



European University Alliance for Global Health

# One Europe, One Mobile Solution: Turning the European Student Card Vision into Reality

*EUGLOH Annual Summit 2023 - Lund*  
*June 14<sup>th</sup>, 2023*

*Alexander Loechel (LMU Munich), Jorge Santos (U.Porto), José Filipe Alves (U.Porto), Morgan Persson (LU)*  
*“ESC Working Group”*



# Disclaimer

This is an early prototype of a presentation for EAIE 2023 in Rotterdam

**Session 10.09**

**One Europe, one mobile solution:  
Turning the European Student Card vision into reality**

Friday 29 Sept. 2023 - 10:30-11:30



<https://www.eaie.org/rotterdam/programme/programme-overview/activity/174.html>

# Disclaimer

## We do have Problems

- „ESC (European Student Card) Working Group“
- A great vision, we share and want to fulfill, but a specification we can not support!
- We are IT-guys
  - We are good in finding technical solutions
  - We are passionated about good solutions and technology (and may go into to much details)
  - We are not the best communicators
  - And we do not have the patience to wait for a solution

→ we want / need your FEEDBACK



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- ✓ 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!

# The Vision

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

It is in the shared interest of all EU Member States to **harness 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](https://ec.europa.eu/education/education-in-the-eu/european-education-area_en)

# The European Student Card Initiative (ESCI)

## European Student Card Initiative (ESCI)



Connecting universities



Connecting students



Online identification and authentication



Connecting student services

→ Digitalization of “mobility” processes



# The European Student Card Initiative (ESCI)

## Erasmus Without Paper

- A digital solution connecting systems in use at higher education institutions so they can manage their Erasmus+ mobilities online.

## Erasmus+ App

- A single app to help Erasmus students with all their practical administration - before, during and after their mobility programme.

## European Student Card

- Transforms current student cards into a European Student Card so students can benefit from on- and off-campus services during their mobility.

# Erasmus+ App

## → As a student:

- Single point of entry into the Erasmus+ Programme
- Plan and carry out the exchange
- Get the info needed (when planning the exchange and while at the host institution)

## → As a higher education institution:

- Share events and deals
- Customise the steps in the mobility journey



Source: <https://erasmus-plus.ec.europa.eu/european-student-card-initiative/erasmus-app>

# European Student Identifier (ESI)

The European Student Identifier (ESI) can take on one of two forms, depending on the qualifiers needed to make a given student code globally unique:

- ESI with nation-wide (or region-wide) scope student code

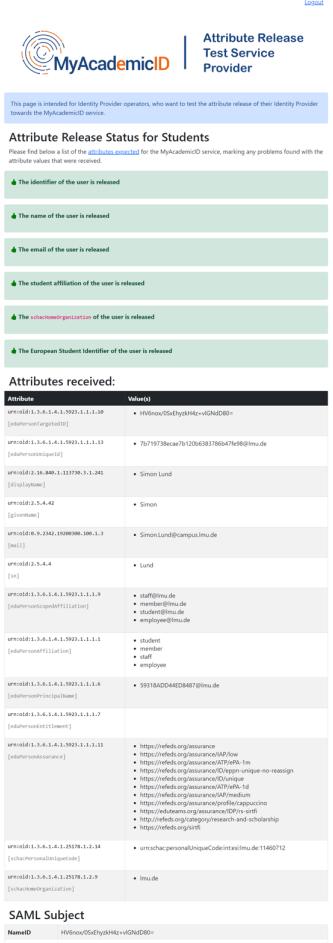
urn:schac:personalUniqueCode:int:esi:<country-code>:<code>

(for countries that support a national student identifier, e.g., France, Finland, Greece, Italy, Netherlands and Hungary  
 → University of Paris-Saclay and U.Szeged cases)

- ESI with HEI-wide scope student code

urn:schac:personalUniqueCode:int:esi:<sHO>:<code>

(for most countries that have institution level student identifiers, e.g., Portuguese/UPorto case, German/LMU Munich + UHH Berlin case)



This screenshot shows the MyAcademicID Attribute Release Test Service Provider interface. It displays a list of attributes released for a user, each with a green checkmark icon and a brief description. Below this is a table titled 'Attributes received:' showing various attributes and their corresponding values.



This screenshot shows the LMU Deutsches Forschungsnetzwerk login page. It features the LMU logo and the text 'DEUTSCHES FORSCHUNGSENTEWK NETZWERK AUTHENTIFIZIERUNGS- UND AUTORIZIERUNGS-INFRASTRUKTUR LOGIN'. A key icon is visible on the right side.

**Informationsweitergabe an MyAcademicID IAM Service**

Beschreibung des Dienstes: The MyAcademicID IAM Service provides Identity and Federated access management for the services of the European Student Card Initiative and the services directly supporting the digitisation of Erasmus+. The MyAcademicID IAM Service is provided by GEANT using the eduteams service.  
 Zusätzliche Informationen über diesen Dienst:  
<https://wiki.geant.org/display/SM/MyAcademicID+Identity+and+Access+Management+Service>

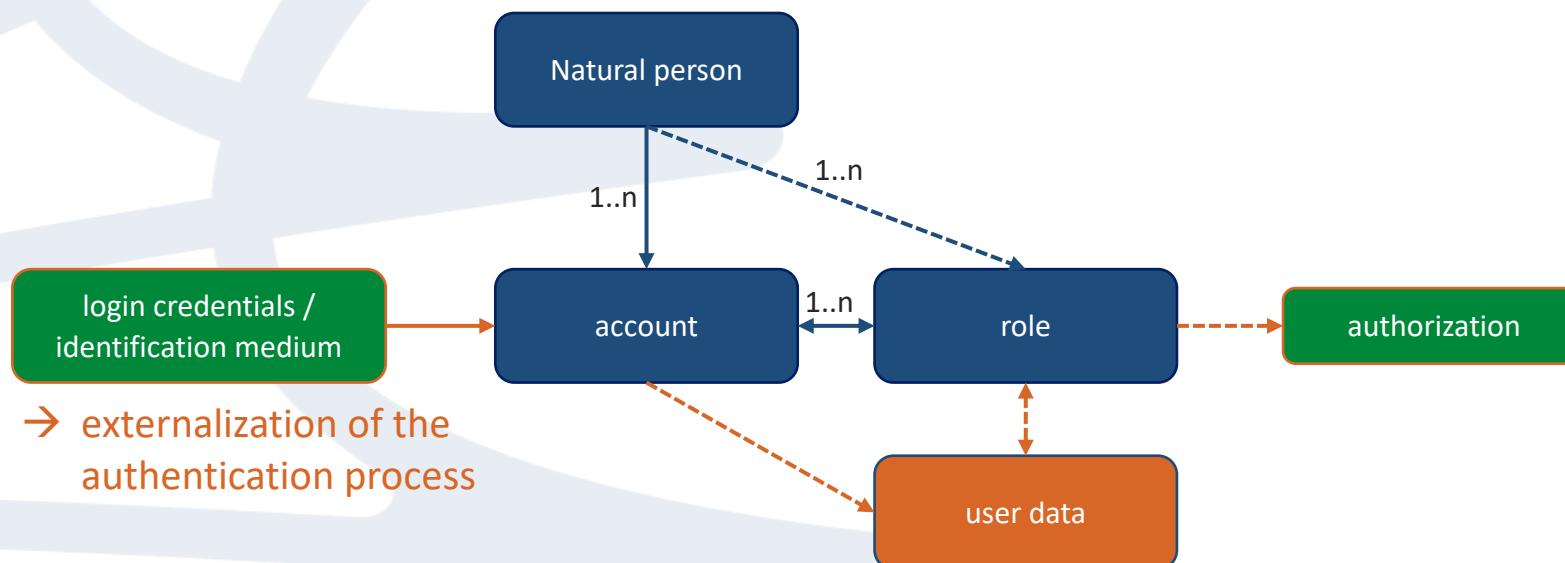
An den Dienst zu übermittelnde Informationen	
Anzeigename	student
Zugehörigkeit	member staff employee
Vertrauensgrad	<a href="https://refeds.org/assurance">https://refeds.org/assurance</a> <a href="https://refeds.org/assurance/ATP/low">https://refeds.org/assurance/ATP/low</a> <a href="https://refeds.org/assurance/ATP/ePA-1m">https://refeds.org/assurance/ATP/ePA-1m</a> <a href="https://refeds.org/assurance/ID/epnn-unique-no-reassign">https://refeds.org/assurance/ID/epnn-unique-no-reassign</a> <a href="https://refeds.org/assurance/ID/unique">https://refeds.org/assurance/ID/unique</a> <a href="https://refeds.org/assurance/ATP/ePA-1d">https://refeds.org/assurance/ATP/ePA-1d</a> <a href="https://refeds.org/assurance/ATP/medium">https://refeds.org/assurance/ATP/medium</a> <a href="https://refeds.org/assurance/profile/cappuccino">https://refeds.org/assurance/profile/cappuccino</a>
Berechtigung	urn:mace:dir:entitlement:common-lib-terms @lmu.de
Personliche ID	staff@lmu.de member@lmu.de student@lmu.de employee@lmu.de
Zugehörigkeit	urn:mace:dir:entitlement:common-lib-terms @lmu.de
eduPersonTargetedID	HV6nox/OSxLhyzkH4z+vIGND80=
eduPersonUniqueId	7b719738cae7b120b6383786b47fe98@lmu.de
Vorname	@campus.lmu.de
E-Mail	uni-muenchen@campus.lmu.de
schacHomeOrganization	lmu.de
schacPersonalUniqueCode	urn:schac:personalUniqueCode:int:esi:lmu.de
Nachname	
Datenschutzinformationen dieses Dienstes	
Die oben aufgeführten Informationen werden an den Dienst weitergegeben, falls Sie fortfahren.	
<b>Wählen Sie die Dauer, für die Ihre Entscheidung zur Informationsweitergabe gültig sein soll:</b>	
<input type="radio"/> Bei nächster Anmeldung erneut fragen. <i>— Ich stimme zu, dass meine Informationen dieses Mal an den Dienst weitergegeben werden.</i>	
<input checked="" type="radio"/> Erneut fragen, wenn sich die Informationen ändern, welche an den Dienste weitergegeben werden. <i>— Ich bin einverstanden, dass dieselben Informationen in Zukunft automatisch an diesen Dienst weitergegeben werden.</i>	
Diese Einstellung kann jederzeit mit der Checkbox auf der Anmeldeseite widerrufen werden.	
<input type="button" value="Ablehnen"/>	<input type="button" value="Akzeptieren"/>

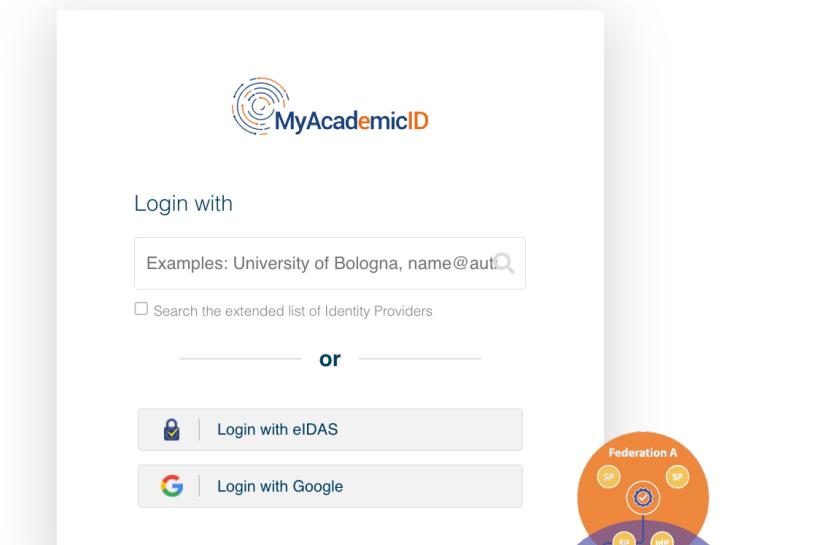
<https://myacademicid.devtest.eduteams.org/sp/>

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# Identity Linking → reduced amount of logins

- Utilization of decentralized / federated Authentication and Authorization Infrastructure
  - Less login credentials – higher assurance levels
  - Data flow





The screenshot shows the MyAcademicID login page. It features a logo for "MyAcademicID" with a fingerprint icon. Below it is a search bar with the placeholder "Examples: University of Bologna, name@aut" and a magnifying glass icon. There is also a checkbox for "Search the extended list of Identity Providers". A horizontal line with the word "or" separates this from two other login options: "Login with eIDAS" (with a lock icon) and "Login with Google" (with a Google icon). At the bottom right is a circular diagram illustrating a federated identity system.



The diagram illustrates a federated identity system. It shows three federations: Federation A (orange), Federation B (yellow), and Federation C (blue). Each federation contains several Service Providers (SP) and Identity Providers (IdP). A central "MDS Metadata Service" (purple) is connected to each federation. The "eduGAIN" logo is prominently displayed at the bottom right.

Co-financed by the Connecting Europe Facility of the European Union

This project has been co-funded by the European Commission. The content of the service reflects the views only of the authors and the European Commission cannot be held responsible for any use which may be made of the information contained therein.

MyAcademicID Support Helpdesk | eduTEAMS by GÉANT | Privacy Policy

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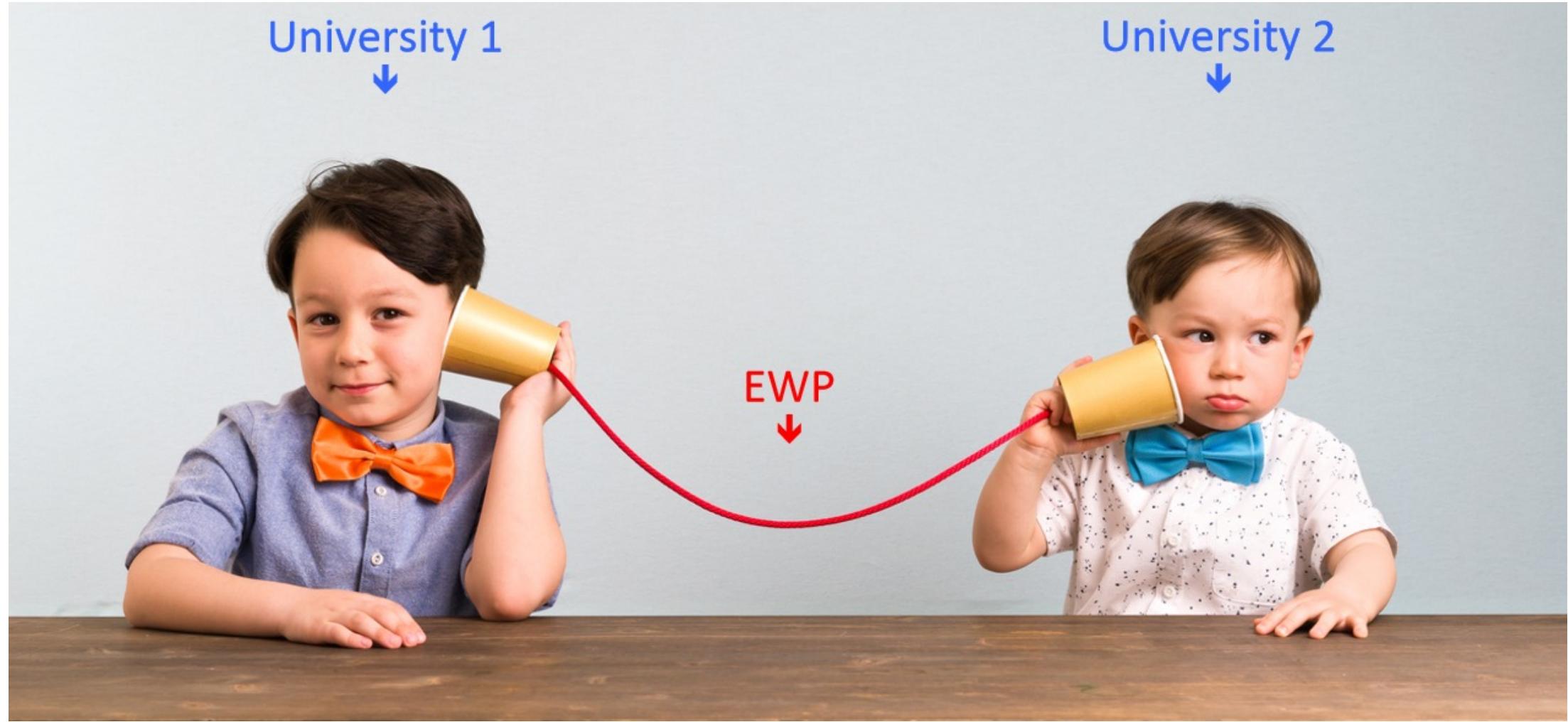
# Erasmus Without Paper (EWP)

- A digital solution for higher education institutions to connect their Erasmus+ mobility management systems.
- Exchange student data swiftly and securely.
- Instead of printing a PDF or a paper copy of a document such as an Inter-Institutional agreement or a Learning Agreement, you will be able to:
  - approve the documents you need online
  - send them directly via your own management system to your partner institution
  - ask your partner institution to digitally approve them
- How to Join:
  - In-house System? Your IT team should develop the necessary APIs
  - 3rd party software? Your provider connects it to the EWP Network
  - EWP Dashboard: for smaller institutions, a free-to-use tool providing the basic functionality

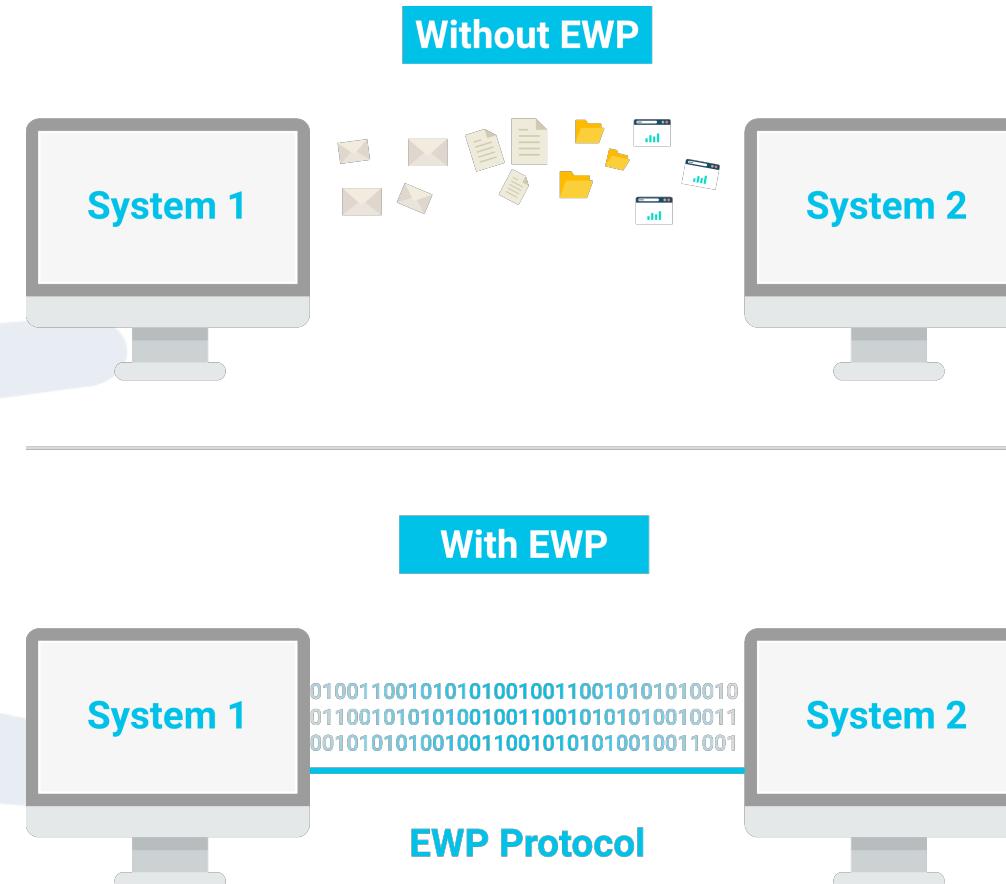


Source: <https://erasmus-plus.ec.europa.eu/european-student-card-initiative/ewp>

# Erasmus Without Paper (EWP)



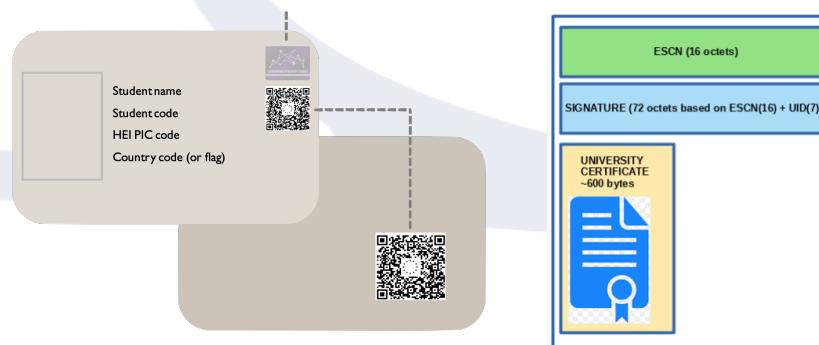
# Erasmus Without Paper (EWP)



# European Student Card (ESC)

## Claims:

- Establishes a common European identity for higher education students
- Students can get their status verified easily across Europe
- Easier access to student services and simpler status recognition
- It is not a new student card



		Available options for interoperability			
		Plain regular card	Card with QR code	Chip card with electronical control	Smart card
HEI					
Potential impact on card production process					
Reading device available					
Possibility to add new services on demand					
Level of interoperability					

Source: <https://erasmus-plus.ec.europa.eu/european-student-card-initiative/card>

# History of the European Student Card

**2012 – 2013**

- Signing of a protocol of Intent
- Bilateral Franco-Italian agreement between:
  - Fondazione ENDISU
  - ANDISU,
  - Cnous

**November 2013**

- Exchange between the Cnous and the CPU on European Student Card

**2016**

- Institutional structuring at European level  
→ Erasmus+ Strategic Partnership

**2016 – 2018 → European Student Card Project**



**2025 - Goal**

- All European / Erasmus+ Higher Education Institutions offer their students a European Student card

1      2      3      4

**December 2015**

- Memorandum of Understanding
- Student Unions of 4 countries:
  - France
  - Germany
  - Ireland,
  - Italy
- Exchange within ECStA

5      6      7

**2019 – 2020 → MyAcademicID Project**

**2020 – 2022**

- European Digital Student Service Infrastructure Project
- ESC-Tension Project – European Student Card Extension and Adoption

→ sole focus: students



Comité National  
de la Carte Étudiant  
et de ses Usages



# ECHE requirements for HEIs

„Implement the priorities of the Program:

- By undertaking the necessary steps to **implement digital mobility management** in line with the technical standards of the European Student Card Initiative.
- ...“

Source: [https://ec.europa.eu/info/funding-tenders/opportunities/docs/cap/eplus2020/eche-fp-2020/1877638-charter-annotated-guidelines-feb2020\\_en.pdf](https://ec.europa.eu/info/funding-tenders/opportunities/docs/cap/eplus2020/eche-fp-2020/1877638-charter-annotated-guidelines-feb2020_en.pdf)

## Timeline – European Student Card Initiative (ESCI)

- Erasmus Without Papers (EWP)
  - 2021 – Online Learning Agreements (OLA)
  - 2022 – Inter-Institutional Agreements (IIAs)
  - 2023 – Exchange Student Nominations, Acceptances, Transcripts of Records
- MyAcademicID
  - 2022 – European Student Identifier (ESI)
- European Student Card Project (ESC)
  - **2025 – Implement and Issue European Student Cards**

## BUT (legal aspects & IT-Security aspects)

- The European Student Card Project specification is not transparent,
- Conflicts with GDPR requirements
  - → **Student IDs are not optional**; therefore, they could not be issued on consent (Article 7 - Conditions for consent, define when GDPR Art. 6 par. 1 lit. (a) did not apply)
  - Centralized Infrastructure conflicts with GDPR Article 24 & 25 and national laws
- Conflicts with competition law and procurement law
  - Not vendor neutral
  - Holograms for example exclusive by one provider
- IT-Security
  - QR-codes are not considered secure
  - **NEVER EVER** code an URL into QR-Codes → communicate Trusted verification Apps or Websites



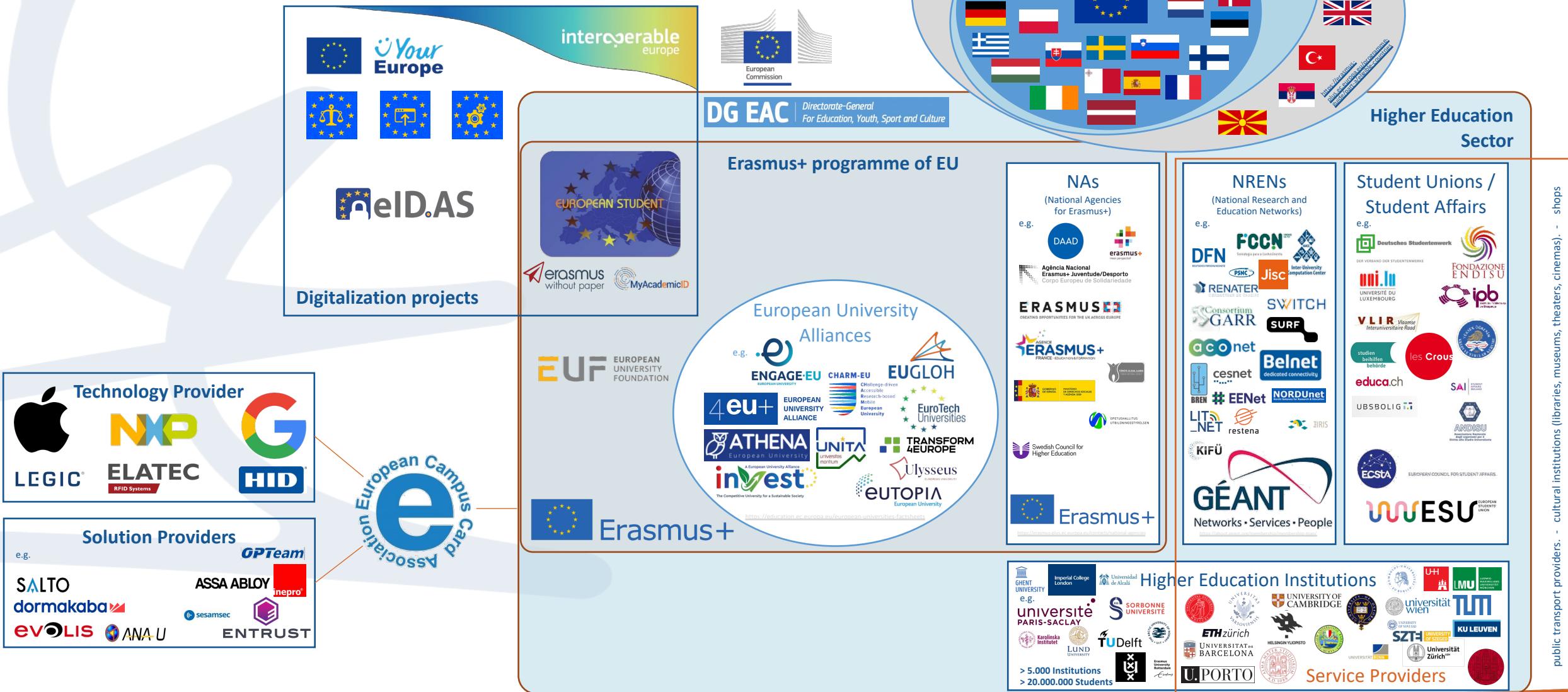
→ not a specification that could be implemented by all HEIs

- ✓ Vision of the European Commission: Towards a European Education Area
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**A great vision!  
That does not work,  
but is worth to be fulfilled**

# The Stakeholder-Landscape



# An interoperable solution based on the EU principles, legal and regulatory requirements

- EU Education Area
- eIDAS 2
- European Declaration on Digital Rights and Principles for the Digital Decade
- EU Digital Strategy
- EU Data Strategy
- EU Digital Action plan
- EU Digital Credentials Action plan
- Data Act



<https://www.etis.org/news/436250/Self-Sovereign-Identity-ideation-workshop---identifying-opportunities-for-Telcos.htm>, 2023



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

### 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.
- 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.

} Interoperable services and identification  
→ passes & service cards



# 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

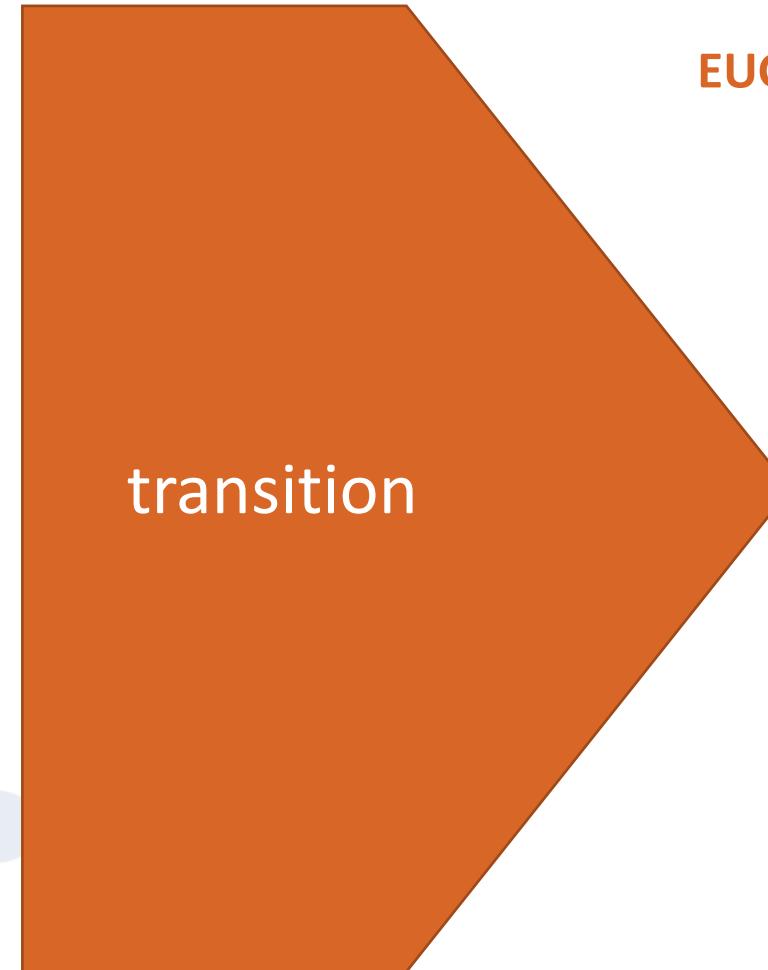
- NXP Mifare Classic Cards
- Physical Access Control (online and offline)
- Login at copiers (for copy/print/scan)
- Library
- Several other services, but not any payment services

## Universidade do Porto

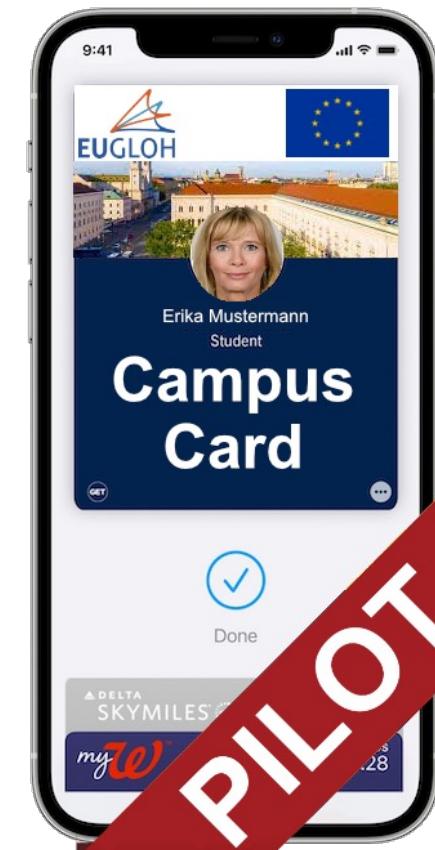
- NXP Mifare Classic Cards
- Library
- Physical Access Control
- Canteen & cafeterias
- Printing Service
- Attendance

Not compatible technologies

# The path to an interoperable Campus Card

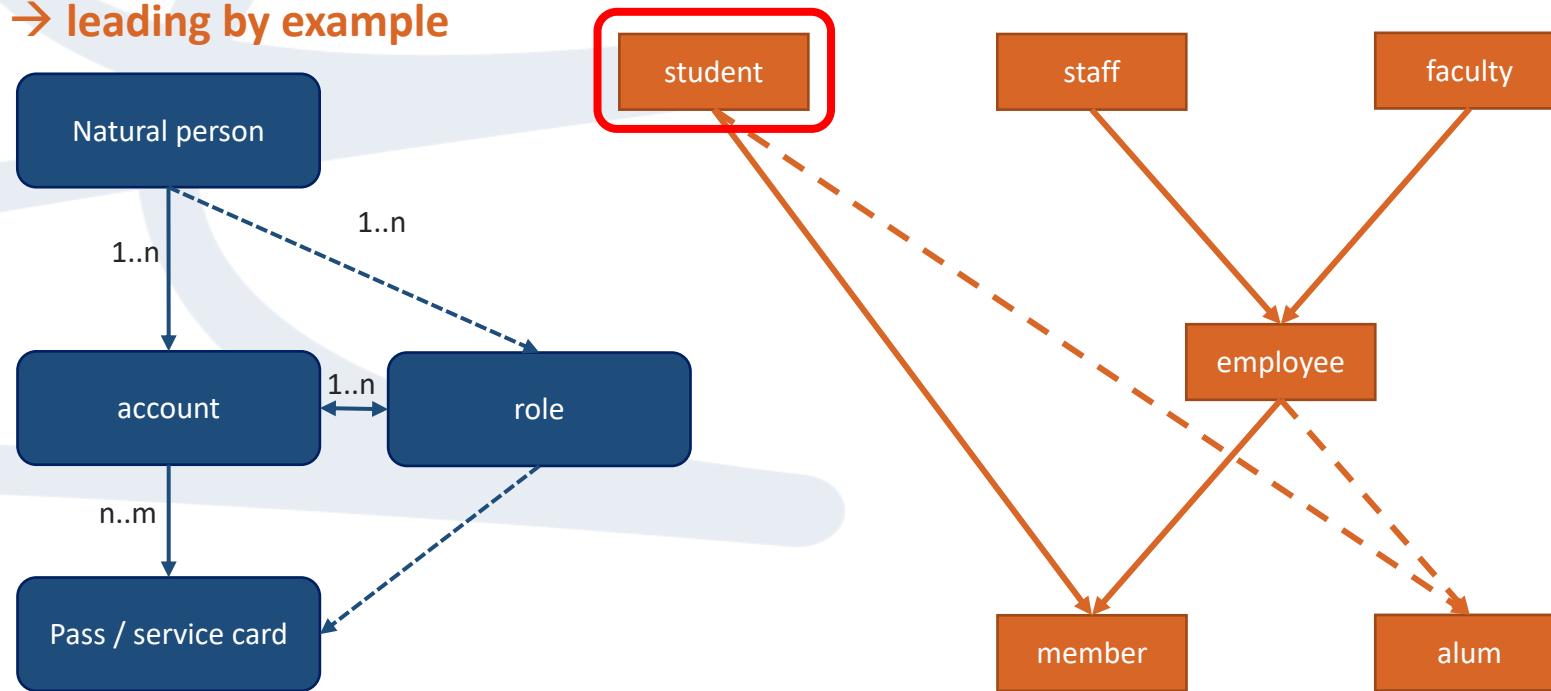


EUGLOH Digitized Campus Card Pilot



# User Scope

- Why focus on students and ISCED:2011 Level 6/7/8?
- It is about **providing services**
  - For users of the (home or host) institution
  - User incoming for a short-term or long-term mobility
- Staff / faculty members are more likely on short-term mobility than students  
→ **leading by example**



ISCED:2011 Level

Level	Label
0	Early childhood education
1	Primary education
2	Lower secondary education
3	Upper secondary education
4	Post-secondary non-tertiary education
5	Short-cycle tertiary education
6	Bachelor's or equivalent
7	Master's or equivalent
8	Doctorate or equivalent
x	Faculty or Staff member of HEI

# 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

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



## 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

providing service → create benefits

# Services

## Identification

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  - 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)
- Special case of “Proof of entitlement”
- Learning spaces
- Special case of “PAC”

## Transport

- On campus services (*university shuttle service*)
  - Special case of “Proof of entitlement”
- Public transport tickets & discounts
- Special case of “Payment” / “discount”

## Discount and promotions

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

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



providing service → create benefits

# Medium → Services → on-site usage

**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**

**For stakeholders**

- Holder (HEI members)
- Service providers
- HEIs
- Ticketing (secure & follow me printing)

**Physical Access Control**

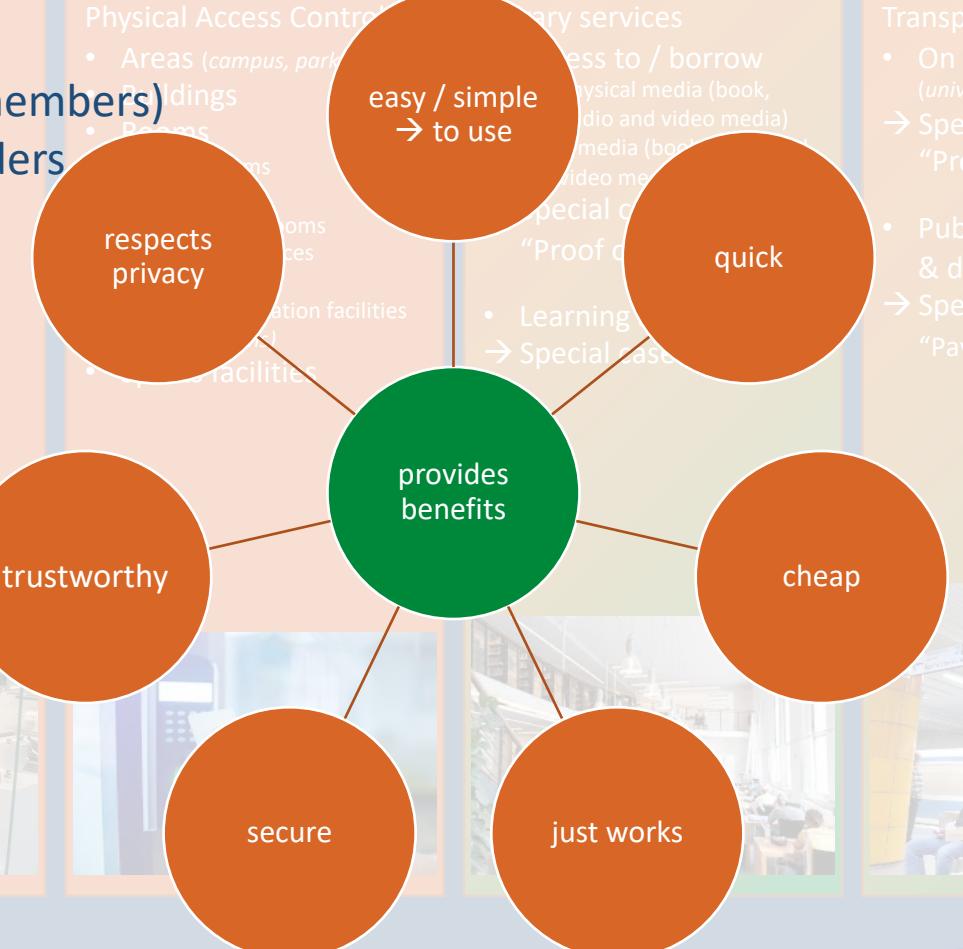
- Areas (campus, parkings, buildings, rooms)
- Vending machines
- Printing / Scanning
- (secure & follow me printing)
- Learning facilities
- Library facilities

**Transport**

- On campus services (university shuttle service)
- Special case of “Proof of entitlement”
- Public transport tickets & discounts
- Special case of “Payment” / “discount”

**Discount and promotions**

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



providing service → create benefits

# Trust level / Assurance Level

- Very important for **IDENTIFICATION**
- Quality of identity (personal) data
- Type of authentication & consequences for identification medium

no trust

normal

Authentication:

- username / email + password

Identity proofing:

- self-asserted
- verified e-mail address

substantial /  
medium

Authentication

- certificate based
- FIDO2
- Smart ID

Identity proofing:

- officially confirmed
- check of a government issued photo-ID



high

Authentication

-  **eID.AS** compliant
  - In eID of EU Citizen IDs
  - Provided by HEI for foreign Students

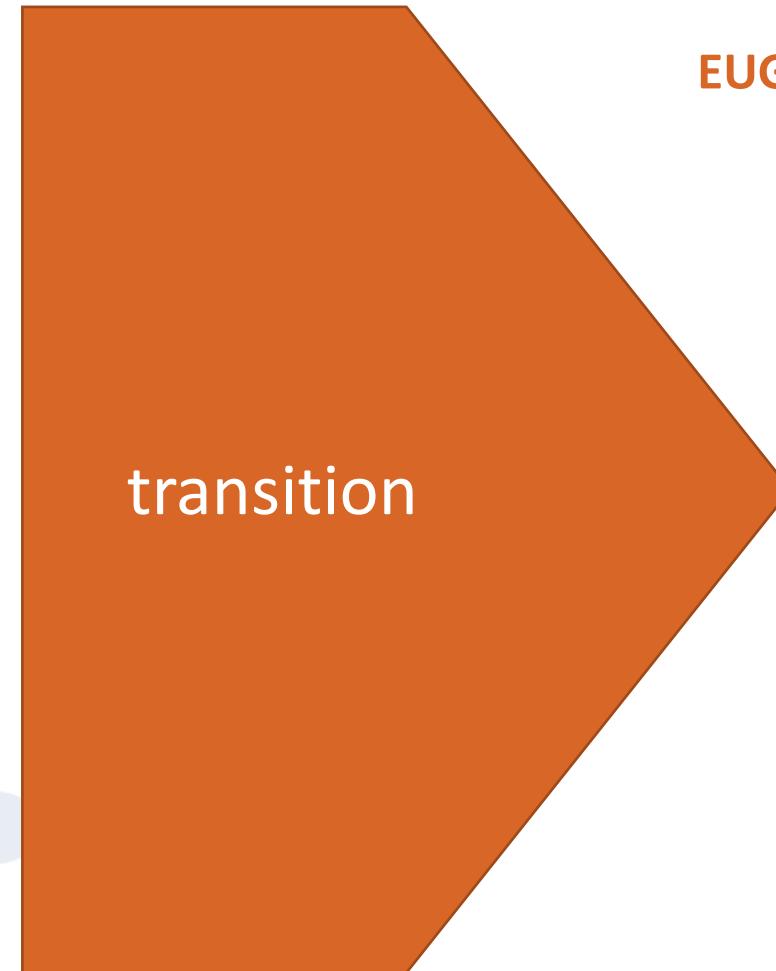
Identity proofing:

- Officially confirmed
  - Identity document checked to be genuine and represent the claimed identity
- **Qualified signature**

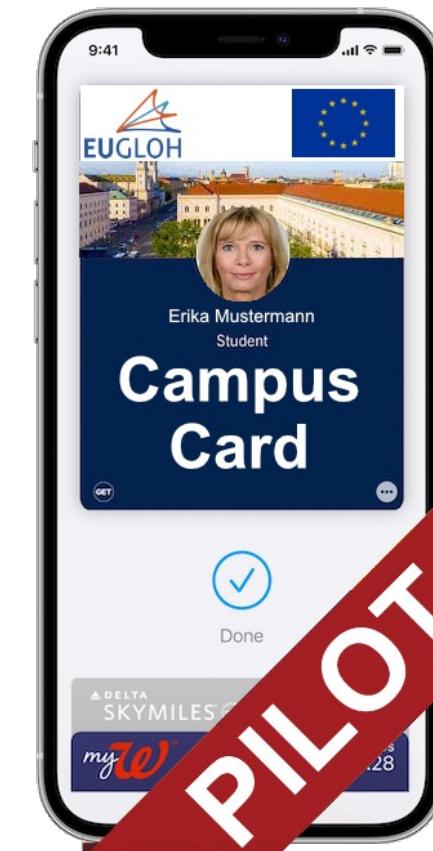
# The path to an interoperable Campus Card



Trust-Level: NO-TRUST



EUGLOH Digitized Campus Card Pilot



PILOT

# Benchmark – Student IDs



The ISIC+ITIC Cards (International Student / Teacher Identity Card)

Both

- ✓ physical medium (card)
- ✓ virtual medium (native Smartphone App) available

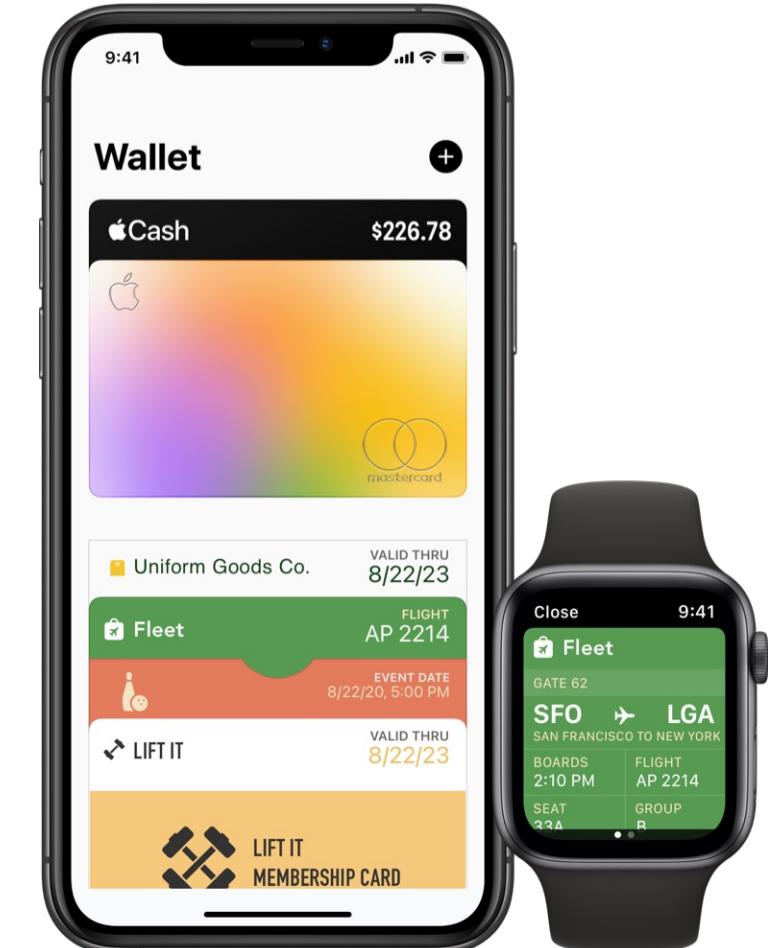
Provided Data:

- Higher Education Institution (Name)
- Name
- Photo
- Date of birth
- Signature (back)
- Validity

Accepted by third party service providers **for discount and promotions**

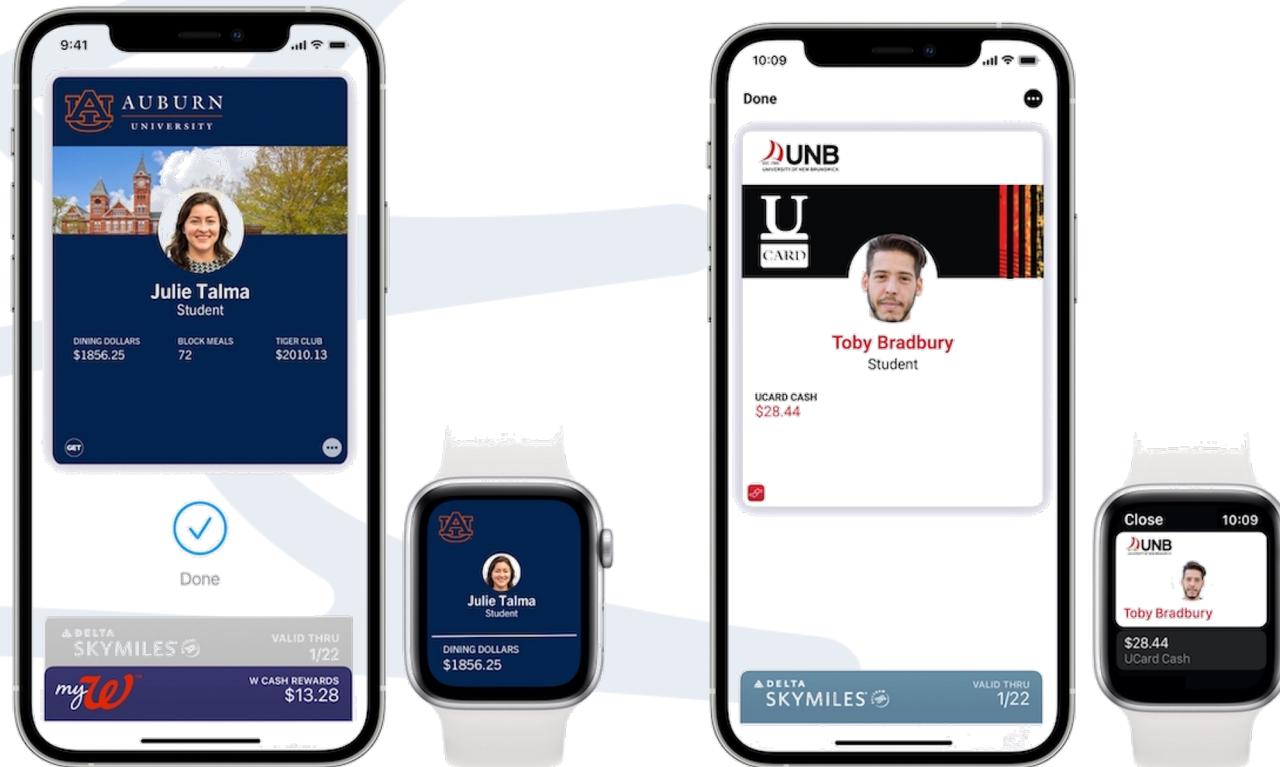
# Benchmark – Users Expectations

- 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



# Student IDs – Enhanced Benchmark

- ✓ Sustainable & Interoperable Virtual eID on Mobile Devices in USA
- ✓ Fulfil User Expectations



Campus ID Solution by **TRANSACT** 

## Features

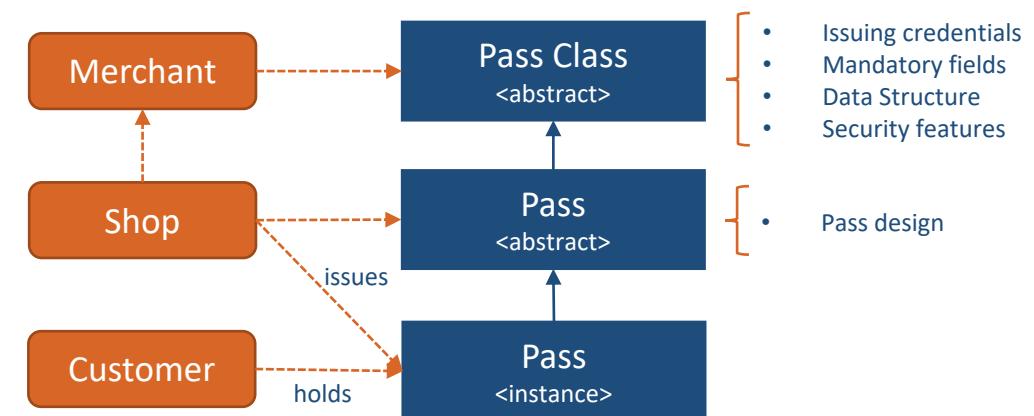
- Physical Access Control
- Library
- Payment
- Printing and Copy, Vending, and Laundry
- On Campus Transport

→ The Difference:

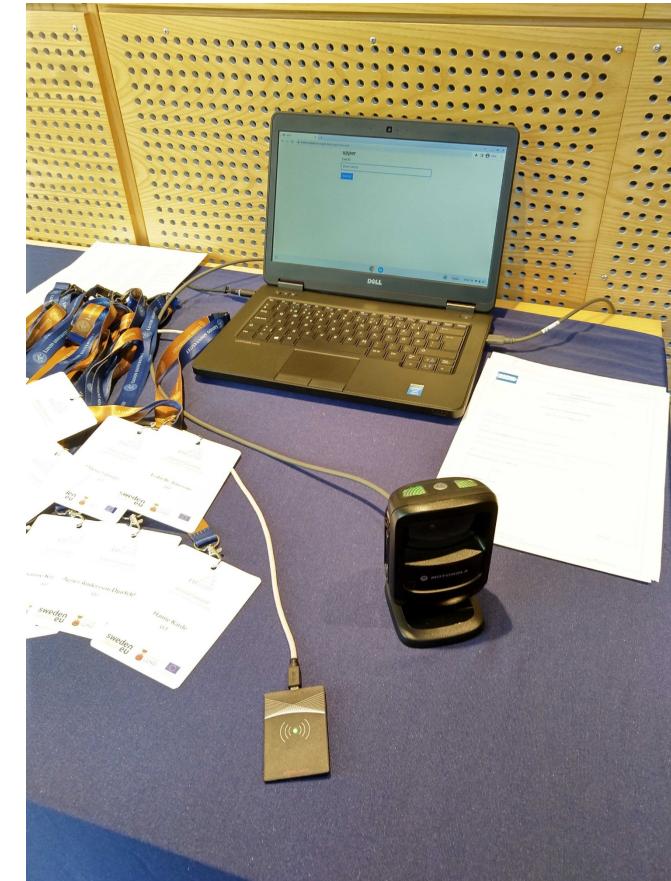
Universities in the USA are campus universities, a clearly demarcated area, the universities act more commercially oriented as **full-service providers**

# Technical details and features of Wallets / Passes

- Smart / Quick Select option (Express-Mode)
- Battery reserve
- Authentication requirements ← security features
- Groupable
- Validity dates
- Remote updateable / revokable
- Offline usable
- Host Card Emulation



# Event pass in the digital wallet

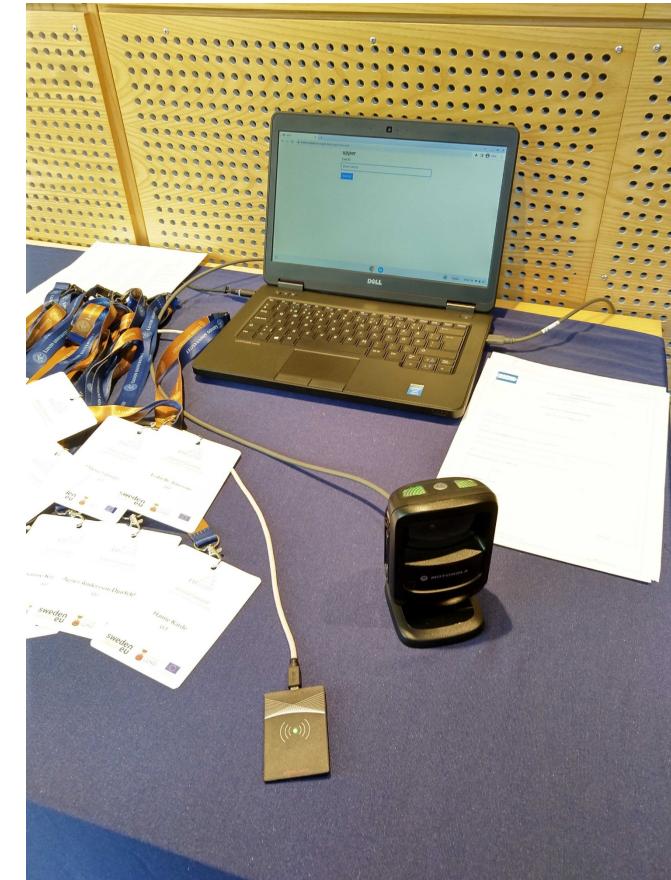


# Event pass in the digital wallet

	Day 1	Day 2	Upper Aula	Lower Aula	Room C216
QR-code	109	134	5+25	31+14	4+28
Passes	43	34	3+8	7+4	1+6
Manually	32	10			

84 people has downloaded the pass to their wallet

# Event pass in the digital wallet



# Event pass in the digital wallet

- It's possible to add additional information
- The information can be updated
- Even the pass itself can be updated

Lund University  
Helgonavägen 3, 223 62 Lund, Schweden



Registration opens at  
12 juni 2023 08:00

Evenemangets starttid  
12 juni 2023 09:00

Evenemangets sluttid  
14 juni 2023 17:00

Biljettnummer  
16a84efd98f94a11a501a8b9c871bb1c

📞 National Emergency Number

📞 University Security

📞 Organizer Contact (Kristina Miolin)

📞 Organizer Contact (Christina Grossmann)

✉️ Organizer Contact

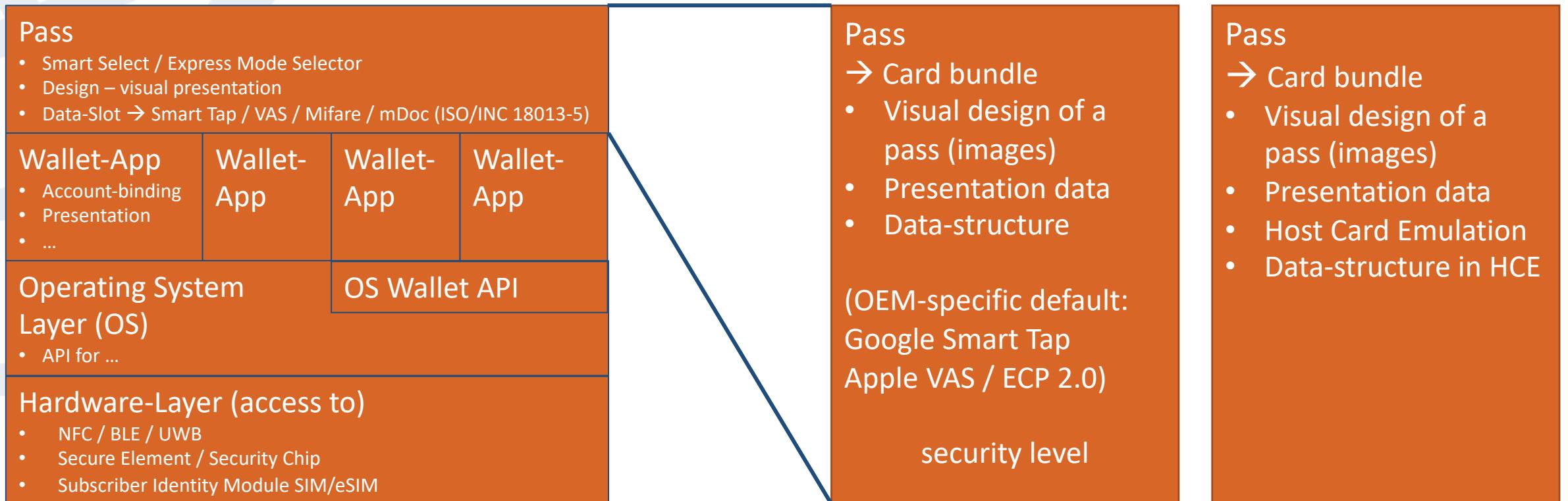
🌐 Event Homepage

🌐 Program



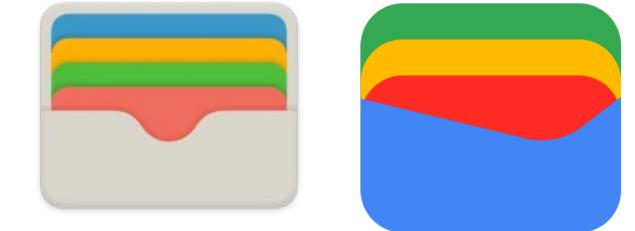
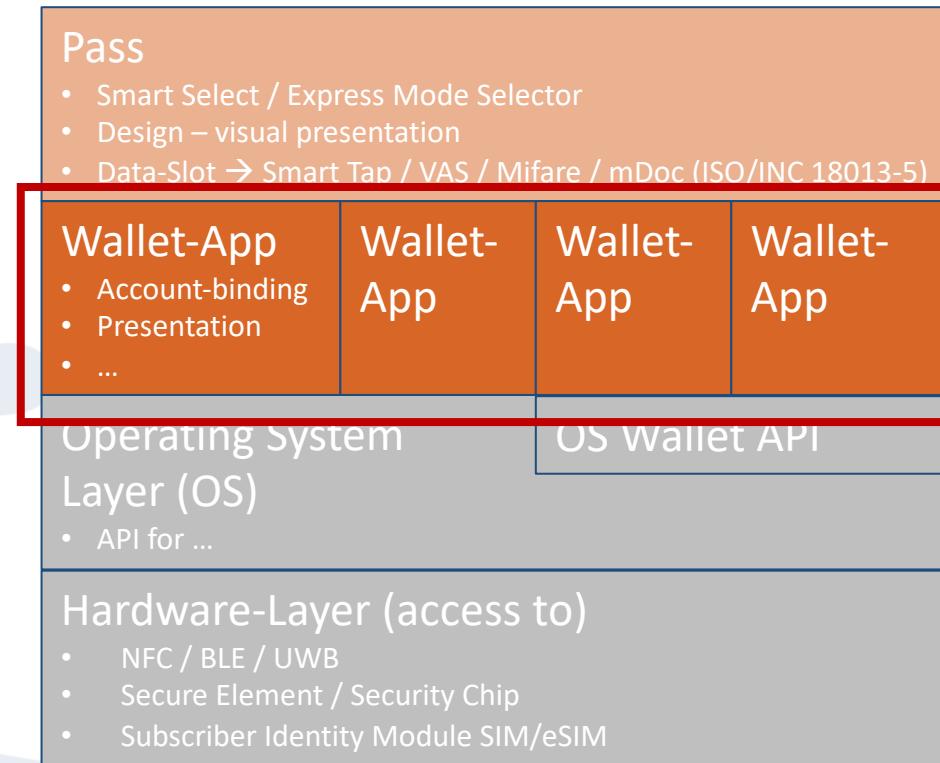
# Technical details of Wallet passes

## Detail view on the Pass



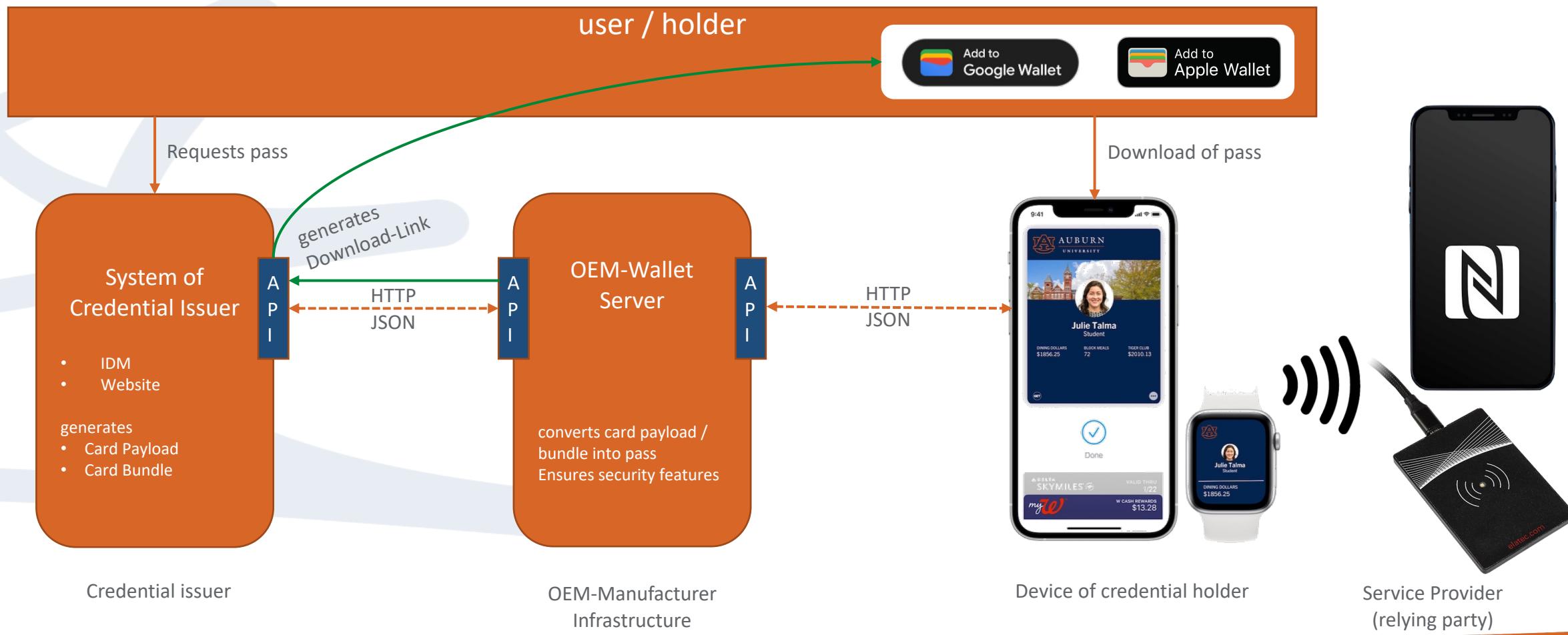
# Technical details of Wallets / Passes

Detail view on the Wallet



→ The solution is wallet **agnostic**, not bind to a specific Wallet provider or company

# Issuing process of wallet passes





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.*

# The Future of ID & service cards – Wallet passes



# One Technology provider did not solve all problems



# 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, CD, DVD, ...)
    - E-media (book, audio and video)

- Transport**
- On campus services (university shuttle service)
  - External services (bus, train, ...)
  - "Proof of entitlement"

- 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

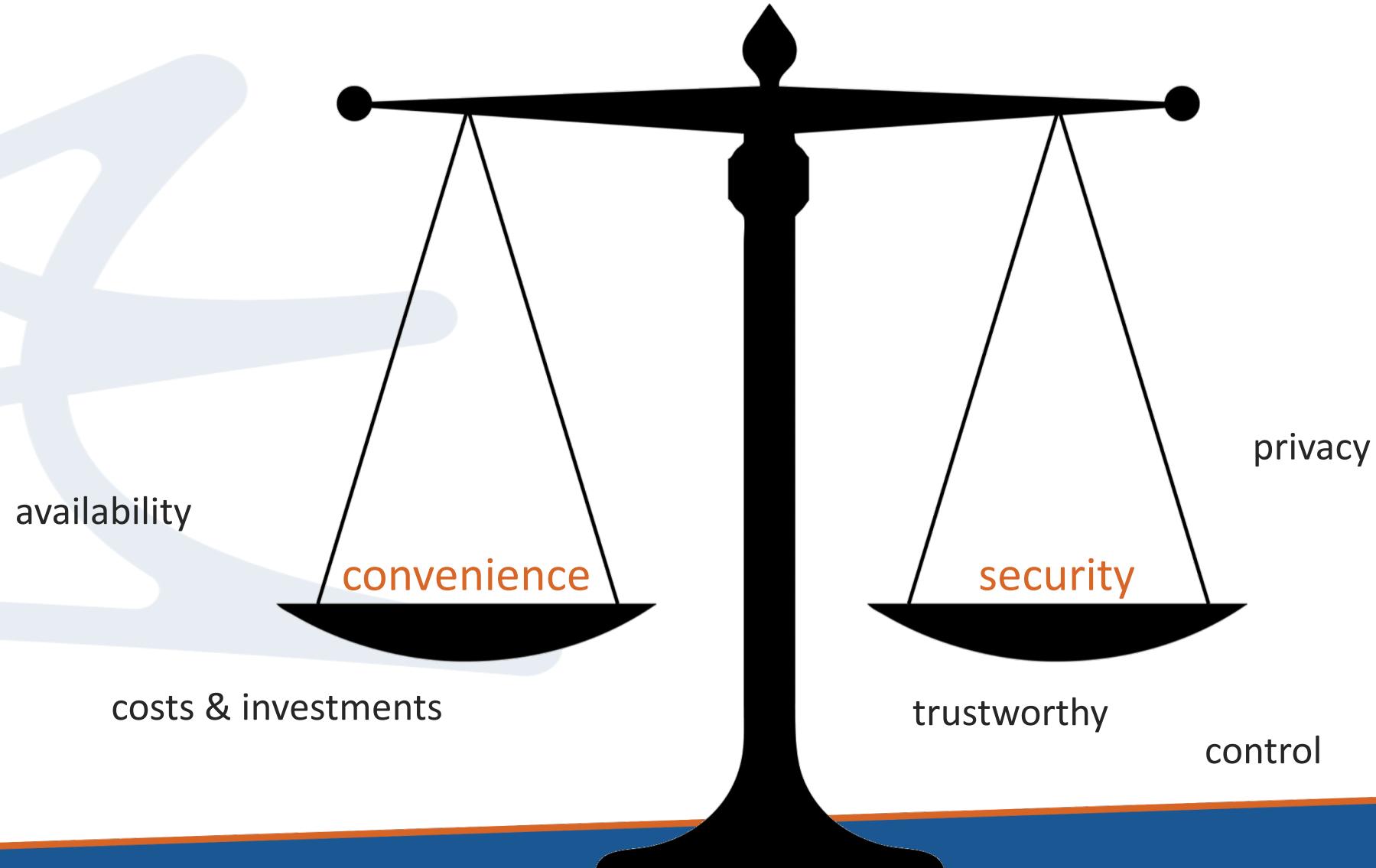


providing service → create benefits

# 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

# balance of objectives



# The Future of interoperable Services



The best way to predict the future is to create it.

Peter Drucker

# Facilitate mobility processes

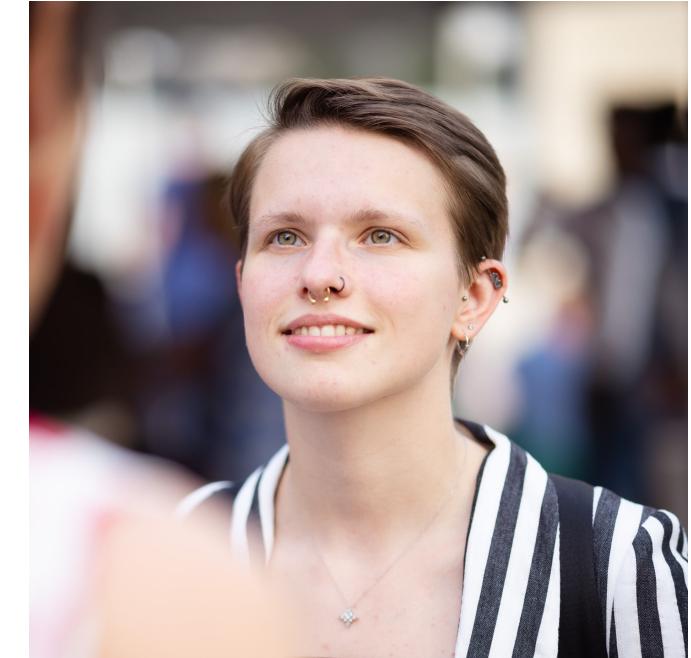
- Short-term vs long-term mobility



# Use-cases - Student

## Charlotte

- Masters student in Sport Sciences for Health and performance at Université Paris-Saclay
- She decided to complete an Erasmus programme during her first year of Masters at the Universidade do Porto in 2023



# Use-cases - Student

## João

- João Rocha Gomes is the Student Ambassador for EUGLOH at the University of Porto
- João has had the opportunity to complete several short mobilities during his studies, such as the Hamburg International Summer School on Health Economics (2022), the Entrepreneurial Skills (Dec 2021) in Lund



# Use-cases - Staff

## Macarena

- Works as Communication and Campus Life Officer at the Université Paris-Saclay
- Has acquired international experience gained through Fulbright, DAAD, and Erasmus Mundus + exchanges programs, in the USA, Germany and Austria



# Use-cases - Professor

## António

- António is an Associate Professor with Habilitation at the Department of Informatics Engineering at University of Porto (UP)
- He is the academic Leader of the WP4 at EUGLOH European University Alliance



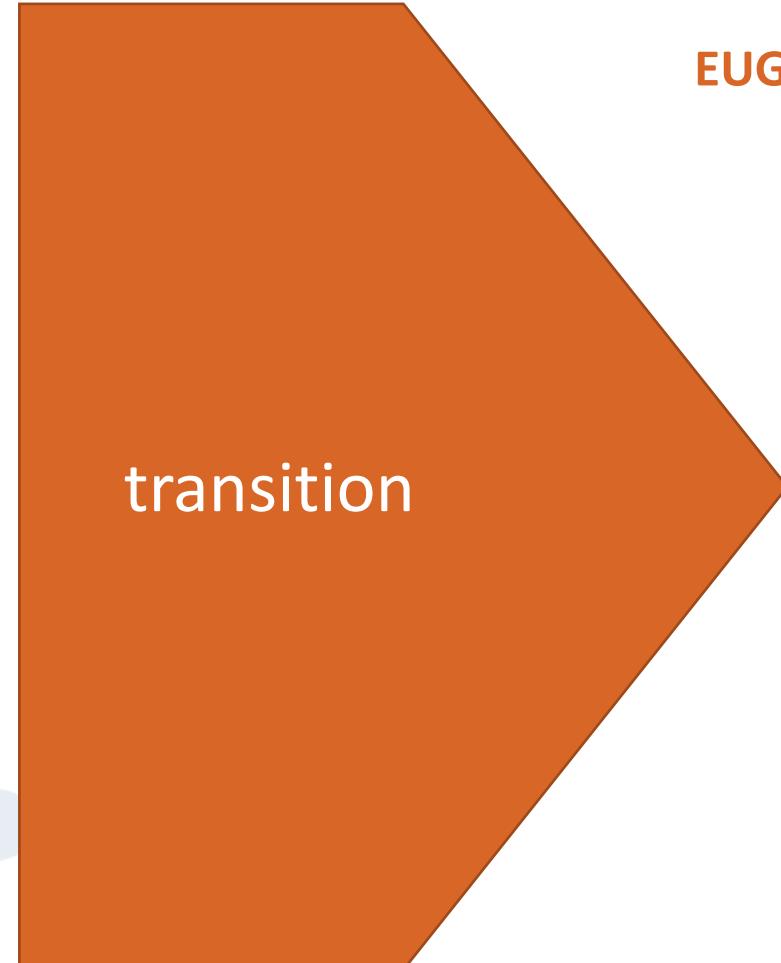
# Use-cases – Board Member

## Lena

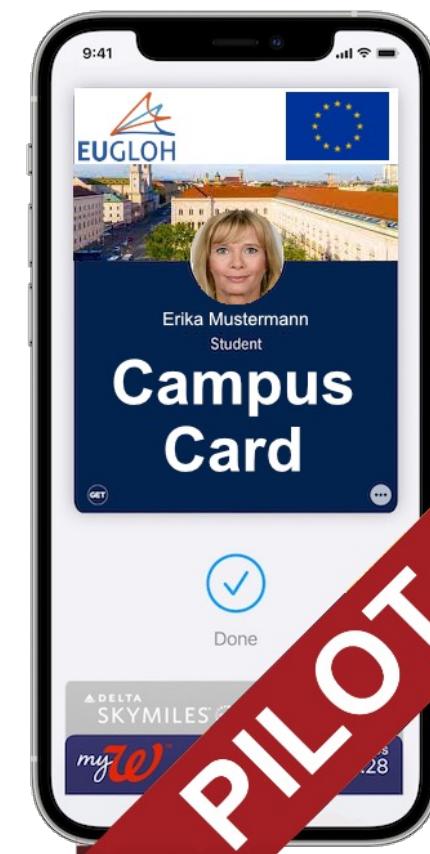
- Lena Eskilsson has many years of experience in teaching and research and has held several management positions at Lund University such as director of studies
- Lena Eskilsson is chair of the University's Education Board and leads the strategic university work within EUGLOH



# The path to an interoperable European Campus Card



EUGLOH Digitized Campus Card Pilot



# The future of passes in HEI context

Each HEI will have a „*Campus Card Portal*“

## For the user:

- Request / download European Campus Card
- Users can search for and book / download additional services
- Service listing with further information (including search) (also via Erasmus+ App)
  - Which university / which university location (e.g., Munich), category
  - What personal data is required → Privacy information
  - The user himself decides which services he would like to use and for this purpose, passes on his data → Self Sovereignty Identity (SSI)
- Listing of all linked services with the possibility of blocking / deleting them, and calling the account / information pages of the service provider.



## For the Service-Provider:

- Centralized service provider directory
- Data is transferred via identity linking through eduGAIN infrastructure
- Own passes or apps are made available via own website

**European Student Card**

Here you can manage your european student card and card services provided by the LMU and our partner universities.



Back

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**Services**

Munich

**Mensa Card** Munich +  
 Card for paying in all cafeterias operated by the Studentenwerk München.  
food mensa pay

**UB Card** Munich +  
 Grants access to the checkout system of the university library.  
books library

**StaBi Card** Munich -  
 Required for accessing the reading halls of the Staatsbibliothek Bayern.  
books library

- Activated Cards +

- Search

---

**MVG Card** Munich +  
 Transport ticket for students in Munich and surrounding counties.  
transport subway bus

**Cafeteria** Berlin -  
 Card for paying in all cafeterias operated by the Studentenwerk Berlin.  
food mensa pay

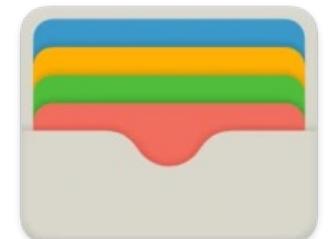
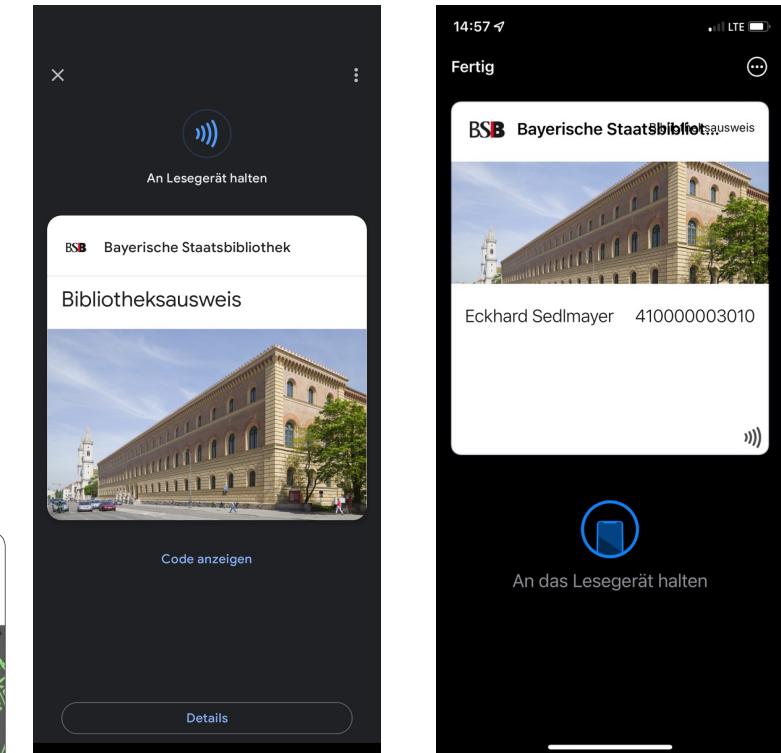
# The future of passes in HEI context

LMU / EUGLOH working on a cross-university pilot for wallet passes

- Prototype for a better solution to the ESCI vision → concept phase
- Not yet completed, but first examples available
  - Library cards for university library and Bavarian State Library as **Wallet Pass in iOS und Android**
- It is a migration to a new solution
  - Continuation of cooperation with service providers
  - Existing infrastructure and solutions will be considered
  - Most readers just need a firmware upgrade
  - Passes on plastic cards as fallback
- **ONE core pass**  
+ any number of service cards (one pass per service)  
or apps of the service provider

goal: starting 2023 issue ID passes in wallets for LMU members  
(students and staff)  
→ first cards for services:

- Library

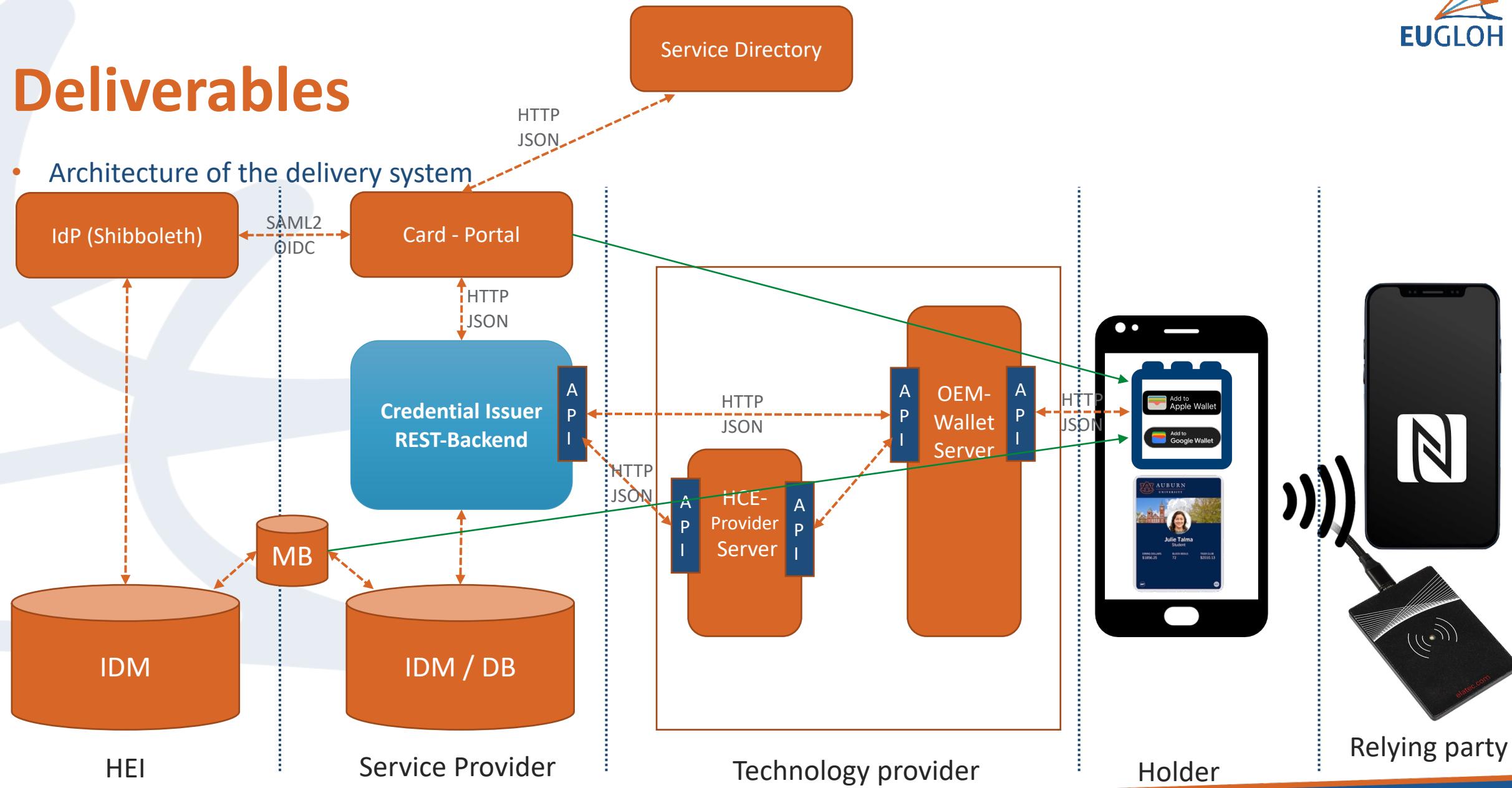


# Deliverables

- The EUGLOH Group wants to provide an ecosystem for a interoperable 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 will 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

# Deliverables

- Architecture of the delivery system



# Deliverables

- Documentation is on GitHub
- Rendered Version:  
<https://ecc-pilot.github.io/documentation/>



## European Campus Card Pilot Project

Search the docs ...

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- 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 an affiliation status

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Goals of this project -  
a “European Campus  
Card”

Key Concepts

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Appendix

We'd love to hear from you!

**Get in touch:**

EUGLOH Work Package 5 – Campus Life

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- José Filipe Alves (UPorto)
- Morgan Persson (LU)
- Pierre Gabrielle (Université Paris-Saclay)

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