The Mobility Project

Building network of web-servers for exchange of data on student mobility

Janina Mincer-Daszkiewicz

University of Warsaw

jmd@mimuw.edu.pl

EUNIS 2010, 2010-06-23
Agenda

- Real life scenarios (motivation)
- History and current state of the project
- Technologies
- Plans and conclusions
Real life scenario - 1

University of Warsaw

- **December-January:**
  - Start of the **recruitment** for outgoing mobility
  - **List of offers** (coming from international agreements) is available for students on the web
Coordination of Erasmus student mobility

at the faculty/unit: Faculty of Mathematics, Informatics, and Mechanics [select another]

This page displays Signed bilateral agreements that fulfill following criteria:
- have status other than 'unsigned' or 'Under negotiation'
- terms and conditions of the agreement are linked to following unit: Faculty of Mathematics, Informatics, and Mechanics
- terms, conditions and the agreement itself are still valid,
- terms, conditions and the agreement itself come into effect within a year.

**FILTER OPTIONS**

Status: (dropdown)

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<th>Institution name</th>
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CLEAR FILTERS  APPLY

**Signed faculty/unit agreements**

Showing first 10 table rows -- show more | show all

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Real life scenario - 2

- **March**: Lists of nominations are ready, approved by departmental Erasmus coordinators
- **May**: Learning Agreement for each student is ready, approved by home and partner coordinators
### Coordination of Erasmus student mobility

at the faculties: Faculty of Mathematics, Informatics, and Mechanics [select another]

#### Assigned outgoing student mobilities

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<tr>
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<th>Surname</th>
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</table>
Learning Agreement has been approved. It should be printed and signed (correspondence will ensure). Subsequent edition of the agreement is possible until its expiration date in USOSweb.

In reference to

<table>
<thead>
<tr>
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<td>Study program:</td>
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<td>Term:</td>
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General information

| Decision number: | 102362 |
| Decision date:   | 2010-03-23 |
| Decision type:   | REPLACEMENT |
| Decision state:  | W - to be completed modification deadline: 2011-03-15 |
| Stage of creation: | Accepted |
| Next period of study: | (no change) |
| Comment:         | Porozumienie w sprawie programu zajęć (LA) |

External courses

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Total number of ECTS credits attempted: 33.00
Real life scenario - 3

- **International Relations Office** is ready to deliver lists of nominated students to partner institutions
  - Personal data
  - Learning agreement

- When student returns (after a semester or a year) International Relations Office would like to get:
  - Transcript of records
  - Exact dates of arrival and departure (to calculate exact amount of scholarship)
Real life scenario – 4

Sending data from home to partner institution

(all pictures are obtained from the Internet)
Real-life Wishful scenario – 5
(list of nominated students)
Mobility nodes (testbed)
The Mobility Project – 1

- **EUNIS 2008** – presentation of the USOS Mobility module for IRO. **MUCI** (Polish consortium) and **CINECA** (Italian consortium) decide to start the project.

- **EUNIS 2009**
  - first version of mobility network (with two nodes) is presented
  - first workshop of **RS3G** standardization body gathers other interested groups
The Mobility Project – 2

- **November 2009, Workshop in Uppsala**
  - Brings together consortia and companies willing to take an active part in the project
  - Main problem domains identified, **Work Teams** formed, team leaders appointed:
    - Business Processes
    - WSDL (data format)
    - Identity and Access Management
    - Security and LifeCycle Management
    - System Architecture
The Mobility Project – 3

- **March 2010, Workshop in Bologna**
  - Brings together the Mobility Group and TF-EMC2 to discuss the aspects of security and of identity and access management
  - Possible solutions outlined

- **June 2010, RS3G workshop in Warsaw**
  (some important plans made on how to speed up the project)
Technical aspects of the project – 1

Data format – WSDL ver.2.0

- Should model the **problem domain** well
- Should be as **simple** as possible and conform to existing **standards** as strictly as possible, **but**
  - Existing standards do not conform to each other
  - They do not cover fully the problem domain

- We try to take into account achievements of:
  - *Metadata for Learning Opportunities* (MLO) – programs of study and course catalogs
  - *European Learner Mobility* (ELM) – Europass portfolio
  - SCHAC (*SCHema for Academia*) – LDAP attributes
Technical aspects of the project – 2

Data format – WSDL ver.2.0

- Specific needs of the Mobility Project
  - data should be well structured
  - pieces of data should be uniquely identifiable (on a database level)
  - each party may want to use own identifiers and own language
  - data format should be generic, i.e. facilitate the data exchange not only in terms of Erasmus program but mobility programs in general
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Technical aspects of the project – 2

Software ver.2.0

- P2P-like architecture
- UDDI (*Universal Description Discovery and Integration*)
  registry stores addresses of endpoints
- Technologies involved:
  - Java with Spring framework
  - Apache as HTTP server and Apache Tomcat as a servlet container
  - Apache Camel as a routing and mediation engine
  - Apache CXF as a web services framework
  - Apache jUDDI as a UDDI Registry implementation
  - Apache Qpid as an AMQP implementation
  - ICEfaces as RIA (*Rich Internet Application*) framework etc.
Architecture of the prototype (ver. 2.0)
UDDI – Universal Description, Discovery and Integration (registry of Mobility nodes)

### UDDI Registry

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#### Details

**Id**

- uw.edu.pl
- 246 left / 255

**Name**

- Language
- Localized Name

**WSDL URL**


**Contact**

- Person Name

**Phone**

- Number

**Service**

- Name
- Description

Buttons:

- Save
- Cancel
Web client (client= WARSAW, server= PARMA)

Mobility Client

Client
- Id: uw.edu.pl
- Name: PL Universität Warschau
- WSDL URL: http://usosphp.mimuw.edu.pl:7979/mobility-service-transportWebServices/mobility-service/wsd1

Server
- Id: unipr.it
- Name: it:Università degli Studi di Parma
- WSDL URL: http://usosphp.7979/mobility-service-transportWebServices/mobility-service/wsd1

Request
- Resource: xml/client=uw.edu.pl/server=unipr.it
- Path: /server=unipr.it
- Sample Data: sendNominateStudentsRequest.xml

Response
- Version: 1.0
- WSDL Location: http://usosphp.mimuw.edu.pl MobilitySchema.xsd
- SOAP Envelope: http://schemas.xmlsoap.org/soap/envelope/
Web server (server=PARMA)
http://usosphp.mimuw.edu.pl:7878/mobility-server-web/
Test deployments

- Testbed – five nodes in four countries: Poland (France), Italy, Spain and Norway; sample data files to validate WSDL and test software

- Registries
  - Local UDDI of the node
  - EdUnify

- Easy-to-install package (takes 5 minutes to deploy, web client and sever inside Tomcat, small database for UDDI entries)

- Sample integration with local Student Management Information System
  - USOS, Oracle
Conclusions

- The success of the project depends on the level of determination of stakeholders who will be main beneficiaries (IRO staff)
- They need help of IT specialists (US!)
- They may contribute by delivering business cases and testing business model (WSDL)
- We may contribute by testing various technology solutions
  - E.g. grid-like integration framework, registry look-up services, enterprise service bus
- Everybody can join and contribute
Join the Mobility Project at ...

http://usos.edu.pl/Mobility