D4.3 Periodical assessment of Platform services

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Deliverable Abstract
The report provides an assessment and statistics of all the Platform services provided under virtual access in WP4.

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Executive summary

This report provides an assessment at M15 of the WP4 installations provided by the EGI-ACE project under the Virtual Access (VA) mechanism. These installations represent the Platform-as-a-Service (PaaS) layer in the project service catalogue. This assessment is based on the metrics collected by the five WP4 installations during the first period of observations, covering Month 1-15 in three rounds of data collection: M01-M05, M06-M10 and M11-M15.

During the first fifteen months of activity, the EOSC Compute Platform was extended with new installations previously not available in the EGI portfolio: CSIC DEEP training facility, LIP DEEP training facility (2 installations supporting the same service) and DODAS. The EGI Notebooks and Workload Manager services in the EGI portfolio were supported by the EGI Notebooks and EGI DIRAC installations respectively. All the installations have gone through operations and maintenance tasks and installation of release upgrades following requirements from user communities. All installations are on-boarded in the EOSC Marketplace and have been progressively integrated with the EGI central services.

WP4 services have been used by 22 user communities. These 22 user communities represent 1,011 individual users in total. These users are the 'expert users' from the user communities and interact with the PaaS services to deploy and operate community specific platforms, Thematic services on top of them. The user communities in EGI-ACE are mapped into Virtual Organisations (VOs) and normally named following a domain-like schema (e.g. vo.reliance-project.eu supports the Reliance Project user community). In particular:

- EGI Notebooks have been used by 273 users (245% growth over baseline in previous 15 months) belonging to the vo.notebook.egi.eu and the vo.access.egi.eu communities, open to individual users, and to four discipline/project specific communities: biomed, auger, eiscat_3d and vo.reliance-project.eu.
- EGI DIRAC has been used by 18 different communities (106% growth over baseline in previous 15 months), with 2 new communities incorporated during the project. DIRAC has supported 735 users belonging to these communities (118% over baseline).
- The CSIC DEEP training facility has received usage from one of the use cases from the 4th Open Call[1] communities. For the LIP DEEP training facility, there are initial discussions with one use from the last Open Call to start its support.
- DODAS was used by one community: fermi-lat.infn.it with a total of 3 users (8% over baseline).

The installations have been promoted via the Webinar programme organised by the project and dedicated presentations at different workshops and conferences like the Virtual DIRAC Users' workshop and the EGI Conferences. Further promotion is planned during the 2nd period, for example, at the EGI Conference in September 2022, a flagship event, will be organised to increase the update by user communities. Promotion will focus on the

[1]EGI-ACE Open Call offers user communities a way to request access to infrastructure and platform services, dedicated user support and training. More details are available at the Open Call website https://www.egi.eu/projects/egi-ace/call-for-use-cases/

installations that are below the expected level of usage: CSIC DEEP training facility, LIP DEEP training facility and DODAS.

Section 4 finally describes the level of satisfaction by checking the orders received via the EOSC portal and the EGI Customer satisfaction reviews, which showed an average level of 5 out of 5 during the reference period.

1 Introduction

Virtual Access (VA) is financial instruments to reimburse the access provisioning costs to access providers. This instrument is provided by the European Commission to increase the sharing of research infrastructures and services that otherwise would not be available to international user groups.

In VA, the services – also called “installations” – must be made available ‘free of charge at the point of use’ for European or International researchers. VA access is open and free access to services through communication networks to resources needed for research, without selecting the researchers to whom access is provided.

Virtual Access to services of the EGI-ACE catalogue applies to the following four categories:

1. Infrastructure Services WP3 - the Cloud Compute (IaaS) and High Throughput Compute services of the EGI portfolio supported by a set of 16 datacentres from the EGI Federation. The enabling components that support the Cloud Compute service: AppDB, for resource discovery and software catalogue; Dynamic DNS, for user-managed DNS provision of domain names for VMs and services running on the e-Infrastructure; and Infrastructure Manager (IM) for the basic orchestration of IaaS resources.
2. Platform Services WP4 - mature software tools offering generic capabilities to facilitate the usage of the underlying infrastructure for EOSC users and Data Spaces.
3. Federated data spaces WP5 - services provided by major European research collaborations, research infrastructures and research institutes, and are composed of mature software tools, datasets and services that offer science discipline specific processing and data analysis capabilities for EOSC users.
4. Federated Access Services WP6 – services providing secure access to other services and enabling large-data analysis workloads in the distributed infrastructure. Included services are delivered by major European research institutions using mature open-source software with already established user communities from multiple scientific disciplines.

This document provides Virtual Access metrics and assessment for WP4.

1.1 Installations

There are 5 service installations under VA in EGI-ACE WP4. The following of these 5 installations have been subject to change since the beginning of the project:

- DODAS target metrics were updated to consider the new operational model of the installation: In order to provide a higher level of flexibility, DODAS enabled the possibility to update the number of components and their configuration supporting a given use case from the upper layers of the service architecture (the one closest to users). This, in turn allows for the dynamic adjustment of the computing and storage resources managed by DODAS without re-deployment, when in the past any modification would imply a recreation of the cluster. With the current model, when a user community decides to add features to an existing deployment, e.g. deploy a cache close to a on-demand batch, it does not need any more to re-deploy everything

from scratch, but it can compose the system on the existing deployment. As such the expected number of deployments has been reduced from 900 to 100. These changes will be formalised in a future project amendment.

- WP4 services have been integrated with the EGI-ACE Key Exploitable Result 2 (Services enabling federated computing in EOSC): Table 1 summarises the integration of the WP4 services with KER2. EGI Notebooks and EGI - DIRAC installations were part of the EGI portfolio as the Notebooks and EGI Workload Manager services respectively and as such were already integrated with most of the EGI core services. Initial integration with accounting for notebooks is available, but a more refined and accurate version is expected in Q3 2022. Check-in integration for the Workload Manager depends on the transition from X.509 certificates to token-based authentication in the EGI High Throughput Computing service, which is expected to be completed during 2022. Pilot activities have started to ensure the activity can be completed once the infrastructure changes the way users are authenticated. DODAS have progressively completed the technical integration during the course of the project and DEEP installations are still progressing with the integration of monitoring and helpdesk. These activities are foreseen to be completed during Q3 2022.

Table 1 - WP4 integration matrix with EGI core services

Installation	Check-in	Helpdesk	Monitoring	GOCDB	Accounting
EGI Notebooks	pre EGI-ACE	pre EGI-ACE	pre EGI-ACE	pre EGI-ACE	ONGOING
EGI - DIRAC	ONGOING	pre EGI-ACE	pre EGI-ACE	pre EGI-ACE	n/a
CSIC DEEP training facility	DONE	ONGOING	ONGOING	DONE	n/a
LIP DEEP training facility	DONE	ONGOING	ONGOING	DONE	n/a
DODAS	DONE	DONE	DONE	DONE	n/a

1.2 Communities

Table 2 summarises the usage of the WP4 installation by the EGI communities (both existing and new communities).

Table 2 - Communities integration matrix with EGI-ACE WP4 installations.

***Community type*[2]**	***Community***	EGI Notebooks	EGI - DIRAC	CSIC DEEP training facility	LIP DEEP training facility	DODAS
WP5	VIP	X	X			
	WeNMR		X			
	LOFAR		X			
LToS	vo.access.egi.eu	X			X	
	vo.notebooks.egi.eu	X	X		X	
	fedcloud.egi.eu		X			
	training.egi.eu		X			
Open Call	vo.reliance-project.eu	X				
	EMPHASIS			X		
	FERMI-LAT					X
WP2	EISCAT_3D	X	X			
	auger	X	X			
Existing	km3net.org		X			
	lsst		X			
	virgo		X			
	vo.grand-est.fr		X			
	vo.hess-experiment.eu		X			
	beapps		X			
	vo.complex-systems.eu		X			

1.3 Metrics definitions

For each installation several metrics has been defined between the provider and WP4 leader, considering following categories:

- **Number of users** – depending on the nature of installation, number could be defined based on accounts (if registration was required) or number of unique IPs (if registration is not needed to benefit of the service)
- **Usage** – the goal of this metric is to report how much the service is used. This metric depended on functionality provided by the service.
- **Number and names of the countries reached** – the goal of this metric was to report how broadly the service is used and how the geographical coverage is changing with time.
- **Marketplace orders** – the goal of this metrics is to provide information about how often the service is being ordered via EOSC Marketplace
    - This metric is not applicable to federation services due to the nature of the service. Federation services are enabling federation and are supporting delivery of customer facing services. Thus, cannot be ordered.

[2] WP5 - Thematic Service in WP5; Open Call - Approached EGI-ACE via the Open Call; WP2 - Early Adopter in WP2; LTOS - Long tail of science community from EOSC Portal or similar channels; Existing - Communities that existed in the service and are generating new usage as part of EGI-ACE.

2 Installations

2.1 EGI Notebooks

Description	Notebooks is a browser-based tool for interactive analysis of data using EGI storage and compute services. Notebooks is based on the JupyterHub technology.
Task	4.1
URL	
Service Category	Platform Service
Service Catalogue	https://www.egi.eu/services/notebooks/
Location	Czech Republic
Duration	M1-M30
Modality of access	All the elements of the service are free at the point of use. Valid EGI user registered in Check-in is needed. There are 2 modes: notebooks for researchers available for users upon registration, and notebooks for communities with access controlled via the marketplace.
Support offered	Technical support is provided via the helpdesk central support team, and by the individual service providers. EGI Outreach activities also include webinars, training, and hands-on sessions during conferences and events.

Operational since	Nov 2019
User definition	single researchers and communities

2.1.1 Metrics

Metric name	Baseline	Define how measurement is done	Period 1 M1-M5	Period 2 M6-M10	Period 3 M11-M15
No of users accessing	90	Internal service database	73	86	117
No of notebook sessions/month	100	Internal logs	66	104	106
No of countries reach	19	Check-in	21	31	29
Names of countries reach	UK, FR, ES, BE, NO, HR, NL, HU, SE, DE, PL, ZA, TW, AT, CH, IT, GR, TR, US	Check-in	Algeria,Croatia,Czechia,Denmark,Estonia,Finland,France,Germany,Greece,Indonesia,Italy,Netherlands, North Macedonia,Poland,Singapore,Slovakia,Spain,Sweden,Switzerland,United Kingdom, United State	Algeria, Austria, Belgium, Brazil, Canada, China, Croatia, Cyprus, Czechia, Finland, France, Germany, Greece, Hungary, Indonesia, Ireland, Italy, Japan,	Austria, Belgium, China, Croatia, Czechia, Denmark, DR Congo, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Italy, Netherlands, Norway, Poland, Portugal, Russia, Singapore, Spain, Sri Lanka, Sweden, Tunisia, Turkey, United Kingdom, United States, Vietnam

				Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, United Kingdom, United States, Vietnam	

2.1.2 Assessment

The EGI Notebooks service, hosted at CESNET (CZ), has seen an increase of usage in all the periods considered in this report. This installation serves mostly individual users that belong to the vo.access.egi.eu and vo.notebooks.egi.eu Virtual Organization (VO)s. Additional VOs have been enabled to access the service: biomed, auger, eiscat_3d and vo.reliance-project.eu. During the period all the metrics have seen an increase with the number of users growing 245% over baseline.

Alongside the existing Notebooks, a Binder instance[3] was introduced in the installation. This service allows for replicating previous research with reproducible environments and it's currently being validated by communities before introducing it into the EOSC Portal.

The service was already onboarded in the EOSC Portal[4] at the start of the project. During 2021, the installation was migrated from INFN-CATANIA provider to CESNET with new hardware and updated underlying kubernetes. The service improved its integration with EGI Check-in for better control of the authorised users and it was integrated with the EGI DataHub to offer users seamless access to data. Regular updates of the user environments, including the support for MATLAB, was also performed during this period.

[3] https://binder.notebooks.egi.eu/
[4] https://marketplace.eosc-portal.eu/services/egi-notebooks

2.2 EGI – DIRAC

Description	EGI Workload Manager
Task	4.2
URL	
Service Category	Platform Service
Service Catalogue	https://www.egi.eu/services/workload-manager/
Location	CC-IN2P3/Lyon
Duration	M1-M30
Modality of access	Access for registered EGI users
Support offered	Full user support including documentation and training. Support is offered via the EGI Helpdesk.
Operational since	2014
User definition	All sizes user communities from large HEP communities to multidisciplinary and long tail communities.

2.2.1 Metrics

Metric name	Baseline	Define how measurement is done	Period 1 M1-M5	Period 2 M6-M10	Period 3 M11-M15
No of groups or experiments	17	Internal provider configuration	16	16	18
No of registered users	500	Internal provider database/logs	737	740	735
No of execute jobs	10,000,000	Accounting	4,000,000	5,000,000	4,500,000
No of countries where jobs executed	12	Accounting	12	12	12
Name of countries where jobs executed	NL, IT, PL, DE, US, BE, FR, CN, PT, ES, SK, UK, GR	Accounting	NL,FR,BE,DE,IT,PT,ES,US,PL,CZ,RO,UK	NL,FR,BE,DE,IT,PT,ES,US,PL,CZ,RO,UK	NL,FR,BE,DE,IT,PT,ES,US,PL,CZ,RO,UK

2.2.2 Assessment

The EGI - DIRAC installation supports the EGI Workload Manager service to manage and distribute computing tasks in an efficient way in the distributed EGI infrastructure. During EGI-ACE, the service was consolidated into a single provider (CC-IN2P3) that took over the responsibility of operating the service for the project, involving DIRAC experts and developers in the support and maintenance of the service. The service is published in the EOSC Marketplace[5].

During the M1-M15 period, the installation has increased the number of groups of experiments supported up to 18 (106% increase over baseline before the project), starting from 16 communities. The Virtual Organisations supported at M15 are; auger, biomed, fedcloud.egi.eu, enmr.eu, lofar, km3net.org, lsst, opencoast.eosc-hub.eu, training.egi.eu, virgo, eiscat.se, vo.access.egi.eu, vo.grand-

[5] https://marketplace.eosc-portal.eu/services/egi-workload-manager

est.fr, vo.hess-experiment.eu, beapps and vo.complex-systems.eu. These VOs support a total number of 735 users (118% over baseline) who executed a total of 12.7 Million jobs in 12 different countries.

The service has started its integration with the EGI Check-in for Authentication and Authorization of users, and it is already capable of using Check-in in the web portal interface. The integration will be completed as the underlying compute resources of the EGI High Throughput Compute service transitions from X.509 certificates to token-based authentication supported by Check-in. DIRAC is actively participating in the transition campaign for this service.

The service has been presented in several workshops and a webinar will be planned for the upcoming period to further promote the installation and engage with new communities.

2.3 CSIC DEEP training facility

Description	Distributed training facility for Machine Learning, Artificial Intelligence and Deep Learning models hosted at CSIC. This service offers a set of tools to build and train Machine Learning, Artificial Intelligence and Deep Learning models in distributed e-Infrastructures. Ready to use models are available for transfer learning or reuse.
Task	4.3
URL	
Service Category	Platform Service
Service Catalogue	
Location	CSIC, ES
Duration	M1-M30

Modality of access	Free at point-of-use. Additional terms: https://confluence.deep-hybrid-datacloud.eu/display/DS/Terms+of+Use
Support offered	Support is offered via the EGI Helpdesk. Detailed documentation about service, APIs, user guides, tutorials, etc. available.
Operational since	Jan 2018
User definition	Single researchers, small and big communities

2.3.1 Metrics

Metric name	Baseline	Define how measurement is done	Period 1 M1-M5	Period 2 M6-M10	Period 3 M11-M15
No of users communities	17	Internal provider configuration	0	0	1
ML training cycles in CPU/GPU hours	350,000	Accounting	0	0	4,128
No of countries reach	6	Check-in	0	0	1
Names of countries reach	US, SP, PT, DE, FR, UK	Check-in	N/A	0	France

2.3.2 Assessment

The CSIC DEEP training facility is a new service added to the EGI ecosystem as part of EGI-ACE. During the initial months of the project, it has integrated with EGI Check-in and EGI Configuration Database (GOCDB) and its operators are currently performing integration with the Helpdesk and Monitoring. This installation is registered in the EOSC Marketplace within a single entry[6] that also covers installation described in section 2.4.

The service was promoted in a dedicated webinar (see section 3 - Dissemination), triggering the interest from the EMPHASIS community from the 4th Open Call for use cases of the project. This community has consumed 4,128 CPU/GPU hours over M11 to M15 with users coming from France. Further dissemination activities will be performed during the next period to increase the uptake of the service and reach the target planned for this installation. We kickstart this with an email campaign targeting AI/ML projects in the EC H2020 / HE programme.

2.4 LIP DEEP training facility

Description	Distributed training facility for Machine Learning, Artificial Intelligence and Deep Learning models hosted at LIP. This service offers a set of tools to build and train Machine Learning, Artificial Intelligence and Deep Learning models in distributed e- Infrastructures. Ready to use models are available for transfer learning or reuse.
Task	4.3
URL	
Service Category	Platform Service
Service Catalogue	

[6] https://marketplace.eosc-portal.eu/services/deepaas-training-facility

Location	LIP, PT
Duration	M1-M30
Modality of access	Free at point-of-use. Additional terms: https://confluence.deep-hybrid-datacloud.eu/display/DS/Terms+of+Use
Support offered	Support is offered via the EGI Helpdesk. Detailed documentation about service, APIs, user guides, tutorials, etc. available.
Operational since	Jan 2018
User definition	Single researchers, small and big communities

2.4.1 Metrics

Metric name	Baseline	Define how measurement is done	Period 1 M1-M5	Period 2 M6-M10	Period 3 M11-M15
No of users communities	17	Internal provider configuration	0	0	0
ML training cycles in CPU/GPU hours	290,000	TBD	0	0	0
No of countries reach	6	Check-in	0	0	0
Names of countries reach	US, SP, PT, DE, FR, UK	Check-in	-	-	-

2.4.2 Assessment

The LIP DEEP training facility complements the CSIC DEEP training facility offering the same type of service at a different location. Technical integration is identical, and the installation is part of the same entry in the EOSC Marketplace. Currently there is ongoing discussion with one of the use cases from the last Open Call of the project to support it within this installation.

2.5 DODAS

Description	DODAS allows to instantiate on-demand complex infrastructures over any cloud with almost zero effort and with very limited knowledge of the underlying technical details. In particular, DODAS provides the end user with all the support to deploy from scratch a variety of solutions dedicated (but not limited) to scientific data analysis. DODAS provides two principal baselines ready to be used and to be possibly extended and customised - HTCondor batch system, possibly federated, and integrated with caching mechanism - Spark+Jupyter cluster for interactive and big-data analysis with persistent storage solutions.
Task	4.4
URL	
Service Category	Platform Service
Service Catalogue	
Location	INFN-CNAF e INFN-Bari
Duration	M1-M30

Modality of access	Free at the point of use
Support offered	Support is offered vie the EGI Helpdesk. Reference for tutorial https://dodas-ts.github.io/HandsOn-INFN-2019/, General Documentation: https://dodas-ts.github.io/dodas-doc
Operational since	Jan 2018
User definition	Researcher, Small communities, big communities and resources providers

2.5.1 Metrics

Metric name	Baseline	Define how measurement is done	Period 1 M1-M5	Period 2 M6-M10	Period 3 M11-M15
No of users using clusters	30	Internal logs	0	2	3
CPU/hours	1,800,000	Accounting	0	2,294.8	464,379
No of clusters deployments	10	Internal logs	0	5	31
No of visits	90	Internal logs	0	10	35

2.5.2 Assessment

DODAS is one of the new services brought to EGI with the start of the EGI-ACE project. The service was already registered in the EOSC Marketplace[7] and during this first period of the project was integrated with the EGI core services. Currently DODAS is fully integrated with Check-in, Helpdesk, Configuration Database and ARGO Monitoring. Integration with accounting for DODAS will be achieved once accounting integration of the PaaS Orchestrator and IM (installations of WP6 and WP3 respectively, that are used internally by DODAS to interact with the resources) is completed. DODAS also has a new section on the EGI documentation portal that introduces the service for EGI users[8].

During this period DODAS has been requested by the FERMI-LAT user community that applied to the 3rd Open Call for use cases of EGI-ACE. This community has consumed 466,674 CPU hours over the reporting period and have triggered the deployment of 31 clusters for running their analytics. A new caching layer for reducing data transfers was added as a new feature to the service to better support this use case. These metrics are below the expected target and more dissemination activities will be performed during the second half of the project to increase the uptake of the service among user communities. So far, the service has been promoted through a webinar (see section 3 - Dissemination). We start the second period with an email campaign targeting 'big data' project in the EC H2020 / HE programme.

Direct contact with potential new communities for the service (mainly from ESCAPE) will also be performed for assigning new use cases. Additionally, the existing use cases of the project will be re-assessed for potential assignment of DODAS as a service to facilitate their interaction with the underlying infrastructure.

[7] https://marketplace.eosc-portal.eu/services/dynamic-on-demand-analysis-service-dodas-portal
[8] https://docs.egi.eu/users/compute/orchestration/dodas/

3. Dissemination

In this section we report the list of events in the context of EGI-ACE that WP4 partners contributed to this period, some of them also mentioned previously, reporting the number of attendees to measure the possible user interests .

Table 3 - Dissemination activities related to WP4 installations

Type of Activity	Title	Date	Name of Event	Location	Type of Audience	Reach	Scale
Presentation	Infrastructure services: Highlights from the compute, data, security areas	2021/02/05	EGI-ACE public launch event	Online	Scientific Community, General Public	250	worldwide
Workshop	EGI-ACE Communities Workshop	2021/02/16	EGI-ACE Communities Workshop	Online	Scientific Community, General Public	150 people	worldwide
Presentation	EGI and FG DIRAC services Development in EGI-ACE project	2021/05/11	Virtual DIRAC Users' workshop	Online	Developers, service admins, users	55	Worldwide
Webinar	Access and analyze data from the EGI DataHub with Jupyter	2021/05/12	EGI Webinar 2021	Online	Scientific communities, and programmers who support	Num. of Participants: 27 Num. of Countries: 10	worldwide

	notebooks and MATLAB				research and education.		
Webinar	Analyze your data using DODAS generated cluster	2021/09/22	EGI Webinar 2021	Online	Scientific communities, developers, integrators and end users	Num. of Participants: 11 Num. of Countries: 8	worldwide
Presentation	Delivering Services and Solutions - Workshop (EGI Workload Manager Service)	2021/10/21	EGI Conference 2021	Online	IT providers, Research Community reps.	40 People	Global (mostly European)
Webinar	How to train your AI model in EOSC	2021/12/01	EGI Webinar 2021	Online	User communities want to use GPUs in Clouds.	Num. of Participants: 32 Num. of Countries: 9	worldwide
Presentation	Les services DIRAC au CC-IN2P3 (Dirac services at CC-IN2P3)	2021/12/15	JCAD2021	Online	IT providers, Research Community reps.	~100 people	European (mostly French)

4. Satisfaction

In this chapter we report the satisfaction on the WP4 installations are reported by EGI Customer interviews and the number of orders coming from the EOSC Marketplace.

4.1 EGI Customer satisfaction reviews

EGI regularly interviews Communities using the services with an active SLA, in order to measure the satisfaction and discuss possible issues. The level of satisfaction is measured from 1 (min) to 5 (max). For what concerns the first period of the EGI-ACE project the communities using EGI-ACE WP4 services interviewed are reported in table 4.

Table 4 - Communities interviewed during the first 15 months of EGI-ACE project

Community	**WP4 installations used**	**Level of satisfactions and comments**	**Issues/feature requests reported with WP4 installations**
WeNMR	EGI - DIRAC	5. Very satisfied Nothing to report since the last review. Things are going smoothly over the year.	Move from X.509 certificates to token-based authentication HPC integration (via DIRAC)
BioMed (VIP)	EGI - DIRAC	5. Very satisfied People are active and helpful but space for improvements	For service and delivery, making progress of DIRAC to transparently use GRID and Cloud, still small problems but the first prototype working.
EISCAT_3D	EGI Notebooks EGI - DIRAC	5 Very satisfied DIRAC is not fully working, still under development. Notebook is not configured	Notebooks integration can be done soon DIRAC developments are needed but it seems lack of developers
STARS4ALL	EGI Notebooks	5: Very satisfied Services are providing the expected features and quality, no need for improvement	n/a

4.2 EOSC Marketplace orders

For the services that have been registered on the EOSC Marketplace, we report here the statistics of the orders during the first 15 months of the project.

Table 5: Number of Orders from the EOSC Marketplace related to WP4 installations

EOSC Marketplace Service - WP4 installation(s)	**Number of orders**
EGI Notebooks - EGI Notebooks	20
EGI Workload Manager - EGI DIRAC	0
DEEP training facility - CSIC DEEP training facility & LIP DEEP training facility	7
Dynamic On Demand Analysis Service	1