The Mobility Project

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

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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

INTRODUCTION

TESTS

EXAM REPORTS

EDITING COURSES

EXAMS REGISTRATION

POSTULATES

GIVING OPINIONS

STUDENT MOBILITY
- coordinated faculties
  - Faculty of Mathematics, Informatics, and Mechanics
    - signed agreements
    - unsigned agreements
    - assign outgoing mobility
    - assigned outgoing mobilities
    - study programmes
    - mobility offers
    - enrollments
    - recommendation templates
- my commissions
- my opinions

SURVEYS RESULTS

Coordination of Erasmus student mobility

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

This page displays **Signed bilateral agreements** that fulfil 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: (dowolny)

Id:

Country:

Institution name:

Erasmus code:

From: YYYY_MM_DD

To: YYYY_MM_DD

CLEAR FILTERS APPLY

Signed faculty/unit agreements

Showing first 30 table entries ... show more | show all

No.	Country	Erasmus code	Institution name	Qualifications stage	Id	From	To	Options
1	(in Polish) Austria	A WIEN01	Universität Wien	podpisana	517/E/XII06	2007-07-01	2010-09-30	details
2	(in Polish) Dania	DK ODENSE01	Syddansk Universitet	podpisana	659/E/II07	2007-07-01	2010-09-30	details
3	(in Polish) Dania	DK KOBENHA01	Kobenhavns Universitet	podpisana	214/E/XI06	2007-07-01	2010-09-30	details
4	(in Polish) Dania	DK ARHUS01	Aarhus Universitet	podpisana	193/E/XI06	2007-07-01	2010-09-30	details
5	(in Polish) Francja	F PARIS013	Université Paris Nord (Paris XIII)	podpisana	282/E/XI06	2007-07-01	2010-09-30	details
6	(in Polish) Francja	F PALAISE01	Ecole Polytechnique	podpisana	521/E/XII06	2007-07-01	2010-09-30	details
7	(in Polish) Hiszpania	E VALENCI01	Universidad de Valencia	podpisana	462/E/XII06	2007-07-01	2010-09-30	details
8	(in Polish) Hiszpania	E BARCELO02	Universitat Autónoma de Barcelona	podpisana	654/E/II07	2007-07-01	2010-09-30	details
9	(in Polish) Niemcy	D SAARBRU01	Universität des Saarlandes	podpisana	283/E/XI06	2007-07-01	2010-09-30	details
10	(in Polish) Niemcy	D MUNCHEN01	Ludwig-Maximilians-Universitat Munchen	podpisana	464/E/XII06	2007-07-01	2010-09-30	details
11	(in Polish) Niemcy	D DARMSTA01	Technische Universität Darmstadt	podpisana	540/E/I07	2007-07-01	2010-09-30	details
12	(in Polish) Szwecja	S UPPSALA01	Uppsala Universitet	podpisana	202/E/XI06	2007-07-01	2010-09-30	details
13	(in Polish) Portugalia	P LISBOA02	Universidade de Lisboa	podpisana	995/E/II08	2008-07-01	2011-09-30	details
14	(in Polish) Wielka Brytania	UK ABERDEE01	University of Aberdeen	podpisana	972/E/I08	2008-07-01	2011-09-30	details
15	(in Polish) Wielka Brytania	UK EDINBUR01	The University of Edinburgh	przedłużona	1130/E/X08	2009-07-01	2011-09-30	details

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

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SURVEYS RESULTS

Coordination of Erasmus student mobility

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

Assigned outgoing student mobilities

PRINT THE LIST (Polish / English)

SEND LIST TO COORDINATORS (Polish / English)

→ export the list to file in CSV format
→ send e-mail to all 23 recipients from table below.

FILTER OPTIONS

Qualification stage: (all)
Status of mobility: Active
Mobility type: (all)
Status of LA: (all)
Academic year: 2010
Institution name:
Erasmus code:
Country:
Granted no sooner than: YYYY_MM_DD
Granted no later than: YYYY_MM_DD

CLEAR FILTERS APPLY

OR

SELECTED STUDENT

student's name APPLY

Showing elements **1..23** (out of 23)

No.	Surname	Name	Country	Erasmus code	Institution name	Date of assignment	Acad. year	Mobility type	Status of mobility	Qualifications stage		Options
1	Baranowska Katarzyna		Niemcy	D MUNCHEN01	Ludwig-Maximilians-Universitat Munchen	2010-02-27	2010	Studies	Active	Finished		→ view → learning agreement
2	Bendowski Michał		Holandia	NL AMSTERD02	Vrije Universiteit Amsterdam	2010-02-24	2010	Studies	Active	Finished		→ view → learning agreement
3	Chapska Monika		Holandia	NL AMSTERD02	Vrije Universiteit Amsterdam	2010-02-12	2010	Studies	Active	Finished		→ view → learning agreement
4	Czeczko Artur		Francja	F PARIS013	Université Paris Nord (Paris XIII)	2010-03-02	2010	Studies	Active	Finished		→ view → learning agreement
5	Dudzik Krzysztof		Niemcy	D SAARBRU01	Universität des Saarlandes	2010-02-14	2010	Studies	Active	Finished		→ view → learning agreement
6	Falkiewicz Tomasz		Hiszpania	E LASPAL01	Universidad de Las Palmas de Gran Canaria		2010	Studies	Active	Finished		→ view → learning agreement
7	Freus Oktawian		Portugalia	P PORTO02	Universidade do Porto	2010-02-25	2010	Studies	Active	Finished		→ view → learning agreement
8	Geras Krzysztof		Wielka Brytania	UK EDINBUR01	The University of Edinburgh	2010-02-24	2010	Studies	Active	Finished		→ view → learning agreement
9	Jarzębowski Przemysław		Wielka Brytania	UK EDINBUR01	The University of Edinburgh	2010-02-24	2010	Studies	Active	Finished		→ view → learning agreement
10	Jurek Michał		Niemcy	D MUNCHEN01	Ludwig-Maximilians-Universitat Munchen	2010-02-27	2010	Studies	Active	Finished		→ view → learning agreement
11	Kacperski Andrzej		Dania	DK KOBENHA01	Kobenhavns Universitet	2010-02-24	2010	Studies	Active	Finished		→ view → learning agreement

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      - learning agreement
        - **decision**
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SURVEYS RESULTS

Learning Agreement has been approved. It should be printed and signed (correspondence will ensue). Subsequent edition of the agreement is possible until its expiration date in USOSweb.

In reference to

Student:	Michał Bendowski
Study program:	**DZ-INF** - Bachelor's degree, first cycle programme, Computer Science
Period of study:	**I3** - Computer Science, 3rd grade
Term:	**2009** - Academic year 2009/10

General information

	Decision number:	102582
	Decision date:	2010-03-23
i	Decision type:	**REPLACEMENT**
	Decision state:	**W** - to be completed modification deadline: **2011-03-15**
i	Stage of creation:	Accepted
	Next period of study:	(no change)
	Comment:	Porozumienie w sprawie programu zajęć (LA)

External courses

No	Name	Term	Passed	ECTS	Language	i	Coordinator	Status	Options
Current **approved** course list									
1.	Logical Verification	2010L	NO	6.00	English	none / none	(unknown)	Z - approved	
	LAB WYK EGZ **Educational institution:** Vrije Universiteit Amsterdam								
2.	Network Programming	2010L	NO	9.00	English	none / none	(unknown)	Z - approved	
	WYK LAB EGZ **Educational institution:** Vrije Universiteit Amsterdam								
3.	Operating Systems Practical	2010L	NO	9.00	English	none / none	(unknown)	Z - approved	
	LAB **Educational institution:** Vrije Universiteit Amsterdam								
4.	Scientific Writing in English	2010L	NO	3.00	(unknown)	none / none	(unknown)	Z - approved	
	PRA-P WYK **Educational institution:** Vrije Universiteit Amsterdam								
5.	Software Configuration Management	2010L	NO	6.00	English	none / none	(unknown)	Z - approved	
	CW PRA-P WYK **Educational institution:** Vrije Universiteit Amsterdam								
	Total number of ECTS credits attempted:			33.00	i				

Real life scenario - 3

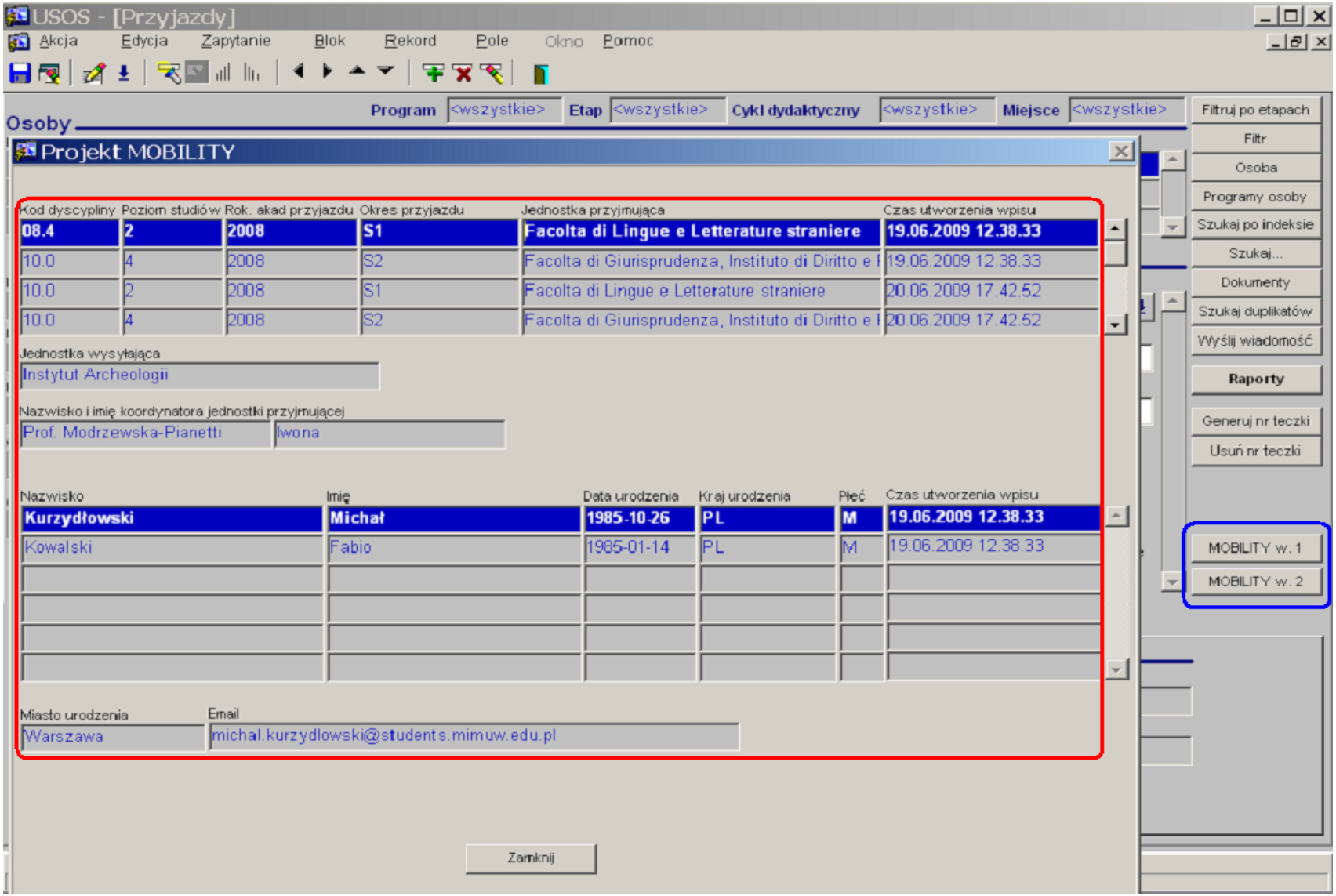
- International Relations Office is ready to deliver lists of nominated students to partner institutions
  - Personal data
  - Learning agreement
- When student returns (after a semester or a year) International Relations Office would like to get:
  - Trancript of records
  - Exact dates of arrival and departure (to calculate exact amount of scholarship)

Real life scenario – 4

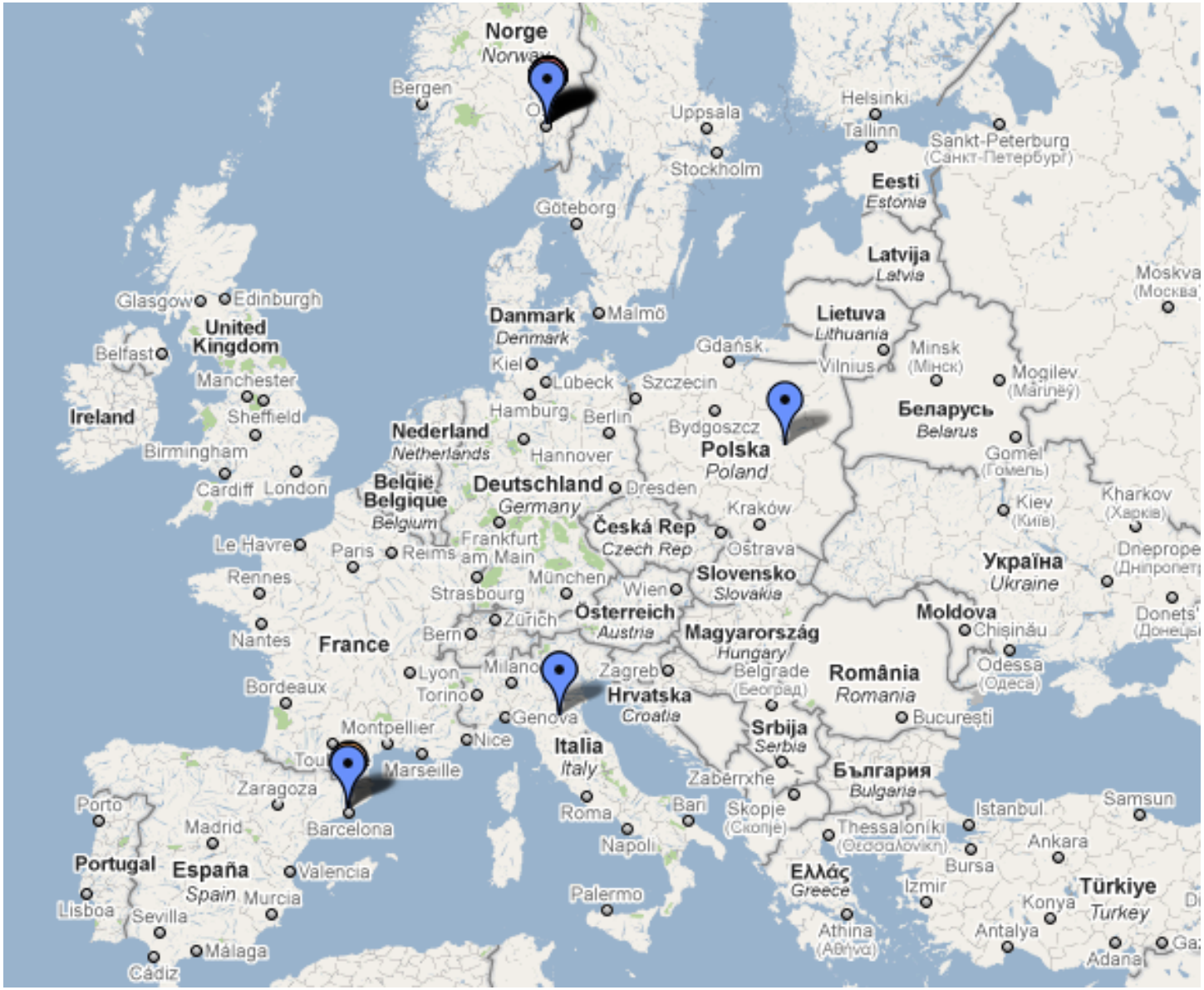
Sending data from home to partner institution

(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 workhop 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 workhop in Warsaw** (some important plans made on how to speed up the project)

Technical aspects of the project – 1

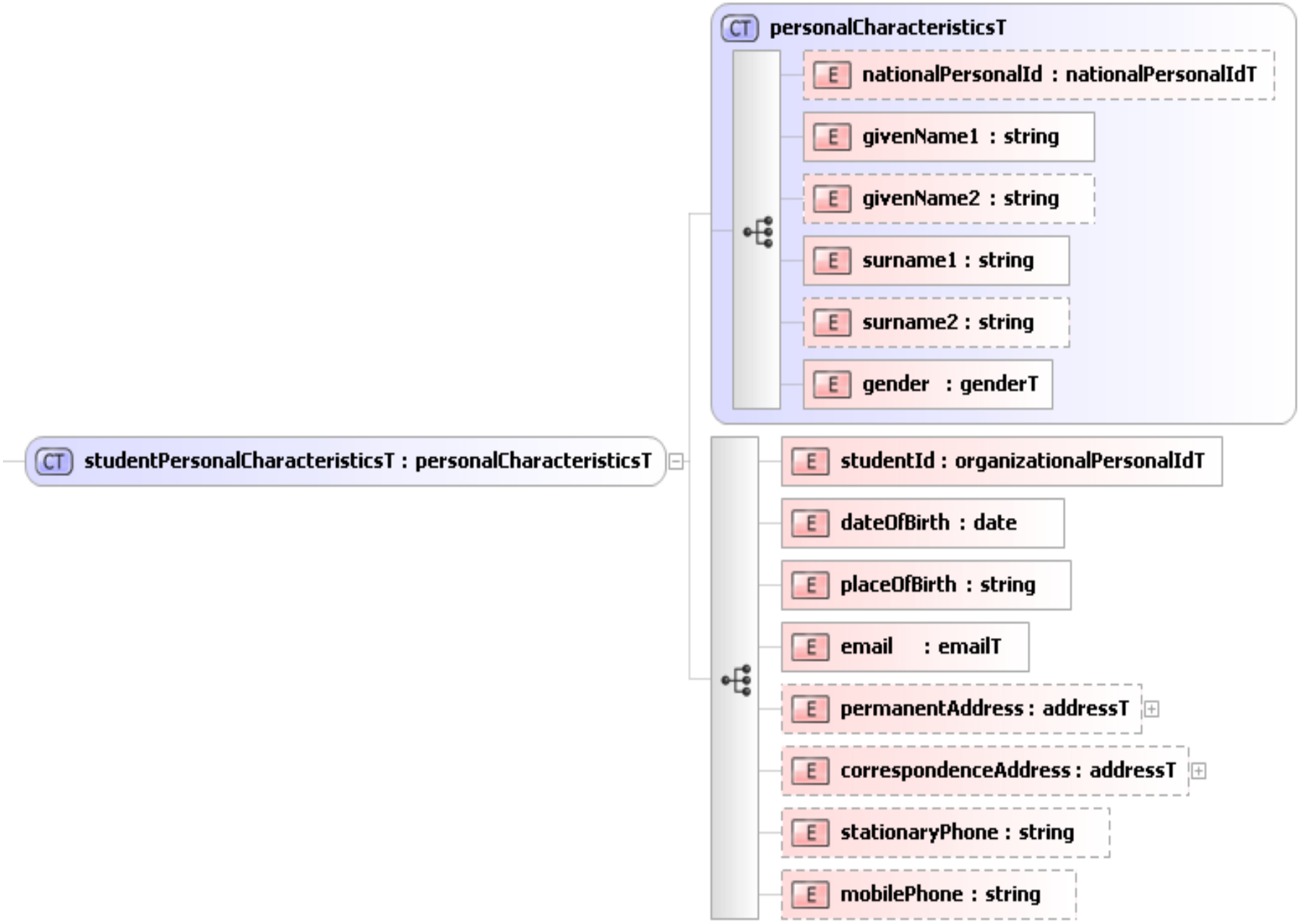
Data format – WSDL ver.2.0

- Should model the **problem domain** well
- Should be as **simple** as possible and conform to existing **standards** as strictly as possible, **but**
  - Exsiting 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

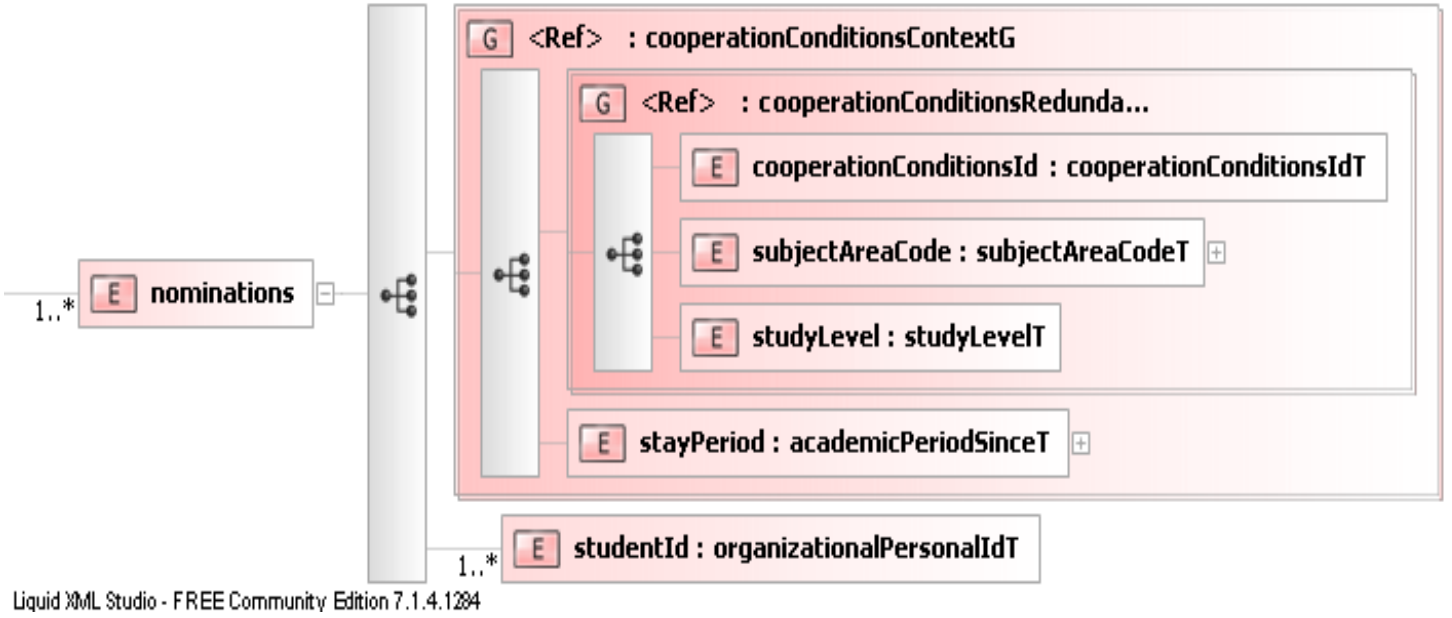
Technical aspects of the project – 2

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



Liquid XML Studio - FREE Community Edition 7.1.4.1284

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                <tns:academicPeriod>S1</tns:academicPeriod>
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        </tns:stayPeriod>
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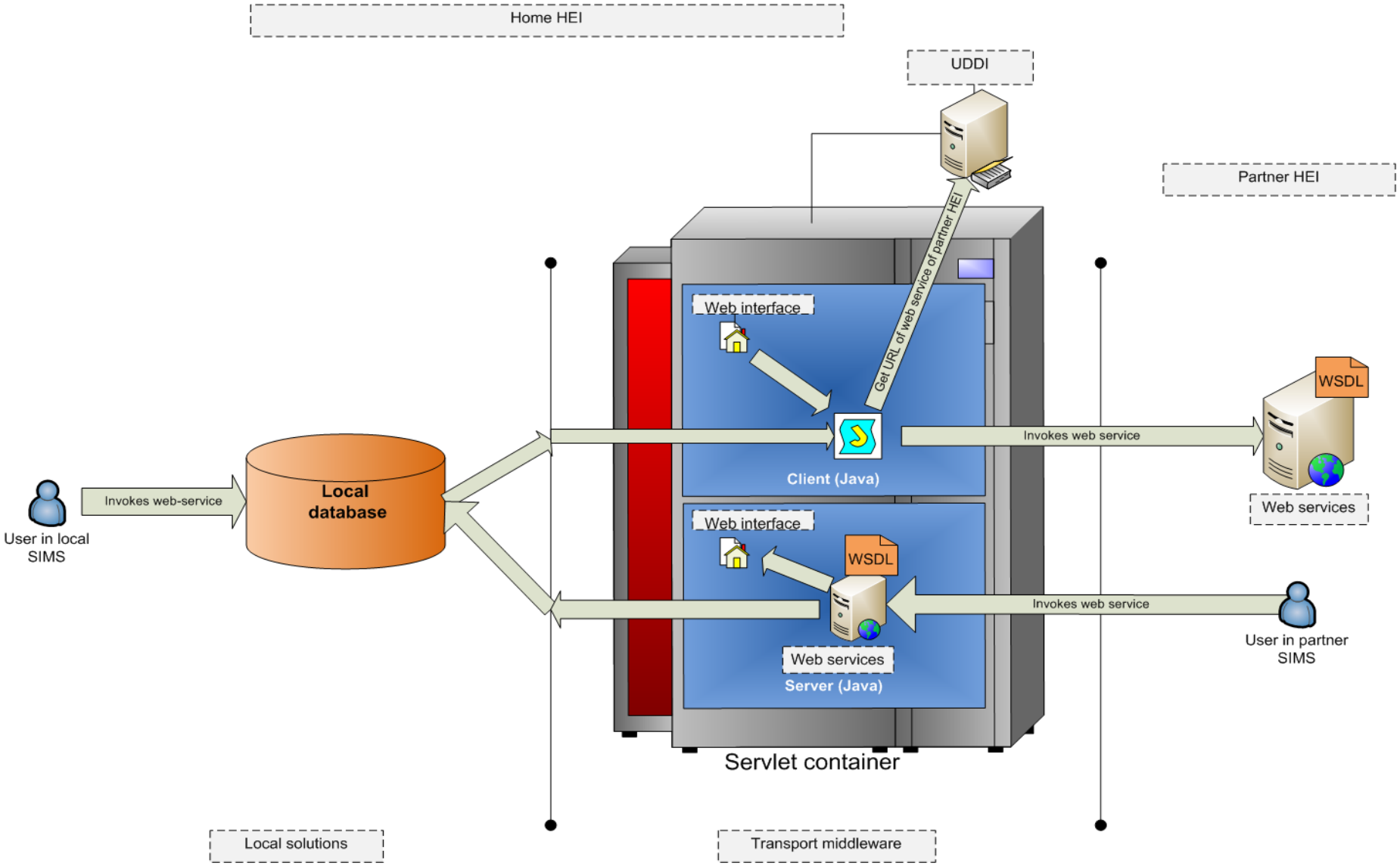
        <tns:studentId>unipr.it:7042</tns:studentId>
        <tns:studentId>unipr.it:4603</tns:studentId>
</tns:nominations>
```

Technical aspects of the project – 2

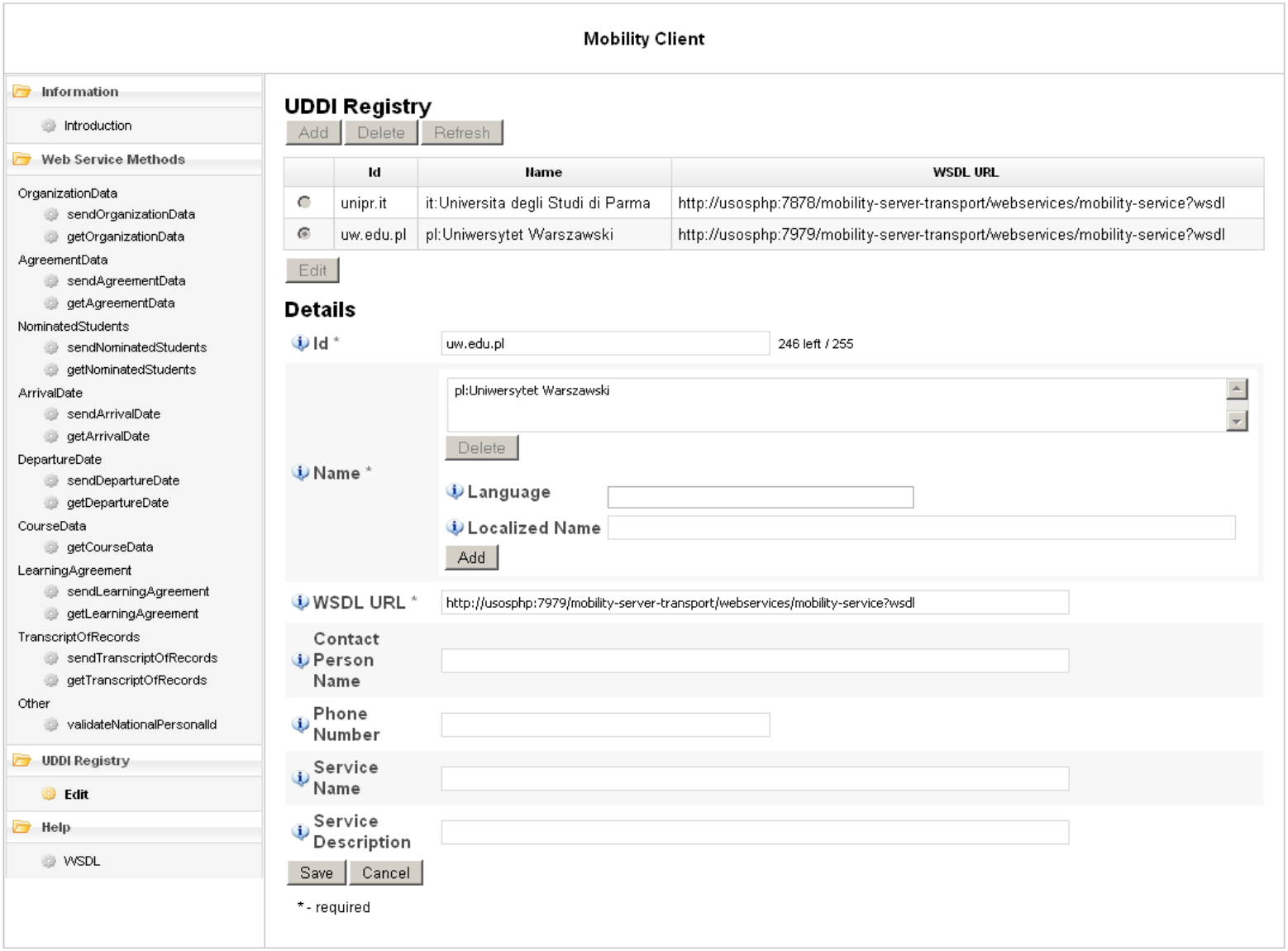
Software ver.2.0

- 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)

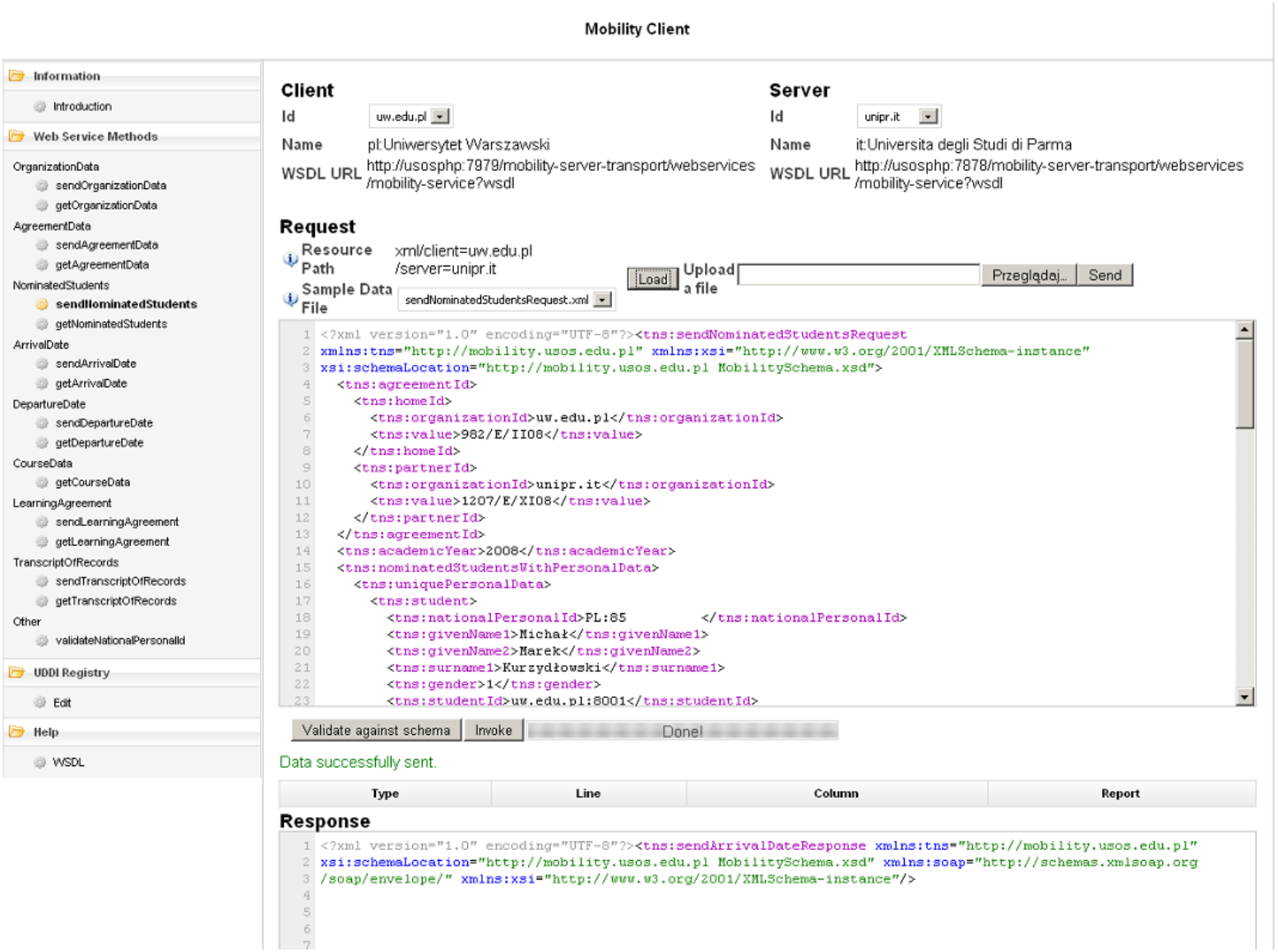


UDDI – Universal Description, Discovery and Integration (registry of Mobility nodes)



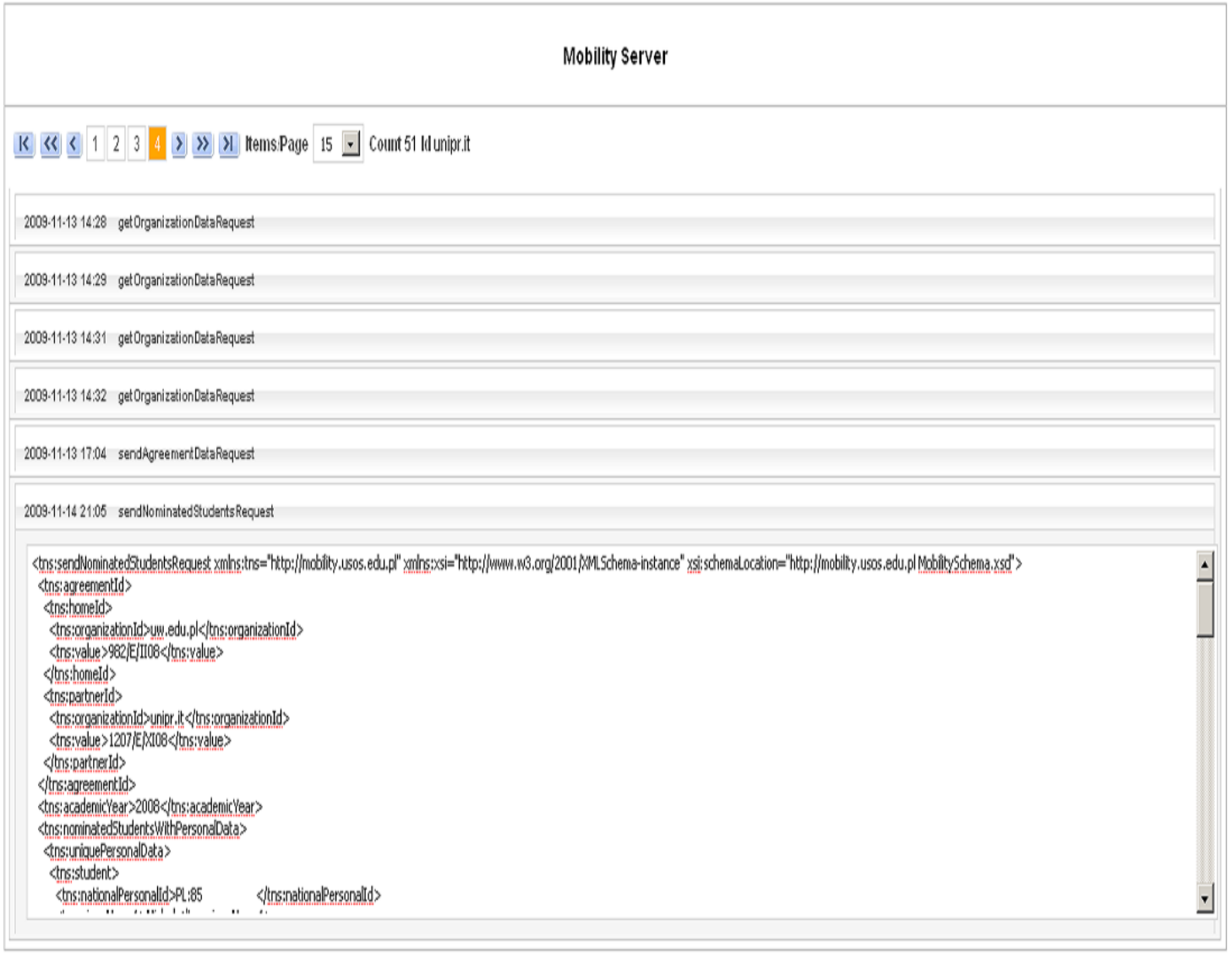
Web client (client= WARSAW, server= PARMA)

http://usosphp.mimuw.edu.pl:7979/mobility-client-web/index.jsp



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 servise bus
- Everybody can join and contribute

Join the Mobility Project at ...

http://usos.edu.pl/Mobility