The Mobility Project

General idea
Progress report

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Groningen, 2012-04-17

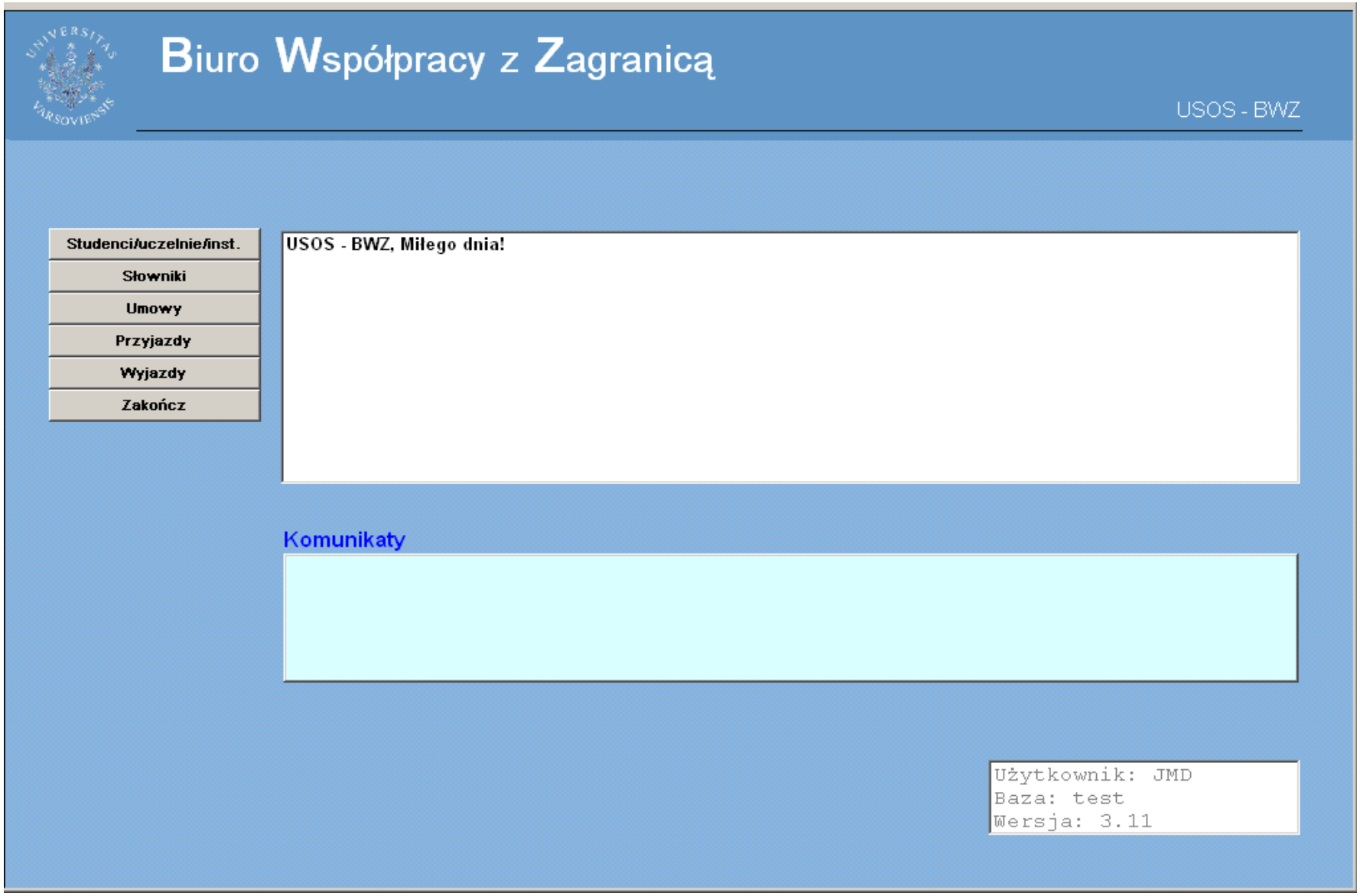
Agenda

- General idea
- Setting the goal
- History of the project
- Achievements
- Mobility Network pilot
- Business Cards pilot
- Some technical aspects
- Further steps

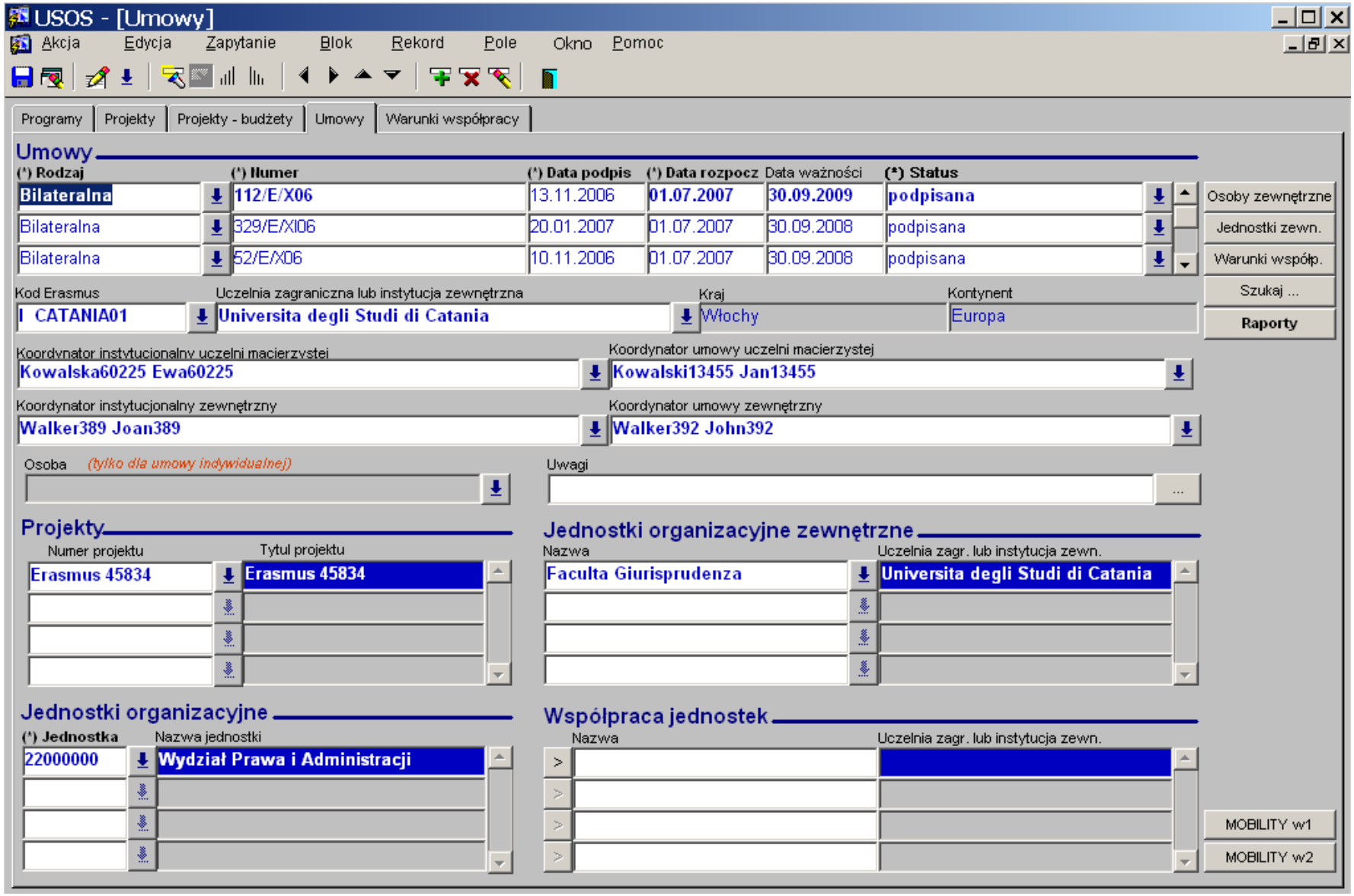
International cooperation ...

- A typical **European university** (like **University of Warsaw**, **UW**) cooperates with other universities, handles staff and students outgoing/incoming mobility ...
- It uses some **Student Management Information System** (like **USOS**) for daily support of the **International Relations Office** (**IRO**)
- All data relevant to international cooperation and mobility are gathered in the university databases in an electronic form

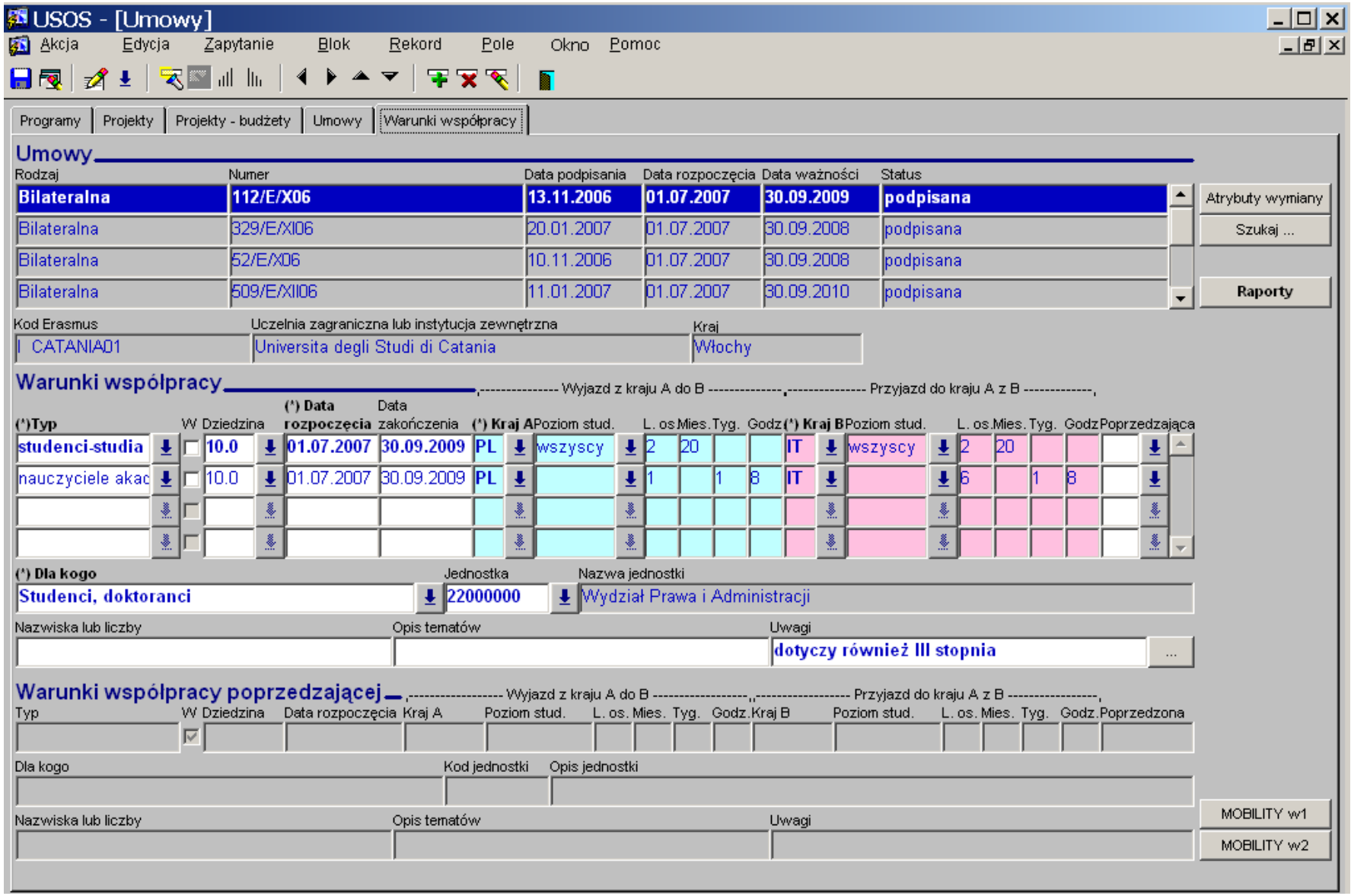
USOS – module for IRO at UW



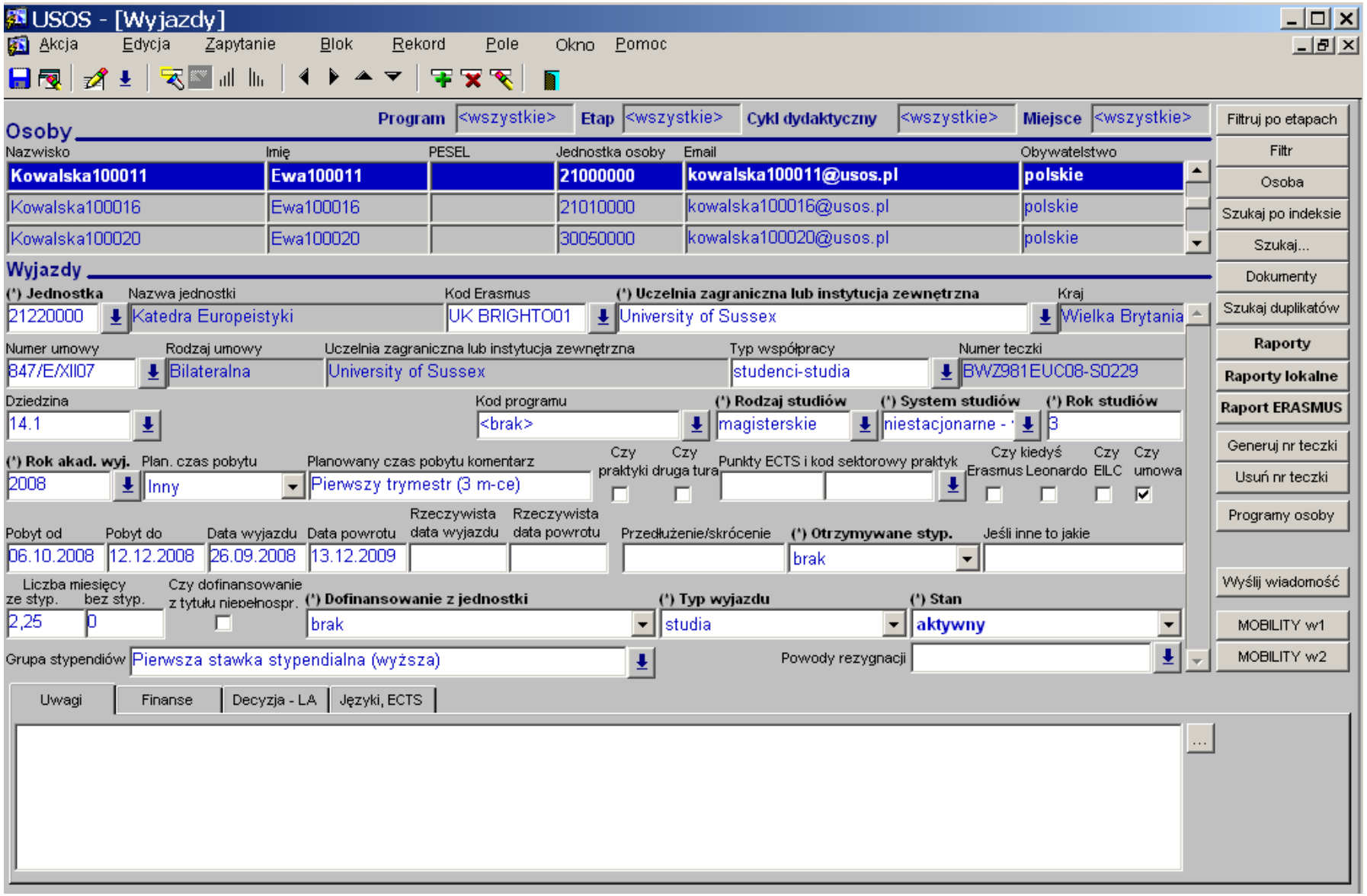
IRO – Bilateral agreements



IRO – Conditions of cooperation

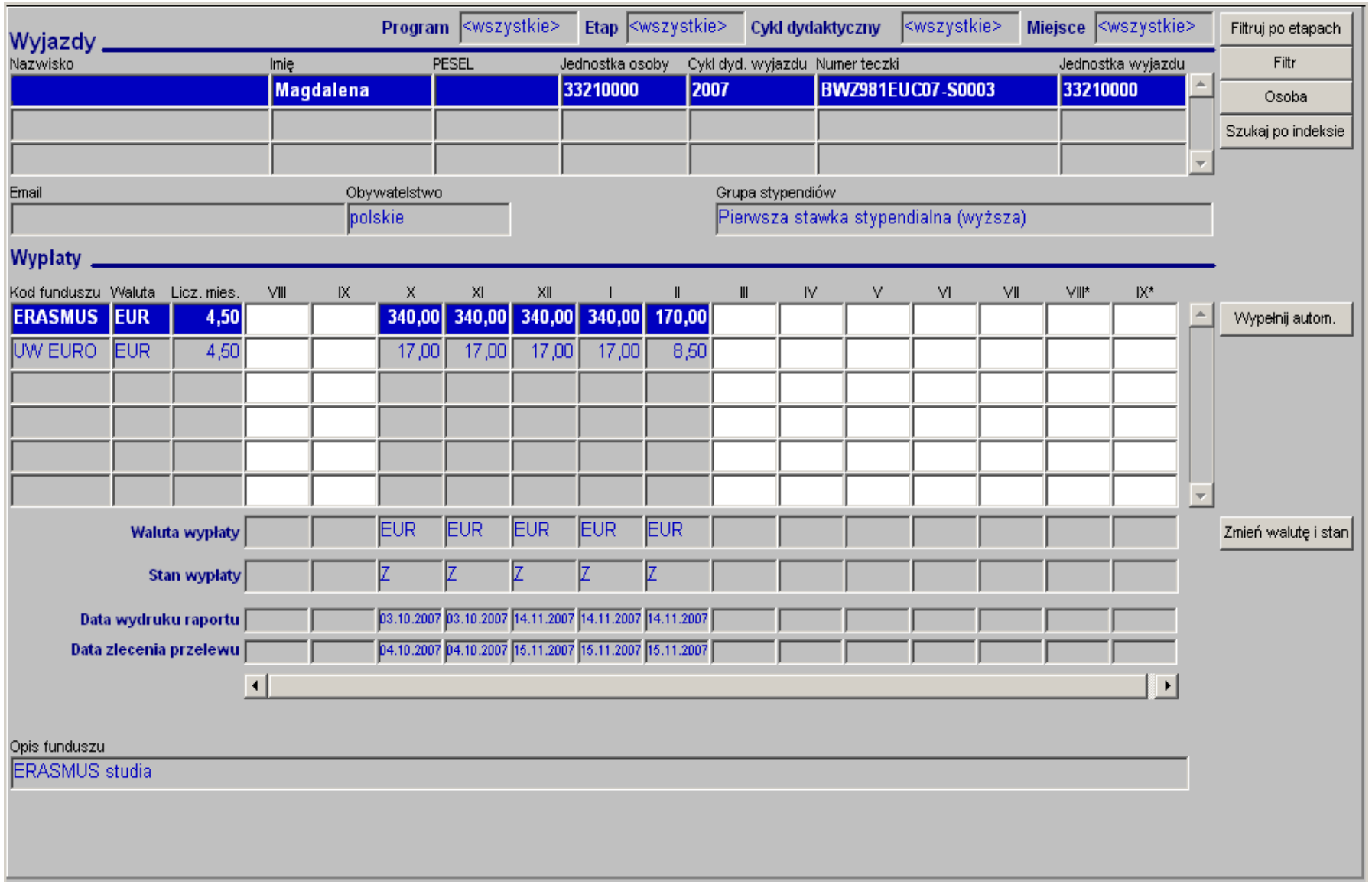


IRO – Incoming and outgoing mobility



IRO – Scholarships

(final amount depends on dates of arrival/departures)



Real life scenario – 1

University of Warsaw

- **December-January**:
  - Start of the recruitment for outgoing mobility
  - List of offers (resulting 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

Faculty – Student's application

Motivation letter in a foreign language

Please consider my candidature to the deans founded scholarship.

Dear Sir or Madam,

I am writing to propose my candidature to the Socrates-Erasmus student exchange program in the academic year 2009/10. I'm a student of the fourth year of mathematics. I am studying mathematics as a primary specialization in a Individual Studies Program in conjunction with physics.
It is a great combination which makes studying more interesting and purposeful. I am a hard-working and solid person. A result of that is the fact that every semester I am exceeding the required ECTS numbers and every subject I take on is passed by me. Thanks to such approach I have passed more subjects that were necessary, and I have also passed numerous subjects on the faculty of Physics.

I believe that an international scholarship will be a great opportunity for me to widen my horizons(not only mathematical) and to get more knowledge in various fields. I am aware that it may be a difficult challenge, however I am sure I will be able to cope with it and it will be a great benefit to me as well.

As a person who is travelling a lot, and with good knowledge in foreign languages I hope I won't have any problems to acommodate myself in a new environment. After finishing my master degree I am planning to continue my studies to reach the PhD degree.

Best regards

This application has been accepted.

Priority	Institutions to which the student wants to go. (max 3)
1	**Université Paris Nord (Paris XIII)** (*Mathematics*)
2	**Vrije Universiteit Brussel** (*Mathematics*)
3	**Universitat Autónoma de Barcelona** (*Mathematics*)

RLMTODO	
Language	Level
English	znam język dostatecznie dobrze, by rozumieć wykłady
French	znam język dostatecznie dobrze, by rozumieć wykłady
German	znam język dostatecznie dobrze, by rozumieć wykłady

Courses with marks (max 3)		
1000-135RC1a	Partial differential equations I	4,5
1000-1L00RR	Differential equations in natural sciences	5
1000-135ST1	Statistics I	4,5

Opinion (min 1)(max 1)		
RLMTODO	Status	Options
Grzegorz Łukaszewicz	submitted	→ view

Real life scenario – 2

- **March**: Lists of nominations are ready, approved by departmental Erasmus coordinators (University of Warsaw recruited **1232** students for 2011/2012, numbers grow every year)
- **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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    - unsigned agreements
    - assign outgoing mobility
    - assigned outgoing mobilities
      - learning agreement
        - **decision**
    - study programmes
    - mobility offers
    - enrollments
    - recommendation templates
- my commissions
- my opinions

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) IRO would like to get:
  - Trancript of records
  - Exact dates of arrival and departure (to calculate exact amount of scholarship)

Learning Agreement

LEARNING AGREEMENT
Academic year: Winter semester 2009/2010
Field of study: Informatics, Computer Science (code 11.3)

Name of student:
Aleksander G

Sending institution:	*Country:*
University of Warsaw	**Poland**

DETAILS OF THE PROPOSED STUDY PROGRAM ABROAD/LEARNING AGREEMENT

Receiving institution:	*Country:*
Université Paris Nord (Paris XIII)	**France**

Current version

Course unit code (if any)	*Course unit title (as indicated in the information package):*	*Number of ECTS credits if applied*
	Algorytmique parallele et distribuee	**4**
	Analyse de Fourrier et theorie du signal	**4**
	Calcul haute performance	**5**
	Modelisation mathematique pour le traitment des images	**5**
	Programmation mathematique approfondie	**5**
	Systemes distribues	**4**

Date	*Student's signature:*
.....	.....

SENDING INSTITUTION

We confirm that this proposed program of study/learning agreement is approved.

The document has been automatically generated from the electronic system USOS. The study program listed above has been approved by Erasmus Departamental Coordinator.
Date: 2009-11-14

The document has been automatically generated from the electronic system USOS. The study program listed above has been approved by Erasmus Institutional Coordinator.
Date: 2009-11-14

RECEIVING INSTITUTION

We confirm that this proposed program of study/learning agreement is approved.

Departmental coordinator's signature	*Institutional coordinator's signature*
.....	.....
Date:	*Date:* .....

Learning Agreement → Transcript of Records

In reference to

Student:	Piotr S
Study program:	**DM-JSIM** - Double Degree Program in Computer Science and Mathematics
Stage:	**JSIM4I** - Fourth year JSIM 3I+4M
Term:	**2007** - Academic year 2007/08

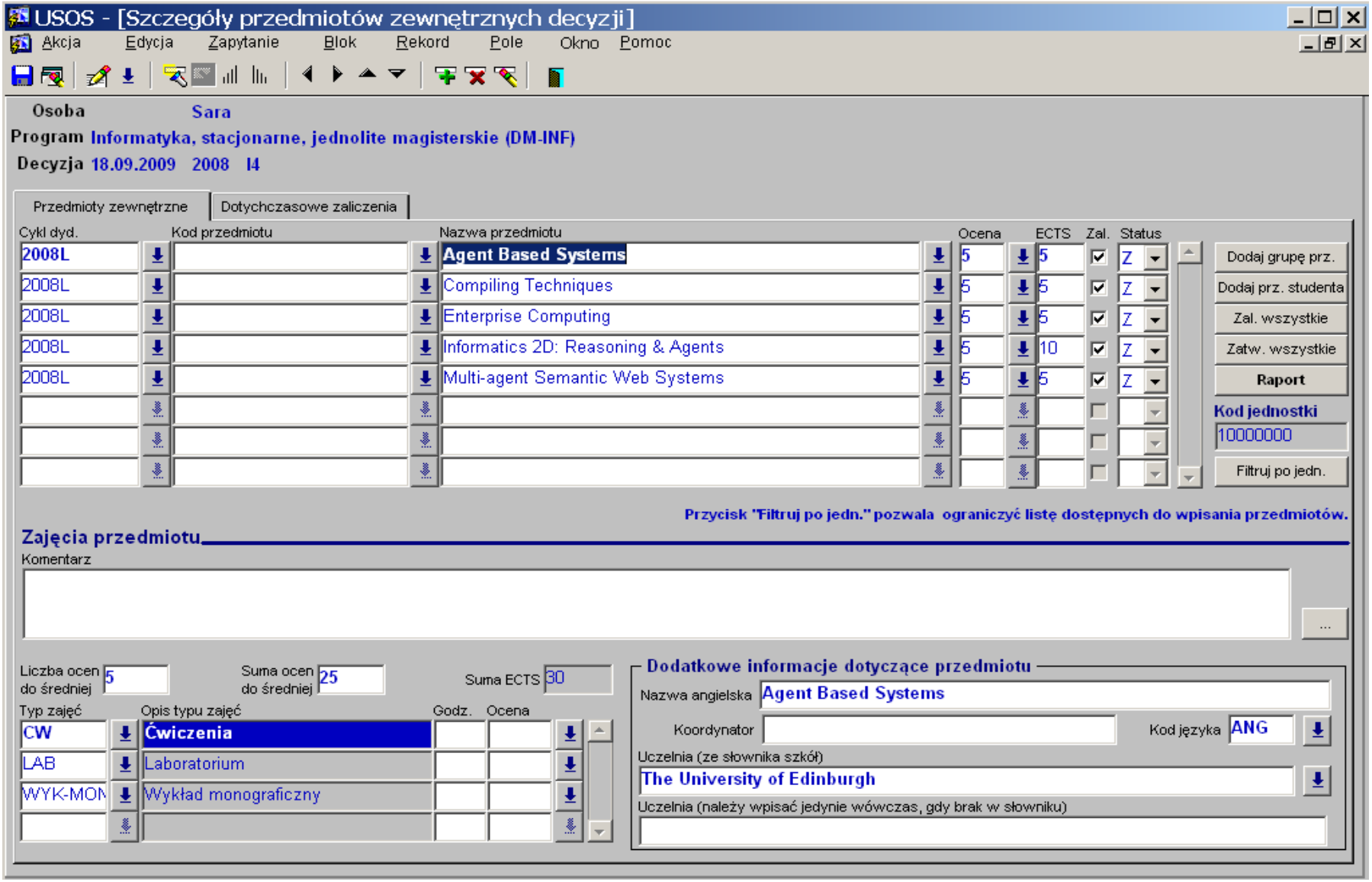
General information

	Decision number:	75064
	Decision date:	2008-08-17
i	Decision type:	**MODIFICATION**
	Decision state:	**Z** - approved
i	Stage of creation:	Filling in
	Next stage:	(no change)
	Comment:	Porozumienie w sprawie programu zajęć (LA)

External courses

#	Name	Term	Passed	ECTS	Language	i	Coordinator	Status
1.	Agent Based Systems U02497	2007	YES	5.00	English	none / none	Michael Rovatsos	Z - approved
	CW (8 hours), WYK (20 hours). **Institution:** (in Polish) The University of Edinburgh							
2.	Computer Communications and Networks U03858	2007	YES	5.00	English	none / none	Mahesh Marina	Z - approved
	WYK (20 hours). **Institution:** The University of Edinburgh							
3.	Computer Security U03025	2007	YES	5.00	English	none / none	David Aspinall	Z - approved
	WYK (20 hours). **Institution:** (in Polish) The University of Edinburgh							
4.	Enterprise Computing U01902	2007	YES	5.00	English	none / none	Stephen Gilmore	Z - approved
	CW (8 hours), WYK (20 hours). **Institution:** (in Polish) The University of Edinburgh							
5.	Informatics 2D: Reasoning & Agents U02602	2007	YES	10.00	English	none / none	Jacques Fleuriot, Michael Rovatsos	Z - approved
	CW (10 hours), LAB (20 hours), WYK (30 hours). **Institution:** (in Polish) The University of Edinburgh							
			max ECTS to achieve:	30.00	i			
			achieved ECTS total:	30.00	i			

Grades from the University of Edinburgh



Diploma supplement

DIPLOMA SUPPLEMENT

Valid with the Diploma no 1000/46331/2009

I. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1. Surname: *S*
2. First name(s): *Piotr Krzysztof*
3. Date of birth (day, month, year): *24.09.1985*
4. Student identification number or code: *219737*

II. INFORMATION IDENTIFYING THE QUALIFICATION

1. Diploma number : 1000/46331/2009
2. Name of qualification and the title conferred [1)] *magister*
3. Main field of study and field of specialisation for the qualification : *Computer Science*
4. Name and status of awarding institution [1)]:

   Uniwersytet Warszawski
   Uniwersytet Warszawski, established in 1816 is a public higher education institution. The university is entitled to confer the degrees of 'doktor', 'doktor habilitowany' and apply for the title of 'profesor'. The university educates students in the spirit of Magna Charta Universitatum and is also a party to the Agreement of Polish Universities on the Quality of Education, as a result of which the University Accreditation Commission was established.
5. Name and status of institution administering studies [2)]

   Uniwersytet Warszawski
   Uniwersytet Warszawski, established in 1816 is a public higher education institution. The university is entitled to confer the degrees of 'doktor', 'doktor habilitowany' and apply for the title of 'profesor'. The university educates students in the spirit of Magna Charta Universitatum and is also a party to the Agreement of Polish Universities on the Quality of Education, as a result of which the University Accreditation Commission was established.

   The University of Edinburgh - United Kingdom
6. Language(s) of instruction/examination: *Polish, English*

III. INFORMATION ON THE LEVEL OF QUALIFICATION

1. Level of qualification: *second cycle programme*
2. Official length of programme: *5-year studies (3+2)*
3. Access requirements: *maturity certificate or entrance examination*

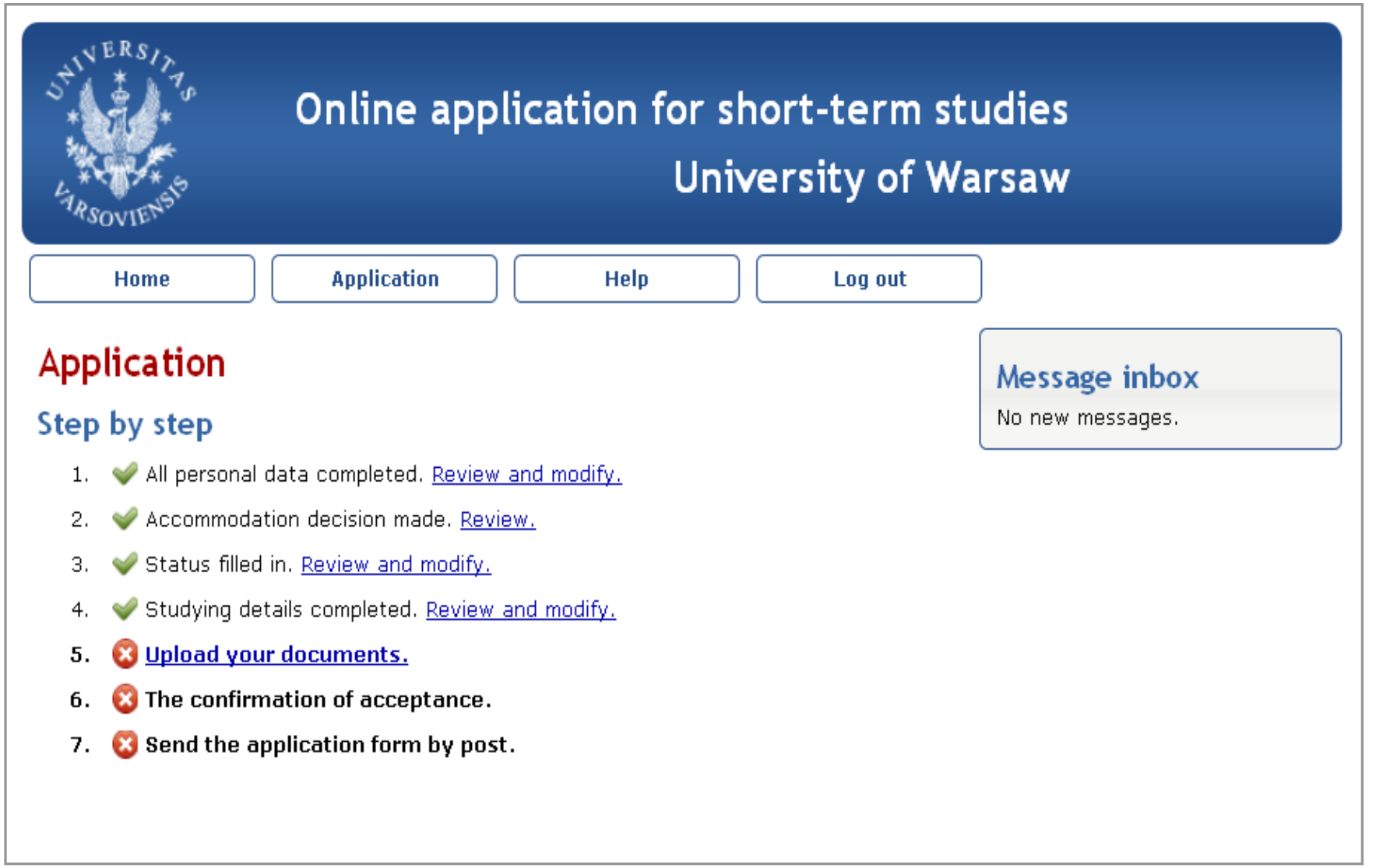
Academic year 2007/08			
Computer Security	*wyk 20*	*5*	*5*
Computer Communications and Networks	*wyk 20*	*5*	*5*
Enterprise Computing	*wyk 20/cw 8*	*4*	*5*
Agent Based Systems	*wyk 20/cw 8*	*4,5*	*5*
Decision support systems	*sem 60*	*4,5*	*12*
Distributed Systems	*sem-mgr 60*	*ZAL*	*6*
Informatics 2D: Reasoning & Agents	*wyk 30/cw 10/lab 20*	*4,5*	*10*

Real life scenario – 4

- Similarly for incoming students ...

Admission of incoming students

Admission of incoming students



Real life scenario – 5

- A lot of information has to be passed during the whole process
- Partner universities keep this information in their databases and handle it using sophisticated computer systems ...

but

deliver it to partners by fax, email, phone

or

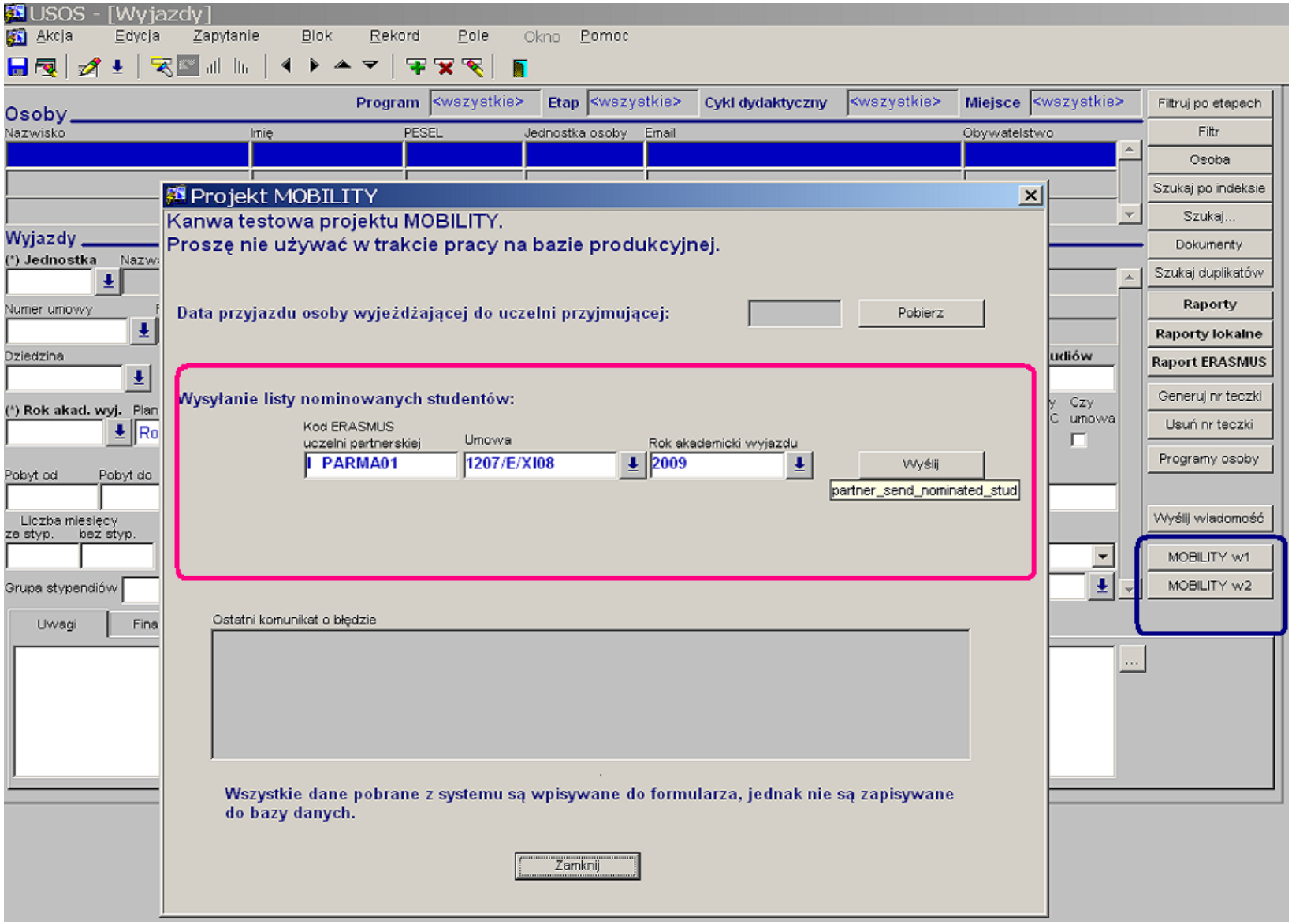
enter it manully to each other systems

(many different systems, many different styles and requirements, frequent updates are necessary, problems with national alphabets, e.g. ą, ę, ł, ń, ó, ś, ź, ż)

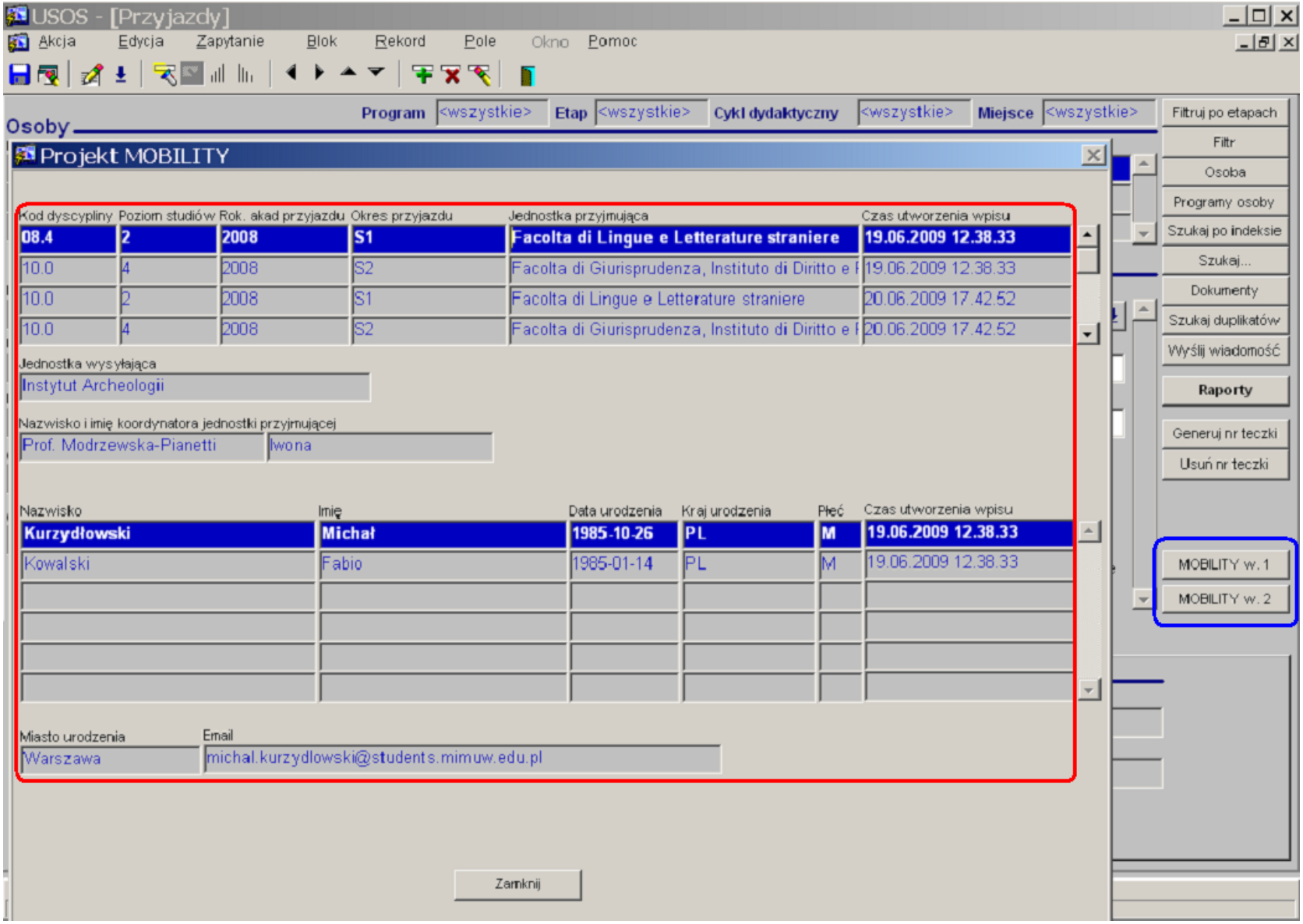
~~Real life~~ Wishful scenario

?

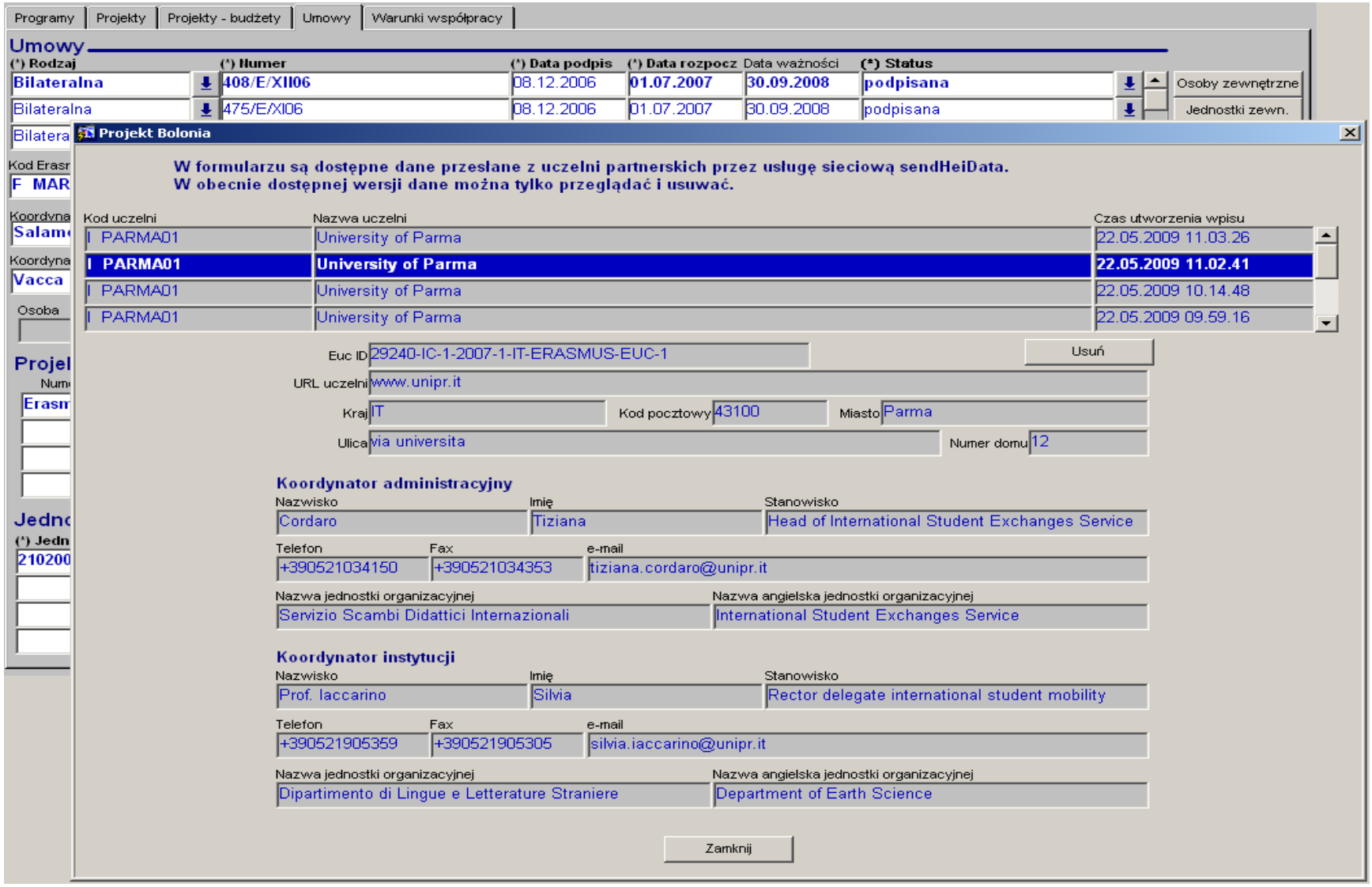
List of nominated students → SEND button



List of incoming students → GET button



Organization data of the partner institution → GET button



Goal of the Mobility Project

Support daily duties of **International Relation Offices** which are responsible for handling international cooperation of Higher Education Institutions, in particular student and staff mobility, by enabling **electronic exchange of the involved data**

What data?

- Details of bilateral agreements (cooperating conditions)
- Personal data of mobile students and staff
- Details of the stay abroad
- Learning Agreements
- Transcript of Records
- Course catalogues

The Mobility Project – History 1

- **June 2008, EUNIS 2008** (Aarchus)
  - Presentation of the USOS Mobility module for IRO
  - **MUCI** (Polish consortium) and **CINECA** (Italian consortium) decide to start the project
- **June 2009, EUNIS 2009** (Santiago de Compostela)
  - First version of the mobility network is presented
  - Workhop of **RS3G** standardization body gathers other interested groups (national consortia, software companies, universities)
- **November 2009**, **RS3G Workshop** (Uppsala)
  - Brings together consortia and companies willing to take an active part in the project
  - Main problem domains identified
  - Discussion on WSDL starts

The Mobility Project – History 2

- **March 2010**, **RS3G Workshop** (Bologna)
  - Brings together the Mobility Group and **TERENA TF-EMC2** to discuss the aspects of security and of identity and access management
  - Possible solutions outlined
- **June 2010**, **EUNIS 2010** (Warsaw)
  - RS3G workhop - some important plans made on how to speed up the project (→ Coding Camp)
- **December 2010**, **RS3G Workshop** (Malaga)
  - Joint meeting with **TERENA TF-EMC2**, technical security details discussed and approved

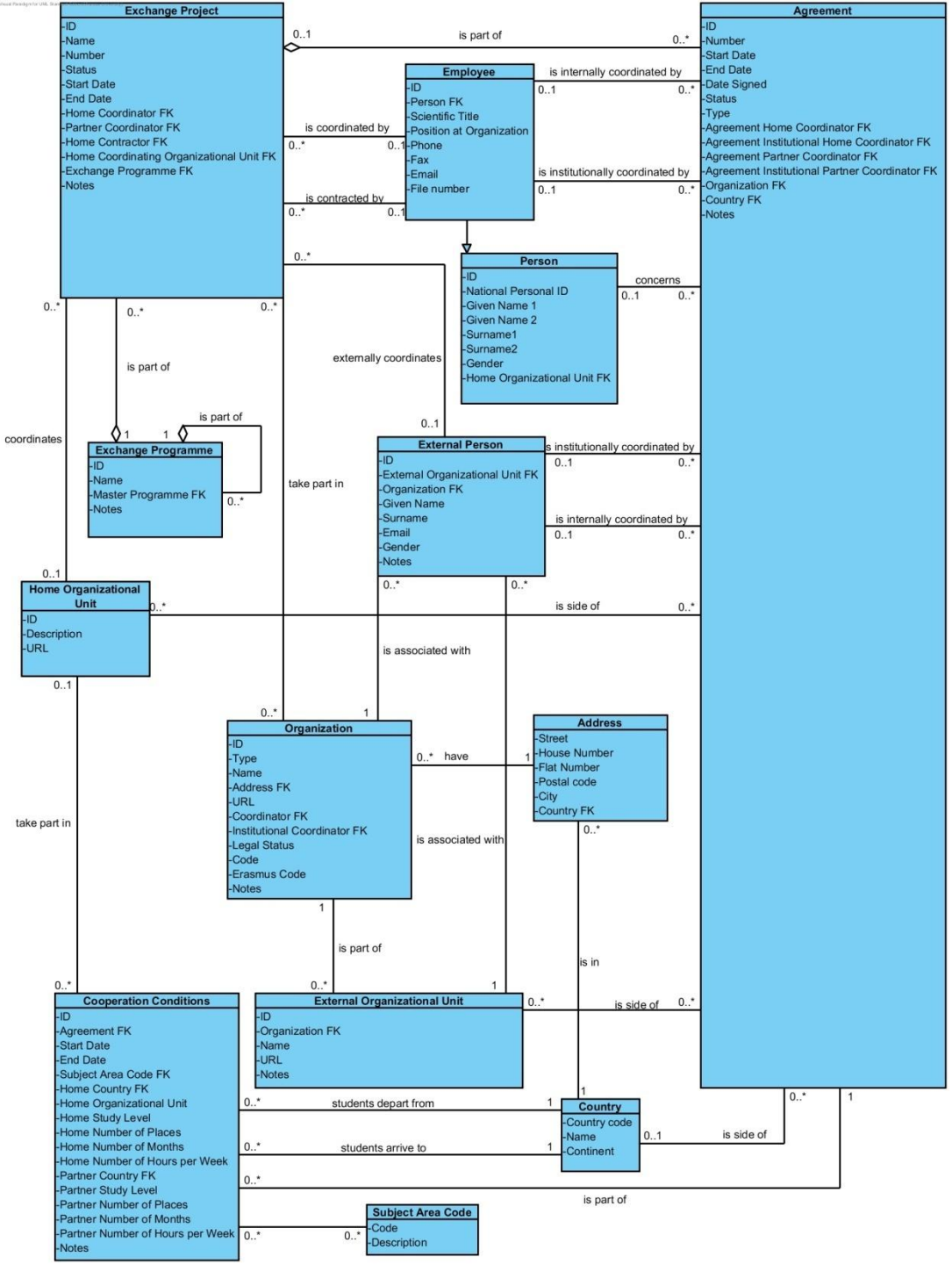
The Mobility Project – History 3

- **March 2011**, **RS3G Coding Camp** (Barcelona)
  - Meeting IRO people, discussing technical issues, extending network of mobility nodes
  - Decision on developing the platform for **exchange of organization data** (so called infosheets or business cards)
- **June 2011, RSG Workshop** (Dublin)
  - meeting with CEN and JISC people – how to develop European standard for data exchange
- **September 2011**
  - Seven business cards from 6 countries posted on the mobility server

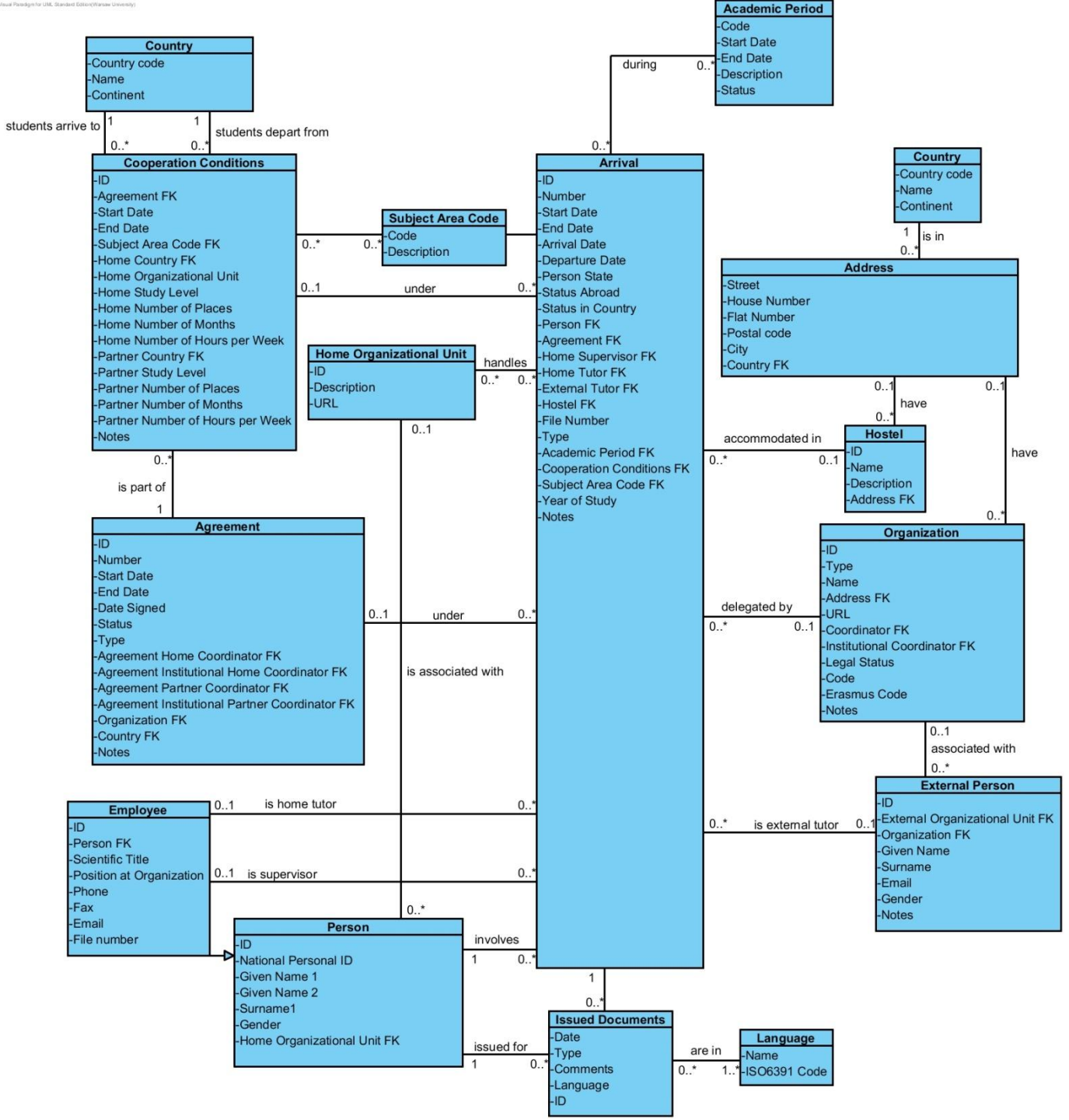
Achievements

What have we achieved?

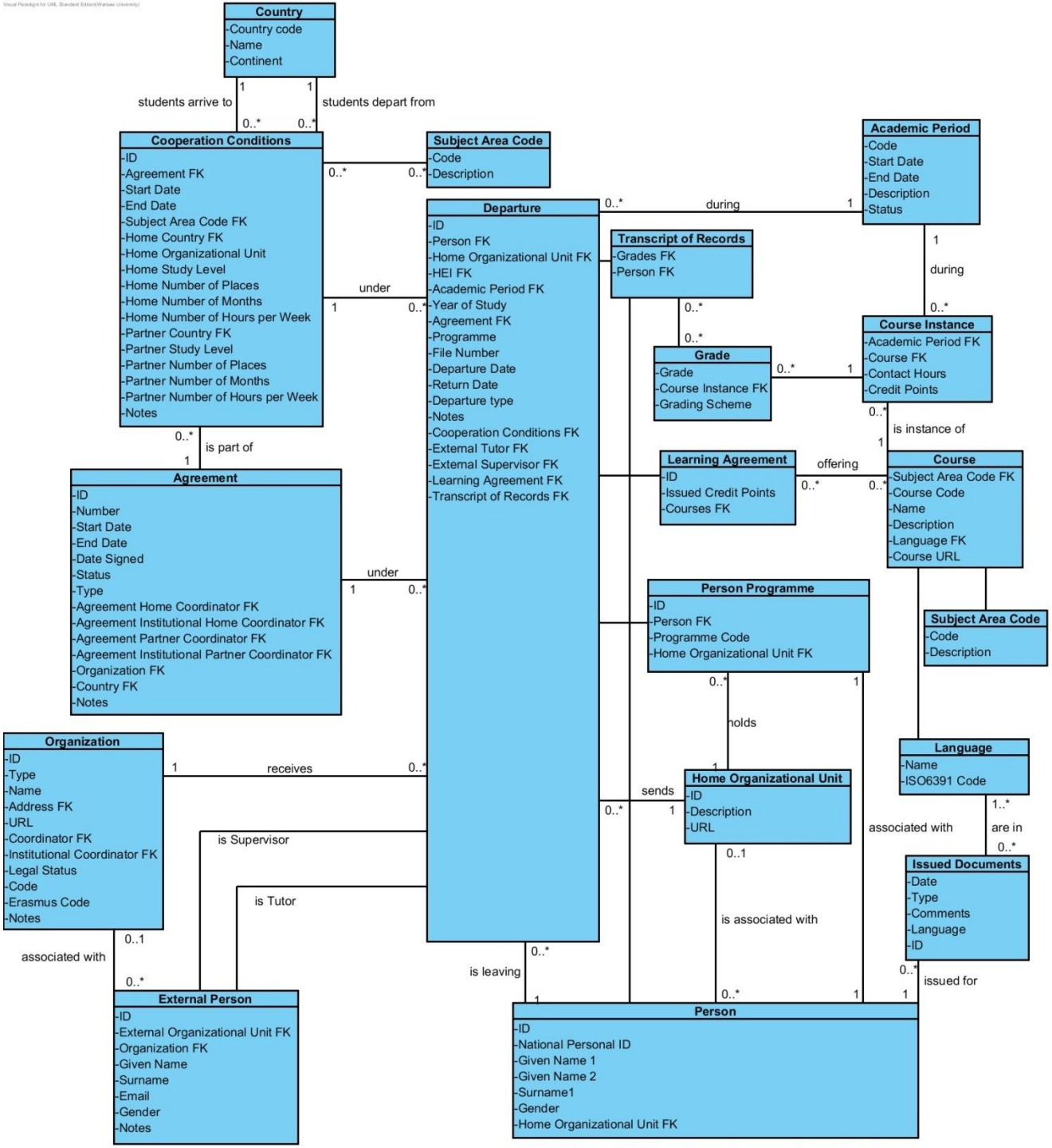
Data model
Agreements



Data model
Arrivals



Data model
Departures



Data format – WSDL

- Requirements concerning data format
  - 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
    - Extra requirements need to be fulfilled to send data from database to database
- We tried 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

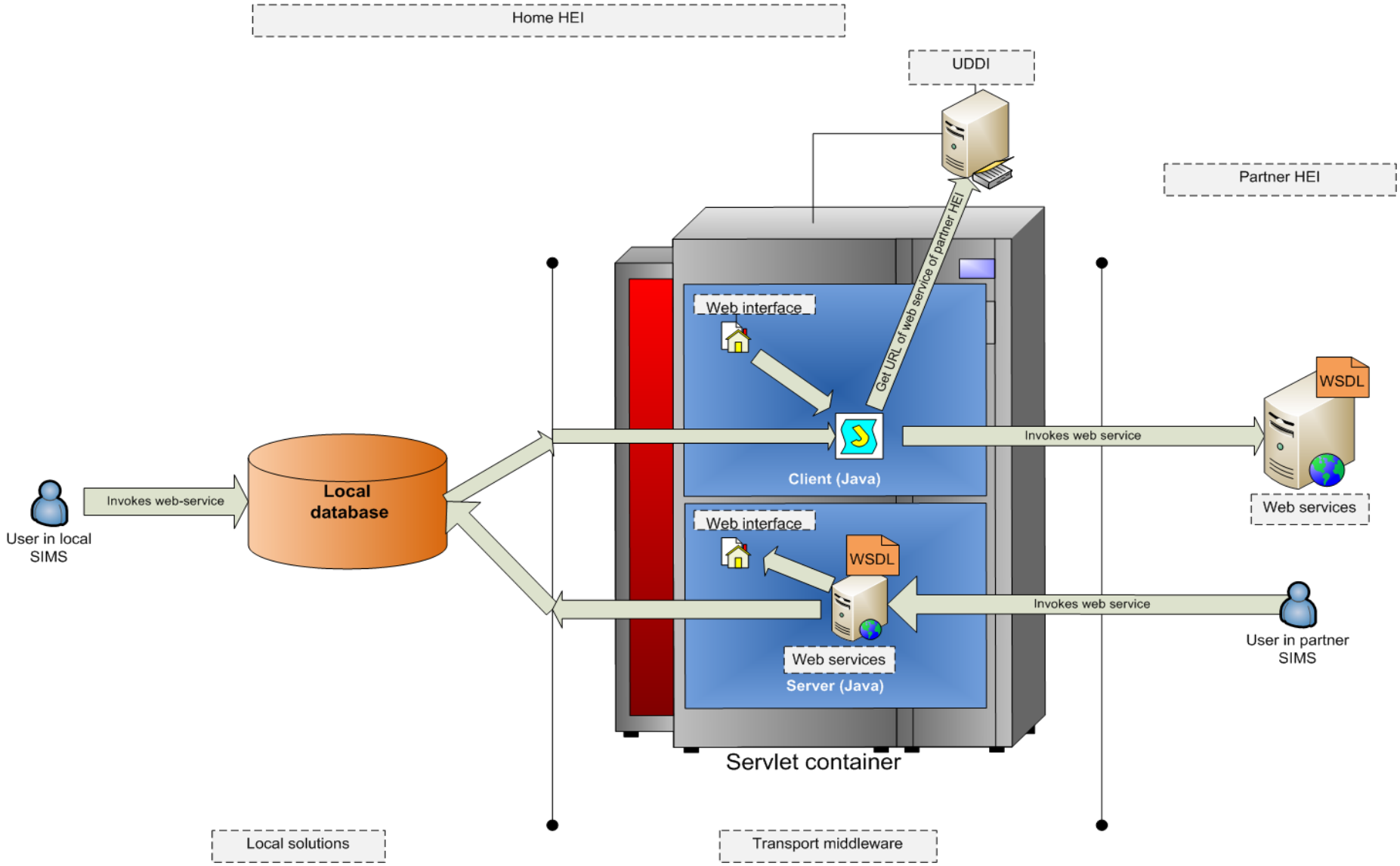
SEND and GET requests (web services)

sendOrganizationData()
getOrganizationData()
sendAgreementData(), getAgreementData()
sendNominatedStudents()
getNominatedStudents()
sendArrivalDate(), getArrivalDate()
sendDepartureDate(), getDepartureDate()
sendLearningAgreement()
getLearningAgreement()
sendTranscriptOfRecords()
getTranscriptOfRecords()
getCourseData()
validateNationalPersonalID()

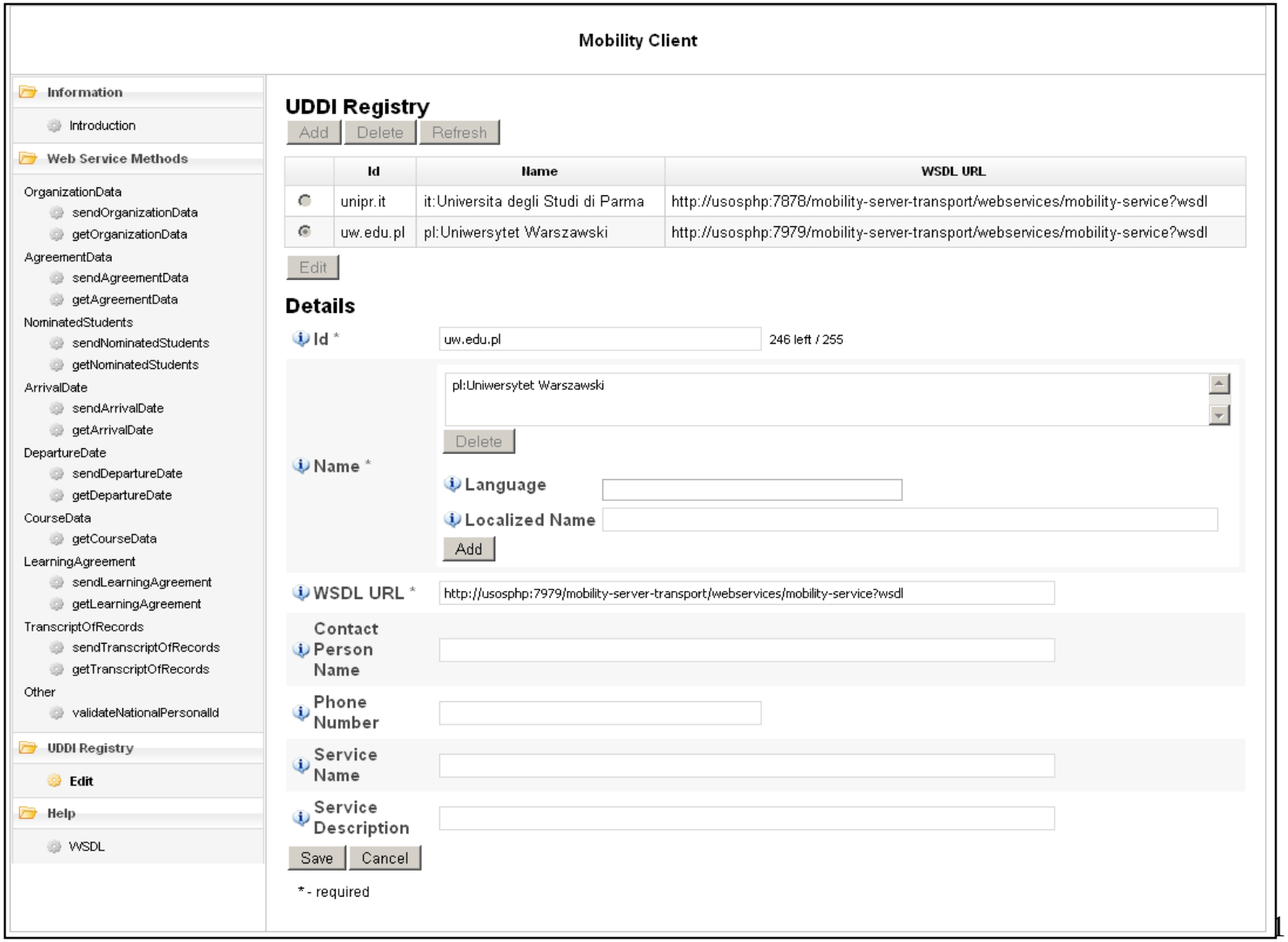
Software for the mobility network

- Distributed network of web servers, one for each HEI
- UDDI (Universal Description Discovery and Integration) registry stores addresses of endpoints
- Technologies involved (open source):
  - 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.
- Preconfigured, easy to install mobility package

Architecture of the mobility network

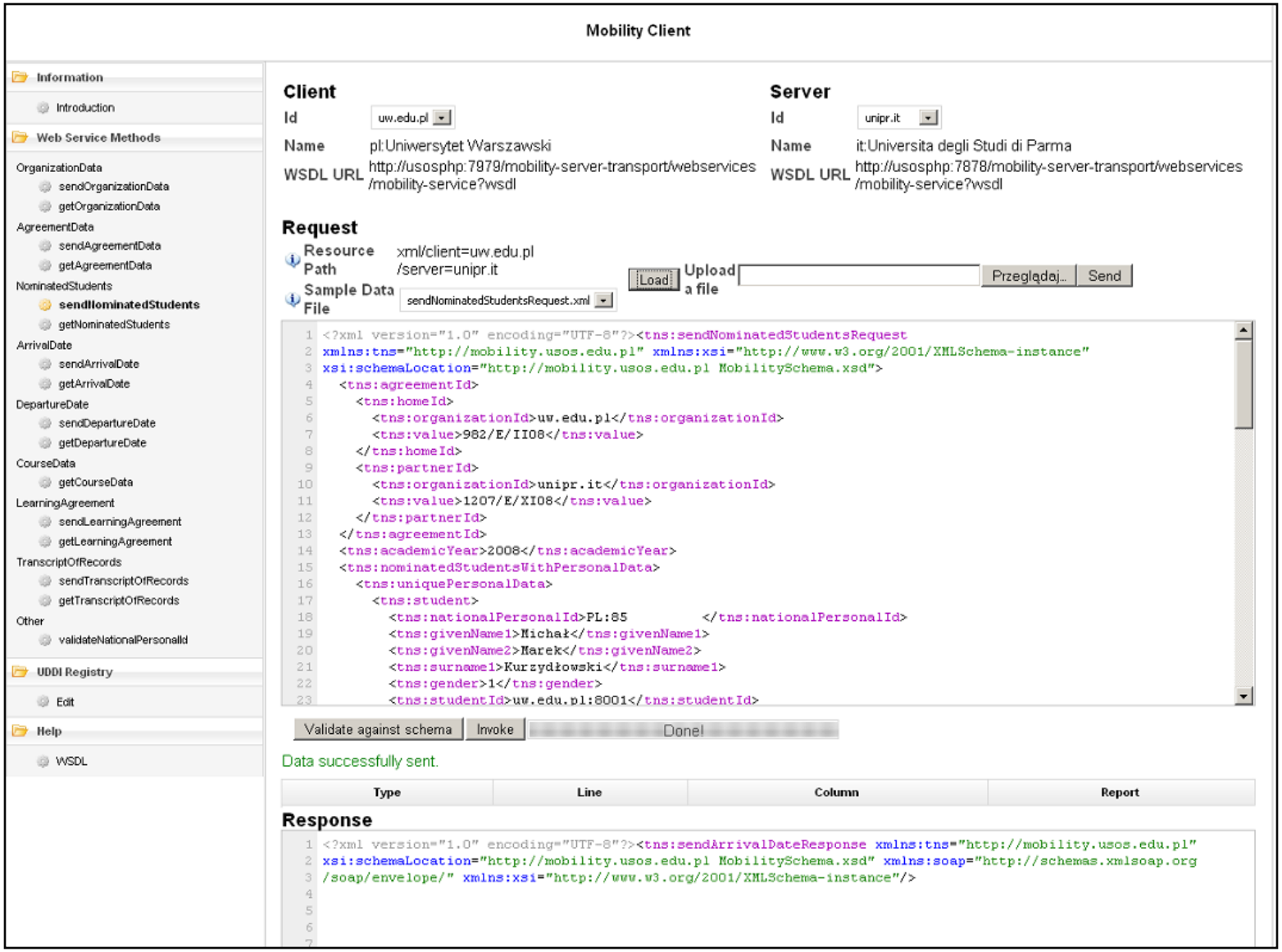


UDDI – Universal Description, Discovery and Integration (registry of Mobility nodes)



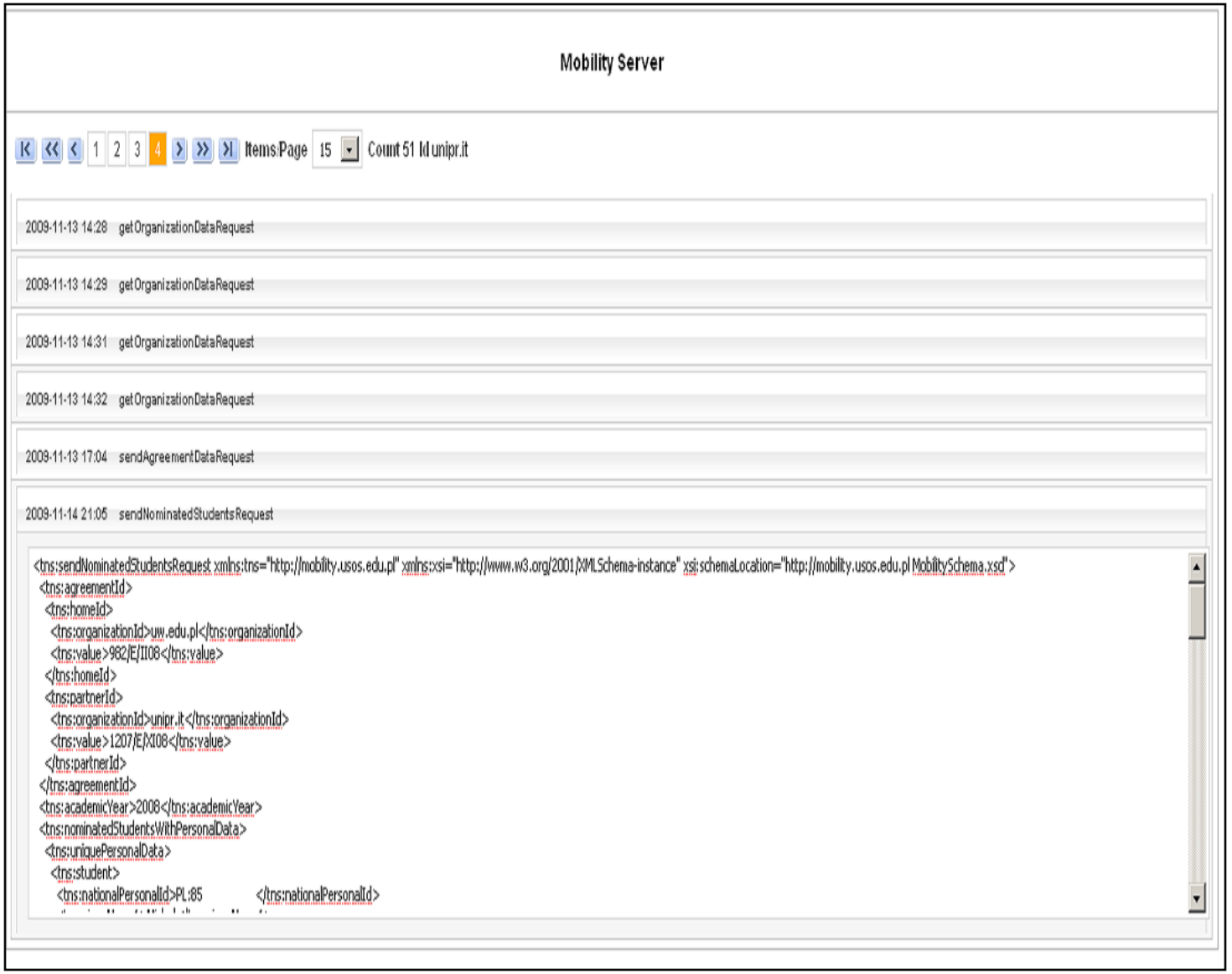
Web client (client= WARSAW, server= PARMA)

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



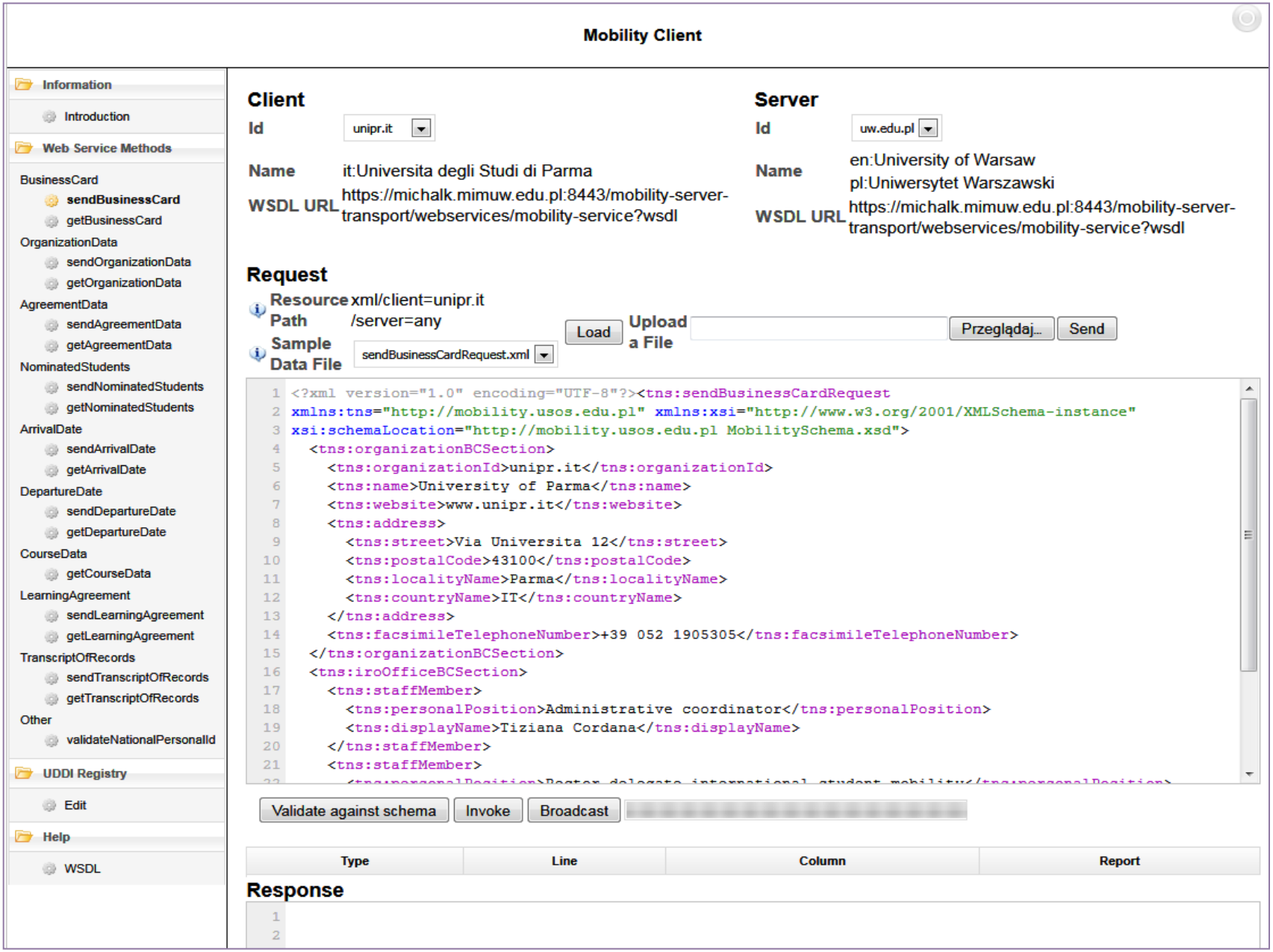
Web server (server=PARMA)

http://usosphp.mimuw.edu.pl:7878/mobility-server-web/



Exchange of Organization Data

- First (necessary) step in any cooperation – each institution every year sends/gets hundreds of organization **Business Cards**
- **Easy to develop and easy to use**:
  - Business cards stored in XML format as flat files on disk (or obtained on the fly from the data stored in a local database)
  - **sendBusinessCard()** sends the data to a server
  - Server automatically posts it one the web (INSERT or UPDATE)
  - **getBusinessCard()** can be used to get the data
- Every institution can join with minimal effort (preparing XML file with the data)
- There may be one mobility node for all partners or one per institution. One common registry stores available services.
- Eventually services will get integrated with local system



Invocation of **sendBusinessCard()** on the mobility client

Subsequent invocations of **sendBusinessCard()** as observed on the mobility server

Subsequent invocations of **sendBusinessCard()** as observed on the mobility server

UW Business Card Part I

University of Warsaw

Institution name	**University of Warsaw**
Website	www.uw.edu.pl
Address	Krakowskie Przedmieście 26/28 00-927 Warsaw, PL
Fax	+48 22 55 24 011
Erasmus code	PL WARSZAW01
Erasmus charter	45834-IC-1-2007-1-PL-ERASMUS-EUCX-1
Vice-rector for research and international relations	
Prof Włodzimierz Lengauer	+48 22 55 20 350 wlengauer@adm.uw.edu.pl

International Relations Office

Website	www.iro.uw.edu.pl
Location	Central Campus, Kazimierzowski Palace, 2. floor, rooms 22, 24, 28
Head of the office and erasmus institutional coordinator	
Sylwia Salamon	Tel: +48 22 55 24 009 s.salamon@uw.edu.pl
Erasmus incoming students	
Klementyna Kielak	Tel: +48 22 55 24 070 klementyna.kielak@adm.uw.edu.pl

UW Business Card Part II

Erasmus outgoing students	
Monika Satała	Tel: +48 22 55 20 818 monika.satala@adm.uw.edu.pl
Other exchange students	
Grażyna Andrejuk	Tel: +48 22 55 20 434 grazyna.andrejuk@adm.uw.edu.pl
More staff contact information	http://www.bwz.uw.edu.pl/en/?page_id=43
List of Erasmus Departmental Coordinators	http://www.bwz.uw.edu.pl/nowa/en/wp-content/uploads/2010/02/Coordinators_2010_2011.pdf
Mobility management	Centralized

Exchange program information

Academic System	Two semester system
Academic Calendar (exams included)	Academic Year: October, 1st – end of June *(the last date may differ year on year)* Semester 1: 1st October – mid February Semester 2: mid February – end of June
Deadlines for applications	Semester 1/whole academic year: **May, 15** Semester 2: **November, 15**
Admission website (on-line registration compulsory)	www.mobility.uw.edu.pl
Orientation week (organized by IRO; strongly encouraged)	Semester 1: last week of September *(exact dates may differ from year on year)* Semester 2: first week of Semester

UO Business Card Part I

University of Oslo

Institution name	**University of Oslo**
Website	www.uio.no
Address	P.O. Box 1072 Blindern N–0317 Oslo, NO
Fax	+47 22858488
Erasmus code	N Oslo01
Prof Ole Petter Ottersen	+47 22856303 rektor@uio.no

International Relations Office

Website	www.uio.no/english/studies/admission/exchange/erasmus/
Location	Lucy Smiths hus Problemveien 7, 0313 Oslo
	Head of International Education Office
Guri Vestad	Tel: +47 22858482 guri.vestad@admin.uio.no
	Erasmus incoming students
Helene Johansen	Tel: +47 22856207 helene.johansen@admin.uio.no
	Erasmus outgoing students
Jan Morten Øien	Tel: +47 22857889 j.m.oien@admin.uio.no

UO Business Card Part |II

Exchange program information

Academic System	Two semester system
Academic Calendar (exams included)	Academic Year: Mid August – mid June *(the dates may differ year on year)* Semester 1: Mid August – mid December Semester 2: Early January – mid June www.uio.no/english/studies/about/academic-calendar/
Deadlines for applications	Semester 1/whole academic year: **May, 31** Semester 2: **October, 31**
Admission website	www.uio.no/english/studies/admission/exchange/erasmus/
Orientation week	Semester 1: last week of September *(exact dates may differ from year on year)* Semester 2: first week of Semester
Course Catalogue	www.uio.no/english/studies/courses/
Language of Instruction	Norwegian English* **for details please check the websites of the relevant faculties*
Workload per semester	Maximum 30 ECTS

Additional useful information

Information for new students	www.uio.no/english/studies/new-student/
Language courses for Erasmus incoming students	www.uio.no/english/studies/admission/exchange/erasmus/
Housing assistance	Housing reservation possible – information will be provided in the acceptance packet.
Housing options	www.uio.no/english/studies/new-student/housing/
Housing application deadlines	June 25 for autumn semester and November 25 for spring semester.

Schema Documentation
Expand All Collapse All

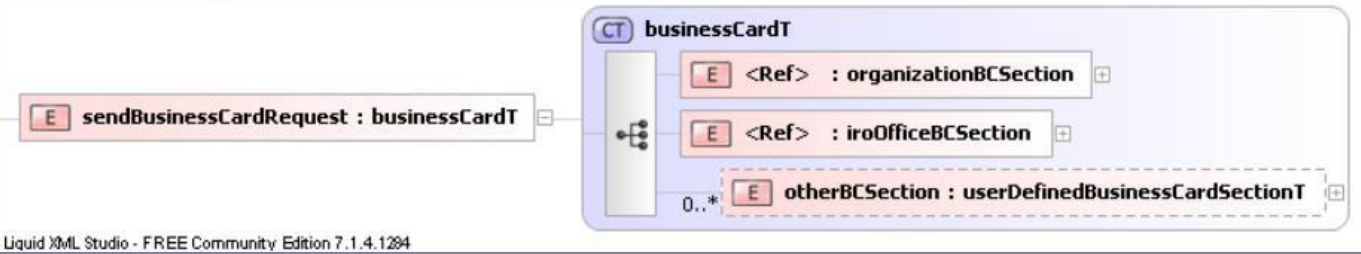
- All Items
- Elements
  - getBusinessCardRequest (tns)
  - getBusinessCardResponse (tns)
  - iroOfficeBCSection (tns)
  - organizationBCSection (tns)
  - sendBusinessCardRequest (tns)
  - sendBusinessCardResponse (tns)
- Complex Types
  - addressT (tns)
  - businessCardT (tns)
  - descLineT (tns)
  - itemNameT (tns)
  - itemValueT (tns)
  - staffSectionItemT (tns)
  - userDefinedBusinessCardSectionT (tns)
  - userDefinedSectionItemT (tns)
- Simple Types
  - countryCodeT (tns)
  - domainT (tns)
  - emailT (tns)
  - facsimileTelephoneNumberT (tns)
  - idAttrT (tns)
  - organizationIdT (tns)
  - personalPositionT (tns)
  - telephoneNumberT (tns)
- Schemas
  - BC.xsd (tns)

Business Cards of Higher Education Institutions

Generated using Liquid XML Studio - FREE Community Edition 7.1.4.1284
Generated : 13 czerwca 2011

Definition Type	Element
Name	sendBusinessCardRequest
Namespace	http://mobility.usos.edu.pl
Type	tns:businessCardT
Abstract	False
Documentation	Send university business card.
XSD Schema	BC.xsd

XSD Schema Diagram



Liquid XML Studio - FREE Community Edition 7.1.4.1284

XSD Schema Code

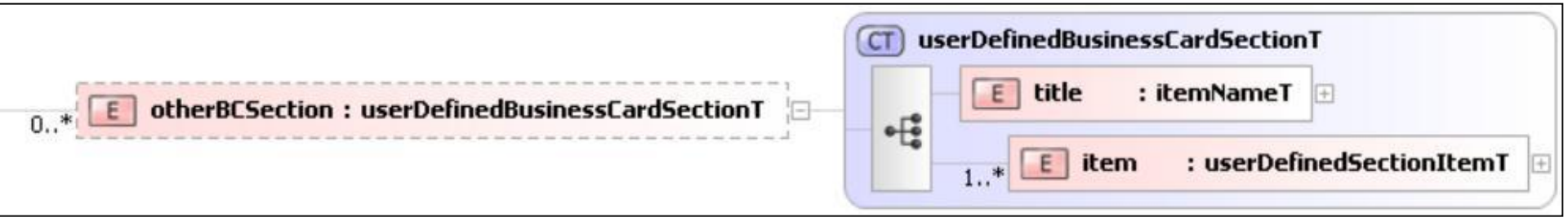
```
<xsd:element name="sendBusinessCardRequest" type="tns:businessCardT" >
  <xsd:annotation>
    <xsd:documentation>Send university business card.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

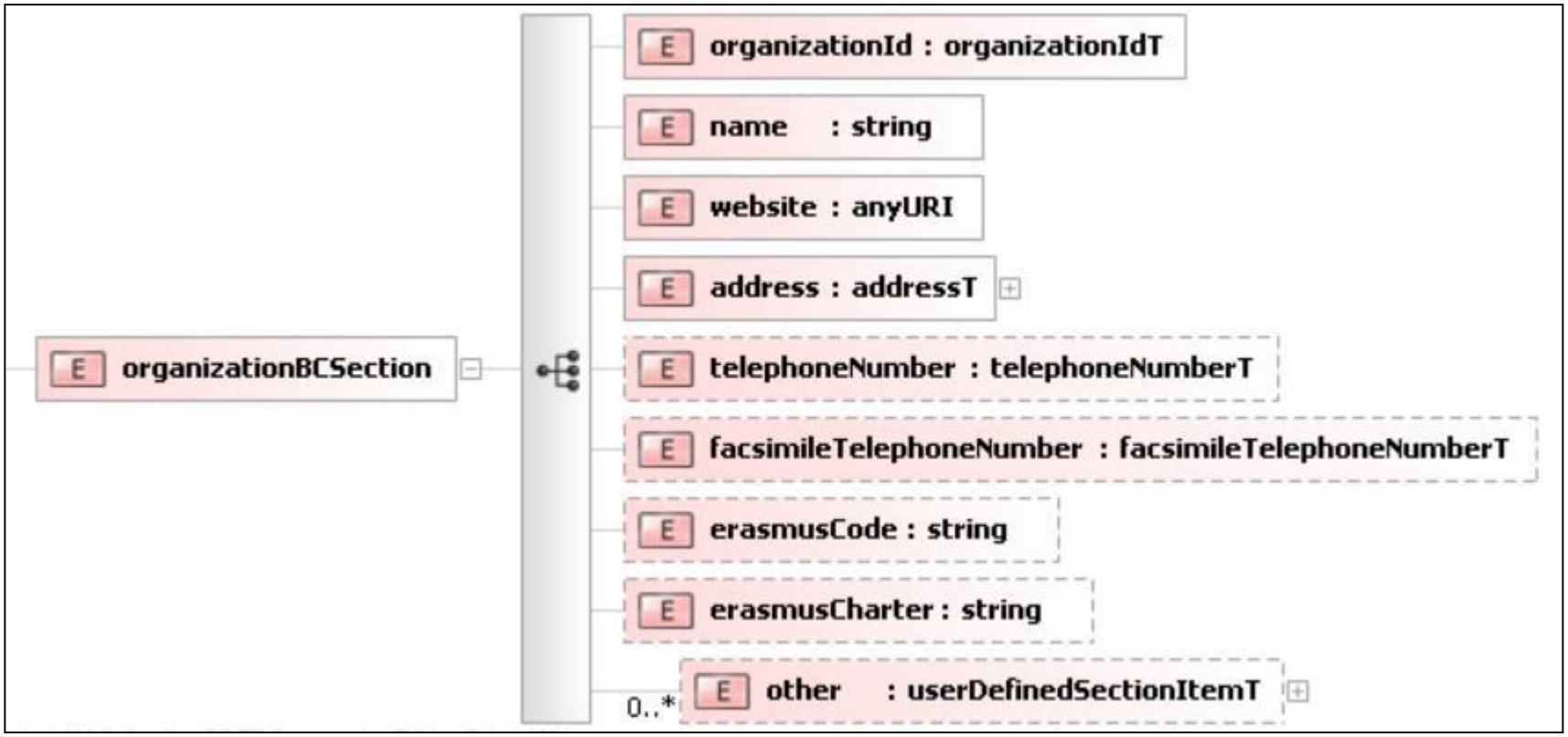
Child Elements

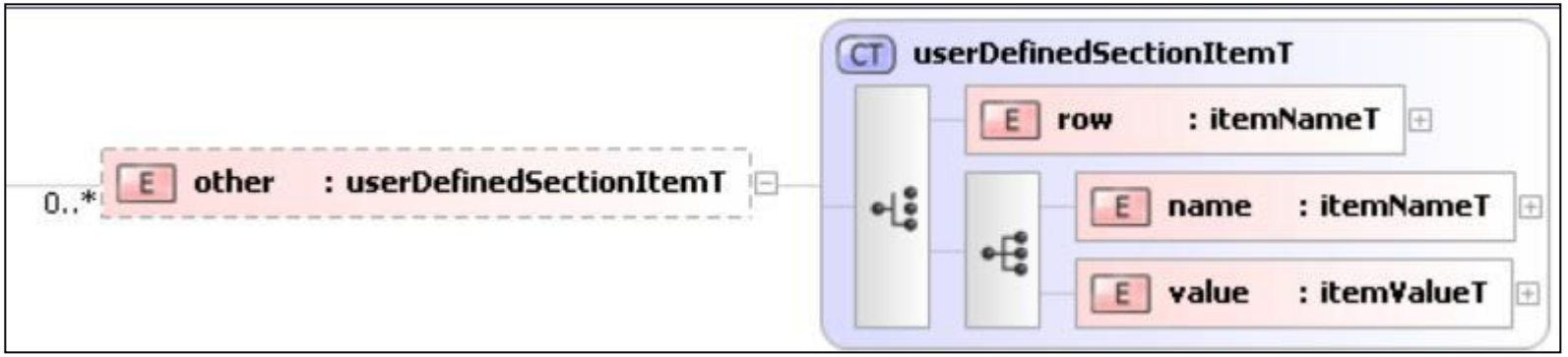
Name	Type	Min Occurs	Max Occurs
organizationBCSection	tns:organizationBCSection	(1)	(1)
iroOfficeBCSection	tns:iroOfficeBCSection	(1)	(1)
otherBCSection	tns:otherBCSection	0	unbounded

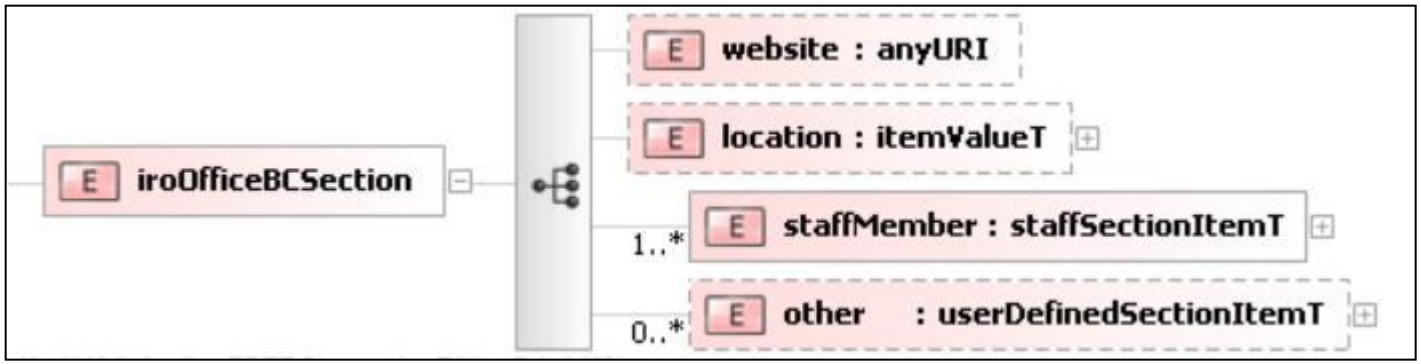
Derivation Tree

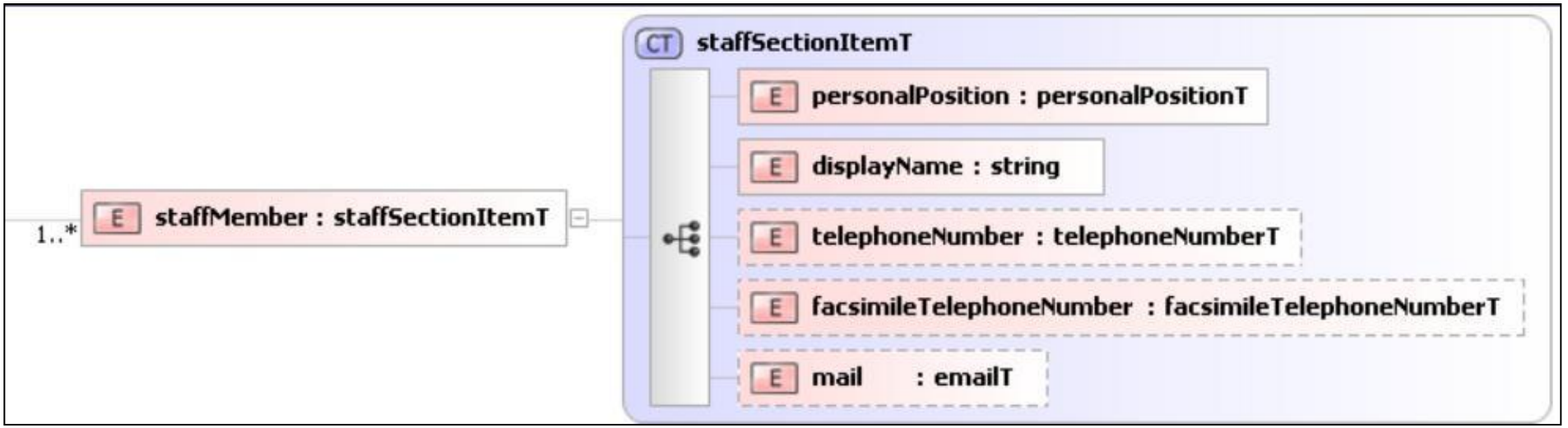
tns:businessCardT
sendBusinessCardRequest
[No Super Types]

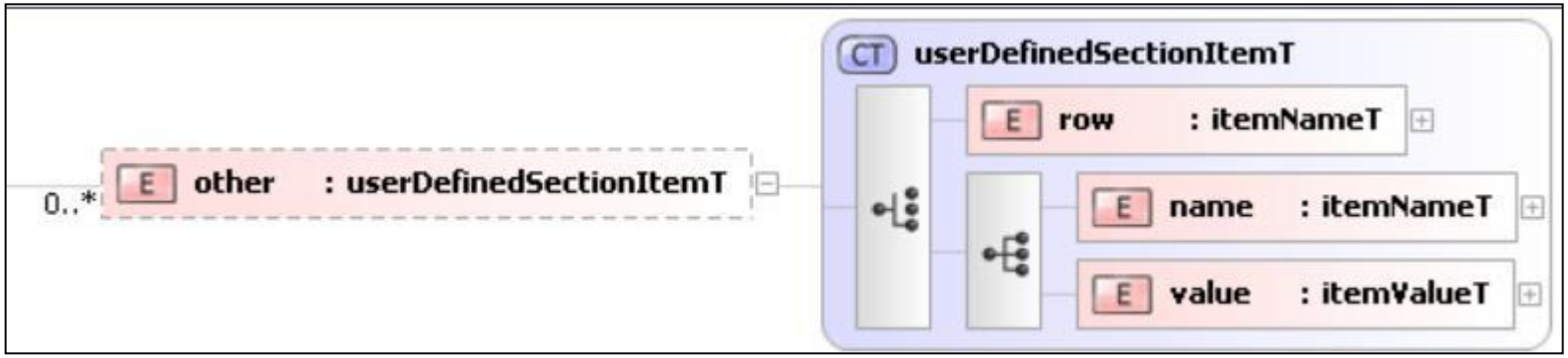



E organizationBCSection
E organizationId : organizationIdT
E name : string
E website : anyURI
E address : addressT
E telephoneNumber : telephoneNumberT
E facsimileTelephoneNumber : facsimileTelephoneNumberT
E erasmusCode : string
E erasmusCharter : string
0..*
E other : userDefinedSectionItemT


0..*
E other : userDefinedSectionItemT
CT userDefinedSectionItemT
E row : itemNameT
E name : itemNameT
E value : itemValueT


E iroOfficeBCSection
E website : anyURI
E location : itemValueT
1..* E staffMember : staffSectionItemT
0..* E other : userDefinedSectionItemT


1..* E staffMember : staffSectionItemT
CT staffSectionItemT
E personalPosition : personalPositionT
E displayName : string
E telephoneNumber : telephoneNumberT
E facsimileTelephoneNumber : facsimileTelephoneNumberT
E mail : emailT


0..* E other : userDefinedSectionItemT
CT userDefinedSectionItemT
E row : itemNameT
E name : itemNameT
E value : itemValueT

Technical issues

- Scalability – **Broadcast** button may also be available to send BC to all registered partners
- Security – **TERENA certificates** are used by the mobility nodes
  - Client checks server certificate (TLS)
  - Server gets the client id from the received message, looks for the id in the registry, reads the associated domain, compares with the domain inside the client's certificate
- Registry – UDDI was used for the pilot, registry developed as part of core middleware of **GEANT3** DJ3.3.2 **GEMBus** Deliverable (by Roland Hedberg) may be used for the real mobility network

REST vs SOAP

- **REST implementation** of the mobility network was also developed
- REST uses WADL instead of WSDL (but the data format is the same)
- REST and SOAP implementations may use the same GEMBus registry
- REST and SOAP use the same security model and certificates
- REST Mobility and SOAP Mobility may eventually both be deployed on GEMBus, depending on preferences of the HEIs

Problems to solve, steps to make

- Recognizing real life scenarios of various universities, describing business cases, testing business model - processes are similar but local requirements and procedures need not (IRO staff)
- Making decision on the amount and format of exchanged data (IRO staff)
- Developing software – needs involvement of software vendors from various European countries (IT people),
- Deploying software in cooperation with partner institutions (IRO staff and IT people)
- Supporting sustainability on a European level

http://usos.edu.pl/Mobility

Help
to build
Mobility
network