tester

Connect Disconnect

SPU Zone
0 2

Send Alert

Communication Flow

```
[186][4]OK 00 80 80 80
[187][4]OK 00 80 80 80
[188][4]OK 00 80 80 80
[189][4]OK 00 80 80 80
[190][4]OK 00 80 80 80
```

Send Command

Alert Messages

Enable Alerts
Disable Alerts

Number of SPUs: 1

<< Sort View

Relay ON T-Fau 1

SPU 1 K-Fac 6 T-Lon 20 S/W Ver 1

Zone 1 Zone 2 Zone 3 Zone 4 Zone 5 Zone 6

Status EN Sens 16 U-Lim 4.00 L-Lim 1.00

Relay ON T-Fau 1

SPU 2 K-Fac 6 T-Lon 20 S/W Ver 1

Zone 1 Zone 2 Zone 3 Zone 4 Zone 5 Zone 6

Status EN Sens 16 U-Lim 4.00 L-Lim 1.00

Relay ON T-Fau 1

SPU 3 K-Fac 6 T-Lon 20 S/W Ver 1

Zone 1 Zone 2 Zone 3 Zone 4 Zone 5 Zone 6

Status EN Sens 16 U-Lim 4.00 L-Lim 1.00

Relay ON T-Fau 1

SPU 4 K-Fac 6 T-Lon 20 S/W Ver 1

Zone 1 Zone 2 Zone 3 Zone 4 Zone 5

Status EN Sens 16 U-Lim 4.00 L-Lim 1.00

Relay ON T-Fau 1

SPU 5 K-Fac 6 T-Lon 20 S/W Ver 1

Zone 1 Zone 2 Zone 3 Zone 4 Zone 5

Status EN Sens 16 U-Lim 4.00 L-Lim 1.00

Perimeter Security - NVR Interface

Interface Help

Alerts

ID	Zone	Alert Time
100	-1	02.06.2009 01:30:24 μμ
99	-2	02.06.2009 01:30:15 μμ
98	-1	02.06.2009 01:30:11 μμ
97	-2	02.06.2009 01:28:51 μμ
96	-1	02.06.2009 01:28:45 μμ
95	-1	02.06.2009 01:28:36 μμ
94	-1	01.06.2009 11:46:23 μμ
93	-1	01.06.2009 11:46:16 μμ
92	-1	01.06.2009 11:45:32 μμ
91	-1	01.06.2009 11:32:58 μμ
90	-1	01.06.2009 11:32:50 μμ
89	-1	01.06.2009 11:25:22 μμ
88	-1	01.06.2009 11:25:07 μμ
87	-1	01.06.2009 11:24:41 μμ

[COM5]

Settings

General Camera Types Cameras Zone/Camera Assignments

Camera Name	Manufacturer	Camera Type	Model	PTZ Capabilities
CP6475	Samung	OPTICAL CAMERA	CP6475	
IRCam	Manufacture2	INFRARED CAMERA	IRCam	

Name CP6475 Manufacturer Samung

Type OPTICAL CAMERA Model CP6475

PTZ Capabilities

Command Protocol TCP

Pan Command

Tilt Command

Zoom Command

Pan/Tilt Command

Pan/Zoom Command

Tilt/Zoom Command

Pan/Tilt/Zoom Command

Use Preset

Preset Command OTOSYSTEM PRE@PRESET[1-24]MOV rtp://[IP]:[p]/live

Close

SYSTEM OPTIONS



- ▶ Long Range Acoustic Devices (LRAD)
- ▶ X-Ray inspection systems, including personnel & parcel screening systems
- ▶ Human presence detection systems
- ▶ Container inspection systems
- ▶ Hazardous material detection systems
- ▶ Spectrum monitoring systems
- ▶ RF jamming systems
- ▶ Mobile telephony interception systems
- ▶ Access control systems (entrance, gates, buildings)
- ▶ Video & data recording systems
- ▶ License Plate Recognition and undercarriage inspection systems
- ▶ Biometric control systems
- ▶ Face recognition systems
- ▶ Passport control systems

REFERENCES - MILESTONES



2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Border Control for Patras Port Authority



Biometric Systems - Passports (Hellenic Police)

Human Presence Detection Systems for Illegal Immigrants in Greek - Turkish borders



Border Control System for Evros Region



Human Presence Detection Systems for Illegal Immigrants in Greek borders with Italy



Mobile X-Ray Detection for Border Control





This was the
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presentation



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