EUROPEAN UNION
SATELLITE CENTRE
Analysis for decision making

*Big Data from Space Conference*
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# Facing the Geospatial Intelligence Challenges in the Big EO Data Scenario

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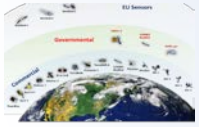
**European Union Satellite Centre**

# European Union Satellite Centre

*SatCen mission is to support the decision making and actions of the European Union in the field of Common Foreign and Security Policy by providing products and services resulting from the exploitation of relevant space assets and collateral data*

**Agency of the Council of the EU**

**Operational User of EO data**



**HQ in Torrejón de Ardoz (ES)**

**Service Provider**

- **DIRECTOR**
  - Capability Development
  - Operations
  - IT
  - Admin
  - Finance

Copernicus

RTDI TRAINING

# SatCen R&I Activities

The SatCen **Research, Technology Development and Innovation (RTDI)** Unit is implementing new operational solutions looking at the whole EO and collateral data lifecycle:

- Cooperation (e.g. H2020 Projects, ESA, GEO)
- New Data Acquisition Systems (e.g. HAPS)
- Alternative Data Sources (e.g. Mobile Networks)
- Innovative Technologies (e.g. Big Data, AI)
- EO Based Applications (e.g. SAR Change Detection)

RTDI Services

# European Union Satellite Centre

**In a context of information overload and distortion, SatCen provides fast and reliable analysis of satellite data in order to face current security challenges**

# Facets of Security in the Global Context

- The total number of people living in urban areas overtook those living in rural areas
- Overall political violence risk levels worldwide continuously increased in the last years
- A changing climate accelerates instability around the world, worsening tensions related to scarcity of natural resources

*Increased Urbanization*

*Political Instability*

*Climate Change*

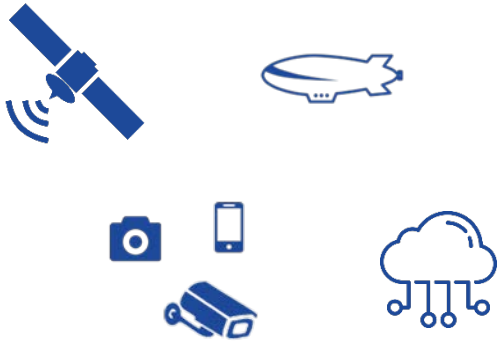
# Initiatives Towards a More Sustainable Future

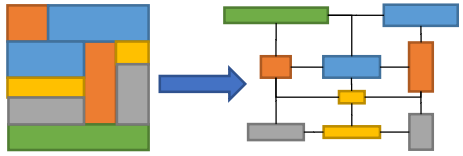
- UN 2030 SDA states that sustainable development cannot be realized without peace and security and peace and security will be at risk without sustainable development
- INTelligence from GEOspatial data constitute a large, reliable and sustainable resource for Security related applications
- Main challenges are due to the increase of EO data and to their management by suitably incorporating new technologies


SatCen

# An Ecosystem of Big EO Data and Platforms

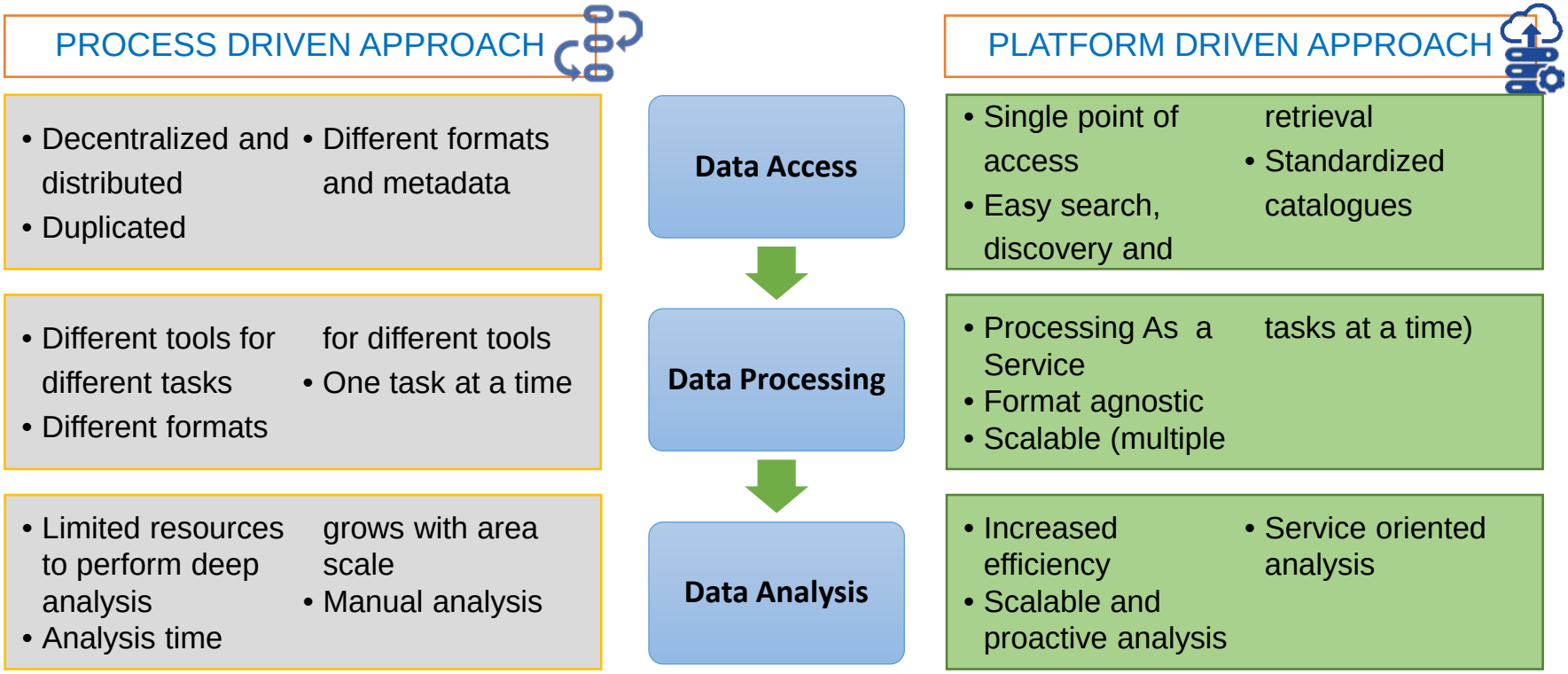
- Big EO Data has still to reach its consolidation phase
  - Free, full and open access to EO data (Copernicus)
  - New data acquisition systems
  - Open data sources
- The EO Platforms Shift
  - From monolithic applications to microservices
  - Cloud-aware systems able to elastically and efficiently scale

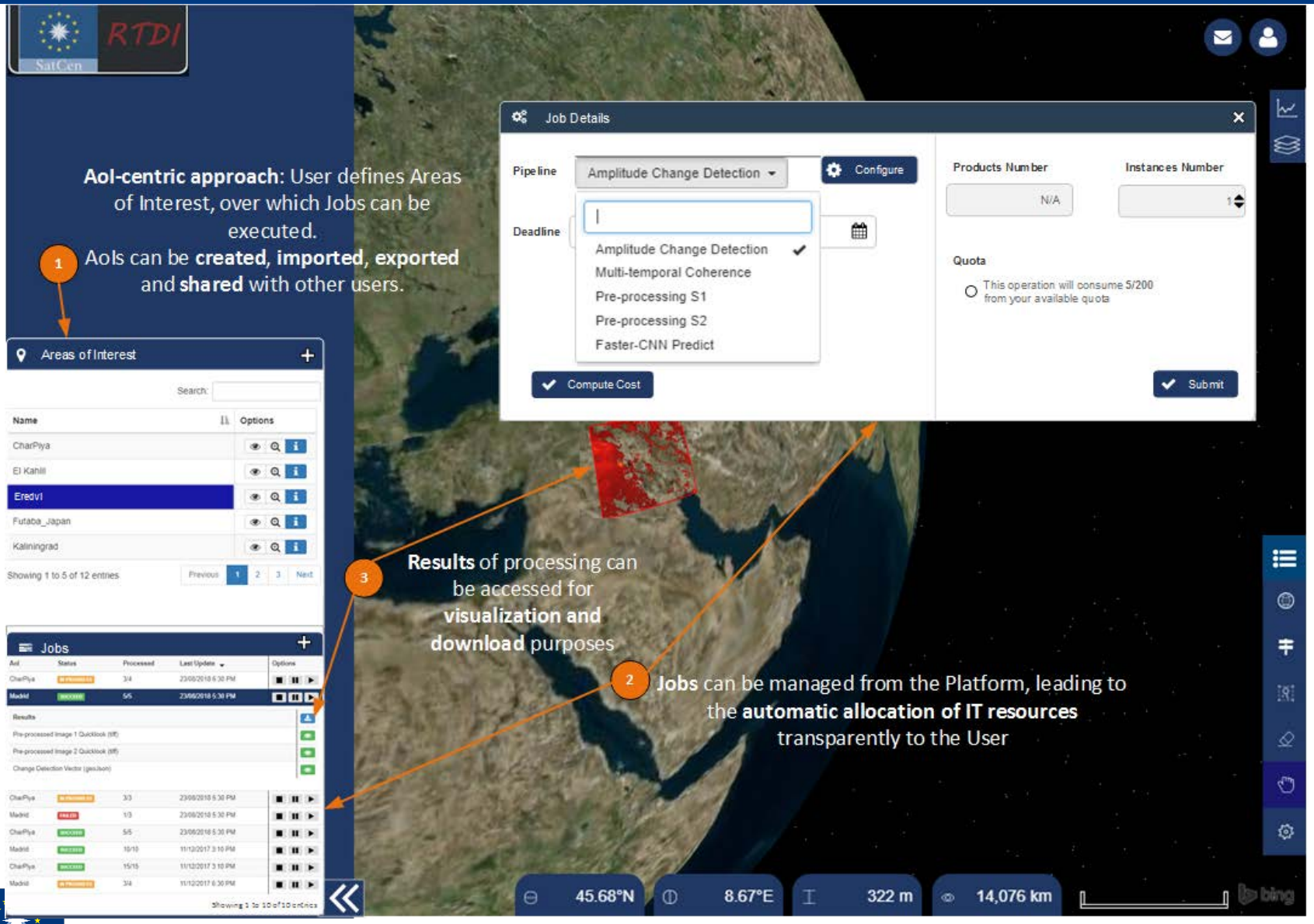


# A New Approach for GEOINT

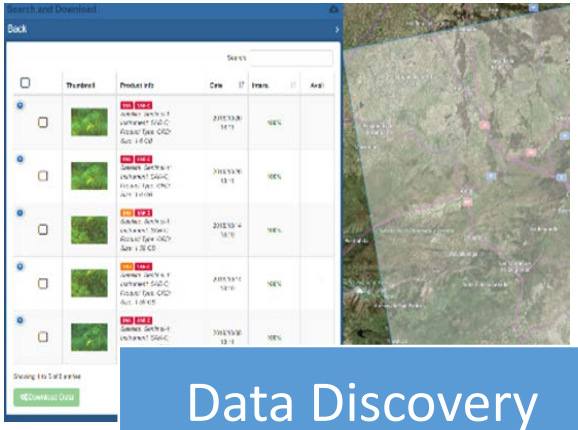
*GEOINT is being rethought from managing serial-flow processes to an efficient integration of data, users and systems, and organizing ecosystem resources*



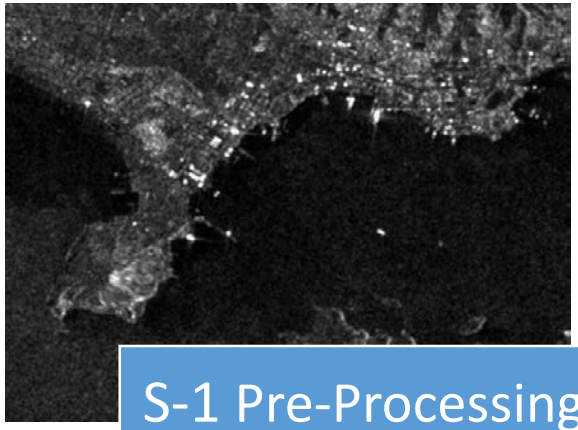
# Geospatial Data Management Platform



# Pipelines – Preliminary Services

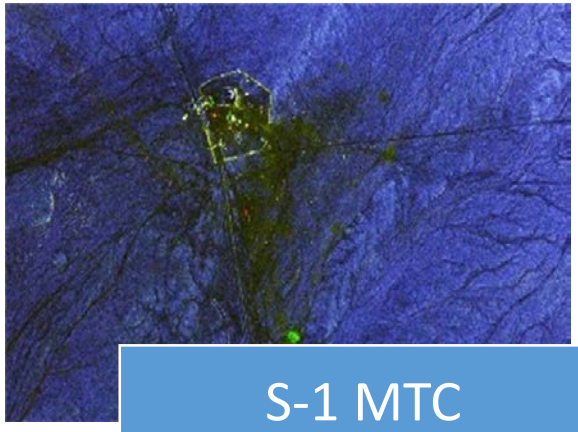


Data Discovery



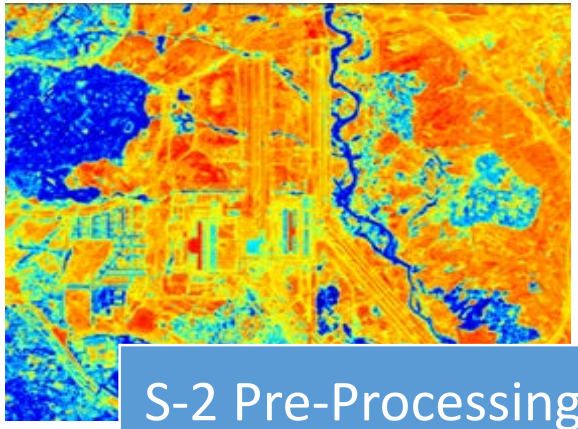
S-1 Pre-Processing

S-1 ACD

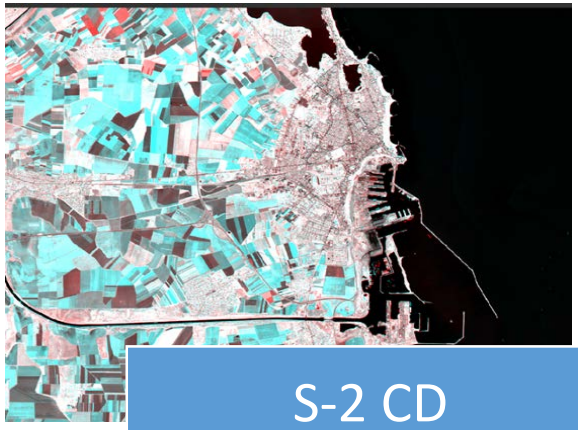


S-1 MTC

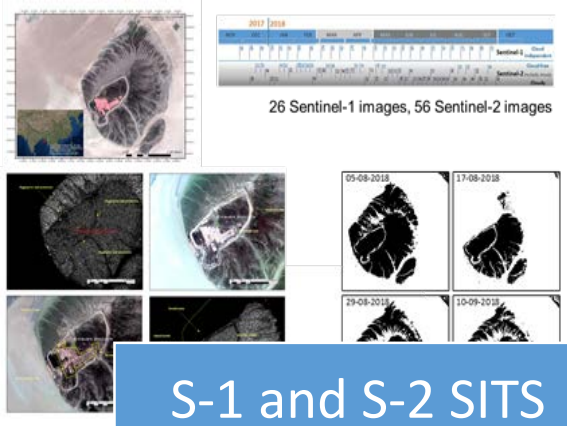
# Pipelines – Preliminary Services



S-2 Pre-Processing



S-2 CD




S-1 and S-2 SITS

Object Detection

# Way Forward

- Accessing relevant **DATA & INFORMATION** in a timely manner
- Maximizing benefit from **OPEN DATA**
- Handling new data sources in a **UNITARY FRAMEWORK**
- Moving **FROM PIXEL TO INFORMATION**
- Enabling proactive and anticipative analysis by **BIG DATA SOLUTIONS**
- Focusing on value adding activities by adopting **AUTOMATED TOOLS & AI**
- Reaching **END-USERS** in due time

# Thank You!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