

# living planet symposium | BONN

23-27 May  
2022

TAKING THE PULSE  
OF OUR PLANET FROM SPACE



**DAMPS, an ESA Service of EO data Archival, Retrieval, Maintenance, Consolidation and (re)Processing**



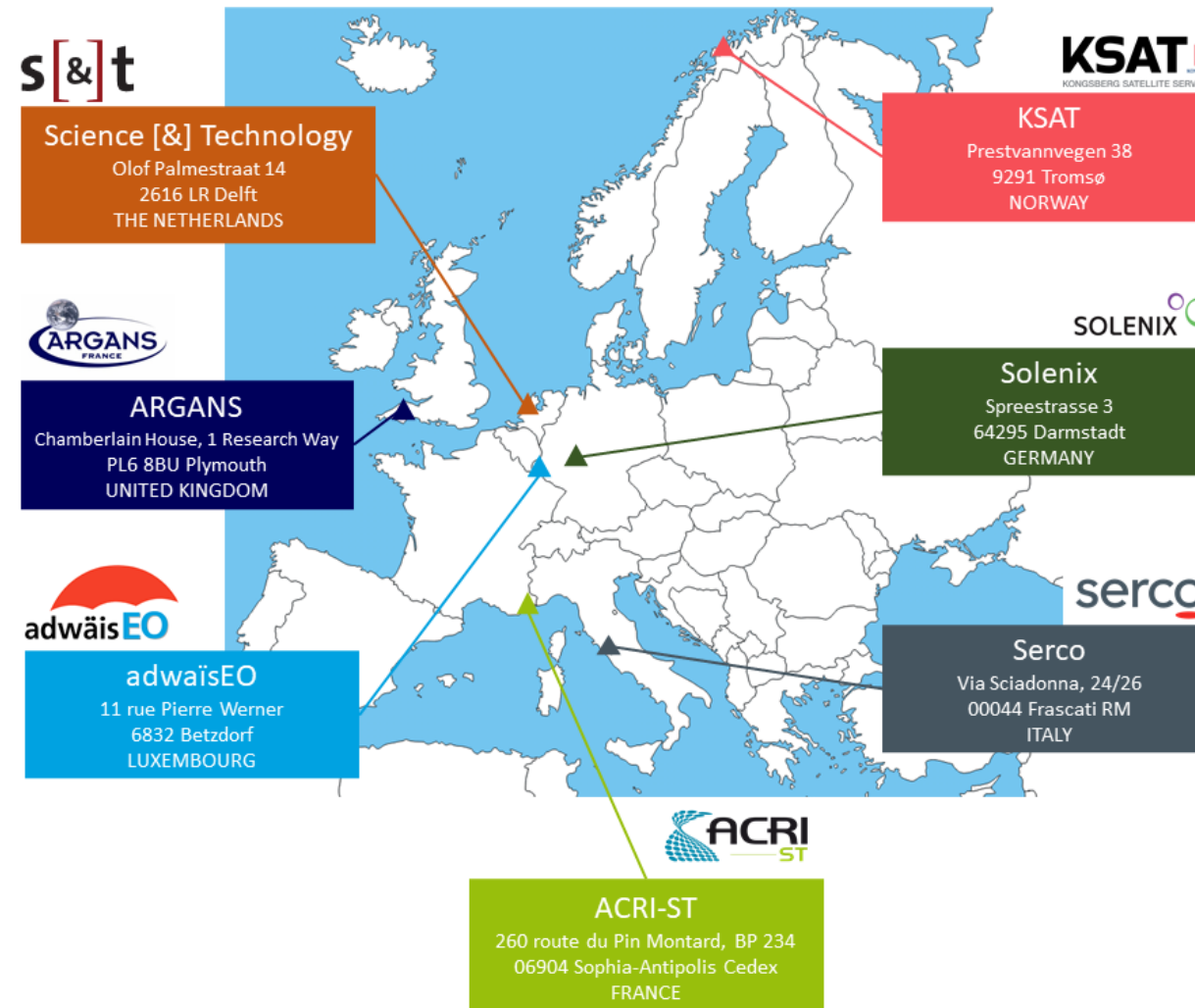
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24/05/2022

- DAMPS = Data Archival, Management & Processing Services
- Contract for data-centred services
- Kick-Off in Aug 2021 (phase-in), operational since January 2022
- Replaces and builds upon two predecessor Service contracts that expired at end 2021:
  - DAS (Data Archiving Service) =
    - Data archival and management, data extraction and data maintenance
    - Active 2016-2021
    - 8+ PB of data archived, ~1200 datasets, 58+ million products
    - ~130 data extractions and ~100 data maintenances
  - DSI (Data Service Initiative) =
    - Data consolidation, processing, management, maintenance + Data Information System (DIS)
    - Active 2013-2021
    - 47 consolidation projects, 57 processing projects, 87 Data Change Requests processed

- Ensure the safeguard of the data as part of ESA's overall Data Preservation context
- Add value to the data via activities of consolidation, processing, maintenance and more
- Apply rigorous management of the data to facilitate valorisation and preservation
- Build upon the success of the predecessor services with additional features:
  - Colocation of data and value-adding services: no more circulation of NASes
  - Cost-saving synergies in management and data transport
  - Faster turn-over of archival process in two repositories (Main and Backup)
  - Faster data extraction for small files
  - Increased archive capacity in view of future EE
  - Set-up of a powerful virtual farm for processor integration and (re-)processing activities
  - Sentinel-like interfaces: catalog queries, retrieval bulk-requests, data ingestion and repatriation

The industrial consortium is made of:

ACRI-ST (FR, Prime contractor), adwäisEO (LU), Serco (IT), ARGANS (UK), KSAT (NO), Solenix (DE) and S&T (NL)



- ❖ DAMPS covers a coherent set of activities focused on the data, including:
  - **data archival** and related services of data ingestion, data extraction and data repatriation
  - **data management** and controlled evolution, including the **Data Information System (DIS)**
  - **data consolidation** to produce Master datasets
  - **data processing, conversion and elaboration** as well as the **related services of integrating and orchestrating various processors**

## ❖ Data concerned:

- ESA Missions (ERS, ENVISAT, Earth Explorers)
- ESA Third-Party missions
- Historical, present and future missions (future ESA missions are limited to Earth Explorers)
- ESA Campaigns data and in general any ad-hoc dataset created for scientific purposes and published to the users

## ❖ Scope of data:

- Initial Data Basket known at the beginning of the Contract = DAS data
- Expected addition of EarthCare, Biomass, Flex, Forum
- Initial archive sizing and capacity planning designed to accommodate future missions

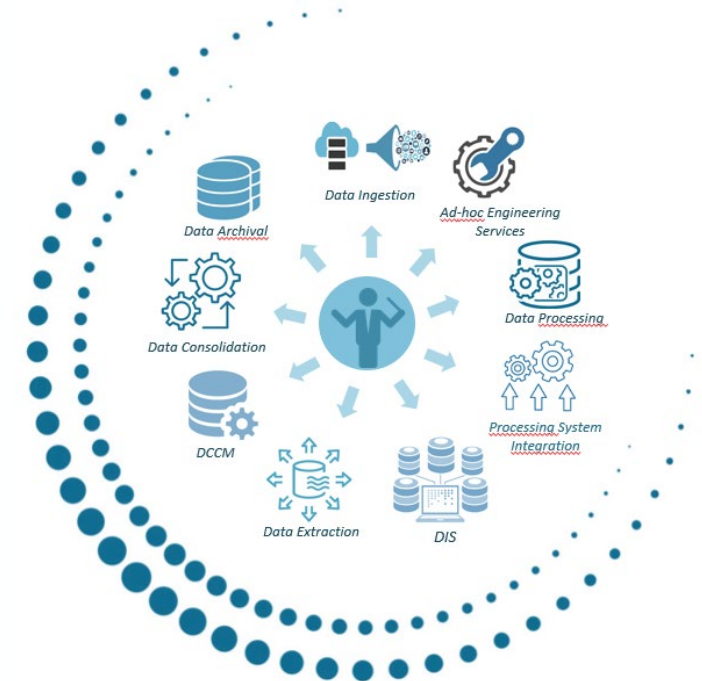
## Continuous services (1/2):

### ❖ Data ingestion and archival services

- Safely archiving of the data in two physical copies in physical sites remote from one another (Betzdorf, Luxembourg and Sophia-Antipolis, south of France)
- Keeping and publishing an accurate situation of the archive contents through the Data Management System
- Keeping the archival infrastructure in line with constructor recommendations, including any updates and media migration
- Producing reports on the status and contents of the archive

### ❖ Data bulk-extraction and delivery service

- Reception and acknowledgement of the request for data
- Identification and extraction from the archive of the required data
- Delivery of the data, on media or on-line
- Verification of the data delivery activities
- Monthly and upon request production of a data delivery report



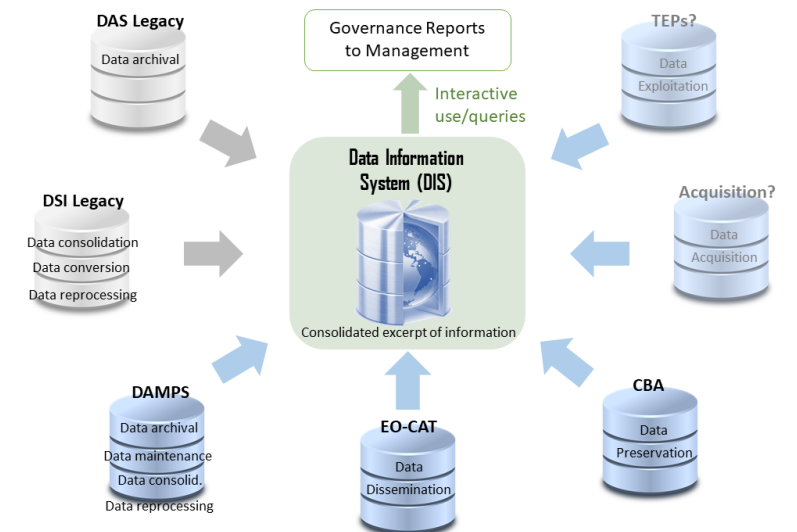
## Continuous services (2/2):

### ❖ Data Configuration Management, Change Management and Maintenance service

- Collecting the meta-data and storing it in the Data Management System (DMS)
- Identifying, managing, and exploiting the data information to use across DAMPS and other services
- Improving the data and corresponding documentation in a controlled approach (data maintenance)
- Checking for overlaps, verify if reproductions are identical due to possible replication of data (data alignment)

### ❖ Data Information Service (DIS)

- Collecting meta-data about the EO data from various contributing systems and services including DAMPS itself and more (CBA, EOCAT ...)
- Providing a single repository and user view of useful information on the data under the management of the organisation (based on its own needs and purposes)
- Providing not only information regarding the data itself but also information on the value added to the data by the various services (tracing of the provenance of the data)





## Project-based services:

### ❖ Data consolidation

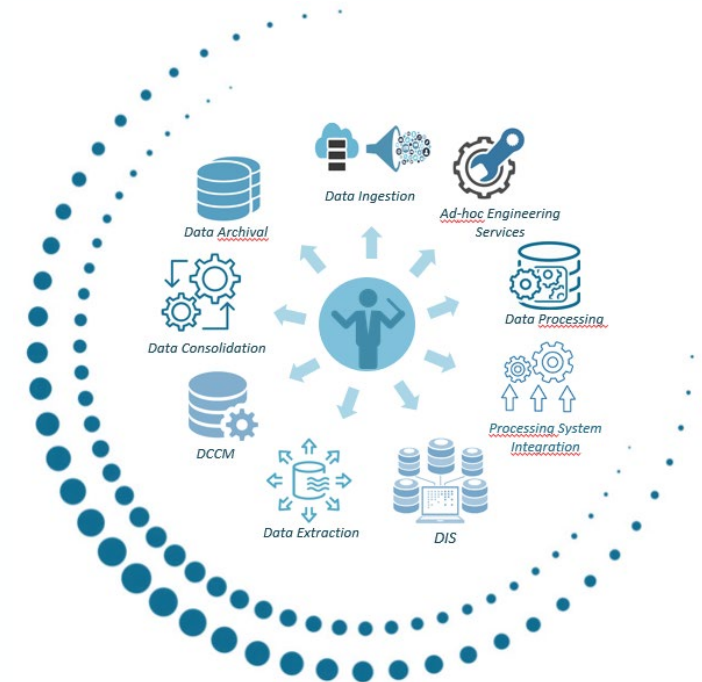
- Collection of the inputs and analysis of the available resources
- Consolidation in terms of completeness and coverage including naming convention
- Production of statistics, completeness analysis and alignment with external repositories

### ❖ Processor system integration

- Preparing the processing environment (Data & Infrastructure)
- Installing and integrating the Processing System on the appropriate service-provided infrastructure and run the system on a selected set of data
- updating / tuning the processor, parameters and input data
- Iterating until the processor is in Operational Status

### ❖ Bulk processing

- Execute and monitor the operational processing of the required datasets
- Generated dataset verification and Data release



# Missions already in DAMPS

**8.575** Peta bytes  
PRODUCTS DATA

**61**  
MISSIONS

**1266**  
DATASETS

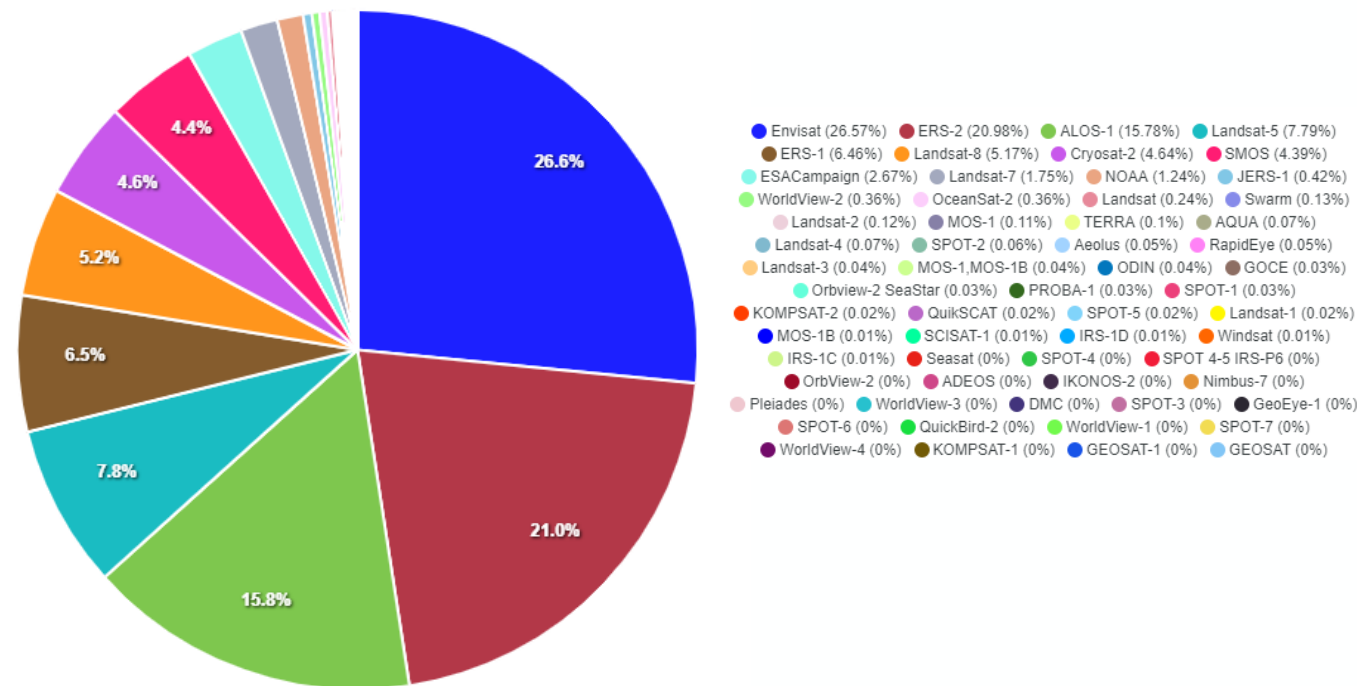
**61.893** Million  
PRODUCTS

❖ Historical data archived:

- Volume: 7,1 PB
- Number of products: ~52M

❖ Live and online missions (7)

- Volume: ~1,5 PB
- Number of products: ~10,5 M



- a description of the services
- the archive content
- the ingestion monitoring
- a dedicated space to DIS for various communications concerning DIS including a link to the operational DIS
- a description of the retrieval requests
- the list of projects completed, ongoing and planned
- the list of all data maintenances and DCR
- Access to last news

[damps.info](https://damps.info)

Governed by Service requests		Governed by DCR	
ID	Original dataset	Final dataset	A Change applied
DMNT015	DL197 v1.0.0	DL197 v1.0.0	- Removal of 1790 duplicated products, i.e. all products where an homonym exists in the same dataset. - Removal of all products having a trailing "_1" to the products name in the fileName from the provided list ( <a href="#">List_1.lis.txt</a> )
DMNT014	-	-	Export to DIS of DL197
DMNT013	DL136 v1.0.0	DL136 v1.0.0	- Fix name of all products by removing the "_DONE" string appended to the Wilma directory name: Current name LS07_ETM_ETM_OP_19990711T095235_19990711T100350_FUI_1264_0000.WILM_DONE Correct name LS07_ETM_ETM_OP_19990711T095235_19990711T100350_FUI_1264_0000.WILM - Export to DIS after the change
DMNT012	DL356b5 v1.0.0	DL356b5 v1.0.0	- Removal from the dataset of the following product: L05_RMTI_TM_GTC_1P_20070928T090051_20070928T090120_125396_0184_0026_0E6E_v0100.SIP.ZIP - Export to DIS after the change
DMNT011	DL356a5 v1.0.0	DL356a5 v1.0.0	- Removal of the following product: L05_RMTI_TM_GEO_1P_20010923T104845_20010923T104914_093418_0204_0019_7B6A_v0100.SIP.ZIP - Archival of the following product: L05_RMTI_TM_GEO_1P_20010923T104845_20010923T104914_093418_0204_0019_D3A1_v0100.SIP.ZIP - Export to DIS after the change
DMNT010	-	-	Re-export to DIS of DL326m1, DL326m2, DL326m3, DL326m4, DL326m5, DL326t4, DL326t5, DL326e7
DMNT009	DL183c v1.0.0 and DL183 v1.0.0	DL183c v1.0.0 and DL183 v1.0.0	Update of the "Source" attribute to "CNES"
DMNT008	DL354b v1.0.0	DL354b v1.0.0	Cancelled
DMNT007	DL244c v1.0.0	DL244c v1.0.0	- Apply "Segregated" classification to the products from the provided list ( <a href="#">SegregatedListDL244c.lis.txt</a> ). - Removal of the trailing "_1" characters for the following product: AL1_OESR_AV2_OBS_1C_20061014T093830_20061014T093842_003841_0298_2280_0410.SIP.ZIP_1
DMNT006	DL275	DL275	Cancelled  Removal of the following products, as requested by Cryosat-2 MOCM: CR2_OPER_SIR1SIN_0_20210801T081837_20210801T081907_0001.ZIP CR2_OPER_SIR1SIN_0_20210801T081915_20210801T081916_0001.ZIP CR2_OPER_SIR1SIN_0_20210801T081918_20210801T081939_0001.ZIP

## For more information:

- consult the DAMPS website at [damps.info](http://damps.info)

## Contacts:

- General DAMPS Service: [damps@damps.info](mailto:damps@damps.info)
- DIS Service: [eodis@damps.info](mailto:eodis@damps.info)