EOSC-Pillar

Coordination and Harmonisation of National &Thematic Initiatives to support EOSC

Supporting service integration into EOSC

EOSC-Pillar Final Event, 26th October, 16:00-17:00

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Outline

1. Maturity tool assessment
2. Supporting use case implementation by utilizing available EOSC-Pillar resources/services
3. Support on integration with EOSC-core services

Outline

1 Maturity tool assessment

Maturity tool assessment

* Adopted as a tool from EOSC-Nordic project **to assess the maturity level of services from the service delivery perspective**
  * Some extra data repository requirements
  * Requirements classification: mandatory or optional based on the relevance
* It consists of a checklist template with all the defined requirements to be considered in order to deliver a good service
* Requirements were identified based on the FitSM process for service management; the EOSC Service Description Template and the criteria/features of data repositories.
* A spreadsheet with requirements designed as multiple-choice questions where service assessors can simply answer either “Yes”, “No” or “N/A”.
* Two scores:
  * *General score*: calculates the number of positive answers from *all the requirements*
  * *Custom score:* calculates the number of positive answers from *mandatory requirements only*
* *Reported in D7.3*

Service Management Framework

* This framework consists of 44 requirements and is divided into 5 sections:
  * Service management → (18 questions)
  * Data repository requirements → (14 questions) – section specific for data repositories only;
  * Accessibility and legal requirements → (5 questions)
  * Sustainability → (1 question)
  * EOSC architecture compatibility → (6 questions)

An excerpt list of requirements

1. Service management			Source:	Importance	Comment
	S-1	Web address where more information about the service can be found is publicly available	FitSM: Service Portfolio Management Process	mandatory	
	S-2	Contact address for end-users is publicly available	FitSM: Incident & Service Request Management Process EOSC portal service requirements for providers	mandatory	
[..]	[..]	[..]	[..]	[..]	[..]
2. Data repository requirements					
	D-1	Repository is certified	CTS(CoreTrustSeal)	mandatory	
	D-2	Repository ensures that data deposited are released with a clear and accessible data usage license	CTS, COAR	mandatory	
[..]	[..]	[..]	[..]	[..]	[..]
3. Accessibility and legal requirements					
	L-1	The service is accessible by users outside its original community	EOSC portal service requirements for providers	optional	For example, a user coming from social sciences is most likely non-native user in case he/she would like to use services provided by climate science community.
	L-2	Service usage form other EU countries is possible		optional	
[..]	[..]	[..]	[..]	[..]	[..]
4. Sustainability					
	F-1	Status in terms of service lifecycle is publicly available (e.g. pilot, in production, to be depreciated soon, notification of discontinuation of the service)		mandatory	Note. It is enough if this information is given in a way that can be understood by service end user
5. EOSC service integration (to be included when documents and services become					
	A-1	EOSC Monitoring and reporting implemented	To be considered when description is available, recent documentation (from EOSC-Hub project) available	optional	
	A-2	EOSC AAI implemented	To be considered when description is available, recent documentation (from EOSC-Hub project) available	optional	
[..]	[..]	[..]	[..]	[..]	[..]

Service case studies

Thematic services

- Laniakea@ReCaS (INFN) – 
- D4Science resource catalogue VRE (CNR) – 
- Marketplace-pilot (Fraunhofer) – 
- GPU container as a Service (CNRS) – 
- VIP(CNRS)- 
- AstroODA(ISDC/APC)- 
- Simbad (CDS)- 
- ReadMetrics(Inist-CNRS)- 

Data repository services

- B2SAFE provided by two national infrastructure providers:
  - B2SAFE (KIT) - 
  - B2SAFE (CINES) 
- iRODS (FG) - 

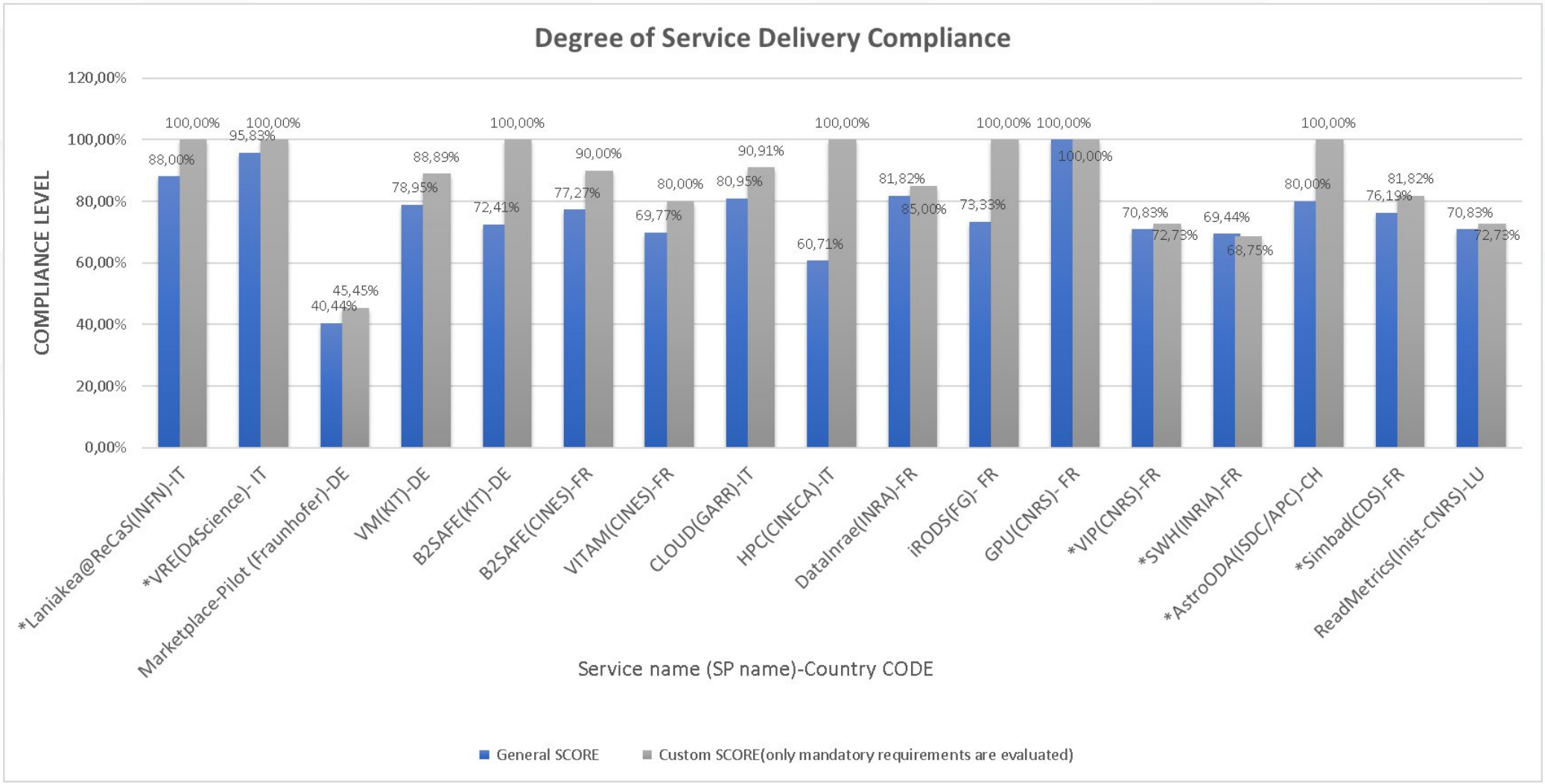
[as data repository service]

- datainrae (INRAE) – 
- SWH(INRIA)- 

Common services

- CLOUD (GARR) - 
- HPC (CINECA) – 
- VITAM (CINES) –  *[as data archive]*
- VM (KIT) –  *[as computing resource]*

Service delivery compliance assessment -*all services*



A submatrix displaying the calculated degree of the service delivery compliance for each service in relation with the requirements category

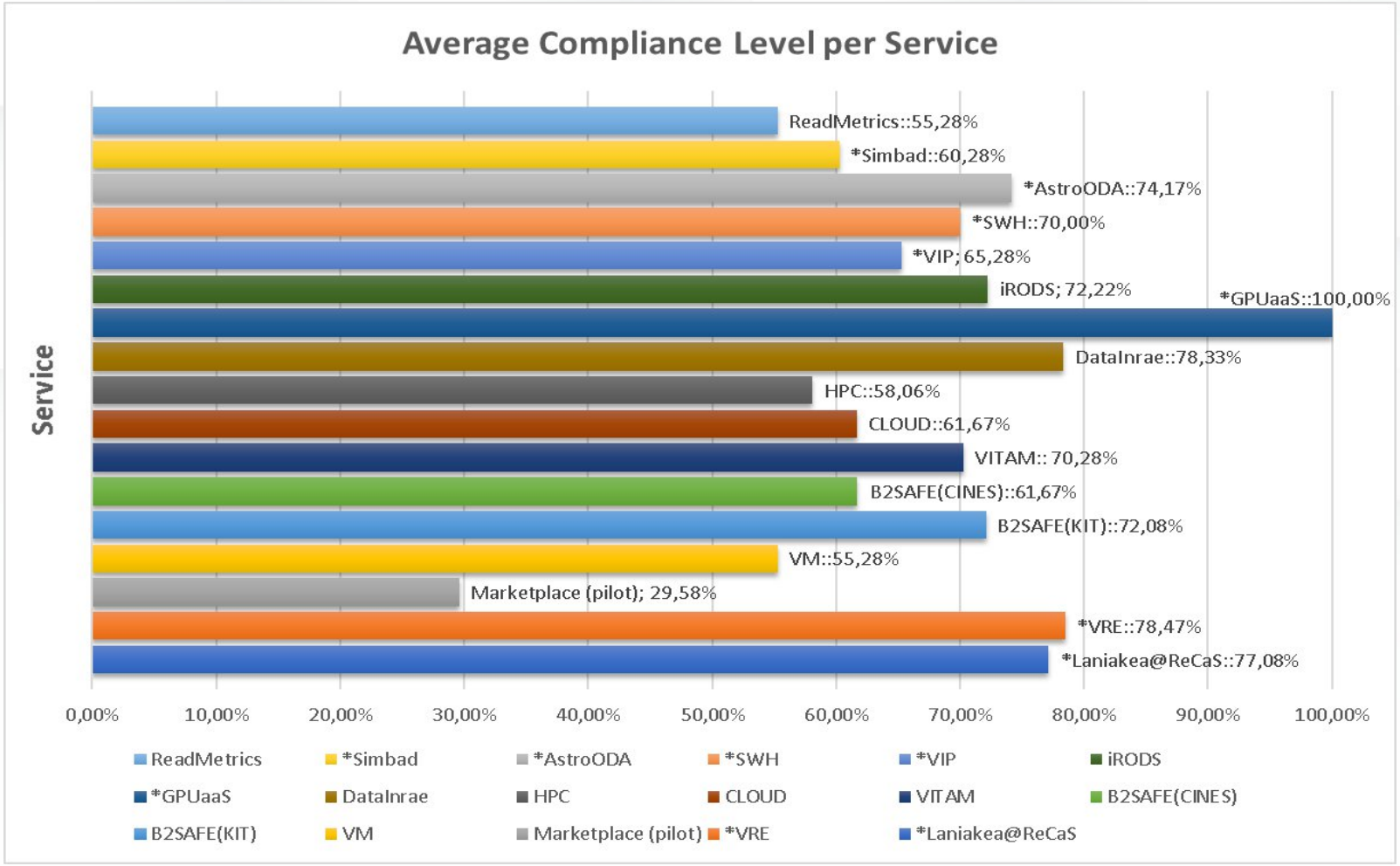
High compliance [>67%]

Medium compliance [>=33% and <67%]

Low compliance [<33%]

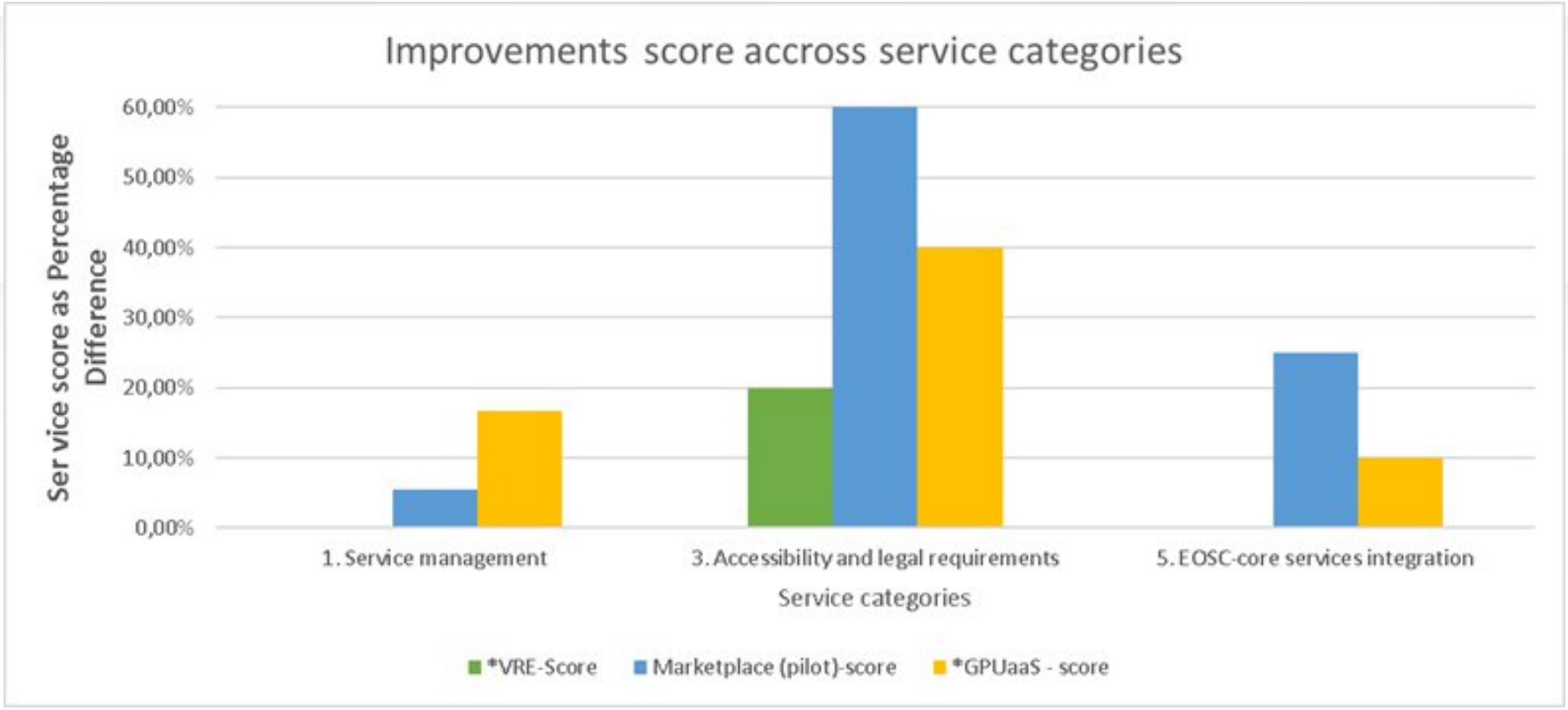
Category Requirements/ Compliance Level	*Lantaka@ReCaS	*VRE	Marketplace (pilot)	VM	B2SAFE(KIT)	B2SAFE(CINES)	VITAM	CLOUD	HPC	DataInrae	*GPUaaS	IRODS	*VIP	*SWH	*AstroODA	*Simbad	ReadMetrics	Aggregate
1. Service management	83,33%	88,89%	33,33%	61,11%	83,33%	66,67%	61,11%	66,67%	72,22%	83,33%	100,00%	88,89%	61,11%	66,67%	100,00%	61,11%	61,11%	72,88%
3. Accessibility and legal requirements	100,00%	100,00%	60,00%	60,00%	80,00%	80,00%	100,00%	80,00%	60,00%	80,00%	100,00%	100,00%	100,00%	80,00%	80,00%	80,00%	60,00%	82,35%
4. Sustainability	100,00%	100,00%	0,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	94,12%
5. EOSC-core services integration	25,00%	25,00%	25,00%	0,00%	25,00%	0,00%	20,00%	0,00%	0,00%	50,00%	100,00%	0,00%	0,00%	33,33%	16,67%	0,00%	0,00%	18,82%
Service aggregation	77,08%	78,47%	29,58%	55,28%	72,08%	61,67%	70,28%	61,67%	58,06%	78,33%	100,00%	72,22%	65,28%	70,00%	74,17%	60,28%	55,28%	67,04%

Average Compliance Level per Service



Score improvements

* Some improvements score across service categories after second run



Overview

2 Supporting use case implementation by utilizing available EOSC-Pillar resources/services

Requirements analysis-Demonstrator#6 example

Demonstrator #6 - Exploring reference Data through existing computing services for the bioinformatics

List of Community Pilots Requirements

Sub use-cases#	Title	Description	Dependency on other resource/services	Status	Demonstrator#	User stories	User story #
[..]	[..]	[..]	[..]	[..]	[..]	[..]	[..]
SUC5	Allow access to reference data (available in data repositories) from different Galaxy deployments	Allow access to reference data (available in data repositories) from different Galaxy deployments	Laniakea@ReCAS authN and authZ mechanisms, IFB Galaxy	Done	#6	As a data provider (health data) I would like to be sure the data I'm taking care of are both properly secured and yet accessible to various computational tools so that they can be useful to researchers	US3
SUC6	Provide coherency between different existing Galaxy deployments	Facilitate the deployment of Galaxy instances close to the data	Laniakea@ReCAS, IFB Galaxy, Public DBs	Done	#6	As a developer, I would like to be able to deploy Galaxy on different Cloud infrastructures across Europe transparently in order to implement and make available new tools and workflows very quickly on the different data spaces available to me.	US4
[..]	[..]	[..]	[..]	[..]	[..]	[..]	[..]

List of Derived Technical Requirements

Technical Requirement ID	Description	EOSC Pillar resource/service utilization	Sub use cases#	Gap	Status	Priority
[..]	[..]	[..]	[..]	[..]	[..]	[..]
RQ2	Integrate a dedicated openstack tenant close to the data available at Laniakea@ReCAS resources	Laniakea@ReCAS	SUC6	No	Done	High
RQ4	Implement/test connection to the API as inputs for Galaxy	Laniakea@ReCAS	SUC5, SUC6	No	Done	Normal
[..]	[..]	[..]	[..]	[..]	[..]	[..]

Matrix of service requests from WP6 use cases

Resource/Service	Provider	Category	In EOSC-catalog?	Status	UC#1	UC#2	UC#3	UC#4	UC#5	UC#6	UC#7	UC#8	UC#9	UC#covid-19
Laniakea/Galaxy	INFN	Ready-to-use (7.4)	Yes	Production						X				
GPU Container	CNRS	Ready-to-use (7.4)	Yes	Production			X		X					
D4Science VRE	CNR (D4Science	Ready-to-use (7.4)	Yes	Production	X	X	X			X				X
D4Science Catalogue by VRE	CNR (D4Science	Ready-to-use (7.4)	Yes	Production	X	X	X			X				X
Federated FAIR Data Space (F2DS)	CINES	New service		in development	X	X	X							
PICO2	INRAE	Ready-to-use (7.4)		in development			X							
Marketplace	IWM	Ready-to-use (7.4)		Production			X			X				
CMIP5/CMIP6 datasets	DKRZ	In kind		Production	X	X								
data.inrae.fr	INRAE	In kind		Production			X			X				
Sotfware heritage archive	INRIA	In kind	Yes	Production		X								
Storage/computing resources	INFN	In kind		Production						X			X	
	KIT	In kind		Production										
	CNRS	In kind		Production					X					
	IFREMER	In kind		Production										
	CINECA	In kind		Production										
	CINES	In kind		Production										
	CNR (D4Science	In kind		Production		X	X							X
Cloud resources	GARR	In kind		Production										
	CNRS	In kind		Production					X	X				
	CINECA	In kind		Production										
	IWM	In kind		Production			X							
Phaidra	UNiVIE	In kind		Production										
LMS-online training platform	Trust-IT	In kind		Production										
data.ifremer.fr	IFREMER	In kind		Production										
www.odatis-ocean.fr	IFREMER	In kind		Production		X								
www.seadatanet.org	IFREMER	In kind		Production										
Datasets/metadata/ontologies	IWM	In kind		Production										
Business decision support system	IWM	In kind		Production										
Vitam	CINES	In kind		Production			X	X						
B2Safe(iRODS)	KIT	In kind		Production							X			
	CINECA	In kind		Production										
	CINES	In kind		Production			X							
FG iRODS	CNRS	In kind		Production			X		X					
IFB cloud Galaxy	CNRS	*To be onboarded*		Production						X				
VIP	CNRS	In kind	Yes	Production										X

Overview

3 Support on integration with EOSC-core services

Support on integration with EOSC-core services

* A dedicated AAI instance, called Indigo-IAM for the EOSC-Pillar project has been deployed. The Pillar IAM instance has been registered in EduGAIN , and provides a registration service that implements user onboarding to the EOSC-Pillar organization.
* Two from the ready-to-use services had been already interfaced their service with one EOSC-core federated AAI:
  * D4Science VRE/VLab
  * GPUaaS
* The following services that have already integrated or started the connection with Indigo-IAM are listed below:

FG-iRODS	Laniakea-Galaxy	Pico2	Software Heritage as a source-code preservation repository	Material Modelling Marketplace	F2DS (Federated Fair Data Space)
▪ https://metalnx.fedcloud.fr ▪ is a data management service called FG-iRODS. ▪ It is based on the iRODS software.	▪ https://laniakea-dashboard.cloud.ba.infn.it ▪ is a software framework that facilitates the provisioning of on-demand Galaxy instances as a cloud service over e-infrastructures.	▪ PICO2 (Pilot for Connecting Computing Centres) was an initiative aiming at facilitating data and code flows between HPC and HTC infrastructures at regional, national and European level	▪ Software Heritage Archive/ https://www.softwareheritage.org ▪ is a universal software archive that collects and preserves software in source code form	▪ https://www.materials-marketplace.eu ▪ Marketplace is a platform for collaboration and online materials modelling laboratories	▪ https://f2ds.eosc-pillar.eu/app/ ▪ a meta-data repository as a prototype of the project

Outcomes from the support of the onboarding task

* The following services were supported to be onboarded to EOSC catalogue/marketplace during Pillar:

SW Heritage	Laniakea-Galaxy	MMODA	EMM	Simbad	GPUaaS
▪ Software Heritage Archive/ https://www.softwareheritage.orgg ▪ is a universal software archive that collects and preserves software in source code form	▪ https://laniakea-dashboard.cloud.ba.infn.itt ▪ is a software framework that facilitates the provisioning of on-demand Galaxy instances as a cloud service over e-infrastructures.	▪ https://www.astro.unige.ch/mmoda/ ▪ web-based astrophysical analysis	▪ http://registry.ethmigsurveydatahub.eu/ ▪ Ethnic and Migrant Minorities' (EMM) Survey Registry	▪ http://simbad.u-strasbg.fr/simbad/ ▪ astronomical database provides basic data, cross-identifications, bibliography and measurements for astronomical objects outside the solar system.	▪ https://sbghorizon.in2p3.fr/dashboard/auth/login/?next=/dashboard/ ▪ A container-based service has been recently added to meet user's needs and to face new challenges of scientific research. It permits to instantiate Kubernetes clusters, with the possibility to use GPUs

Conclusions

* Enhanced the EOSC portfolio with the new EOSC-Pillar services
* Raised service providers' awareness in advance of EOSC validation requirements during the onboarding process through the checklist template
* Existing services should stay aligned with latest developments in related software
* Reliability and sustainability of a service offering should be transparent
* Once service reaches the highest degree of compliance, the focus should turn to enhancing delivery throughout additional European countries:
    * Prepare SLAs
    * Translate relevant documentations in English language if not exist already

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Thank you!

* Contact us @ wp7@lists.eosc-pillar.eu

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