EMREX

Supporting Student Mobility
Agenda

- Introduction to Emrex
- Technical solution
- Field trial in 2016

“Field trial on the impact of enabling easy mobility on recognition of external studies”
Emrex prehistory

Collaboration between the Nordic countries (Finland, Sweden, Norway and Denmark) began more than 10 years ago.

A couple of earlier attempts at creating a solution for electronic transfer

(Emrex) Prestudy done by Nordforum and afterwards decision to start a common project

Funding decision from EACEA in late 2014
# Towards automatic recognition

1. **Need common terminology (Nordic Glossary)**
2. **Technical solution for transferring data (EMREX, EWS)**
3. **Final step is aligning processes to support automatic recognition (FAIR, EGRACON)**

<table>
<thead>
<tr>
<th>Term</th>
<th>Term (MLO/ELM)</th>
<th>EN translation/ description</th>
<th>N</th>
<th>DK</th>
<th>SV SE</th>
<th>FIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combination rule</td>
<td>Combination rule</td>
<td>Rule governing what is allowed or accepted regarding combination of learning opportunities taken by a learner. Example module A can only be taken after successful completion of module B, and must be studied in conjunction with module C.</td>
<td>Forskunskapsskrav</td>
<td>Regel</td>
<td>Förkunskapskrav, behörighetsvillkor</td>
<td>Rakenteen saannot (kuten, sisällysvydet, edellävyydet, edeltävät opinnot)</td>
</tr>
<tr>
<td>Cost</td>
<td>Cost</td>
<td>MLO: A cost associated with obtaining access to the learning opportunity (instance).</td>
<td>Kostnad</td>
<td>Pris?</td>
<td>Kostnad</td>
<td>Opetuksen osallistumismaksu</td>
</tr>
<tr>
<td>Course</td>
<td>Learning opportunity object: course</td>
<td>Formally specified education or training process in the form of a course</td>
<td>Emne</td>
<td>Undervisningsaktivitet</td>
<td>Kurs</td>
<td>Opinfojakso</td>
</tr>
<tr>
<td>Course</td>
<td>Learning Opportunity Object: Course</td>
<td>Learning opportunity object that awards credits.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course instance</td>
<td>Learning opportunity instance: course</td>
<td>LO offered to students restricted to time, place, pace and form</td>
<td>Undervisningsenhed, Undervisningsaktivitet</td>
<td>Lektion?</td>
<td>Kursstillfälle</td>
<td>Opintojakson toteutus</td>
</tr>
<tr>
<td>Credit</td>
<td>Credit</td>
<td>Credit, a measure of the extent of the learner action according to a framework like ECTS.</td>
<td>Belastning</td>
<td>Poäng (ECTS = högskolepoäng)</td>
<td>Opinopiste</td>
<td></td>
</tr>
</tbody>
</table>
Background

“The biggest obstacle for student mobility, after financial support, is the lack of recognition”

(Erasmus Student Network 2012)
What is EMREX?

• EU Erasmus+ project (2015-2017)
• Ministry level initiative
• Increase student mobility (20%)
• Recognition of previous studies
• Electronic and secure transfer of student data between HEIs
• Denmark, Finland, Italy, Norway, Poland, Sweden
Timeline

2015
Planning
Specification
Developing

2016
Field Trial
Surveys

2017
Evaluation
Upscaling
Production
Where to use EMREX

Degree mobility
Credit mobility
Transferring students

Before
During
After
Worklife

Eligibility
Reviewing achievement records
Recognition of previous studies

Admission services
Benefits for higher education

- Mobility targets - increases student mobility and crediting
- Enables automatic recognition
- Mobility statistic – reliable and aggregated data
- Non-HEIs e.g. government/student support agencies
- Electronic solution saves time and money
- Reduces risk of forgeries
- Turnkey solution for connecting existing systems:
  - Easy tool to implement locally
  - Student authorization (no new contracts)
  - Local infrastructure (data warehouses, authentication) to be utilized

Students used to google – demand fast and online services
Case: Transferring data from Finland to Norway

- HEI SIS (University of Oslo)
- Student Mobility Plug-in
- National Contact Point (Finland)
- National data warehouse (VIRTA)
- Authentication (HAKA)
- ELMO (XML)

Processes:
1. HEI SIS (University of Oslo) interacts with the Student Mobility Plug-in to initiate the transfer.
2. The Plug-in sends data to the National Contact Point (Finland).
3. The National Contact Point passes the data to the National data warehouse (VIRTA).
4. Authentication (HAKA) is used to verify the data.
5. The data is then sent to HEI SIS (University of Oslo) for processing.
Case: Transferring data from Norway to Finland

HEI SIS (University of Helsinki)

Student Mobility Plug-in

ELMO (XML)

National Contact Point (Norway)

Authentication (Feide)

HEI SIS (University of Oslo)
Technical components

- HEI client
- SMP lib
- EMREG
- ELMO-data
- NCP
- National services

ERASMUS+
HEI client of SMP

- Initiates the EMREX transfer for the student
- Must implement secure login
- Provides a way to store fetched results in local SIS
SMP library

Used by the HEI 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
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
- Sign ELMO data. Public key in EMREG
- Validate student
EMREX field trial in 2016

- Testing electronic transfer of study records between HEIs
- To promote higher attainment level to student mobility in higher education
- To encourage more effective recognition of prior learning
- To avoid overlapping studies
- To test new ways to enable easier administration of student mobility
Field trial in a nutshell

- Between Nordic countries, including Italy
- In some countries both SMP and NCP, in some just the NCP
  - All HEIs in Norway both ways
  - All HEIs data (incoming) in Finland, Sweden and some outgoing HEIs
  - NCP in Denmark
  - 2-3 big Universities in Italy
- From 1.1.2016 to 28.2.2017 (to get returning students)
- Estimated for “a few hundred students”
- Local recognition processes as is, or improved
EMREX CSC Field Trial  
- in Finland

HEI network

CSC network

SIS

NCP FI

Virta

EMREG

NCP Sweden

NCP Norway

NCP Italy

NCP Sweden

NCP Norway

NCP Italy

ERASMUS+
Wireframes

https://moquups.com/lundin.goran@gmail.com/2sWGyfXn/p:a2fa73ae2

Italy:  
https://moquups.com/megachirone@gmail.com/vULqzxsH/p:ac3457fa0

Sweden:  
http://vl9gc1.axshare.com/home.html
What happens after field trial?

- Plans for an EMREX steering group
- Up-scaling to whole of EU (if successful)
- All results including code available for everybody
Additional information

- **Project internal website** [www.csc.fi/emrex](http://www.csc.fi/emrex)
- **Emrex-info email list** (Enquiries: mats.lindstedt@csc.fi)
- **Stakeholder Forum** (Enquiries: mats.lindstedt@csc.fi)
- **Official EMREX website** [www.emrex.eu](http://www.emrex.eu)
Questions?

No thanks!

We are too busy