POL-ON

Information System for Science and Higher Education in Poland

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AGENDA


Main facts about the system
Supported business processes
Main benefits
Project organization and system architecture

National Information Processing Institute in Poland

- Non-profit organization
- Our principal aim is to provide access to complex and up-to-date information concerning Polish science.
- We create complex IT systems on science and higher education
- The core recipient of our work is the **Ministry of Science and Higher Education in Poland**, for which the results of our research serve as an instrument for better decision-making
- We create links between public and private entities

THE MAIN FACTS ABOUT PROJECT

2011 — Project begins

The system has been created between 2011- 2013 as a partnership project co-financed by the European Union under European Social Fund.

2013 — End of the first phase

Partnership

- Interdisciplinary Center for mathematical and computational Modeling at University of Warsaw
- Index Copernicus

2014 — Second phase

Current state

Since 2014 the system has been developed and maintained only by OPI PIB

The overall cost of development and maintenance of the system in the last five years is equal to 7,500,000 EUR

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SYSTEM ENVIRONMENT IN POLAND

Diversity

POL-on works in a heterogeneous information environment witch hampers integration in one datacenter. Most universities and institutes have their own unique information systems in various technologies and architectures (ERP, antiplagiarism systems, repositories, and alike)

Obligations

The Polish universities and research units are obliged by law to provide various information and store it in the central system

Changing law

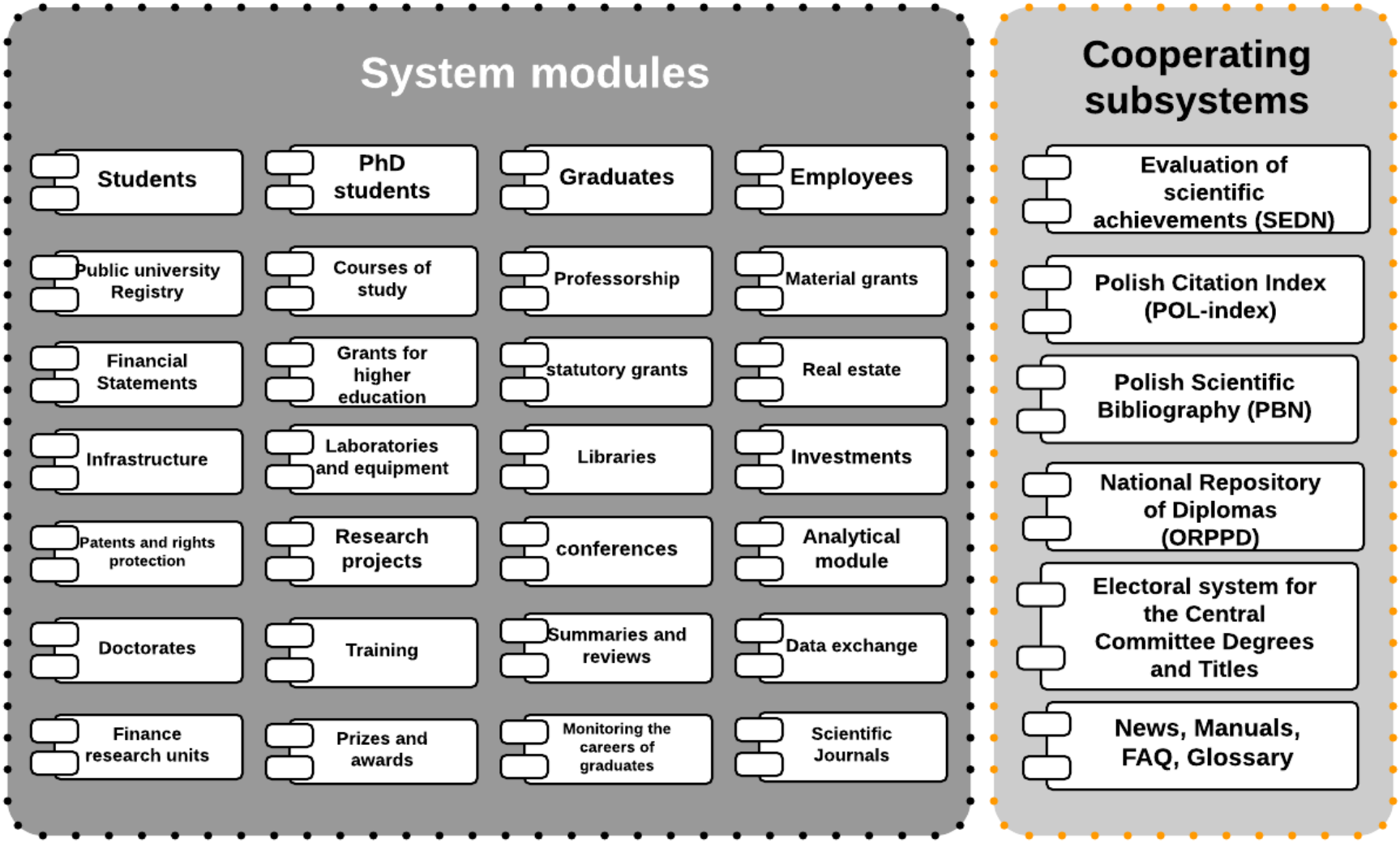
The critical problem is the high changeability of law in Poland. During the last five years there were three amendments of the bill about higher education and science in Poland.

Government architecture is still in progress

Interoperability of state systems in Poland is still in the development phase

POL-ON

INTEGRATED INFORMATION SYSTEM
FOR SCIENCE AND HIGHER EDUCATION



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SYSTEM IN NUMBERS

By May 2016 we have collected data from more than:

Universities
445

Research Institutes
224

Students
~`1 300 000
(per each academic year)

PhD Students
43 513

Employees
157 024

Courses of study
8 055

Thesis
Over
1 000 000

Publications
Over
1 000 000

Research projects
27 976

Patents and licences
65 362

and many others .....

POL-ON

</> ~ 900 000 lines of JAVA code

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Stakeholders and users of POL-ON

Overall registered users: 20 000

Governmental institutions, namely:

- Ministry of Science and Higher Education
- Ministry of Health
- Ministry of Culture and National Heritage
- National Science Centre
- National Centre for Research and Development
- Central statistical office in Poland (GUS)

Entities of Higher Education and Science, namely:

- Universities
- Research Institiutes
- Polish Academy of Sciences

Institutions supporting Higher Education and Science in Poland, namely

- Committe for Evaluation of Scientific Units
- The Degrees and Titles Committee,
- Conference of Rectors of Academic Schools in Poland
- Polish Accreditation Committee,
- The Bureau for Academic Recognition and International Exchange;

Citizens, namely :

- Researchers and academic teachers
- Research & development staff
- Students
- Graduates
- Individuals particularly interested in science and higher education
- Innovative companies

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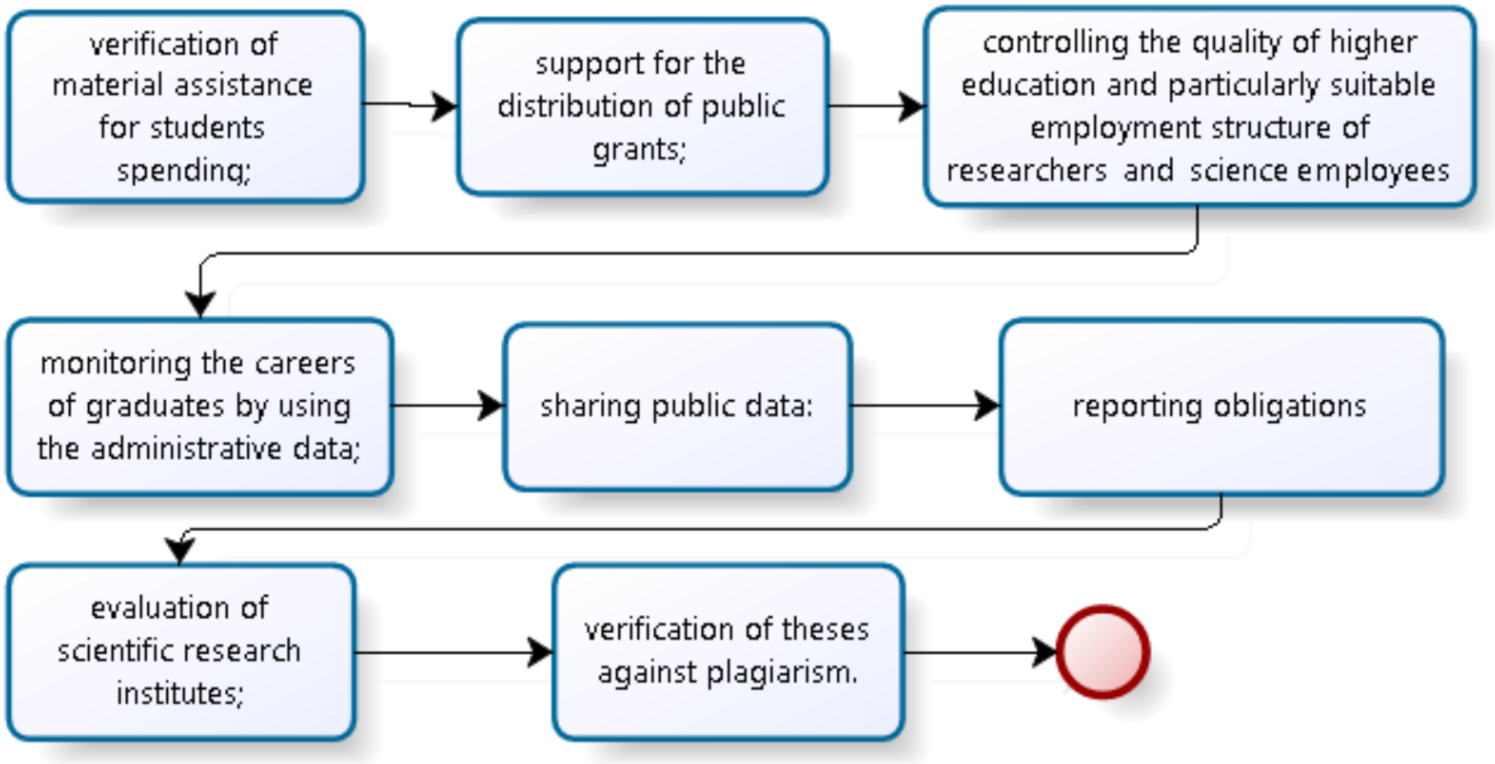
BUSINESS PROCESSES

- **Among many business processes there are several ones that are especially important:**



THE MAIN FACTS ABOUT POL-ON

POL-on is one of the biggest functioning governmental system in Poland in terms of the scope of acquired data

According to the Central Repository of Public Information it covers the largest public registers of data

Reduces bureaucracy

It supports over 20 reporting obligations of universities and researche instituites

Improves veryfication

Since 2015, it monitors graduates careers nationwide using the data system in conjunction with the insurance state register

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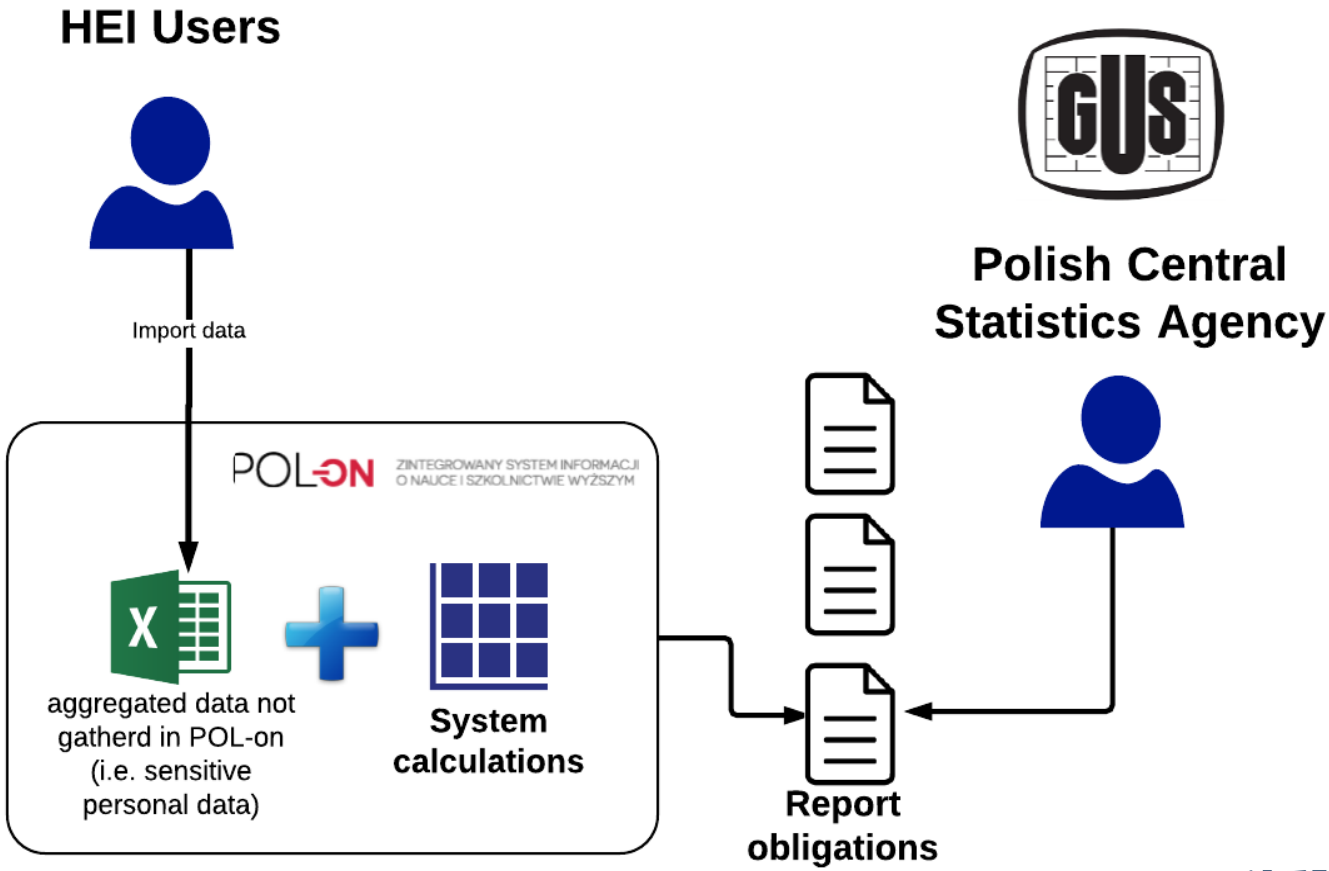
THE MAIN FACTS ABOUT POL-ON

- In 2015 the system was adapted to take over the entire national statistics in the field of higher education, which will start operating from 2017



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THE MAIN BENEFITS OF POL-ON

Supports the creation of financial policies

Provides strategic data about Polish science and higher education system which supports the creation of financial policies of the country and calculations of supporting funds for higher education

Shares data for public use

Stores the biggest national public registers covering the areas of science and higher education

Checks for plagiarism and fraud

Supports the verification of the correctness of students scholarships as well as public funds spending

It helps to check the quality of education and it eliminates the phenomenon of plagiarism by using the national repository of diplomas;

Supports the employment quality check

Supports the employment quality check in universities and research institutes, i.e. it automatically verifies multiple employments of researchers and science employees

Evaluates all national research units

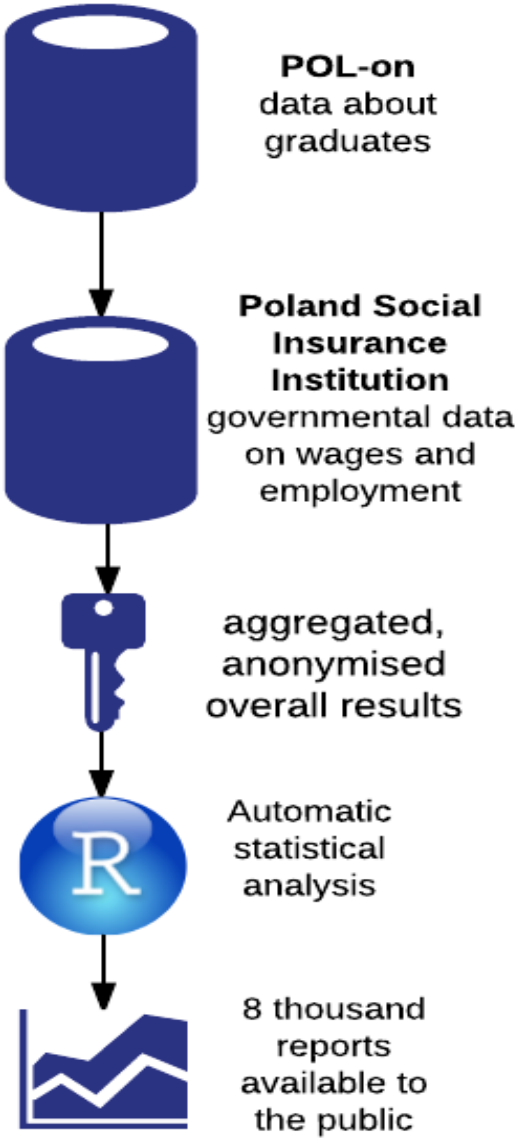
It evaluates all national research units – assesses scientific values that help to establish relevant policies on fund spendings in the scientific field;

Reduce of administrative burden

It supports reporting obligations of universities and institutions

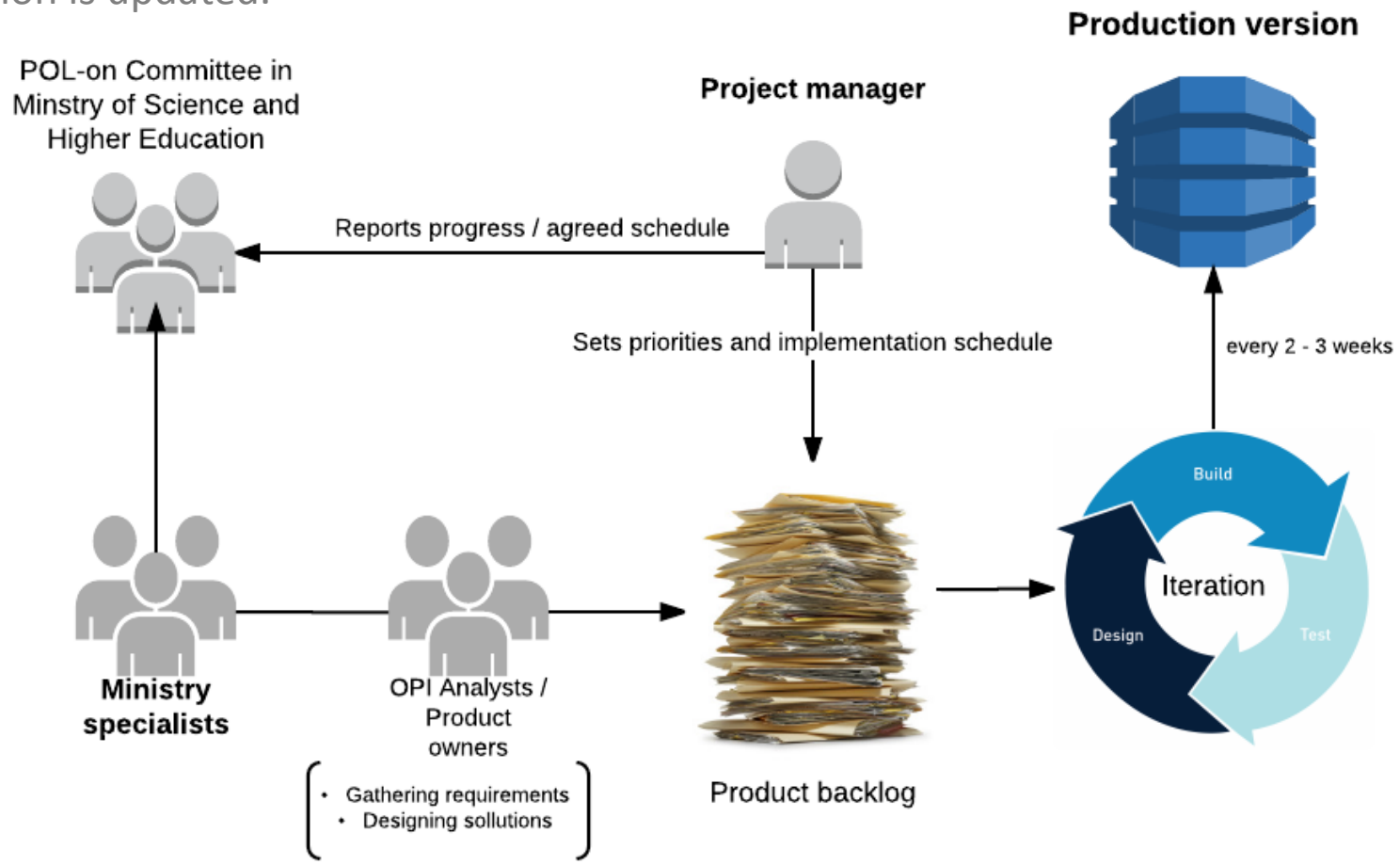
THE MAIN BENEFITS OF POL-ON

- Provides the necessary knowledge about educational offers to candidates who apply for places at universities www.wybierzstudia.nauka.gov.pl
- Provides general data about graduates, shares such data with the Polish Social Security System (ZUS) in order to create reports about graduates' salaries, mobility and their first jobs www.absolwenci.nauka.gov.pl
- Makes publicly avalaible the national repositories of scientific publications and citing indexes www.pbn.nauka.gov.pl
- It boosts innovative economy and the cooperation between science and business by using the registers covering the human capital of science and higher education www.inventorum.opi.org.pl



ORGANIZATION OF THE PROJECT

The POL -on is implemented based on the agile and iterative SCRUM methodology. Iterations last two weeks. After the end of the iteration, in most cases, the software version is updated.



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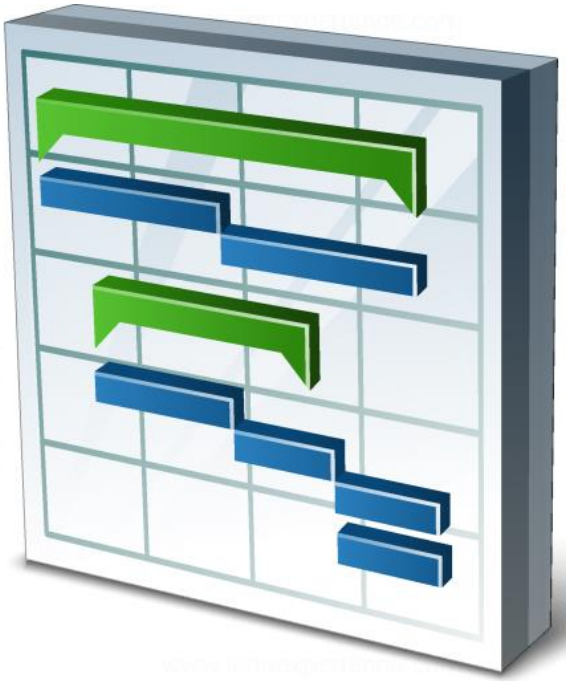
ARCHITECTURE AND TECHNOLOGY

Data providers	Data aquisition	Architecture	Sharing
over 20 000 registered users	Web interfaces	**Front end:** - Java Server Faces - Spring Webflow	nearly 30 publicly available registers
over 400 university databases	REST / SOAP	**Middleware:** - Apache Tomcat 7 - Spring framework - Hibernate / Envers - Jersey	over 20 state units
over 200 research units databases	IMPORT OF FILES	**Persitence layer:** - Oracle 12c EE - Hadoop Cluster - MongoDB	**web aplications:** www.polon.nauka.gov.pl www.pbn.nauka.gov.pl www.wybierzstudia.pl www.inventorum.pl www.nauka-polska.pl www.absolwenci.nauka.gov.pl

FUTURE PLANS

- Provide some data warehouse solution for the HEIs
- Translate POL-on data to CERIF XML model to increase an interoperability across Europe
- Increase interoperability with other governmental systems in Poland
- Increase an open access to public data
- Central Service Bus
- Central Authentication Service



Thank you for your attention

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