The importance of GIS technology as an effective tool to support European Union defence and security priorities.

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Products and services resulting from the exploitation of relevant space assets and collateral data, including satellite and aerial imagery, and related services.
New imagery data enhances the possibilities for imagery Exploitation and Analysis

Increasing number of sensors with better Spatial and Spectral Resolutions imply a challenge to the Image Analysts and GEOINT specialists…

… as they have the possibility, not only to detect, but also to identify features of the terrain and man-made objects that provide more information to feed the analytical process and conclude with specific deductions in order to answer the specific request of the task.
Main Analysis Domains

Military capabilities

Analysis of military activity/deployed forces, battle damage assessment

Contingency planning

Support to evacuation operations, rapid mapping

Humanitarian aid

Refugee camps, state failure and insurgency, man-made and natural disasters
Main Analysis Domains

**Weapons of Mass Destruction**

*Arms control and non-proliferation, chemical weapons*

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**Critical infrastructure**

*Elements-at-risk, mapping*

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**General crime and security surveillance**

*Treaty verification, border control, global terrorism, piracy and coastal analysis, drugs/illegal cropping*
GIS and GEOINT

• GIS technology alone cannot solve problems that require additional knowledge and sense-making of multiple geographic entities and their relationships but is a critical infrastructure for GEOINT allowing:
  - Efficient management of geospatial data,
  - Fusion of geospatial data with other forms of intelligence, and
  - advanced analysis

• GEOINT as a discipline requires the use of GIS technology, geospatial reasoning and analysis for finding, merging then processing and analysing very heterogeneous data from numerous and diverse sources (big data approach).
Users

• Council Bodies – EEAS
• Member States
• European Commission

• Third States
• International Organisations (NATO, UN, OSCE, OPCW)

Field Support

Planning

Decision making

Written Reports
• Planning operations
• Military activity

Cartography
• High detail maps
• Complex

Spatial Analysis
• Added value GI overlays

Written Reports
• Figures
• Statistics
• Simple
Support to EU Missions and Operations, EU Agencies and International Organizations

**EU NAVFOR MED–SOPHIA**
Surveillance and assessment of human smuggling and trafficking networks

**EU NAVFOR SOMALIA**
Monitoring known Pirate Operating locations, maritime facilities and shoreline activity

**EUMM GEORGIA**
Border monitoring, assessment of military facilities and analysis of military activity

**OSCE**
Support to SMM Ukraine in the verification of the Minsk Agreement. Analysis of military activity and equipment

**FRONTEX**
Monitoring of coast activity and external borders activity related to migration crisis

**OPCW**
Assessment of facilities, site surroundings and road network. Support to Fact Finding Teams and verification of Syrian Reports
GIS - Illegal Immigration

Location of Immigrant Camp
Estimation of Number of Immigrants

Visibility Analysis
The above map displays Oea Family Village as a schematic with the addition of Light Coverage Analysis. Lamp posts were captured where possible and where resolution was clear enough to facilitate this. It is important to note this is an estimate because lamps may vary in brightness due to available power, lighting element type and environmental factors. Distances are calculated on an estimated 10 m projected light radius based upon the general 20 m distance between lamp posts.

Building types are broken down into four categories (a-d). Category (a) are advertised as 265 m² and are two floor villas. Category (b) are advertised as 220 m² and are also two floor villas. Category (c) is advertised as 270 m², and category (d) are 135 m², both are one floor villas.
Imagery analysis can be used effectively to **understand, monitor, detect, and warn** of a Threat or Crisis

- Identify a specific activity
- Quantify that activity
- Qualify that activity
- Verify events
- Provide irrefutable evidence of events and activity
- Confirm other intelligence information
- Fuse with other intelligence
- Provide timely intelligence products (IMINT and GEOINT)

Imagery analysis enhances situational awareness by **removing doubt to enable informed decision making**
From Products to Services

• Yesterday: PDF

• Today: Full GIS + Metadata for easy ingestion + unclassified web services + tools

• Tomorrow: Full classified 24/7 interoperable services (data + processing). Intelligence + reference data.

• After tomorrow: Big data analytics, automatic change detection and fusion
From Products to Services
Geo-Intelligence Portal for EU Missions and Operations

- Deployable, self-contained tool
- Improves the communication, coordination and data flow with supported missions/operations
- Online platform (closed loop at Restricted level) allowing user to consume data and products in a geospatial environment (pdf reports, satellite imagery, maps)
- Set of tools that allows users to generate geospatial intelligence, interacting with the data provided by the SatCen.
GISMO is an initiative from EDA-SatCen
- Gap identified by EDA Project Team ISR
- Cooperation EDA-SatCen
- Participation of EUMS and MSs
- 3 phases already, GISMO, GISMO2 and GISMO3

Geohub is a tool created by GISMO initiative
- Support sharing of geospatial information at OHQ
- Facilitate the turn-over of staff at OHQ
GISMO2

Custom Web-based Viewer
Custom Web-based Editor
Request Managing
Bulk Data Insertion
Analysis

Custom weapon range analysis
3D Analysis Tools
Automatic upload of GeoTagged information
Collateral data management
Support of 3D Techniques

DEM

Transcription
From document

3D Sketch

Central Island Second Floor Control Room
and Observation Area

Building Main Entrance

6 Cascades
of Centrifuge Pairs

Aluminium Casing Centrifuge
20cm diameter, 3.8 m high
3D Models for Operational Use
Example of detailed products
Mosul Dam (IRAQ); Dam Break Simulation Analysis
- VIDEO: From Mosul Dam and to Mosul city -
Questions?