EOSC EU NODE DATA-CENTRIC CLOUD SERVICES

SHORT UPDATE ON EOSC EU NODE IMPLEMENTATION ORGANISATION, SCOPE OF DATA-CENTRIC CLOUD SERVICES DELIVERY

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SHORT INTRO

WHO WE ARE?

- **PSNC - mission and activity:**
  - NREN: PIONIER R&E/D network in PL; connected to GEANT and NORDUNet
  - HPC CENTER
  - R&D CENTER
  - SERVICES PROVIDER:
    - cloud computing, storage,
    - hosting, security, consultation
    - network, network services

- **PSNC - in numbers**:
  - **400+ people** in 4 divisions: computing, applications, network services, network
  - **HPC: 36 PFLOPs** (2023)
  - **Cloud**: **28kI** cores, **380 TB** RAM (2023)
  - **Storage**: **300PB** (disk) + **300PB** (tape)
 - **Network**: 11000 km of fibres, Connections to GEANT, NORDUNet

PSNC 30 Poznan Supercomputing and Networking Center
affiliated to the Institute of Bioorganic Chemistry, PAS

CONTEXT:

EOSC EU NODE TENDER

- IN 2023 EC WAS TENDERING
  FOR DELIVERY OF EOSC SERVICES:
- PSNC (ALONG WITH PARTNERS) WAS
  AWARDED THE CONTRACT

- DATA-CENTRIC CLOUD SERVICES:
  - **EOSC-EXCHANGE: LOT3**
    DATA-CENTRIC USER-FACING SERVICES:
    - EFSS: Sync & Share
    - DATA SCIENCE: Notebooks
    - LARGE DATA Transfer
  - **EOSC-EXCHANGE: LOT2**
    INFRASTRUCTURE AND PLATFORM SERVICES
    - CLOUD/ VMs
    - CONTAINER PLATFORM
    - BULK DATA TRANSFER
  - **EOSC-CORE: LOT1**
    USER-ACCESS, SERVICE MGMT AND OPERATIONS
    - SERVICES FOR FEDERATED
      EOCS CORE SERVICES:
    - REDESIGNED USER PORTAL
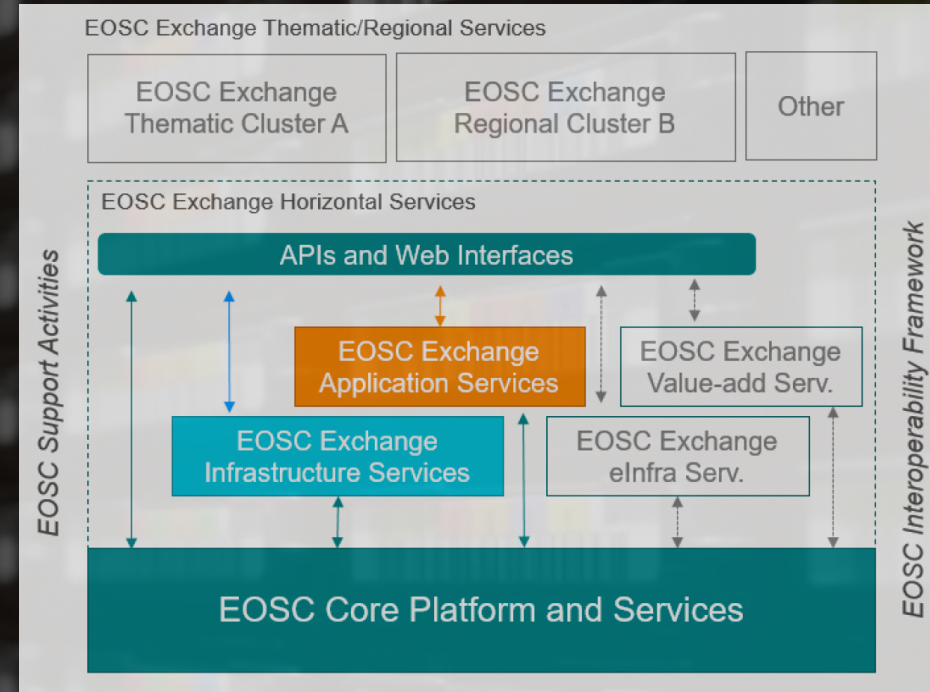
PROJECT SPECIFCS

- **THE BAR WAS SET VERY HIGH:**
  - TECHNICAL EXCELENCE
  - ECONOMIC ACTIVITY
  - SERVICES MGMT PROCEDURES
  - CERTIFICATION
  - SECURITY

- **IMPORTANT TO NOTE:**
  - EC IS **CONTRACTING ON COMMERCIAL TERMS** RATHER THAN FUNDING INFRASTRUCTURE AND SERVICES DEVELOPMENT AND DELIVERY THROUGH GRANTS

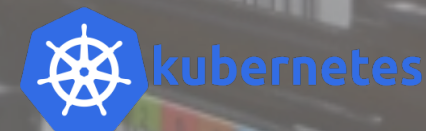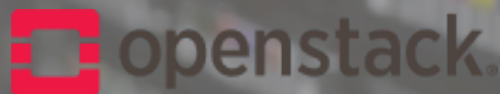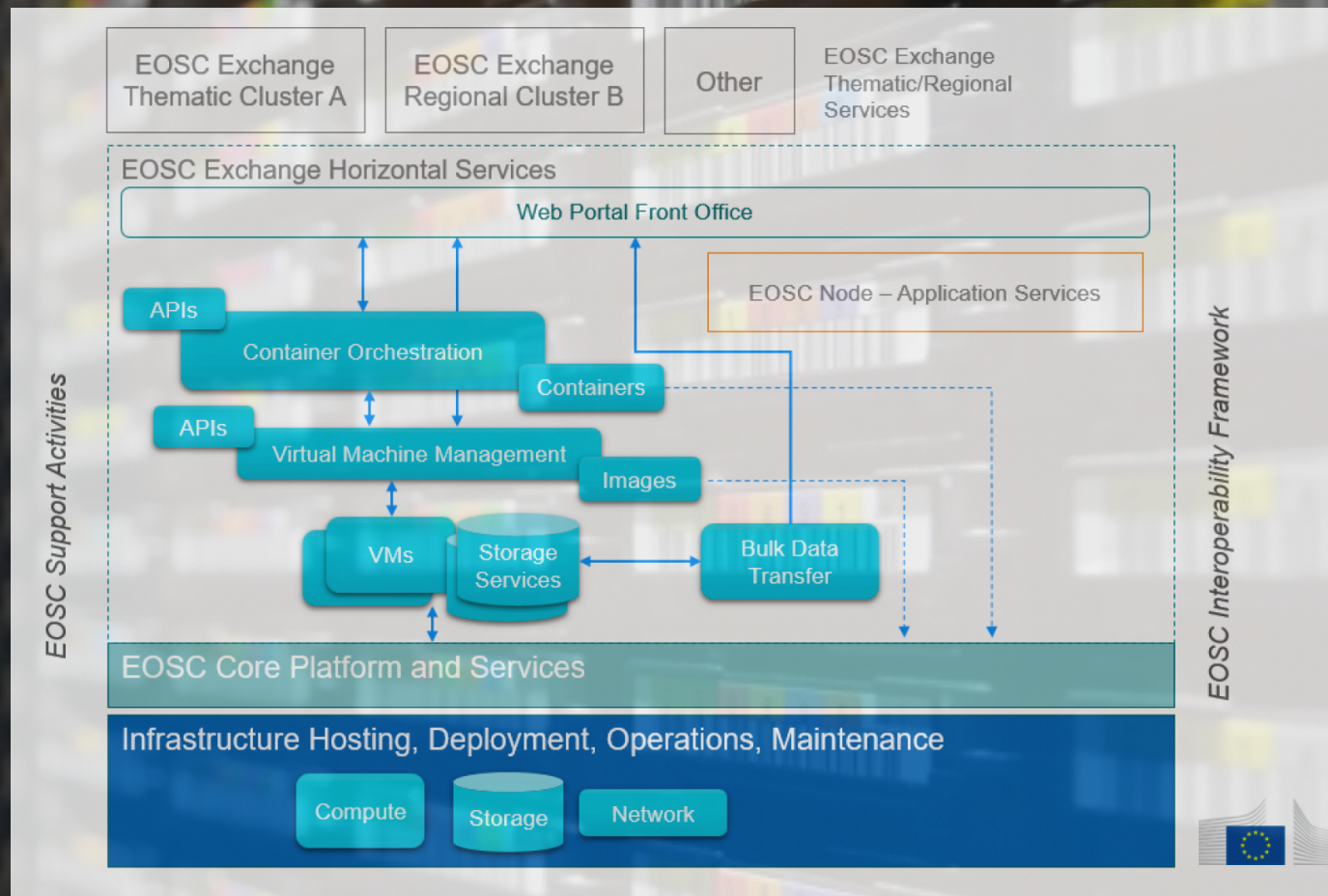Source: https://www.istockphoto.com/photos/challenges

SCOPE

LOT#2:

- OPEN SOURCE &
INDUSTRY STANDARDS
COMPONENTS ENCOURAGED:

- SOLUTIONs:

  - **INFRASTRUCTURE: IaaS:**
    OpenStack-based cloud

  - **PLATFORM: PaaS:**
    Kubernetes / OKD

  - **BULK DATA TRANSFER:**
    FTS and others

  - => in their 'vanilla' versions
   with minimum possible
    integration/dev. work (TRL 9)

LOT#3

- AGAIN: OPEN SOURCE & INDUSTRY STANDARDS ENCOURAGED:
- DATA-CENTRIC SERVICES
  - **EFSS/SYNC & SHARE:** OWNCLOUD
  - **DATA SCIENCE:** JUPYTER NOTEBOOKS
  - **FILE TRANSFER:** FILE SENDER
- 'USUAL SUSPECTS' WE WORK WITH
- COMPANIES AND DEVELOPERS ON-BOARDED TO THE BIDDING GROUP
- **IMPORTANT TO NOTE:**
  - LOT#3 APPLICATION-LEVEL MORE R&E-SPECIFIC REQS & ADDED VALUES SCORED (E.G. SCIENCEMESH COMPLIANCE)
  - OPTION TO USE COMPUTE INFRASTRUCTURE FROM LOT#2
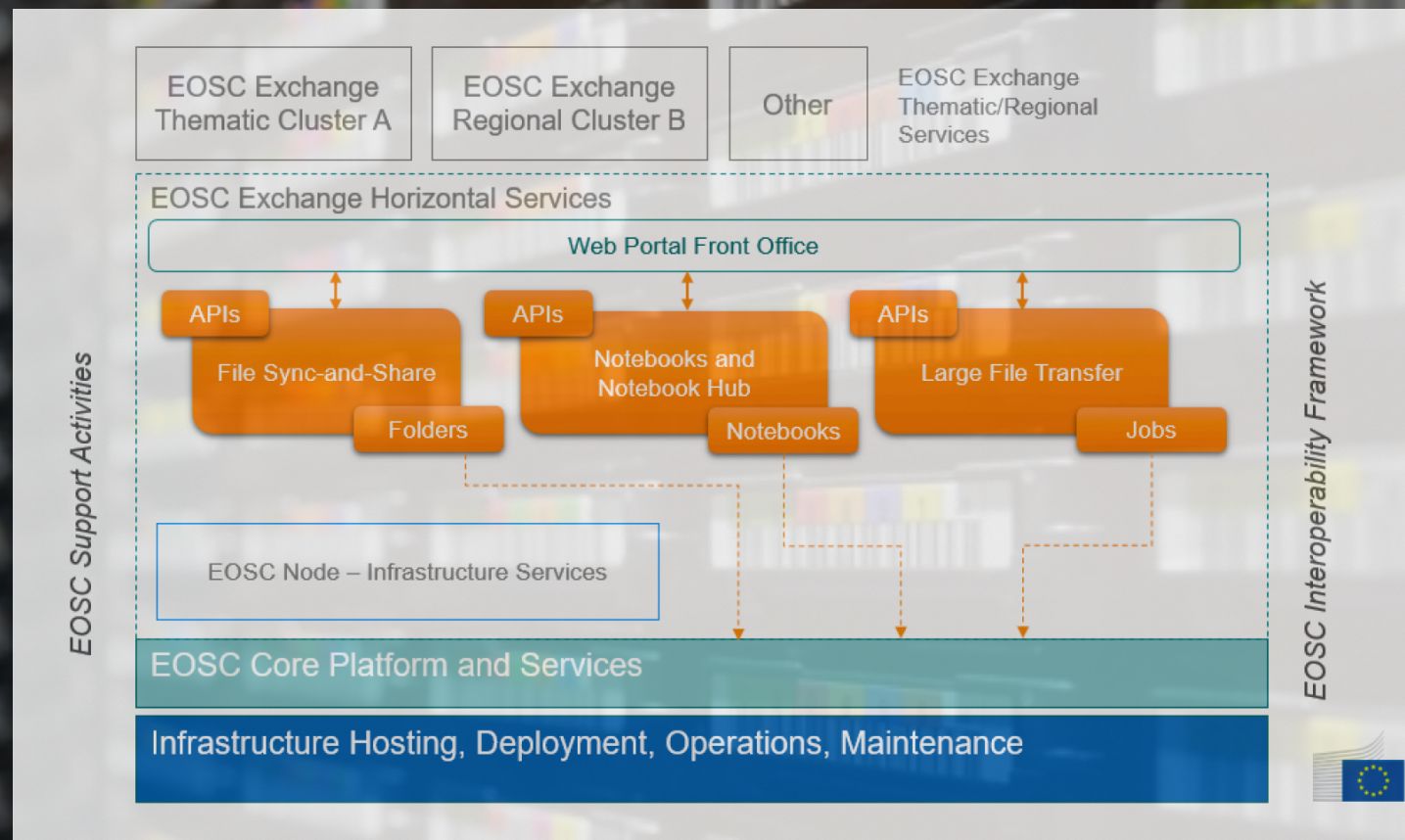
LOT#3:

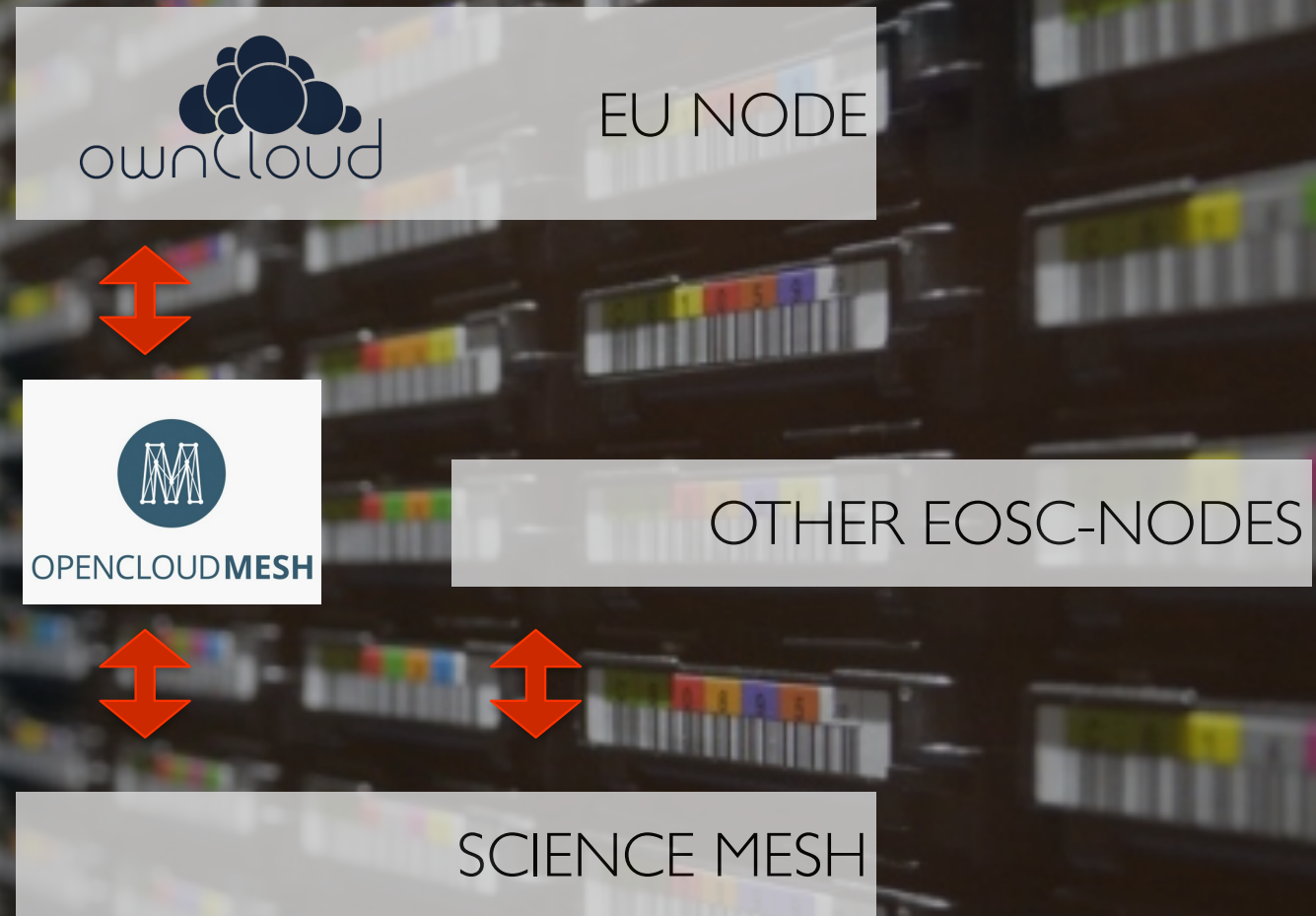- LOT #3'S FILE SYNC & SHARE SOLUTION HAS TO BE SCIENCEMESH-COMPLIANT MEANS: PROTOCOLS, PROCEDURES, ARCHITECTURE
- THE OFFERED SOLUTION:
  - IS **OWNCLOUD OCIS** THAT SUPPORTS CS3APIs and OCM
  - **OCM** IS THE BASIC **BUILDING BLOCK** FOR CROSS-SITE DATA ACCESS AND STORAGE
  - EOSC EU NODE MUST BE **ABLE TO JOIN** SCIENCEMESH

ownCloud

EU NODE

OPENCLOUDMESH

OTHER EOSC-NODES

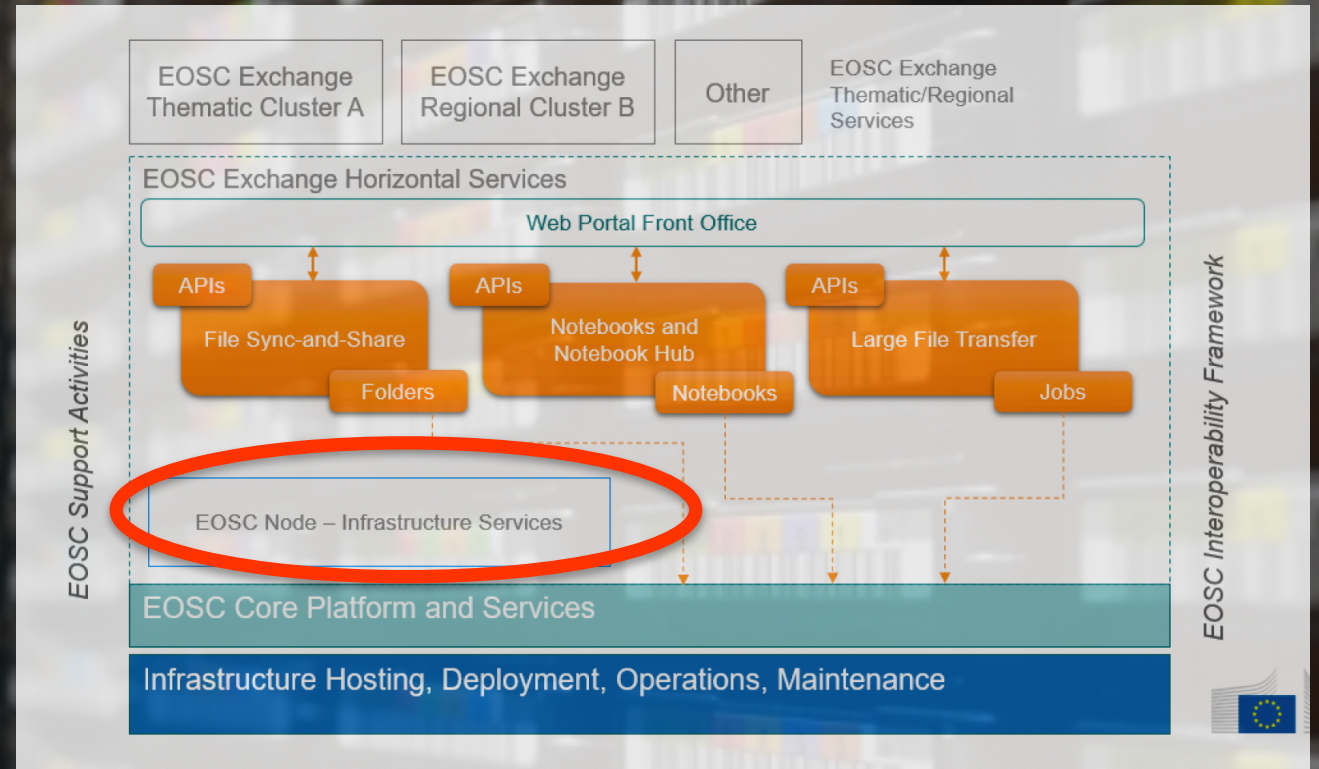SCIENCE MESH

LOT#3 INTEGRATIONS:

- **VERTICAL (OPTIONAL)**
  - USE COMPUTE INFRASTRUCTURE FROM LOT#2 TO IMPLEMENT FILE STORAGE AND DATA SCIENCE IN EVEN LARGER SCALE

- **HORIZONTAL (ENVISIONED):**
  - JUPYTER NOTEBOOK SERVICES MAY STORE USERS' DATA IN EFSS
  - FILE TRANSFER MAY BE INTEGRATED INTO JUPYTERS AND/OR EFSS
  - DATA DEPOSIT MAY BE PERFORMED DIRECTLY: EFSS TO REPOSITORIES

SUMMARY

- **EOSC EU NODE - PROVIDES DATA-CENTRIC CLOUD SERVICES**
  - **FILE SYNC & SHARE**
  - **JUPYTER NOTEBOOKS**
  - **DATA TRANSFER**
  - **INFRASTRUCTURE BACK-END**
  - **OTHER SERVICES IN LOT#1 INCLUDING PID SERVICES AND FEDERATED AAI**

- **INTEROPERABILITY AND DATA FAIR'NESS IS PART OF THE GAME:**
  - **INDUSTRY STANDARD COMPONENTS**
  - **STANDARD APIs FOR:**
    - DATA ACCESS
    - RESOURCES/SERVICES PROVISIONING
    - AAI
  - **SCIENCEMESH COMPLIANCE**
  - **INTEGRATIONS TO SUPPORT FAIR**

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THANK YOU!

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