

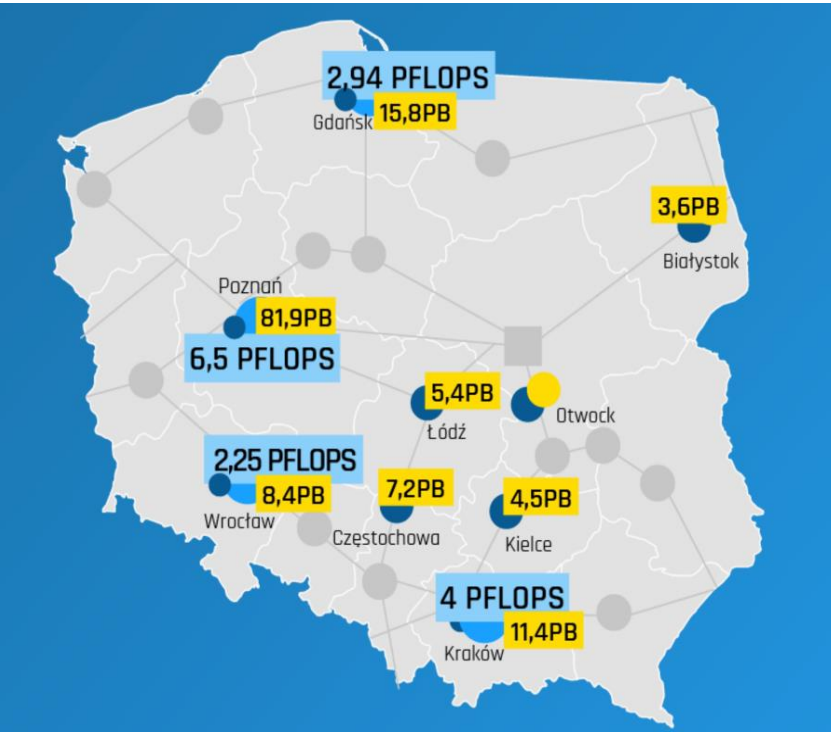


*innovation is everyday*

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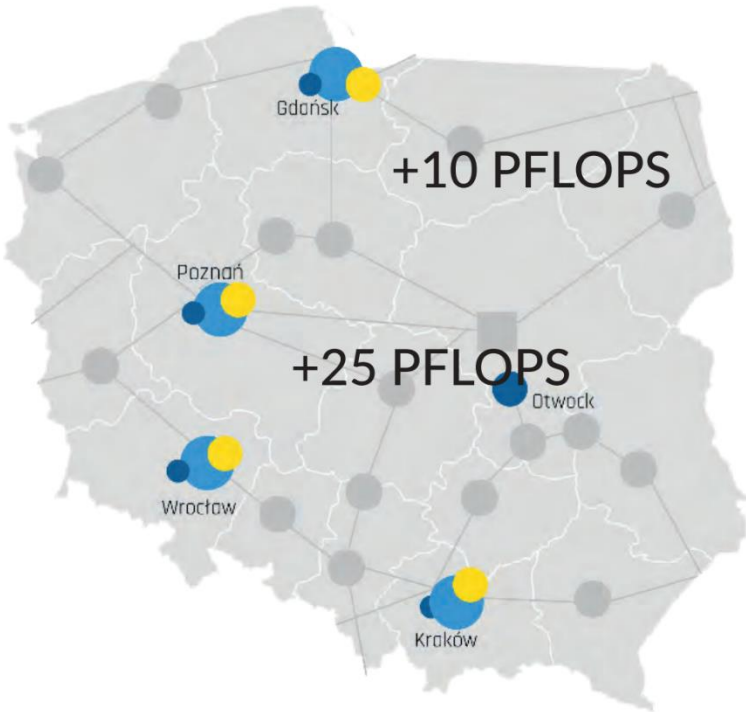
**Research Infrastructures  
ICT Research and Development**

## Cooperation on Advanced Computing in Europe



# PRACE-LAB2 **pracelab** 2

## Cooperation on Advanced Computing in Europe



- Parallel processing on HPC systems
- HPCaaS, GPUaaS
- Emulation of quantum computing
- BigData analytics
- Neural network learning
- Visualization rendering
- Large-scale data transfer
- Blockchain database environment
- Providing gas pedals in the cloud - IaaS
- Domain expert consultation
- Commercial usage

# National Data Storage



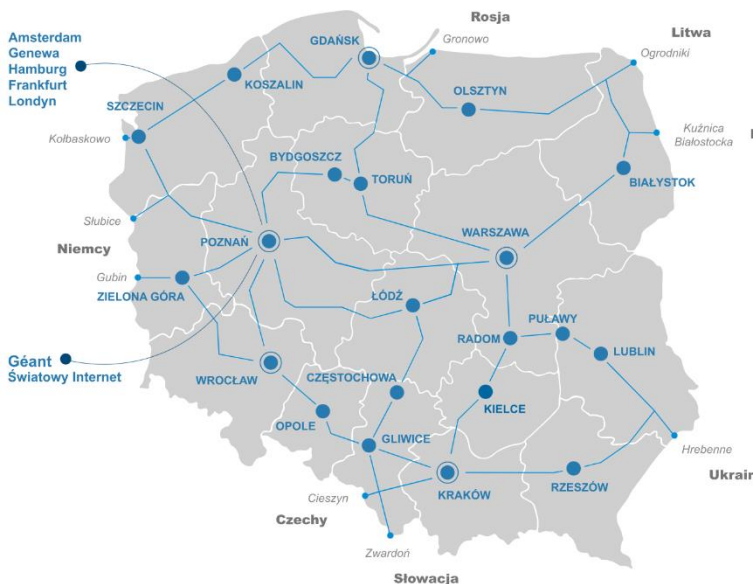
Universal infrastructure for data storage, access, and potent processing of large data volumes in **HPC**, **Big Data**, and **Artificial Intelligence** computing models



- Up to 1 Exabyte archivization and long-term storage
- Data storage infrastructure and systems laboratory
- Services embedded in storage laboratory
- Services and applications for data access laboratory
- Repository services laboratory
- Edge computing laboratory

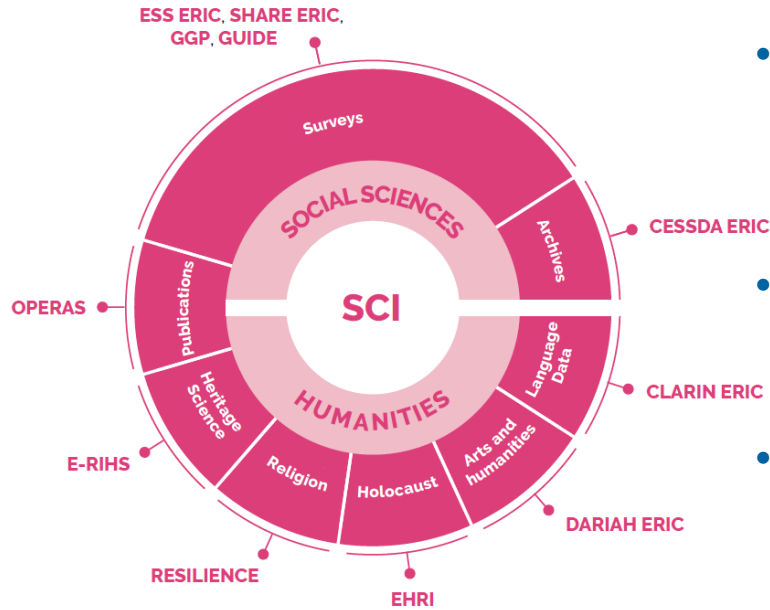


## National Platform for Integrating Research Infrastructures with Ecosystems of Innovation



- Laboratory of Innovative Network Technologies
- Distributed Time and Frequency Laboratory
- Smart Campus as Smart City Laboratory
- Regional "Living" Innovation Labs inspired by ICT
- Cloud Services Laboratory
- Multi-scale Simulation Laboratory
- Laboratory and e-Training Services (in the scope of PIONIER-LAB and technology-inspired innovations)
- Preincubation Laboratory

## Digital Research Infrastructure for the Arts and Humanities



- **Geoarchaeology**, covering broadly understood non-invasive analysis and documentation of soil, landscape, and monuments
- **Cultural data**, including a wide range of interdisciplinary research on culture and phenomena occurring in it
- **Musicology**, involving research on music as an acoustic, cultural, historical and social phenomenon, and its perception

# MOSAIC

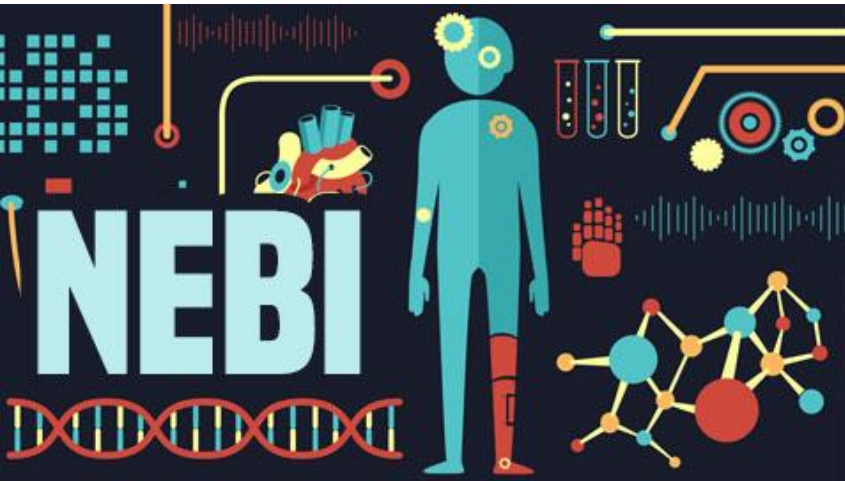
The European Center for **Bioinformatics** and **Genomics**



- New infrastructure for large-scale and **multi-level studies** of **biological systems**
- **Precise therapeutic strategies**
- **Single-cell biology**, organoids, and **Artificial Intelligence**

# NEBI

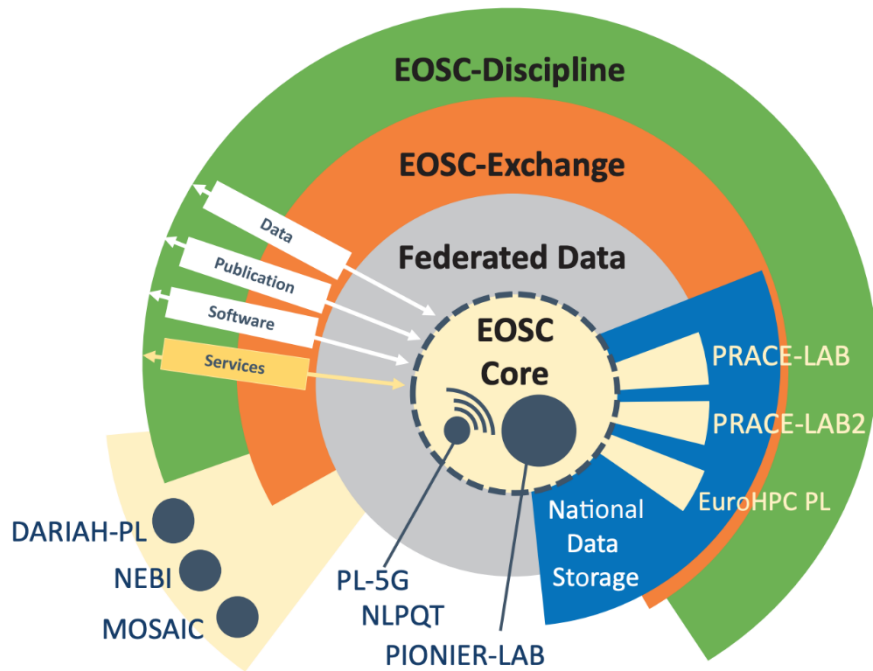
## National Center for Advanced Analysis of **Biological** and **Biomedical Imaging**



- A new research infrastructure that offers open access to imaging technologies, training and data services in **biological** and **biomedical imaging**
- Foster the liaison and **cooperation** of all its stakeholders, including scientists, industry, national and European authorities
- Next generation of **microscopes** and bioimaging tools



# European Open Science Cloud



# PL-5G

## National Laboratory for Advanced 5G Research



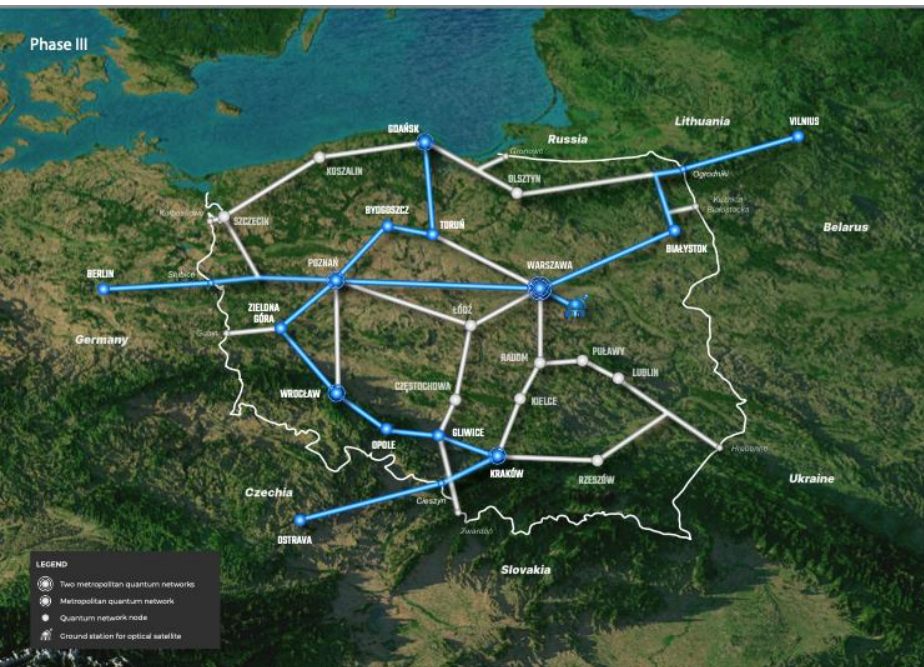
- 5G network laboratory will be built using state-of-the-art 5G solutions (wireless and wired access networks, edge cloud computing, core network, and central cloud computing).
- Laboratory of 5G simulators and measurement tools provides 5G simulation scenarios for evaluation of parameters for 5G devices.
- 5G environment laboratory supply a research infrastructure supporting users in developing new 5G-ready network solutions, platforms, and applications.

# Quantum Communication

## EuroQCI and PIONIER-Q



QUANTUM COMMUNITY NETWORK

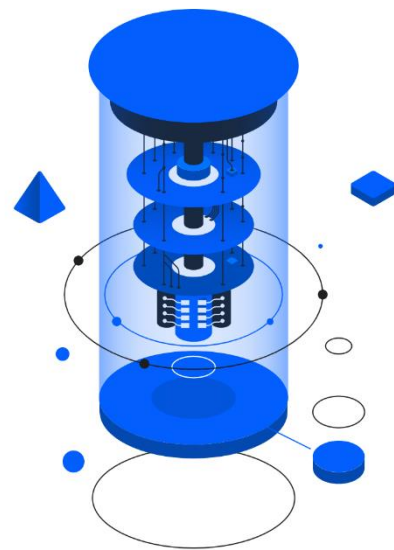
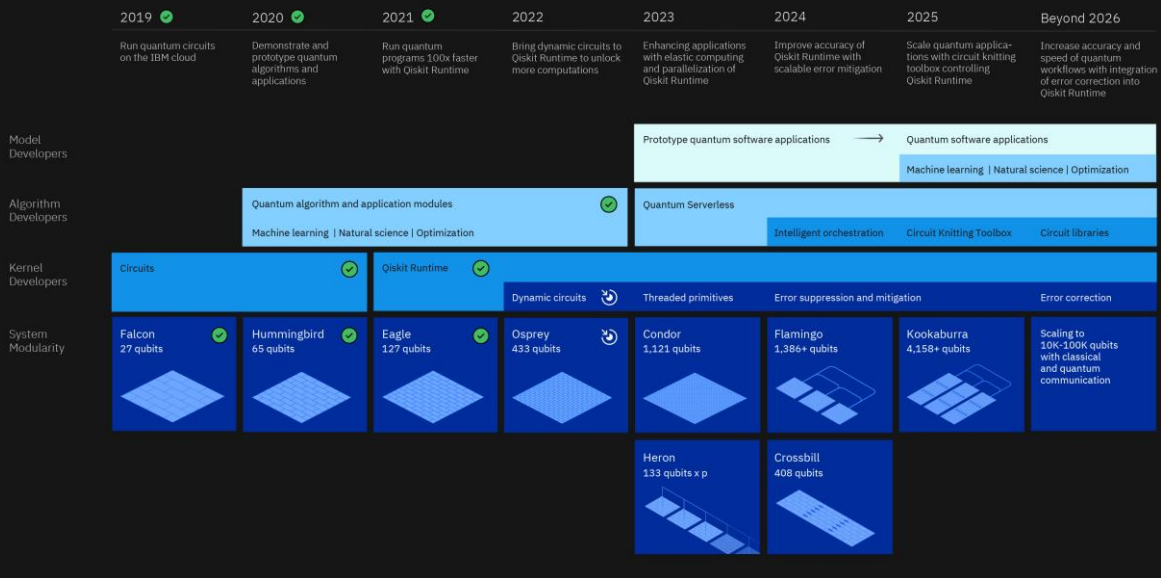


- First quantum key distribution (QKD) system as an operational and secure network and services connecting two PSNC data centers in Poznan (~5 km)
- First QKD cross-border link between Poland and Czech Republic (~60 km)
- PIONIER-Q consortium representing Poland in EuroQCI

# Quantum IBM Hub

## First Hub in Central and Eastern Europe

### Development Roadmap | Executed by IBM On target

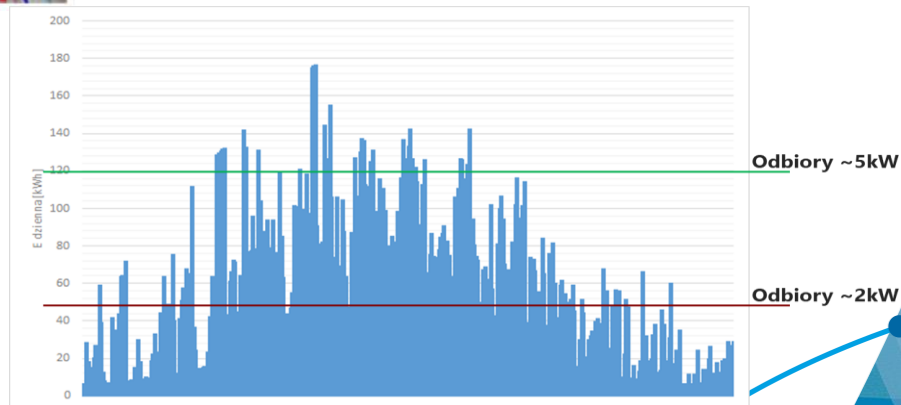
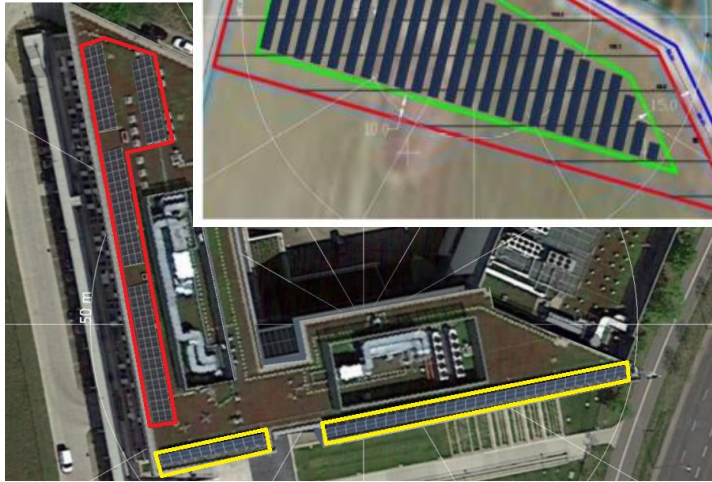




# Green IT

Aims to provide energy savings for the infrastructure operation:

- 20 kWp off-grid on the roof PSNC PoC
- 55 kWp on-grid on the roof PSNC
- 50 kWp on-grid on the roof hangar
- 1 MWp on-grid field installation
- 8 MWp on-grid field installation
- Up to 10 MW on-grid field Konin





*Thank You !*

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