



# Current status of the e-Science Centre and future plans

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# PITHIA e-Science Centre (PeSC) current status

- PeSC is publicly available at <https://esc.pithia.eu> since May 2023
- **Publicly available functionalities:**
  - Searching browsing registered metadata
  - Accessing data in all registered datasets (based on local access policies)
  - Executing registered models
  - Browsing the space physics ontology
  - Reading the metadata registration guide
- **Functionalities requiring password** (available in the PITHIA Wiki)
  - Publishing, modifying, deleting new Data Collections and Catalogues
  - Viewing and downloading already published XML registration files
  - Currently one common password for all

No major updates in functionality since Rome Training Workshop (June 2023)



# PITHIA e-Science Centre live demo...



PITHIA-NRF  
e-Science Centre

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Home

## PITHIA-NRF e-Science Centre

### Search & Browse



Search Data Collections



Browse Metadata

### Admin Functionalities



Register & Manage  
Metadata



Metadata Models



Space Physics Ontology



# What are the next steps?

- **Implementation of User Management is almost ready**
  - Testing completed
  - Accounts need to be created
  - All currently registered resources need to be assigned to its owner
  - Data need to be migrated

This means you can start using the system once we are ready without any extra work/re-registration



# What are the next steps?

[registered metadata.xlsx - Google Sheets](#)

	A	B	C	D
1	name	institution	registered by	
2	<a href="#">Acquisition capabilities of AIS-INGV Ionospheric Sounder</a>	Istituto Nazionale di Geofisica e Vulcanologia	Emanuele Pica	
3	<a href="#">Acquisition capabilities of GNSS Scintillation Receiver GPStation6</a>	Istituto Nazionale di Geofisica e Vulcanologia	Emanuele Pica	
4	<a href="#">Acquisition capabilities of GNSS Scintillation Receiver GSV4004A/GSV4004B</a>	Istituto Nazionale di Geofisica e Vulcanologia	Emanuele Pica	
5	<a href="#">Acquisition capabilities of GNSS Scintillation Receiver PolaRxS/PolaRx5S</a>	Istituto Nazionale di Geofisica e Vulcanologia	Emanuele Pica	
6	<a href="#">Acquisition capabilities of the Athens Digisonde</a>	National Observatory of Athens	Angeliki Thanasou	
7	<a href="#">Acquisition capabilities of the LOFAR Borowiec</a>			
8	<a href="#">Acquisition capabilities of the Sodankyla Alpha-Wolf Ionosonde</a>	National Observatory of Athens	Angeliki Thanasou	
9	<a href="#">Continuous Doppler Sounder acquisition capabilities at 3.59 MHz</a>	Institute of Atmospheric Physics CAS Prague	Jan Rusz	
10	<a href="#">Continuous Doppler Sounder acquisition capabilities at 4.65 MHz</a>	Institute of Atmospheric Physics CAS Prague	Jan Rusz	
11	<a href="#">Continuous Doppler Sounder acquisition capabilities at 7.04 MHz</a>	Institute of Atmospheric Physics CAS Prague	Jan Rusz	
12	<a href="#">D2D: Digisonde-to-Digisonde fixed-frequency skymapping</a>	Borealis Global Designs	Ivan Galkin	
13	<a href="#">Dynasonde Advanced Ionospheric Sounder Data Acquisition Capabilities</a>			
14	<a href="#">EISCAT Remote VHF data</a>	EISCAT Scientific Association	Anders Tjulin	
15	<a href="#">EISCAT Svalbard Incoherent Scatter Radar data</a>	EISCAT Scientific Association	Anders Tjulin	
16	<a href="#">EISCAT UHF Incoherent Scatter Radar data</a>	EISCAT Scientific Association	Anders Tjulin	
17	<a href="#">EISCAT UHF Remote receiver data</a>	EISCAT Scientific Association	Anders Tjulin	
18	<a href="#">EISCAT VHF Incoherent Scatter Radar data</a>	EISCAT Scientific Association	Anders Tjulin	
19	<a href="#">GPS: Precise Orbital Data and Time</a>	Polytechnic University of Catalonia		
20	<a href="#">Ionogram: Digisonde 256</a>	Borealis Global Designs	Ivan Galkin	
21	<a href="#">Ionogram: Digisonde DPS1</a>	Borealis Global Designs	Ivan Galkin	
22	<a href="#">Ionogram: Digisonde DPS4</a>	Borealis Global Designs	Ivan Galkin	
23	<a href="#">Ionogram: Digisonde DPS4D</a>	Borealis Global Designs	Ivan Galkin	
24	<a href="#">Ionogram: IPS-5A Ionospheric Sounder</a>	Borealis Global Designs	Ivan Galkin	



# Why do we need user management?

- We want most e-Science Centre functionalities to be open
- But certain functionalities cannot be open
  - We do not want strangers to delete/modify our registered resources
  - We do not want strangers to register non-existent/bogus resources
  - We only want to allow the owner of the resource to do such things
  - Even within PITHIA, we do not want one organisation to accidentally ruin another one's registration



# The main ideas

## ➤ We use Federated Identity Management

- You do not have to create a new account for the e-Science Centre
- You can choose one of your already existing accounts:

- Your institutional login
- Google account
- Facebook account
- LinkedIn account
- etc.



- But you can also create a new account specifically for the PeSC, if you want to



# Main principles

- **Only users who create, manage and delete resources need an account**
  - If you only browse, access data, execute models etc. then you will not need an account
  - Most scientists will never need an account, only the “gurus”
- **Registered users belong to institutions**
  - Each institution has one or more admins who let people in (out)
  - You can belong to multiple institutions
  - Resources belong to an institution – all members of that institution can publish, modify or delete these resources (but no one else can)







# Main principles

## ➤ **What is an Institution?**

- Research institute/ University/SME – inside or outside PITHIA
- The user who creates the institution will become admin (and can add more admins)
- E-Science Centre operator manually checks and accepts new institution requests

## ➤ **How can users join an Institution?**

- If you register, you **MUST** belong to an Institution (what is the point if not?)
- New users can see a list of Institutions and have to select at least one institution they want to join
- Institution admins will receive email and need to approve new members



# Main principles

## ➤ **How many registered users do we anticipate?**

- Not that many
- Hopefully, we will have 100s/1000s users worldwide
- But we expect only 2-3 registered users per institution
- Currently we have 20 provider organisations registered – may have ~25-30 by the end of the project



# Further roadmap

## ➤ **We will concentrate on smaller outstanding tasks next**

- Integrating user analytics
- Adding a Data Subset upload/download functionality
- Integrating a ticketing and support system
- Responding to feedback and requests on the eSC (e.g., grouping registrations by namespace, improving the usability of the search page, updating the Catalogue browsing experience).
- Uploading metadata registrations to a dedicated file server (they will be available at <https://metadata.pithia.eu/resources/2.2/>).



# Further roadmap

## ➤ **Larger scale tasks until the end of the project**

- Supporting the creation and execution of “workflows”
- Support for Jupyter notebooks and AI/ML tools
- Implementing further integration mechanisms (see my second presentation later)
- Providing intelligent learning and help/support capabilities

**These typically require more detailed discussion and consultation involving all parties from the project (we may want to organise dedicated meetings)**



# Thank you for your attention!

**WEB:** <https://www.pithia-nrf.eu>

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