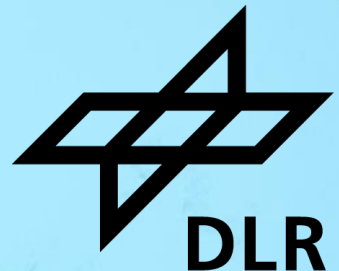
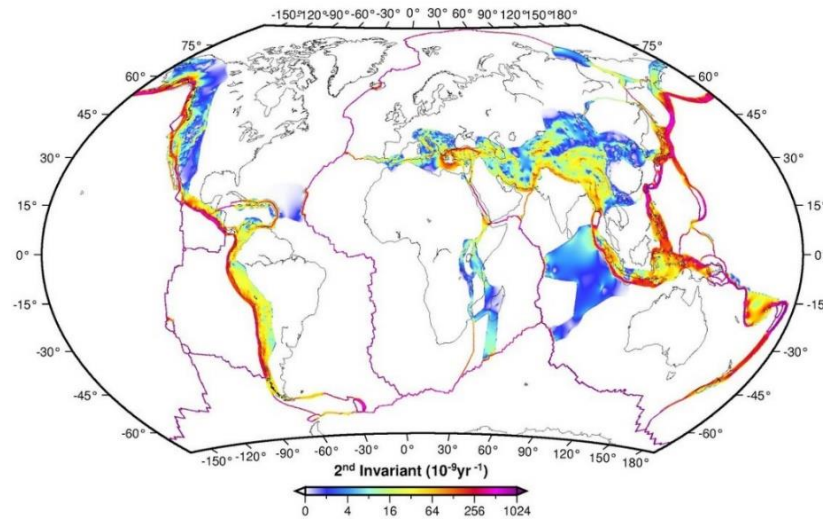
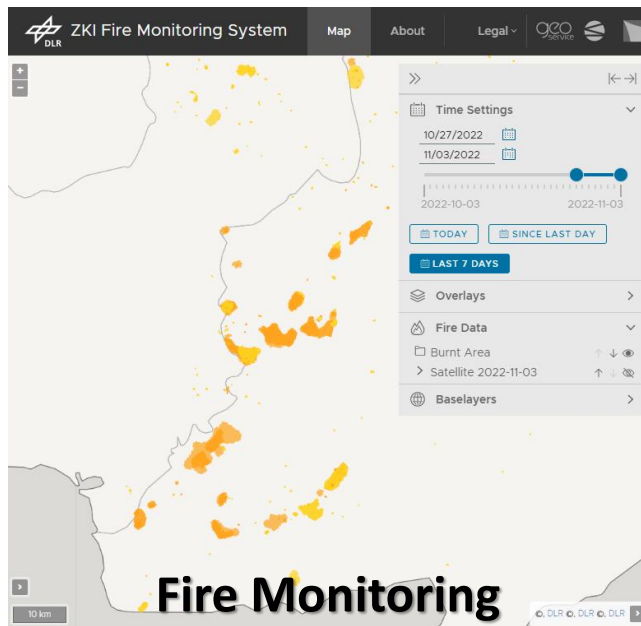
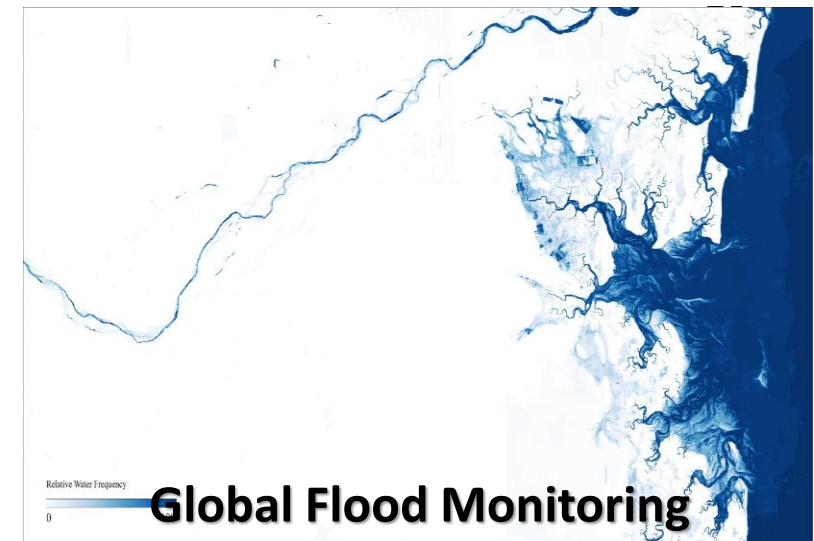
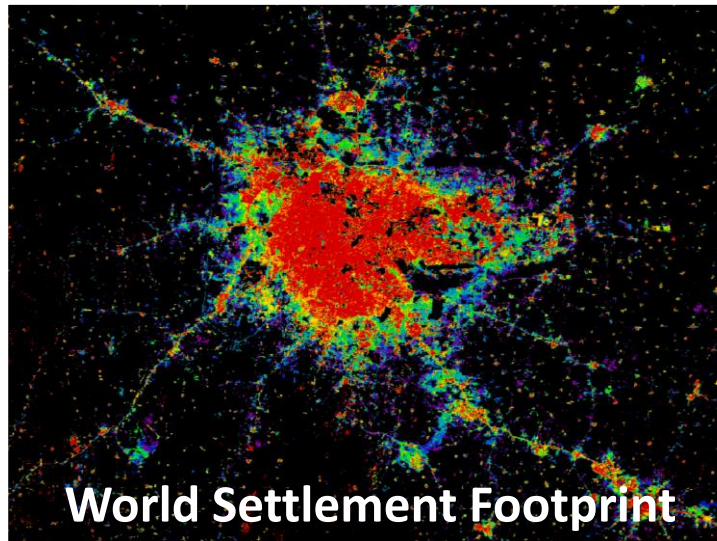
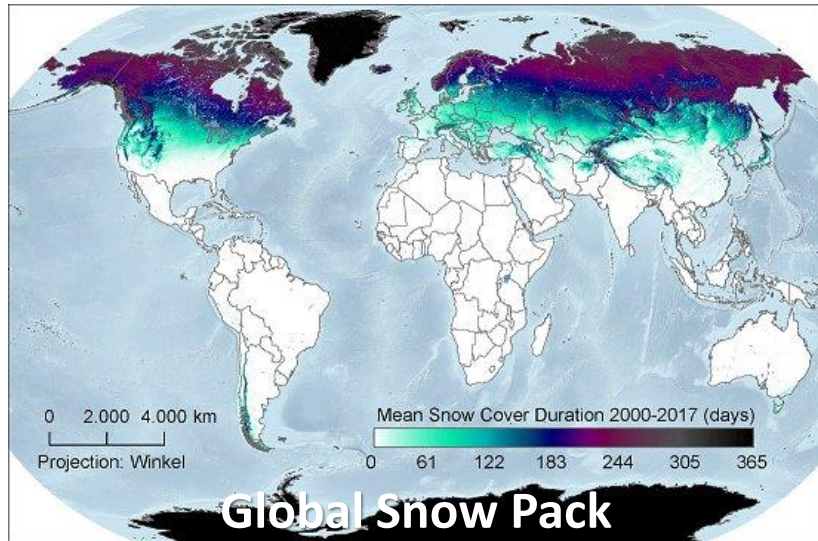


HPDA platform terrabyte

Opportunities and Challenges

EODC-Forum, 09.05.2023





Deformation maps



**Global & regional chemistry
climate and air quality modelling**

Challenge:

Evaluation of software stacks for EO exploitation platforms



Data Processing & Analysis



Metadata catalogue



User Management



Workflows



terrabyte

a high performance data analytics (HPDA) platform



Project cooperation with Leibniz Supercomputing Center (LRZ)

- Financing of the HPDA platform from DLR funds
- Hosting and system operation by LRZ
- DLR focus on EO research, services and user support
- LRZ focus on IT research and operation



Compute

44.000 vCPUs
188 GPUs
333 TB RAM



Online storage

50 Petabyte
(36 Petabyte net)



Leibniz Supercomputing Centre
of the Bavarian Academy of Sciences and Humanities

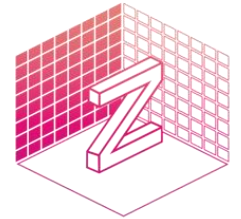
Challenge: Be up to date with the latest technologies



Open
Geospatial
Consortium®



COG
CLOUD OPTIMIZED
GEOTIFF

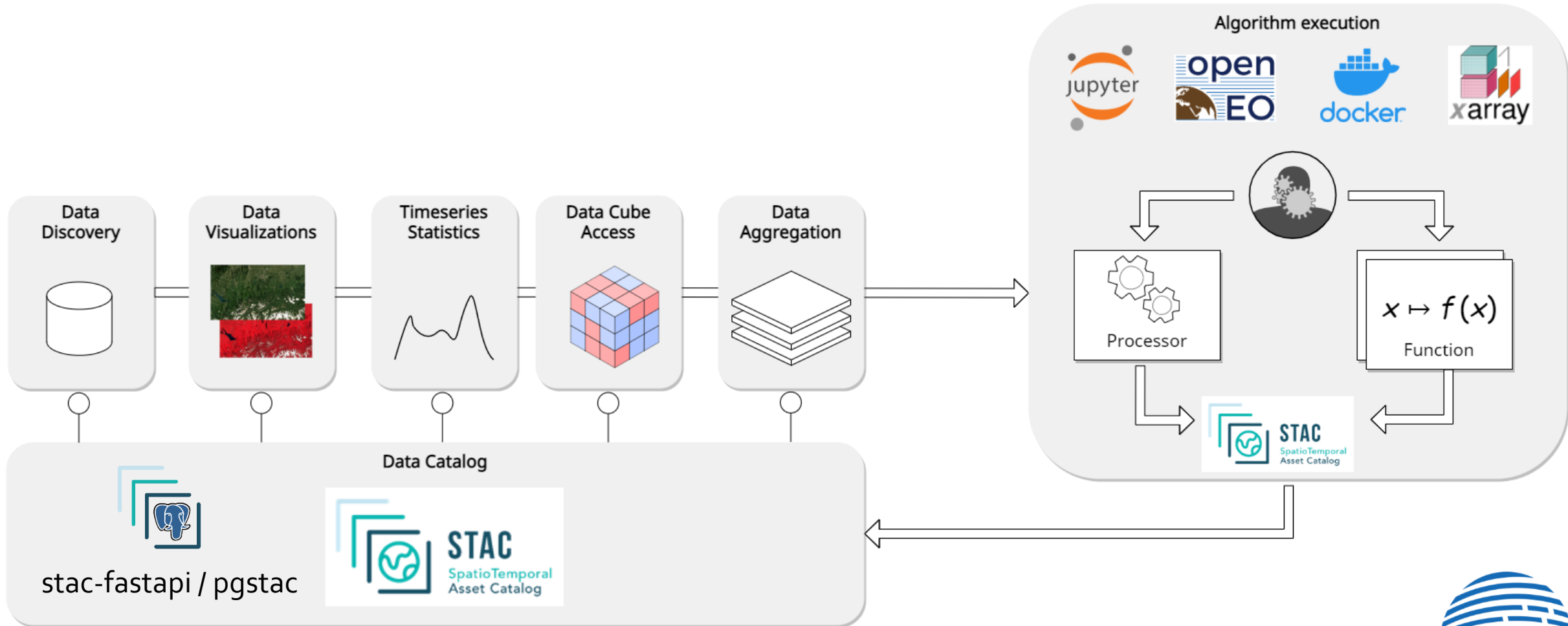


Zarr

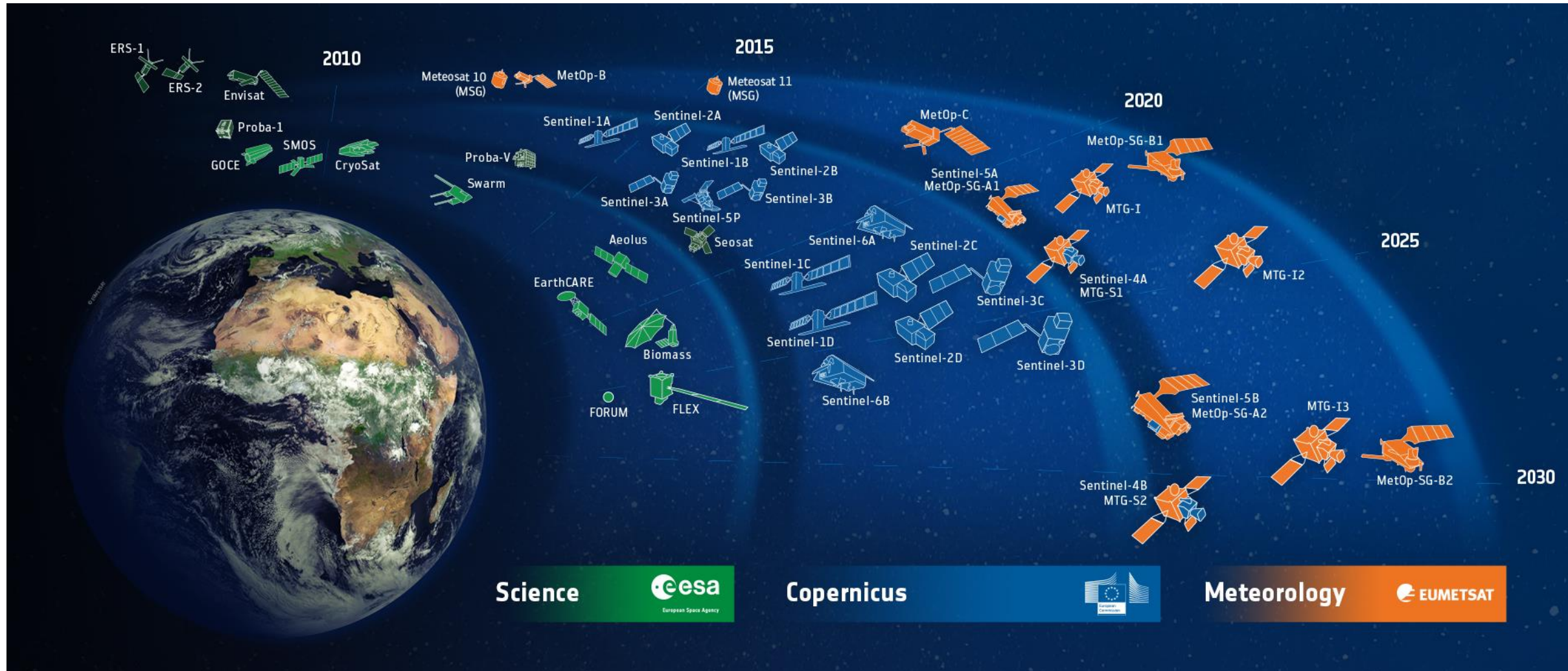
~~OpenSearch~~



STAC-based architecture



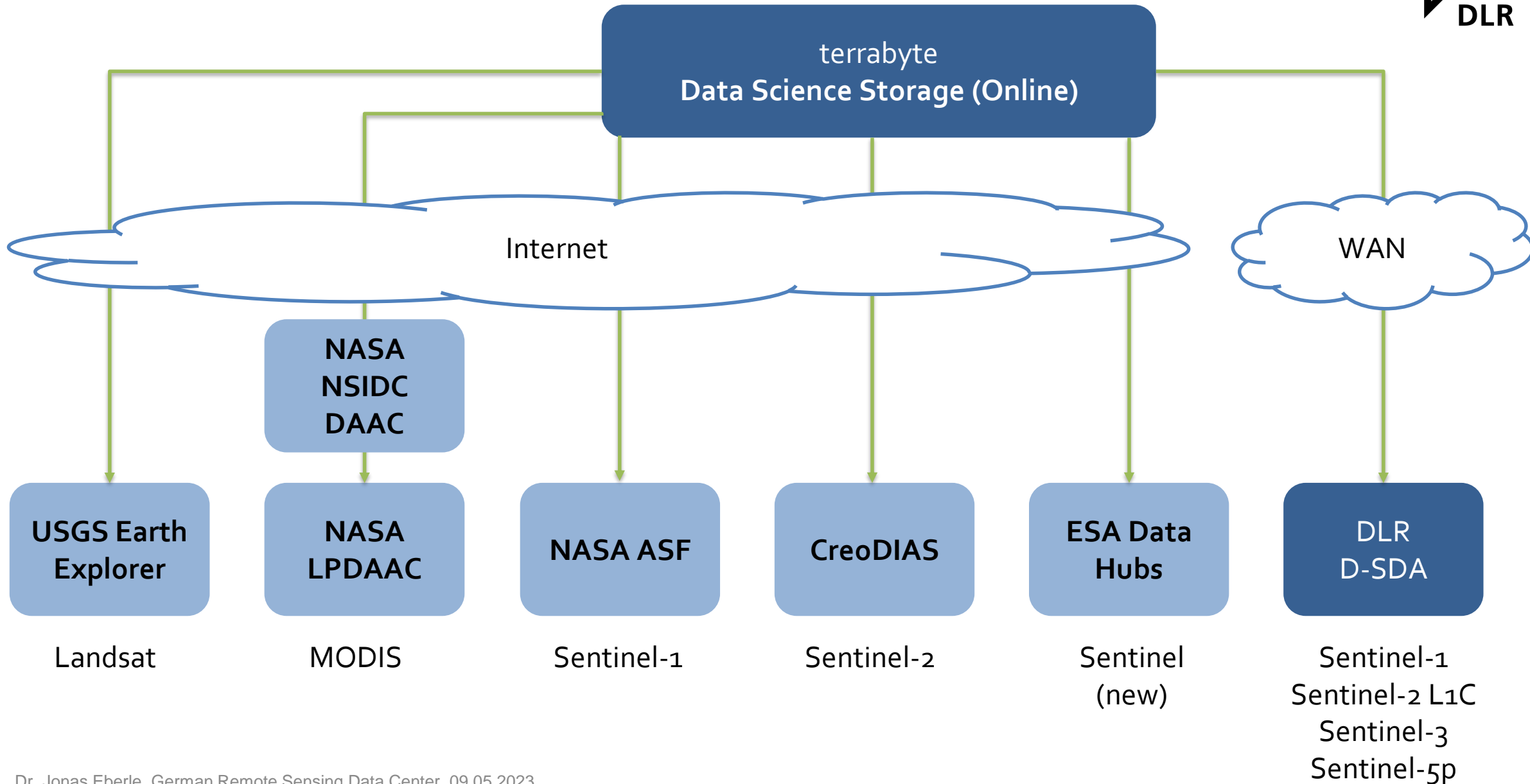
Opportunity: We have so much satellites and data...



Opportunity: We have so much satellites and data...



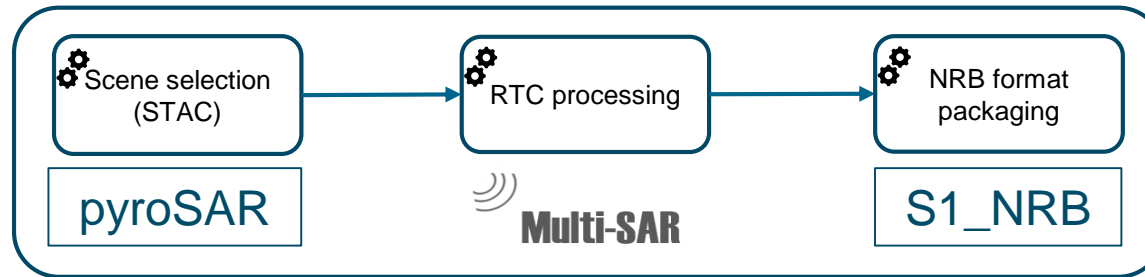
Challenge: Where to store all the data for immediate data analysis?



Opportunity: Generating and providing Analysis Ready Data



■ Sentinel-1 Normalized Radar Backscatter

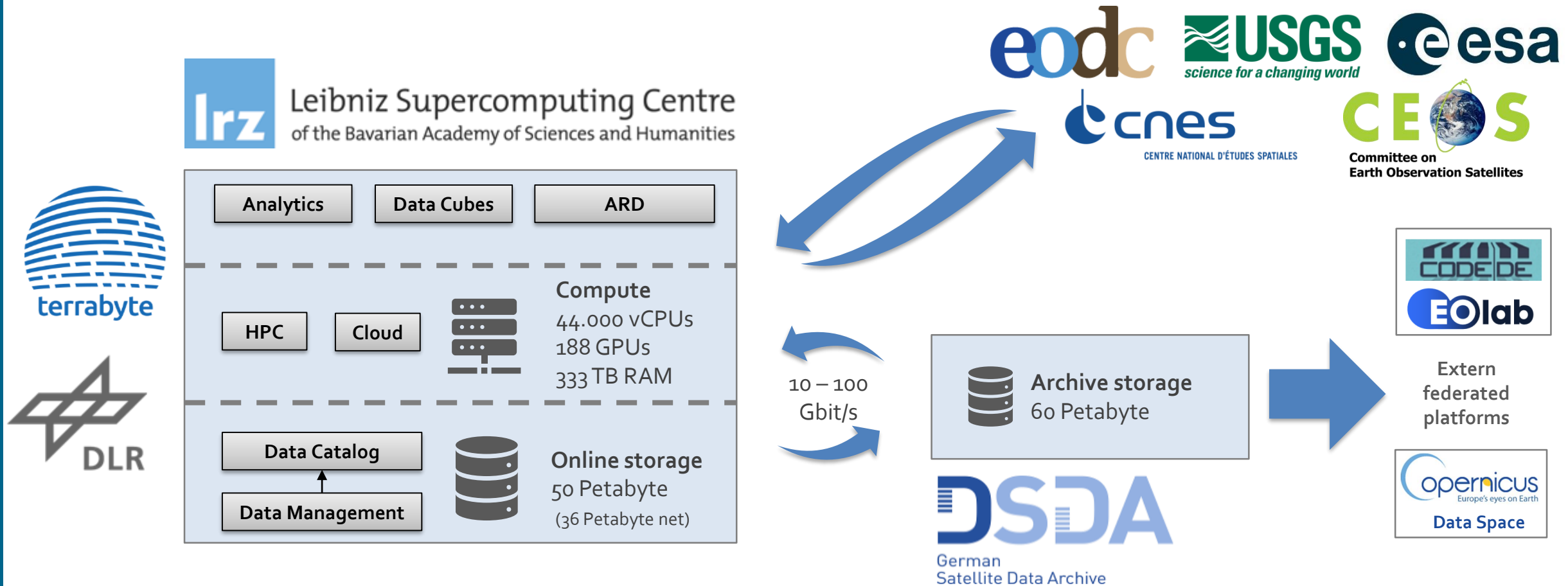


- Complete archive based on Sentinel-1 SLC
 - Based on CEOS ARD NRB specification
 - Reprocessing from Level-0 to Level-1 useful
- ## ■ Sentinel-2 L2A MAJA
- Currently: Europe 2018 – 2022

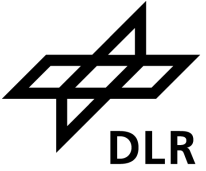
version	delivery	start usage	end usage	notes
003.61	2023-03-17 12:00:00	2023-03-30 10:19:46		!
003.52	2022-05-12 00:00:00	2022-05-12 10:48:19	2023-03-30 09:29:57	!
003.51	2022-03-04 00:00:00	2022-03-23 16:25:31	2022-05-12 09:31:31	!
003.40	2021-10-08 00:00:00	2021-11-04 07:56:32	2022-03-23 12:25:17	!
003.31	2020-06-19 12:00:00	2020-06-30 12:00:00	2021-11-03 11:08:26	!
003.30	2020-03-09 12:00:00	2020-06-23 08:00:00	2020-06-30 12:00:00	!
003.20	2019-12-16 12:00:00	2020-01-29 10:00:00	2020-06-23 08:00:00	!
003.10	2019-06-04 15:00:00	2019-06-26 10:00:00	2020-01-29 10:00:00	!
002.91	2018-05-29 00:00:00	2018-06-26 08:30:00	2019-06-26 10:00:00	!
002.90	2018-01-16 00:00:00	2018-03-13 12:00:00	2018-06-26 08:30:00	!
002.84	2017-07-12 00:00:00	2017-08-22 10:00:00	2018-03-13 12:00:00	!
002.82	2017-02-27 00:00:00	2017-03-28 06:00:00	2017-08-22 10:00:00	!
002.72	2016-07-29 00:00:00	2016-08-23 12:00:00	2017-03-28 12:00:00	!
002.71	2016-04-21 00:00:00	2016-05-11 12:00:00	2016-08-23 12:00:00	!
002.70	2016-03-31 00:00:00	2016-04-13 12:00:00	2016-05-11 12:00:00	!
002.60	2015-10-09 00:00:00	2015-11-20 12:00:00	2016-04-13 12:00:00	!
002.50	2015-06-30 00:00:00	2015-07-02 12:00:00	2015-11-24 12:00:00	!
002.40	2015-03-09 00:00:00	2015-03-19 00:00:00	2015-07-02 12:00:00	!



Opportunity: We all provide data and develop platforms



Opportunities for EO data access and analysis



Conclusion



Challenge: Keep up to date with changing technology.



Opportunity: Work together towards a common architecture and conduct joint software developments!

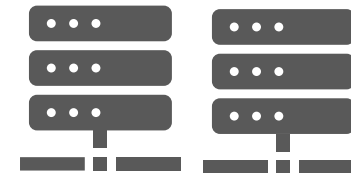


Challenge: Develop solutions for federated data holdings to minimize data copies around the world.



Open
Geospatial
Consortium.

Opportunity: Use the on-prem computing and storage resources to generate or reprocess data products!



Thank you for your attention!

