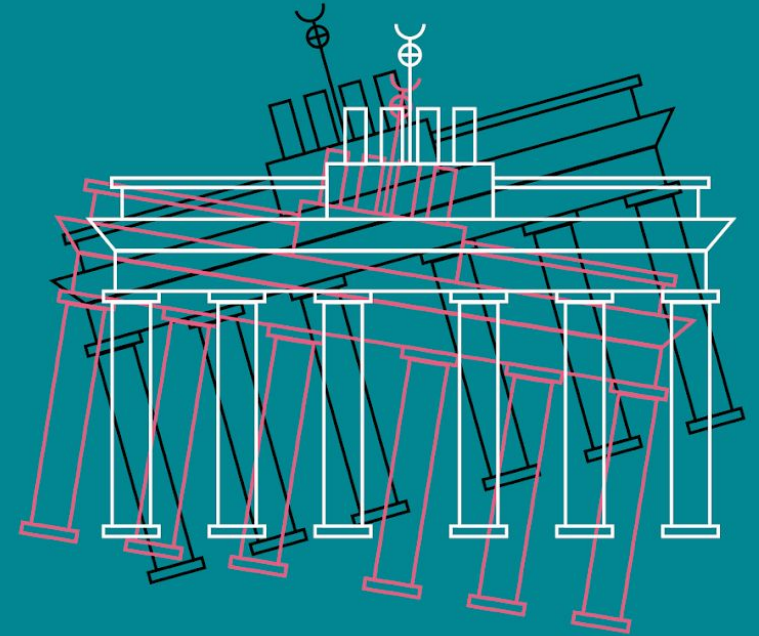




Deep dive into the EOSC EU Node



EOSC Symposium 2024 / 21 - 23 October / Berlin, Germany

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in cooperation with





EOSC EU Node

Deep dive into the EOSC EU Node

EOSC Symposium 2024

23 October 2024

Spiros Athanasiou (Athena RC)

EOSC EU Node

Introduction

EOSC EU Node – Unique identity

- **The first node of the EOSC Federation** commissioned by the EC as the Business Owner (DG CONNECT) and operated by the Managed Service Contractors
 - **European level multi-disciplinary and multi-national** scientific data/service portfolio for all research users and citizen scientists
 - Specified, provisioned, and operated leveraging **experience** and **outcome** gained from EOSC-related projects under a new **pragmatic, focused, and quality-assured** perspective
 - **Serves as a blueprint for other EOSC Nodes; architecture and open-source** software
 - **Provides federating** capabilities (e.g. AAI via GEANT) and **SaaS** (e.g., Helpdesk) offerings to other Nodes (optional; lower the entry barrier/costs)
- The EOSC EU Node serves
 - **researchers & groups** (across disciplines, under-served, last resort), **citizen scientists** (discover RO)
 - **Service Providers** (discover, access, order), **RIs** (compute/storage resources), **Nodes** (enrol)
- **Focal point** of the EOSC Federation, but it is only **one** EOSC Node

Managed Service Contractors



EOSC EU Node

EXCHANGE



NORDUnet



CORE



netcompany

intrasoft

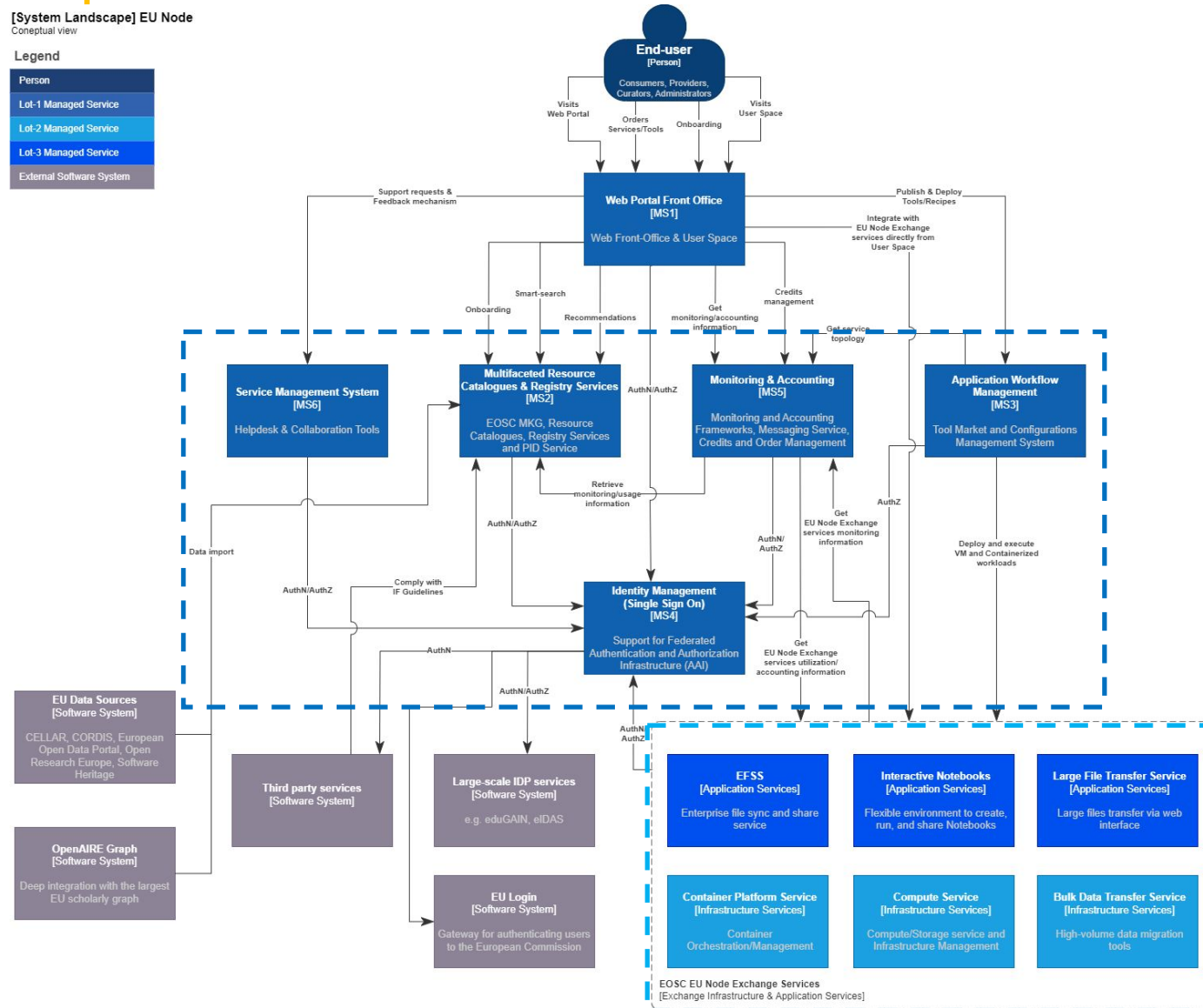


High-level EOSC EU Node Architecture

[System Landscape] EU Node
Conceptual view

Legend

Person
Lot-1 Managed Service
Lot-2 Managed Service
Lot-3 Managed Service
External Software System



<https://open-science-cloud.ec.europa.eu/>

EOSC EU Node Core Federating Capabilities

- User Space
- Identity Management
- Resource Catalogues and Registry services
- Application Workflow Management
- Monitoring and Accounting
- Service Management System (incl. Helpdesk)

EOSC EU Node Exchange Services Data Management and Infrastructure Services

- File Sync and Share
- Interactive Notebooks
- Large File Transfer
- Virtual Machines
- Container Platform
- Bulk Data Transfer

EOSC EU Node

Key Concepts

Spiros Athanasiou (Athena RC)

Authentication

- Users log-in using their **existing home organization** credentials
 - No need to create (yet) another account
 - Seamless and secure experience for all
- **EOSC AAI Federation**
 - **eduGAIN** (world-wide identity federation, 27M)
 - **EU Login + eIDAS** (EC's own authentication service and national federations; option to self-register)
 - **User attributes** (e.g., affiliation, organization) shared by their home organization
 - Single-Sign-On (**SSO**) across all EOSC EU Node services, where possible
 - Offered "**as a Service**" to other Nodes and the community at large

Service Tiers

- **Tier-1 – Native**

- **Guaranteed** services of the **EOSC EU Node** (application, infrastructure, +)
- Fully **integrated** into the EOSC EU Node
- **Automated** access policies and quota

- **Tier 2 – Onboarded (*Coming soon...*)**

- High-quality **third-party** services **onboarded** into the EOSC EU Node
- Technical and operational **requirements**, quality-assured
- **Service-specific** ordering, access policies, and/or integration options

- **Tier 3 - Discoverable**

- Third-party services **discoverable** by end-users in the EOSC EU Node
- No technical requirements, inclusivity, lower entry barrier (inclusion criteria applies)



Credits

- How do we manage user **demand** and ensure **fair, equitable and transparent** access to services?
- **Credits** is the virtual ‘currency’ of the EOSC EU Node
 - Expresses the relative (and actual) cost of services but has **no real monetary value**
 - Users are already familiar with commercial offerings (pay as you go)
- **A service has its cost expressed in credits**
 - Clearly communicated to users, known in advance (how much will it cost?)
- **A user is allocated free credits (wallet)**
 - Users can spend their credits according to their needs
 - Same amount of credits to all users of the same category, replenished every 3 months
- **Credit economy evolves to support users and service providers**

Access Policies

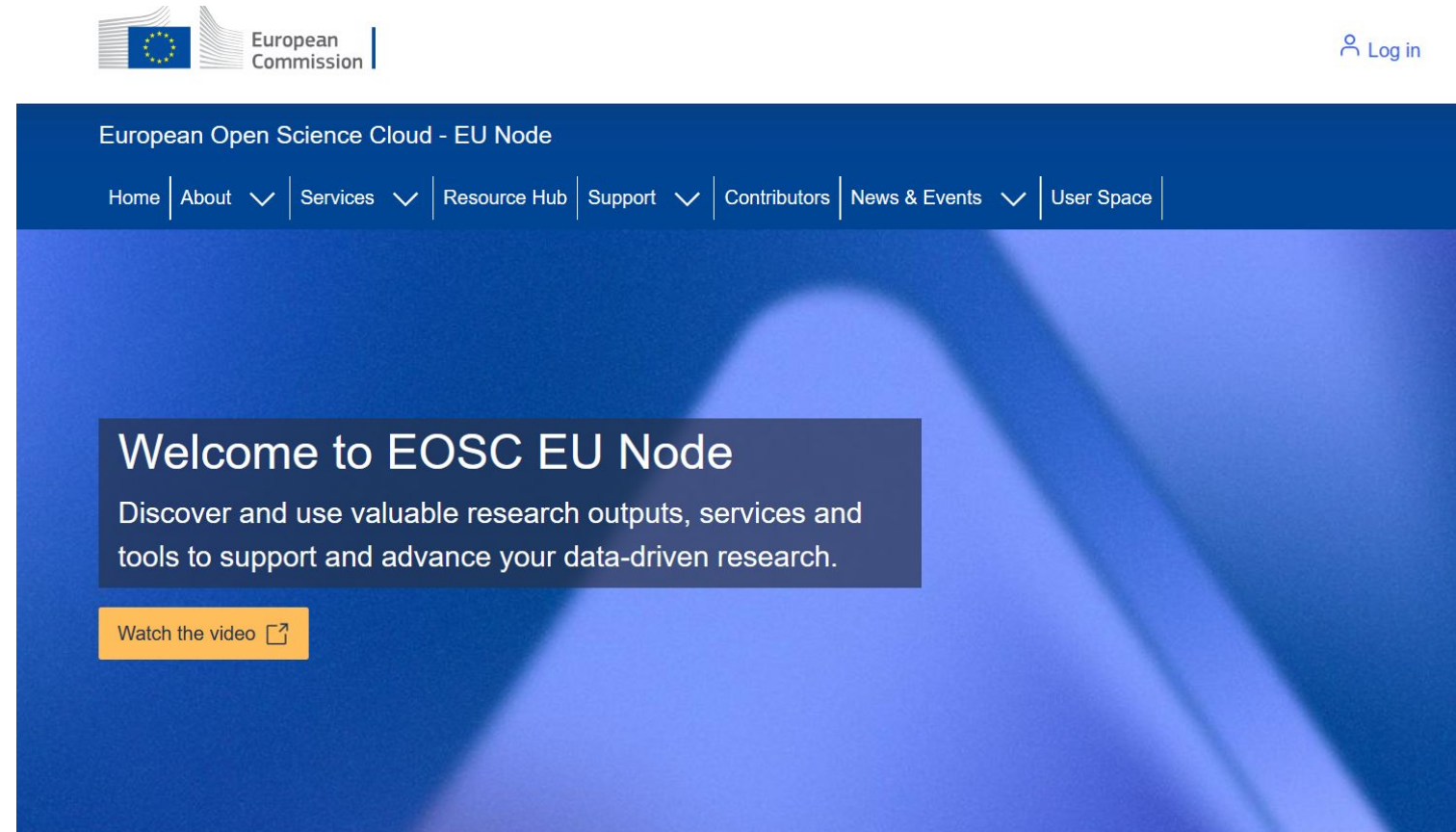
- Authorizing users to access and spend their credits on the EOSC EU Node is an **automated** process based on their **affiliation**
- **AP Level B**
 - **eduGAIN faculty** (EU27 + Horizon Europe AC): **500** credits & access to **all services**
- **AP Level A1**
 - **eduGAIN employee or staff** (EU 27 + Horizon Europe AC) or **EU Login staff**: **100** credits & access to a subset of services
- **AP Level A**
 - **View** only access to the services
- **Gatekept services (scarce and/or high-demand) via Helpdesk**
- **Access policy levels and characteristics can be easily revised**

EOSC EU Node

Features and Services

Front Office

- Your **entry point** to the EOSC EU Node
- **Resource Hub**
- **EOSC EU Node Services**
 - Application Services
 - Infrastructure Services
- **Support**
 - Helpdesk
 - FAQ
 - Documentation
 - Training material
- **User Space**



Resource Hub

- **Discover ~130M resources**
 - OpenAIRE, EC data sources
 - Harvested & indexed
- **Resources**
 - Publications
 - Data
 - Software
 - Services
 - Data Sources
 - Training
 - Tools

Home > Resource hub

Resource hub

Publications Search resources Q Search

All resources **Publications** Data Software Other Products Services Data Sources Training Interoperability Guidelines Tools

Access right ^ Scientific domain ^ Document type ^ Publication date ^ Funder ^

Showing 1 to 20 of 92,379,287 resources

No filters applied Relevance

PUBLICATION ARTICLE, JOURNAL ☆

Year: 2014 | Views: 0 | Downloads: 0 | Citations: 3

Excited states time evolution on a laser-ablated molybdenum plume

The dynamics of the excited states on a laser-ablated Mo plume was studied, both in air and in vacuum, by emission spectroscopy along the plume expansion axis. The emission related to ionized atoms occurs in the beginning of the plume expansion, near the metal surface, and is predominantly ultraviolet emission. In the...

Author C. A. B. Silveira | Jayr Amorim | E. M. A. Sternberg | N. A. S. Rodrigues | Maria Esther Sbampato

Publisher Applied Physics B Photophysics and Laser Chemistry | Unknown Repository

Identifier 10.1007/s00340-014-5786-1 | 2014385100

Source Citation

Application Services

- **File Sync and Share**

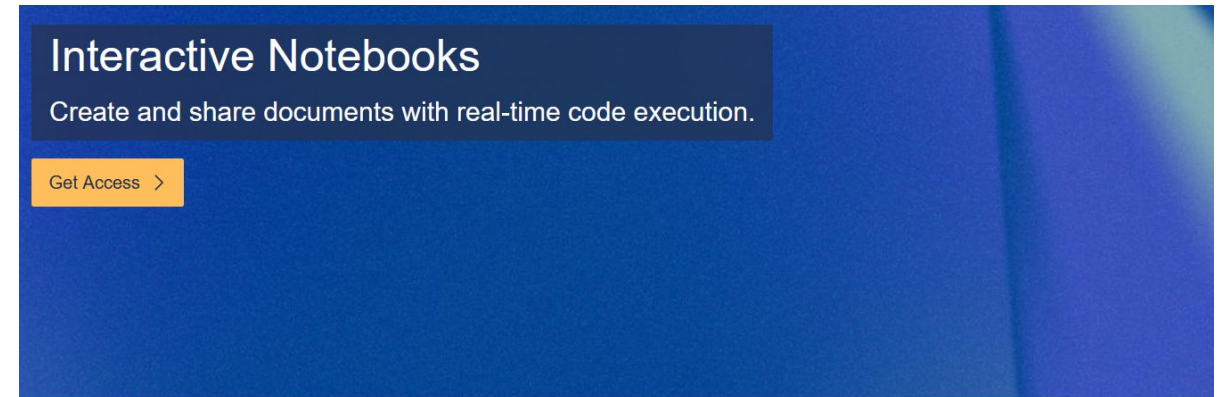
- Your personal cloud storage
- Upload and share files
- Productivity suite

- **Interactive Notebooks**

- Jupyter
- Multiple environments
- Multiple kernels

- **Large File Transfer**

- Securely share files



PAGE CONTENTS

Service Overview

Benefits

Features

Service Capabilities

How it works

User Resources

Service Overview

Interactive Notebooks are a browser-based tool designed for interactively analysing data. Based off the Jupyter Hub, they enable you to create and share documents that include live code, equations, visualisations, and explanatory text. With Jupyter's support of all programming languages, including R and Python, the service seamlessly integrates text, mathematical equations, computational code, and multimedia outputs. Capable of scaling to accommodate multiple users and servers, the Notebooks are key in facilitating collaboration.

These Notebooks provide a versatile and interactive platform that facilitates different aspects of the research process, fostering transparency, collaboration, and reproducibility across diverse research fields. With the Interactive Notebooks, you can collaborate more effectively, streamline your workflows, and enhance the transparency and reproducibility of your research. Empower your research endeavours with real-time collaboration and visualisation capabilities, revolutionising the way you analyse and share data.

Infrastructure Services

- **Virtual Machines**

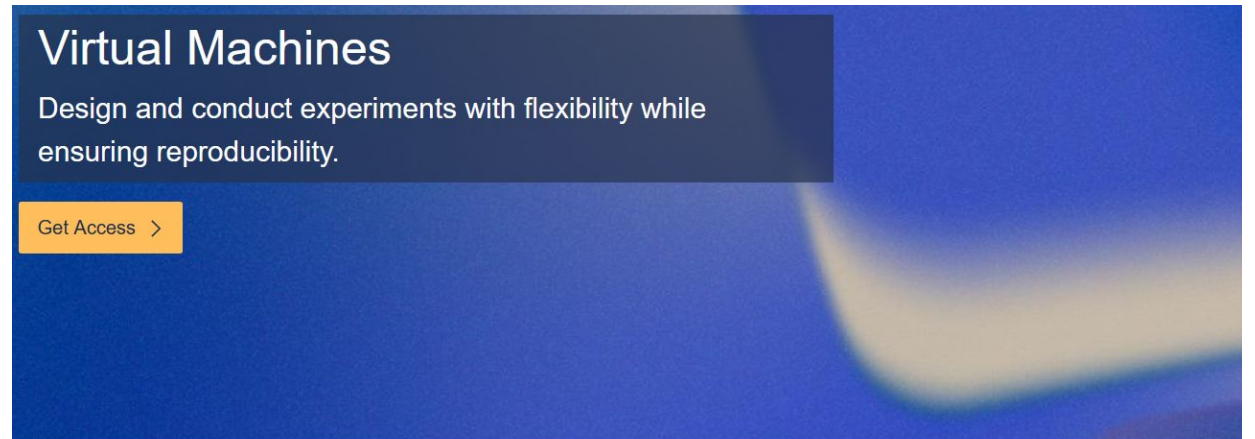
- Open Stack
- Multiple environments
- VM templates
- GPU support

- **Cloud Container Platform**

- OKD
- Multiple environments
- GPU support

- **Bulk Data Transfer**

- Site-to-site large data transfer



PAGE CONTENTS

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Service Overview

Virtual Machines (VM) offer a dynamic approach to computing and storing data in the cloud. The service is delivered through the industry standard open-source implementation OpenStack. Researchers are provided compute resources to launch their own VMs to create isolated environments for experimenting with different configurations, software setups, or algorithms. The compute resources can be used to create reproducible research environments. By packaging the entire software stack and data dependencies within a VM image, researchers can ensure that their experiments can be easily replicated by others, enhancing the credibility and transparency of their research.

Virtual Machines offer researchers a flexible, scalable, and secure computing environment for conducting experiments, analyzing data, and collaborating with colleagues in various research disciplines.

Log in

- **Home organization credentials**

- eduGAIN
- EU Login

- **Automated Access Policies**

- 0 credits; view only (AP-A)
- 100 credits; FSS, NBs (small) (AP-A1)
- 500 credits (AP-B)

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European Open Science Cloud EU Node

Access your account and take advantage of the free resources, perform research and collaborate.

Log in

Find your home institution

Search for your home institution and use your existing credentials to login

OR

If you have EU Login credentials, you may click on the link below



If you do not have an EU Login, you can click [HERE](#) and create one

User Space

- Your personal environment
- Application Services
- Infrastructure Services
- Wallet (Credits)
- Orders
- Groups
- Favorites
- Notifications
- Settings

The screenshot displays the user interface for the EOSC EU Node. On the left is a sidebar menu with the following items: 'EOSC EU Node', 'Resource Hub', 'Louise Evans user' (with a 'Logout' button), 'Overview' (selected), 'Notifications', 'Tools Hub', 'SERVICES' (with links to 'File Sync & Share', 'Interactive Notebooks', 'Large File Transfer', 'Cloud Container Platform', 'Virtual Machines', and 'Bulk Data Transfer'), 'Other Services', 'GENERAL' (with links to 'Groups', 'Orders', 'Credits', and 'Favourites'). The main content area is titled 'Hello Louise Evans' and states 'This is the overview of your EOSC EU Node account.' Below this is a welcome message: 'Welcome to the closed beta of the EOSC EU Node!'. The 'Services' section is divided into six cards: 'File Sync & Share' (Access enabled, View Service >), 'Interactive Notebooks' (Access enabled, View Service >), 'Large File Transfer' (Access enabled, View Service >), 'Virtual Machines' (800 credits consumed in this period, View Service >, Credits renewed 2024-12-14), 'Cloud Container Platform' (230 credits consumed in this period, View Service >), and 'Bulk Data Transfer' (Access enabled, View Service >). The footer contains three columns: 'European Open Science Cloud - EU Node' (managed by the Directorate-General for Communications Networks, Content and Technology), 'Contact us' (Contact our Helpdesk, FAQs), and 'About us' (The European Open Science Cloud aims to establish a federation of infrastructures facilitating effortless access to interoperable).

European Open Science Cloud - EU Node

This site is managed by the Directorate-General for Communications Networks, Content and Technology

Contact us

Contact our Helpdesk

FAQs

About us

The European Open Science Cloud aims to establish a federation of infrastructures facilitating effortless access to interoperable

Thank you