



**Serbia**

## Overview of open science activities in Serbia

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Serbia

# Outline

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- Stakeholders
- Policies
- Infrastructure
- Community building

# Open Science stakeholders

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- Team for Open Science in Serbia, since January 2020
  - Ministry of Education, Science and Technological Development (FUND)
  - Fund for Science of the Republic of Serbia (FUND)
  - Researchers (CREATE)
  - e-infrastructures (SUPPORT)
  - Libraries (SUPPORT)
  - OpenAIRE NOAD, EIFL OA Country Coordinator, CESSDA representative (FACILITATE)

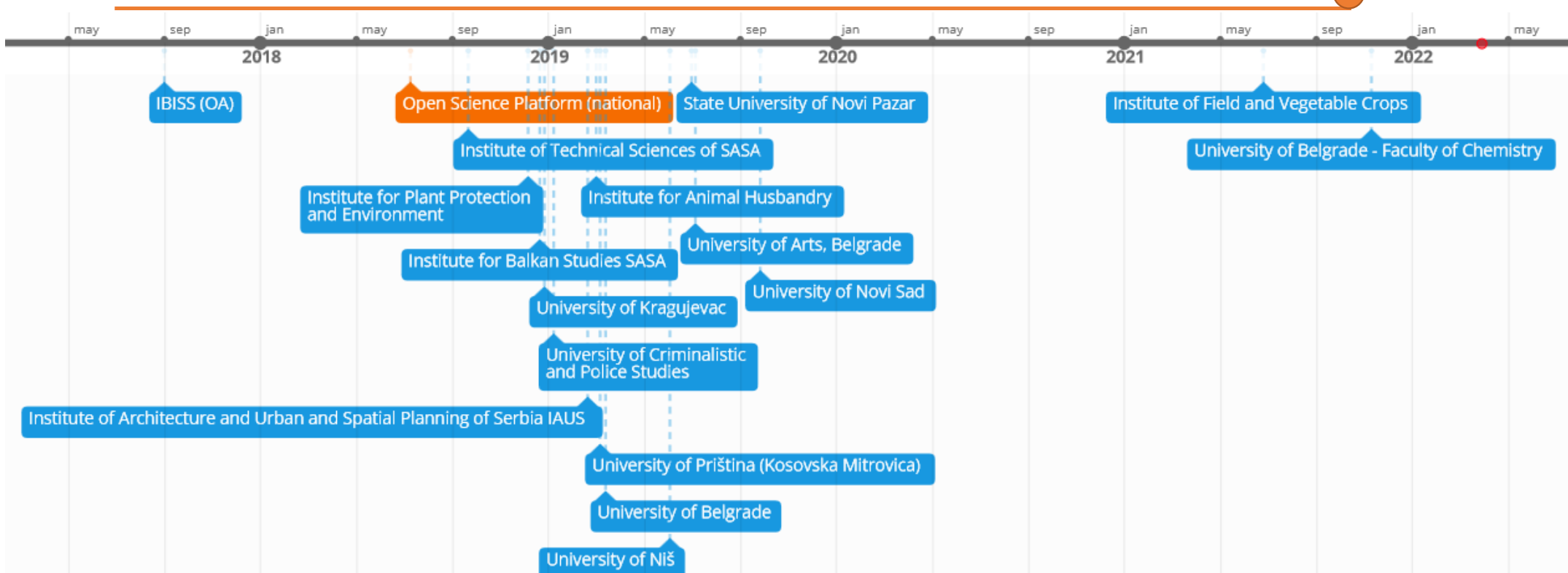


# National policy: Open Science Platform

- Adopted in July 2018\*
- Open Access mandate for publications
- Open Access to research data is recommended.
- Universities and other RPOs are required to adopt institutional OS policies.
- Basic technical requirements for repositories are defined.
- APCs are recognized as an eligible cost if foreseen by the project plan; no dedicated OA fund for APCs.
- The 2019 Law on Science and Research mentions funding for Open Science programmes and infrastructure (not implemented in practice).
- No policy monitoring mechanism at the national level.

\*Open Access Mandate for PhD theses since 2014

# Institutional policies



<http://roarmap.eprints.org/view/country/688.html>

<https://time.graphics/line/314977>



## OS policy update (planned)

- OA to publications (mandated)
  - FAIR data (mandated)
  - Policy monitoring
  - FLOSS and open hardware (recommended)
  - Open Access to research infrastructures (mandated)
  - PIDs (mandated); ORCID (mandated)
  - Support to local Diamond OA publishing
  - Support for infrastructure
  - Skills and competencies for OS
  - Incentives for OS in the research evaluation system
- A draft, awaiting discussion/approval



# Infrastructure: services

GENERIC ON-BOARDED



## Data analysis service

Hadoop-based data analysis service.

Data analysis service or PARADOX Hadoop cluster consists of a single name node that runs the YARN resource manager, and three additional data nodes. The name node is hosted on a machine with 4-core Intel Xeon E3-1220v3 CPU running at 3.1 GHz, with 4 GB of RAM, and 500 GB of local hard disk storage. Each of the data nodes, which perf...

[more](#)

GENERIC ON-BOARDED



## PARADOX-IV cluster

PARADOX-IV - Serbian supercomputing cluster.

PARADOX-IV cluster represents the fourth major upgrade of the PARADOX cluster and became operational during September 2013. The cluster consists of 106 working nodes and 3 service nodes. Working nodes (HP ProLiant SL250s Gen8, 2U height) are configured with two Intel Xeon E5-2670 8-core Sandy Bridge processors, at a frequency...

[more](#)

GENERIC ON-BOARDED



## Simple storage service

Research data storing and sharing.

The Simple Storage Service (SSS) is a secure data storage service provided to researchers for storing and sharing research data as well as keeping it synchronized across different devices. SSS is functionally similar to Dropbox, Office 365, or Google Drive. Files are stored in conventional directory structures, accessible via WebDAV...

[more](#)

GENERIC ON-BOARDED



## RePol - Repository Policy Generator

Tool for creation of repository and privacy policies

RePol - Repository Policy Generator is an open-source web application that guides users through the process of defining policies for repositories and web-based services. It helps in defining and maintaining comprehensive and clear repository and privacy policies. Generated privacy policies are su...

[more](#)

THEMATIC REGISTERED



## DREAM

The DREAM service simulates and predicts the atmospheric cycle of mineral dust aerosols. It is tuned for usage on high-performance computing infrastructures available today. A typical use-case is the production of a dataset with the aerosol optical thickness and surface dust concentration for a particular period and for a particular geographical region. The service supports different horizon...

[more](#)

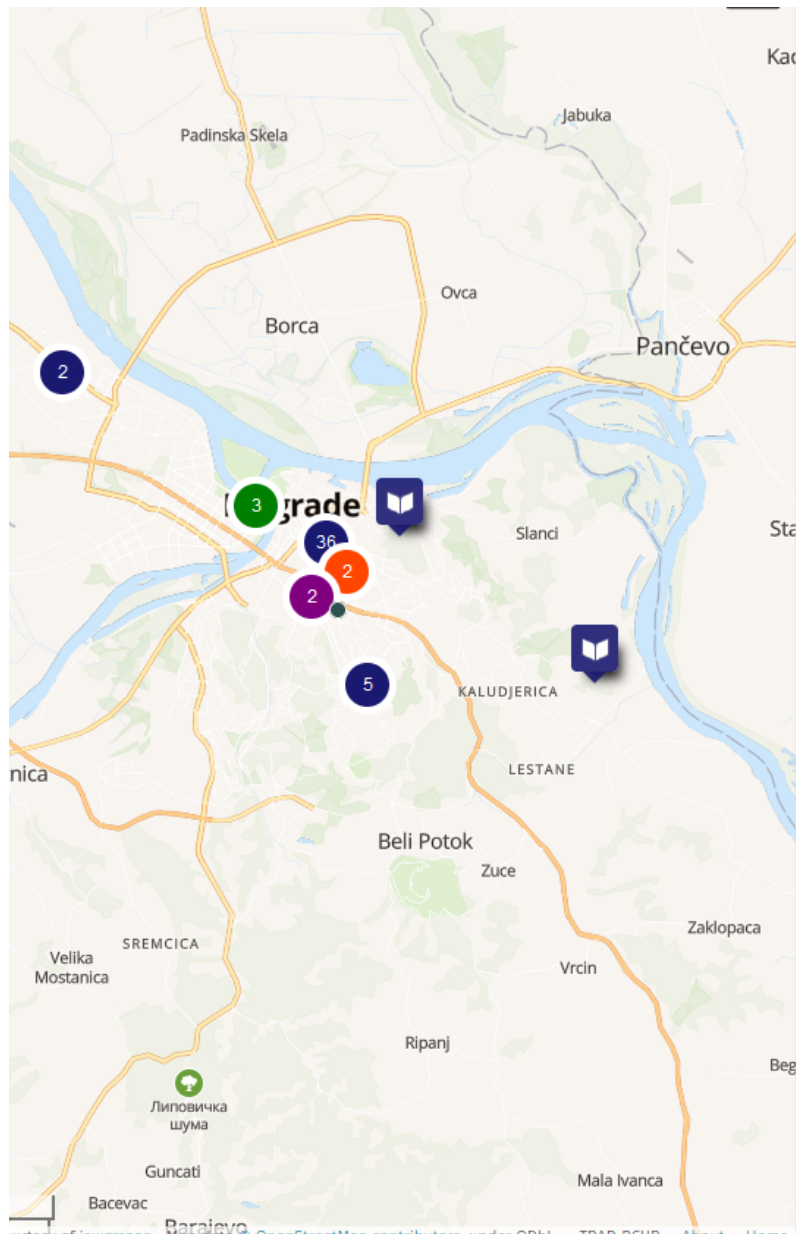
<https://catalogue.ni4os.eu>

# Infrastructure: repositories



<https://time.graphics/line/314977>





### Repositories in Serbia

Filter...

Institutional repositories	
AgroSpace – Repository of the University of Belgrade...	
BIOREpository – Repository of the University of Belgr...	
CER - Central Repository of the Institute of Chemistr...	
Cherry - University of Belgrade - Faculty of Chemistry	
DAIS - Digital Archive of the Serbian Academy of Scie...	
DAIS - Geographical Institute "Jovan Cvijić" SASA	
DAIS - Institute for Balkan Studies SASA	
DAIS - Institute for Byzantine Studies SASA	
DAIS - Institute for the Serbian Language of SASA	
DAIS - Institute of Ethnography of SASA	
DAIS - Institute of Technical Sciences of SASA	
DAIS - SASA Institute of Musicology	
DIRIKUM – Repository of the Institute for Literature a...	
Dr RGF – Repository of the University of Belgrade - F...	
FarFar - Repository of the University of Belgrade - Fa...	
FiVeR – Repository of the Institute of Field and Veget...	
Gery - Repository of the University of Belgrade - Fac...	
GraFar - Repository of the University of Belgrade - Fa...	
InTor – Repository of the Institute of Virology, Vaccin...	
IPIR – Repository of the Institute for Educational Res...	
IRIES - Repository of the Institute of Economic Scien...	
IRIScience – IRITEL Repository	
IRISS - Repository of the Institute of Social Sciences	
Jakov - Repository of the University of Criminal Inves...	
NIV-NS Repository	
OPEN arts.bg.ac.rs – Repository of the Uiniversity of ...	



- [https://v2.sherpa.ac.uk/view/repository by country/Serbia.html](https://v2.sherpa.ac.uk/view/repository%20by%20country/Serbia.html)
- <https://explore.openaire.eu/search/find?active=datasources&fv0=serbia&f0=q&datasourcetypeuiname=%22Repository%22>
- <https://www.base-search.net/Search/Results?q=country:rs&refid=dcmopen>
- [http://umap.openstreetmap.fr/de/map/repositories-in-serbia\\_701341#8/44.324/21.497](http://umap.openstreetmap.fr/de/map/repositories-in-serbia_701341#8/44.324/21.497)



# Core Trust Seal certification

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- Expert support under the SSHOC project: <https://www.sshopencloud.eu/sshoc-trusted-repositories> (repository: DAIS – Digital Archive of the Serbian Academy of Sciences and Arts)
- Application submitted in December 2021
- Preservation plan drafted
- PIDs implemented
- Usage statistics enabled
- Recommended citation supported
- Documentation: <https://repowiki.rcub.bg.ac.rs/index.php/Category:DAIS>



# Community building

- National Open Science Portal: <https://open.ac.rs/index.php>
- Boosting EOSC Readiness, a co-creation project supported by the EOSC Secretariat
- Open Science Community Serbia
- PSSOH conference (Application of Free Software and Open Hardware)

# Open Science Portal (<https://open.ac.rs>)

## Šta je otvorena nauka?



Otvorena nauka je pokret koji ima za cilj promovisanje i ostvarivanje slobodnog pristupa naučnom znanju, podacima i rezultatima naučnih istraživanja, prvenstveno onih koji se finansiraju budžetskim sredstvima. Otvorena nauka se najčešće povezuje sa otvorenim pristupom publikacijama, ali je sam pojam mnogo širi i obuhvata veći broj principa, kao što su otvoreni podaci, otvoreno recenziranje, otvorena metodologija i otvoreni kod. Iako je ideja otvorene nauke jednostavna, primena njenih principa je složen proces koji zahteva postojanje odgovarajuće tehničke infrastrukture, zakonskih regulativa i kompetencija. Principi otvorene nauke se primenjuju na celokupan proces produkcije naučnih, ali i umetničkih rezultata, od obezbeđivanja sredstava i ispunjavanja zahteva finansijera (npr. u okviru Horizont 2020 programa) do deponovanja naučnih radova, primene rezultata istraživanja u praksi i praćenja efekata naučnog rada. Principi otvorenosti imaju za cilj da nauku učine transparentnijom, vidljivijom, efikasnijom, pravednijom i demokratsnijom.

Otvoreni pristup



Otvoreni podaci



Otvorena metodologija



Otvorena evaluacija





# Project Boosting EOSC Readiness

Upravljanje istraživačkim podacima (eng. *Research Data Management*) je tema sa kojom se istraživači u Srbiji sve češće sreću - pre svega u okviru projekata koje finansira Evropska komisija, a sada i konkursima [Fonda za nauku Republike Srbije](#). Upravljanje istraživačkim podacima zahteva odgovarajuće resurse, znanja i veštine od istraživača i bibliotekara.


U želji da istraživačima i bibliotekarima pomogne u usvajanju znanja neophodnih za efikasno upravljanje istraživačkim podacima, Serbia.RDM tim Univerziteta u Beogradu realizuje projekat *Boosting EOSC readiness: Creating a scalable model for capacity building in RDM*, uz podršku Sekretarijata Evropskog oblaka za otvorenu nauku (eng. *European Open Science Cloud*, skraćeno EOSC).

Vodič koji je pred vama rezultat je projekta *Boosting EOSC readiness: Creating a scalable model for capacity building in RDM*. Podeljen je na šest celina:



Serbi<sup>3</sup>.RDM **ORDSerbia** @ordSerbia · May 7, 2021

Findings and recommendations of our Co-creation #EOSC project [bit.ly/3hah59Q](https://bit.ly/3hah59Q) @Univerzitet\_BG #RDM #FAIR #FAIRdata #OpenData @EoscSecretariat @NadicaSm @lessormore4 @Lilj\_Lazarevic @obrad\_vuckovac and Vladimir Otašević with the kind help from @BikiOA

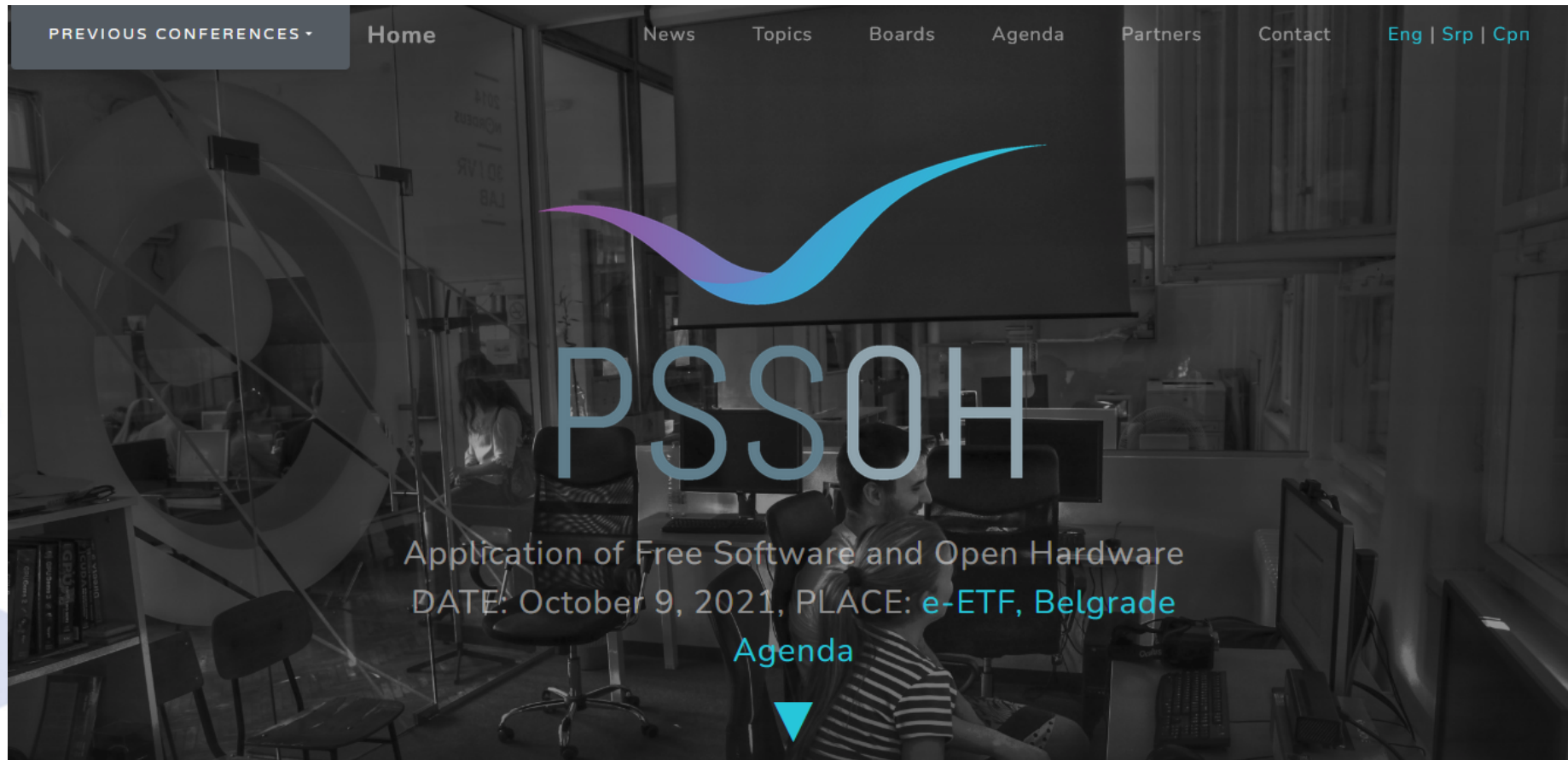


Landscape

**Boosting EOSC readiness: Creating a scalable model for capacity building in RDM**



# Focus on FLOSS and open hardware



PREVIOUS CONFERENCES - Home News Topics Boards Agenda Partners Contact Eng | Srp | Cpn

# PSSOH

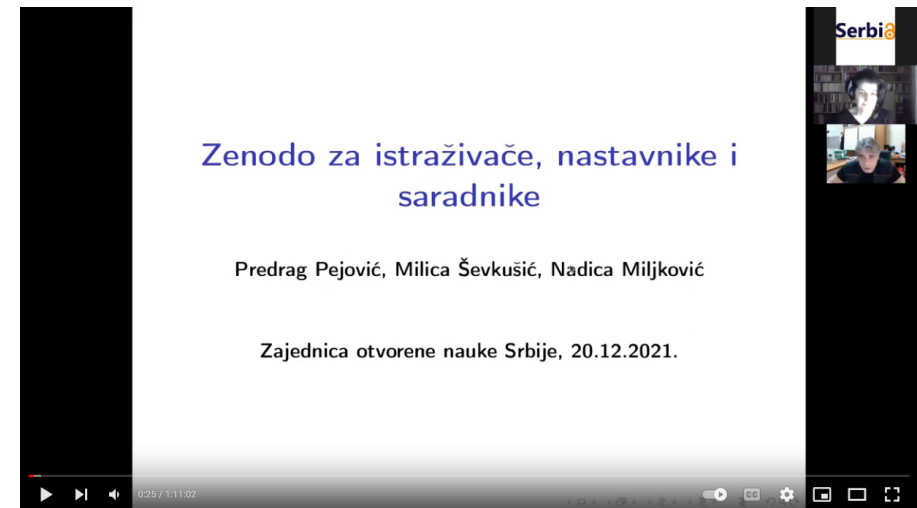
Application of Free Software and Open Hardware  
DATE: October 9, 2021, PLACE: e-ETF, Belgrade  
[Agenda](#)

The image shows a screenshot of the PSSOH website. The background is a dark, grayscale photograph of a modern office or meeting room with people working at computers. Overlaid on this is the PSSOH logo, which consists of a stylized wave shape in shades of purple and blue. Below the logo, the text 'PSSOH' is written in large, light blue, sans-serif capital letters. Underneath that, the full name 'Application of Free Software and Open Hardware' is written in a smaller, light blue font. Below the name, the date and location are listed: 'DATE: October 9, 2021, PLACE: e-ETF, Belgrade'. At the bottom, the word 'Agenda' is written in a light blue font with a small blue triangle pointing downwards to its right. The top of the page features a navigation menu with links for 'Home', 'News', 'Topics', 'Boards', 'Agenda', 'Partners', 'Contact', and language options 'Eng | Srp | Cpn'. A 'PREVIOUS CONFERENCES -' dropdown menu is also visible on the left side of the navigation bar.

# Open Science Community Serbia



- OSCS website: <https://oscs.open.ac.rs/>
- The first OSCS event, 20 December 2021: <https://www.youtube.com/watch?v=V4naNkHQLaY&t=2852s>
- Informal training for librarians (Let's learn together!) since October 2021
- An informal initiative to support the NOSCI



## Challenges

- Motivation and commitment of researchers
- Sustainability of infrastructure
- FAIR in practice
- Open Educational Resources



**Serbi**

# Questions?

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Twitter: @lessormore4



NI4OS-Europe - National Initiatives for Open Science in Europe – H2020 Research and Innovation action – contract no. 857645

**ACUB**