

EOSC-Pillar

Coordination and Harmonisation of National & Thematic Initiatives to support EOSC

Les solutions techniques de l'EOSC: la couche infrastructure

Basé sur les travaux du Work Package 7: the infrastructure layer

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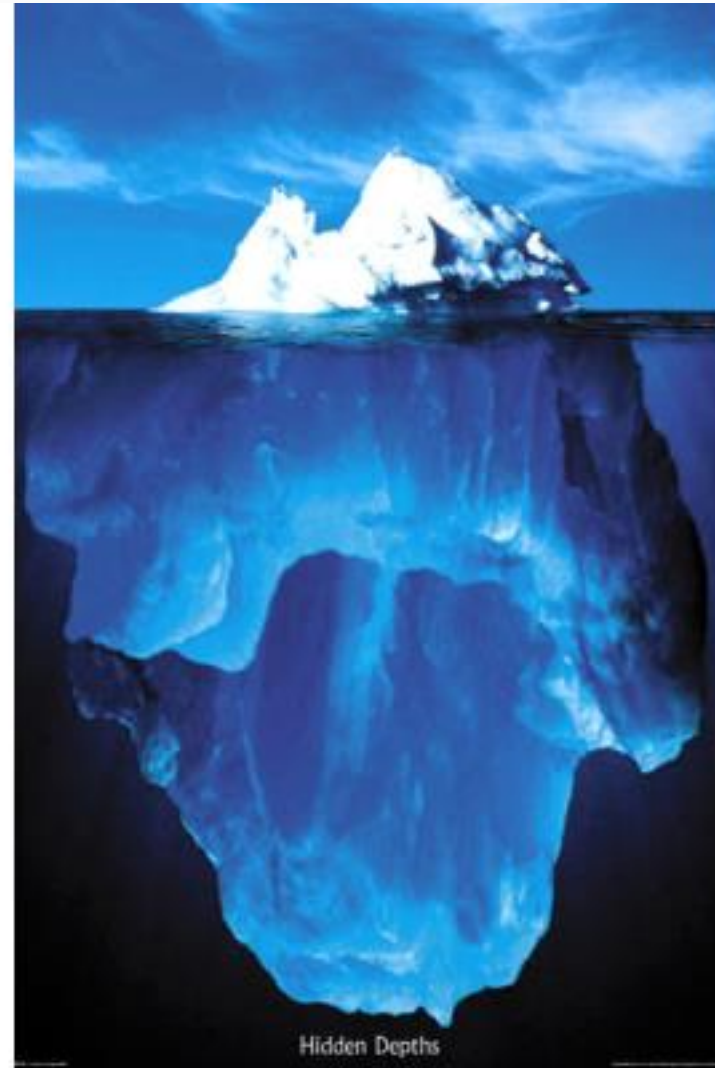
Credits: L. Berberi, D. Evans J. van Wesel & all WP7 members



EOSC-Pillar has received funding from the European Union's Horizon 2020 research and innovation Programme under Grant Agreement No. 857650.

Introduction

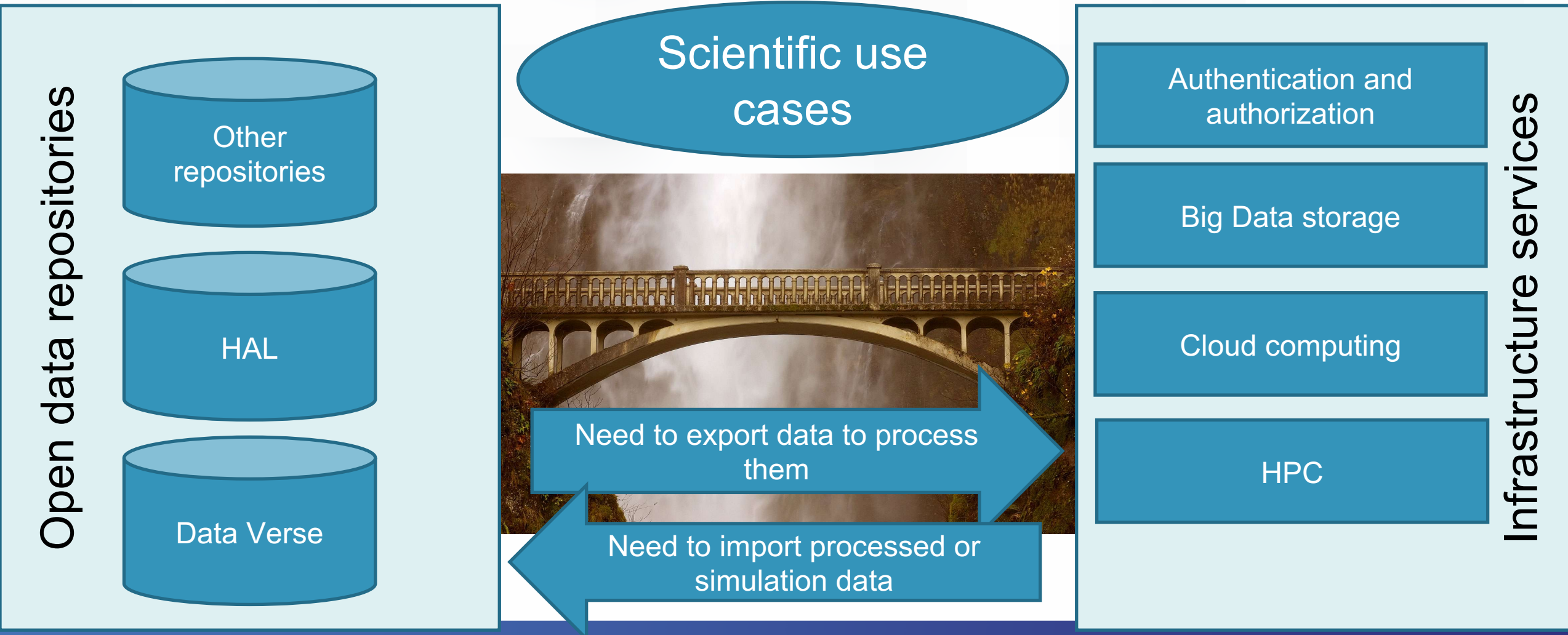
EOSC-Pillar WP7 is about the infrastructure layer enabling open science



Open science

The
infrastructure
layer

Bridging the gap between data repositories and infrastructure services

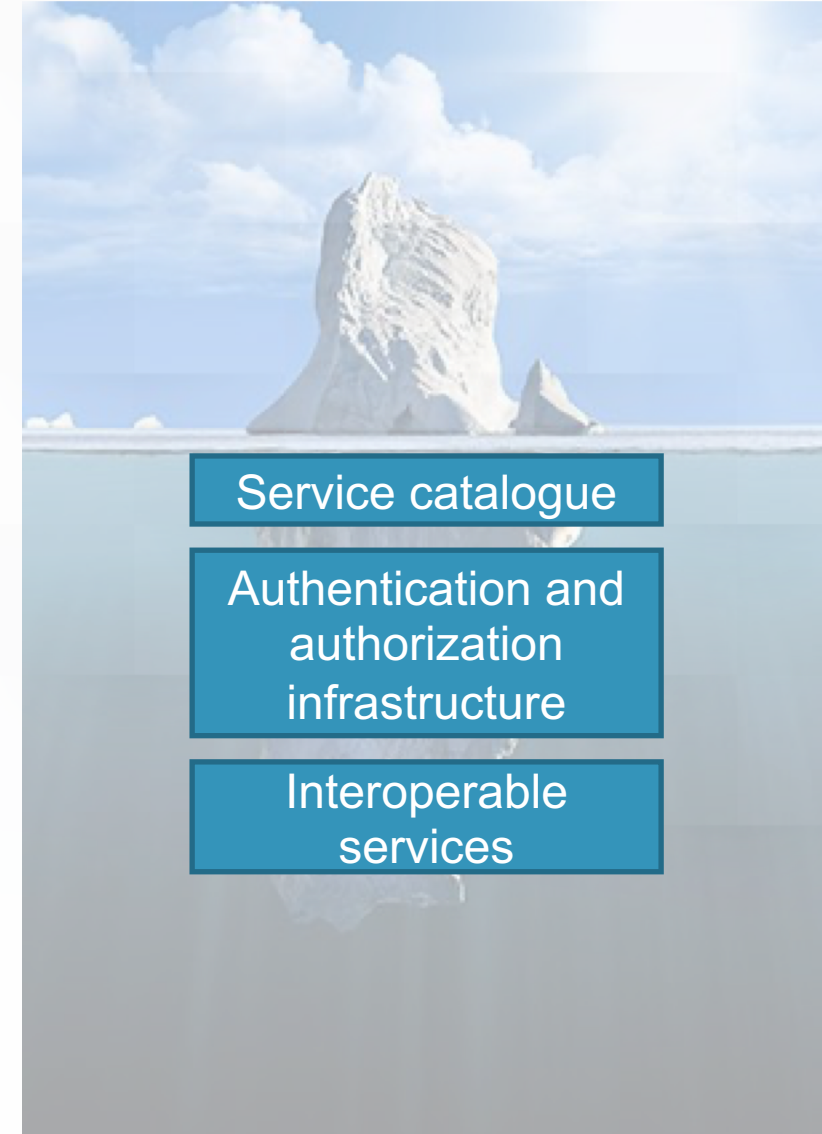


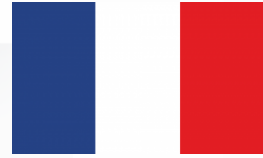
FAIR principles should apply to data, but also to infrastructure services

- Infrastructure services should be findable
- Infrastructure services should be accessible
- Infrastructure services should be interoperable
- Infrastructures services should be reusable

Toward FAIR infrastructure services: the challenges

- Findable
 - How to make infrastructure services easy to find?
 - => **catalogue of services**
- Accessible
 - How to allow users to access them easily?
 - => **authentication and authorization infrastructure**
- Interoperable
 - How to achieve for services to work together smoothly ?
 - => **integration of services, standardization of interfaces**
- Reusable
 - How to achieve service sustainability and continuity?





Service catalogue

Service catalogue

Service catalogue

Service catalogue

Service catalogue

AAI

Interoperable services

EOSC-Pillar WP7: applying FAIR principles to infrastructure services

Findable

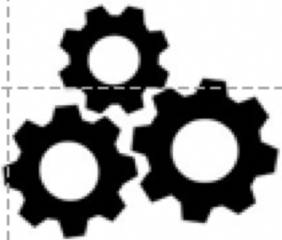


- **bring together** user communities, use cases, e-infrastructure and service providers
- provide **technical and strategic guidance** for the integration and federation of services in the EOSC ecosystem

Practical help, providing answers to

- How to (better and easier) integrate services in the EOSC?
- How to find the right AAI solution?
- Provide technical solutions to the use cases of WP6
- deploying services already available for several scientific communities and support their integration in the EOSC framework

Interoperable



Accessible



Reusable

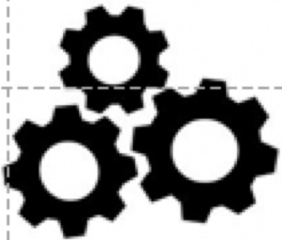


Towards FAIR infrastructure services

Findable



Interoperable



- **Task 7.1 Guidance and procedures for integrating services**
- **Task 7.2 Support for the integration of national services**
- **Task 7.3 Integrated services validation and operation of the federated services in a production environment**
- **Task 7.4 Ready to use services**

Accessible

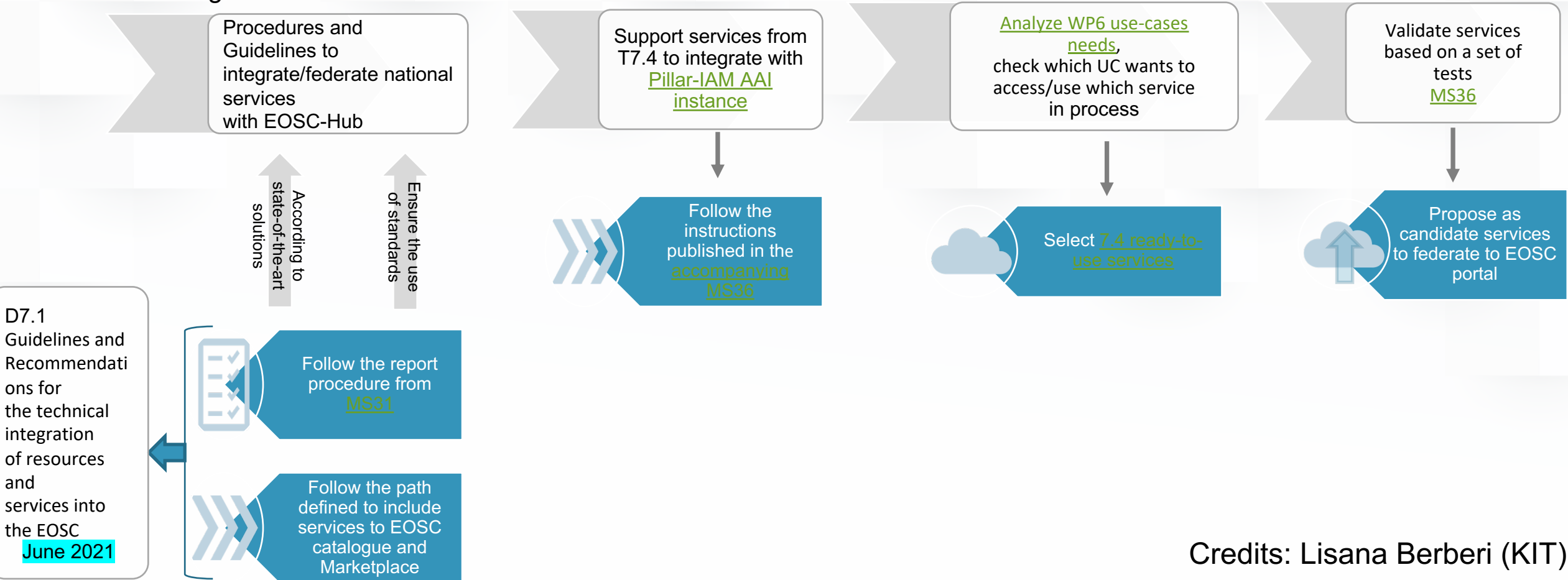


Reusable



WP7 supports the integration of national services and validate the integrated services in a production realm

- The following workflow describes an overall roadmap and timeline to support service owners in Pillar project to integrate/federate their relevant national services



Credits: Lisana Berberi (KIT)

More than 30 infrastructure services provided by EOSC-Pillar partners to the project use cases

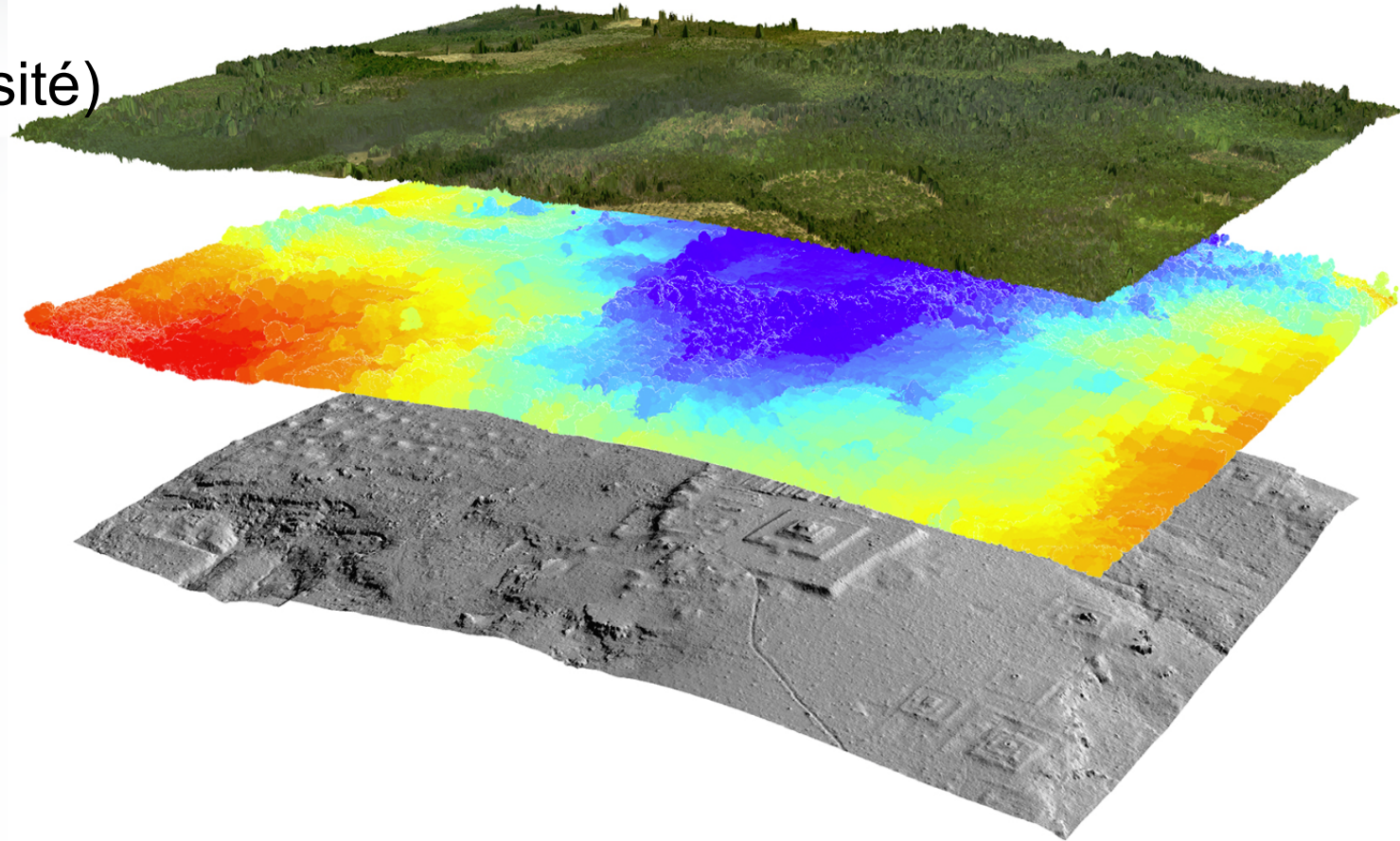
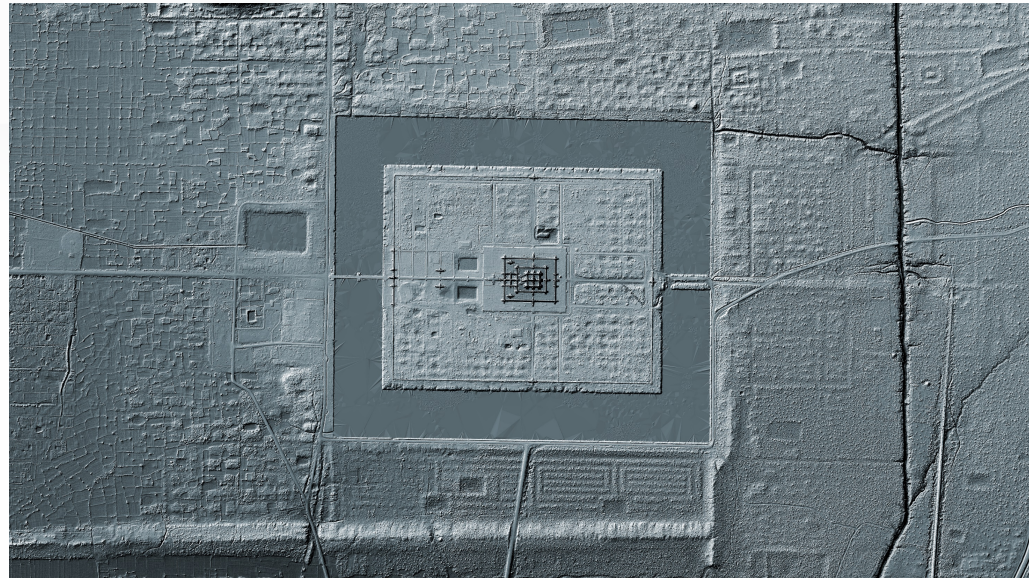
- 6 ready-to-use services
- 20+ in-kind services

Service	Provider	Category	Status
Laniakea/Galaxy	INFN	Ready-to-use (7.4)	Production
GPU Container	CNRS	Ready-to-use (7.4)	Production
D4Science Virtual Research Environment	CNR	Ready-to-use (7.4)	Production
D4Science VRE-based service for research data publishing	CNR	Ready-to-use (7.4)	Production
PICO2	INRAE	Ready-to-use (7.4)	in development
Marketplace	IWM	Ready-to-use (7.4)	Production

Do these infrastructure services respond to the needs of the scientific use cases ?

Example: archaeological applications of airborne lidar scanning (Use Case 6.5)

Credits: A. Joffres (Humanum)
D. Evans (EFEO / Sorbonne Université)



Archaeoscape goals

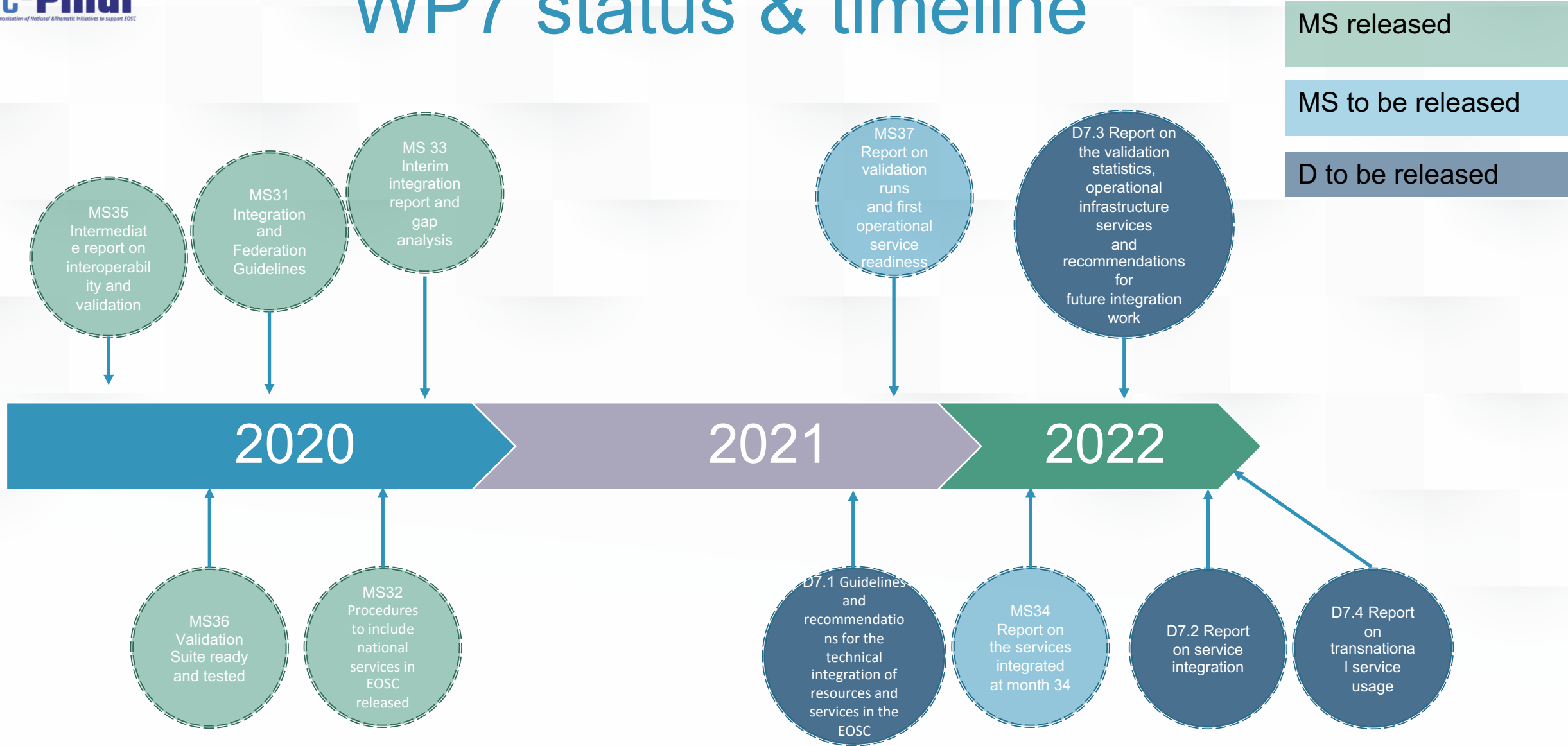
5 GB data per km² Lidar scan
500-2000 km² per archeological campaign

- Archive data sets from Lidar acquisition
- Web portals to access Lidar data
- Simple, web-based systems for collaboration
- Advance, Real-Time, Online Visualisation Capabilities
- Accessing Automated Feature Recognition Products
- Machine Learning as a Service for Archaeology

WP7 enabling services:
- GPU computing
(WP7.4.1)
- France Grilles iRODS
federation (in kind contribution)



WP7 status & timeline



Credits: Lisana Berberi (KIT)

Next steps

- Interfacing WP5 FAIR Federated Data Space with WP7 infrastructure layers
- Transnational access and usage of WP7 services



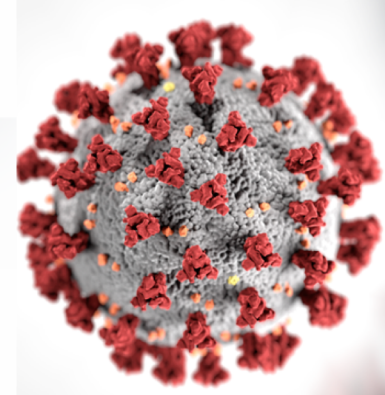
Data repositories

FAIR Federated Data Space

Service catalogue

Authentication and authorization infrastructure

Interoperable services



COVID-19
CORONAVIRUS DISEASE 2019

- Scientific goals:
 - virtual screening of existing / potentially new drugs against COVID-19 target proteins
 - Modeling of COVID-19 propagation
 - Analysis of COVID-19 epidemiological data sets



EOSCPILLAR
COVID-19

Conclusion

- Making infrastructure services Findable, Accessible, Interoperable and Reusable is a considerable challenge
- EOSC-Pillar WP7 aims at enabling this vision on a portfolio of use cases and services

