



EUMETSAT and Ocean Colour – Data access and working with OLCI

Dr Hayley Evers-King
Lead Marine Applications Expert

FICE 2025

What can I do to help people and planet?



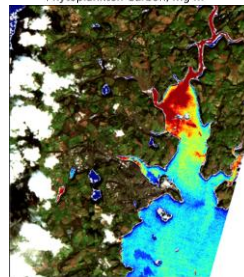
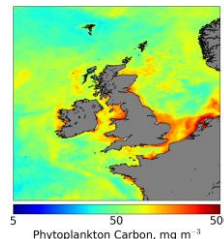
BSc Env. Sci



MSc Oceanography

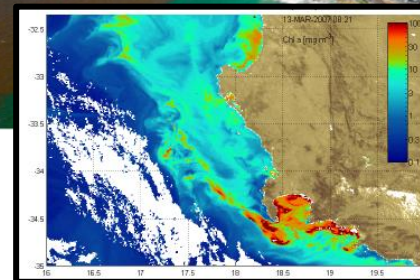
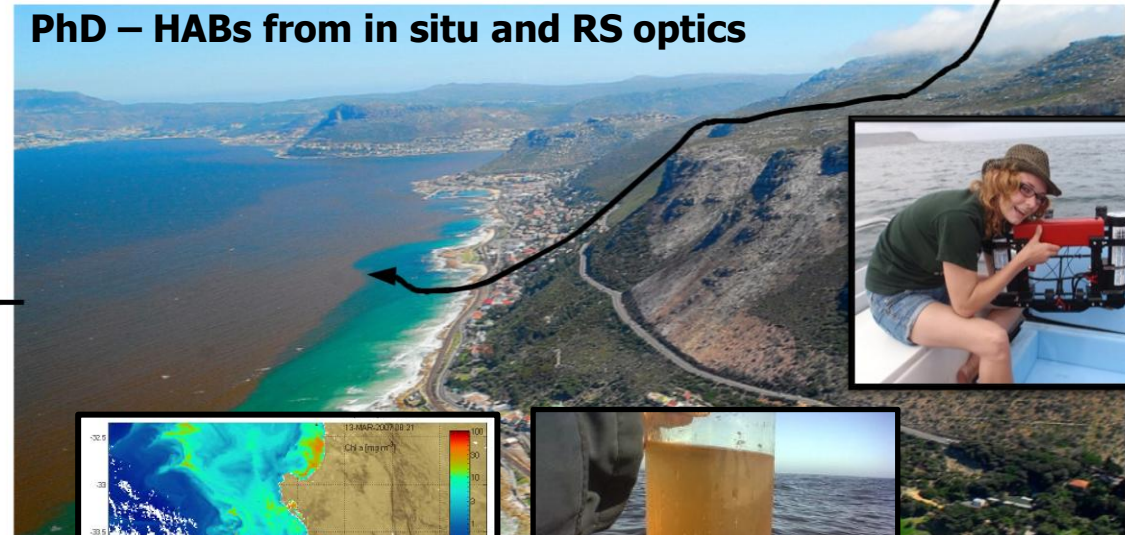


Lead Marine Applications Expert



Marine EO Scientist (PML)

PhD – HABs from in situ and RS optics





EUMETSAT and Ocean Colour

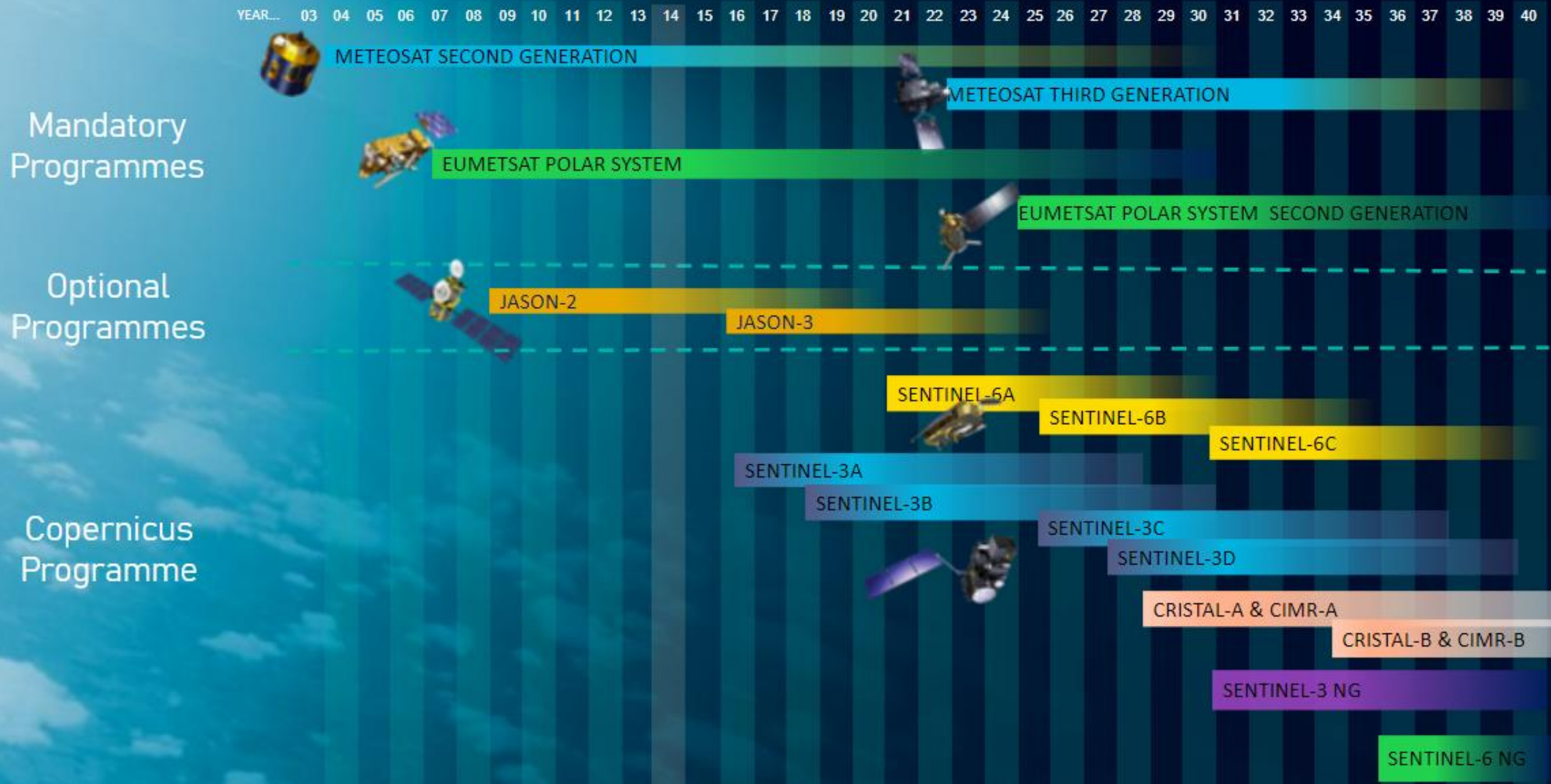
EUMETSAT Data Store

EUMETSAT Tools and Support

Accessing and working with OLCI



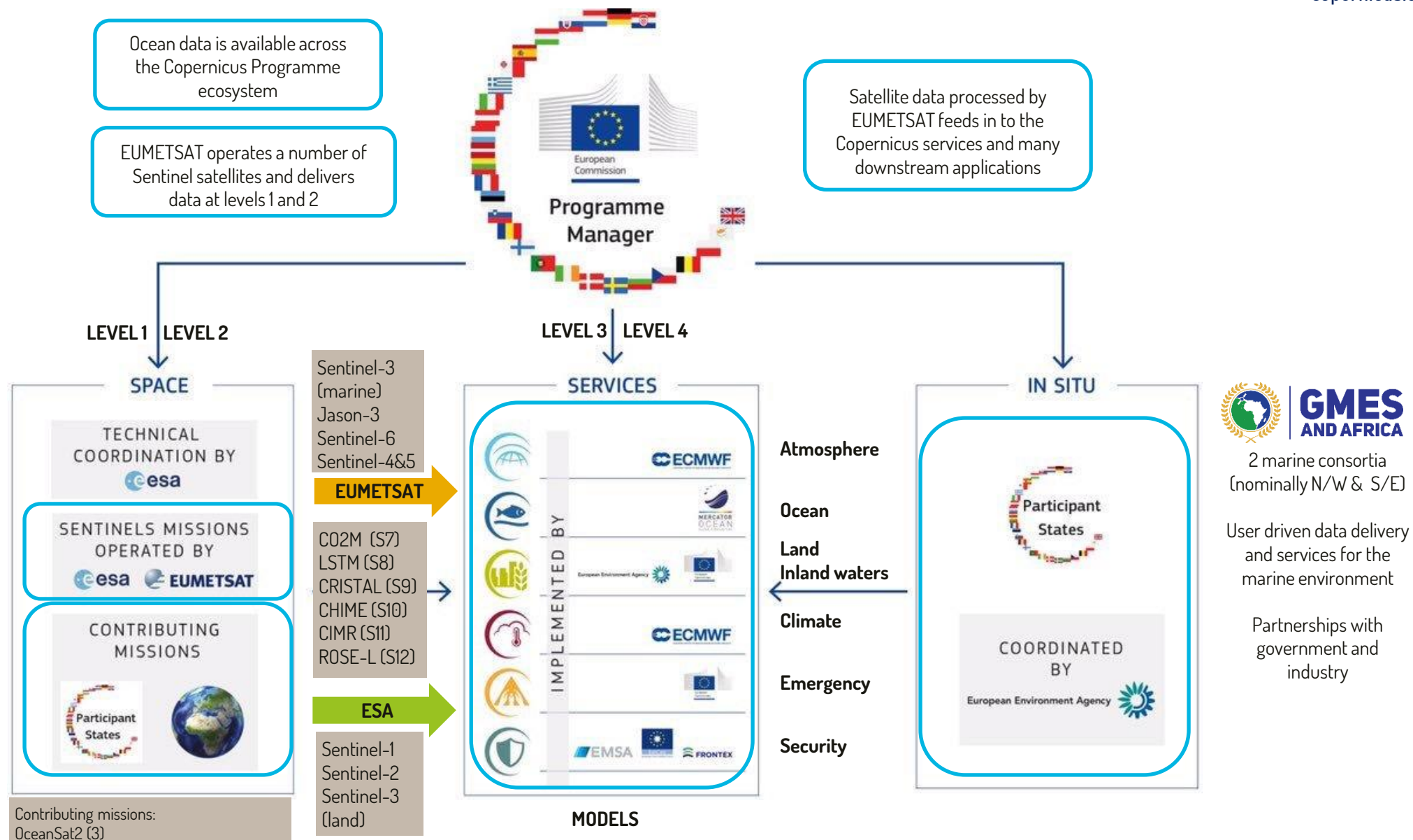
EUMETSAT and Marine Satellite Missions





Who's who? The Copernicus programme

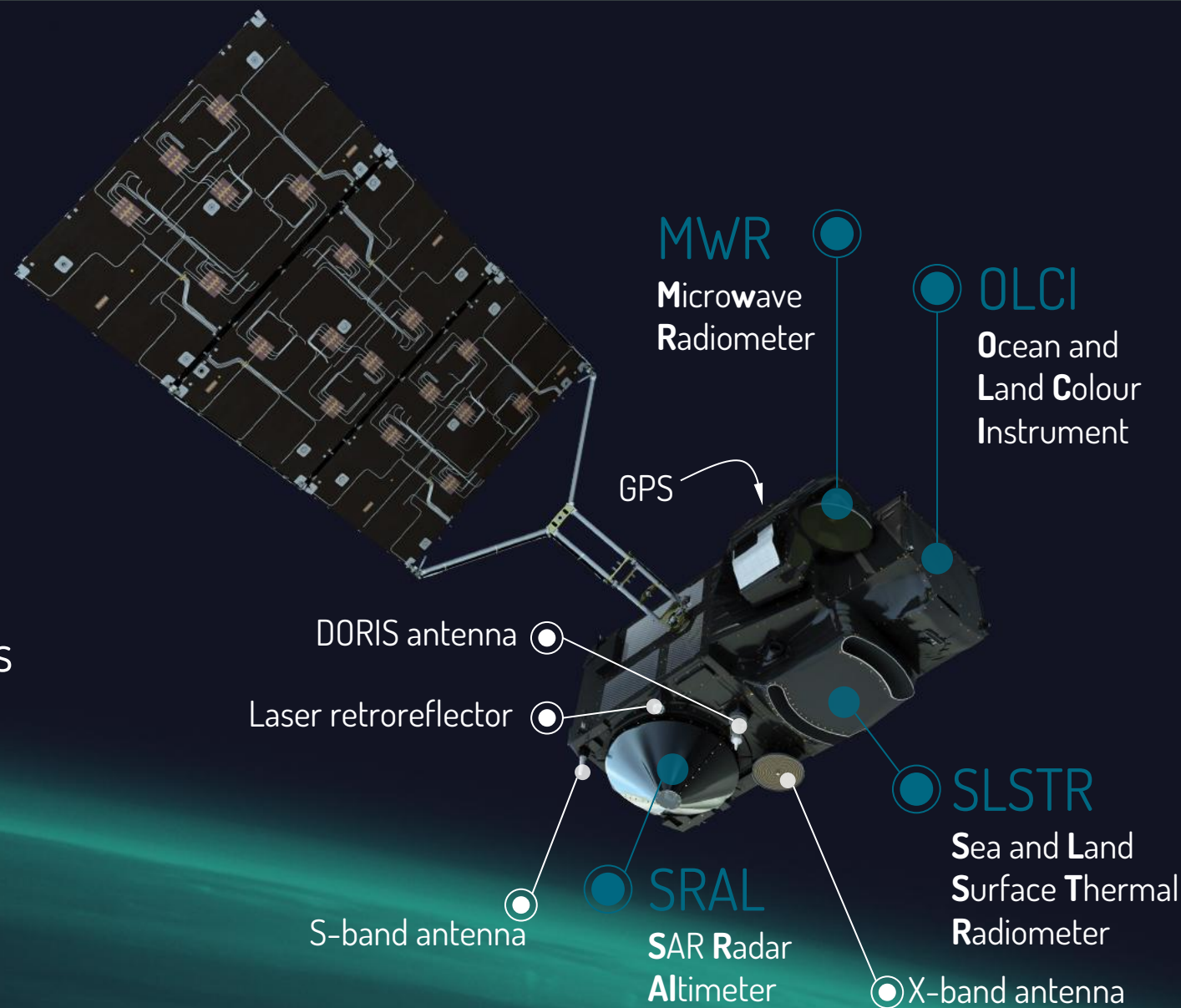
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Marine missions: Sentinel-3 instruments and variables

- **OLCI >> visible radiometry**
 - **ocean colour:** radiances & reflectances
 - chlorophyll, suspended sediment (TSM), CDOM, IOPs
 - PAR / k_d490
- **SLSTR >> thermal radiometry**
 - radiances & brightness temperatures
 - Sea and sea-ice surface temperatures
- **SRAL / MWR / POD (DORIS/GNSS/LRR)**
>> surface topography mission
 - Sea surface height
 - Significant wave height
 - Wind speed



PROGRAMME OF
THE EUROPEAN UNION



IMPLEMENTED BY

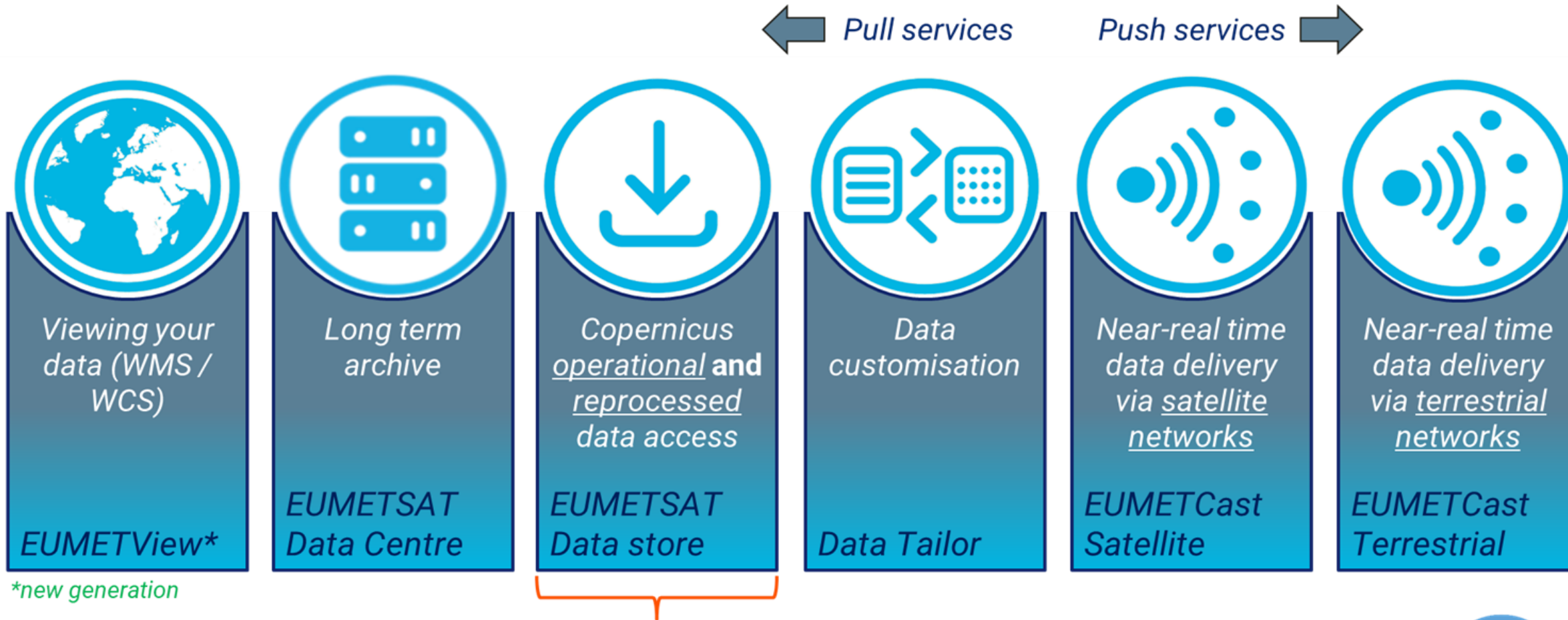


- Central page in user portal:
<https://user.eumetsat.int/data/satellites/sentinel-3/ocean-colour-service>
 - User guides under resources including processing baseline
 - Code
 - Case study examples
- Can also find code directly via our gitlab and available in WEkEO...



Quick look at our user portal...

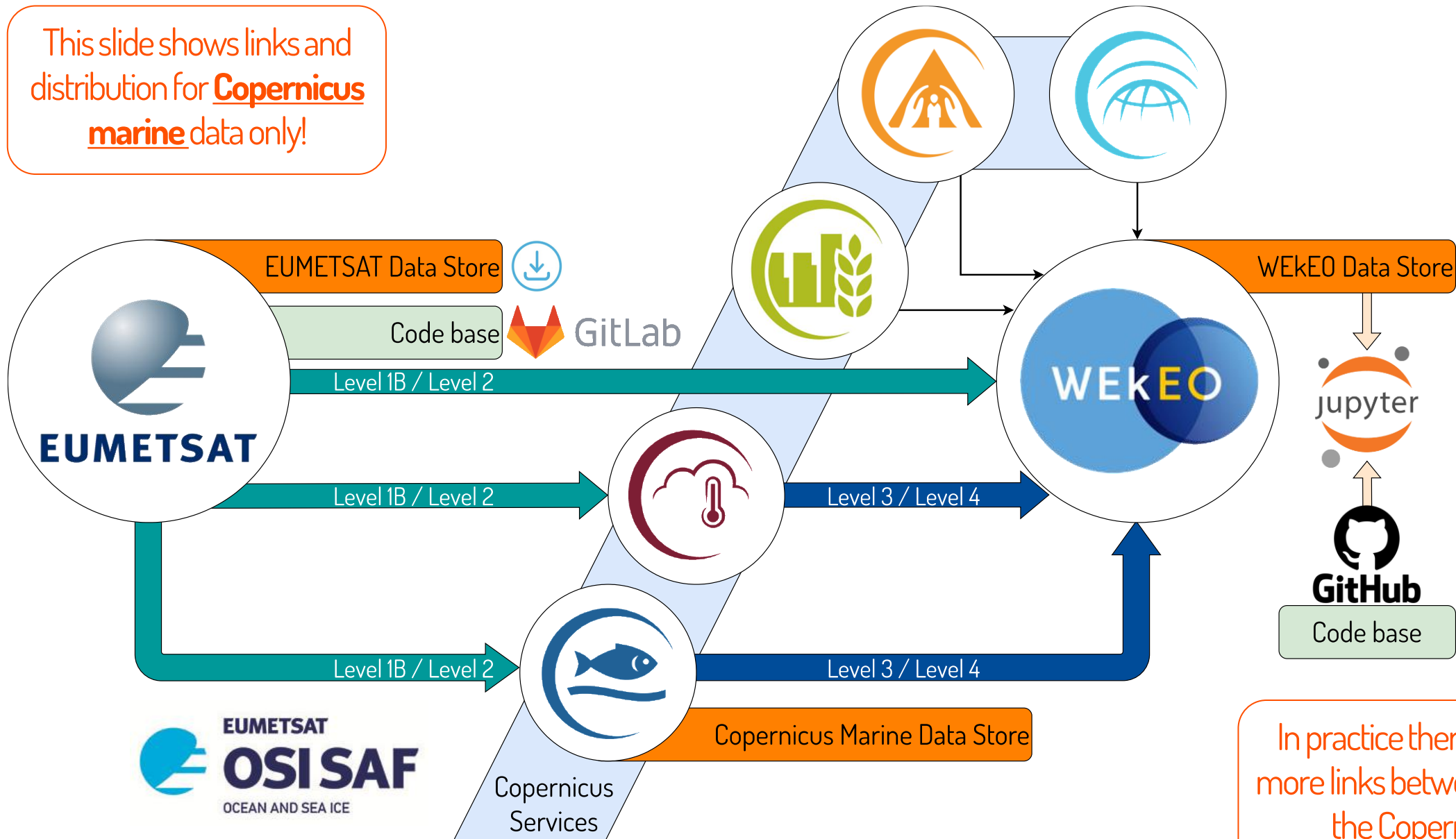
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Data Store has replaced the CODA and CODAREP services used by many Sentinel-3 users, offering unified access to operational and reprocessed data. It will allow access long time-series of the most up to data products, via a single point without the use of Data Centre in most cases (including to WEkEO).



This slide shows links and distribution for **Copernicus marine** data only!



In practice there are many, many more links between EUMETSAT and the Copernicus Services



The **EUMETSAT Data Store** provides single point of access to a growing catalogue of EUMETSATs meteorological, climate and ocean data.

Data collections

Near real-time products

Historic & reprocessed products

Climate data records



Data Store Interfaces

Online web user interface

OLCI Level 2 Ocean Colour Full Resolution - Sentinel-3

ID: EO:EUM:DAT:0407
Orbit: LEO
Data Policy:
[learn more](#) [EUMETView](#)

AVAILABLE TIME RANGE: 2021-02-14 - 2023-04-23

2023-04-22 < 08:39 >

2023-04-23 < 08:39 >

Filename

1 Browse API

2 OpenSearch API

3 Download API

4 Subscription API

EUMDAC (EUMETSAT Data Access Client)

Python library and command line interface

Service available at:

<https://data.eumetsat.int>



Operational products

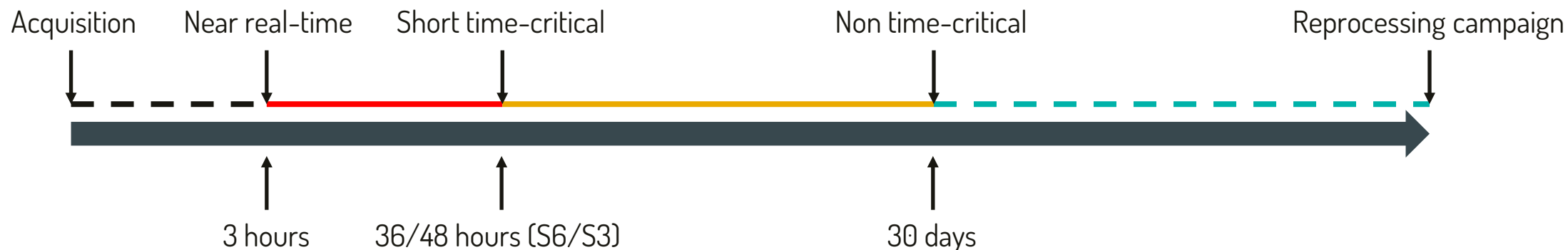
Constantly updated and available in three “timeliness”:

- Near real-time
- Short time-critical
- Non time-critical

Reprocessed products

Periodically updated through reprocessing campaigns:

- Typically whole mission
- Highest quality data
- Performed with latest processing baseline
- Supersede previous reprocessing(s)
- Not really to be mixed with NRT data





Collection	Description	Date start
EO:EUM:DAT:0407	OLCI Level 2 Ocean Colour Full Res (OPE)	2021-01-01
EO:EUM:DAT:0556	OLCI Level 2 Ocean Colour Full Res (REP:BC003)	2016-04-25
EO:EUM:DAT:0408	OLCI Level 2 Ocean Colour Reduced Res (OPE)	2021-01-01
EO:EUM:DAT:0557	OLCI Level 2 Ocean Colour Reduced Res (REP:BC003)	2016-04-25
EO:EUM:DAT:0409	OLCI Level 1B Full Res (OPE)	2021-01-01
EO:EUM:DAT:0885	OLCI Level 1B Full Res (REP:BC004)	2016-04-25
EO:EUM:DAT:0410	OLCI Level 1B Reduced Res (OPE)	2021-01-01
EO:EUM:DAT:0886	OLCI Level 1B Reduced Res (REP:BC004)	2016-04-25

Other collections for Sentinel-3 (SST, altimetry), Sentinel-6 (altimetry) and many more...



Quick look at the Data Store....

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- We have developed a client to support API based access to the data store – EUMDAC (CLI and Python library).
- Supporting documentation available on our user portal:
<https://user.eumetsat.int/resources/user-guides/eumetsat-data-access-client-eumdac-guide>
- Use of EUMDAC is embedded across our library of code based tutorials, and in the ThoMaS toolkit.
- <https://gitlab.eumetsat.int/eumetlab> for all our code
- If you're ever stuck – ops@eumetsat.int is your place to ask for help!



Quick look at our code repositories...

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- Follow the repository README instructions at <https://gitlab.eumetsat.int/eumetlab/oceans/ocean-training/sensors/learn-olci>
- `git clone --recurse-submodules --remote-submodules`
<https://gitlab.eumetsat.int/eumetlab/oceans/ocean-training/sensors/learn-olci.git>
- `conda env create -f environment.yml` (add: “`--solver=libmamba`” if you have – its faster!)



In a nutshell: getting started...

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- Installing **Anaconda**
 - If you don't have Python...
 - Cloning repositories
- OR** {
- **On windows:** Open Anaconda, find and launch the powershell.exe application. This will open a command line window.
 - **On Linux or OSX:** Open a terminal window
 - **Clone the **learn-olci** and **ThoMaS** repositories:** (you may wish to change directory first)
 - Copy and paste the following lines into your terminal and hit “enter”
 - **learn-olci:** *git clone --recurse-submodules --remote-submodules https://gitlab.eumetsat.int/eumetlab/oceans/ocean-training/sensors/learn-olci.git*
 - **ThoMaS:** *git clone https://gitlab.eumetsat.int/eumetlab/oceans/ocean-science-studies/ThoMaS.git*
- Setting up Python environments
 - To create the required Python environments, you should copy and past the following lines into your terminal and hit “enter”
 - **learn-olci:** *conda env create -f learn-olci/environment.yml*
 - **ThoMaS:** *conda env create -f ThoMaS/environment.yml*



What to do this afternoon?

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- Troubleshoot any issues with cloning and environmental setup of learn-olci repository
- Set up authentication – use notebook in learn-olci/working-with-python
 - EUMDAC, also CDS/ADS if you have (can also do this later).
- Work through the learn-olci repository according to your interests (or check out our other code resources!)



Thank you!
Questions are welcome.