ΚΕΝΤΡΟ ΜΕΛΕΤΩΝ ΑΣΦΑΛΕΙΑΣ
CENTER FOR SECURITY STUDIES

PSCE Conference, Athens-Greece

Pre-Operational Validation (POV) Project for Land Borders

Early Warning for Increased Situational Awareness

EWISA

Concept and Implementation

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 608174

Athens, 24 November 2016

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EWISA Consortium Members

Coordinator and Contracting Authority

KEMEA (Center for Security Studies) – Hellenic Police/ Border Division – **GREECE**

Partners

Finnish Border Guard – **FINLAND**

Guardia Civil – **SPAIN**

Romanian Border Police – **ROMANIA**

EWISA Concept

EWISA concept proposal is based on the development of an integrated and unified tool with a scope to improve the overall Situational Awareness in the EU External Land Borders.

The EWISA concept is based on Data Fusion technologies from heterogeneous sensors, including Video Analytics with a scope to generate enhanced Intelligent Analysis Reports.

EWISA Concept

The EWISA Concept implements the actual strategic approach of European Border and Coast Guard Agency (FRONTEX).

EWISA common concept is aligned with the EUROSUR regulation providing an integrated solution at the Strategic Level (National Coordination Center (NCC))

and at the Tactical Level (Local Command Center /Regional Command Center (LCC)/(RCC)).

EWISA Objectives

- EWISA aims to promote **further cooperation between (the participating and other) public authorities in National and EU Level (FRONTEX)** in charge of the surveillance of selected portions of the external EU land borders, to improve the quality and efficiency of their services (as related to security), through the Pre-Operational Validation (POV) of novel solutions.

- The Commission identified Pre-Operational Validation (POV) guided by potential end-users scheme **as a way to promote innovation.** In POV a tangible assessment of the performance levels offered by innovative technologies **in a realistic user-defined operational scenario, where a tradeoff between efficiency, effectiveness and cost can be aligned with actual needs**.

The POV scheme is being successfully tested in the CLOSEYE project, coordinated by Guardia Civil (ES), in relation to the surveillance of the EU External Sea Border.

POV EWISA Phases

Phase 1:
Definition Phase (CSA)
2014-2016

- Need Analysis Document
- Validation Strategy Document
- Joint POV call for Tender

Phase 2:
Execution Phase (CP)
2017-2018

- Two Separate Solutions by Industry (Procurement)
- Development testing
- Implementation

Phase 3:
Ex-Post assessment Phase (CSA) 2018

- Joint Validation and Conclusion

PARTNERS-Public Authorities
Center for Security Studies (KEMEA)
Guardia Civil /ISDEFE
Finnish Border Guards
Romanian Border Police

Solution 1
Industry I

Solution 2
Industry II

PARTNERS-Public Authorities

EWISA Phases

PHASE 1-DEFINITION (December 2014-December 2016)

- Needs and Analysis, Validation Strategy and Tender Preparation and Elaboration
  - WP1 (Needs and Analysis)
  - WP2 (Strategy)
  - WP3 (Tender Preparation, Tender Call and Evaluation)
  - WP51 (Experiment Planning Execution and Supervision)

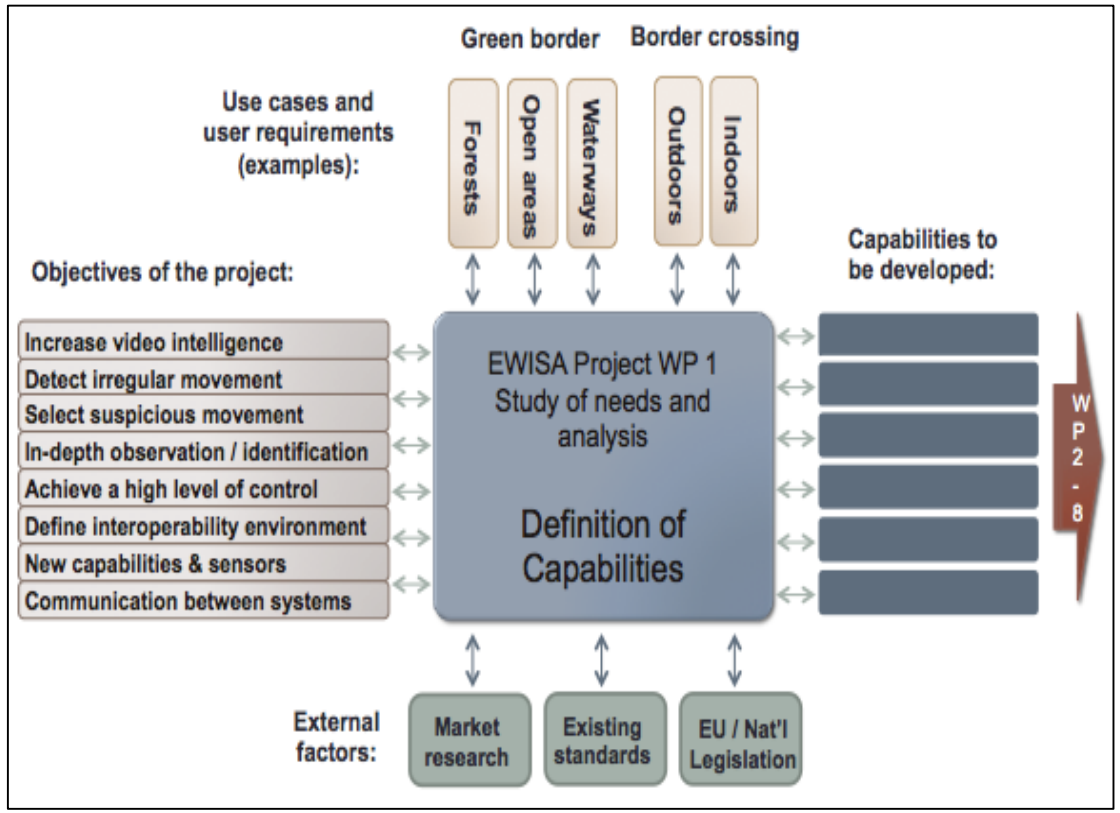
PHASE 2-EXECUTION (January 2017-June 2018)

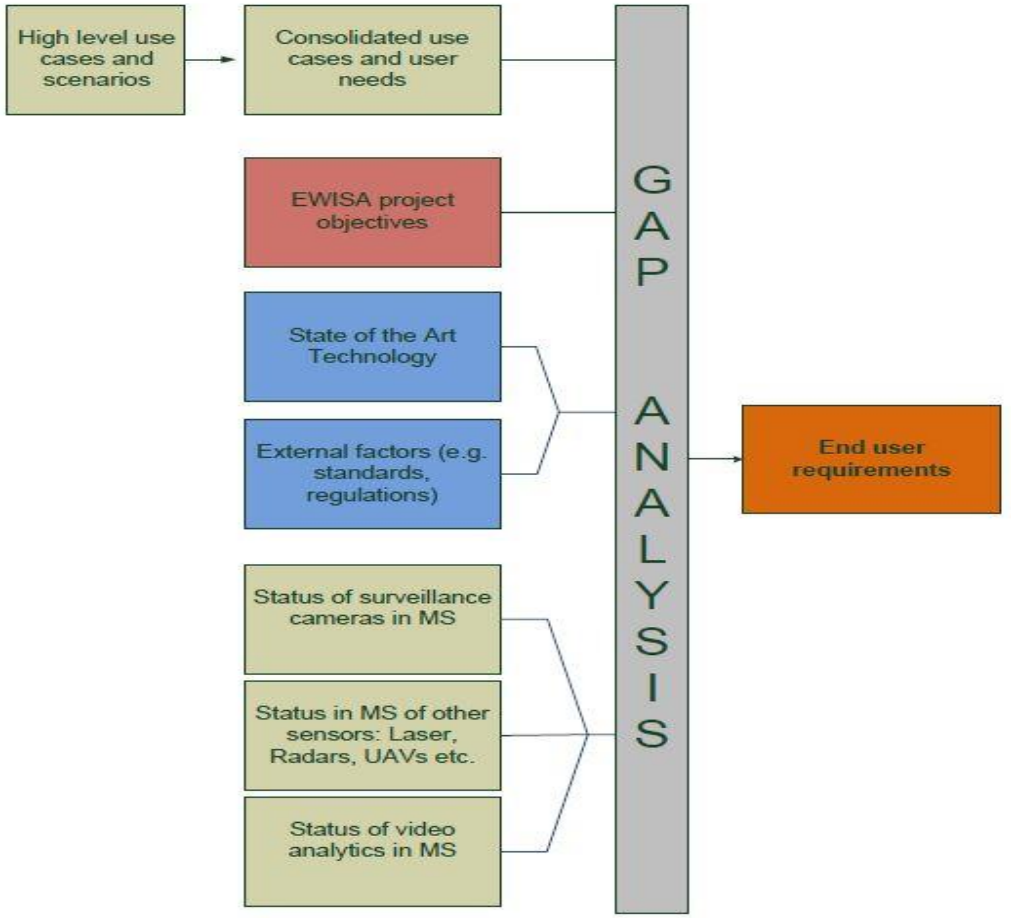
- Tender Awarding, Contracting and execution
  - WP4
  - WP5

PHASE 3-EVALUATION(June 2018-December 2018)

- Assessment and Recommendations
  - WP6

Working method of End User Requirements definition





Basic Working Method of End-User Needs

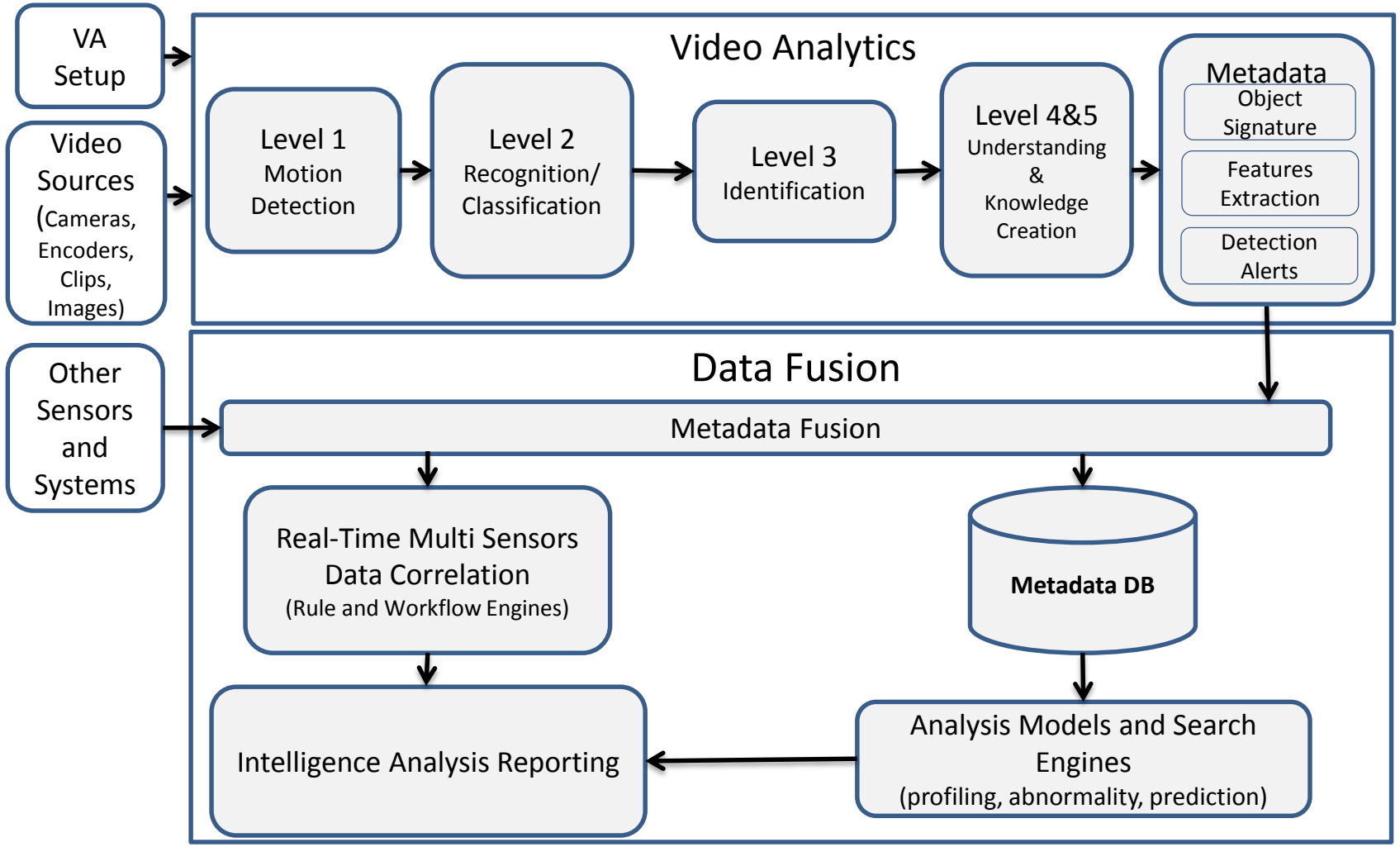
- The End-User needs were provided by all partners based on Use Cases related to Incident Scenarios;
- Definition of the System (End User) requirements was based on:
  - EWISA objectives.
  - State of the Art Technology analysis.
  - Legacy systems.
  - Standards and regulations.
  - Current patterns and trends in Border Surveillance/Management, including the latest Immigration flows toward EU and finally on the status of the surveillance systems in EU Member States;
- Moreover, the Consortium Partners were asked to describe a number of Use Cases that would be typical of the border control of the country in question.

EWISA Core System

The **core of the EWISA system** consists of two fundamental components which are the:

- **Video Analytics Component (VAC)** fed by Video and Image sources;
- **Data Fusion Component served by** heterogeneous stationary or mobile sensors such as Radars and ESM sensors, including Video Analytics Component output with a scope to generate enhanced Intelligent Analysis Reports.

EWISA Core System



Video Analytics Component (VAC)

Video Analytics is a generic term and refers to the capability of automatically analysing videos to detect and determine temporal and spatial events, using algorithm technology to provide two critical capabilities:

- Real-time analysis of videos for immediate detection of events of interest;
- Analysis of pre-recorded videos for the purpose of extracting events and data from the recorded videos.

EWISA VAC Functionalities

The main functionalities of the VAC will be:

- Motion detection.
- Pattern recognition (object of interest classification and counting).
- Anomaly detection.
- Person Re-identification based on colour and texture features on person.
- Abandoned object.
- Text and logo reading.

Data Fusion
Intelligence Analysis Reports

• A useful definition of Data Fusion is “the process of integration of multiple data and knowledge representing the same real-world object into a consistent, accurate and useful representation”.

• In EWISA, supporting surveillance equipment will be integrated in the core system. The metadata from these platforms will be correlated and fused with the metadata provided by the VAC, following particular workflow and rule engines along with other databases following specific analysis models and search engines.

•The objective is to provide Intelligent Analysis Reports which ideally should be independent of the sensors used: activities of interest will be detected by the system and automatically (or semi-automatically) reported to an operator.

Supporting Surveillance Equipment

- For the practical implementation of the EWISA core system, other supporting surveillance equipment need to be deployed along with Core System, either to facilitate the provision of coherent inputs to the VAC system, or just to guarantee adequate performance of the overall surveillance deployment.
- EWISA will not deal with stand-alone technology providing new capabilities.
- Supporting surveillance equipment will be used as a proof of concept (in terms of capacity to meet the requirements set by the public authorities) of the integration of novel solutions, into the current/legacy surveillance infrastructure.

Supporting Surveillance Equipment

The following Surveillance Equipment will be integrated in the EWISA Core System to support the EWISA proof of concept:

- Vehicle with Long Range EO/IR/SWIR sensors and Laser pointers / Spotlights.
- Boat with Short Range EO/IR/SWIR.
- Aerostat with Short Range EO/IR sensor and Laser pointers / Spotlights.
- UAV with EO/IR sensors –Airborne Video.
- Deployable Low Emission Radar.
- Deployable ESM sensor.
- Underground Fiber Optics.
- EO/IR sensor sensors.

EWISA Tender

The EWISA consortium requests from the tenderers to provide Research and Development Services in Land Border Surveillance, following the concept of a unified integrated solution for the external EU borders based on Data Fusion from heterogeneous sensors including Video Analytics Technologies generating Intelligent Analysis Reports.

EWISA Tender

Two independent solutions with a separate contract will be procured, so as a way to achieve equality in comparison conditions of the proposals provided by the industry.

The maximum budget for each solution is 2,717,000 € (excluding VAT).

EWISA Tender

The aim is to obtain two different technical solutions (solution 1 and solution 2) which will be implemented, tested and evaluated in the four areas of the project (Greece, Finland, Romania, Spain) for 3 Months.

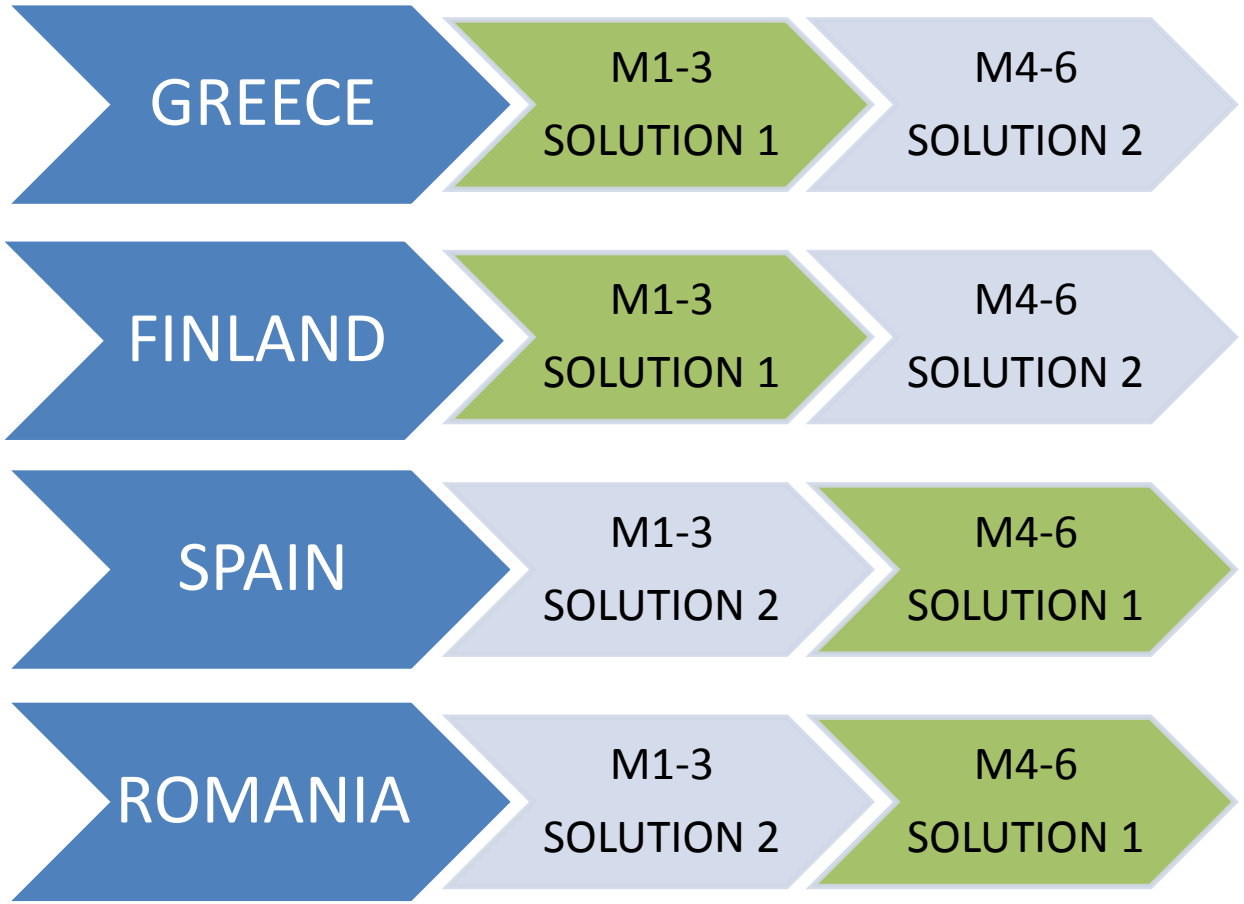
Each economic operator may submit a tender for either one or both solutions (solution 1 and solution 2), however in the latter case the procurer can be awarded only one contract (for either solution 1 or solution 2).

EWISA System implementation

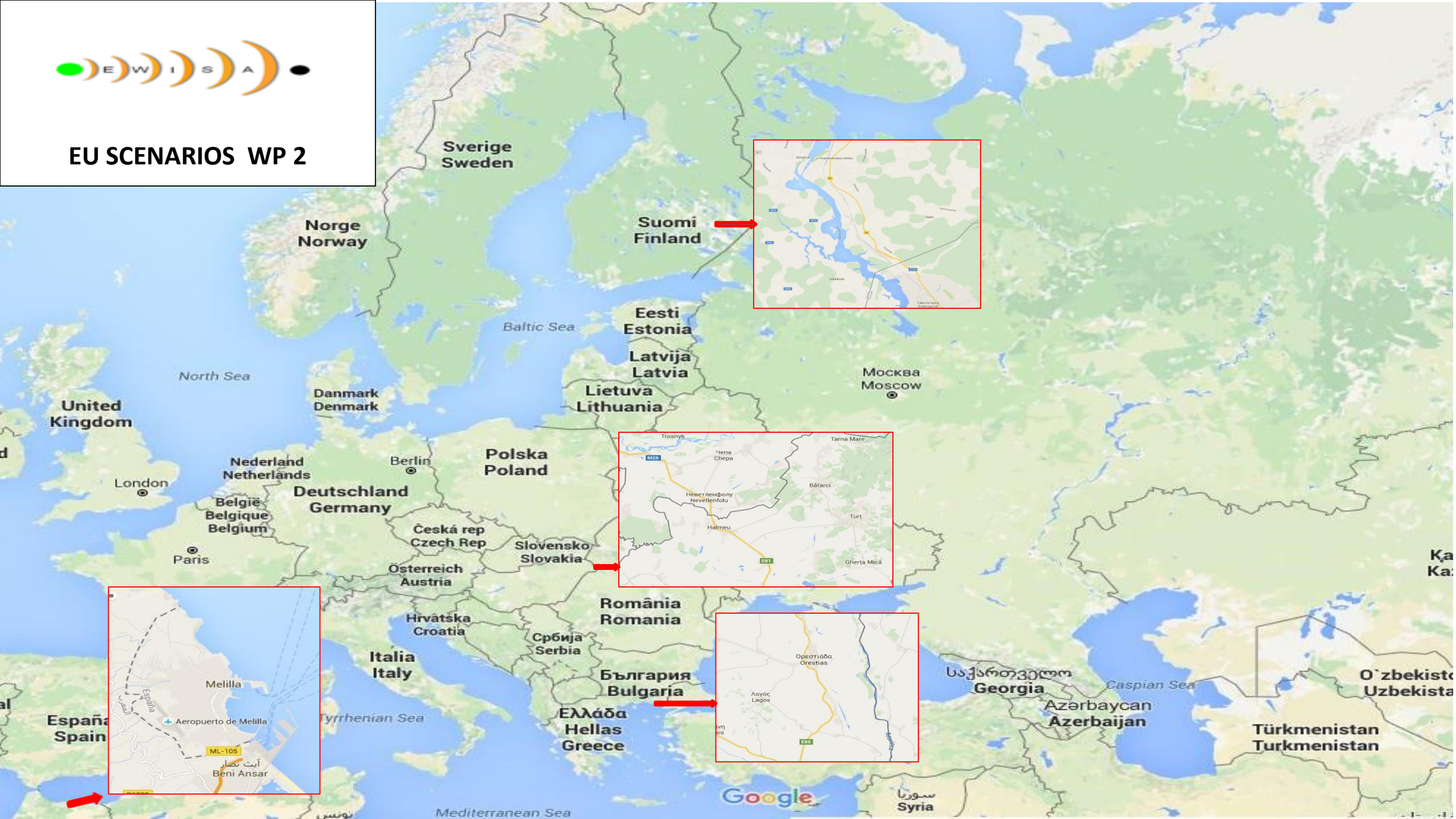
The surveillance technologies are going to be tested in four diverse Geographical areas of EU external land borders in a real operational environment, based on well-defined scenarios, representing the EU external borders environment and concept of operation, as follows :

- **Greece**: Surveillance of North area of Evros River in open and semi-open area along with BCP point and the fence in Nea Vissa, on the borders with Turkey;
- **Finland**: Surveillance of border line and border opening combined with surveillance of border zone boundary in a forest area, uneven or rough land with Russia;
- **Spain**: Surveillance of the border line in Melilla area with Morocco;
- **Romania**: Surveillance of unauthorized border crossing in the Border line with Serbia.

EWISA Preliminary Plan Solution implementation



EU SCENARIOS WP 2



SCENARIOS
& experiment location no 1

GREECE

- ORESTIADA
- GREEK-TURKISH BORDER
- BORDER RUNS MAINLY ALONG EVROS RIVER
- 12 KILOMETRES OF GREEN BORDER, FENCED
- ONE BCP (KASTANIES)
- AGRICULTURAL LAND, HILLS, FORESTS, RIVER WITH VARIATION IN DEPTH AND FLOW

SCENARIOS
& experiment location no 2

FINLAND

- IMATRA AREA, SOUTH-EAST FINLAND
- FINNISH-RUSSIAN GREEN BORDER
- FENCE ON THE FINNISH SIDE BUT ONLY 160 CM HIGH (FOR DOMESTIC ANIMALS MAINLY)
- A MAJOR BCP, RAILROAD, TWO CITIES (IMATRA AND SVETOGORSK) WITHIN FEW KILOMETRES
- FOREST AREA WITH OCCASIONAL AGRICULTURAL LAND CLOSE TO THE BORDER

SCENARIOS
& experiment location no 3

SPAIN

- MELILLA AREA, NORTHERN AFRICA
- SPANISH-MOROCCAN GREEN BORDER
- SURROUNDED BY FENCES
- OPEN, HILLY TERRAIN WITH (DRY) RIVERBEDS

SCENARIOS
& experiment locations no 4

ROMANIA

- Stamora- Moravita AREA
- RO-SRB GREEN and BLUE BORDER BETWEEN BCP'S
- SURVEILLANCE OF RAILWAY CROSSING THE BORDER
- SURVEILLANCE OF DANUBE RIVER AREA
- OPEN TERRAIN WITH HILLS AND BATCHES OF FORESTS

EWISA Evaluation

- The above mentioned scenarios will cover all kinds of possible operational and environments variations that may occur in the EU External Land Borders.

- The EWISA solutions concept represents a unified solution for all the EU External Land Borders.

The evaluation of EWISA surveillance System will be done **under common generic evaluation criteria.**

Thus, it will be easy to come to a conclusion at the end of the project, such as: **which surveillance solution/equipment (between the chosen in the tender) in a dedicated area, might be best.**

Legal Framework

On the basis of article 14 of Directive 2014/24 and Article 13 of Directive 2009/81, the tender falls outside the scope of application of the directives. In this regard and in order to ensure the maximum transparency and competition of tender, EWISA consortium chose to adopt the following basic principles:

- Compliance with all general principles of EU public procurement law, mainly the principle of transparency, equal treatment, non-discrimination, proportionality, protection of free and undistorted competition;
- Adoption of a restricted procedure, designed according to the principles of Directive 2014/24 (article 28).

Tender Procedure and Evaluation

In order not to disclose sensitive information openly and to select the most experienced candidates, we will use the restricted procedure, as described in article 28 of directive 2014/24. Therefore, the tendering process will be conducted in two steps:

- STEP 1 (Tenderers' Solvency – Qualitative selection);
- STEP 2 (Financial and Technical evaluation – Award of the contracts).

Tender Procedure-Step 1

- A limited set of information will be widely published. The public version of the Terms of Reference (not inclusive of sensitive information) will contain enough information for the industry to understand the scope of the tender.

- In this first step, any economic operators may submit a request to participate containing all the information requested in the tender document. They will sign a Non-Disclosure Agreement for the information they are going to receive in Step 2.

Tender Procedure-Step 2

- Once the pre-selected economic operators have passed the solvency screening and have signed a Non-Disclosure Agreement, they will be sent a restricted version of the tender document requiring submission of tenders.

- This version will include in detail all technical specifications and the technical and economic criteria that will be used to evaluate the tenders in order to extract the most economically advantageous tenders on a best price-quality ratio.

Tentative Timeline

- STEP 1: Period of:
  - 30 days for the submission of the request of participation by the Economic Operators;
  - 20 days for the selection by EWISA Consortium.

- STEP 2: Period of:
  - 45 days for tender submission by the selected tenderers of STEP 1;
  - 60 days for the evaluation and the contract award by EWISA Consortium.

- Notification of the award – Standstill period (10 days).

Intellectual Property Rights

- Ownership rights of IPRs generated by a company during the POV contract should be assigned to that company.

- The public authorities directly contributing to the POV phase 2 (Execution Phase), and the institutions of the European Union, should be assigned a free licence to use the R&D results for internal use, as well as the right to require participating companies to license IPRs to third parties under fair and reasonable market conditions, to be specified in the Call for Tender.

Tender Official Languange

The Official Language of the Tender is ENGLISH

EWISA Tender Publicity

The EWISA tender will be published:

- Official Journal of European Union, with the concrete remark that the tender is not following the scope of application of directive 2014/24 and 2009/81;
- EWISA web site (www. Ewisa-project.eu);
- All EWISA partners web sites;
- First step was the EWISA Information Event on 8-9 November in Athens.

Government furnished equipment (GFE)

- As a specific part of this support, end users will provide the essential equipment for the implementation of the project.
- GFE comprises any materiel provided to a contractor and it includes several categories such as assets, information facilities, software, test equipment, etc. to be used in coordination with the contractor throughout the duration of the contract execution.
- GFE remains the property of the government and must only be issued on loan.

Thank you for your attention!

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