Designing a Platform for International Student Mobility

Towards a Process - and Technical Specification Sheet

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DAAD – German Academic Exchange Service
Mobility & Internationalization of HE

DAAD as an active Actor

Physical & Virtual Exchange

Skilly & Competencies Development at HEI

Synergies: DAAD-Portfolio & Erasmus+ Programs

Personalized digital offers “Stud. Journey”

Data preparation: Networking & Guidance

Digitally & transnationally entangled curricula

Transnational DAAD-Alumni Network

Digitally & transnationally entangled curricula
From Physical Mobility to Digital Data Mobility

Physical Mobility
Mobility of People and Paper

Blended Mobility
Mobility of People and/or Data

Digital Data Mobility
Mobility of Digital Data
Establishing a student administration according to the Student Journey

- Information on Studies
- Introductory Phase
- Study abroad
- (Competence) Assessment/Degree
- Internship
- Blended Mobility
- Transfer

Student Journey
# BMBF-Project: Platform for International Student Mobility

## Project Context

- **Bologna Process (EU level):**
  German universities aim to increase international and European **study programs** as well as **study exchanges**

- **European context:**
  other countries are already actively implementing strategies and making use of standards to promote international student mobility

- **Symptom:**
  The German goal of 50% outbound mobility has not been achieved yet

- **Diagnose:**
  Lack of digitally supported back office processes within German universities

## Project Focus

- **Vision:**
  A conceptual and technical framework for a platform → networked or centralized?

- **Focus:**
  Digitalization and Standardization of back and front office processes (recognition)

- **Goal:**
  Supporting German universities in increasing European and global student mobility

- **Procedure:**
  - adoption and development of internationally interoperable operator models and standards
  - self-orientate on international best practices and benchmarks
  - The final framework and concept testing through a proof of concept on the basis of operational prototypes
International Student Mobility: 3 Steps of Recognition

The three main processes within international student mobility

1. Submission
   - Submission of study achievements by students for recognition by the target university
   - User group: Students

2. Validation (digitally supported)
   - Examination, validation and digitally supported processes of recognition of study achievements by the university
   - User group: Universities

3. Provision of information
   - Provision and maintenance of information relevant to the recognition of academic achievements
Who Benefits from the Project? Three User Perspectives

Beneficial for **STUDENTS**

Platform for international student mobility

Beneficial for **UNIVERSITY EXAMINATION BOARDS**

Beneficial for **UNIVERSITY ADMINISTRATION**
2 Forms of Student Mobility

Credit Mobility
- Focus on students which are going to, or have been taking part in an exchange program
- The focus lies on:
  - Finding exchange programs
  - Finding module information
  - The application process
  - The recognition process

Degree Mobility
- Focus on applicants/students, which seek to apply to a university to study in a masters program
- The focus lies on:
  - Searching study programs and finding program information
  - The application process
  - The recognition process

Relevant Processes

Sub-Processes

Inbound
- The application process of an international student for a university program or study exchange in Germany

Outbound
- The application process of a German student for a university program or study exchange outside of Germany

Re-Inbound
- The returning process of a German student back to his university of origin after having completed a study exchange outside of Germany

Re-Outbound
- The returning process of an international student back to his university of origin after having completed a study exchange in Germany
2 Mobility Scenarios

German University
- Student (Master)
- Student (min. Bachelor)
- Student (Exchange)

Foreign University
- Student (min. Bachelor)
- Student (Master)
- Student (Exchange)

SCOPE

Degree Mobility
- Inbound
- Outbound

Credit Mobility
- Inbound
- Outbound

(Re-)Inbound
(Re-)Outbound

Recognition of academic achievements
Provision of academic achievements
### Capgemini: Framework Conditions Analysis and Requirements Development

#### Analysis of requirements within universities
- Concretization, survey and analysis of processes, functions, application landscape, software environment and requirements
- Verification of the existing mock-ups from the preliminary project
- Development of first pilots ideas for the target concept
- Conductance of interviews e.g. TU München

#### Analysis of the international environment and context
- Evaluation of international/European activities and initiatives with connections to the project (e.g. Groningen Declaration, EMREX, Erasmus without Papers, Europass)
- Analysis of international application scenarios (e.g. Netherlands, Norway/Scandinavia)
- Concretization of the intersections within the framework of the Single Digital Gateway Regulation / Online Access Act

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### Creative-Workshop

- **Development** of user journeys and requirements
- **Conception** of approaches for possible pilot use-cases

### Functional requirements
- **Specification** of the core processes
- **Development** of the application cases
- **Conception** of the functional requirements
Paper-based Application Landscape

- **Degree-Mobility**
  - Campus Management System
  - Application process

- **Credit-Mobility**
  - Done manually within the faculty
  - Mobility management

- **Campus Management System**
  - Information to course programs, module information

- **Course information**
Status Quo: Existing European Initiatives

These standards offer a framework, our solution should permit a connection to these standards and leave room for the further standards.

| EMREX |
|-----------------|---------------------------------|
| **An independent, international and decentralized network which unites various actors interested in enhancing student data portability** |
| Institutions/universities and students can share their diplomas (safely and securely) and academic certificates across borders with institutions |
| Focuses on a student centered approach, the student manages his own data |

<table>
<thead>
<tr>
<th>Erasmus Without Paper (EWP)</th>
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<tbody>
<tr>
<td>Co-funded by the European Commission</td>
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<tr>
<td>Focused on replacing a paper-based workflow for Erasmus exchanges with a digital workflow</td>
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<tr>
<td>Streamlining technical solutions for student mobility, consolidating technical tools and embedding them in a network</td>
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<tr>
<td>Aims to develop the exchange between universities in Europe</td>
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<th>Single Gateway Regulation</th>
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<tbody>
<tr>
<td>European Commission project</td>
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<tr>
<td>Will help citizens and firms to access information and administrative procedures online</td>
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<tr>
<td>Operates under the “once only” principle</td>
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<tr>
<td>Can be used as a registry</td>
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<th>Europass</th>
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<tr>
<td>Integrated initiative from the EU to standardize and digitalize the issuance and handling qualifications</td>
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<tr>
<td>Focuses on five documents to make your skills and qualifications clearly and easily understood in Europe</td>
</tr>
<tr>
<td>Aims to support the handling, issuance and sending of documents (e.g. CV, certificates)</td>
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### Student Mobility Providers: Some Good Practices

**DUO**
- Provides information from a database for acknowledgements and academic documents for students
- Focus is on enrolment
- Focus is on the funding of schools as well as the handling of student loans

**Studielink**
- Acts as a broker between the students and universities, it does not process the individual applications
- Studielink does not handle students which re-enroll to other universities

**Scandinavia**
- Within Scandinavian countries standards like EMREX are actively being used to handle student mobility
- Though there is already an extended level of exchange and communication within student mobility in Scandinavia
- Institutions such as UNIT within Norway implement digitization and enact the use of standards such as EMREX
- The use of standards such as a EMREX significantly reduces the costs associated with student mobility

**Other best practices and initiatives**
- UK: UCAS, a central portal that connects students directly to colleges and universities
- Several further initiatives for digital recognition processes e.g France, Italy.
Anticipating the Future Technologically at Best

Artificial Intelligence

- The integration of AI focuses on:
  - The analysis of past recognition processes
  - Module comparison (content level) → Equivalence score
  - The equivalence assessment → based on the score, staff members can decide

Blockchain

- The blockchain technology focuses on:
  - Increasing the security and authenticity of academic transcripts and certificates
  - The issuance of study certificates (e.g. diplomas)
  - The verification of study certificates → greater level of accuracy → replacement of sending paper-based documents or scans
International Student Mobility Digitalized: Functionalities

Cloud solution based

- Making use of Software as a service (SaaS)
- A central cloud-solution which will handle the uploading and storing of student related data

A document depository

- A depository within which the student can individually manage his data and documents (e.g. certificates, diplomas)

A connection to a central transcript depository

- Connection to a centrally managed transcript depository
- This depository would be similar to DUO and could be linked to EMREX

Document transmission function

- Enable the handling and the transfer of degrees and academic achievements as a copy to a personal repository

Transparent module information access

- Would provide a clear and transparent link towards module-catalogs and descriptions

Citizen-Portal connection

- Connection to digitized public administrative services (loan applications, funding applications)
Digitalized Recognition: An IT-Architecture Vision

Receipt-Repository
- Receipts for academic achievements

Platform for International Student Mobility
- Degree-course information
- Electronic documents
- Paper-based documents

Recognition
- Degree recognition
- Recognition history
- Credit recognition

Credit-Mobility

Campus Management System
- Application process
- Mobility management

Information about degrees and modules

IT system

Electronic documents

Paper-based documents
The IT-Architecture: Applied to the EMREX Specification Depict
Challenges

Challenges to overcome

- Uniform electronic ID or login for students for the platform
- Central availability of information about modules in the history. E.g. Which contents did module XY of the university Z convey in the summer semester YYYY?
- Transmission of study documents of German universities in electronic form from the universities to the students / the platform
- Uniform data structures for the exchange of study documents
- It has to be clarified whether the recognition process will be handled on the platform or within the individual campus management system of the universities
Requirements for Pilots

Developing prototypes which take international experience into account (e.g. Norway)

Ensuring integration to a comprehensive platform with international connection (no isolated solution)

Recognizing students, university administration and (examination offices) as target groups

Aim to derive added value from scalability (network externalities)

Enabling access to module information (referencing) within the exchange processes

Defining of concrete "Minimum Viable Products" along the process chains with partner universities

Developing procedures for the exchange of data, information and artifacts between partners
### Potential Pilots

<table>
<thead>
<tr>
<th>Universität Siegen</th>
<th>RWTH Aachen</th>
<th>uni.assist</th>
<th>TH Lübeck</th>
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<tbody>
<tr>
<td><strong>Pilot focus:</strong></td>
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<tr>
<td>• Developing standard digital module handbooks and catalogues</td>
<td>• Using already established links to Scandinavian partner universities to test the EMREX-Standard</td>
<td>• Using EMREX or blockchain technology to send and import artifacts</td>
<td>• Developing means to digitally send academic achievements/academic results</td>
</tr>
<tr>
<td>• The developed products should aim to support the digital exchange and recognition process of student- and examination performance</td>
<td>• Using EMREX to send and import artifacts</td>
<td>• Using blockchain technology to send, import and store study related artifacts</td>
<td>• Supporting the academic recognition process through technology</td>
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<td><strong>Core processes:</strong></td>
<td>• Providing study related information</td>
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<tr>
<td>• Examine study option</td>
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</tr>
<tr>
<td><strong>Core processes:</strong></td>
<td>• Using EMREX as the foundation for the automatic recognition of academic achievements</td>
<td>• Developing a German data repository to store and manage academic achievements</td>
<td>• Digitizing the data input for student related data</td>
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Some Prototypes to be Developed by Universities

- EMREX Pilot: Integration of foreign HEI's with EMREX system

**Foreign Country**
- Students Mobility Platform
- CMS

**EMREX Core**
- EMREX Registry
- EMREX National Contact Point
- EMREX Student Mobility Plugin (SMP)
- ELMO (ELMEX + ERASMUS Exchange) Format
- Campus Management System

**German Component Landscape**
- Receipt-Repository
  - Receipts for academic achievements
- Platform for International Student Mobility
- Recognition
  - Degree recognition
  - Credit recognition
- Degree-Mobility
- Credit-Mobility
- Recognition history
- Application process
- Mobility management
- Information about degrees and modules

**Format**
- CMS
- NCP

**Authentication + portal function for pilot**

**Platform for International Student Mobility**
- Degree-course information

**Recognition**
- Degree recognition
- Credit recognition

**Mobile System**
- EMREX Pilot
- RTWH Aachen

**CMS NCP Students Mobility Platform**
- EMREX Core
- German Component Landscape

**EMREX Registry**
- EMREX National Contact Point
- EMREX Student Mobility Plugin (SMP)
- Campus Management System

**ELMO**
- ELMO (ELMEX + ERASMUS Exchange) Format
Timetable:

Assessment
- Conducting interviews with universities and students to conceptualize processes and record common problems
- Defining potential prototypes

Final deliverables
- Specifications book with both functional and technical requirement specifications
- A running prototype version, to be tested through pilot cases within universities

International involvement
- Developing a suitable pilot use case between a German and an international university which involves the use of standards such as EMREX
- Conducting a hackathon on the basis of the requirement specifications

Phase 1: Survey and Analysis
31.12.2018

Phase 2: Target conception and validation
30.06.2019

Phase 3: Transformation
31.12.2019
Thanks!

GIF: @I_say_thank_you via Reddit.com
Contact

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3 Core Processes Supported by the Platform

**Strategic processes**
- Controlling
- Strategic development
- Internationalization
- ...

**Inbound**
- Re-Inbound

**Core processes**
- Providing study related information
- Submitting academic achievements
- Examine study option

**Cross-sectional processes**
- Information management and networking
- Operating the platform
- Functional and technical platform development
- Interface maintenance
- Enrolment and registration
- ...

**Outbound**
- Re-Outbound