Responding to Europe's Defence Geo-intelligence needs

Copernicus Ecosystem Workshop Brussels, 9 October 2018

Giuseppe D'Amico

Deputy Director

European Union Satellite Centre

Giuseppe.DAmico@satcen.europa.eu

Intelligence cycle

The intelligence cycle

(EU) Defence geo-intelligence needs

A Global Strategy for the
European Union's Foreign And Security Policy

"European security and defence must become better equipped to build peace, guarantee security and protect human lives, notably civilians. The EU must be able to respond rapidly, responsibly and decisively to crises, especially to help fight terrorism."

(EU) Defence geo-intelligence needs

From Shared Vision
to Common Action:
**Implementing the
EU Global Strategy**
Year 1

between EU civilian and military missions. At the same time, the EU has reinforced its civil-military situational awareness through the joint work carried out by EU Intelligence and Situation Centre and the Intelligence Directorate of the EUMS within the EEAS.

The case of SatCen

The SatCen

Who we are

A unique operational GEOINT instrument to support the EU External Action
Agency of the EU Council
HQ in Torrejón de Ardoz, Spain
GEOINT Service Provider,
24/7 availability
EO Satellite Data – secure context

Our Mission

Analysis for decision making and actions in the field of CFSP/CSDP, including EU missions and operations by providing products and services resulting from the exploitation of relevant space assets and collateral data

Our Current Engagements

| Operations | Regional Conflicts | Piracy | Migration | Proliferation WMD | Humanitarian Aid |

Our Goal

"Making Sense of Data"

To produce **timely, relevant, reliable, accurate geospatial intelligence products and services (GEOINT)** resulting from the exploitation of relevant space assets and collateral data, including satellite and aerial imagery.

Value added products and services (solutions, not only data!)

Products & Services Overview

Example of geo-intelligence for Defence needs

Satellite imagery analysis, coupled with added value of open sources, is highly valued by the EUMM Georgia, as they offer access to information otherwise unattainable

(The EU Mission is not allowed to enter the two breakaway regions).

Tripoli Naval Base Monitoring

Use of 3D data

Misratah Port 3D scene – SatCen product *(City Engine – Esri)*

Support to OSCE SMM Ukraine

Monitoring Military Activity

Jan 2017

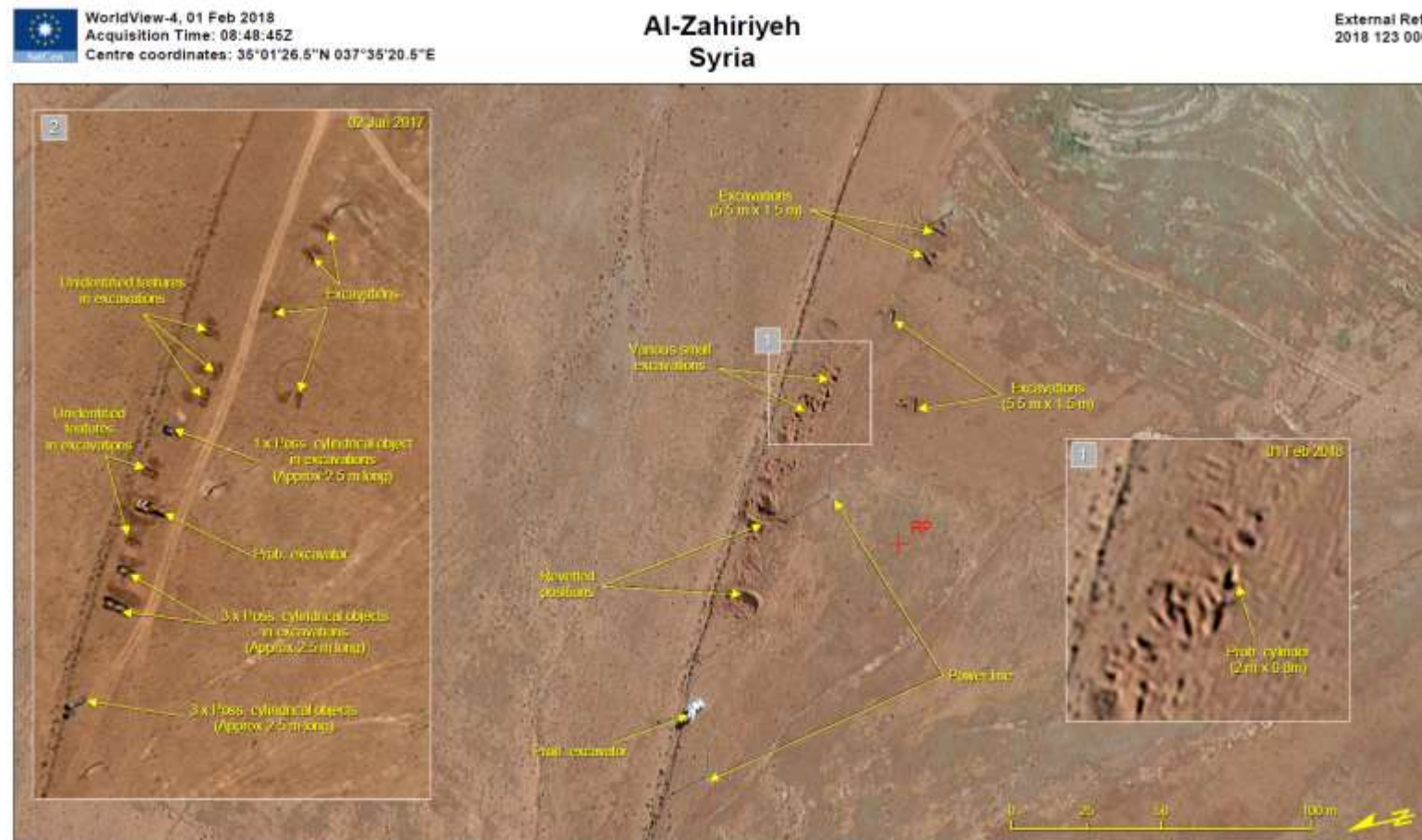Five Main Battle Tanks

Contact Zone Analysis

Source: http://www.independent.co.uk/

Damage Assessment/Shelling

The map composition above focuses on a large concentration of military equipment. At the time of imagery acquisition, a convoy of vehicles was waiting to move to a temporary parking area where a large number of HETs were noted.

IA comment: The convoy was comprised of armoured vehicles, HETs (loaded with engineering and armoured vehicles) and civilian trucks.
Open source video footage of a convoy in Syria, reportedly recorded on 31 Jan 2018, showed a very similar convoy en route to Idlib. Indeed, at least seven vehicles noted in Reyhanli could be identified on the video footage (the snapshots above are taken from the video footage). The other vehicles in the footage (HETs carrying ACV-15 and engineer vehicles, BMC KIRPI and OTOKAR COBRA, *Inset 1*) are consistent with the vehicles detected nearby on the satellite imagery. This suggests that Reyhanli is used as a staging area by Turkish Forces before they enter into Syria.

Ballistic Missiles

DPRK - Pongdon-Ni Rocket Launch Facility

Future trends
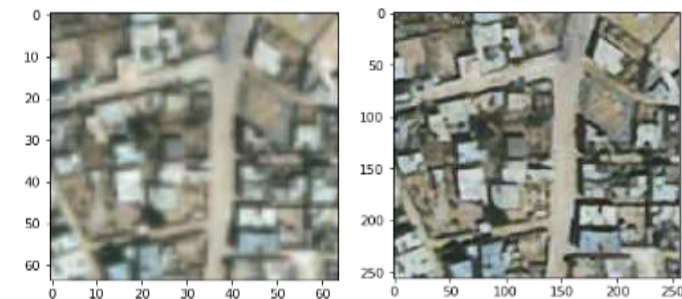
New paradigm in space

- New constellations and sensors (small, micro and nano satellites);

- New analysis technologies (automatic detection algorithms using Artificial Intelligence);

- Business model of commercial providers based on subscription services (access to data+analytics);

- Big Data analysis (need of performant processing platforms);

- Wide area analysis (detection of anomalies);

- Integrated services with other INT (SIGINT, HUMINT, OSINT...);

- Real-time and near real-time products and services...

Artificial Intelligence in SatCen

- **Computer vision**: detection of objects from Satellite Imagery, from internet imagery, face detection and identification, extraction of roads, buildings, change detection, land use extraction

- **Natural language processing**: identification of topics from social media, clustering of data, assisted editing of analysis,

- **Cybersecurity**: anomaly detection on web portals usage, clustering of servers

- **Social media** extraction and analysis

- **Predictive models** on ships movement, refugee etc.

Copernicus support to geo"spatial"-intelligence needs

Copernicus SEA - Operations

Thematic Areas requested:

- Critical Infrastructure Analysis

- Non EU-Border Map

- Reference Map

- Camp Analysis

- Activity Report

- Road Network Status Assessment
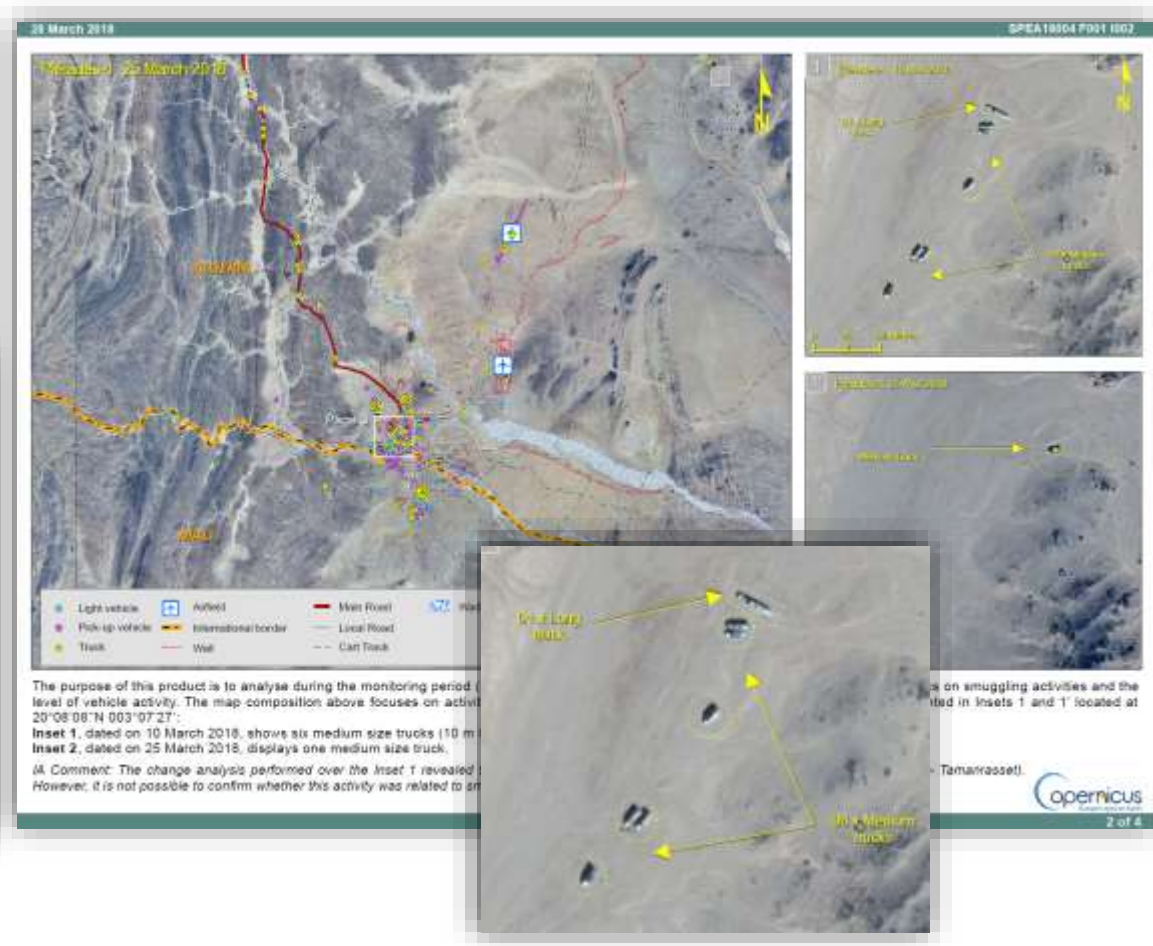
- Support to Evacuation Plan

UNCLASSIFIED

Reference Map

Road Network Status Assessment

Conflict Damage Assessment

Critical Infrastructure Analysis

Support to Evacuation Plan

Non-EU Border Map

Camp Analysis

Crisis Situation Picture

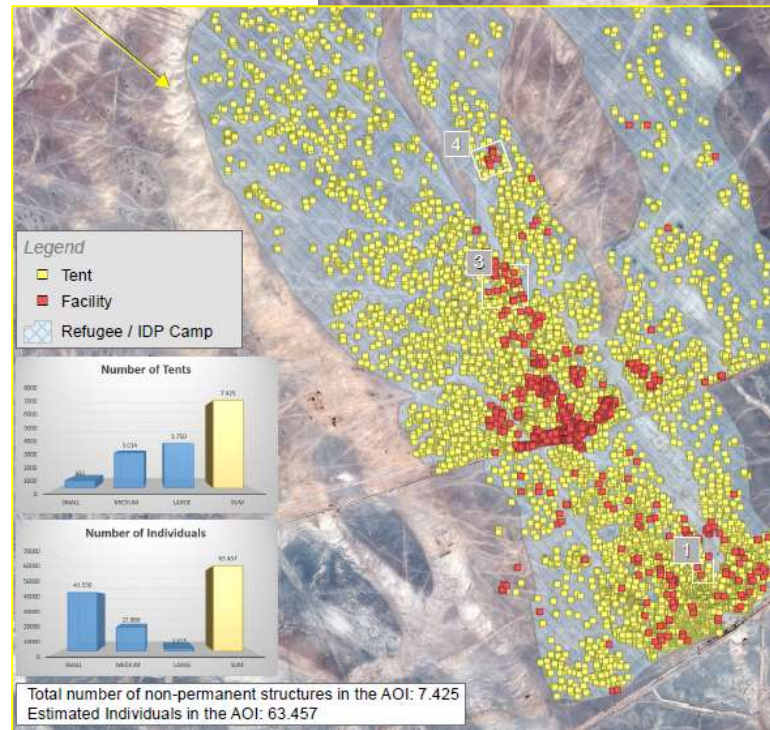Activity Analysis

Critical Infrastructure Analysis

Route Analysis

Refugee Camps Monitoring

Activity Report – Camp analysis

Geo-intelligence for Defence

➢ Consider to fulfil a wider range of **Defence/CSDP needs** (consider compliance with EUCI - European Union Classified Information - ?)

➢ Upgrade the **Copernicus Infrastructure** (use of DIAS, networks, data security, etc.)

➢ Increase the use of **Artificial Intelligence** (Machine learning, Deep learning, etc) for large area data processing and analysis before analysis

➢ Consider the **access to new sensors** (including non-space RPAS, HAPS, etc)

➢ **Synergies with other EU Space Programmes** (Galileo, GovSatCom, etc)

Conclusions

- SatCen is delivering geo-intelligence for Defence needs (and for Security needs)

- Geo-intelligence for Defence and Geo-Intelligence for Security are using same capabilities with some differences regarding the sensitivity and the nature of the objects or situations observed

- Copernicus has the capacity to deliver substantial capacity in geo-spatial intelligence for Defence providing some upgrade of the infrastructure, protection of sensitive "classified" data and Service portfolio.

- Subject to be explored more in detail tomorrow in the parallel session 2 "Safety and Security"

Engaged for Excellence

Thank you for your attention!