Federated regional and institutional digital libraries in Poland as a part of European data infrastructure

Adam Dudczak, Agnieszka Lewandowska, Marcin Werla (Poznań Supercomputing and Networking Center, Poznań, Poland)

Since 1999 Poznań Supercomputing and Networking Center (PZIWN) has been developing the ZeKNEX framework which aims to allow easy creation of distributed digital libraries (http://libracz.poznan.pl). In 2003 this software became a part of the Polish Optical Network (PIONIER) project. In October 2005, the first Polish-based regional digital library, Digital Library of the Wielkopolska (http://www.zezwo.pl), was made publicly available. Currently this library holds more than 100,000 digital objects and is the largest digital library in Poland. The project is now being extended to include regional digital libraries, aiming at creating a comprehensive network of publicly available digital libraries. In total, 18 regional and 2 national digital libraries have already adopted the ZeKNEX software. The project is being supervised by the Poznań Supercomputing and Networking Center (PZIWN), which is the main coordinating centre. The project currently comprises 18 regional digital libraries and 2 national digital libraries.

### Development of Digital Libraries in Poland

- **National Digital Libraries**
  - National Digital Library: "Polona" (Warsaw)
  - Polish Internet Library: PI (Warsaw)

- **Regional Digital Libraries**
  - Baltic Digital Library (Sława)
  - Digital Library of Old Brand (Gdańsk)
  - Lower Silesian Digital Library (Wrocław)
  - Digital Library of Zamość (Zamość)
  - Digital Library of Oleśnica (Olesnica)
  - Digital Library of Wieliczka (Wieliczka)
  - Digital Library of the Wielkopolska (Poznań)
  - Digital Library of Radom (Radom)
  - Digital Library of the Juliusz Słowacki (Kraków)
  - Digital Library of the Jan Matejko (Kraków)
  - Digital Library of the Kazimierz (Kraków)
  - Digital Library of the Adam Mickiewicz (Poznań)
  - Digital Library of the Stefan Narutowicz (Poznań)
  - Digital Library of the Kacper Wielopolski (Wielopolski)
  - Digital Library of the Dominika (Dominika)

### Institute Digital Libraries

- Academic Digital Library: "Zakład" (Kraków)
- Digital Library of the University of Technology (Swinoujście)
- CDOM Digital Library (Wrocław)
- Digital Library of the University of Technology (Bydgoszcz)
- Digital Library of the University of Science and Technology (Gdańsk)
- Digital Library of the University of Science and Technology (Kraków)
- Digital Library of the Kacper Wielopolski (Wielopolski)
- Digital Library of the Krzysztof Wielopolski (Wielopolski)
- Digital Library of the Stanisław Wyspiański (Wyspiański)
- Digital Library of the Jerzy Grot-Rowecki (Grot-Rowecki)
- Digital Library of the Juliusz Słowacki (Kraków)
- Digital Library of the Stanisław Moniuszko (Moniuszko)

### Metadata Aggregation

Metadata of digital objects available in Polish digital libraries is used for various purposes by the external network services such as search engines (e.g., Google, Yahoo). Metadata aggregates (e.g., PIONIER, APIFON, OAI-PMH and GDEAP) project, which aggregates metadata from all OAI-PMH-compliant Polish digital libraries. The main goal of this initiative is to:

- fight against the lack of metadata of Polish digital libraries and repositories,
- increase the visibility of Polish digital resources in the Internet,
- give Internet users access to a wide range of services based on the resources of Polish digital libraries and repositories.

### Extended Harvesting Capabilities

OAI-PMH service provider, the PIONIER OAI-PMH also acts as the OAI-PMH compliant data provider, with extended selective harvesting functionality. This allows external projects (e.g., European DRIVER) to perform selective harvesting on the national level. The extended harvesting is based on the OAI-PMH standard, which determines the number of records transferred from the repository to the key voter. Dynamic sets can be harvested by any OAI-PMH compliant service; no software changes are required. Criteria for set membership are defined by the key voter, the only place where criteria can be placed without additional parameters to the request is the set specification. For the OAI-PMH request with dynamic set specification can look like this:

```
http://dom.zezwo.pl/id/OAI2?setIdentifier=pionier-dom-POLish-Biomedical-Criteria
```

which means that retrieval should be from somewhere and additionally the rules should match the Biomedical criteria. The rules are encoded in the OAI-PMH, and the OAI-PMH is a query language designed for various information retrieval systems. To conform to the restrictions of the OAI-PMH specification, the OAI-PMH-based set specification should be URL-encoded (e.g. "OAI-PMH") in order to be processed by OAI-PMH-compliant services.