



EARSC

European Association
of Remote Sensing
Companies

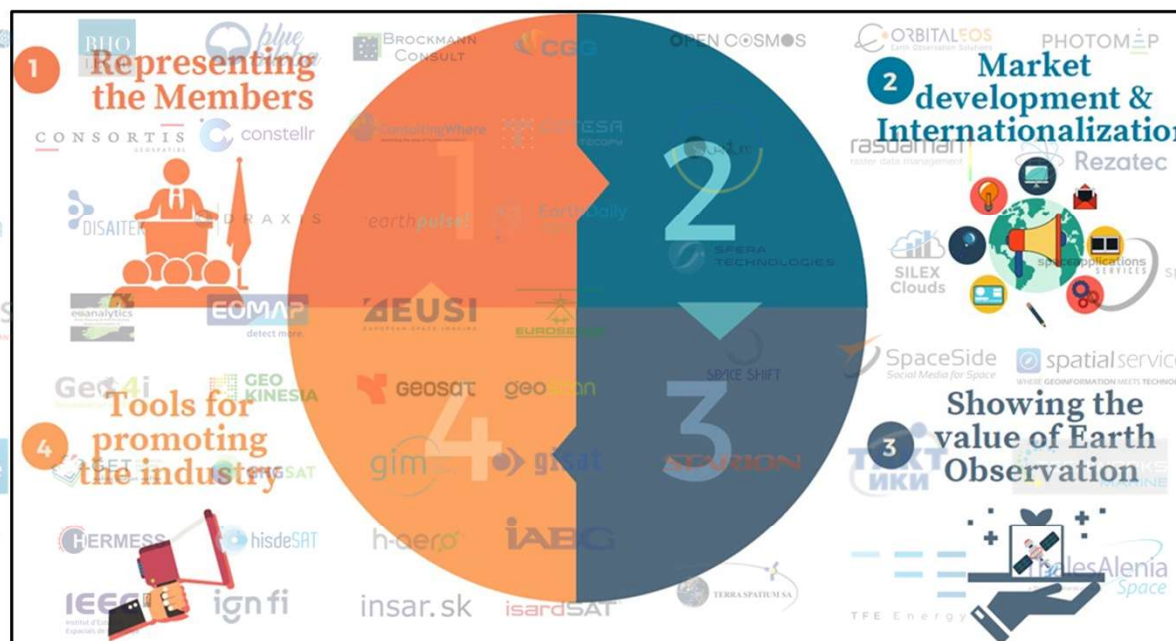


Francesca Piatto, Project officer & Outreach
coordinator

**EARSC's Role in the Earth Observation
Sector – Exploring how Earth
Observation can meet societal needs
through innovation and collaboration**

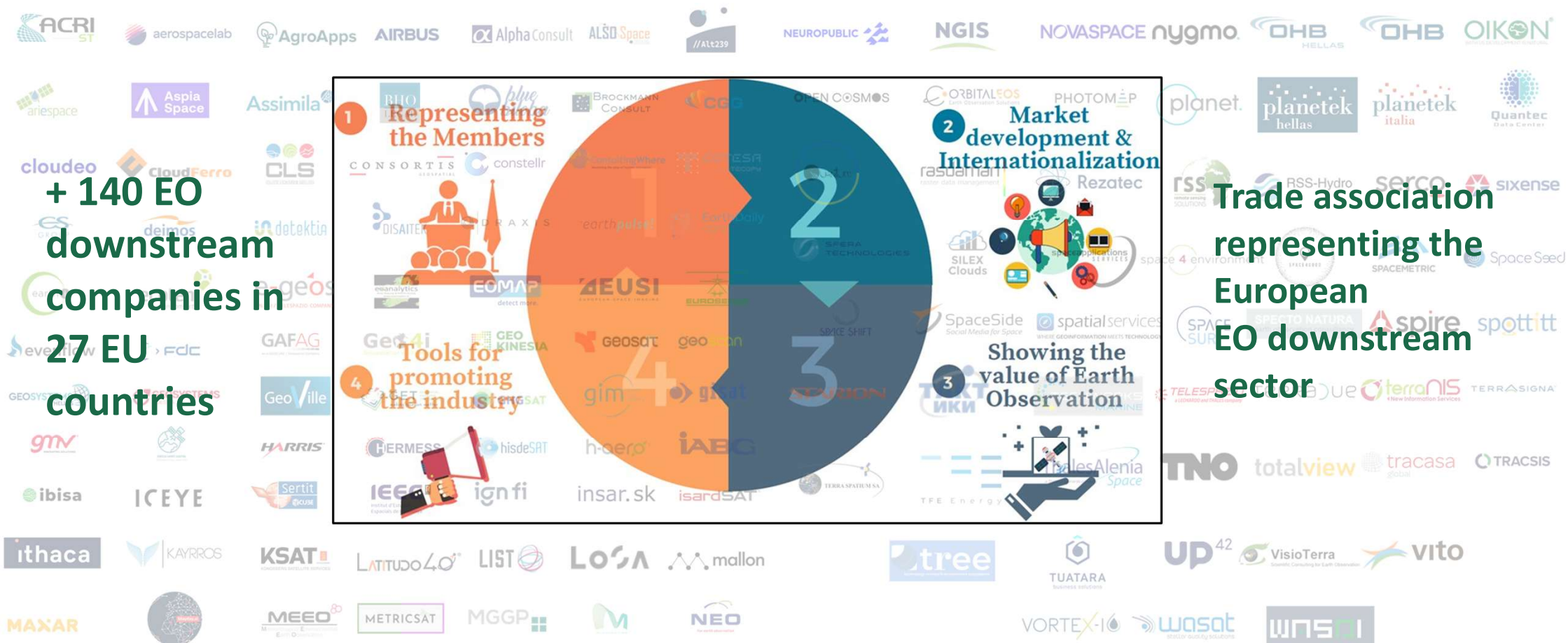
GISTAM Conference

Porto, Portugal, 1 April 2025



**Trade association
representing the
European
EO downstream
sector**

**+ 140 EO
downstream
companies in
27 EU
countries**



Some key EO industry facts



**796
Companies**
Up from 772
(+3%)
year on year



**14928
Employees**
Up from
13796 (+8%)
year on year

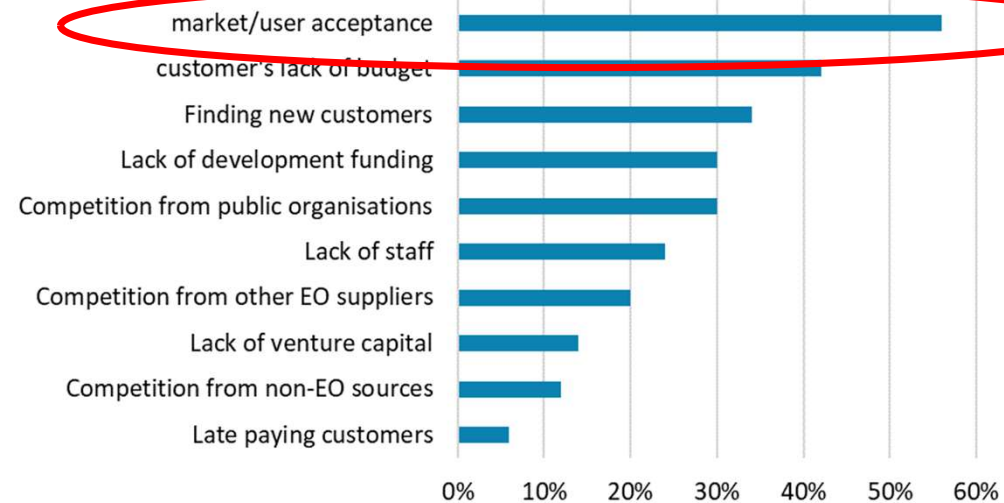
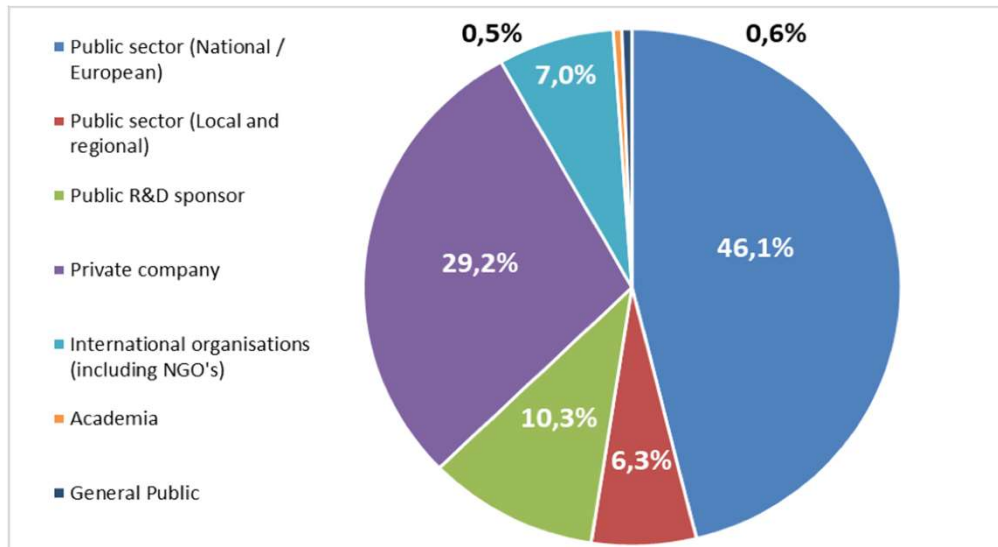


**2.27b EUR
Revenues**
Up from 1.79b
EUR (+27%)
year on year



**10.7%
Growth Rate**
Over the last
five years

- Market acceptance is still the main barrier
- Move to a one shot map to a monitoring service
- Standardization of indicators/parameters



Socio economic benefits of EO: Sentinel Benefits Studies (SEBS)

More info & full cases:
www.earsc.org/sebs

MOTORWAY MAINTENANCE IN PORTUGAL

The Satellite Data

Copernicus Sentinel-1 provides free-of-charge frequent, all-weather, day-and-night C-band radar images over Portugal. Copernicus Sentinel-2, also free-of-charge, provides frequent wide-swath, high-resolution multispectral imagery with 13 spectral bands over Portugal.

The Service Provider

Spotlite specialises in infrastructure risk monitoring using satellite imagery. They assist in identifying maintenance needs due to ground subsidence or unhealthy vegetation, which is key for early risk detection.

✓ A24 Motorway: €60k pa; Portugal: €1.2 million pa

The Primary User

Egis is an end-to-end global consulting, engineering and operating firm specialising in mobility services. They use the Spotlite service to help understand where potential issues could be and optimise maintenance operations.

✓ A24 Motorway: €17.2k–€24.4k pa; Portugal: €344k–€488k pa

Secondary Beneficiaries

The IMT - Instituto da Mobilidade e dos Transportes (Portuguese Road Authority) is a central body with jurisdiction over the entire national territory, and NorScut is a concessionaire that has been granted the rights by the government to manage the A24 motorway. Thanks to Egis' services, they are less likely to incur in reparation costs as a result of geohazards.

✓ A24 Motorway: €40k–€80k pa; Portugal: €800k–€1.6 million pa

Society & Citizens' Benefits

All road users and citizens now benefit from better maintained and safer roads, which are less likely to suffer from closures and associated costs. Further, Portugal's regions are better connected, which can aid in the smooth operation of the country's economy.

✓ A24 Motorway: €7.6k–€15.1k pa; Portugal: €151k–€302k pa

...SPANNING SEVERAL COUNTRIES AND REGIONS...





Geographical markets
Expansion to new countries

Sectorial markets :
building cross-sectorial relations

Promote EU capacities in international events



Promoting the market and creating networks of interests – international, technology, users

International



Technologies



Users

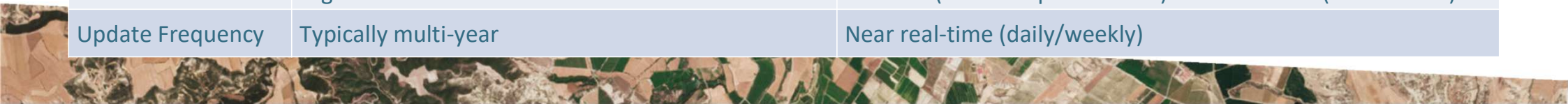


EARSC activities within Statistical Community

Observer member of **UN-GGIM global** since 2020 & active role in **UNGGIM:Europe** since 2024.

- Support bringing together statistical and geospatial information (focus on Earth Observation)
- Established direct discussion with National Statistical Institutes in the framework of SDGs
- Work towards better alignment with statistics code of practise (frequency, timeliness, coverage, countries comparability, time series (y), comparability over time)

Aspect	Authoritative Data	Alternative Data Sources (inc. satellite derived-data)
Accuracy	High, validated through institutional standards	Variable, depends on data processing and algorithm accuracy
Coverage	Local to national (specific regions)	Global, including inaccessible areas, local level granularity
Timeliness	Periodic updates (multi-year intervals)	Near real-time / frequent updates (daily to weekly)
Accessibility	Limited by cost/licensing; often restricted	FODP (Copernicus) or commercial options
Legal Status	Legally binding and officially recognized	Supports and complements the analysis
Processing	Minimal (data is pre-processed and ready-to-use)	ARD, new ways to pre-processing
Applications	Administrative, cadastral, regulatory purposes	Environmental monitoring, dynamic systems, emergency, etc
Cost	High cost for collection and maintenance	Variable (free for open sources) + value added (commercial)
Update Frequency	Typically multi-year	Near real-time (daily/weekly)



From data to geospatial pipeline

STEP 1: Data Acquisition



Example
15.1.1 - Forest area as a percentage of total land area / Share of forest area (ESS code: 15_10)



STEP 2a: Preprocessing and Analysis

Land Cover Classification

- Satellites HR imagery.
- Create **land cover classification maps** to distinguish forests.
- Continuous monitoring supports tracking changes in forest cover over time

Monitoring Forest Changes

- Satellite imagery tracks deforestation, degradation, afforestation..
- NDVI (Normalized Difference Vegetation Index) measures **forest health and biomass changes**

Accuracy through High Temporal & Spatial Resolution

- Sentinel-1 and Sentinel-2 provide 10-20m resolution.
- Enables frequent, detailed monitoring of forest changes
- Timely updates help **policymakers respond to forest degradation events**

STEP 2b: Indicator calculation

Workflow Integration: Satellite Data & Authoritative Datasets

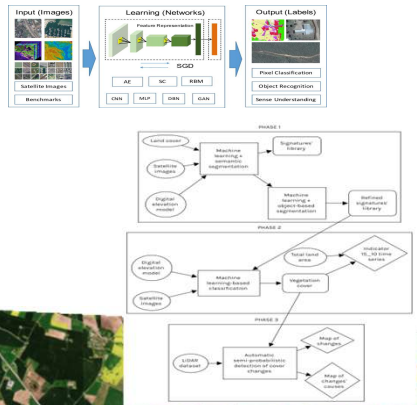
- Satellite data integrated with **national inventories** and EU datasets (e.g., Corine Land Cover).
- Socioeconomic data (land ownership, management) complements forest cover information.
- Ensures accurate total land area and consistent **legal forest definitions**

STEP 3: Validate the data & Reporting

Reporting & Compliance with EU Policies

- Supports European Green Deal objectives and forest conservation targets.
- Data feeds into EU frameworks (e.g., **Forest Europe, LULUCF Regulation, EUDR...**).
- Published in national reports for global SDG 15 monitoring. Generates forest cover maps over time for SDG 15.1.1 reporting.

Computation line



- Improve service and products
- Demonstrate complementarity, upgrade, support
- Enhance Stakeholder Engagement & synergies
- Include developments

ID	Description
UR1	Higher frequency of dissemination (currently aperiodic). Users ask for monthly or quarterly.
UR2	Higher timeliness (currently 3+ years according to EUROSTAT).
UR3	Increased spatial resolution - the users are asking from 10 to 16 m products
UR4	Degradation maps in other types of natural land covers, i.e., rangelands/grasslands
UR5	Would be great to indicate the correlation between forest cover loss and natural disturbances (e.g. wind throw, wind and/or snow breakage, forest fires, insect outbreaks)
UR6	The event-scale is typically the required temporal scale in order to match disturbances with forcing events. While these predictions are typically difficult, and many simulations use temporal aggregations (e.g. annual averages), most information can be obtained from the event timescale
UR7	Identify high wildfire risky areas

Guidelines
Documenting

Replicability

Overview	Objectives Alignment with needs: indicators / variables
Workflow	Resolution (spatial, temporal, spectral) specific target/indicator user uptake
Guidelines	Data, Algorithm , Analysis , Visualization, Platform
Process	Dashboard Consultation (front end) Laboratory Exploitation (back end)
Execution Feedback	Usability (products, laboratory, processing, interpreting data, expectation needs..)

The projects and their communities



Aims to establish the Green Deal Data Space Foundation and its community of practice, building on both the European Green Deal and the European data strategy.

SeBS

Highlights the benefits of using Sentinel data for society, the environment, and the economy.



Harmonia provides tools to assess and mitigate the effects of climate change in cities.



Bridges the skills gap between supply and demand in education, training, and workforce development in the EO/GI sector.



EARSC projects supporting the Green Deal



The objective is to strengthen Europe's capacity to monitor the SDGs using Copernicus tools to track environmental indicators, aligning with the EU Green Deal from a cross-sectoral perspective.



Aims to build momentum and trust for achieving credible soil carbon farming in the EU. Specifically, it will address how satellite-derived data and services can help establish a consensus on credible carbon farming.



Aims to empower European regions and cities to drive the upcoming societal transformation toward sustainable and climate-resilient development through their own actions by enhancing access to and usability of available climate data.



Meet us here:



GWF: 23-24 April 2025

- ESG summit & EO downstream summit



Industry engagement in GEO- Group of Earth Observation

- EuroGEOsec, SDGsEYES, OCEANIDS



EARSC's Annual Conference for EO industry, policy, innovation & partnerships. From sustainability and climate adaptation to civil security, defence and other new market opportunities



EuroGEO Workshop 2025, the regional coordination mechanism that aims to consolidate and coordinate activities throughout Europe that contribute to GEO (Group on Earth Observations) initiatives. Date & place tbc soon.



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