EMREX in Poland supporting internal mobility

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Agenda

- EMREX project
- EMREX architecture
- Internal mobility in Poland (MOST)
- Implementation of EMREX for USOS
- Summary

EMREX

Field trial on the impact of enabling easy mobility on recognition of external studies

EU Erasmus+ KA3 project (2015-2017).

Danmark, **Finland**, **Italy, Norway**, **Sweden**

- building platform for an effective transfer of student's records between partner institutions,
- running field trial.

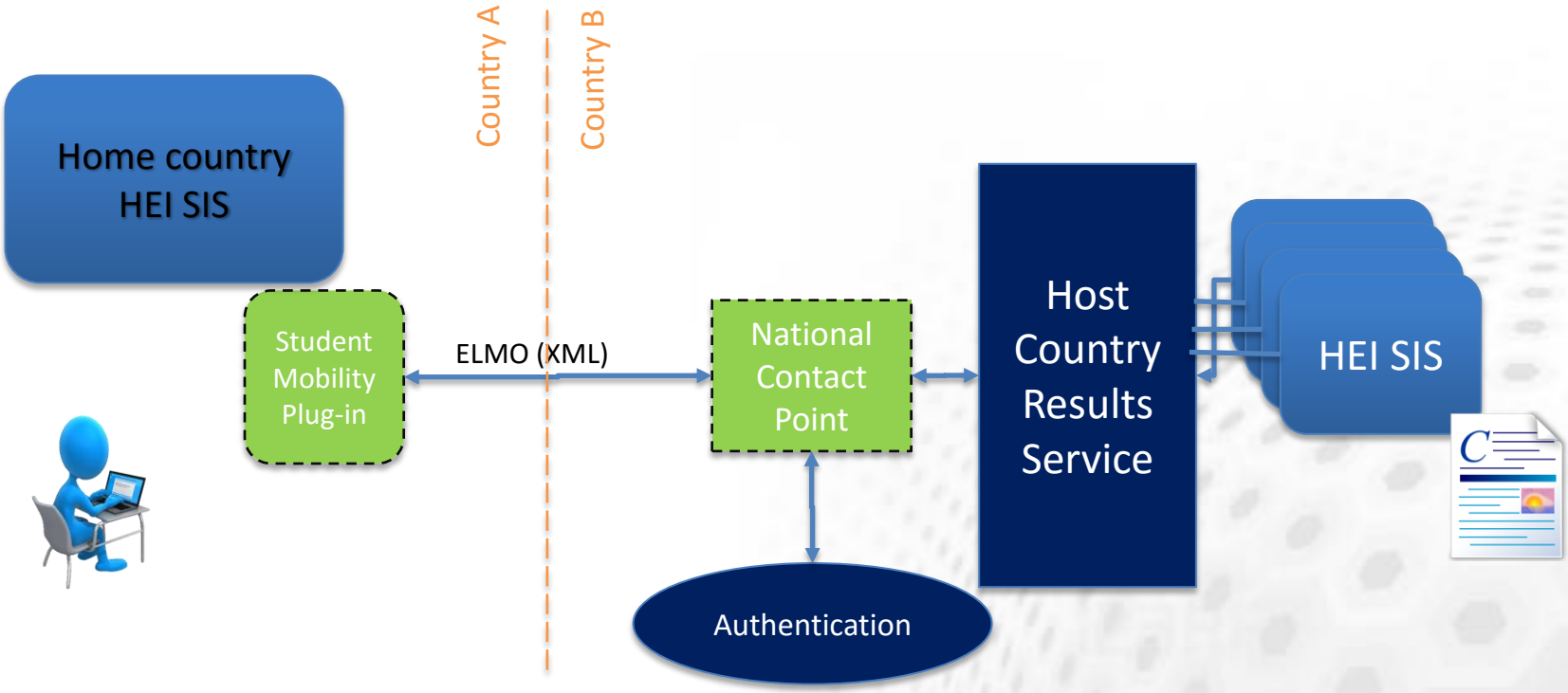
Poland as evaluation body measuring impact on recognition, quality, scalability of the solution from the technical perspective.

Project goals – details

- Data format – EMREX-ELMO XSD posted on GitHub.
- Each partner adds **student mobility plug-in** (**SMP)** and **EMREX Client** to local student information systems (**SIS**), sets up **national contact points** (**NCP**) at country-level through which partner institutions may get access to data on student achievements.
- Data transfer is initiated by students.
- Authorization is required at home institution and host institution.
- Common software is open source and can be reused by new institutions.

How it works?

ERASMUS+



Student returning home can retrieve his achievement data electronically

Poland internal mobility

- **MOST** (Polish word for **bridge**) is a mobility program for Polish students.
- Based on the rules similar to Erasmus+ but limited to students of Polish HEIs.
- Coordinated by UAC (**University Accreditation Commission**) established in 1998 by the **Conference of Rectors of Polish Universities**.
- Involves **20** Polish public universities, members of UAC, and **8** associated HEIs.
- **15** of these HEIs belong to consortium **MUCI** and use the same SIS → **USOS**.
- Covers over **400** fields of studies.
- Over **6000** students took part in the program since its start in 1999.
- Statistics for the academic year 2015/2016:
  - 2967 study offers,
  - almost 1000 students registered in the admission system,
  - 501 students qualified for studies at bachelor and master level,
  - 33 students qualified for doctoral studies.

Admission to MOST

- Since May 2010 admission to MOST is carried at **IRK-MOST**.
- IRK-MOST is developed by USOS developers and run by MUCI.
- It supports federated identity management.
- Admissions are run twice a year.
- Students may choose up to 3 offers.

http://most.uka.uw.edu.pl

- Coordinator from UAC with the help of coordinators from partner institutions qualifies students for the mobility.
- Data of qualified students can be transferred electronically from IRK-MOST to local SIS → USOS. Transfer is initiated by staff of **Student's Office**.

LA and TR in IRK-MOST

- As is the case of Erasmus+ program
  - before the mobility students prepare **Learning Agreements** (LA) which have to be approved by coordinators from the home and host institution,
  - after the mobility students obtain **Transcripts of Records** (TR) which have to be delivered to the student office at the home institution.
- IRK-MOST **supports** handling of these two documents.
- IRK-MOST may be integrated with HEI's course catalog (which is part of the ECTS guide), so when composing LA student can browse courses and transfer (upload) codes of those selected to LA.
- When LA is ready a special token may be sent to home and host coordinators giving access to LA in IRK-MOST.
- LA may be approved either straight in the system by the authorized person or the scanned version of the signed document can be uploaded into student's account and than its originality confirmed.

LA and TR in IRK-MOST

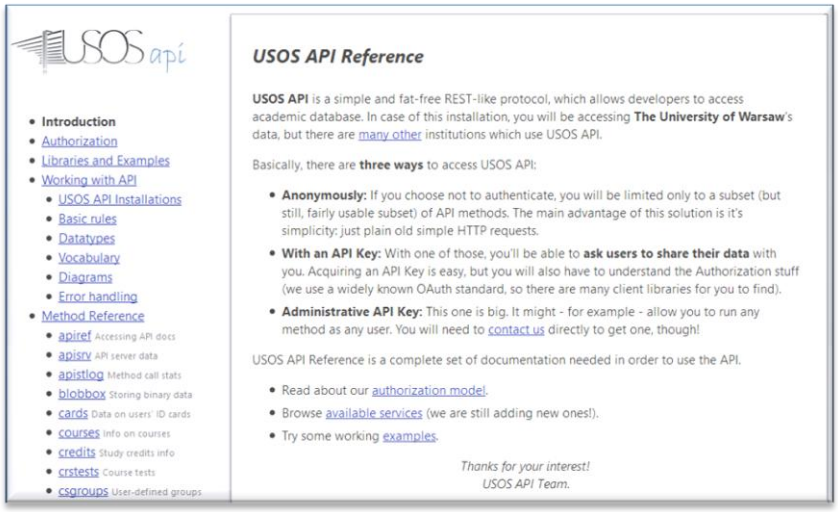
- After the mobility student may himself add grades to LA → TR.
- Such TR has to get approval of the host coordinator.
- The signed and scanned document can also be uploaded to student's account.
- Whatever document is generated electronically from IRK-MOST it is signed with the application certificate.
- An electronic document contains PDF file to be read by human and XML equivalent which may be processed electronically by another application.
- Information about the current status of the document is attached (was it approved/confirmed by the authorized staff member of the involved HEI).
- Various scenarios of information transfer between involved institutions are possible, more or less automatic.
- IRK-MOST can be regarded as one central point for exchange of documents on student mobility between participating HEIs.

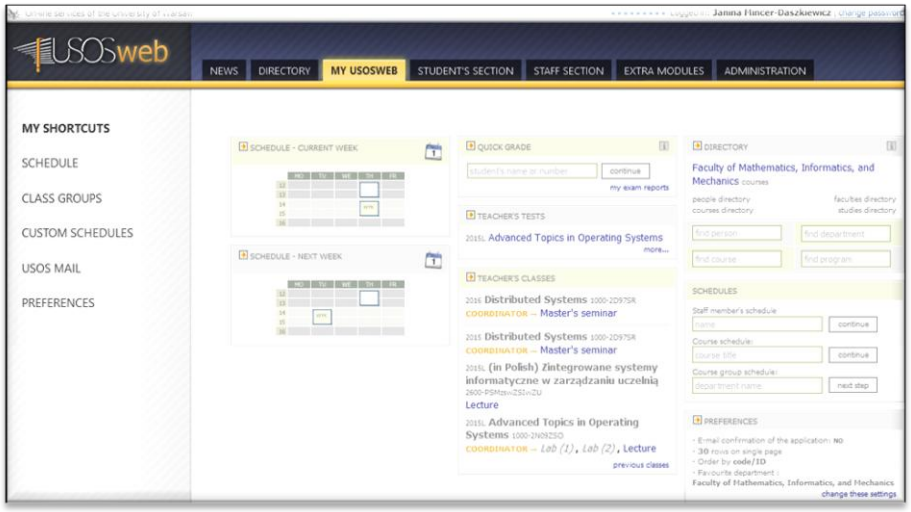
EMREX in Poland?

- IRK-MOST supports exchange of **LA** and **TR** – but program coordinators and partner institutions have not yet decided to deploy that functionality and documents are still exchanged mostly on paper. Possible reasons:
  - Don't want to change procedures?
  - Prefer to stick to local system used daily?
  - Not enough training?
- **Idea → Give initiative to students, they are key benefactors of timely transfer of Transcript of Records.**
- If the Polish partner integrates USOS with the EMREX platform, mobile students from these institutions will be able to easily transfer their transcripts of records from USOS installation at host institution to USOS installation at home institution. No other implementation is required.
- The effect of scale will be immediate.
- If the system proves useful internally, going international will be an easy next step.

EMREX in Poland – implementation

- Implementation of NCP, SMP and EMREX Client is spread across two USOS subsystems:
  - **USOS API** – a collection of web services, written primarily in Python, publicly documented in English, and designed for use by external consumers. NCP endpoints are implemented in USOS API installations.
  - **USOSweb** – a web portal used by all students and staff members in their daily academic activities, written primarily in PHP. Hosts EMREX Client.
- Every HEI in Poland which runs USOS has its own installation of USOS API and USOSweb subsystems.

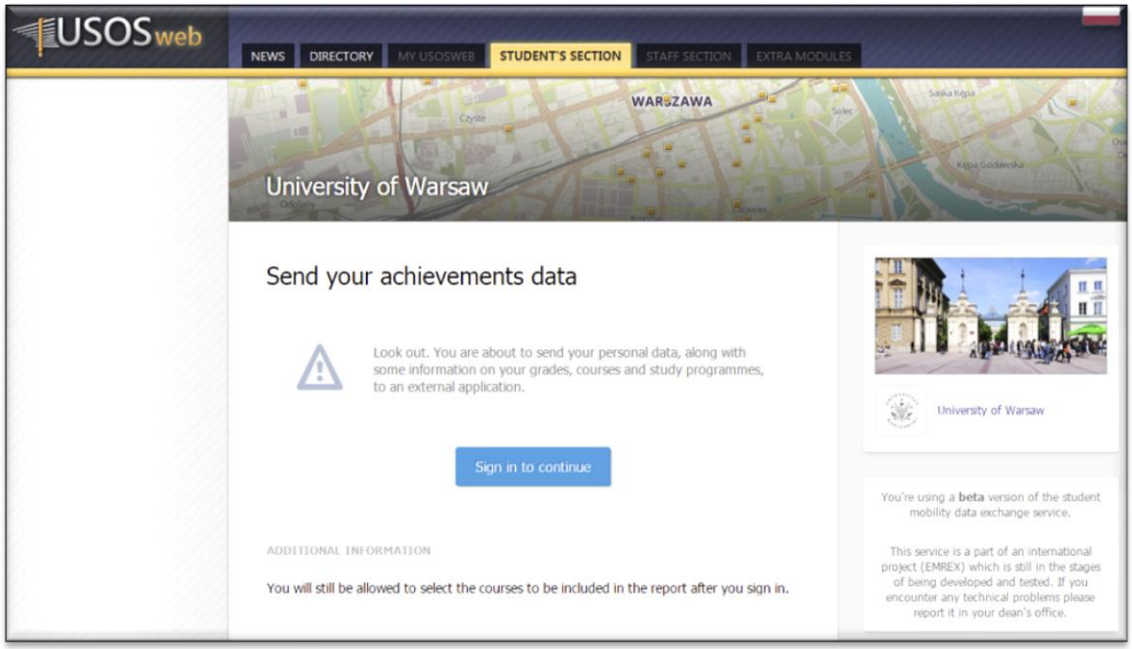




EMREX in Poland – implementation

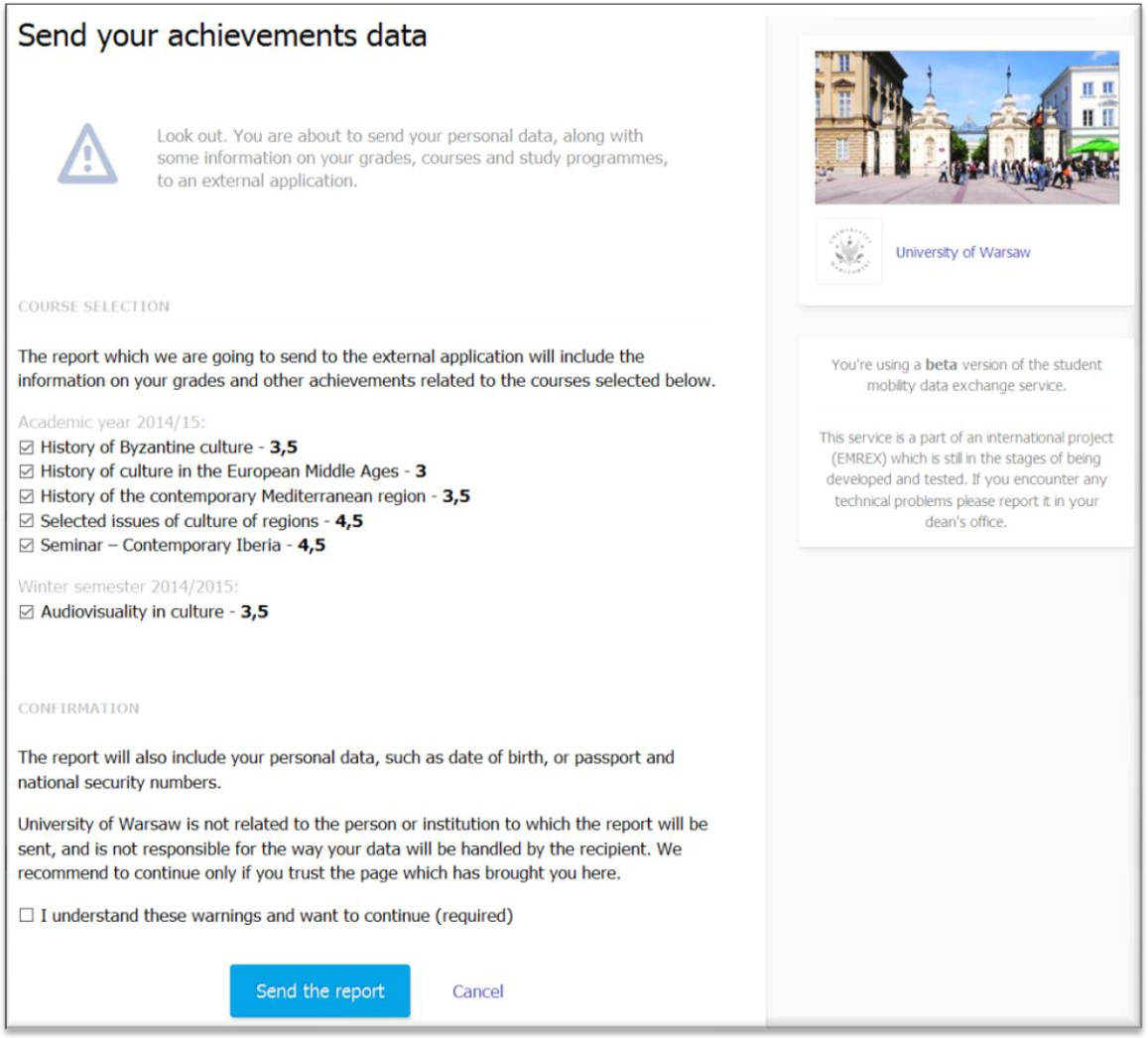
- A user signs in to a local USOS installation and initiates the EMREX exchange on a dedicated USOSweb page.
- USOSweb fetches the list of NCP servers from EMREG via USOS API (USOS API is also responsible for caching EMREG responses).
- The student selects the NCP server on the USOSweb page, and then USOS API method is called with the server's URL.
- The user is redirected to the NCP URL with the return URL parameter referring back to a proper **receiver** USOS API **method**.
- Once the user accesses the NCP-related USOSweb web page, he is asked to sign in (second time).

Logging to the NCP of the University of Warsaw



EMREX in Poland – implementation

- The user is presented with the list of courses and is allowed to select any subset of them.
- When the user clicks SEND, NCP response is constructed with the EMREX-ELMO document (communication with USOS API is done in the background).
- POST request is sent directly from user browser to the EMREX Client.

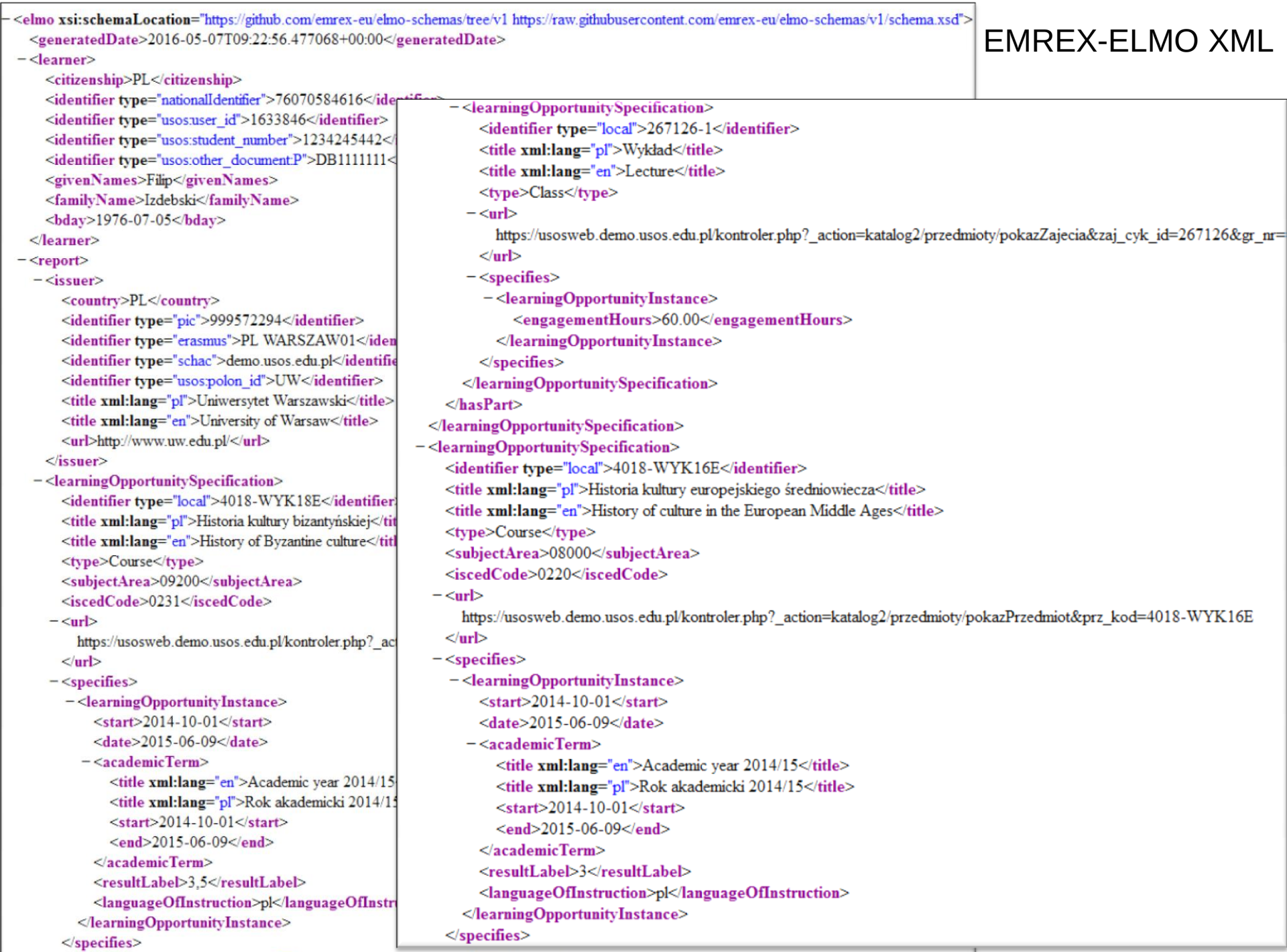


Selecting results at the NCP of the University of Warsaw

EMREX in Poland – implementation

- The user is redirected to the home USOSweb subsystem and presented with the results of the EMREX-ELMO processing.
- The received EMREX-ELMO document is stored and verified.
- If the verification process goes well, and the local system is able to understand the data in the document, then it may additionally allow the student to select the courses which he would like to store locally (this being an extra option).
- Suspicious import requests would need to be approved by an authorized staff member (PDF document attached to EMREX-ELMO XML should be useful in this case).

EMREX-ELMO XML



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            <title xml:lang="pl">Rok akademicki 2014/15</title>
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EMREX-ELMO
XML continued


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    "http://ususapps.demo.usos.edu.pl/developers/api/services/emrex/", "request_id": "yDTF2PQQk4dHA625j2WA"}
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  <ds:SignedInfo>
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```

Other issues

- The solution will first be available for testing on **USOS DEMO** – special test bed of USOS based applications, with anonymised data, fully functional, intended for testers, training, institutions which want to integrate their systems with USOS.
- **Federated identity management** for Polish HEIs will help in solving the problem of student authorization at the country level.
- **Validity of students accounts** in home and host institutions after students leave the institution – keep these accounts active indefinitely.
- How to translate student achievements expressed in the context of regulations and culture of the host institution to that of the home institution – **grade conversion** (Egracons project).
- **Transcript of Records** – simpler version for incoming students.

Summary

- Implementation of the EMREX solution for Polish HEIs from MUCI will be available in the next official distribution (no extra cost involved).
- Initiative is on the side of the students, they are the main benefactors. This may be the key to successful deployment.
- IT solutions should be tailored to needs/expectations/capabilities of the organization at its current stage of development.
- Changes in institutional administrative procedures can be more challenging than software development.
- Testing them internally can be a useful proof-of-concept.
- If the EMREX scenario proves useful it may open the door for more sophisticated scenarios of data exchange (e.g. Erasmus Without Paper).

- **Acknowledgments** – EMREX is a common work of all project partners. Many thanks.

Additional information

- EMREX website: www.emrex.eu
- EMEX on GitHub: github.com/emrex-eu
- Versions of XML Schema for EMREX-ELMO github.com/emrex-eu/elmo-schemas/releases
- EMREX wireframes https://moqups.com/lundin.goran@gmail.com/2sWGyfXn/p:a2fa73ae2
- USOS API in the University of Warsaw https://usosapps.uw.edu.pl/developers/api.
- USOSweb in the University of Warsaw https://usosweb.uw.edu.pl.
- Survey for mobile students on recognition (please distribute) https://ankieter.mimuw.edu.pl/en/surveys/81/

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