



European University Alliance for Global Health

Digitized Card Pilot for European HEIs – A European Campus Card for Interoperable Services –

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European University Alliance for Global Health

9 Universities, 1 Goal: Building Europe's Campus for Global Health

*A vibrant, multicultural and inclusive inter-university campus.
Seamless mobility for students, staff and professionals – physical and virtual.*



European University Alliance for Global Health

9 Universities, 1 Goal: Building Europe's Campus for Global Health



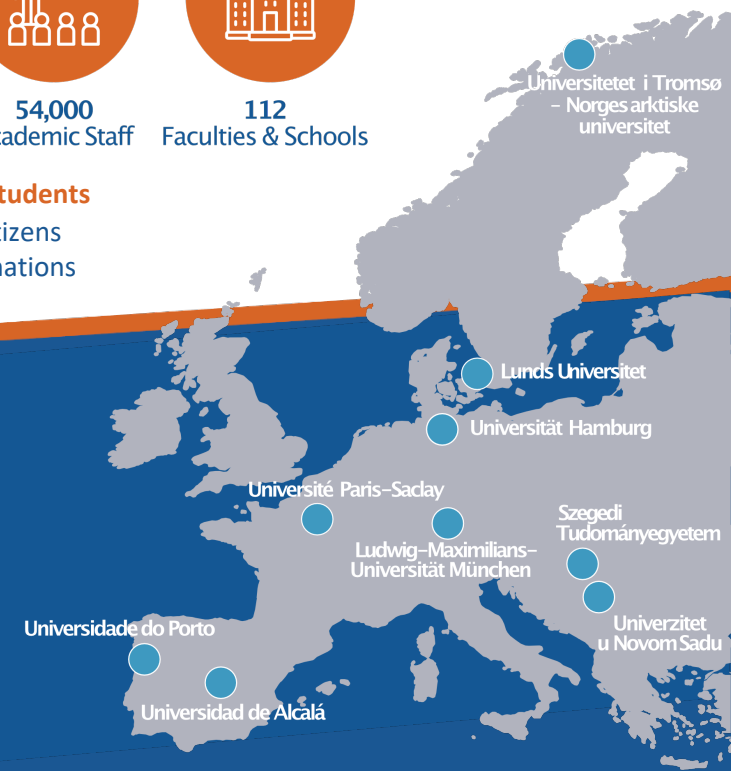
EUGLOH 2.0 Consortium Partners



→ UNS & UiT are from **non-member states** of the **European Union**



15-20 % foreign students
40 % European citizens
60 % from other nations



Key Goals

- Interdisciplinary Global Health programmes across universities – striving towards a joint European degree.
- **A vibrant, multicultural and inclusive inter-university campus.**
- **Seamless mobility** for students, staff and professionals – physical and virtual. } Interoperable services and identification → passes & service cards
- Strong links between higher education, research and local socio-economic ecosystems to prepare young people for the jobs of tomorrow.
- Empowering future generations to find solutions for Global Health challenges.

- ✓ Vision of the European Commission: Towards a European Education Area
- ✓ The European Student Card Initiative (ESCI)
- ✓ European Charter for Higher Education (ECHE) of the Erasmus+ Program



A great vision!

Background

Vision of the European Commission: **Towards a European Education Area**

It is in the shared interest of all EU Member States to enable the full potential of education and culture as drivers for job creation, economic growth and improved social cohesion, as well as a means to experience European identity in all its diversity.

The Commission is developing initiatives to help work **towards a European Education Area**.

The vision contained within this policy is that, across the EU:

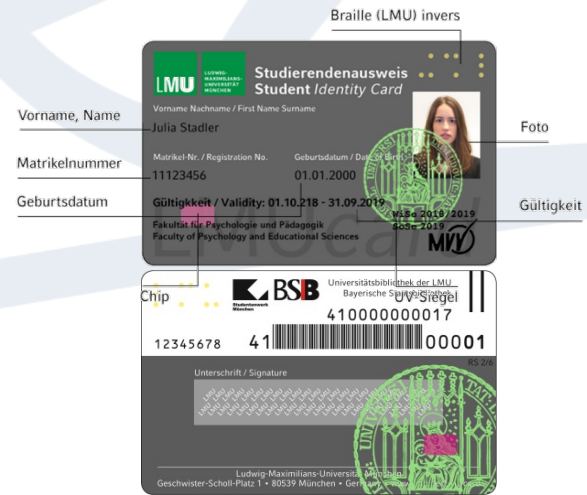
- **spending time abroad to study and learn should become the norm**
- school and higher education **qualifications should be recognised across the EU**
- knowing two languages in addition to one's mother tongue should be standard
- everyone should be able to access high-quality education, irrespective of their socio-economic background
- people should have a strong sense of their **identity as a European**, of **Europe's cultural heritage** and its diversity

Source: https://ec.europa.eu/education/education-in-the-eu/european-education-area_en

EUGLOH campus cards current state and connected services

→ Vision:

All university members should be able to use services of host university while on visit



Ludwig-Maximilians-Universität München

- Legic CTC Cards (Legic Advant + Prime)
- Payment (Studierendenwerk München)
- Cloud-Printing and Scanning (Secure-Printing and Payment)
- Library user number
- Ticket for Public Transport System

Université Paris-Saclay

- NXP Mifare DESfire Cards
- Payment (izly – les Crous)
- Library user number
- Physical Access Control

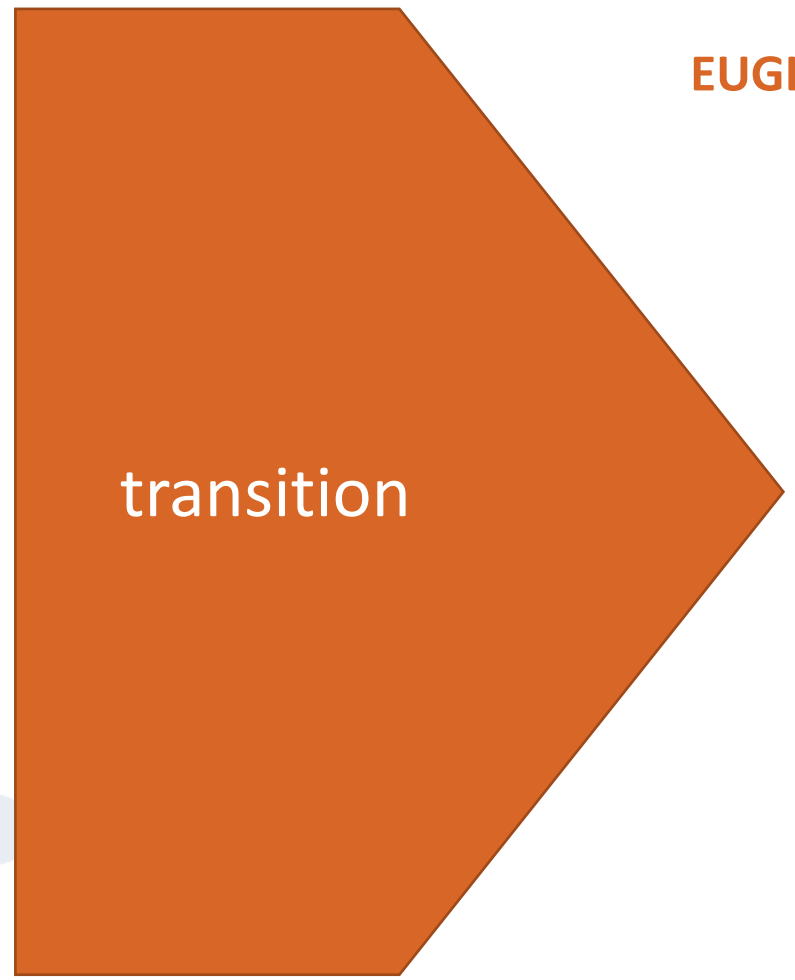
Lunds universitet

- NXP Mifare Classic Cards
- Physical Access Control (online and offline)
- Login at copiers (for copy/print/scan)
- Library
- Several other services, but not any payment services

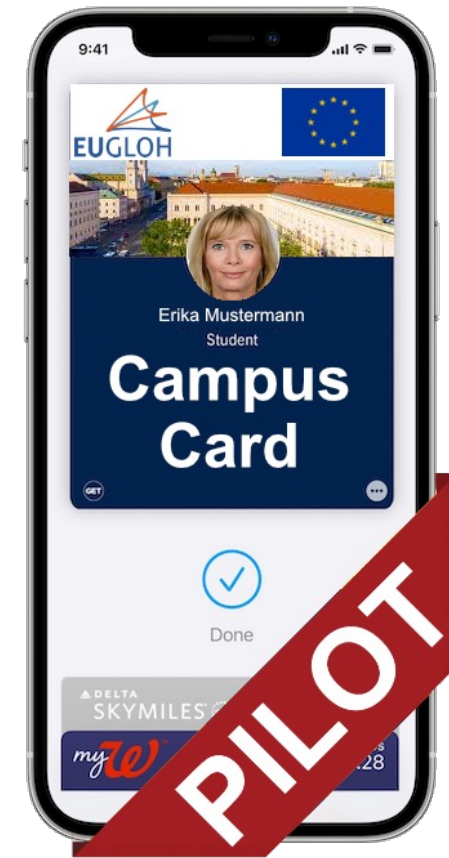
Universidade do Porto

- NXP Mifare Classic Cards
- Library
- Physical Access Control
- Canteen & cafeterias
- Printing Service
- Attendance

The path to an interoperable European Campus Card



EUGLOH Digitized Campus Card Pilot



Users Expectations

- Don't stick to old technology if your user expects something modern
 - Integration and Interoperability
 - **Smartphone** is the essential working tool for younger generations
 - Higher Education Institutions should provide credentials in modern ways
 - **Student IDs / Campus IDs should be recognized and accepted anywhere**
-
- ✓ Be compliant
 - ✓ Be Secure → implement IT-Security best practices
 - ✓ Respect privacy
 - ✓ Respect self sovereignty and decisions of users



Services

Identification

- Identification
- Status verification
- Proof of entitlement
- Single Sign On / 2FA / FIDO2
- Attendance check
 - Check-in for exams
 - attendance at courses
 - Time recording
- Electronic Signature (of legal documents)

Electronic payment / cashless campus

- Canteen & cafeterias
- Vending machines
- Printing / scanning (secure & follow me printing)
- Ticketing (secure & follow me printing)



Physical Access Control

- Areas (campus, parking lot)
- Buildings
- Rooms
 - Classrooms
 - Labs
 - Computer rooms
 - Learning spaces
 - Offices
 - Accommodation facilities (i.e., dorms)
- Sports facilities



Library services

- Access to / borrow
 - Physical media (book, audio and video media)
 - E-media (book, audio and video media)
- Learning spaces



Transport

- On campus services (university shuttle service)
- Public transport tickets & discounts



Discount and promotions

- Discounts on cultural activities
 - Museums
 - theaters
 - cinemas
- Shops
- Restaurants

on- & off-campus → on-site usage
online services

providing service → create benefits



Medium → Services

Identification

- Identification
- Status verification
- Proof of entitlement
- Single Sign On / 2FA / FIDO2
- Attendance check
 - Check-in for exams
 - attendance at courses
 - Time recording
- Electronic Signature (of legal documents)

Electronic Payment / cashless campus

- Canteen & cafeterias
- vending machines
- Printing / scanning (secure & fast)
- Ticketing (secure & fast)

Physical Access Control

- Areas (campus, parking lot)
- Buildings
- ROOMS
- Classrooms

Library services

- Access to / borrow
 - Physical media (book, audio and video)
 - E-media (book, audio and video)

Transport

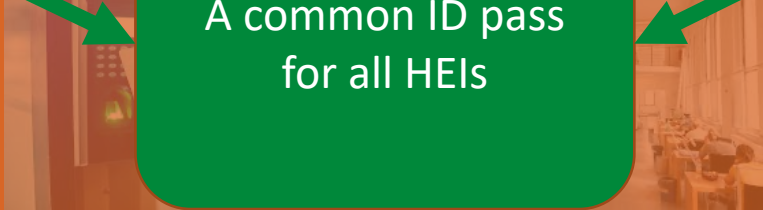
- On campus services (university shuttle service)
- "Proof of entitlement" for transport tickets
- Special case of "discount"

Discount and promotions

- Discounts on cultural activities
 - Museums
 - theaters
 - cinemas
- Shops
- Restaurants
- Special case of "Identification" / "Status verification" / "Proof of entitlement"

Working solutions by solutions providers
 → separate service pass (can chose appropriate technology)

A common ID pass for all HEIs



providing service → create benefits

One core pass and additional passes as/if needed

- The core pass
 - For "simple" services like library and printing.
 - For use outside the university by anyone.
 - Provided to **anyone** with an eduGAIN account.
 - Could be issued centrally.
- Additional passes
 - For compatibility with "legacy" systems.
 - Also for solutions that require additional security.
 - Provided by the local university or a service provider.
 - Probably needed for access control.
 - Probably based on MIFARE 2GO.

Additional passes and services

- Access control systems have other requirements.
 - The readers will probably need a firmware update.
 - If that's not possible, the system might have to be replaced.
 - Your reader provider might have their own (proprietary?) solution.
 - UUID / Card serial number is not a solution.
 - DESFire applications is a good start.
- Payments are even more complicated and also have special requirements.
- We will try to provide guidelines about different passes.

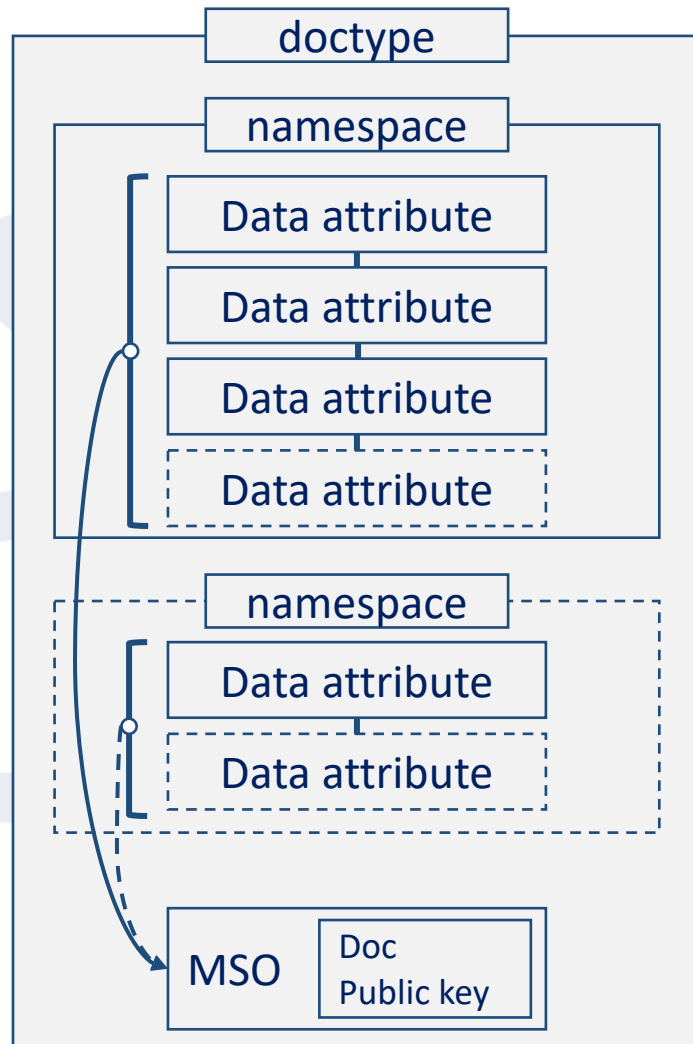
The core pass

- Online verification for those with access.
 - An online service could connect the pass to a specific user.
- Offline verification for anyone.
 - Primarily a card number and eduPersonScopedAffiliation.
 - ... and some useful information (date of birth, assurance level, expiry date...).
 - No name, username or social security number.
 - Maybe a picture of the user ?
 - Verified with a reader, it's a pass, not a card that should be shown.
 - edutap ?

Common Identification pass using ISO/IEC 18013-5 model

- The “ISO/IEC 18013-5 Personal Identification” model is designed to support
 - A protocol for two devices to establish a **secure wireless communication** channel and exchange structured request and response message
 - **Identification** of the credential holder (**user binding**)
 - **Selective release of data elements** by the credential holder (**data minimization / consent**)
 - A protocol to retrieve credential data directly from the mobile device of the holder, **purely offline**, facilitating **availability** and **non-traceability**
 - An **optional** protocol to **retrieve additional data** from the issuing authority
 - A mechanism to establish **integrity** and **authenticity** of the credential data
 - A mechanism to confirm **device binding** (signing at transaction time)
 - Multi document and **multi namespace aware** ← extendable for other use cases
- Established governmental credential format that is already in use → mobile driving licence
- Already supported by the OEM-Smartphone-Manufactures (Apple and Google (see: <https://android-developers.googleblog.com/2020/11/privacy-preserving-features-in-mobile.html>))
- No additional infrastructure costs

ISO/IEC 18013-5 Data model



Reuse of directory Data:

- givenNames
- sn
- eduPersonAffiliation / eduPersonScopedAffiliation
- eduPersonEntitlement
- eduPersonAssurance
- schacHomeOrganization
- schacPersonalUniqueCode
- schacDateOfBirth
- schacYearOfBirth
- schacPlaceOfBirth
- schacExpiryDate

Why an image?

- Some existing services require both a student id and an official id.
 - The photo on the official id is used to assure that card is used by the owner.
- If the reader would show the picture of the user that could be used instead.
 - There would be no need for name or social security number.
- Probably an optional feature.
 - We need to get the pictures somewhere.
 - Would this be accepted by the users?

The core pass - usage

- A verification reader that approves card with a light/beep/image.
 - Based on a set of rules (student and older than xx years?).
 - Discount providers could provide a set of rules instead of a cards.
- Integrated in the payment terminal.
- At the university (both home university and away).
 - Supported services will differ between universities.
 - Universities would have access to look up the username.

The core pass – issuing and services

- Central issuing of core passes can be hosted anywhere during the pilot.
 - The final solution could be hosted locally or by a trusted party. (GEANT?)
- Passes is not enough, we also need services.
 - Guides for how to use the core pass with different systems.
 - Cooperation with developers of these systems.
 - An open specification that anyone can use.
- Services could accept both current cards and the core pass (and other passes).
- Other organizations could provide similar passes. (Student Union Membership?)

Deliverables

- The EUGLOH Group wants to provide an ecosystem for a European Campus Card that quickly scales to all HEI in Europe or even world wide
- The EUGLOH Project did not receive any funds or grants for their work, all is financed out of our own budgets, so we do not have any project limits.
- We expect to provide:
 - Documentation
 - Help to generate a pass design
 - Infrastructure to issue service passes and the common identity pass
 - Infrastructure to manage, issue, update and revoke passes,
 - A service discovery portal and REST-API to include it in your own portals and Apps
 - We will provide example connectors to several common used IDM Backends and Databases
- BUT it will not be a full-service solution
- All our software will be open source and available free of charge



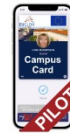
Public Money

Public Code

publiccode.eu

Deliverables

- Documentation is on GitHub
- Rendered Version: <https://ecc-pilot.github.io/documentation/>
- Disclaimer
- *Documentation is like our ideas and concepts not finalized*



European Campus Card Pilot Project

🔍 Search the docs ...

TABLE OF CONTENTS

- Project ▾
- Partners
- Requirements ▾

BACKLOG OF STILL UNSTRUCTURED CONTENT

- Data and presentation
- Deliverable's
- Security considerations
- Apple VAS
- Google SmartTap
- Transponder technologies ▾
- ISO/IEC 18013-5 Personal identification — ISO-compliant



Key Concepts

Identity Documents based on plastic cards are not a good base for interoperable service provision. Chip cards and smart cards, are limited. They have a limited memory, and storing data / applications on those cards differ by the providers. Also interoperability does not reside within the cards, as almost any technology provider has different internal standards to store and secure data on the card, *interoperability is done on the reader side.*

Modern smartphones have **Wallet** functions build into the operating system and could store almost an unlimited number of cards / passes and data. Also smartphones are the essential working tool for students and most university employees.

The approach of "Integrated Chip Cards", to store multiple service specific applications within one card is not valid anymore. Within Smartphone Wallets the approach of "**one card per service**" has more benefits.

Service provider on and off campus does have different needs and existing technologies, especially with legacy systems, so issuing one service card per service is a better approach.

Additionally most service providers does not provide their services to students exclusively. Multiple customer / consumer groups exists, that could uses those services. The European Campus Card does reflect this by opening the system to all roles.

A majority of service providers, especially off campus, do offer services and discounts to members of Higher Education Institutions. They often only need a affiliation status

☰ Contents

Background

Goals of this project - a "European Campus Card"

Key Concepts

Contents

Appendix

Conclusion

- Parts of the solution are protected under NDAs.
- Wallet passes are the future for credential, not apps or cards
- cost-effective solutions are possible
- It is a long-term migration process
- See us outside at the exhibition

We'd love to hear from you!

Get in touch:

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