Supporting Student Mobility — news from the EMREX network

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1. ABSTRACT

The EMREX network, initially co-funded by Erasmus+, addresses the EU 2020 target that 20% of higher education students should be mobile during their studies. EMREX focuses on the electronic exchange of student achievement records between higher education institutions and together with other initiatives, like Erasmus Without Paper, ESC, ESMO, SEAL, MyAcademicID, is part of a wider set of activities supporting digitalization of student mobility.

In 2016-2017, the EMREX project ran a field trial in Finland, Norway, Sweden, Denmark, Italy and Poland, testing new ways to make the administration of student mobility easier by sending data digitally. Over 100 students from 30+ HEIs in these countries logged into their student portals at their home universities and collected their study achievements electronically from the host universities, without the need to send paper copies. Since then, the network has converted into a working production environment. EMREX is spreading out to new countries and provides more value to users by augmenting the service catalogue.

This paper aims at presenting news from the EMREX network — on development, expansion, and plans for the future. The EMREX solution will be demonstrated live during the session.

2. THE EMREX FIELD TRIAL

The EMREX field trial was in operation during 2016 and 2017, which means that it was running for a year and a half and therefore included students who came home from their exchange period during spring semester 2017. The number of students using the tool exceeded 100, which is quite good.

A short survey included directly in the EMREX tool asked about the student's experience of the service. The feedback from this survey, in addition to evaluation purposes, also provided good help for further development of the tool. The majority of students said that the system was easy to use and produced value for them. Many valuable text comments were received with suggestions of how to make it even better working.

3. THE EMREX SOLUTION

EMREX is a decentralized network consisting of several components. For consumers of the result data the network is open and the students themselves are in control of the data exchange. The decentralized model also makes it easier to add new providers of student result data to the network.

Each SIS (*Student Information System*) or institution that wishes to retrieve results from the EMREX network can connect using a standard *Student Mobility plug-in* (**SMP**). This then becomes an EMREX client, and enables the student to retrieve her result data from the EMREX network.

Each country that seeks to provide results to the EMREX network must implement one or more *National Contact Points* (**NCP**). The NCP provides the students with a secure login, and enables them to select

the results they want to share with the EMREX client. The only common component is the NCP registry (**EMREG**).

4. THE EMREX NETWORK AFTER THE TRIAL

EMREX initially started out as an Erasmus+ project but has since developed into an established service enabling digital information flows between countries. Launched in 2017, EMREX is spreading out to new countries and expanding its network in addition to providing more value to users by augmenting the service catalogue. It is used by students in the countries connected to it and the latest statistics will be shown during the session.

Since the trial, the EMREX network has grown and there are now 17 full members, 8 NCPs in production, and about 1500 students have used the system. More NCPs are on the way of starting in production. The partners in the field trial suggested starting a User Group and the *EMREX User Group* (**EUG**) had its first annual meeting in Paris in 2018. Attendance was over 40 participants. During the Annual Assembly, members of the EUG Executive Committee were elected. The current chair is Jan-Joost Norder from DUO in the Netherlands. The website of the organization is www.emrex.eu.

It was discovered during the field trial that electronic achievement records would be a valuable addition to admission processes and in credential evaluation. Work on this topic is already ongoing. The EUG has therefore extended the ELMO standard to encompass also Diploma Supplement (DS). The ELMO standard is an implementation of the European standards: *Metadata for Learning Opportunities (MLO) — EN 15982:2011* and *European Learner Mobility — Achievement information (EuroLMAI) — EN 15981:2011*. It is constantly being improved and developed. In March 2019 version 1.4 of ELMO was released, which — among other things — gives support for Diploma Supplement.

EMREX can also be used in other user scenarios. One example is the Norwegian Diploma Portal, which allows students and former students, who have studied in Norway, to retrieve their educational results and share them with a desired recipient for recruitment and other scenarios. In the long term, it can help the consumers of these data to automate their processes and give better services to the owner of the data. The first steps towards this are already in development, and examples will be given as part of the presentation.

EMREX is based on open source code and is freely available to all HEIs in Europe as well as the rest of the world. New countries can join the EMREX network by creating their own EMREX clients, and contribute to the network by providing their own NCPs.

5. FUTURE STEPS FOR EMREX

The successful period after the field trial has shown the need for EMREX. The current members of the EUG are all committed to continue using and enhancing EMREX to support student mobility. EMREX in most cases is already integrated into the existing SISs, thus it will automatically be continued to be supported.

The EUG constantly seeks opportunities for new challenges, cooperation, and funding. Research on using EMREX in admission processes and in credential evaluation is already ongoing. Course descriptions, course catalogues and grade conversion also offer interesting possibilities that could be further explored. Expanding EMREX to countries outside EU and exploring cooperation possibilities with other projects, which work on student mobility digitalization, is also on the roadmap.

Academic recognition in higher education is seen as a challenge in learner mobility and also as a potential area for the improvement of a more efficient education system in general. EMREX might enable and promote mutual recognition, as well as transparency and comparability of skills, qualifications and learning outcomes of formal and informal learning, by identification of information, which should accompany documents supporting learners' achievements, and development of tools and platforms for the electronic exchange of such extended documents.

Another area is the field of automatic recognition. EUG is in the process of starting a research on the possibility to use the ELMO format and the EMREX network for exchange and easy validation of certificates stored in highly secure and trustful repositories based on Blockchain technology.

6. BIOGRAPHIES

Tor Fridell, M. Sc. in Computer Science and Engineering. Currently Head of Student Information System at Linkoping University. Previous jobs include Operations manager for the national Swedish Ladok Consortium, Area Manager for Statistics and Follow-up for the national Ladok Consortium, IS manager for Linkoping Institute of Technology, and programmer. Tor has been employed by the university since 1996. Tor has been involved in the EMREX project since start and is also active in standards work and development of student information systems.

Geir Vangen has more than 20 years' experience in developing nationwide systems within higher education. He is head of development at Unit – The Norwegian Directorate for ICT and Joint Services in Higher Education and Research. He participates in national and international standardisation work. He has been member of national committees appointed by the Ministry of Education and Research, and has led projects on behalf of the Ministry. Geir Vangen graduated from University of Oslo, Institute of Informatics in 1989.
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Janina Mincer-Daszkiewicz graduated in computer science in the University of Warsaw, Poland, and obtained a Ph.D. degree in math from the same university. She is an associate professor in Computer Science at the Faculty of Mathematics, Informatics and Mechanics at the University of Warsaw. Since 1999, she leads a project for the development of a student management information system USOS, which is used in more than 60 Polish Higher Education Institutions, gathered in the MUCI consortium. Janina takes an active part in many nation-wide projects in Poland. She has been involved in Egracons, EMREX and Erasmus Without Paper European projects.