



Poland - e-Infrastructure ecosystem and relation to EOSC

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Polish research infrastructure stakeholders

- ✓ **Owners of the infrastructure**
 - ✓ MAN institutions + HPC centres
- ✓ **Service providers**
 - ✓ MAN + HPC and universities
- ✓ **Users**
 - ✓ Universities, R&D institutions, Polish Academy of Science institutes
 - ✓ Digital libraries, hospitals
- ✓ **Founders**
 - ✓ Ministry of Science and Higher Education
 - ✓ Ministry of Regional Development, Marshals of the regions
 - ✓ Inkind contribution of MAN and HPC centres

Partners:

PIONIER consortium

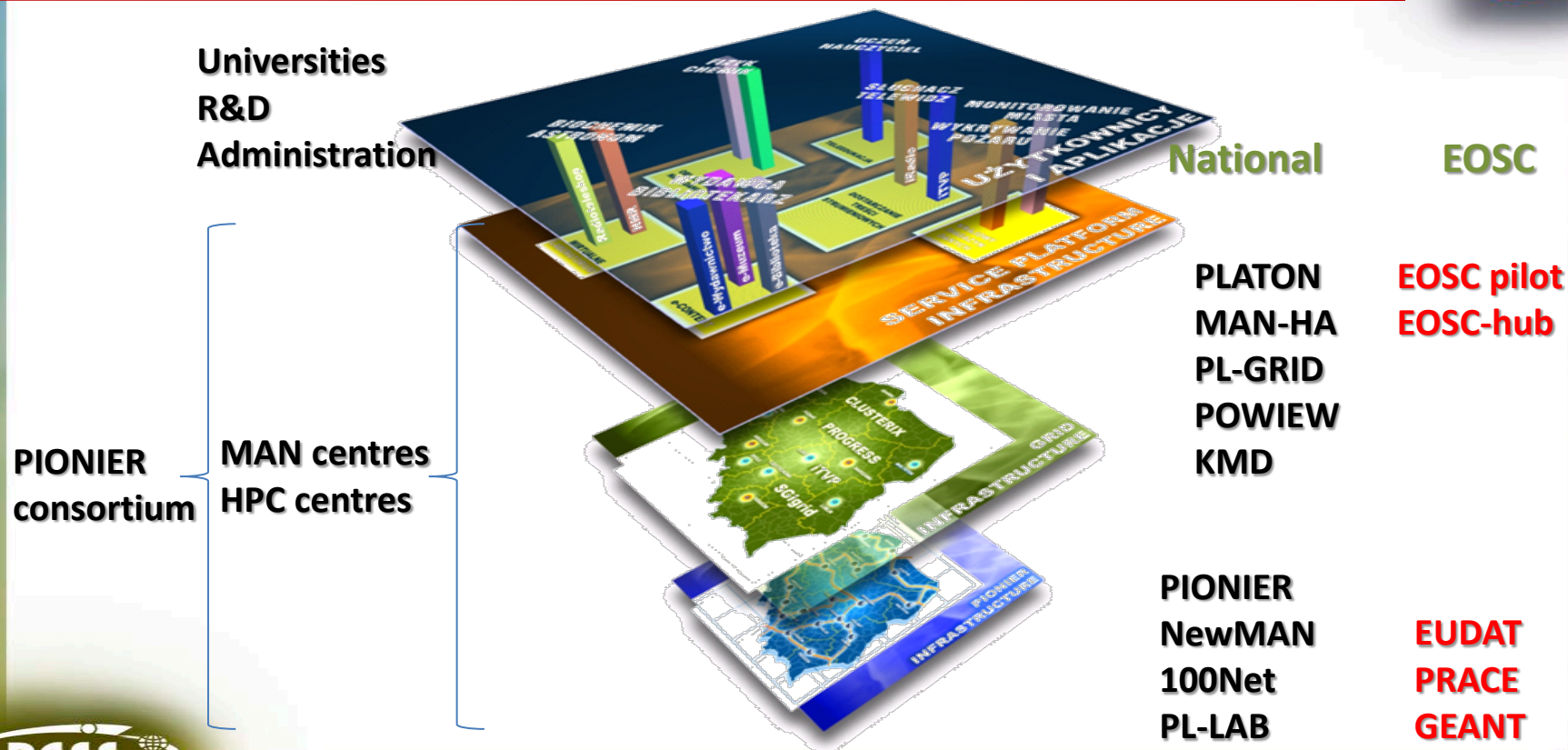
1. Institute of Bioorganic Chemistry of the Polish Academy of Science – Poznań Supercomputing and Networking Center
2. University of Technology and Life Sciences in Bydgoszcz
3. AGH University of Science and Technology – Academic Computer Centre CYFRONET
4. Institute of Soil Science and Plant Cultivation – State Research Institute
5. Maria Curie – Skłodowska University in Lublin LUBMAN UMCS
6. Białystok University of Technology
7. Częstochowa University of Technology
8. Gdańsk University of Technology Academic Computer Centre TASK
9. Koszalin University of Technology
10. Technical University of Łódź
11. Technical University of Radom
12. Rzeszów University of Technology
13. West Pomeranian University of Technology Szczecin
14. Silesian University of Technology – Computer Centre
15. Kielce University of Technology
16. Wrocław University of Technology
17. Nicolaus Copernicus University
18. Opole University
19. University of Warmia and Mazury in Olsztyn
20. University of Warsaw – Interdisciplinary Centre for Mathematical and Computational Modelling
21. University of Zielona Góra
22. NASK Research and Academic Computer Network



Partners in all regions



e-Infrastructure and services related to EOSC



- ESFRI
 - Significant parts of European Research Infrastructures (RI) located in Poland
- Polish RI roadmap
 - 53 proposals in 2014-2018 , incl. **25 related with European initiatives and ESFRI projects**

Integration with European infrastructures (cont.)

- Data infrastructure
 - EUDAT – European Data Infrastructure
 - openAIRE
- HPC - PRACE initiative
- European Grid Initiative (EGI)
- GEANT (GN4)
- Integrated and joined initiatives from EUDAT2020-INDIGO-EGI
 - Common open cloud for data and computing
- Interdisciplinary joint initiatives with high chances for sustainability, e.g.
 - LOFAR, EVN,
 - CLARIN,
 - ELIXIR, ASPERA,
 - EuroFUSION
- Cultural heritage data

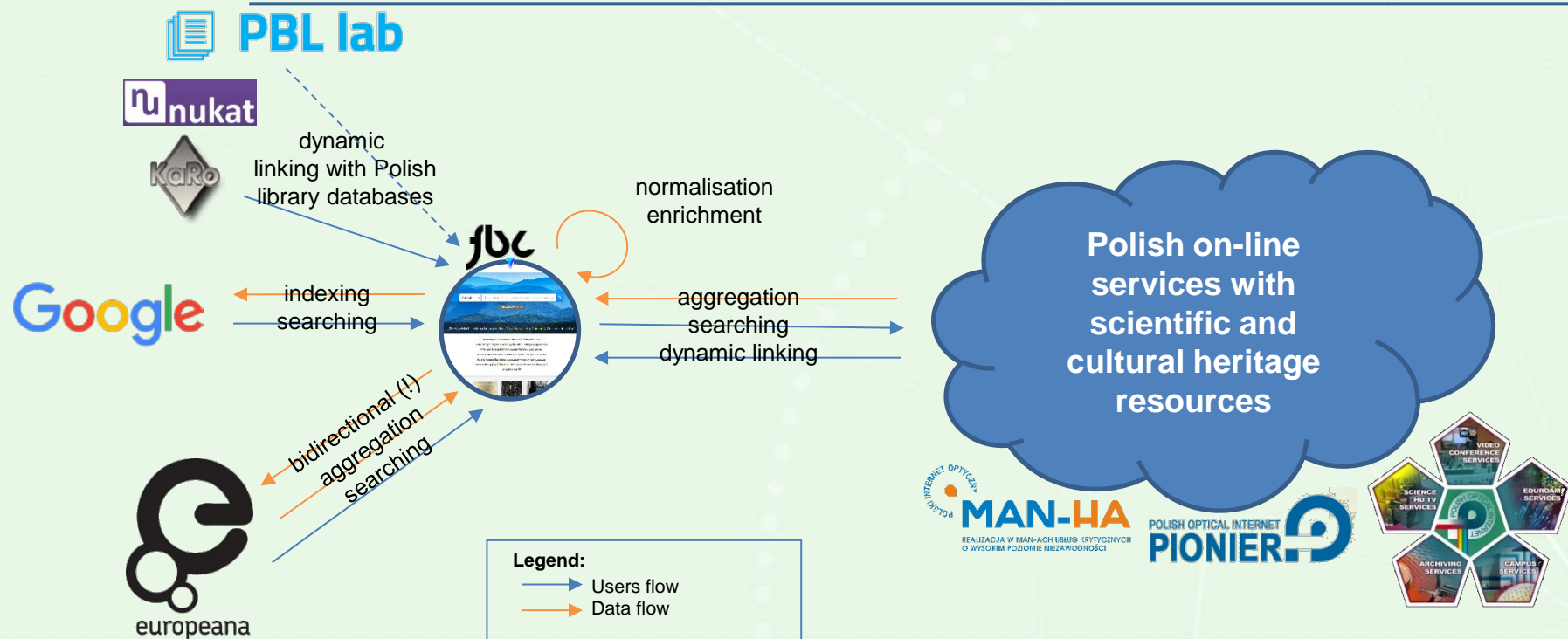
Integration with European initiatives and projects

- EOSCPilot
- EOSC-hub
- Euro-HPC
- PRACE-AISBL
- EUDAT CDI

Examples – integration with EOSC

- **Architecture**
 - EOSC-hub - integration with competence centres and business cases (PSNC)
 - OneData, Marketplace (Cyfronet)
- **Data level**
 - data-id services in Pionier (in co-operation with DataCite)
- **Services**
 - national/European (PionierId - eduGAIN, MDVPN, eduroam)
 - National Data Storage, mbox
 - OneData
 - Service Providers for Humanities (FBC+DARIAH+Europeana),
 - Earth Science (ROHub i EVEREST),
 - GLobal System Science (Coegss)
 - fusion (EOCOE, EuroFUSION),
 - Radioastronomy (LOFAR, EVN)
- **Access & Interface**
 - ROHub - access to Research Objects
- **Governance**
 - EuroHPC, PRACE AISBL, EUDAT CDI
 - e-IRG
 - ESFRI

Platform for Polish scientific and cultural heritage resources



FBC: Portal and API with **4,4 mln metadata records** from 131 data sources, of which **3,4 mln in open access**, with links to digital files – humanities research data

CBN Polona

Jagiellońska BC

Wielkopolska BC

e-biblioteka Uniwersytetu
Warszawskiego

In the future: integrated with EOSC to provide access to humanities research data and make it interoperable with (coming) humanities VREs running in EOSC

Śląska BC

Kujawsko-Pomorska BC

Małopolska BC

Biblioteka
Multimedialna
Teatru NN

Bałtycka BC

Podlaska BC

BC
Uniwersytetu
Łódzkiego

Repozytorium
Cyfrowe
Instytutów...

Zachodnio...
BC
"Pomerania"

Radomska
BC

BC
Politechniki
Śląskiej

Elbląska
BC

BC
UMCS

BC KUL

Mazowiecka
BC

BC
Uniwersytetu
Wrocławskiego...

BC Ośrodk
KARTA

Dolnośląska
BC

Cyfro...
Dolny
Śląsk

Zielono...

Podka...

Akade...

Wejhe...

BC -
Regionalia
Ziemi Łódzkiej

Pomorska
BC

Cyfrowe
Muzeum
Narodow...

Repoz...
Uniw...

BC
Woj...

BC
Poli...

Biblio...

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PLGrid - Polish Grid and Cloud Infrastructure for Science



Computing resources

- 5+ PTFLOPS
- 130 000+ cores



Scientific Software

- 600+ applications, tools, libraries
- <http://apps.plgrid.pl>



Storage

- 60+ PB
- fast scratch
- distributed access



Tools for collaboration

- project tracking (JIRA)
- version control (Git)
- teleconferencing (Adobe Connect)



Computational Cloud

(based on OpenStack)

- 6000+ users
- 350+ active research grants
- All Polish Academic HPC centres integrated

- Agreements signed on governmental level, e.g. Euro-HPC
- New legal European institutes
 - ERIC (**European Research Infrastructure Consortium**) – participation via national representatives,
 - PRACE AISBL
 - EUDAT CDI
 - POLFAR/LOFAR
- Financial support for international co-operation: RI, e-Infrastructures and further ESFRI landmarks
- Structural funds in Poland (2016-2020)

- Secure and Trusted environment for open data access
 - eduGain and Pionier.Id in Poland
 - Open access to resources, data and services
 - Eduroam – for network connections
- Full support for getting access to EOSC for academia, industry and administration