DIAS Copernicus
Eumetsat – ECMWF – Mercator Ocean
Successful experience of **proactive interactions with user communities** and of attracting new communities to data and information

**Sound scientific and operational background** in weather, climate, ocean and environment monitoring and forecasting

In-depth knowledge of data and information from a **variety of satellite missions and information services**, within and beyond Copernicus, and their user communities

**Strong background and experience in large data management and processing**

24x7 operational services to end users
Added value of the partnership among EUMETSAT, ECMWF and Mercator-Ocean
The COPERNICUS DNA
The Copernicus approach for DIAS

**Principles at the heart of Copernicus**

1. **User-driven**: local to EU institutions, downstream sector, education and Science. The assessment of needs is essential

2. **Copernicus is "Services"**: information more than data, accompanying measures like training and outreach, on-call support services

3. **Copernicus is full, free and open**

4. **Copernicus is based on an integrated infrastructure** including satellites, in-situ data, contributing missions and modelling capacities

5. **Copernicus is sustainable** with a fleet of satellites planned until 2030

6. **Copernicus is global** and creates cooperation opportunities
Copernicus components

SPACE
- TECHNICAL COORDINATION BY esa
- SENTINELS MISSIONS OPERATED BY esa EUMETSAT
- CONTRIBUTING MISSIONS
  - EU Member States
  - Globe

SERVICES
- IMPLEMENTED BY
  - ECMWF
  - European Environment Agency
  - European Commission
  - FRONTEX

IN SITU
- COORDINATED BY
  - EU Member States
  - European Environment Agency
Copernicus Services

Monitoring the State of the Earth System Environment ...

6 Services
What is a DIAS USER

User front-office
Software as a service approach (SaaS)

Development/computing and storage resources
Platform as a Service approach (PaaS)

Access to ALL Sentinel data and Copernicus services
Data as a Service approach (DaaS) & Infrastructure as a Service approach (IaaS)
The User-driven approach basis

The Copernicus experience of the team members bring onboard more than 50,000 users (10,000 for MO, 30,000 for ECMWF)

It includes end-users, SMEs and Large Companies, Research institutes and Universities, Data producers, Programmers, H2020 projects and ESA projects, Others Copernicus Services, European and non European

They are organized in communities with specifics needs. The Copernicus services offer them data, information and accompanying measures like training, on call user support, outreach etc..

=> We want to maintain this user driven approach, based on interactions between users, data producers, data distributors in our DIAS
The User-driven approach: 1) Removing the barriers

The most important benefit for USERs will be a unified access to all the Sentinel data and Copernicus services.

This data access will allow the user to process information close to the data, in its own virtual environment.

This system will be fast, efficient and reliable.

⇒ We will grant automatically access to the current users of EUMETSAT, ECMWF and MO without need of additional registration

⇒ Processing capabilities will be free for basic tool like data extraction/slicing or payable to the elastic cloud provider(s) for advanced computing and storage
The User-driven approach: 2) User Support

Being given the access to a very large portfolio of Copernicus services information and Sentinel data, user may be facing quantities of question regarding data access, format, content or usage.

Dedicated User Support Functions will offer a service desk:
• To give answer to all questions regarding access to data
• With skilled contact points for each level (DIAS, DIAS components, IT…)
• Provision of documentation and other support information,
• Training activities,
• …

In order to facilitate the sharing of large and diversified amounts of data and information within and beyond Copernicus
3) Training support

**DIAS Training Activities** will be put in place in order to support each type of users typologies (front offices users, "simple" third parties, end users...) :

- Invitation to DIAS Training sessions during events dedicated to users,
- Direct access to information through MOOC and Forum tools,
- Invitation to Copernicus Services training sessions (already existing),
- Training and information to anticipate release of new products

**Training activities will be tailored for each user communities (regional users communities, thematic users communities...) to share the most efficient and suitable level of information.**
The implementation of user uptake and outreach will include:

• communication,
• market assessment,
• impact assessment,
• social uptake and
• management of partnerships

=> to give incentive for hosting communities, market places and incubators registered via the DIAS portal
What is a DIAS USER

**Service Baseline**

- **User front-office**
  - Software as a service approach (SaaS)

- **Development/computing and storage resources**
  - Platform as a Service approach (PaaS)

- **Access to ALL Sentinel data and Copernicus services**
  - Data as a Service approach (DaaS) & Infrastructure as a Service approach (IaaS)

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**End user**

- Copernicus Services
- EUMETSAT
- ESA/EU projects
- Developers
- Companies

**DIAS interface services**

- Copernicus Services
- ESA
- EUMETSAT
- Other datasets

**Back-office:** Storage, Computer
Third party users will be primary actors of the DIAS overall approach:

• by completing the Copernicus Value Chain with Business Models addressing many end-uses;

• by developing downstream services of the DIAS and as economic players (bringing potential for jobs, turnover, business …)

• by acting as Copernicus Distributors in their Member States and play a multiplier role for Copernicus;

**Benefits:** They will have to be promoted in the DIAS and should be promoted in each Copernicus Component’s Portal.
Third Parties: Specific User support

We will provide a set special set of tools for this activity

It will be supported by:
- Specific training activities
- User support for developers

⇒ Helping the migration toward DIAS for already established service

⇒ Propose a sustainable solution for the next years compatible with the development of EUMETSAT Pathfinders
EXAMPLES

Functions and Use Cases
DIAS basic functions

- **Discover, view** and **access** on a full, open and free basis all Copernicus data and information. Contributing mission data will also be made available, with however potentially a restricted access for sensitive and licensed data;

- Access additional data and information acquired through partnerships/ cooperation/ agreements **with third party providers**, within the limits of the applicable licensing or data policy restrictions;

- Access to a privileged gateway for experts linking directly with the 6 Copernicus information services (& access to their dedicated portal under their respective conditions of access);

- Provide **hosted services via their third-party front-office** while being connected to the DIAS back-office data and information portfolio;

- Benefit from a demonstrated **user customer care expertise**.
DIAS Use Case 1

• A user needing access to more than one Copernicus Service or wanting to combine Sentinel data and Copernicus Service information will find a free of charge one-stop-shop-access to the complete Copernicus Portfolio (discovery, search, view, download).

• The Collaborative virtual environment with toolboxes will allow development in secure and confidential context (i.e. for start-ups, business or regulatory analysis).
• A third party aiming at offering a second-layer service to a dedicated market or community (additional data and information, additional tools, API…) will be able to create its own front-office for its end-users, according to a business model or not.

• Examples of functionalities:
  • automated access to data and information via API to create virtual online catalogues,
  • booking of dedicated resources for computing and storage according to required SLAs,
  • accounting and billing of resources allocated to the third-party front-office,
  • linkage of the front-office service desk to the DIAS back-office service desk for escalation procedure.
A group of third parties running a project will be able to create their shared environment based on the back-office resources without creating a project-dedicated website:

Examples of functionalities:
- creation of a community within one gateway with predefined set of local computing and storage resources,
- accounting of such resources with an SLA affordable for research,
- equal share of these resources among a group of users registered in the community, community administration,
- capacity to publish results with the help of the user support team.
The DIAS-procurement was entrusted to ESA and Eumetsat

**2 different approaches**

**ESA concept (Several DIAS platforms):**
- Release of one open Invitation to Tender requesting outsourced industrial DIAS services

**EUMETSAT, ECMWF, Mercator Ocean joint initiative:**
- Several separate procurements for DIAS components

**Architecture**

- Centralized architecture
  - Computer and network resources optimized.

- Decentralized architecture

**Market approach**

- Market approach from the start
- Joining up exploitation capacities and knowledge of the markets/users
Thank you for your attention