



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