

EO Taxonomy

Market View



EARSC's extensive engagement with Earth observation user communities has highlighted the need for a common language to help services providers and users arrive at a mutual understanding of the types of services that can be offered and the benefits that can be delivered. We have developed an Earth observation taxonomy that is not only a process of naming and classifying EO services but additionally a tool to improve the understanding between these communities.

The taxonomy includes a generic and comprehensive definition of available products and

how these form the basis for the delivery of the EO services (the combination of e.g. EO products, in-situ data, modelling etc.) to deliver contextualized knowledge to citizens, business, government and other organisations. The taxonomy takes a two-sided approach, describing this common list of services from both the suppliers' and users' points of view. These two views are interconnected in the figure in your right and described in the links below.

- [Executive summary](#)
- [eoTAXONOMY](#)
- [Market/User's EO needs \(EARSC taxonomy\)](#)
- [eoTAXONOMY \(extended description\)](#)

For more information contact [Monica Miguel-Lago](#)

MARKET (User) perspective		EARSC TAXONOMY		THematic (provider) perspective			
Customer and User (view)		EO SERVICES (3 rd level)		Technician and Expert (view)			
- Structures the market from the customer point of view - Based on customer segmentation - Identify the type of organisation that fits into each one - Helps associate types of users with their requirements		The special nature of EO services is their composing ability. The EO services gather the information and data for a particular object. This characteristic allows the composition of service chains that tackle the necessity of solving complex business procedures supported by technological platforms. The EO services propose an action or a sequence of actions, specific events appropriate in a given situation geographically or temporal (an application) for example, "assess the environmental impact of farming in the region of Murcia". For example, it unifies major entities such as environment, agriculture or deeper an granularity such crops. The description of the EO services include the products, which make up a service but also key words representing the parameters or essential variables.		- Structure of the EO domain from a technical approach - Based on an expertise view - Seek to gather EO services into groups - Add meaning & insight to each service			
1st level		2nd level		2nd level			
MARKET	Responds to the highest rank in the market perspective, describes a part of the economic activity, it is a group or groups of customers who require the products and services provided by industry. Understand the major markets in which EO services are doing business. These major markets structure grow sufficiently robust to accommodate future sector segments. We can cite as an example the market super-category "managed living resources".	SECTOR	It provides some granularity introducing a group of business activities (industry activities) that have similar characteristics. For example (agriculture, forestry and fisheries) all in the primary sector and helping to define the type of customers.	AREA	It is the set of EO services (greater detail of objects) with similar characteristics and associated patterns. There corresponds to thematic segments in each of the domain. For example, built environment such as urban areas, infrastructure, transport, or waste. It may be also named as a segment.	DOMAIN	Responds to the highest rank in the thematic perspective, categorises by type of activity for which the observations are being made i.e., risk assessment, forecasting, responding, monitoring, detecting etc. for a particular domain. We propose 4 domains (atmosphere & climate, built environment, disasters & geohazards, land, marine, security & safety). It may be also named as thematic.

Market View



Thematic View



The chart above show the organisation of all EO services from the user's perspective, i.e. from the market or sector within which any given service would be used. The Market view is organised:

- **By Market** – Services are grouped Into **8 main markets**, e.g. citizens, defense & security, infrastructure & transport...
- **By Sectors** – Each market is split into a number of more specific sectors corresponding to specific niches within that market to which the services apply e.g. the 'Energy and mineral resources' market contains the sectors 'Renewable energy', 'Oil & gas' and 'Raw materials'. There are **26 sectors** in total.
- **By sector composition** - examples are given of the types of organisation that make up the market sector e.g. users in managed living resources refer to human activities exploiting natural organic resources (users in agricultural commodities, trading, agricultural production and horticulture, agricultural services, agriculture machinery, agriculture and rural development policies, etc. This helps define the sector and its EO-related needs.

The chart above shows the organisation of all EO services supplier's perspective. The Thematic view is organised:

- **Into 6 main Domains (or classes)** - This refers to the applications of EO technologies and stems from the different scientific schools from which different approaches have been developed, e.g. marine applications have been developed in a different community than geohazard or atmospheric pollution.
- **By Areas** - These Domains are then split into **32 thematic segments (or Areas)** below that showing specialisation in those fields, e.g. within the Marine Domain we include detection of ships, marine pollution, sea ice...
- **By service descriptions and keywords** – a non-exhaustive list of keywords are provided for each Area that help to define the Area. These keywords are presented in relation to a few verbs that describe the action undertaken in the service: monitor, detect, track, assess... For a full description of **EO services** see either the reduced or extended descriptions linked to above.