



NATIONAL  
INFORMATION  
PROCESSING  
INSTITUTE

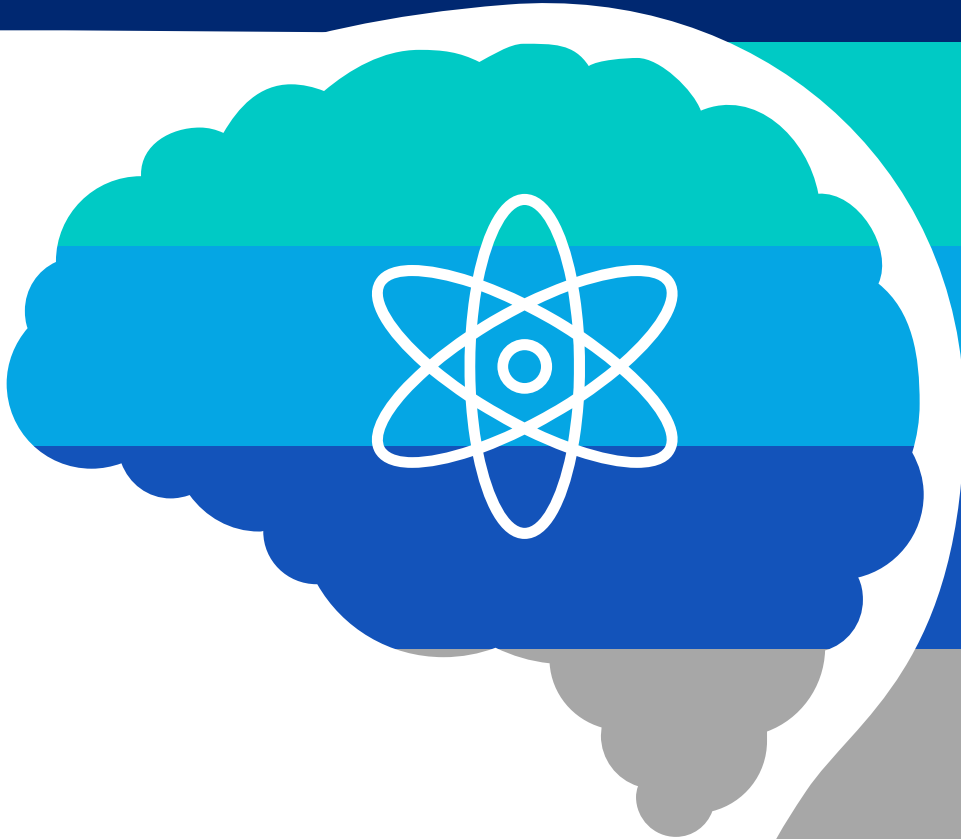
radon  
raporty | analizy | dane

# Open access to data on science and higher education

A case study of the RAD-on platform in Poland

Sylwia Ostrowska

# The rationale behind RAD-on



The growing number of databases, despite its obvious advantages, also brought negative consequences that required a systemic solution

**01** **Data dispersion**  
No central source of access to data for citizens, journalists, scientists and public administrators

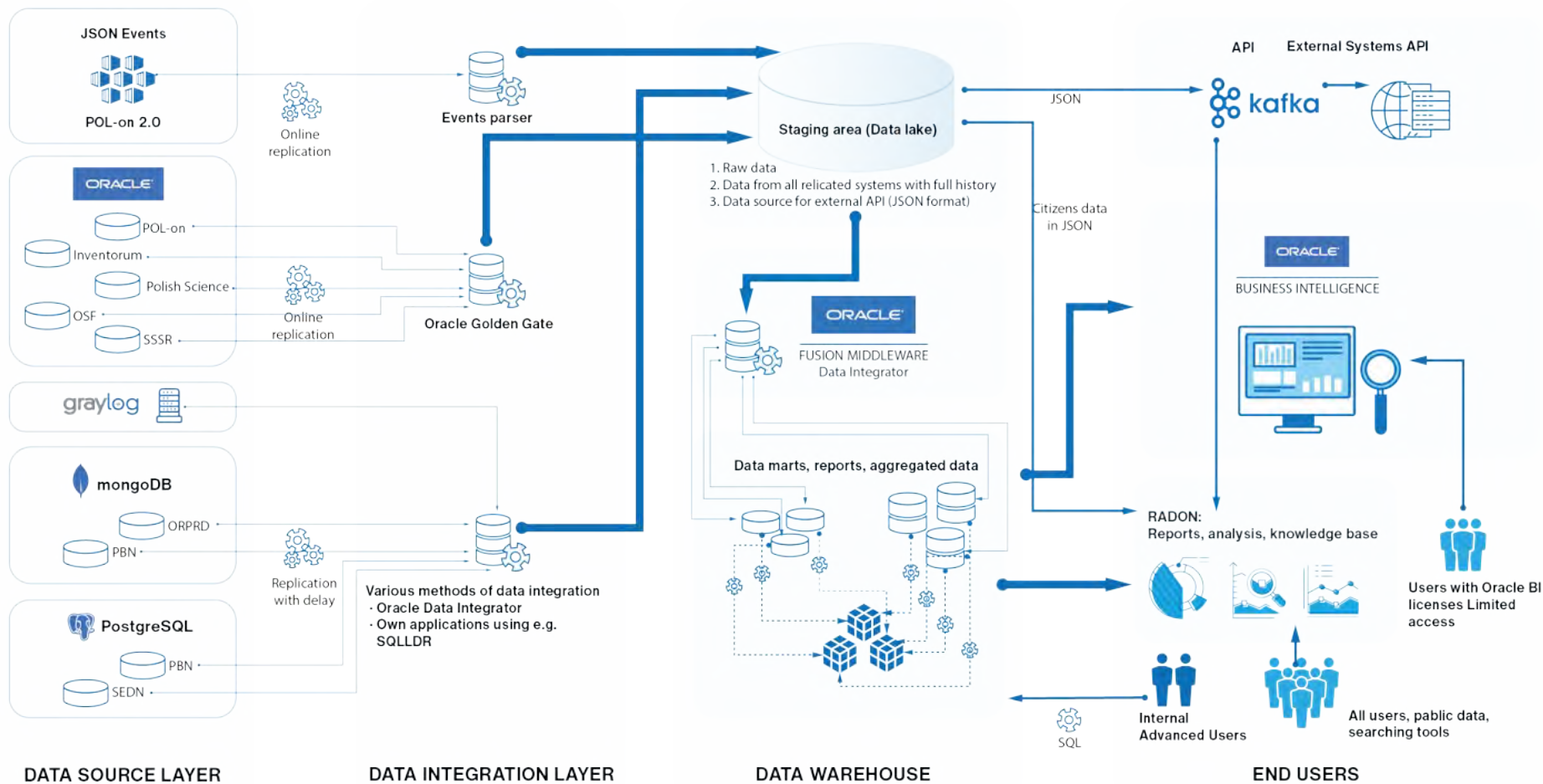
**02** **Poor data integrity**  
Data from individual IT systems occasionally conflicted with that of other systems

**03** **Few possibilities for analysis**  
No visualisations of data, no advanced BI tools

**04** **Limited machine data processing**  
No central point of access to raw data and machine data retrieval services

# A simplified architecture of RAD-on

## DATA WAREHOUSE - PROCESSING AND ARCHITECTURE

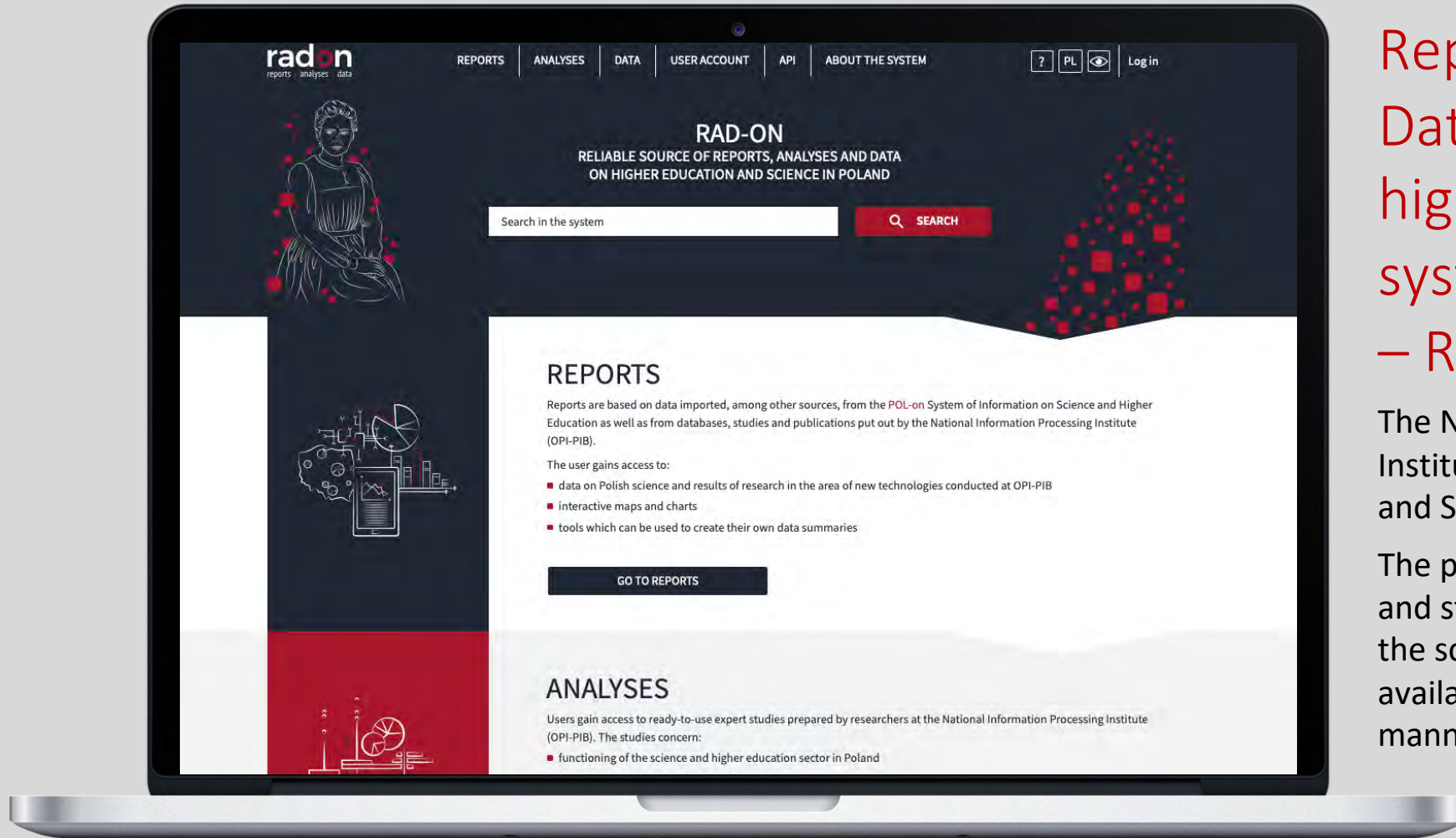


- **RAD-on integrates data from the following systems:**
- **POL-on** – a system of information on science and higher education
- **PBN** – a database of Polish scientific publications
- **SEDN** – the System for Evaluation of Scientific Achievements in Poland
- **Inventorium** – a system that facilitates science-business cooperation
- **Polish Science** – data on Polish scientists and their research
- **OSF** – a system for managing funding for science
- **SSSR** – a support system for selection of reviewers
- **ORPPD** – a national repository of written diploma theses



The final product

Functionalities and their  
development

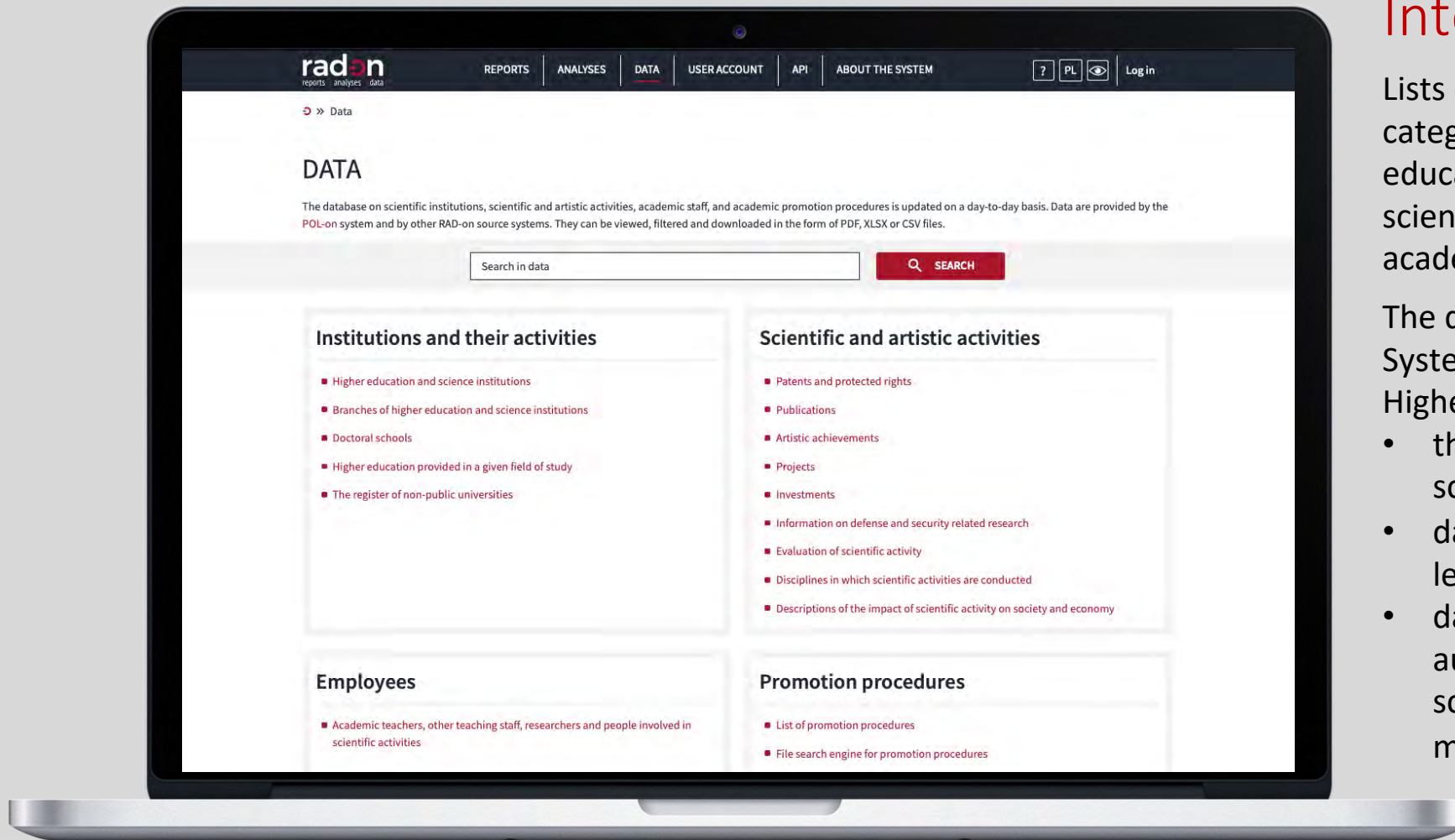


## Reports, Analyses and Data on the science and higher education system in Poland – RAD-on

The National Information Processing Institute and the Ministry of Education and Science in Poland.

The platform integrates all of the systems and state registers, and makes data on the science and higher education available in a single place and in an open manner.

[www.radon.nauka.gov.pl](http://www.radon.nauka.gov.pl)



## Integrated access to data

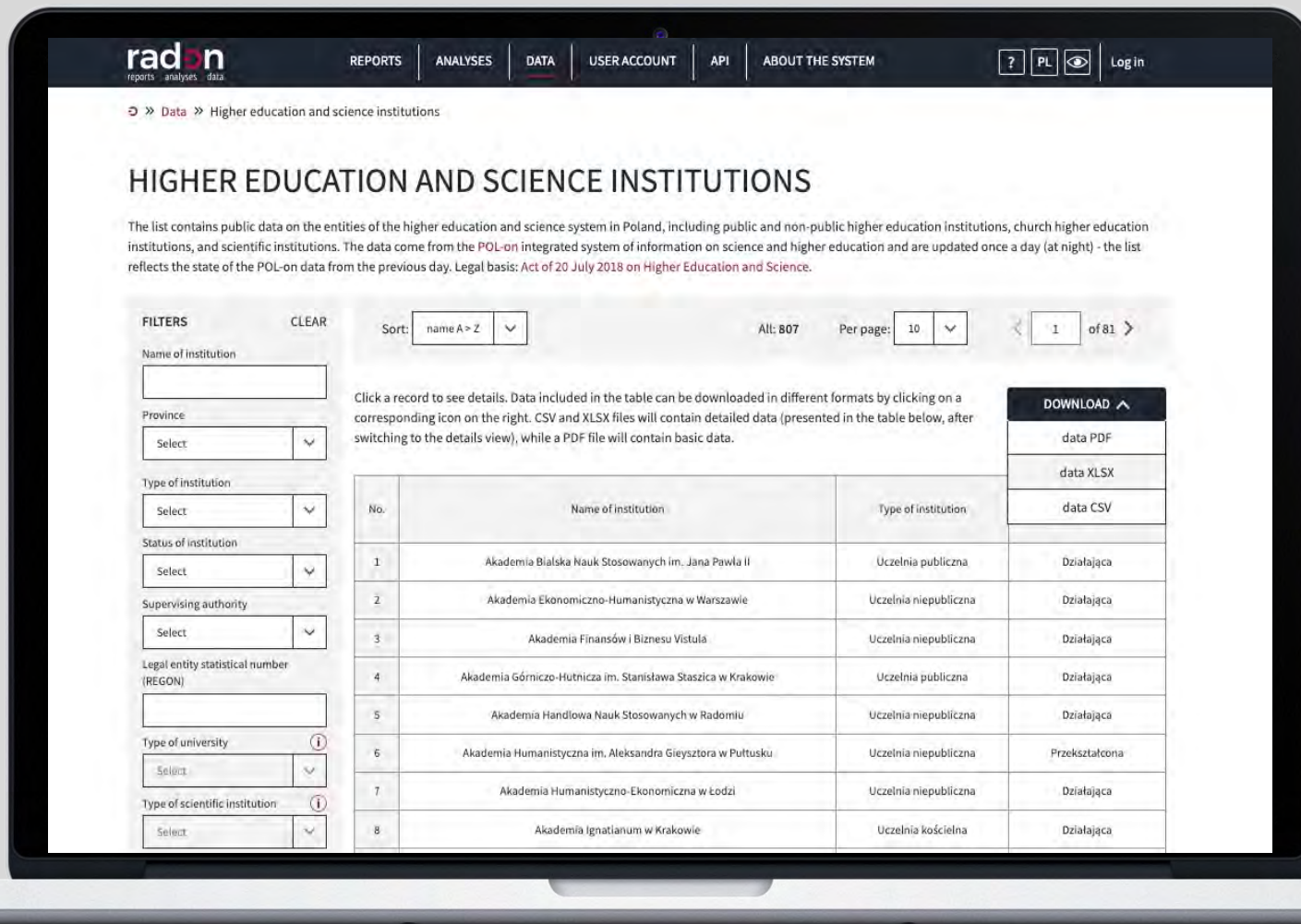
Lists of data from different subject categories, including institutions of higher education and science, fields of study, scientific and artistic achievements, academic staff, and researchers.

The data comes from the [POL-on](#) Integrated System of Information on Science and Higher Education:

- the central reporting system for the science and higher education sector
- data model and obligations defined in legal acts
- data entered into the system only by authorised entities (e.g. universities, scientific institutions, government ministries).

[www.radon.nauka.gov.pl](http://www.radon.nauka.gov.pl)

polon<sup>2.0</sup>



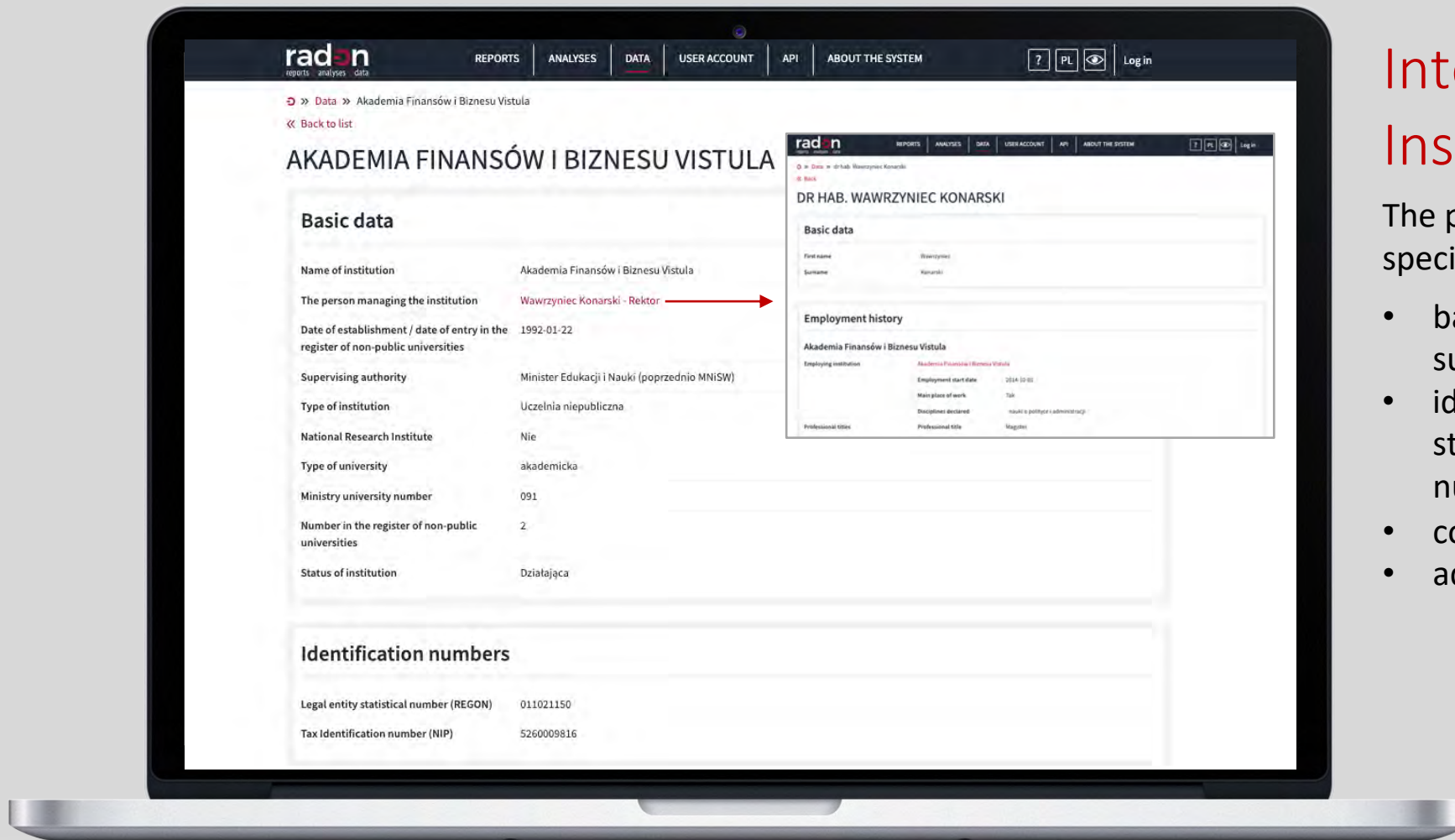
## Integrated access to data: Institutions

List of institutions (as well as other lists of data) can be viewed using filters and downloaded in CSV or XLSX formats.

Users can view institution profiles containing detailed data of a selected university or scientific institution.

The English version is not yet fully available.

[www.radon.nauka.gov.pl](http://www.radon.nauka.gov.pl)



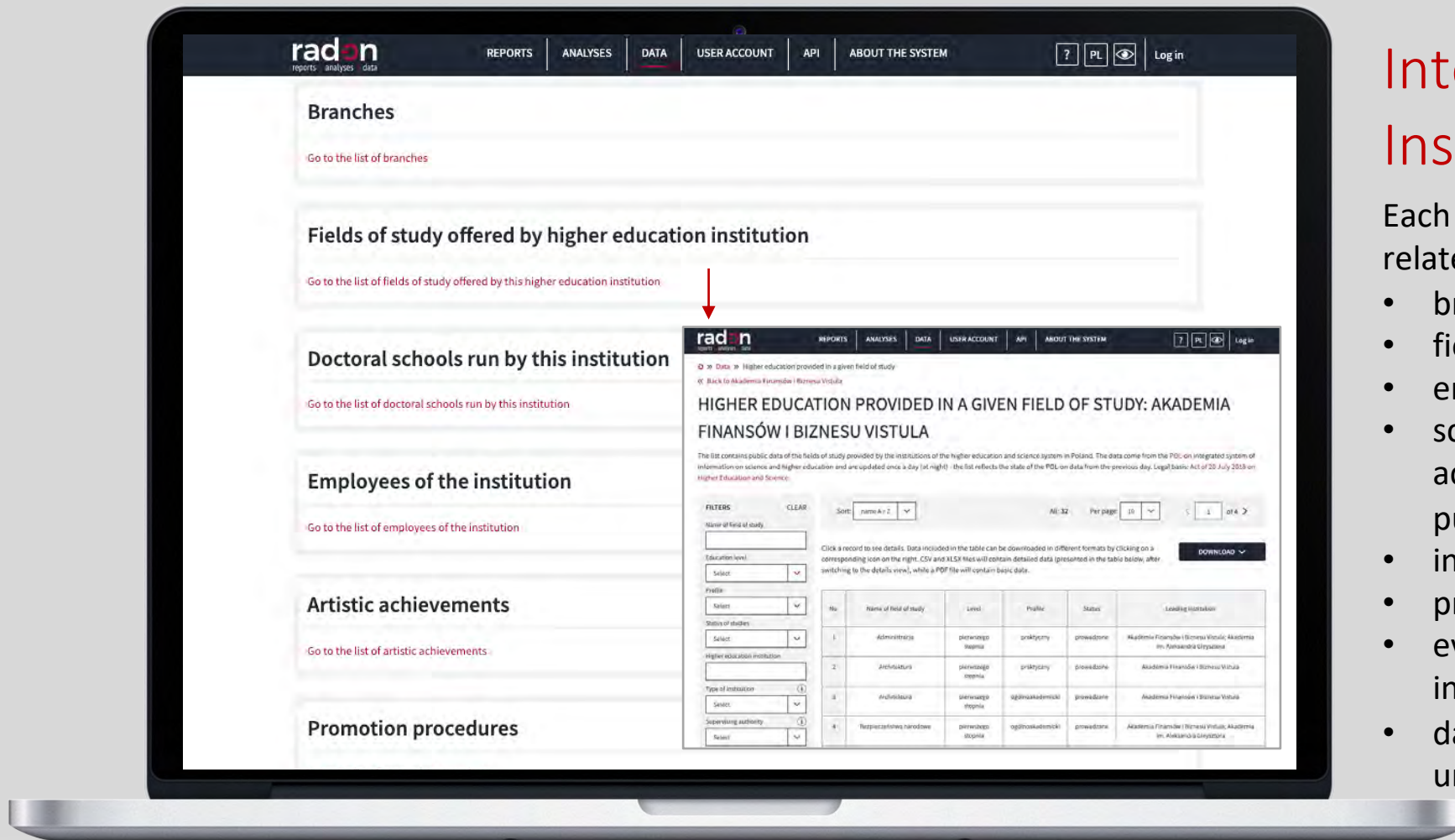
## Integrated access to data: Institutions

The publicly available data on institutions is specified by law. It includes:

- basic data (e.g. name, managing person, supervising authority, type, status)
- identification numbers (e.g. legal entity statistical number, Tax identification number)
- contact data
- address data

[www.radon.nauka.gov.pl](http://www.radon.nauka.gov.pl)

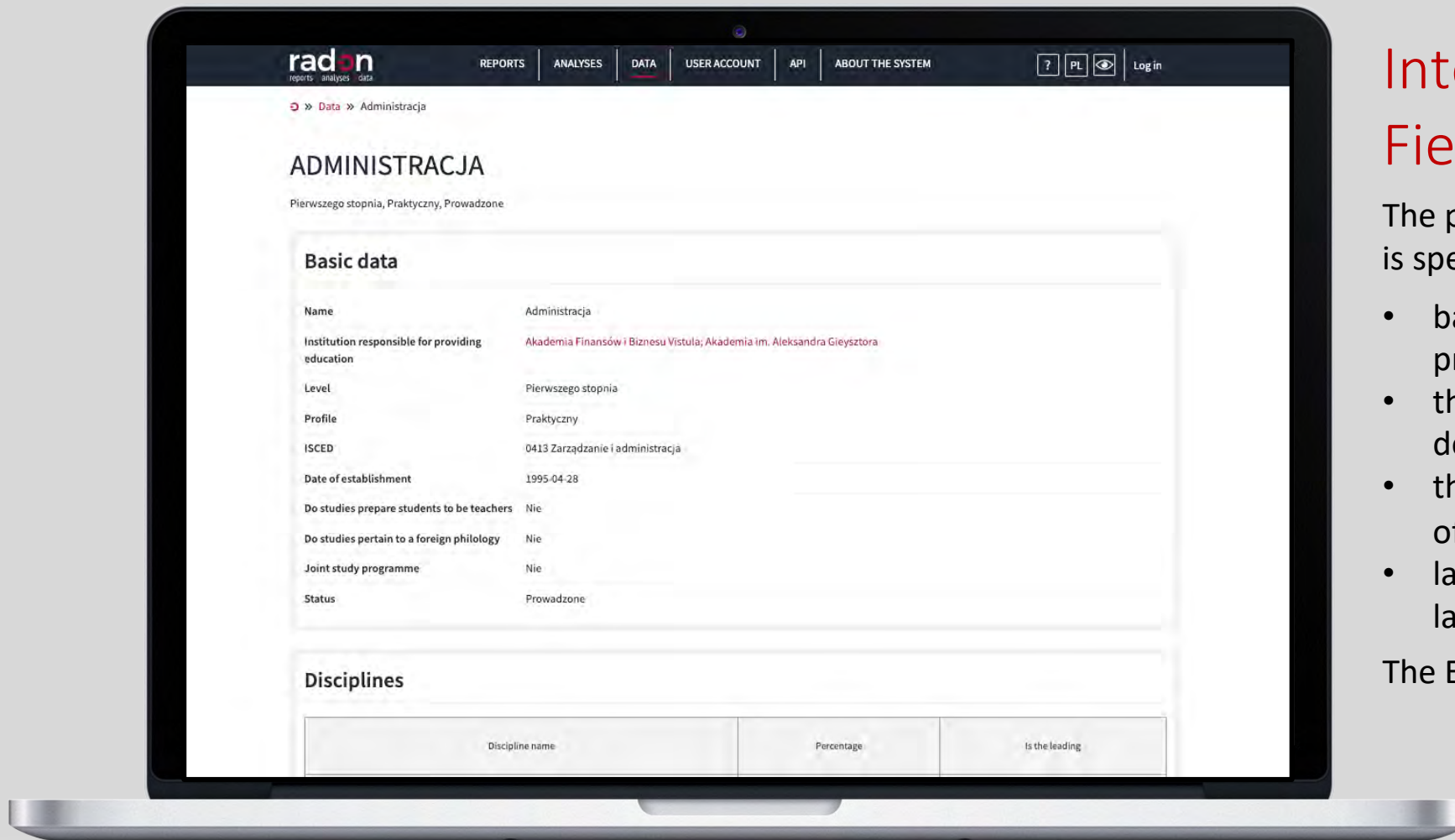




## Integrated access to data: Institutions

Each institution's profile contains links to related resources:

- branches
- fields of study and doctoral schools
- employees
- scientific and artistic activities (artistic achievements, patents, projects, publications)
- investments
- promotion procedures
- evaluation of the scientific activity of the institution
- data in the register of non-public universities



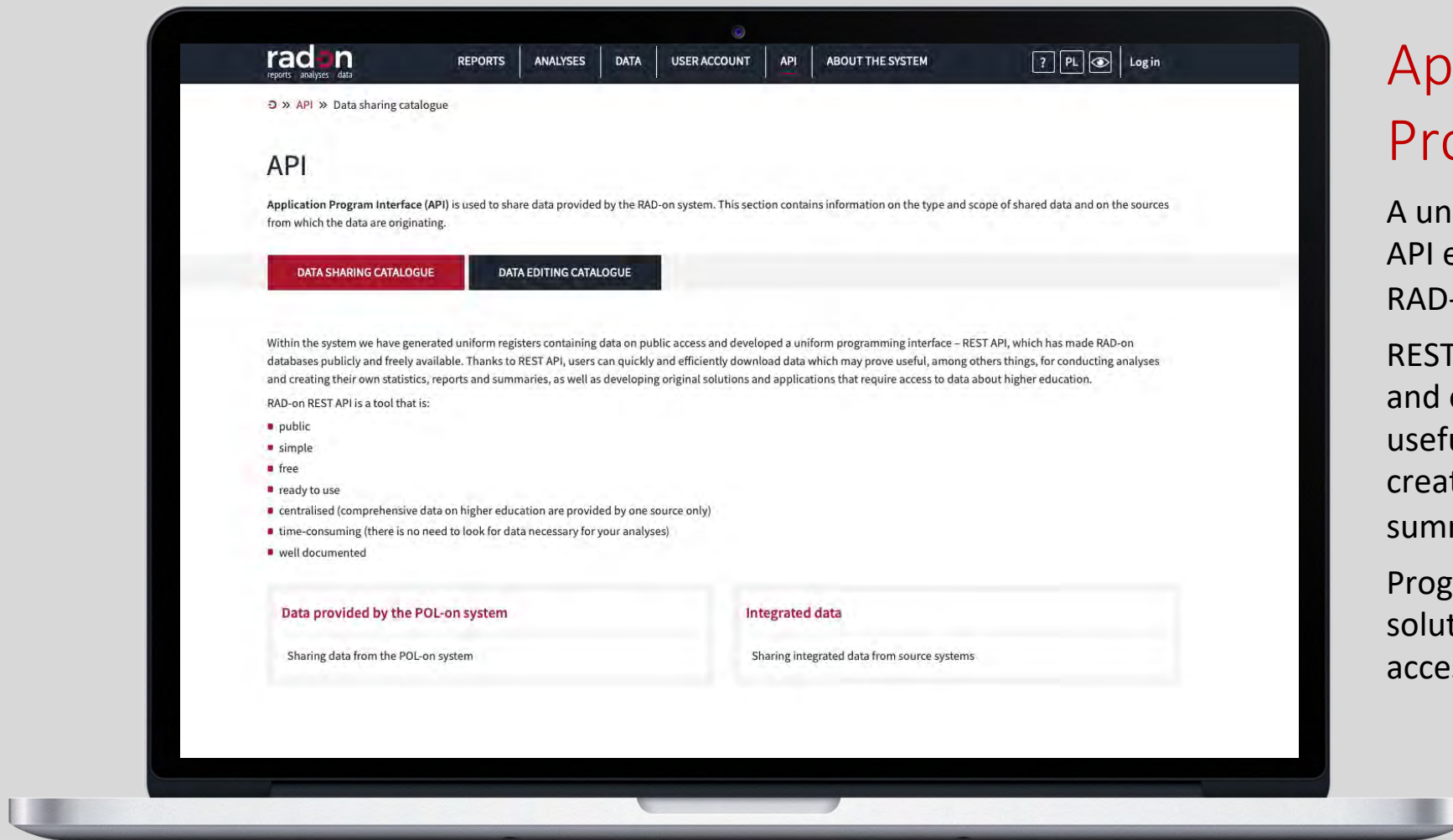
## Integrated access to data: Fields of study

The publicly available data on fields of study is specified by law. It includes:

- basic data (e.g. name, institution, level, profile)
- the disciplines in which programmes are delivered
- the legal basis for the creation of fields of study
- launch data (e.g. form, professional title, language of instruction)

The English version is not yet fully available.

[www.radon.nauka.gov.pl](http://www.radon.nauka.gov.pl)



## Application Programming Interface

A uniform programming interface – REST API enables free and public access to the RAD-on databases (including POL-on).

REST API allows data scientists to quickly and efficiently download data that is useful in conducting analyses and in creating statistics, reports and summaries.

Programmers can develop original solutions and applications that require access to data on higher education.

[www.radon.nauka.gov.pl](http://www.radon.nauka.gov.pl)

## STUDENTS

The unit of observation used in the report is a student enrolled in all study programmes. The number of students enrolled in all study programmes exceeds the true number of students; this is due to the possibility of single students pursuing multiple degree programmes simultaneously.

This report contains statistics for the number of students enrolled in all study programmes at higher education institutions in Poland by:

- characteristics of students: sex, residence (city/town, village), origin (Polish, foreign), and year of study;
- mode, level and profile of study, as well as an academic degree obtained;
- features of higher education institutions that deliver study programmes: name, city, province, type, and profile.

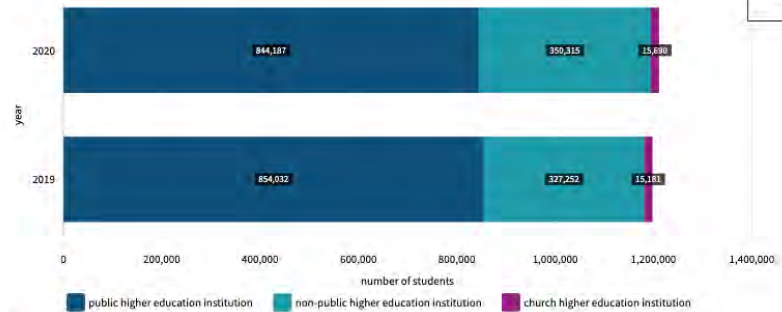
The data pertains to students and higher education institutions on 31 December of a given year.

This report is based on reports on higher education programmes submitted by higher education institutions, prepared for the purpose of public statistics for Statistics Poland. The reports are generated in the **POL-on system** and are based on methodology developed by Statistics Poland in cooperation with the National Information Processing Institute (OPI PIB) (see: methodological clarifications).

FILTERS

STUDENTS IN TOTAL BY SEX BY ORIGIN BY STUDY MODE BY STUDY LEVEL BY TYPE OF HIGHER EDUCATION INSTITUTION

NUMBER OF STUDENTS BY TYPE OF HIGHER EDUCATION INSTITUTION



DOWNLOAD

PNG chart

XLSX data

CSV data

Download data as XLSX - Number of students by type of higher education institution

## Dynamic reports for public and non-public use

The reports section of the RAD-on platform is a dashboard that presents statistics as interactive tables and graphs.

Each analytical report is complemented by methodological and expert comments. Users can download data in CSV or XLSX formats.

The reports are fully available in English.

## STUDENTS

The unit of observation used in the report is a student enrolled in all study programmes. The number of students enrolled in all study programmes exceeds the true number of students; this is due to the possibility of single students pursuing multiple degree programmes simultaneously.

This report contains statistics for the number of students enrolled in all study programmes at higher education institutions in Poland by:

- characteristics of students: sex, residence (city/town, village), origin (Polish, foreign), and year of study;
- mode, level and profile of study, as well as an academic degree obtained;
- features of higher education institutions that deliver study programmes: name, city, province, type, and profile.

The data pertains to students and higher education institutions on 31 December of a given year.

This report is based on reports on higher education programmes submitted by higher education institutions, prepared for the purpose of public statistics for Statistics Poland. The reports are generated in the **POL-on system** and are based on methodology developed by Statistics Poland in cooperation with the National Information Processing Institute (OPI PIB) (see: methodological clarifications).

**FILTERS**

CHARACTERISTICS OF STUDENTS AND STUDY PROGRAMMES

<b>SEX</b> <input type="checkbox"/> woman <input type="checkbox"/> man	<b>RESIDENCE</b> <input type="checkbox"/> city/town <input type="checkbox"/> village	<b>FOREIGNER</b> <input type="checkbox"/> yes <input type="checkbox"/> no	<b>YEAR OF STUDY</b> Select
<b>STUDY MODE</b> <input type="checkbox"/> full-time <input type="checkbox"/> part-time	<b>STUDY LEVEL</b> <input type="checkbox"/> first-cycle <input type="checkbox"/> second-cycle <input type="checkbox"/> long-cycle	<b>STUDY PROFILE</b> <input type="checkbox"/> general academic <input type="checkbox"/> practical <input type="checkbox"/> unspecified profile	<b>PROFESSIONAL TITLE OBTAINED</b> Select

CHARACTERISTICS OF HIGHER EDUCATION INSTITUTIONS

<b>NAME OF HIGHER EDUCATION INSTITUTION</b> Select	<b>CITY/TOWN</b> Select	<b>PROVINCE</b> Select	<b>TYPE OF HIGHER EDUCATION INSTITUTION</b> <input type="checkbox"/> public <input type="checkbox"/> non-public <input type="checkbox"/> church
---	----------------------------	---------------------------	--

**PROFILE OF HIGHER EDUCATION INSTITUTION**  
 university  
 non-university

## Dynamic reports for public and non-public use

Users select filters to answer questions, including:

‘How many higher education institutions are there in Poland?’; ‘What courses do they offer?’; ‘How many students are enrolled at each higher education institution?’; ‘How many of them are foreigners?’; ‘Which courses are the most popular among students?’; and ‘What salaries might graduates of this programme expect?’.



Project impact

11 TB  
data  
released online

9  
individual  
databases  
integrated

150 million  
number of downloads of  
documents containing  
public sector information  
in 2021

Our analyses and  
reports are frequently  
cited by journalists and  
representatives of  
governmental bodies

## Impact of RAD-on

### REAL-WORLD APPLICATIONS

actual decision-making –  
not only on governmental,  
but also organisational!

RAD-on Publication API service  
is used by major universities in Poland to  
integrate internal systems that report  
the scientific achievements of their  
researchers for evaluation purposes

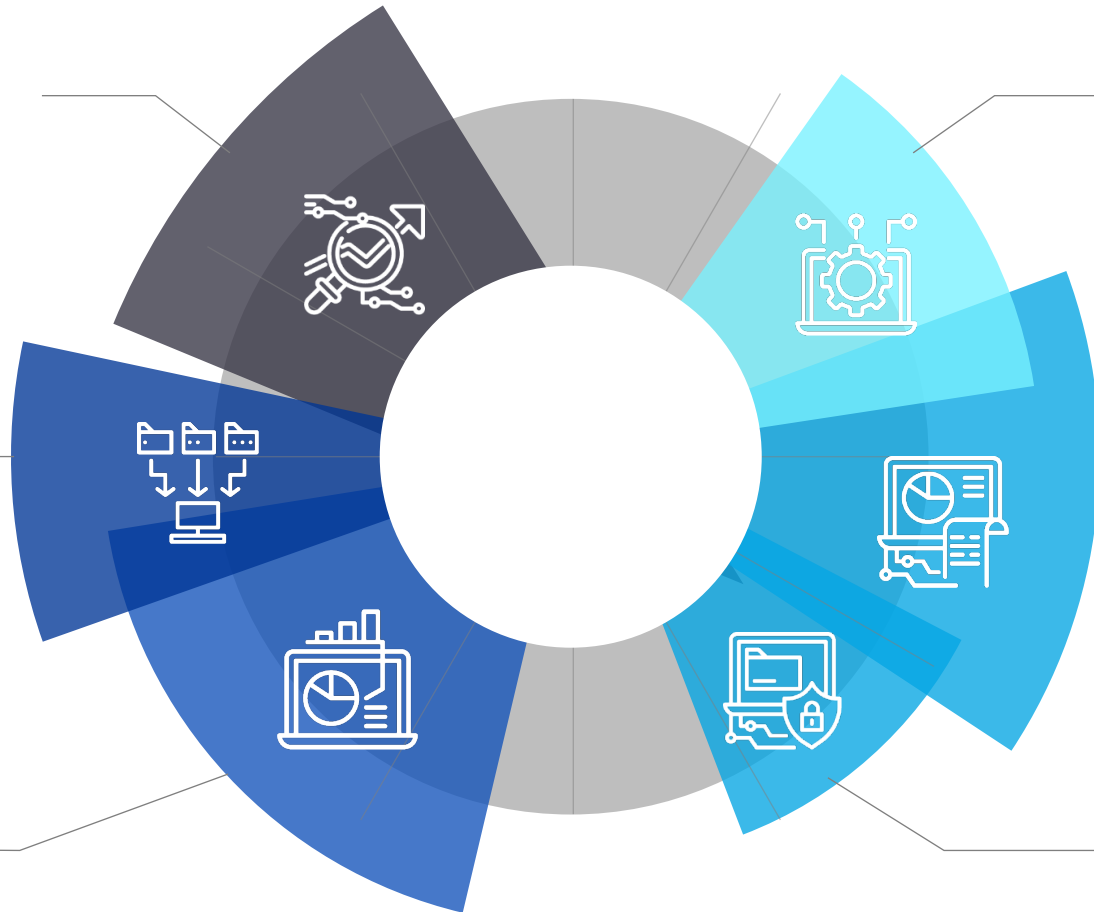
International  
companies  
use RAD-on to  
identify Polish R&D  
experts

# Conclusions

RAD-on is the first fully **integrated** system for science and higher education that enables access to governmental and other data from multiple databases.

Users can interact with data in a **variety of ways**, depending on their analytical skills and level of authorisation.

Journalists and the general public have access to the **list of data** and comprehensive **analyses** with in-depth interpretation of data.



Programmers and data scientists benefit from an integrated **API**; whereas researchers prefer to download pre-defined tables and **visualisations**.

RAD-on offers the most up-to-date and credible information, as scientists or students can correct their own data through **a single point-of-entry**.

Decision-makers who can access non-public data benefit from more advanced dashboards created using the **BI tool**.





NATIONAL  
INFORMATION  
PROCESSING  
INSTITUTE

# National Information Processing Institute

al. Niepodległości 188 b  
00-608 Warsaw, POLAND  
<https://opi.org.pl/en/>

Sylwia Ostrowska  
[sostrowska@opi.org.pl](mailto:sostrowska@opi.org.pl)