

Destination Earth Core Service Platform

Services Portfolio



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1. Introduction

1.1 Scope

This document provides the User Service Description for the "Destination Earth – DestinE Core Service Platform Framework – Platform & Data Management Services".

1.2 Purpose

This document is intended to describe and maintain updated the documentation of all the DESP registered Services, and detail the relevant specific data offer – if any. This document is available to DESP users and will rely on the form provided by ESA for the Services descriptions, as required in [AD-1].

1.3 Applicable Documents

Ref.	Title	Reference and Version
AD-1	[DP-SOW] Statement of Work - Destination Earth – Destine Core Service Platform Framework – Platform & Data Management Services	ESA-EOPG-EOPGD-SOW-10, v 1.0
AD-2	[AD-DSP-TSR] DESP Framework – Platform & Data Management Services – Technical and Service Requirements	ESA-EOPG-EOPGD-RS-10, v1.0
AD-3	[AD-DDL-DP] DestinE – System Framework – Data Portfolio	EUM/TSS/DOC/22/1279455, v1G, 09/09/2022
AD-4	[AD-DSP-SR] DESP Framework – Platform & Data Management Services – Security Requirements	ESA-ESO-SSRS-2022-0111, v1.0
AD-5	Space engineering – Software	ECSS-E-ST-40C, 06/03/2009

1.4 Reference Documents

Ref.	Title	Reference and Version
RD-1.	Negotiation meeting minutes of meeting	SPA-DEST-MOM-001
RD-2.	ARC Blueprint Architecture 2019	AARC-G045 2019-11-06 https://aarc-project.eu/architecture/
RD-3.	CSC DA	https://dataspace.copernicus.eu/index.html#data-access
RD-4.	Landsat8 Data Provider	https://www.usgs.gov/landsat-missions/landsat-8
RD-5.	EUMETSAT Big Data Service	https://data.eumetsat.int/search?query=
RD-6.	ISIMP	https://data.isimp.org/
RD-7.	IAGOS	https://www.iagos.org/iagos-data/
RD-8.	Eurostat	https://ec.europa.eu/eurostat/data/database

RD-9.	Copernicus Climate Change Service (C3S)	https://climate.copernicus.eu/
RD-10.	Copernicus Atmosphere Monitoring Service (CAMS)	https://atmosphere.copernicus.eu/
RD-11.	Copernicus Emergency Management Service (CEMS)	https://emergency.copernicus.eu/
RD-12.	Copernicus Marine Monitoring (CMEMS)	https://marine.copernicus.eu/
RD-13.	Copernicus Land Monitoring (CLMS)	https://land.copernicus.eu/
RD-14.	WEKEO Interface	https://www.wekeo.eu
RD-15.	Copernicus Data Space Ecosystem Sentinel-1 SLC documentation	https://documentation.dataspace.copernicus.eu/Data/SentinelMissions/Sentinel1.html#sentinel-1-level-1-single-look-complex-slc
RD-16.	Copernicus Data Space Ecosystem Sentinel-2 L2A documentation	https://documentation.dataspace.copernicus.eu/Data/SentinelMissions/Sentinel2.html#sentinel-2-level-2a-top-of-canopy-toc
RD-17.	Copernicus Data Space Ecosystem Sentinel-3 L2 SRAL documentation	https://documentation.dataspace.copernicus.eu/Data/SentinelMissions/Sentinel3.html#sentinel-3-sral-level-2
RD-18.	Copernicus Data Space Ecosystem Sentinel-3 L2 SYNERGY documentation	https://documentation.dataspace.copernicus.eu/Data/SentinelMissions/Sentinel3.html#sentinel-3-syn-level-2
RD-19.	Copernicus Data Space Ecosystem Sentinel-5P L2 documentation	https://documentation.dataspace.copernicus.eu/Data/SentinelMissions/Sentinel5P.html
RD-20.	CMEMS Global Ocean - High Resolution SAR Sea Ice Drift Documentation	https://doi.org/10.48670/moi-00135
RD-21.	CMEMS Global Ocean OSTIA Sea Surface Temperature and Sea Ice Reprocessed Documentation	https://doi.org/10.48670/moi-00168
RD-22.	CMEMS Global Ocean Sea Ice Concentration Time Series REPROCESSED (OSI-SAF) Documentation	https://doi.org/10.48670/moi-00136
RD-23.	CMEMS Global Ocean Waves Reanalysis Documentation	https://doi.org/10.48670/moi-00022

RD-24.	CMEMS Global Ocean Daily Gridded Reprocessed L3 Sea Surface Winds from Scatterometer Documentation	https://doi.org/10.48670/moi-00183
RD-25.	CMEMS Global Ocean OSTIA Sea Surface Temperature and Sea Ice Analysis Documentation	https://doi.org/10.48670/moi-00165
RD-26.	CMEMS Global Ocean Gridded L 4 Sea Surface Heights And Derived Variables NRT Documentation	https://doi.org/10.48670/moi-00149
RD-27.	CMEMS Global Total (COPERNICUS-GLOBCURRENT), Ekman and Geostrophic currents at the Surface and 15m Documentation	https://doi.org/10.48670/mds-00327
RD-28.	CMEMS Global Ocean Ensemble Physics Reanalysis Documentation	https://doi.org/10.48670/moi-00024
RD-29.	CMEMS Global Ocean L3 Spectral Parameters From NRT Satellite Measurements Documentation	https://doi.org/10.48670/moi-00178
RD-30.	CMEMS ESA SST CCI and C3S reprocessed sea surface temperature analyses Documentation	https://doi.org/10.48670/moi-00169
RD-31.	CMEMS Global Ocean low and mid trophic levels biomass content hindcast Documentation	https://doi.org/10.48670/moi-00020
RD-32.	CMEMS Global Ocean Biogeochemistry Analysis and Forecast Documentation	https://doi.org/10.48670/moi-00015
RD-33.	CMEMS Multi Observation Global Ocean 3D Temperature Salinity Height Geostrophic Current and MLD Documentation	https://doi.org/10.48670/moi-00052
RD-34.	CMEMS Global Ocean Surface Carbon Documentation	https://doi.org/10.48670/moi-00047
RD-35.	CMEMS Multi Observation Global Ocean Sea Surface Salinity and Sea Surface Density Documentation	https://doi.org/10.48670/moi-00051

RD-36.	CMEMS Global Ocean - Arctic and Antarctic - Sea Ice Concentration, Edge, Type and Drift (OSI-SAF)	https://doi.org/10.48670/moi-00134
RD-37.	CMEMS ODYSSEA Global Ocean - Sea Surface Temperature Multi-sensor L3 Observations Documentation	https://doi.org/10.48670/moi-00164
RD-38.	CMEMS Global Ocean Daily Gridded Sea Surface Winds from Scatterometer Documentation	https://doi.org/10.48670/moi-00182
RD-39.	CMEMS Atlantic- European North West Shelf- Ocean Physics Reanalysis Documentation	https://doi.org/10.48670/moi-00059
RD-40.	CMEMS Global Ocean 3D Chlorophyll-a concentration, Particulate Backscattering coefficient and Particulate Organic Carbon Documentation	https://doi.org/10.48670/moi-00046
RD-41.	CMEMS Global Ocean Mean Dynamic Topography Documentation	https://doi.org/10.48670/moi-00150
RD-42.	CMEMS Global Ocean Physics Analysis and Forecast Documentation	https://doi.org/10.48670/moi-00016
RD-43.	ERA5 Hourly Single Level data	https://doi.org/10.24381/cds.adbb2d47
RD-44.	ERA5-Land Hourly Data	https://doi.org/10.24381/cds.e2161bac
RD-45.	ERA5 Monthly Averaged Single Level Data	https://doi.org/10.24381/cds.f17050d7
RD-46.	ERA5 Monthly Averaged Data	https://doi.org/10.24381/cds.68d2bb30
RD-47.	Jupyter Hub	https://jupyter.org/hub

1.5 Acronyms and Abbreviations

Acronym	Definition
AARC	Authentication and Authorisation for Research and Collaboration
AD	Applicable Document
ADAM	Advanced geospatial Data Management platform
API	Application Programming Interface
CAMS	Copernicus Atmosphere Monitoring Services
CDSE	Copernicus Data Space Ecosystem
CMEMS	Copernicus Marine Environment Monitoring Service
CMS	Copernicus Marine Service
CSC DA	Copernicus Data Access

DB	Database
DEDL	DestinE Data Lake
DESP	DestinE Service Platform
DT	Digital Twin
EAC4	ECMWF Atmospheric Composition Reanalysis 4
ECSS	European Cooperation for Space Standardization
eIDAS	electronic IDentification, Authentication and trust Services
EO	Earth Observation
ERA5	fifth generation ECMWF atmospheric reanalysis
ESA	European Space Agency
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
GDPR	General Data Protection Regulation
GPU	Graphic Processing Unit
GRD	Ground Range Detected
GUI	Graphical User Interface
HAL	Hypertext Application Language
HDA	Harmonized Data Access
IaaS	Infrastructure as a Service
IAGOS	In-service Aircraft for a Global Observing System
IAM	Identity and Access Management
IOPS	input/output operations per second
IP	Internet Protocol
ISIMP	Inter-Sectoral Impact Model Intercomparison Project
IT	Infrastructure
NGC	Nvidia GPU Cloud
OLCI	Ocean and Land Colour Instrument
PaaS	Platform as a Service
RAM	Random Access Memory
RD	Reference Document
REST	Representational state transfer
S3	Simple Storage Service
SaaS	Software as a Service
SLC	Single Look Complex
SLSTR	Sea and Land Surface Temperature Radiometer
SOW	Statement of Work
SRAL	Synthetic aperture Radar Altimeter
STAC	SpatioTemporal Asset Catalogue
UMA	User-managed Access
vCores	Virtual Cores
WMS	Web Map Service

1.6 DESP Registered Services Overview

The document will describe the **DESP Registered Services**.

They can be divided into Platform Management Services, Data Management Services and Additional Services.

The **Platform management services** do not depend strongly on the user demand. These services are intended to be used by the other services to integrate inside the platform.

Platform Management Services, fully described in Section 2, are:

- Identity and Access Management Service is described in Section 2.1;
- Service Registry is described in Section 2.2;

- Service Desk is described in Section 2.3;
- Dashboard Service is described in Section 2.4;
- Information Dissemination and Onboarding Support Service are described in Section 2.5;

All these services are functional to host and run data-related services.

The **Data Management Services**, on the other hand, are services highly dependent on the user demand. They will strongly leverage the scalability and elasticity of the platform. They are described in Section 3.

- Data Workflow Services is described in Section 3.1;
- Traceability Services is described in Section 3.1.1;
- Visualization Services is described in Section 3.3;
- User Workflow Services is described in Section 3.3.1.

The **Additional Services** are not part of the **DESP Core Services** and can be provided by Third Parties. Additional Services can be found in Section 0 and are the following:

- OVHcloud Public Cloud Services, described in Section 4.1.

The tables in the next sections provide the following key information for the various DESP Services:

- **Name** of the service
- **Description**, specifying the objective of the service;
- **Access Policy** [Public Access]/[Registered Public Access];
- **Registration Method** [Self-registration]/[Service Desk Registration]/[Federated Registration];
- **Service Type** [IaaS]/[PaaS]/[SaaS]/[Web-based];
- **Interface Type** [CLI]/[API]/[REST API]/[GUI];
- **Service Consumption Type** [Fixed Resources Consumption]/[Variable Resources Consumption];
- **DestinE usage Profile**, explaining the characteristics of the free DestinE Usage Profile;
- **Service Usage Profile**, describing the commercial plans available and their characteristics;
- **Content Source Management**, describing how the content related to the service will be managed and by whom;

The DESP oversees a comprehensive Data Portfolio, conveniently organized within the relevant sections corresponding to each Data Management Service in Chapter 3.

2. Platform Management Services

2.1 Identity and Access Management Service

Table 1 - IAM Service Description

IAM Service		
Description	Followed by a registration process, the Identity and Access Management service provides the means of authenticating end-users and authorizing their access to resources depending on the specific resource and access privileges. All user information is protected according to the General Data Protection Regulation (GDPR).	
Access Policy	Public Access, Registered Public Access	
Registration Method	Self-registration, service desk registration, federated registration	
Service Type	Software as a Service (SaaS)	Users leverage IAM Service for registration and login/logout. Registration and login/logout will be available via internet web browser and via API.
Interface Type	API	IAM Service APIs support user management, user role permissions and membership management, and service onboarding management. The IAM Service provides a list of well-known endpoints for authentication and authorization standards as well as identity management for users. In particular, the UMA API, OpenID Connect API, SCIM API and Identity administration API.
	REST API	The IAM Service provides open endpoints interfaces to request authorization through REST web services. Token retrieval, resources and policies for authorization process are attached to this interface type. Mostly all operations require an authenticated user as minimum.
	GUI	Provides a User Interfaces accessible through browsers to monitor and manage user data, roles and attributes as well as client registrations and resource access control.
Service Consumption Type	Fixed Resources Consumption Services	IAM Service is not bounded to any consumption restriction
DestinE Usage Profile	Access is open for all authenticated users and to non-authenticated users to register and log-in.	
Content Source Management	Information & content managed & published by the DESP Provider.	

2.2 Service Registry

Table 2 - Service Registry Service Description

Service Registry		
Description	The Service Registry solution allows Service Providers to register their own services/applications for making them available to the user community after validation process. The Service Catalogue available to the users is based on the Service Registry.	
Access Policy	Public Access, Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Software as a Service (SaaS)	Users leverage the Service Registry to consult the Service Catalogue and to register new Services in DESP. The Service Registry will be available via internet web browser and via API.
Interface Type	API	The Service Registry provides APIs to support service onboarding and configuration control management of services within the DESP ecosystem.
	REST API	The Service Registry API provides open endpoints interfaces to request registration, validation, listing, updating and publish information through REST web services.
	GUI	Provides a user interface accessible through browsers for service registration. The service registration form comprises both standard mandatory and optional fields that must be completed to successfully finalize the onboarding process. The form includes informative elements, such as tooltips, to assist and guide service providers throughout the registration. Documentation featuring detailed examples and tutorials on the service registration process is available for download.
Service Consumption Type	Fixed Resources Consumption Services	The Service Registry is not bounded to any consumption restriction
DestinE Usage Profile	Access is open for all authenticated users which are authorised to use the Service Registry to register a Service. The access to the catalogue is open for all the authenticated users.	
Content Source Management	Information & content managed & published by the DESP Provider. All Services information is stored in the Service Catalogue.	
	Content open for contribution from registered Users/Third Party, publication depends on critical review from DESP Provider.	

2.3 Service Desk

Table 3 - Service Desk Service Description

Service Desk		
Description	The DESP Service Desk provides support for users by enabling them to submit requests and monitor the progress of their inquiries. Additionally, the Service Desk is responsible for analysing user feedback and generating comprehensive reports	
Access Policy	Public Access, Registered Public Access	
Registration Method	Self-registration, service desk registration, federated registration	
Service Type	Web-based Service	The Service Desk is available via internet web browser in a client – server model with no user persistent resources allocated.
Interface Type	GUI	Provides a User Interfaces accessible through browsers to track issues and requests, access the web forum, access the knowledge base and consult reports and analytics. The UI is organized into channels to ease the management of user's requests and communication. Tracked issues and data can be exported via the UI for analytics and administration purposes, according to well-established permission policies.
Service Consumption Type	Fixed Resources Consumption Services	The Service Desk is not bounded to any consumption restriction
DestinE Usage Profile	Access is open for all authenticated users and for non-authenticated users to support registration.	
Content Source Management	Information & content managed & published by the DESP Provider.	

2.4 Dashboard Services

Table 4 – Executive Dashboard Service Description

Dashboard		
Description	The DESP Executive Dashboard is aimed at presenting and promoting DESP activities. It aggregates and displays metrics and key indicators so they can be examined immediately by all possible audiences, allowing also to export the results in different formats.	
Access Policy	Public Access, Registered Public Access	
Registration Method	Self-registration, service desk registration, federated registration	
Service Type	Web-based Service	The Executive Dashboard is available via internet web browser in a client – server model with no user persistent resources allocated, and via API.
Interface Type	GUI	<p>The Executive Dashboard User Interface is accessible via browser and provides users with a visual and intuitive representation of key metrics, data, and functionalities related to DESP Services.</p> <p>The UI is organized into sections facilitating seamless data representation and organization based on specific analysis topics. Intuitive filters and date range selectors empower users to effortlessly customize the displayed data, tailoring it to specific time periods or criteria with ease.</p>
	REST API	The Executive Dashboard provides REST API to allow the integration of data from external applications and services, as well as a RESTful API for accessing Dashboard data in a delimited text or JSON format.
Service Consumption Type	Fixed Resources Consumption Services	Executive Dashboard Service is not bounded to any consumption restriction
DestinE Usage Profile	Access is open for all authenticated and non-authenticated users. Some dashboard views will be accessible only by users with specific authorizations.	
Content Source Management	Information & content managed & published by the DESP Provider.	

2.5 Information Dissemination and Onboarding Support

Table 5 - Information Dissemination and Onboarding Support Service Description

Information Dissemination and Onboarding Support		
Description	The Information Dissemination and Onboarding Support provides to DESP users the DESP web portal together with the web forum and the knowledge base, provides the needed support to external providers that want to register their Services in DESP, and takes care of the community engagement, of the promotional activities and events.	
Access Policy	Public Access, Registered Public Access	
Registration Method	Self-registration, service desk registration, federated registration	
Service Type	Web-based Service	Information Dissemination and Onboarding Support will be available via internet web browser in a client – server model with no user persistent resources allocated, but also via API.
Interface Type	GUI	The web portal serves as the primary gateway for users to access the DESP (Data and Service Portfolio). Designed with an intuitive user interface, it encompasses a comprehensive suite of functionalities to efficiently manage communication, deliver support services, and disseminate pertinent information regarding the DESP services and data offerings. Users can seamlessly navigate the portal to explore and engage with the full spectrum of DESP Services and Data Portfolio, ensuring a robust and user-friendly experience.
Service Consumption Type	Fixed Resources Consumption Services	The Information Dissemination and Onboarding Support is not bounded to any consumption restriction
DestinE Usage Profile	Access to the web portal and to some of the information is open for all authenticated and non-authenticated users. Onboarding Support and Specific Information pages will be available only to authenticated users.	
Content Source Management	Information & content managed & published by the DESP Provider.	

3. Data Management Services

3.1 Data Workflow Services

Table 6 - Data Workflow Service Description

Data Workflow Service		
Description	A catalogue of services to enable machine-to-machine and human-readable interfaces for data discovery, data preparation and transformation, data retrieval, and data caching.	
Access Policy	Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Web-based Service	The Data Workflow Service operates on a client-server model, accessible via the internet to deliver data access and management functionalities to end users. Its architecture ensures a seamless and secure connection, enabling users to efficiently interact with the service.
Interface Type	REST API	The Service supports RESTful API access to data via standards like STAC , OpenSearch, S3, as well as key standard libraries as GDAL. Also, the service exposes a set of Harmonized Data Access (HDA) RESTful APIs designed to facilitate interactions with the Data Workflow service.
	GUI	The graphical user interface exposes a comprehensive suite of data-related features provided by the service, facilitating streamlined data access and effective data management in an Advanced geospatial Data Management Platform (ADAM). The UI supports the OGC standards as WMS/WCS, and the OpenAPIs and JSON schema powered by the HDA APIs.
Service Consumption Type	Variable Resources Consumption Services	Quotas on Parallel downloads and WCS request size
DestinE Usage Profile	<ul style="list-style-type: none"> - 2 parallel downloads - WMS/WCS service 	
Service Usage Profile	Advanced	<ul style="list-style-type: none"> - up to 10 parallel downloads - WMS Service - 100MB max size per WCS request
	Premium	<ul style="list-style-type: none"> - up to 10 parallel downloads - WMS Service - 1GB max size per WCS request
Content Source Management	Information & content managed & published by the DESP Provider.	

3.1.1 Data Workflow Service Data Portfolio

The DESP Data Workflow Service Data portfolio includes datasets coming from Federation Access and Fresh Data Pool of the DestinE Data Lake (DEDL), as well as the Digital Twins made available in the DT Data Warehouse.

Following table summarizes the Federated Data Provider services.

Table 7 - Federated Data Providers

Federated Data Providers	Reference
CSC DA	RD-5
Landsat8 Data Provider	RD-6
EUMETSAT Big Data Service	RD-7
ISIMP	RD-8
IAGOS	RD-9
Eurostat	RD-10
Copernicus Climate, Atmosphere and Emergency Monitoring	RD-11
Copernicus Marine Monitoring	RD-12
Copernicus Land Monitoring	RD-13
WEkEO Interface	RD-14

The Data Workflow Service comprehend a Systematic Data Cache Management system in charge of storing temporarily data which is copied from external sources (e.g. DEDL federated location), according to optimised eviction policies and data formats.

Also, in case of products subject of recurring requests (due, for example, to a relevant environmental event like a volcano eruption, an earthquake, or a tsunami) the data are stored in the cache making them immediately available.

Table 8, Table 9, Table 10, Table 11, Table 12, Table 13, Table 14, Table 15, Table 16, Table 17, Table 18, that follow include a tag to identify immediately available datasets and pre-processed for visualization. In summary they are listed below.

- Latest week of Copernicus Sentinel-1-2-3-5p
- From 1979 to present ERA5 Hourly Single Level Data (RD-43) variables 2m dewpoint temperature, 2m temperature, and Total precipitation, in COG data format.
- From 1950 to present ERA5-Land Hourly Data (RD-44) variables 10m u-component of wind, 10m v-component of wind, 2m dewpoint temperature, 2m temperature, Surface solar radiation downwards, Total precipitation, in COG format.
- From 1979 to present ERA5 Monthly Averaged Single Level Data (RD-45) variables 2m dewpoint temperature, 2m temperature, and Total precipitation, in COG data format.
- From 1950 to present ERA5-Land Monthly Averaged Data (RD-46) variables 2m dewpoint temperature, 2m temperature, and Total precipitation, in COG data format.
- Latest 1 year of CAMS global reanalysis (EAC4)
- Full period of CAMS European air quality reanalyses
- Latest 1 month of CAMS European air quality forecasts
- Latest 1 year CMEMS analysis Global Ocean 1/12° Physics Analysis and Forecast updated Daily
- Latest 1 month of CMEMS forecasts Global Ocean 1/12° Physics Analysis and Forecast updated Daily
- Full period Global Ocean 3D Chlorophyll-a concentration, Particulate Backscattering coefficient and Particulate Organic Carbon.

For the other datasets of the DestinE Portfolio a reasonable amount of recent data will be stored. The user request rate for each dataset will be continuously monitored to adapt the caching policy to the real user demand.

The following tables details the DestinE data portfolio. For each available data source we reported a table with the available datasets together with the following information

- brief description
- the dataset provider
- the type of access (dataset available in the DestinE Data Lake fresh pool or via federated access to the provider)
- the dataset ID
- the availability in DESP Data Cache:
 - for datasets prefetched in the data cache the period of retention is provided
 - other datasets for which data cache retention should be aligned to user demand are indicated as *Usage-based/ Smart*
- the availability of preprocessed data for quick visualization.

Table 8 - DestinE Datasets from Copernicus Data Access

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Rolling on Systematic Cache	Pre-Processed for Visualization
Sentinel-1 Level 1 SLC	Copernicus Space Component Data access	DEDL Fresh Data Pool (Last 2 years rolling archive)	EO:ESA:DAT:EODC- SENTINEL-1:L1_SLC	1 week	Y
Sentinel-1 Level 1 GRD	Copernicus Space Component Data access	DEDL Fresh Data Pool (Last 2 years rolling archive)	EO:ESA:DAT:EODC- SENTINEL-1:L1_GRD	1 week	Y
Sentinel-2 Level 1C: Top-Of-Atmosphere reflectances in cartographic geometry	Copernicus Space Component Data access	DEDL Fresh Data Pool (Last 2 years rolling archive)	EO:ESA:DAT:SENTINEL-2:MSI:L1C	1 week	Y
Sentinel-2 Level 2A: Bottom-Of-Atmosphere reflectances in cartographic geometry	Copernicus Space Component Data access	DEDL Fresh Data Pool (Complete dataset)	EO:ESA:DAT:SENTINEL-2:MSI:L2A	1 week	Y
Sentinel-3 Level 2 OLCI Land Colour Full Resolution	Copernicus Space Component Data access	Federation access	EO:ESA:DAT:SENTINEL-3:OL_2_LFR___	1 week	Y
Sentinel-3 Level 2 OLCI Land Colour Reduced Resolution	Copernicus Space Component Data access	Federation access	EO:ESA:DAT:SENTINEL-3:OL_2_LRR___	1 week	Y
Sentinel-3 Level 2 Land - Sea and Land Surface Temperature Radiometer (SLSTR)	Copernicus Space Component Data access	Federation access	EO:ESA:DAT:SENTINEL-3:OL_2_LST___	1 week	Y
Sentinel-3 Level 2 Land	Copernicus Space Component Data access	Federation access	EO:ESA:DAT:SENTINEL-3:OL_2_LAN___	1 week	Y
Sentinel-3 L1B OLCI Full Resolution	EUMETSAT Big Data Services	Federation access	EO:EUM:DAT:SENTINEL-3:OL_1_EFR___	1 week	Y
Sentinel-3 L1B OLCI Reduced Resolution	EUMETSAT Big Data Services	Federation access	EO:EUM:DAT:SENTINEL-3:OL_1_ERR___	1 week	Y
Sentinel-3 Level 2 Ocean Color Full Resolution	EUMETSAT Big Data Services	Federation access	EO:EUM:DAT:SENTINEL-3:OL_1_WFR___	1 week	Y
Sentinel-3 Level 2 Ocean Color Reduced Resolution	EUMETSAT Big Data Services	Federation access	EO:EUM:DAT:SENTINEL-3:OL_1_WRR___	1 week	Y
Sentinel-3 L1B Radiances and Brightness Temperatures	EUMETSAT Big Data Services	Federation access	EO:EUM:DAT:SENTINEL-3:SL_1_RBT___	1 week	Y

Sentinel-3 L1B SRAL	EUMETSAT Big Data Services	Federation access	EO:EUM:DAT:SENTINEL-3:SR_1_SRA	1 week	Y
Sentinel-3 Level 2 Altimetry Global	EUMETSAT Big Data Services	Federation access	EO:EUM:DAT:SENTINEL-3:SR_2_WAT	1 week	Y
Sentinel-5P Level 1	Copernicus Space Component Data Access	DEDL Fresh Data Pool (Complete dataset)	EO:ESA:DAT:SENTINEL-5P:TROPOMI:L1	1 week	Y
Sentinel-5P Level 2	Copernicus Space Component Data Access	DEDL Fresh Data Pool (Complete dataset)	EO:ESA:DAT:SENTINEL-5P:TROPOMI:L2	1 week	Y

Table 9 - DestinE Datasets In-situ and Satellite observations

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
Seasonal forecast daily and subdaily data on single levels	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEASONAL_FORECAST_DAILY_DATA_ON_SINGLE_LEVELS_2017_PRESENT	Usage-based/Smart	N
Seasonal forecast subdaily data on pressure levels	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEASONAL_FORECAST_DAILY_DATA_ON_PRESSURE_LEVELS_2017_PRESENT	Usage-based/Smart	N
Seasonal forecast anomalies on single levels	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEASONAL_FORECAST_ANOMALIES_ON_SINGLE_LEVELS_2017_PRESENT	Usage-based/Smart	N
Seasonal forecast anomalies on pressure levels	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEASONAL_FORECAST_ANOMALIES_ON_PRESSURE_LEVELS_2017_PRESENT	Usage-based/Smart	N
Seasonal forecast monthly statistics on single levels	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEASONAL_FORECAST_MONTHLY_STATISTICS_ON_SINGLE_LEVELS_2017_PRESENT	Usage-based/Smart	N
Seasonal forecast monthly statistics on pressure levels	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEASONAL_FORECAST_MONTHLY_STATISTICS_ON_PRESSURE_LEVELS_2017_PRESENT	Usage-based/Smart	N

Carbon dioxide data from 2002 to present derived from satellite observations	Copernicus CDS	Federation access	EO:ECMWF:DAT:CO2_DATA_FROM_SATELITE_SENSORS_2002_PRESENT	Usage-based/Smart	N
Glaciers distribution data from the Randolph Glacier Inventory for year 2000	Copernicus CDS	Federation access	EO:ECMWF:DAT:GLACIERS_DISTRIBUTION_DATA_FROM_RANDOLPH_GLACIER_INVENTORY_2000	Usage-based/Smart	N
Glaciers elevation and mass change data from 1850 to present from the Fluctuations of Glaciers Database	Copernicus CDS	Federation access	EO:ECMWF:DAT:GLACIERS_ELEVATION_AND_MASS_CHANGE_DATA_1850_PRESENT	Usage-based/Smart	N
Methane data from 2002 to present derived from satellite observations	Copernicus CDS	Federation access	EO:ECMWF:DAT:METHANE_DATA_SATELITE_SENSORS_2002_PRESENT	Usage-based/Smart	N
UERRA regional reanalysis for Europe on single levels from 1961 to 2019	Copernicus CDS	Federation access	EO:ECMWF:DAT:REANALYSIS_UERRA_EUROPE_SINGLE_LEVELS	Usage-based/Smart	N
Sea ice monthly and daily gridded data from 1978 to present derived from satellite sensors	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEA_ICE_MONTHLY_AND_DAILY_GRIDDED_DATA_1978_PRESENT	Usage-based/Smart	N
Sea level daily gridded data from satellite observations for the Black Sea from 1993 to 2020	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEA_LEVEL_DAILY_GRIDDED_DATA_FOR_BLACK_SEA_1993_PRESENT	Usage-based/Smart	N
Sea level daily gridded data from satellite observations for the global ocean from 1993 to present	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEA_LEVEL_DAILY_GRIDDED_DATA_FOR_GLOBAL_OCEAN_1993_PRESENT	Usage-based/Smart	N
Sea level daily gridded data from satellite observations for the Mediterranean Sea from 1993 to 2020	Copernicus CDS	Federation access	EO:ECMWF:DAT:SEA_LEVEL_DAILY_GRIDDED_DATA_FOR_MEDITERRANEAN_SEA_1993_PRESENT	Usage-based/Smart	N
Water quantity indicators for Europe	Copernicus CDS	Federation access	EO:ECMWF:DAT:WATER_QUALITY_INDICATOR_FOR_EUROPEAN_RIVERS	Usage-based/Smart	N
Water quantity indicators for European catchments	Copernicus CDS	Federation access	EO:ECMWF:DAT:WATER_QUANTITY_INDICATORS_FOR_EUROPEAN_CATCHMENTS	Usage-based/Smart	N

Table 10 - DestinE Datasets from C3S: Reanalysis

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
ERA5 hourly data on single levels from 1979 to present	Copernicus CDS	Federation access	EO:ECMWF:DAT:REANALYSIS_ERA5_SINGLE_LEVELS	1979 - "to present"	Y
ERA5 hourly data on pressure levels from 1979 to present	Copernicus CDS	Federation access	EO:ECMWF:DAT:ERA5_HOURLY_VARIABLES_ON_PRESSURE_LEVELS	Usage-based/Smart	N
ERA5 monthly averaged data on single levels from 1979 to present	Copernicus CDS	Federation access	EO:ECMWF:DAT:REANALYSIS_ERA5_SINGLE_LEVELS_MONTHLY_MEANS	1979 - "to present"	Y
ERA5 monthly averaged data on pressure levels from 1979 to present	Copernicus CDS	Federation access	EO:ECMWF:DAT:ERA5_MONTHLY_MEANS_VARIABLES_ON_PRESSURE_LEVELS	Usage-based/Smart	N
ERA5-Land hourly data from 1950 to present	Copernicus CDS	Federation access	EO:ECMWF:DAT:ERA5_LAND_HOURLY	1979 - "to present"	Y
ERA5-Land monthly data from 1950 to present	Copernicus CDS	Federation access	EO:ECMWF:DAT:ERA5_LAND_MONTHLY	1979 - "to present"	Y

Table 11 - DestinE Datasets from CAMS

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
CAMS global reanalysis (EAC4)	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_GLOBAL_REANALYSIS_EAC4	1 years (rolling archive)	Y
CAMS global emission inventories	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_GLOBAL_EMISSION_INVENTORIES	Usage-based/Smart	N
CAMS global reanalysis (EAC4) monthly averaged fields	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_GLOBAL_REANALYSIS_EAC4_MONTHLY_AV_FIELDS	Usage-based/Smart	N
CAMS global inversion-optimised greenhouse gas fluxes and concentrations	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_GREENHOUSE_GAS_FLUXES	Usage-based/Smart	N
CAMS European air quality reanalyses	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_EURO_AIR_QUAL_REANALYSIS	Full period	Y

CAMS global radiative forcing	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_GLOBAL_RADIATIVE_FORCING	Usage-based/ Smart	N
CAMS global radiative forcing - auxilliary variables	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_GLOBAL_RADIATIVE_FORCING_A UX	Usage-based/ Smart	N
CAMS global greenhouse gas reanalysis (EGG4)	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_GLOBAL_GREENHOUSE_GAS_RANALYSIS	Usage-based/ Smart	N
CAMS global greenhouse gas reanalysis (EGG4) monthly averaged fields	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_GLO BAL_GREENHOUSE_GAS_RANALYSIS_MO NTHLY_AV_FI ELDS	Usage-based/ Smart	N
CAMS European air quality forecasts	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_EUROPE_AIR_QUALITY_FORECASTS	Full period	Y
CAMS global atmospheric composition forecasts	Copernicus ADS	Federation access	EO:ECMWF : DAT:CAMS_GLOBAL_ATMOSH ERIC_COMPO_FORECAST	Usage-based/ Smart	N
CAMS solar radiation time- series	Copernicus ADS	Federation access	EO:ECMWF :DAT:CAMS_SOLAR_RADIATION_TIMESERIES	Usage-based/ Smart	N

Table 12 - DestinE Datasets from CMEMS: Marine datasets are restricted to Global area in this initial version

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
Global Ocean 1/12° Physics Analysis and Forecast updated Daily	Copernicus Marine	Federation access	EO:MO:DAT:GLOBAL_ANALY SIS_FORECAST_PHY_001_024	1 years (rolling archive) for analysis 1 month (rolling archive) for forecast	Y
Global Surface Chlorophyll Concentration from Satellite observations (daily average) Reprocessed L3 (ESA-CCI)10	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_CHL_L3_REP_OBSERVATIONS_009_065	Usage-based/ Smart	N

Global Ocean 1/4° Physics Analysis and Forecast updated Daily	Copernicus Marine	Federation access	EO:MO:DAT:GLOBAL_ANALY SISFORECAST_PHY_CPL_001_015	Usage-based/ Smart	N
Global Ocean Biogeochemistry Analysis and Forecast	Copernicus Marine	Federation access	EO:MO:DAT:GLOBAL_ANALYSIS_FORECAST_BIO_001_028	Usage-based/ Smart	N
Global Ocean Waves Analysis and Forecast	Copernicus Marine	Federation access	EO:MO:DAT:GLOBAL_ANALYSIS_FORECAST_WAV_001_0 27	Usage-based/ Smart	N
Global ocean low and mid trophic levels biomass content hindcast	Copernicus Marine	Federation access	EO:MO:DAT:GLOBAL_MULTIYEAR_BGC_001_033	Usage-based/ Smart	N
Global Ocean Waves Reanalysis WAVERY5	Copernicus Marine	Federation access	EO:MO:DAT:GLOBAL_MULTIYEAR_WAV_0 01_032	Usage-based/ Smart	N
Global Ocean Ensemble Physics Reanalysis - Low resolution	Copernicus Marine	Federation access	EO:MO:DAT:GLOBAL_REANALYSIS_PHY_00 1_026	Usage-based/ Smart	N
Global Ocean Ensemble Physics Reanalysis	Copernicus Marine	Federation access	EO:MO:DAT:GLOBAL_REANALYSIS_PHY_00 1_031	Usage-based/ Smart	N
Global Ocean- Real time in-situ observations objective analysis	Copernicus Marine	Federation access	EO:MO:DAT:INSITU_GLO_TS_OA_NRT_OBSERVATIONS_013_002_a	Usage-based/ Smart	N
Global Ocean- Delayed Mode gridded CORA- In-situ Observations objective analysis in Delayed Mode	Copernicus Marine	Federation access	EO:MO:DAT:INSITU_GLO_TS_OA_REP_OBSERVATIONS_013_002_b	Usage-based/ Smart	N
Global Ocean- in-situ Near real time observations of ocean currents	Copernicus Marine	Federation access	EO:MO:DAT:INSITU_GLO_UV_NRT_OBSER VATIONS_013_048	Usage-based/ Smart	N
Global Ocean 3D Chlorophyll-a concentration, Particulate Backscattering coefficient and Particulate Organic Carbon	Copernicus Marine	Federation access	EO:MO:DAT:MULTIOBS_GLO_BIO_BGC_3D_REP_015_010	Full period	Y
Global Ocean Surface Carbon	Copernicus Marine	Federation access	EO:MO:DAT:MULTIOBS_GLO_BIO_CARBON_SURFACE_REP_015_008	Usage-based/ Smart	N

Nutrient profiles vertical distribution	Copernicus Marine	Federation access	EO:MO:DAT:MULTIOBS_GLO_BIO_NUTRIENTS_PROFILES_REP_015_009	Usage-based/ Smart	N
Global Total Surface and 15m Current (COPERNICUS-GLOBCURRENT) from Altimetric Geostrophic Current and Modeled Ekman Current Processing	Copernicus Marine	Federation access	EO:MO:DAT:MULTIOBS_GL O_PHY_NRT_0 15_003	Usage-based/ Smart	N
Global Total Surface and 15m Current (COPERNICUS-GLOBCURRENT) from Altimetric Geostrophic Current and Modeled Ekman Current Reprocessing	Copernicus Marine	Federation access	EO:MO:DAT:MULTIOBS_GL O_PHY_REP_0 15_004	Usage-based/ Smart	N
Multi Observation Global Ocean Sea Surface Salinity and Sea Surface Density	Copernicus Marine	Federation access	EO:MO:DAT:MULTIOBS_GL O_PHY_S_SUR FACE_MYNRT _015_013	Usage-based/ Smart	N
Multi Observation Global Ocean 3D Temperature Salinity Height Geostrophic Current and MLD	Copernicus Marine	Federation access	EO:MO:DAT:MULTIOBS_GL O_PHY_TSUV_ 3D_MYNRT_0 15_012	Usage-based/ Smart	N
Global Observed Ocean Physics 3D Quasi-Geostrophic Currents (OMEGA3D)	Copernicus Marine	Federation access	EO:MO:DAT:MULTIOBS_GL O_PHY_W_3D _REP_015_00 7	Usage-based/ Smart	N
Global Ocean Chlorophyll, PP and PFT (Copernicus-GlobColour) from Satellite Observations : Daily (Near Real Time)	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_CHL_L3_NRT_OBSERVATIONS_009_032	Usage-based/ Smart	N
Global Ocean Chlorophyll, PP and PFT (Copernicus-GlobColour) from Satellite Observations: Daily (Reprocessed from 1997)	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_CHL_L3_REP_OBSERVATIONS_009_085	Usage-based/ Smart	N

Global Ocean Chlorophyll, PP and PFT (Copernicus-GlobColour) from Satellite Observations: Monthly and Daily Interpolated (Near Real Time)	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_CHL_L4_NRT_OBSERVATIONS_009_033	Usage-based/Smart	N
Global Ocean Chlorophyll, PP and PFT (Copernicus-GlobColour) from Satellite Observations: Monthly and Daily Interpolated (Reprocessed from 1997)	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_CHL_L4_REP_OBSERVATIONS_009_082	Usage-based/Smart	N
Global Surface Chlorophyll Concentration from Satellite observations (daily average) Reprocessed L4 (ESA-CCI): monthly	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_CHL_L4_REP_OBSERVATIONS_009_093	Usage-based/Smart	N
Global Ocean NRRS, BBP, CDM, KD, ZSD, SPM (Copernicus- GlobColour) from Satellite Observations: Daily (Near Real Time)	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_OPTICS_L3_NRT_OBSERVATIONS_09_030	Usage-based/Smart	N
Global Ocean, Ocean Optics Products (daily average) Reprocessed L3 (ESA-CCI)	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_OPTICS_L3_REP_OBSERVATIONS_09_064	Usage-based/Smart	N
Global Ocean NRRS, BBP, CDM, KD, ZSD, SPM (Copernicus- GlobColour) from Satellite Observations: Daily (Reprocessed from 1997)	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_OPTICS_L3_REP_OBSERVATIONS_09_086	Usage-based/Smart	N
Global Ocean NRRS, BBP, CDM, KD, ZSD, SPM (Copernicus- GlobColour) from Satellite Observations: Monthly and Daily Interpolated (Reprocessed from 1997)	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR_GLO_OPTICS_L4_NRT_OBSERVATIONS_09_083	Usage-based/Smart	N

Global Ocean NRRS, BBP, CDM, KD, ZSD, SPM (Copernicus- GlobColour) from Satellite Observations: Monthly and Daily- Interpolated (Reprocessed from 1997)	Copernicus Marine	Federation access	EO:MO:DAT:OCEANCOLOUR _GLO_OPTICS_L4_REP_OBSERVATIONS_09_081	Usage-based/ Smart	N
Global Ocean - Arctic and Antarctic - Sea Ice Concentration, Edge, Type and Drift (OSI-SAF)	Copernicus Marine	Federation access	EO:MO:DAT:SEAICE_GLO_S EAICE_L4_NRT _OBSERVATIONS_011_001	Usage-based/ Smart	N
Global Ocean - High Resolution SAR Sea Ice Drift	Copernicus Marine	Federation access	EO:MO:DAT:SEAICE_GLO_S EAICE_L4_NRT _OBSERVATIONS_011_006	Usage-based/ Smart	N
Global Ocean Sea Ice Concentration Time Series REPROCESSED (OSI-SAF)	Copernicus Marine	Federation access	EO:MO:DAT:SEAICE_GLO_S EAICE_L4_REP _OBSERVATIONS_011_009	Usage-based/ Smart	N
GLOBAL OCEAN GRIDDED L4 SEA SURFACE HEIGHTS AND DERIVED VARIABLES NRT	Copernicus Marine	Federation access	EO:MO:DAT:SEALEVEL_GLO _PHY_L4_NRT _OBSERVATIONS_008_046	Usage-based/ Smart	N
GLOBAL OCEAN MEAN DYNAMIC TOPOGRAPHY8	Copernicus Marine	Federation access	EO:MO:DAT:SEALEVEL_GLO _PHY_MDT_0 08_063	Usage-based/ Smart	N
Global Ocean - Sea Surface Temperature Multi-sensor L3 Observations	Copernicus Marine	Federation access	EO:MO:DAT:SST_GLO_SST_L 3S_NRT_OBSERVATIONS_01 0_010	Usage-based/ Smart	N
Global Ocean OSTIA Sea Surface Temperature and Sea Ice Analysis	Copernicus Marine	Federation access	EO:MO:DAT:SST_GLO_SST_L 4_NRT_OBSERVATIONS_010 _001	Usage-based/ Smart	N
Global Ocean Sea Surface Temperature Multi Product Ensemble (GMPE)	Copernicus Marine	Federation access	EO:MO:DAT:SST_GLO_SST_L 4_NRT_OBSERVATIONS_010 _005	Usage-based/ Smart	N
Global Ocean OSTIA Diurnal Skin Sea Surface Temperature	Copernicus Marine	Federation access	EO:MO:DAT:SST_GLO_SST_L 4_NRT_OBSERVATIONS_010 _014	Usage-based/ Smart	N
Global Ocean OSTIA Sea Surface Temperature and Sea Ice Reprocessed	Copernicus Marine	Federation access	EO:MO:DAT:SST_GLO_SST_L 4_REP_OBSERVATIONS_010 _011	Usage-based/ Smart	N

ESA SST CCI and C3S reprocessed sea surface temperature analyses	Copernicus Marine	Federation access	EO:MO:DAT:SST_GLO_SST_L 4_REP_OBSERVATIONS_010_024	Usage-based/ Smart	N
GLOBAL OCEAN L3 SPECTRAL PARAMETERS FROM NRT SATELLITE MEASUREMENTS	Copernicus Marine	Federation access	EO:MO:DAT:WAVE_GLO_WAV_L3_SPC_NRT_OBSERVATIONS_014_002	Usage-based/ Smart	N
GLOBAL OCEAN L3 SIGNIFICANT WAVE HEIGHT FROM NRT SATELLITE MEASUREMENTS	Copernicus Marine	Federation access	EO:MO:DAT:WAVE_GLO_WAV_L3_SWH_NRT_OBSERVATIONS_014_001	Usage-based/ Smart	N
GLOBAL OCEAN L4 SIGNIFICANT WAVE HEIGHT FROM NRT SATELLITE MEASUREMENTS	Copernicus Marine	Federation access	EO:MO:DAT:WAVE_GLO_WAV_L4_SWH_NRT_OBSERVATIONS_014_003	Usage-based/ Smart	N
Global Ocean Wind L4 Reprocessed Monthly Mean Observations	Copernicus Marine	Federation access	EO:MO:DAT:WIND_GLO_P HY_CLIMATE_ L4_REP_012_ 003	Usage-based/ Smart	N
Global Ocean Daily Gridded Sea Surface Winds from Scatterometer	Copernicus Marine	Federation access	EO:MO:DAT:WIND_GLO_ WIND_L3_NRT_OBSERVATIONS_012_002	Usage-based/ Smart	N
Global Ocean Daily Gridded Reprocessed L3 Sea Surface Winds from Scatterometer	Copernicus Marine	Federation access	EO:MO:DAT:WIND_GLO_ WIND_L3_REP _OBSERVATIONS_012_005	Usage-based/ Smart	N
Global Ocean Wind L4 Near real Time 6 hourly Observations	Copernicus Marine	Federation access	EO:MO:DAT:WIND_GLO_ WIND_L4_NRT_OBSERVATIONS_012_004	Usage-based/ Smart	N
Global Ocean L4 Reprocessed 6 hourly Observations	Copernicus Marine	Federation access	EO:MO:DAT:WIND_GLO_ WIND_L4_REP _OBSERVATIONS_012_006	Usage-based/ Smart	N

Table 13 - DestinE Datasets from CLMS

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
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Copernicus DEM - Global and European Digital Elevation Model (COP-DEM)	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	EO:ESA:DAT:COP	Usage-based/Smart	N
Global 10-daily Normalized Difference Vegetation Index 333M	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	EO:CLMS:DAT:CGLS_GLOBAL_NDVI300_V1_333M	Usage-based/Smart	N
Global 10-daily Normalized Difference Vegetation Index 1KM	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	EO:CLMS:DAT:CGLS_GLOBAL_NDVI_V2_1KM	Usage-based/Smart	N
Vegetation Indices, daily	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	EO:HRVPP:DAT:VEGETATION-INDICES	Usage-based/Smart	N
10-daily Burned Area 300M (V3)	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	URN:CGLS:GLOBAL:BA300_V3_333M	Usage-based/Smart	N
10-daily Burned Area 300M	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	URN:CGLS:GLOBAL:BA300_V1_333M	Usage-based/Smart	N
CORINE Land Cover	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	EO:CLMS:DAT:CORINE	Usage-based/Smart	N
Global 10-daily Fraction of Vegetation Cover 333m	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	EO:CLMS:DAT:CGLS_GLOBAL_FCOVER300_V1_333M	Usage-based/Smart	N
10-daily Dry Matter Productivity 333M from 2014 to present	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	URN:CGLS:GLOBAL:DMP300_V1_333M	Usage-based/Smart	N
10-daily Gross Dry Matter Productivity 333M	Copernicus Land	DEDL Fresh Data Pool (Complete dataset)	URN:CGLS:GLOBAL:GDMP300_V1_333M	Usage-based/Smart	N

Table 14 - DestinE Datasets from CEMS

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
Fire danger indices historical data from the Copernicus Emergency Management Service	Copernicus Emergency	Federation access	EO:ECMWF :DAT:CEMS_FIRE_HISTORICAL	Usage-based/Smart	N
River discharge and related forecasted data by the Global Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:CEMS_GLOFAS_FORECAST	Usage-based/Smart	N
River discharge and related historical data from the Global Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:CEMS_GLOFAS_HISTORICAL	Usage-based/Smart	N
Reforecasts of river discharge and related data by the Global Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:CEMS_GLOFAS_REFORECAST	Usage-based/Smart	N

Seasonal forecasts of river discharge and related data by the Global Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:CEMS_GLOFAS_SEASONAL	Usage-based/ Smart	N
Seasonal reforecasts of river discharge and related data from the Global Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:CEMS_GLOFAS_SEASONAL_REFORECAST	Usage-based/ Smart	N
River discharge and related forecasted data by the European Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:EFAS_FORECAST	Usage-based/ Smart	N
River discharge and related historical data from the European Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:EFAS_HISTORICAL	Usage-based/ Smart	N
Reforecasts of river discharge and related data by the European Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:EFAS_REFORECAST	Usage-based/ Smart	N
Seasonal forecasts of river discharge and related data by the European Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:EFAS_SEASONAL	Usage-based/ Smart	N
Seasonal reforecasts of river discharge and related data by the European Flood Awareness System	Copernicus Emergency	Federation access	EO:ECMWF :DAT:EFAS_SEASONAL_REFORECAST	Usage-based/ Smart	N

Table 15 - DestinE Datasets from ISIMP and IAGOS

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
Climate forcing data	ISIMP	Federation access	TBD	Usage-based/ Smart	N
Socioeconomic forcing data	ISIMP	Federation access	TBD	Usage-based/ Smart	N
Atmospheric composition	IAGOS	Federation access	TBD	Usage-based/ Smart	N

Table 16 - DestinE Datasets from EuroStat

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
Population distribution: Population on 1 January by age, sex and NUTS 2 region	EC EUROPA Data Store	Federation access	STAT:EUSTAT: DAT:POP_AGE_SEX_NUTS2	Usage-based/ Smart	N
Population distribution: Population on 1 January by age group, sex and NUTS 3 region	EC EUROPA Data Store	Federation access	STAT:EUSTAT: DAT:POP_AGE_GROUP_SEX_NUTS3	Usage-based/ Smart	N
Population change - Demographic balance and crude rates at regional level (NUTS 3)	EC EUROPA Data Store	Federation access	STAT:EUSTAT: DAT:POP_CHANGE_DEMO_BALANCE_CRUDE_RATES_NUTS3	Usage-based/ Smart	N
Greenhouse gas emissions from agriculture	EC EUROPA Data Store	Federation access	STAT:EUSTAT: DAT:GREENHOUSE_GAS_EMISSION_AGRICULTURE	Usage-based/ Smart	N
Share of energy from renewable sources	EC EUROPA Data Store	Federation access	STAT:EUSTAT: DAT:SHARE_ENERGY_FROM_RENEWABLE	Usage-based/ Smart	N

Table 17 - DestinE Datasets from Landsat8

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
Landsat 8 OLI-TIRS European Coverage	NASA Data	Federation access	EO:ESA:DAT:LANDSAT8:OLI-TIRS	Usage-based/ Smart	N
Landsat 8 Collection 2 European Coverage	NASA Data	Federation access	EO:ESA:DAT:LANDSAT8:COL-2	Usage-based/ Smart	N

Table 18 - DestinE Digital Twins Data

Dataset Description	Dataset Provider	DestinE Dataset Access	DestinE Dataset ID	Cache Period	Pre-Processed for Visualization
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Climate Change Adaptation DT data	Destination Earth	DT Data Warehouse (See Chapter 5.1.) Gradually ramp up during phase I, reaching the target by Phase II.	DTCC-01	Usage-based/ Smart	N
Weather-induced and Geophysical Extremes DT data	Destination Earth	DT Data Warehouse (See Chapter 5.2.) Gradually ramp up during phase I, reaching the target by Phase II.	DTEE-01	Usage-based/ Smart	N
On-Demand Climate Change Adaptation DT data	Destination Earth	DT Data Warehouse (See Chapter 5.3) Gradually ramp up during phase I, reaching the target by Phase II.	DTOD-01	Usage-based/ Smart	N
On-Demand Weather-induced and Geophysical Extreme DT data	Destination Earth	DT Data Warehouse (See Chapter 5.4) Gradually ramp up during phase I, reaching the target by Phase II.	DTOD-02	Usage-based/ Smart	N
<i>DestinE User Generated Data</i> <placeholder> DE User dataset X	Destination Earth	Use Case specific – it will be defined when DE User dataset available for the public	DTUD-01	Usage-based/ Smart	N

3.2 Traceability Services

Table 19 - Traceability Service Description

Traceability Services		
Description	Traceability Services comprise the Data Traceability Service providing DESP generated data traceability and protection by allowing to sign the provenance, metadata lineage, and register information of all DESP Core Services-managed data and the Software Traceability Service providing DESP users with a tool to build, check and sign reference software packages.	
Access Policy	Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Software as a Service (SaaS)	Users leverage Traceability Services for signing and verifying traces. Traceability is available via API.
Interface Type	API	The service exposes a set of APIs to manage trace generation, trace search and verification by end users.
Service Consumption Type	Variable Resources Consumption Services	Under definition
DestinE Usage Profile	Under definition	
Service Usage Profile	Under definition	
Content Source Management	Information & content managed & published by the DESP Provider.	

3.3 Data Visualization Service

Table 20 - Visualization Service Description

Visualization		
Description	The DESP Data Visualization service is specialized in presenting data in a dynamic and immersive manner including 2D, 3D, or 4D visual representations. Geographic data, such as Earth Observation (EO) images and wind fields, are projected onto a sphere, providing a contextual and spatial understanding. Additionally, numerical and categorical variables are depicted through insightful plots, offering a comprehensive view of data patterns. The service also enables the visualization of time series data evolution, supporting to track changes and trends over time seamlessly.	
Access Policy	Public Access, Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Web-based Service	The Visualization Service is provided through a client – server model running on the end user's browser. It supports the visualization of EO data projected onto a sphere, a 2D or 3D map. Users can create their own "shows" of data visualization, by selecting the datasets, the projection and customizing the view by adjusting colours and zoom. The service allows also to export the user's generated shows and share these to the community.
Interface Type	REST API	The Service exposes a set of RESTful APIs to manage user's "shows" in a JSON file format that describes user's selections and customizations. These APIs are accessible to external REST clients (e.g. Jupyter Hub). The JSON file can be injected into the Visualization service and generates a visual representation of data running in the user's browser.
	GUI	An advanced GUI is provided to visualize geospatial data and plots running in the user's browser. The UI presents a comprehensive suite of visualization-related features provided by the service, facilitating streamlined data access and effective visualization.
Service Consumption Type	Variable Resources Consumption Services	Quotas on save/export requests.
DestinE Usage Profile	Users can only visualize data available in the Data Portfolio and can save/export up to 10 visualizations per month.	
Service Usage Profile	Advanced	Users can save/export up to 50 visualizations per month.
	Premium	Users can incorporate ancillary data, images and graphs, and custom imagery in standard formats in the 3D world.
Content Source Management	Information & content managed & published by the DESP Provider.	

3.3.1 Data Visualization Service Data Portfolio

The DESP Data Visualization Service Data Portfolio includes all the datasets made available by the Data Workflow Service Portfolio that are “ready” for visualization. Visualization-ready data refers to data that has been prepared, formatted, and organized in a way that facilitates its effective and straightforward visualization. This preparation involves cleaning, structuring, and possibly aggregating or transforming the data so that it can be easily interpreted and represented graphically. For instance, the OGC formats (WMS, WCS) are considered ready for visualization purposes.

Please refer to Table 8,

Table 10, Table 11, Table 12 referring to the visualization-readiness tag composing the Data Visualization Service Portfolio.

3.4 User Workflow Services

Table 21 - User Workflow Service Description

User Workflow		
Description	The DESP User Workflow service provides access to processing services to be consumed from end-users. For Third Party Service Providers, it allows to create, deploy and offer processing services.	
Access Policy	Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Platform as a Service (PaaS)	User Workflow Service provides to DESP users an environment to develop and process data, in a Platform-as-a-Service setup.
Interface Type	Command Line	Access to the Processing Environment is available via CLI on user's own devices in a client-server architecture model.
	Python API	The User Workflow Service Development and Processing environments provides users with a set of functions and methods to interact with Python applications and libraries. These APIs are used to perform a wide range of tasks, such as retrieving data, sending commands, and integrating with other systems. Popular Python APIs included in the Development environment are Requests, NumPy, Pandas, Scikit-learn, and GDAL. More customizations into the user's own environment are possible via the pip and conda utilities.
	REST API	Access to the Processing Environment is available via HAL RESTful APIs. This set of APIs allows users to ease data management operations like dataset discovery and access. Users can retrieve a list of publicly shared algorithms from other users and manage processing tasks by initiating, monitoring, and updating jobs within the environment. There is no interface from the Processing environment to the Development environment, but users can run processing jobs onto the Processing environment via API by the Development environment.
	GUI	Access to Development and Processing Environments is available via GUI reachable via internet. The Development environment exposes a Jupyter Hub (RD-47) standard user interface, supporting the creation and prototyping of user's applications on Jupyter Notebooks. Users can customize their own Development in terms of libraries to handle data and in terms of cloud resources, among the available server's options. The Processing environment presents a user interface where users can create, manage and monitor running jobs. Jobs are configurable by selecting the input data, the output destination, and the amount of resources utilized by the processing task in a Platform-as-a-Service modality.
Service Consumption Type	Variable Resources Consumption Services	Usage profiles are based on the computational size of the environments.
DestinE Usage Profile	Standard environment, characterised as follows: 16 vCores 60 GB RAM 400 GB SSD	
Service Usage Profile	Two possible choices:(1) Advanced 16 vCores, 60 GB RAM, 400 GB SSD ; (2) Premium (GPU based) 18 vCores, 90 GB RAM, 2×Tesla V100 16 GB GPU, 128 GB SSD.	
Content Source Management	Information & content managed & published by the DESP Provider.	
	Content open for contribution from registered users fulfilling DESP code of conduct requirements.	

3.5 Data Cache Management Service

Table 22 – Data Cache Management Service Description

Data Cache Management Services		
Description	The Data Cache Management Service facilitates the systematic retrieval, configuration, and storage of all Portfolio data, allowing Registered Users to search, access, and download from a “local archive”. Also, it permits both Registered Users and Data Management Services to select specific Data Collections/Datasets, storing them in a dedicated “service cache” with a defined retention policy. In addition to meeting specified requirements, the service ensures partial downloads through its API and guarantees scalability.	
Access Policy	Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Web-based Service	The Data Cache Management Service operates on a client-server model, accessible via the internet to deliver data access and management functionalities to end users. Its architecture ensures a seamless and secure connection, enabling users to efficiently interact with the service.
Interface Type	REST API	The Service supports RESTful API access to data via standards like STAC and S3.
	GUI	N/A
Service Consumption Type	Variable Resources Consumption Services	Under definition
DestinE Usage Profile	Under definition	
Service Usage Profile	Advanced	Under definition
	Premium	Under definition
Content Source Management	Information & content managed & published by the DESP Provider.	

3.5.1 Data Cache Management Service Data Portfolio

The DESP Data Cache Management Service Data Portfolio includes datasets coming from Federation Access as well as the Digital Twins made available in the DT Data Warehouse.

It is complementary to the Data Workflow Service data offer, ensuring immediate access to data with 1 year of rolling policy. Moreover, the ERA5 and ERA5-Land historical timeseries are included to support extensive climate and land analysis over the long term.

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The following tables details the DestinE data portfolio, split by Data Provider. For each entry we reported a table with the available datasets together with the following information

- Dataset name and type
- Variables or bands selected from each dataset
- Dataset provider
- Data availability in terms of the retention period (time coverage)
- Reference (from data source), where available

In future versions of this document, the Dataset naming conventions will be also included, as well as a detailed description of the archiving structure of these data within the archive system.

It is worth noting that the Data Cache Management Service Data Portfolio does not support prompt visualization of data in a “visualization-ready” format.

Table 23 – DESP Data Cache Management Service Copernicus Sentinels Data Portfolio.

Dataset	Variables or bands	Dataset Provider	Time coverage	Reference
S1 SLC	N/A	CDSE	1 year	RD-15
S2 L2A	TCI, B04, B08	CDSE	1 year	RD-16
S3 SR_2_	N/A	CDSE	1 year	RD-17
S3 SY_2_V10	N/A	CDSE	1 year	RD-18
S3 SY_2_VG1__	N/A	CDSE	1 year	RD-18
S5P L2 AER AI	N/A	CDSE	1 year	RD-19
S5P L2 CH4	N/A	CDSE	1 year	RD-19

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S5P L2 CLOUD	N/A	CDSE	1 year	RD-19
S5P L2 CO	N/A	CDSE	1 year	RD-19
S5P L2 HCHO	N/A	CDSE	1 year	RD-19
S5P L2 NO2	N/A	CDSE	1 year	RD-19
S5P L2 O3	N/A	CDSE	1 year	RD-19
S5P L2 SO2	N/A	CDSE	1 year	RD-19

Table 24 – DESP Data Cache Management Service Copernicus Marine Data Portfolio

Dataset	Variables or bands	Dataset Provider	Time coverage	Reference
SEAICE_GLO_SEAICE_L4_NRT_OBSERVATIONS_011_006	Sea ice x displacement (SIUV) Sea ice y displacement (SIUV)	CMS	1 year	RD-20
SST_GLO_SST_L4_REP_OBSERVATIONS_010_011	Sea ice area fraction Sea surface temperature (SST)	CMS	1 year	RD-21
SEAICE_GLO_SEAICE_L4_REP_OBSERVATIONS_011_009	Sea ice area fraction	CMS	1 year	RD-22
GLOBAL_MULTIYEAR_WAV_001_032	Sea floor depth below geoid Sea surface primary swell wave from direction (SW1) Sea surface primary swell wave mean period (SW1)	CMS	1 year	RD-23

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	Sea surface primary swell wave significant height (SW1) Sea surface secondary swell wave from direction (SW2) Sea surface secondary swell wave mean period (SW2) Sea surface secondary swell wave significant height (SW2) Sea surface wave from direction (VMDR) Sea surface wave from direction at variance spectral density maximum (VMDR) Sea surface wave mean period from variance spectral density inverse frequency moment (MWT) Sea surface wave mean period from variance spectral density second frequency moment (MWT) Sea surface wave period at variance spectral density maximum (MWT) Sea surface wave significant height (SWH) Sea surface wave stokes drift x velocity (UV, VSDXY) Sea surface wave stokes drift y velocity (UV, VSDXY) Sea surface wind wave from direction (WW) Sea surface wind wave mean period (WW) Sea surface wind wave significant height (WW)			
WIND_GLO_PHY_L3_MY_012_005	Air density (WIND) Eastward wind (WIND) Magnitude of surface downward stress (WIND) Northward wind (WIND) Status flag Stress curl (WIND) Stress divergence (WIND)	CMS	1 year	RD-24

Destination Earth Core Service Platform

	Surface downward eastward stress (WIND) Surface downward northward stress (WIND) Wind speed (WIND) Wind to direction (WIND) Wvc index			
SST_GLO_SST_L4_NRT_OBSERVATIONS_010_001	Sea ice area fraction Sea surface temperature (SST)	CMS	1 year	RD-25
SEALEVEL_GLO_PHY_L4_NRT_008_046	Sea surface height above geoid (SSH) Sea surface height above sea level (SSH) Surface geostrophic eastward sea water velocity (UV) Surface geostrophic eastward sea water velocity assuming sea level for geoid (UV) Surface geostrophic northward sea water velocity (UV) Surface geostrophic northward sea water velocity assuming sea level for geoid (UV)	CMS	1 year	RD-26
MULTIOBS_GLO_PHY_MYNRT_015_003	Eastward sea water velocity (UV) Northward sea water velocity (UV) Surface geostrophic eastward sea water velocity (UV) Surface geostrophic northward sea water velocity (UV)	CMS	1 year	RD-27
GLOBAL_MULTIYEAR_PHY_ENS_001_031	Eastward sea water velocity (UV) Northward sea water velocity (UV) Ocean mixed layer thickness defined by sigma theta (MLD) Sea ice thickness (SIT) Sea surface height (SSH) Sea water potential temperature (T) Sea water salinity (S)	CMS	1 year	RD-28
WAVE_GLO_WAV_L3_SPC_NRT_OBSERVATIONS_014_002	Sea surface wave from direction at variance spectral density maximum (VMDR) Sea surface wave period at variance spectral density maximum (MWT)	CMS	1 year	RD-29

Destination Earth Core Service Platform

	Sea surface wave significant height (SWH)			
SST_GLO_SST_L4_REP_OBSERVATIONS_010_024	Sea ice area fraction Sea water temperature (T)	CMS	1 year	RD-30
GLOBAL_MULTIYEAR_BGC_001_033	Eastward sea water velocity vertical mean over pelagic layer (W) Euphotic zone depth (ZEU) Mass content of epipelagic micronekton expressed as wet weight in sea water (MNKC) Mass content of highly migrant lower mesopelagic micronekton expressed as wet weight in sea water (MNKC) Mass content of lower mesopelagic micronekton expressed as wet weight in sea water (MNKC) Mass content of migrant lower mesopelagic micronekton expressed as wet weight in sea water (MNKC) Mass content of migrant upper mesopelagic micronekton expressed as wet weight in sea water (MNKC) Mass content of upper mesopelagic micronekton expressed as wet weight in sea water (MNKC) Mass content of zooplankton expressed as carbon in sea water (ZOOC) Net primary productivity of biomass expressed as carbon in sea water (PP)	CMS	1 year	RD-31

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	Northward sea water velocity vertical mean over pelagic layer (W) Sea water pelagic layer bottom depth Sea water potential temperature vertical mean over pelagic layer (T)			
GLOBAL_ANALYSISFO RECAST_BGC_001_02 8	Cell thickness Mass concentration of chlorophyll a in sea water (CHL) Model level number at sea floor Mole concentration of dissolved inorganic carbon in sea water (DIC) Mole concentration of dissolved iron in sea water (FE) Mole concentration of dissolved molecular oxygen in sea water (O2) Mole concentration of nitrate in sea water (NO3) Mole concentration of phosphate in sea water (PO4) Mole concentration of phytoplankton expressed as carbon in sea water (PHYC) Mole concentration of silicate in sea water (SI) Net primary production of biomass expressed as carbon per unit volume in sea water (PP) Sea floor depth below geoid Sea water alkalinity expressed as mole equivalent (ALK) Sea water ph reported on total scale (pH) Surface partial pressure of carbon dioxide in sea water (spCO2) Volume attenuation coefficient of downwelling radiative flux in sea water (KD)	CMS	1 year	RD-32
MULTIOBS_GLO_PHY_ TSUV_3D_MYNRT_015 _012	Geopotential height Geostrophic eastward sea water velocity (UV)	CMS	1 year	RD-33

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	Geostrophic northward sea water velocity (UV) Ocean mixed layer thickness (MLD) Sea water salinity (S) Sea water temperature (T)			
MULTIOBS_GLO_BIO_CARBON_SURFACE_REP_015_008	Sea water pH reported on total scale (pH) Surface downward mass flux of carbon dioxide expressed as carbon (fpCO2) Surface partial pressure of carbon dioxide in sea water (spCO2)	CMS	1 year	RD-34
MULTIOBS_GLO_PHYS_SURFACE_MYNRT_015_013	Sea surface density (SSD) Sea surface salinity (SSS)	CMS	1 year	RD-35
SEAICE_GLO_SEAICE_L4_NRT_OBSERVATIONS_011_001	Sea ice area fraction Sea ice classification (SITYPE) Sea ice x displacement (SIUV) Sea ice y displacement (SIUV)	CMS	1 year	RD-36
SST_GLO_SST_L3S_NRT_OBSERVATIONS_010_010	Sea surface temperature (SST)	CMS	1 year	RD-37
WIND_GLO_PHY_L3_NRT_012_002	Air density (WIND) Eastward wind (WIND) Magnitude of surface downward stress (WIND) Northward wind (WIND) Status flag Stress curl (WIND) Stress divergence (WIND) Surface downward eastward stress (WIND) Surface downward northward stress (WIND) Wind speed (WIND) Wind to direction (WIND) Wvc index	CMS	1 year	RD-38
NWSHELF_MULTIYEAR_PHY_004_009	Eastward sea water velocity (UV) Northward sea water velocity (UV)	CMS	1 year	RD-39

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	<p>Ocean mixed layer thickness defined by sigma theta (MLD)</p> <p>Sea surface height above geoid (SSH)</p> <p>Sea water potential temperature (T)</p> <p>Sea water potential temperature at sea floor (bottomT)</p> <p>Sea water salinity (S)</p>			
MULTIOBS_GLO_BIO_BGC_3D_REP_015_010	<p>Mass concentration of chlorophyll a in sea water (CHL)</p> <p>Mass concentration of particulate organic matter expressed as carbon in sea water (POC)</p> <p>Volume backwards scattering coefficient of radiative flux in sea water due to particles (BBP)</p>	CMS	1 year	RD-40
SEALEVEL_GLO_PHY_MDT_008_063	<p>Sea surface height above geoid (SSH)</p>	CMS	1 year	RD-41
GLOBAL_ANALYSIS_FORECAST_PHY_001_024	<p>Age of sea ice (SIAGE)</p> <p>Cell thickness</p> <p>Eastward sea ice velocity (SIUV)</p> <p>Eastward sea water velocity (UV)</p> <p>Model level number at sea floor</p> <p>Northward sea ice velocity (SIUV)</p> <p>Northward sea water velocity (UV)</p> <p>Ocean mixed layer thickness defined by sigma theta (MLD)</p> <p>Sea floor depth below geoid</p> <p>Sea ice albedo (SIALB)</p> <p>Sea ice area fraction</p> <p>Sea ice speed</p> <p>Sea ice surface temperature (IST)</p> <p>Sea ice thickness (SIT)</p> <p>Sea surface height above geoid (SSH)</p> <p>Sea surface wave stokes drift x velocity (UV, VSDXY)</p> <p>Sea surface wave stokes drift y velocity (UV, VSDXY)</p> <p>Sea water potential temperature (T)</p>	CMS	1 year	RD-42

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	Sea water potential temperature at sea floor (bottomT) Sea water pressure at sea floor Sea water salinity (S) Surface snow thickness (SNOW) Upward sea water velocity (UV)			
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Table 25 – DESP Data Cache Management Service ERA5 Data Portfolio

Dataset	Variables or bands	Dataset Provider	Time coverage	Reference
ERA5 HOURLY SINGLE LEVEL DATA (Reanalysis)	2m dewpoint temperature 2m temperature Total precipitation	C3S	From 1979 to present	RD-43
ERA5 MONTHLY AVERAGED SINGLE LEVEL DATA (Monthly averaged reanalysis)	2m dewpoint temperature 2m temperature Total precipitation	C3S	From 1979 to present	RD-44
ERA5-LAND HOURLY DATA	10m u-component of wind 10m v-component of wind 2m dewpoint temperature 2m temperature Skin temperature Surface solar radiation downwards Total precipitation	C3S	From 1950 to present	RD-45
ERA5-LAND MONTHLY AVERAGED DATA (Monthly averaged reanalysis)	2m dewpoint temperature 2m temperature Total precipitation	C3S	From 1950 to present	RD-46

Table 26 – DESP Data Cache Management Service DestinE Digital Twin Data Portfolio

Dataset	Variables or bands	Dataset Provider	Time coverage
Climate Change Adaptation DT data	N/A	Destination Earth DT	DT Data Warehouse (See Chapter 5.1.) Gradually ramp up during phase I, reaching the target by Phase II.
Weather-induced and Geophysical Extremes DT data	N/A	Destination Earth DT	DT Data Warehouse (See Chapter 5.2.) Gradually ramp up during phase I, reaching the target by Phase II.

4. Additional Services

4.1 OVH Public Cloud Services

OVHcloud is Europe's leading cloud provider, that delivers public and private cloud products, shared hosting and dedicated server solutions in 140 countries worldwide. They also offer domain name registration, telephony services and internet access to customers.

Founded in 1999, OVHcloud is a French company with an international presence, based on a backbone of datacentres and points of presence spread across the globe. They are committed to creating an open, reliable and trusted cloud.

OVHcloud Service Portfolio offers a variety of Cloud Solution with an eco-friendly approach. OVHcloud Public Cloud Services will be available for DESP users. A detailed description of these services is reported in the following Sections.

4.1.1 Computing Instances

Table 27 - OVHcloud Compute Instances Service Description

Compute Instances		
Description	OVHcloud virtual machines are available on demand, with monthly or hourly rates. OVH Instances comes in different sizes of following flavors: <ul style="list-style-type: none"> - guaranteed resources - GPU - IOPS - discovery - metal 	
Access Policy	Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Infrastructure as a Service (IaaS)	IaaS provides access to hardware (virtual machines/containers, network and storage) to users over the internet.
Interface Type	Command Line	https://github.com/ovh/ovh-cli
	API	https://ca.api.ovh.com/ https://docs.ovh.com/au/en/public-cloud/starting-with-nova-api/
	GUI	https://docs.ovh.com/gb/en/public-cloud/horizon/ https://www.ovh.com/manager
Service Consumption Type	Variable Resources Consumption Services	User can access OVHcloud services using credits in their wallet.
DestinE Usage Profile	None	
Service Usage Profile	Following OVHcloud available sizes and flavors https://www.ovhcloud.com/fr/public-cloud/prices/	
Content Source Management	Content is managed by the Third-Party providing the service, fulfilling DESP code of conduct requirements.	

4.1.2 Storage

Table 28 - OVHcloud Storage Service Description

Storage	
Description	OVHcloud different storage options: <ul style="list-style-type: none"> - object storage - block storage - cloud archive - cold archive - snapshot - volume backup - instance backup
Access Policy	Registered Public Access
Registration Method	Self-registration, federated registration

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Service Type	Infrastructure as a Service (IaaS)	IaaS provides access to hardware (virtual machines/containers, network and storage) to users over the internet. Block storage attached to Cloud Instances is available as IaaS storage.
	Software as a Service (SaaS)	SaaS provider offers an entire application stack. Users simply log in and use the application that runs completely on the provider's infrastructure. Typically, SaaS applications are completely accessible via internet web browser. SaaS providers manage the application workload and all underlying IT resources, users only control the data created in the SaaS application. Object Storage, Archives, Snapshots and Backups are available as SaaS.
Interface Type	Command Line	https://github.com/ovh/ovh-cli
	API	https://ca.api.ovh.com/ https://docs.ovh.com/au/en/public-cloud/starting-with-nova-api/
	GUI	https://docs.ovh.com/gb/en/public-cloud/horizon/ https://www.ovh.com/manager
Service Consumption Type	Variable Resources Consumption Services	User can access OVHcloud services using credits in their wallet.
DestinE Usage Profile	None	
Service Usage Profile	Following OVHcloud available sizes and flavors https://www.ovhcloud.com/fr/public-cloud/prices/	
Content Source Management	Content is managed by the Third-Party providing the service, fulfilling DESP code of conduct requirements.	

4.1.3 Network

Table 29 - OVHcloud Network Service Description

Network		
Description	OVHcloud Public Cloud lets you design and build your network architecture on demand. Network services are: - private networks - load balancers - floating IPs - gateways	
Access Policy	Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Infrastructure as a Service (IaaS)	IaaS provides access to hardware (virtual machines/containers, network and storage) to users over the internet.
Interface Type	Command Line	https://github.com/ovh/ovh-cli

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	API	https://ca.api.ovh.com/ https://docs.ovh.com/au/en/public-cloud/starting-with-nova-api/
	GUI	https://docs.ovh.com/gb/en/public-cloud/horizon/ https://www.ovh.com/manager
Service Consumption Type	Variable Resources Consumption Services	User can access OVHcloud services using credits in their wallet.
DestinE Usage Profile	None	
Service Usage Profile	Following OVHcloud available sizes and flavors https://www.ovhcloud.com/fr/public-cloud/prices/	
Content Source Management	Content is managed by the Third-Party providing the service, fulfilling DESP code of conduct requirements.	

4.1.4 Database

Table 30 - OVHcloud Database Service Description

Database		
Description	OVHcloud Public Cloud Database as a service: <ul style="list-style-type: none"> - MySQL - PostgreSQL - MongoDB - Redis - Kafka - OpenSearch - Kafka MirrorMaker - Kafka Connect - Grafana - Cassandra - M3DB - M3 Aggregator 	
Access Policy	Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Platform as a Service (PaaS)	PaaS provider provides access to hardware and software tools to users over the internet. Usually, these tools are needed for application development.
Interface Type	Command Line	https://github.com/ovh/ovh-cli
	API	https://ca.api.ovh.com/ https://docs.ovh.com/au/en/public-cloud/starting-with-nova-api/
	GUI	https://docs.ovh.com/gb/en/public-cloud/horizon/ https://www.ovh.com/manager
Service Consumption Type	Variable Resources Consumption Services	User can access OVHcloud services using credits in their wallet.

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DestinE Usage Profile	None
Service Usage Profile	Following OVHcloud available sizes and flavors https://www.ovhcloud.com/fr/public-cloud/prices/
Content Source Management	Content is managed by the Third-Party providing the service, fulfilling DESP code of conduct requirements.

4.1.5 Containers

Table 31 - OVHcloud Container Service Description

Container		
Description	OVHcloud container offering: <ul style="list-style-type: none"> - managed Kubernetes service - managed private registry - private image catalogue - public image catalogue - workflow management - OpenStack Orchestration - load Balancer for Kubernetes Services 	
Access Policy	Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Platform as a Service (PaaS)	PaaS provider provides access to hardware and software tools to users over the internet. Usually, these tools are needed for application development.
Interface Type	Command Line	https://github.com/ovh/ovh-cli
	API	https://ca.api.ovh.com/ https://docs.ovh.com/au/en/public-cloud/starting-with-nova-api/
	GUI	https://docs.ovh.com/gb/en/public-cloud/horizon/ https://www.ovh.com/manager
Service Consumption Type	Variable Resources Consumption Services	User can access OVHcloud services using credits in their wallet.
DestinE Usage Profile	None	
Service Usage Profile	Following OVHcloud available sizes and flavors https://www.ovhcloud.com/fr/public-cloud/prices/	
Content Source Management	Content is managed by the Third-Party providing the service, fulfilling DESP code of conduct requirements.	

4.1.6 Data and AI

Table 32 - OVHcloud Data and AI Service Description

Data and AI		
Description	OVHcloud data and AI services include: <ul style="list-style-type: none"> - data processing - AI notebooks - AI training - AI deploy - NVIDIA NGC Platform 	
Access Policy	Registered Public Access	
Registration Method	Self-registration, federated registration	
Service Type	Software as a Service (SaaS)	SaaS provider offers an entire application stack. Users simply log in and use the application that runs completely on the provider's infrastructure. Typically, SaaS applications are completely accessible via internet web browser. SaaS providers manage the application workload and all underlying IT resources, users only control the data created in the SaaS application.
Interface Type	Command Line	https://github.com/ovh/ovh-cli
	API	https://ca.api.ovh.com/ https://docs.ovh.com/au/en/public-cloud/starting-with-nova-api/
	GUI	https://docs.ovh.com/gb/en/public-cloud/horizon/ https://www.ovh.com/manager
Service Consumption Type	Variable Resources Consumption Services	User can access OVHcloud services using credits in their wallet.
DestinE Usage Profile	None	
Service Usage Profile	Following OVHcloud available sizes and flavors https://www.ovhcloud.com/fr/public-cloud/prices/	
Content Source Management	Content is managed by the Third-Party providing the service, fulfilling DESP code of conduct requirements.	