About FSAT

- Organization under the Norwegian Ministry of Education and Research
- Manages and develops national student registers, all the way from admission, through their studies, until they graduate (and beyond)
FSAT’s systems

- FS
- National admission system
- National diploma registry
- National exclusion register
- National register of recognition of higher education
Managing Student Mobility

- Local processes
- Need for common procedures
- System support
  - Common procedures across institutions
  - Common procedures across borders?
- Nobody shall tell me how to manage my work
  - Or should they?
Student Information Systems

- Where does SIS come into the picture?
- Student mobility concerns every part of student administration
- SIS have to be a central part in developing system support for mobility
- Not necessarily a part of SIS, but at least integrated with SIS
Students

- Where do students come into the picture?
Standardization

- National
- European (CEN)
- Global (ISO)
- Committees
- Standardization of student information
  - CEN TC 353
  - CEN WS-LT
  - SO SC36
Standardization

- MLO and ELM
  - Metadata for Learning Opportunities
  - European Learner Mobility
- European Norms in 2011
  - MLO Advertising EN15982
  - EuroLM Achievement Information EN15981
Exchanging results

- Use of ELM and MLO for exchanging results
  - We need more than data models
  - Formats for exchanging results
- XML schema for ELM/MLO
  - Support admission and recognition process / Diploma

=> ELMO

- And support in Student information systems for this data exchange
European projects

- **RS3G**
  - Mobility Project
  - Expand id-federation

- **Erasmus+**
  - Erasmus Without Paper
  - EMREX
Erasmus Without Paper (EWP)

- Define an electronic ‘EWP Network’ (a kind of student data internet) supporting the exchange of student data in an electronic form

- Build connecting software modules (connectors) to the EWP Network that are driven by specific standards and protocols
Long term aims

- Set up an international organization to manage the network, its exploitation, further development and integration of other products
- Provide training and help for organizations joining the network
- Assist organizations in using or adapting existing/generic connector modules
- Uphold and update common standards for student data portability
- Provide sustainability and integration to new projects and developments
- Initiate collaboration and synergies
Partners

- Universiteit Gent, Belgium
- Asociación Grupo Santander, Spain (Brussels)
- European University Foundation - Campus Europae, Luxemburg
- FSAT - Universitetet I Oslo, Norway
- Uniwersytet Warszawski (+ Muci), Poland
- Umea Universitet (+ Ladok), Sweden
- Universidade do Porto, Portugal
- Erasmus Student Network, ESN, Belgium
- Kion Spa (+S3), Italy
- SOP Hilmbauer & Mauberger GmbH & Co KG, Austria,
- SIGMA Gestion Universitaria AIE, Spain

erasmuswithoutpaper.eu / emrex.eu
Other consortium members

- University of Essex, UK
- Framework Computer Consultants Limited, (Digitary), Ireland
- University of Aveiro, Portugal
- National Student Clearinghouse, United States
- Grupo Compostela de Universidades, Spain
- European Association of Erasmus Coordinators, Cyprus
- European Association for International Education (EAIE), Netherlands
- RESEAU DES UNIVERSITES DES CAPITALES DE L'EUROPE (Unica), Belgium
- QS unisolution GmbH (Moveon), Germany
- UNIVERSIDAD DE MALAGA, Spain
- AHOVOS/DHO, Belgium
- Groningen Declaration, Netherlands

erasmuswithoutpaper.eu / emrex.eu
User scenario

➢ Before Mobility
  ➢ Interinstitutional Agreement
  ➢ Nominations
  ➢ Learning Agreement
  ➢ (Course Catalogue)

➢ During Mobility
  ➢ Learning Agreement changes
  ➢ Arrival & Departure information

➢ After Mobility
  ➢ Transcript of Records
  ➢ (Grade Conversion)
Technical topics

- Infrastructure and architecture
- Data
  - model
  - dictionary
  - standards
  - security
- Working prototype
Basic flow

API Nomination Home

POST  Nomination / Delete
RECV  Nomination Response

API Nomination Host

RECV  Nomination / Delete
POST  Nomination Response

Messages:

Nomination
- nom_id
- ver
- student_data
- lia_id
  - home_inst
  - host_inst
- start
- end
- text (if change proposal)

Delete
- nom_id
- version
- text

Nomination Response
- nom_id
- response_type (Accept / Reject)
- version
- text
Architecture
EMREX – electronic transfer of records

- Supporting student mobility
- Make the administration easier
- More effective recognition
- Increased quality and reliability of information
- Faster processes for the students
- Policy project: improving national policies and rules for recognition
Timeline

2015
- Planning
- Specification
- Developing

2016
- Field Trial
- Surveys

2017
- Evaluation
- Upscaling
- Production

erasmuswithoutpaper.eu / emrex.eu
Technical components
EMREX client

- Initiates the EMREX transfer for the student
- Must implement secure login
- Provide a way to store fetched results in local SIS
SMP – Student Mobility Plugin

- Used by the EMREX client to ensure that the transfer is standardized
- A library of helpful functions
NCP – National Contact Point

- Entry point for the EMREX network to that country’s data
- Must contain functionality for secure login, result fetching and transfer
EMREG

- Only central component
- Registry of available NCPs with metadata
- Exposed through web services
- Currently hosted in Norway
Standards – ELMO

- EMREX uses the ELMO XML format to exchange data
- Metadata for learner opportunities (MLO-AD)
- European Learner Mobility – Achievement Information (EuroLMAI)
Security

- Login at both client and NCP
- Enforce HTTPS
- Results signed with public key in EMREG
- Validate student
  - Is it the same student on both ends?
Anyone can join EMREX

- Fetch results
  - Requires only a client
  - SMP library available

- Deliver results
  - Must be registered centrally
  - Generate results in ELMO format
  - Sign