



EMREX Technical description

Purpose of document

This document gives a quick overview of EMREX for persons working in e.g. IT or Helpdesk functions and who get the question “EMREX doesn’t work, what should I do?”

What is EMREX?

EMREX is the solution for electronic transfer of student records between higher education institutions in Europe. The project addresses the Bologna Process 2020 target that 20% of students within the European Higher Education Area should be mobile. The biggest benefit of EMREX will be the increased availability, quality and reliability of information about student records of achievements.

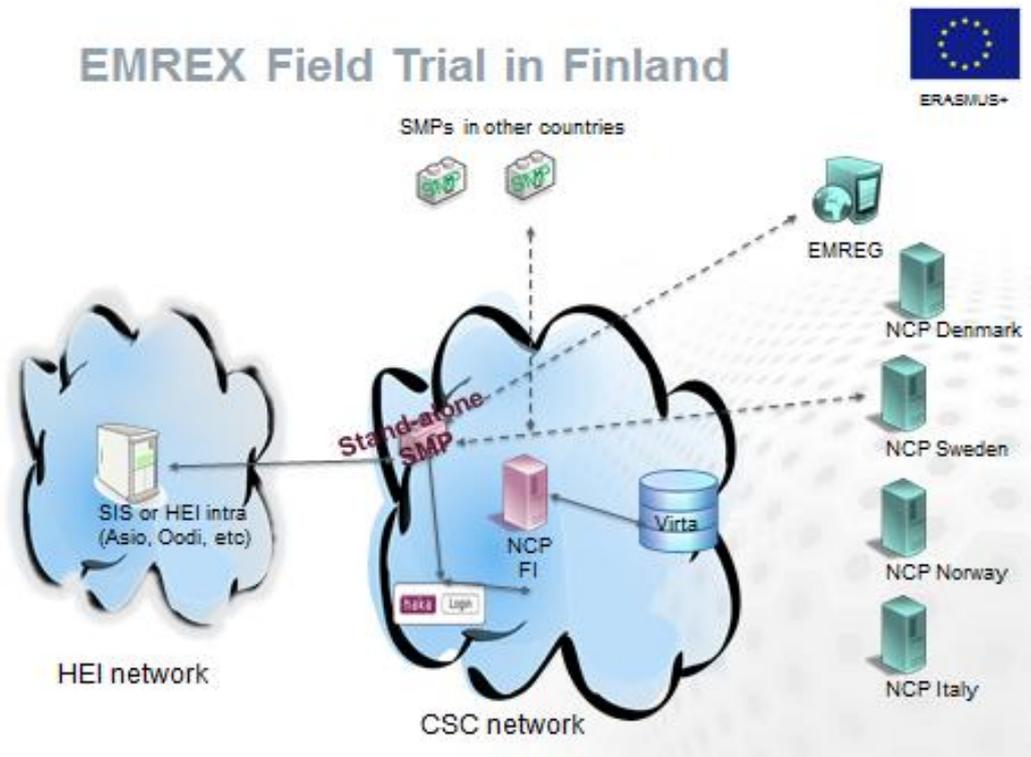
The EMREX field trial aims at testing new ways to make the administration of student mobility easier and thus promoting higher attainment level to student mobility in higher education and also encouraging more effective recognition of prior learning and avoiding overlapping studies. In the first phase the transfer will be set-up between four Nordic countries and Italy.

A live going field trial of EMREX will run from January 2016 to March 2017 to test and evaluate the solution. The field trial will include the following partners of the EMREX project: Denmark, Finland, Italy, Norway and Sweden.

Students in these countries, may during the above mentioned period, log into their student portal at their home university and collect study achievements from the host university. The project will provide support, information and manuals for each participating country’s institutions and students during the field trial period. The students who will choose to use the EMREX-transfer, will have the opportunity to evaluate the solution. The students will participate in a survey that will provide feedback from the user and in this way contribute to improve the solution.

For more information about EMREX, please visit www.emrex.eu

Generic System Description



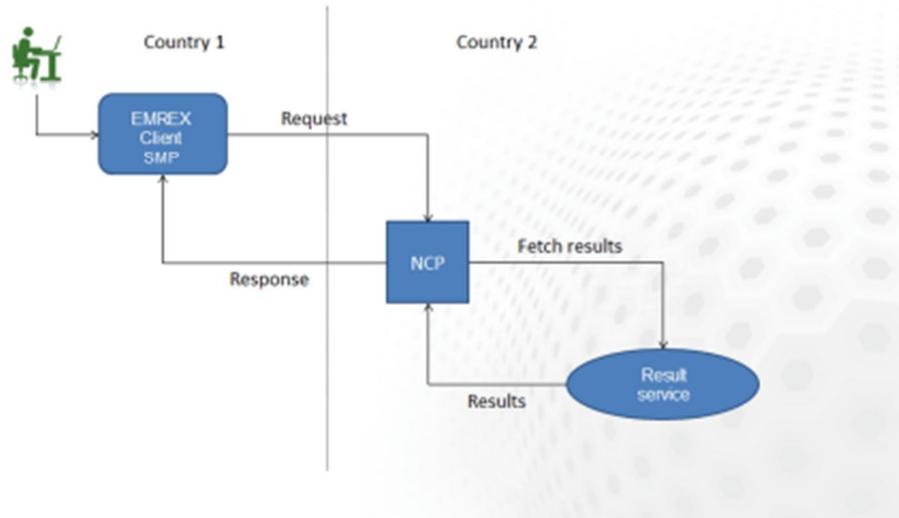
The above description gives an overview of the components of EMREX and how it is implemented in Finland. There are slight differences between the different countries.

EMREX is a solution for retrieving student achievement records from another university. It is a decentralized system, a Network, which includes a number of Student Mobility Plug-ins (SMP-local to the universities), National Contact Points (NCP – one or more per country) and result services (national or local to a university).

In addition authentication services are needed



Simple drawing of EMREX



The Student Mobility Plug-in

A Student Mobility Plug-in (SMP) is a web application, or part of one, at a university, where the student initiates the process of collecting his achievement records from other institutions. This can for instance be a self-service web application for students or for applicants.

The SMP will have its own login solution to identify the student locally to the university or utilize a federated solution in that country.

In Finland a Stand-alone SMP run by CSC will be used for the EMREX Field Trial. The university will have a web-link either in the local SIS or in the intranet, this link will redirect the student to the SMP in the CSC network. The SMP will use HAKA to verify and authenticate the student.

In the SMP the student starts by choosing the country of the host university and he is then redirected to the National Contact Point (NCP) of the selected country. The SMP will use a common registry called EMREG to find the addresses for the NCPs. EMREG is the only common resource in this network. The EMREG also contains the public keys for each NCP so that the results that are transferred can be verified by the client.

The response from the NCP contains result information. The response is signed by the NCP, and the SMP checks the signature before further processing. The SMP then stores the data in the student information system at the home university or other data store after an approval from the student.

In Finland the SMP will provide the home university with a XML- and PDF-file of the records. Either as downloadable files using the Virta SFTP or via secure email to an administrator's email account.

During the EMREX Field Trial, then SMP will at the end redirect the student to an online questionnaire to answer a few questions about the process.

The National Contact Point (NCP)

Each county in the EMREX network will have one or more NCP's. In Finland there is one NCP run by CSC.

Any SMP must be able to contact this NCP to fetch the results. The NCP contains the following functions:

1. A secure login solution that identifies the student. When the student accesses the NCP, the NCP must provide an appropriate way to log in in order to authenticate the student. The Finnish NCP is connected to HAKA
2. Interpret a request from an SMP
3. Fetch results for the student from a Result service. In Finland this means from VIRT.A.
4. Let the student choose which results to send back to the SMP
5. Send results back to the SMP in a predefined XML-format
6. Let the student have a PDF-copy of the results, if requested by the student

Result service (VIRT.A)

The result service is a web service providing the achievement records for a student. The service can be local to a university, or national. The result information will normally be the data content of a Diploma, Diploma Supplement and/or Transcript of Records. The records will be transferred on an agreed upon xml-format.

In Finland VIRT.A is used for students fetching their achievement records from a Finnish university.

Security

The information exchanged in the EMREX network is personal. The whole solution must therefore secure the integrity and confidentiality in the data exchange. Confidentiality is ensured by enforcing https during transfer of results. Data integrity is ensured by adding a digital signature to the transferred results, which can be verified by the SMP. In addition, we are using internal session keys to ensure that the whole transfer happens within the same transaction and a comparing algorithm to ensure that the student is the same person that has logged in on each system.

What could go wrong?

The EMREX project is responsible for ensuring that the EMREX network is fully functioning, from the SMP to the NCP. The home university needs to ensure that the student's credentials are in order and that he can access the SMP.

Below is a list of possible pitfalls:

- The student cannot access the SMP
 - Is the student in HAKA?
 - Is the link from the university to the SMP working?
- The SMP is not working properly or cannot find the right NCP
 - Contact the EMREX support
- The NCP is not working properly or not returning any achievement data
 - Are the achievement records registered by the host university, i.e. are there records to be fetched? Ask the student to check with the host university if needed.
 - Try again later or contact the EMREX support
- The results are not transferred back to the HEI
 - Ask the local EMREX contact person to check if they have arrived
 - Is the mailbox and/or Virta SFTP working properly?
 - Contact the EMREX support
- The questionnaire isn't working properly
 - Contact the EMREX support

Support lines

The project has set up a support email-address at emrex-support@emrex.eu for problems occurring during the field trial.

Additional information

For information about the EMREX project or about the status of the field trial, please see the webpages at www.emrex.eu.

For specific questions please contact your local EMREX contact person at the home university or the project directly, e.g. the project manager Mats Lindstedt (CSC)