



**CompBioMed**

A Centre of Excellence in Computational Biomedicine

**Webinar series**

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# **Webinar #8**

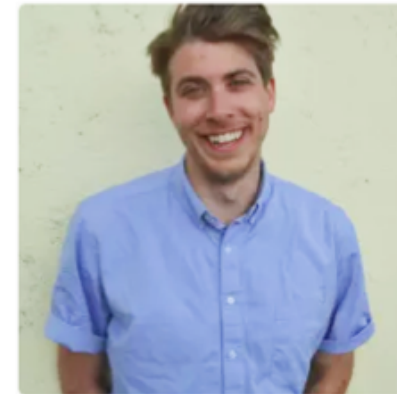
## **The EOSC Digital Innovation Hub: open data services for biomedicine and business**

**28 May 2019**



**Presenter:**  
**Sy Holsinger (EOSC-hub project)**

**Welcome!**



**Moderator:**  
**Ben Czaja (UvA)**



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 675451

In collaboration  
with:





## About Presenter: Sy Holsinger

- Background
  - Studied Business Mgmt. & Communications (U.S.)
  - 10+ years experience in EC projects
- At EGI Foundation
  - Business and sustainability model development
  - Strategy planning; market/trend analysis
  - Industry engagement programme manager
  - Project management
  - In-house ITSM consultant
  - Expert, trainer, auditor (ISO 19011) in:
    - FitSM standard (service management)
    - ISO/IEC 27001 (information security)
  - Co-Chair of ITEMO (IT Education Management Organization)  
FitSM working group



LinkedIn: <https://it.linkedin.com/in/syholsinger>

Twitter: [@syholsinger](https://twitter.com/syholsinger)



# Webinar Content

- **European Open Science Cloud (EOSC) and the EOSC-hub project**
- **Role of SMEs/Industry in European Initiatives**
- **Intro to Digital Innovation Hubs (DIH) and the EOSC DIH**
  - Overview
  - Services
  - Success Stories
- **Conclusions and Opportunities**
- **Q&A**





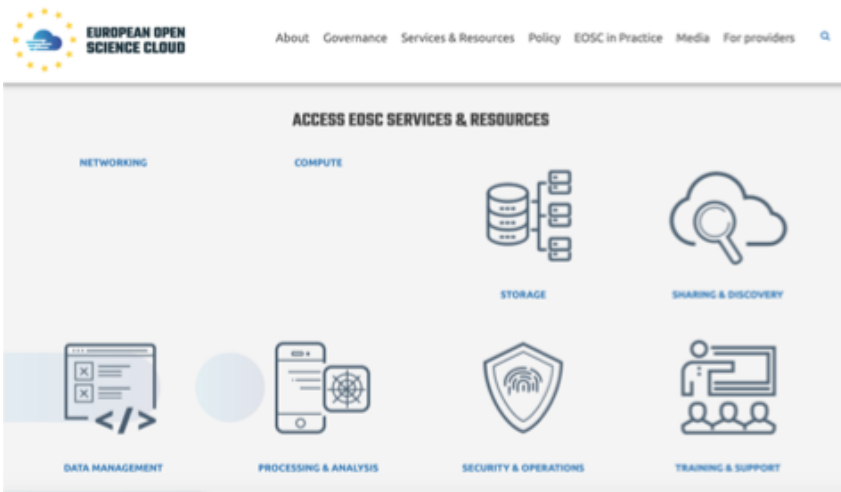
# European Open Science Cloud and EOSC-hub Project

Brief Intro



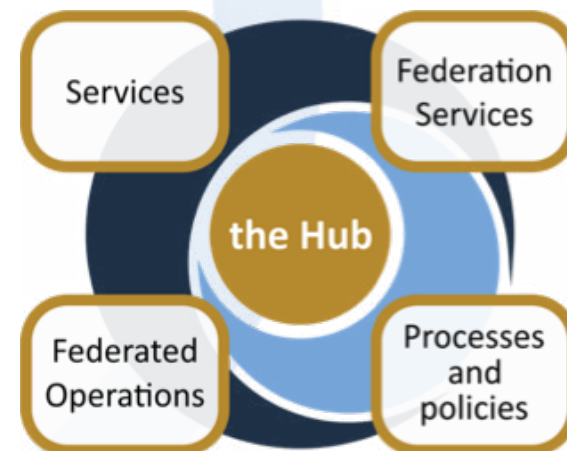
## EOSC = European Open Science Cloud

- EC Initiative for Open Science and Innovation
- Reduce fragmentation of services for research and innovation from decades of individual investments, providing
  - Governance and funding
  - Data culture and FAIR data
  - Services and architecture



## EOSC-hub

- H2020 Project: Integrating and managing services for the European Open Science Cloud
- 100 Partners, 76 beneficiaries (75 funded)
- 3,874 PMs, 108 FTEs
- €33,331,180, funded by:
  - EC: €30,000,000 (call H2020-EINFRA-2016-2017)
  - EGI Foundation Participants: €3,331,180
- 36 months: January 2018 – December 2020







## **SMEs/Industry in European Initiatives**

Digital Single Market and Roles in EOSC





# #DigitalSingleMarket

## DIGITISING EU INDUSTRY







# #DigitalSingleMarket

## DIGITISING EU INDUSTRY

### Digitising European Industry

To facilitate coordination of European, national & regional initiatives such as Industrie 4.0 (DE), Smart Industry (NL) (SK), Industrie du Futur (FR)

#### Mainstreaming digital innovation across all sectors:

Setting up a pan-European network of Digital Innovation Hubs

#### Strengthening leadership in digital technologies

- Public-Private Partnerships
- Industrial platforms
- Large scale pilots & test beds

#### Preparing People for the digital age: Skills & Training

##### Regulatory framework:

- Free flow of data & data ownership
- Safety & liability of autonomous systems & Internet of Things

#### Challenges & opportunities of the Internet of Things

#### CLOUD

##### European Cloud Initiative in a data-driven economy:

- European Open Science Cloud
- European Data Infrastructure
- Widening access & building trust

High Performance Computing

Quantum

#### STANDARDS

##### Fast development in 5 priority areas:

- 5G
- Cloud Computing
- Internet of Things
- Data Technologies
- Cybersecurity

#### DIGITAL PUBLIC SERVICES

##### eGovernment Action Plan:

- New Digital Single Gateway
- eJustice Portal
- "Once-only" principle in Administrations
- Cross-border Health services
- eProcurement & "Once-only" in public procurement

To focus investments  
(Horizon 2020, EU Investment Plan, EU Structural & Investment Funds, national & regional funds, private sector)

**MOBILISING €50bn of public & private investments**

#DigitiseEU  
@DSMeu

DigitalSingleMarket  
bit.ly/DigitiseEU








Created the  
EOSC DIH

EOSC identified as  
a key component



## Some state of play

**EOSC  
Opportunity**

|  |  <b>SMEs</b> |  <b>Large Enterprises</b> |
|--|---|--|
|  <b>E-Commerce</b>                              | 44% purchased online in 2017<br>20% received orders online                                    | 63% purchased online in 2017<br>44% received orders online   |
|  <b>Big Data</b>                                | 3% analyse own big data   | 14% analyse own big data   |
|  <b>Cloud computing</b>                        | 20% use cloud computing services  | 45% use cloud computing services   |
|  <b>Enterprise Resource Planning Software</b> | 33% use ERP software for information sharing  | 76% use ERP software for information sharing   |
|  <b>RFID Technology</b>                       | 12% use Radio Frequency Identification Technologies   | 44% use Radio Frequency Identification Technologies  |

Every year, technology is getting a little bit smarter. That is why, in 2019, the keynote theme will be "Integrated Industry - Industrial Intelligence". This reflects the increasing digitally driven integration of humans and machines in the age of artificial intelligence.

Source: Hannover Messe, 2019

Source: PwC Europe Monitor - Innovation and Digital Transformation: How do European SMEs perform? (October 2018)



## Service Needs

A group of organisations with complementary expertise and a non-profit objective, offering a set of services to companies – especially SMEs (incl. Start-ups) and mid-caps – to support their digital transformation through a one-stop-shop.



\*Andrea Halmos, European Commission, DG CONNECT  
Unit A2, Technologies & Systems for Digitising Industry



# Role of Industry in the EOSC

## Customer

Making use of existing EOSC services



## Provider

Offering services to EOSC



## Partner

Co-development



## Procurement

Participate in the procurement framework







# EC Digital Innovation Hub Initiative

Background and landscape



## What is a Digital Innovation Hub?

An **ecosystem** of start-ups, SMEs, large industries, researchers, accelerators and investors that fosters the creation of partnerships to stimulate **innovation**.



# Digital Innovation hub

A one-stop-shop providing services to companies in the region through a multi-partner cooperation



Access to Specialist Expertise and Infrastructure

Brokering/matchmaking

Awareness Creation around Digital Technologies

Innovation Scouting

Digital Maturity Assessment.

Visioning and Strategy Development for Businesses

Mentoring



# European Landscape of DIHs

Agile, and demand-driven, Digital Innovation Hubs in Europe are sustainable innovation ecosystems, not just a gateway to services.

## Running DIH initiatives



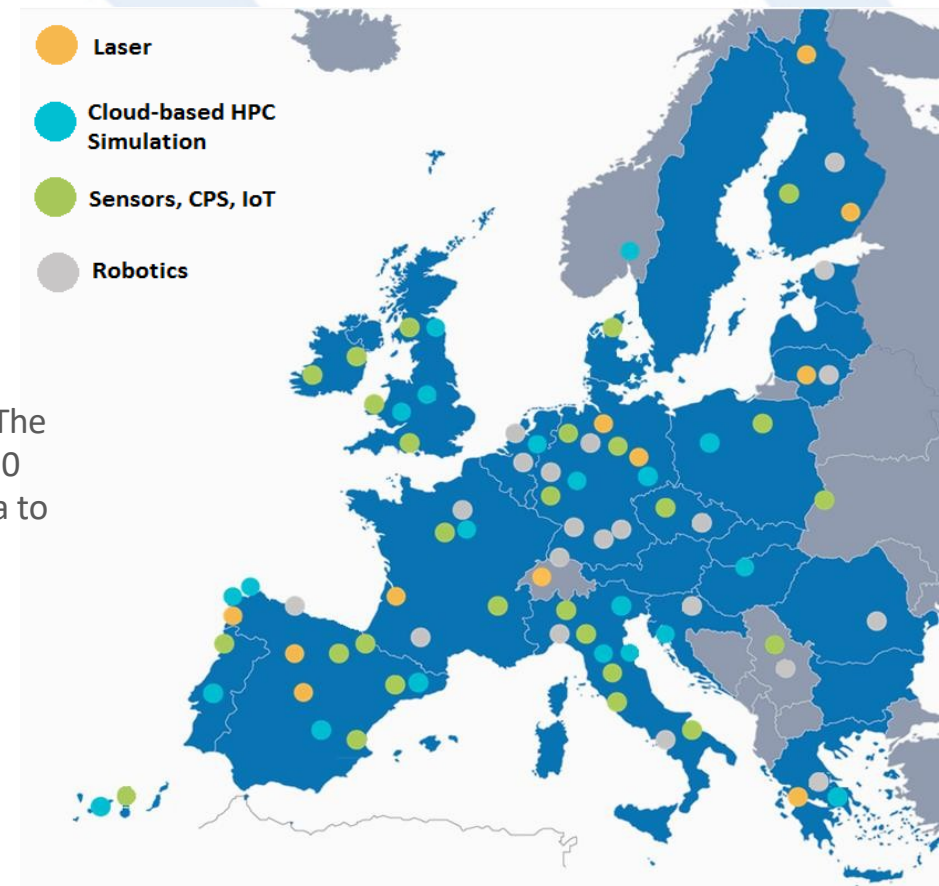
22 innovation hubs all over the European continent, soon expanding worldwide



€110m of funding has been invested in I4MS since 2013; - 11 large projects funded by Fp7 and H2020, 70 competence centres;



**Digital Innovation Hubs in H2020:** The EC is focusing EUR 300M in H2020 (2018-2020) – short time from idea to hands-on experimentation and development.





First version available:

- Fact-sheets with profile, contact data, service examples for regional, national, and EU- supported DIHs
- Map-based search tool by technical competences, market sector, services

<http://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool>

European Commission / Smart Specialisation Platform / Tools / Digital Innovation Hubs

Home S3 Platform Sections **Tools** News Events Knowledge Repository

Digital Innovation Hubs

Search  
Enter any search term

Countries  
None selected

Technical Competences  
None selected

Services Provided  
None selected


Focus on TRL  
None selected

Market sectors  
None selected

**SEARCH**

Contact us in the following email: JRC-S3-DIH@ec.europa.eu

Click on the following link if you want to propose new HUB.



Leaflet | © OpenStreetMap contributors | Disclaimer

Export Hubs to csv

| Hub Name   | Location   | Country | Contact                  | Phone            | Email                 | Website                 |
|--|--|---------|--------------------------|------------------|-----------------------|-------------------------|
| Aalen University / Transfer Platform Industry 4.0          | Beethovenstraße, 1, 73430, Aalen                               | Germany | Prof. Dr. Axel Zimmerman | +49 7361576 6702 | <a href="#">Email</a> | <a href="#">Website</a> |
| Accelerating Photonics innovation for SME's (ACTPHAST 4.0) | Brussels Photonics B-PHOT, Vrije Universiteit, B-1050, Brussel | Belgium | Prof. Hugo Thienpont     | +32 2 791 6852   | <a href="#">Email</a> | <a href="#">Website</a> |
| ADAPT Centre   | O'Reilly Building, Trinity College Dublin, 2, Dublin           | Ireland | Vincent Wade             | +353 1 896 1797  | <a href="#">Email</a> | <a href="#">Website</a> |





## DIHNET.EU project

DIHNET.EU: EU supports the collaboration among Digital Innovation Hub Networks across Europe

The DIHNET.EU project enables the coordination of European, national and regional initiatives directly supporting the digital transformation and Digital Innovation Hubs (DIHs). The project aims to create a sustainable pan-European network of networks, with a focus on regional DIHs.



DIHNET.EU  
will create a pan-European  
network of DIHs



DIHNET.EU  
will boost DIHs  
collaboration



DIHNET.EU  
will offer services  
and tools to DIHs



DIHNET.EU  
invites you to join  
the DIHs community



# Launch 3 Working Groups

To derive recommendations to the High-Level Governance Meeting within 1 year

1. WG on **Digital Innovation Hubs** addressing issues such as
  - Raising awareness and engaging SMEs
  - Improving access to finance for SMEs
  - Networking and collaboration including business models
  - Role of Member States/regions for the development of DIHs
  - Reinforce digital skills and training dimension
2. Joint WG of DEI and Multi Stakeholder Platform (MSP) on **standardization** activities of **Digital Industrial Platforms**
  - Coordination of platform building and piloting activities
  - Synchronization and acceleration of standardization efforts
3. WG on **Future Partnerships**





"Digitizing and transforming European industry and services" calls for digital innovation hubs (€300M)

- DT-ICT-01-2019: Smart Anything Everywhere (SAE) Initiative, with the "widening" part for industrial regions that are currently underrepresented in I4MS and SAE
- DT-ICT-02-2018: Robotics – Digital Innovation Hubs
- DT-ICT-03-2020: I4MS (phase 4) - uptake of digital game changers and digital manufacturing platforms
- DT-ICT-04-2020: Photonics Innovation Hubs
- DT-ICT-05-2020: Big Data Innovation Hubs

In SC2: DT-RUR-12-2018: ICT Innovation agriculture – Digital Innovation Hubs for Agriculture

+ Support action DT-ICT-06-2018: Coordination and Support Activities for Digital Innovation Hub network





## **EOSC Digital Innovation Hub**

Objectives, pilots and ongoing collaborations



- Builds on the EC initiative to **onboard industrial partnerships** within the European Open Science Cloud
- **Joint effort** from years of individual e-Infrastructure industry engagement programs
- Focused on (not limited to) **start-ups and SMEs**
- Starts with **6 business pilots** selected during project preparation; open for many more
- To **persist beyond** the life of any support project (e.g. **EOSC-hub** project – [www.eosc-hub.eu](http://www.eosc-hub.eu))



## Key Figures

**Start:**

**1<sup>st</sup> January 2018**

**48 Service offerings**

**25 Partners**

**6 Pilots running**

## Mission

***“To bring private companies into the European Open Science Cloud through concrete business cases.”***

## Driven by





## EOSC DIH: Objectives



- Offer **access** to **e-Infrastructure resources** to support **pilots**, prototyping, scaling-up, design, performance verification, testing, demonstration, etc.
- Facilitate **partnerships** with **SMEs/industry, innovation clusters, accelerators** and **investors** that stimulate **innovation**
- Increase **visibility** on a **European/International level**
- Provide **business coaching** and training to “accelerate” **market uptake** and **exploitation** results
- Support access to **funding/grants**
- Develop **long-term business** relationships



## Piloting and co-design

- Pilots/proofs of concepts
- Service/Product design
- PaaS/SaaS Integration
- Performance verification
- Testing

## Technical access

- Compute (HTC, HPC, Cloud)
- Storage (Online/Archive)
- Data management
- Research data
- Tools & applications

## Training & Support

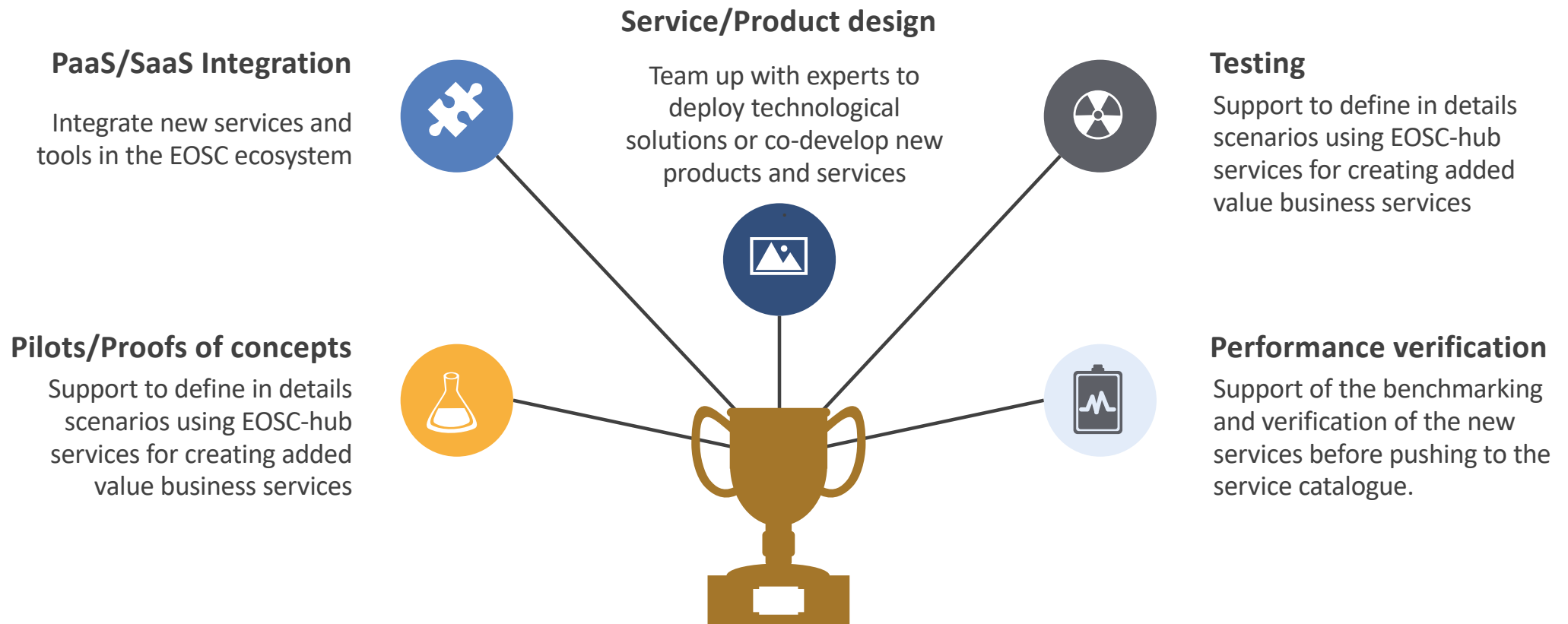
- Technical consultancy
- Service management
- Commercialization and business coaching
- Brokerage to funding and opportunities

## Visibility

- Media Exposure
- Participation to events
- Promotional print material
- Inclusion in marketplace
- Networking









# Technical Access

Use open research data sets, tools and applications and access our extensive computing capacity

## Compute



EGI Cloud  
Container  
Compute



EGI Cloud  
Compute



EGI High-  
Throughput  
Compute

## Authentication



B2access



EGI Check-in

## Research Data

100 100 100  
10101010 1010  
01 01 01

## Tools & Applications



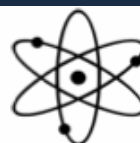
Climate  
Analytics



Arts &  
Humanities



Structural  
biology



Particle  
Physics



Atlantic Coast  
Forecast



Earth  
Observation



EGI Apps on  
Demand



EGI  
Notebooks

## Storage & Data Management



B2Handle



B2Share



B2Drop



EGI DataHub



EGI Online  
Storage



EGI Archive  
Storage



B2Stage



B2Find



B2Safe



CernVM File System

CernVM  
File system



Services for  
Sensitive data





## Technical consultancy

Obtain dedicated support and consultancy to use computing capacity and applications of the EOSC ecosystem to develop great innovation



## Service Management

Learn how to manage IT services with a pragmatic and lightweight standard



## Commercialization & business coaching

Support market take-up and commercial boost strategy, through tailor-made coaching, market insights and network with stakeholders



## Brokerage to funding opportunities

Access to funding and business opportunities through our extensive network





Participation to events  
Inclusion in print materials  
Media exposure on our websites  
and social networks



Media Exposure  
& Events

Market your services in the EOSC ecosystem

Inclusion in Marketplace



Access to our extensive network of experts

Networking



# Vouchers, Marketplace, Platform


## Vouchers

**Free Trial Offer!**

**€250**  
worth of cloud services  
dedicated to industry/SMEs

- 4 cores / 8GB RAM allocatable to a maximum of 4 VMs
- Up to 200 GB Storage
- Max 3 months of allocation

\*30 initial trials – first come first served



**EOSC Digital Innovation Hub**

**LIMITED SLOTS AVAILABLE**  
**Obtain your FREE trial NOW!**




**€5,000 service voucher!**

- Up to 40.000 CPU hrs on HPC or 300.000 CPU hrs on Cloud
- 1 TB work area storage (+ 1 TB scratch area storage)
- 40 hours of specialized support

\*additional options based on use case

## EOSC Marketplace



Find service... All services 🔍

Login

**EOSC Marketplace**

**services for your research**

- Easy to access: log in with own credentials
- Lots to explore: tools and services for many research domains
- Integrated services: analytical tools empowered by compute and data services
- Ready to use: virtual environments pre-packed with services and tools

**ALL SERVICES**

- Compute
- Data management
- Networking
- Processing & Analysis
- Security & Operations
- Sharing & Discovery
- Storage
- Training & Support

**For providers**

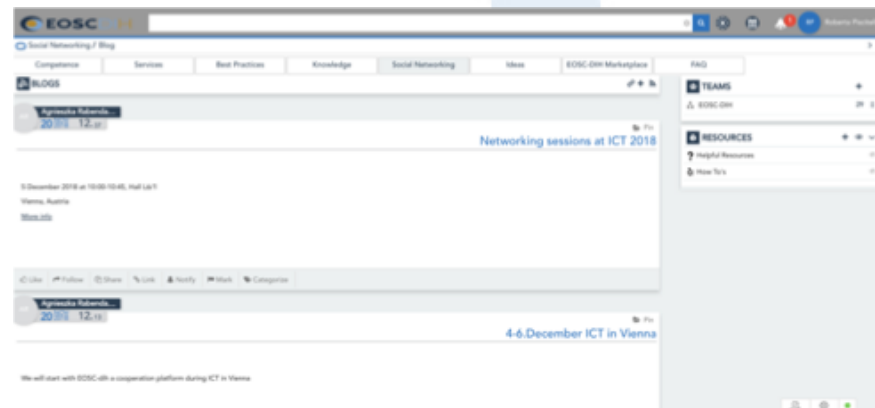
Contribute to develop EOSC into a rich environment with a wide range of services and resources for researchers. [Become a provider](#)

**50** providers

**67** services

**32** countries

## Collaboration Platform



The interface shows a social networking style platform with tabs for Competence, Services, Best Practices, Knowledge, Social Networking, Ideas, and EOSC-DM Marketplace. It features a 'BLOGS' section with posts about 'Networking sessions at ICT 2018' and '4-6 December ICT in Vienna'. A right-hand sidebar contains sections for 'TEAMS', 'RESOURCES', and 'Helpful Resources'.

\*prototype based on





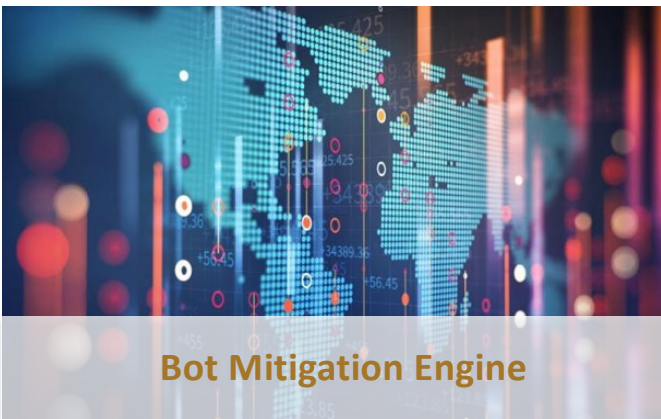
## **Initial 6 Business Pilots**

Pre-selected to kick start the DIH - open for many more!






## **EOSC DIH: Our Initial 6 Business Pilots**



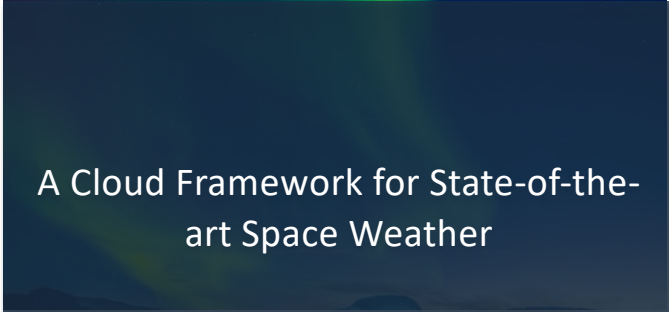


## EOSC DIH: Our Initial 6 Business Pilots

A background image of a seaport with large cranes and ships, overlaid with a dark blue semi-transparent rectangle.

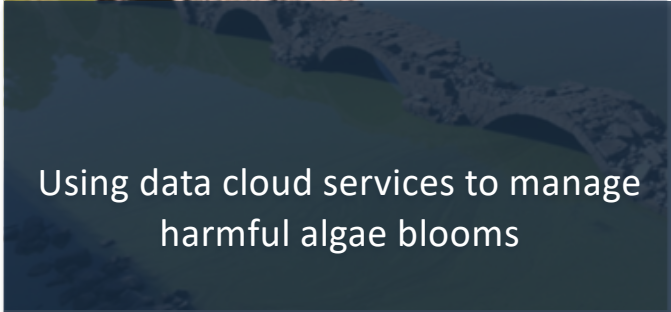
Improving safety and operational performance of seaports

**ACTION Seaport**

A background image of a space scene with a green aurora-like glow, overlaid with a dark blue semi-transparent rectangle.

A Cloud Framework for State-of-the-art Space Weather

**Space Weather Data for the DRACO Observatory**

A background image of a coastal area with green algae blooms, overlaid with a dark blue semi-transparent rectangle.

Using data cloud services to manage harmful algae blooms

**CyberHAB**

A background image of a network diagram with nodes and lines, overlaid with a dark blue semi-transparent rectangle.


Solutions to secure online services from Botnets Attacks

**Bot Mitigation Engine**

A background image of a person running on a track, overlaid with a dark blue semi-transparent rectangle.

Analyzing Sport Performance through a Cloud-hosted platform

**Sport Smart Video Analysis**

A background image of a modern interior space with a brick wall and furniture, overlaid with a dark blue semi-transparent rectangle.

Platform-as-a-Service Data Analytics for the Furniture Industry

**Furniture Enterprise Analytics Datafurn**





# EOSC DIH: Our Initial 6 Business Pilots

Acquired



TRL 7->8



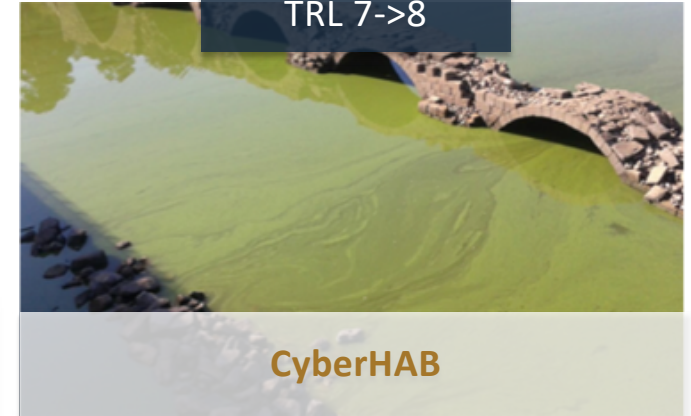
**ACTION Seaport**

TRL 4->7



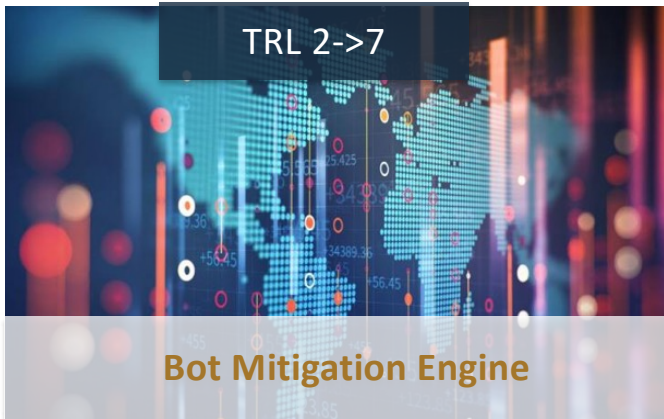
**Space Weather Data for the DRACO Observatory**

TRL 7->8



**CyberHAB**

TRL 2->7



**Bot Mitigation Engine**

TRL 4->7



SME->Large Enterprise

**Sport Smart Video Analysis**

TRL 5->8



**Furniture Enterprise Analytics Datafurn**



## Why Collaborate

- **Why should industry **engage** the European Open Science Cloud (EOSC)?**
  - Diverse services; Exploit research data; Expertise; Wide visibility; Funding opportunities
  - Single point for discovery, request and access of services and expertise
  - Collaborate on a European and international scale
  - Promote services (agreeing to the 'rules of participation')
  - Participant in procurement framework
- **Are you already in a Digital Innovation Hub?**
  - EC wants to create a **pan-European 'network' of DIHs**, we should work together

Additional Collaborations (at various stages)







## EOSC DIH Partners



## Contact Us!



 [eosc-dih.eu](https://eosc-dih.eu)  [@EOSC\\_DIH](https://twitter.com/EOSC_DIH)

[business@eosc-hub.eu](mailto:business@eosc-hub.eu)

## EOSC DIH Team

- Sy Holsinger (EGI)
- Marcin Plociennik (PSNC)
- Agnieszka Rabenda-Tomczak (PSNC)
- Konrad Leszczynski (PSNC)
- Claudio Arlandini (CINECA)
- Giuseppe Fiameni (CINECA)
- Nuno Varandas (F6S)
- Hugo Cantão (F6S)
- Catherine O'Donoghue (F6S)
- David Wright (UCL)



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# Q&A

To pose a question, you can write your question  
in the “Questions” tab

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**Digital Innovation Hub**