TB✕MED

EUGLOH

European University Alliance for Global Health
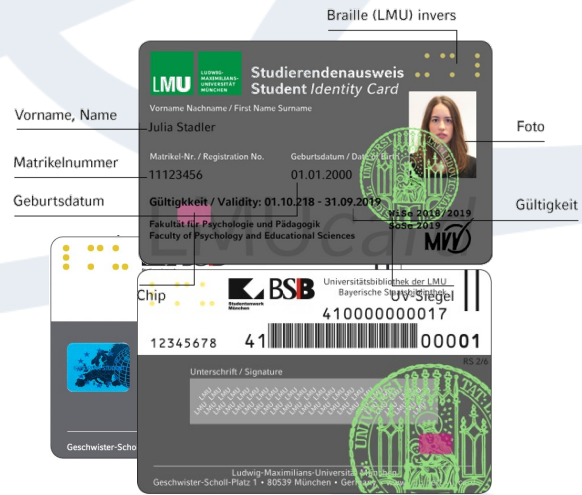
eduTAP

Bridging online identity to mobile credentials for reliable and trustworthy on-site service access (in the educational sector)
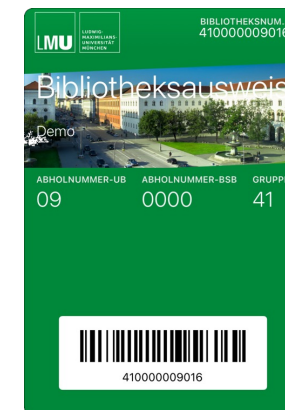
EUNIS 2024 – Athens – June 7th, 2024
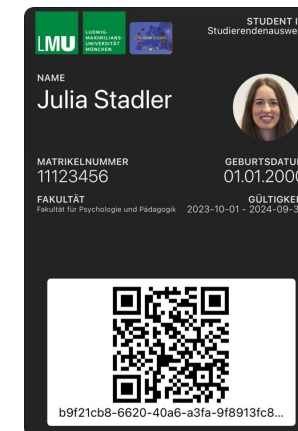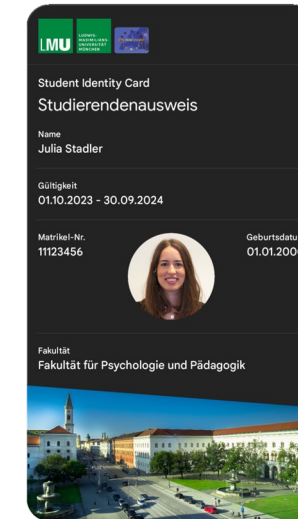*Alexander Loechel (LMU Munich), José Filipe Alves (U.Porto), Morgan Persson (LU)*

www.eugloh.eu

Transition of credentials into the Smartphone Wallets

transition

Access Services → **a question of interoperability**

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

eID.AS

providing service → create benefits

The European Student Card

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

✓ The **European Student Card Initiative** (ESCI)

   → Students can get their **status verified** easily across Europe

   → **Access to on- and off-campus services**

   → *easier* access to student services at host universities on a *mobility* programme

✓ European Charter for Higher Education (ECHE) of the Erasmus+ Program

A great vision!
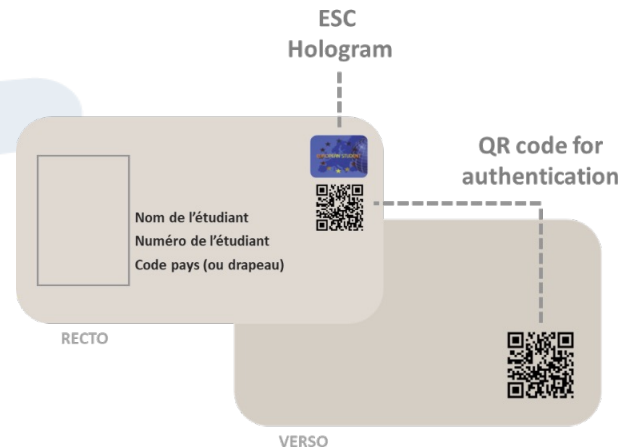
European Student Card Technology and Features

The European Student Card (1st Gen) is a **solution added to existing cards**, and implemented through a **centralised digital platform called the ESC Router** that allows participant institutions to **(1) generate student cards** and to **(2) validate student status**

ESCN - European Student Card Number
Unique card identifier of 16 bytes that serves to link a specific card to the specific HEI who produced it and to identify a card.

ESI - European Student Identifier

A digital identifier enabling students to uniquely identify themselves when they access student mobility services online.

ESC Hologram

QR code for authentication

Nom de l'étudiant
Numéro de l'étudiant
Code pays (ou drapeau)

RECTO

VERSO

European Student Card QR Code

Two-dimensional barcode printed on the ESC to ensure compatibility with any type of passive card and to automatically verify the data of the student's status.

European Student Card Hologram

Logo on the front of the European Student Card that certifies the authenticity of the card and serves as an identifier to access services at European level.

EUGLOH

European University Alliance for Global Health

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

Co-funded by the Erasmus+ Programme of the European Union

EUGLOH 2.0 Consortium Partners

université PARIS-SACLAY

LUND UNIVERSITY

SZTE UNIVERSITY OF SZEGED

U.PORTO

LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

Universidad de Alcalá

UiT The Arctic University of Norway

UNIVERSITAS STUDIORUM NEOPLANTENSIS

UH Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

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

338,500
Students

54,000
Academic Staff

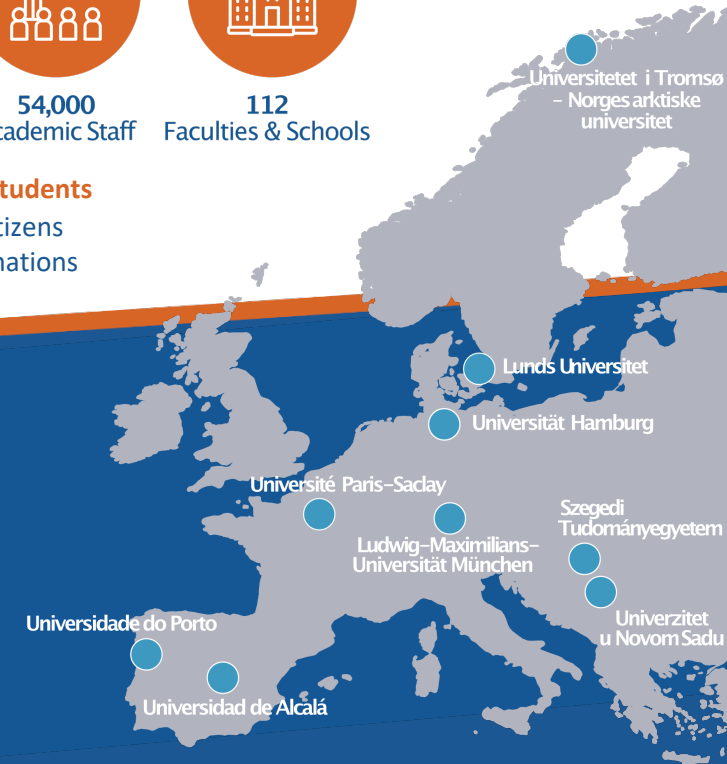**112**
Faculties & Schools

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

- 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.

Universitetet i Tromsø – Norges arktiske universitet

Lunds Universitet

Universität Hamburg

Université Paris–Saclay

Szegedi Tudományegyetem

Ludwig–Maximilians–Universität München

Universidade do Porto

Univerzitet u Novom Sadu

Universidad de Alcalá

Interoperability ?

to access on and off-campus services?

→ a hologram does not provide interoperability

a URL in a QR code as a solution?

security, privacy, …?

Interoperability: Question of the medium

Baselined on the ESC specification

Possible technological implementations:

1. Plain Card with Hologram

2. Plain Card with **Hologram + QR-Code**

3. Chip card (with Hologram + QR-Code)
    1. Chip card technology neutral
    2. Mifare DESfire chip card with App
    3. Multi-technology chip card with App

4. Smart card (with Hologram + QR-Code + App)

5. Virtual eID (Smartphone)
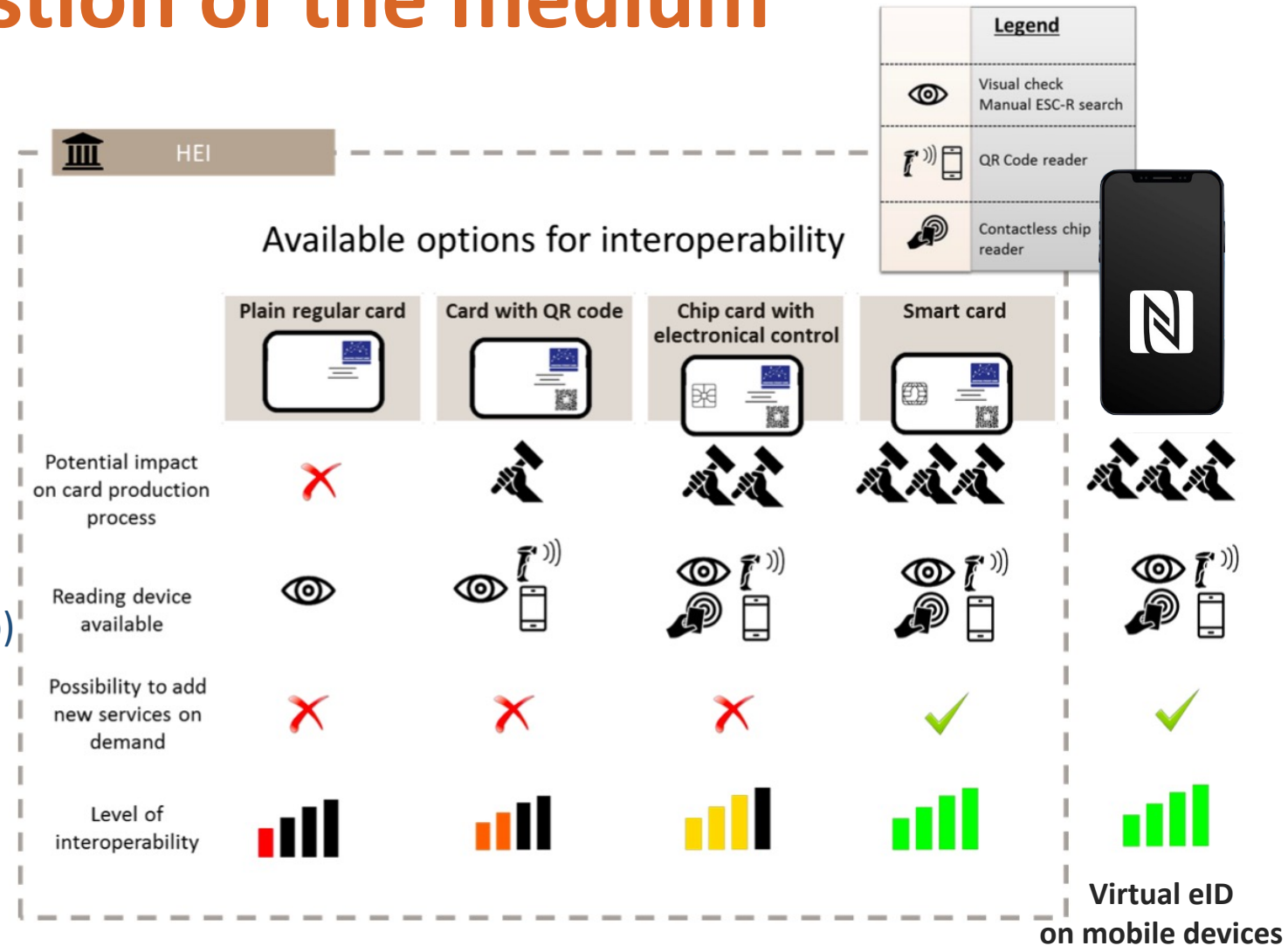
Interoperability: Physical card side?
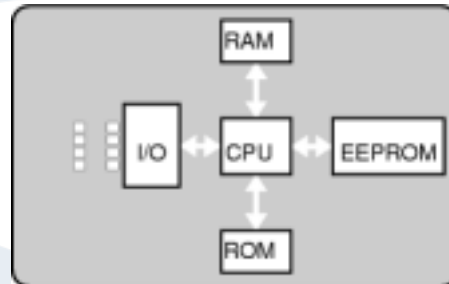
Chip cards → bind to one certain technology or combi cards

- NXP Mifare DESfire

- Legic Advant

- HID iClass

- …
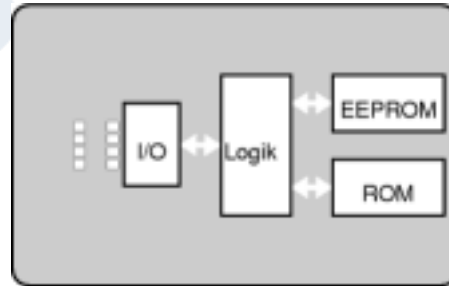
Smartcards → expensive

- JCOP

→ Plastic cards are not the solution, so…

✓ Sustainability
✓ Interoperability   Responsibility

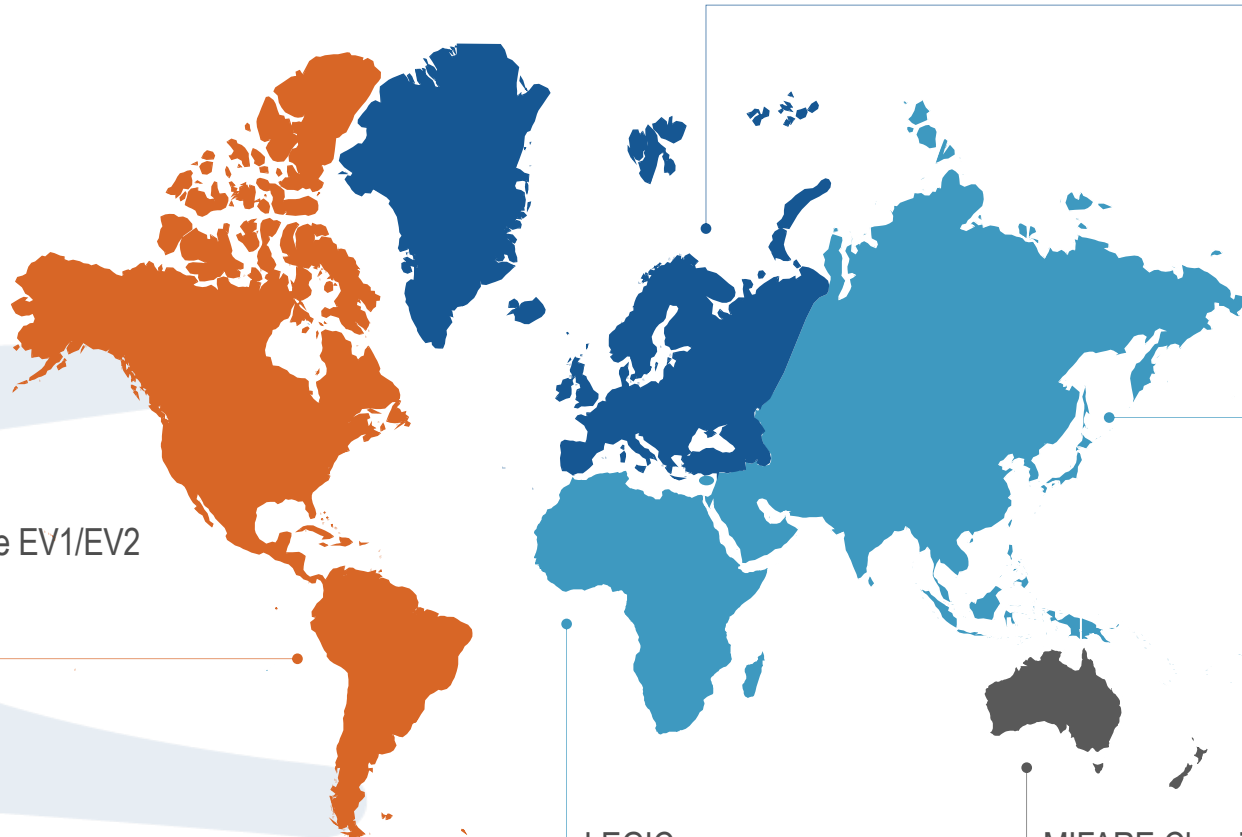**Interoperability: Cards – Communication Protokolls and Data / File Systems**
Different standards of Transponder technologies – "standards" – NOT Compatible to each other

MIFARE Classic
MIFARE DESFire EV1/EV2
HID iCLASS
HID Prox
Indala
ioProx
AWID
Keri
CASI-RUSCO

MIFARE Classic
MIFARE DESFire EV1/EV2
HID Prox
EM4102

MIFARE Classic
MIFARE DESFire EV1/EV2
LEGIC
Calypso
Moneo
Oyster
HID Prox
EM4102

LEGIC
MIFARE Classic
MIFARE DESFire EV1/EV2
SONY Felica
TIRIS
CEPAS
Octopus
EM4102

LEGIC
MIFARE Classic
MIFARE DESFire EV1/EV2
EM4102

MIFARE Classic
MIFARE DESFire EV1/EV2
HITAG
HID Prox

ISO 14443A   ECM-340
ISO 14443B   ECMA-352
ISO 15693   ISO 11784
ISO 18000   ISO 11785
ISO 18092   NFC Tag Types 1-5

EUGLOH campus cards
current state and connected services

→ Vision:

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

Status of four core members (IT wise)

Ludwig-Maximilians-Universität München

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

Université Paris-Saclay

- NXP Mifare DESfire Cards
- Payment (izly – les Crous)
- Library
- 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 / Java Cards with Mifare Classic emulation
- Library
- Physical Access Control
- Canteen & cafeterias
- Printing Service
- Attendance

Not compatible technologies

The Stakeholder-Landscape

The European Student Card

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✓ The **European Student Card Initiative** (ESCI)

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  → **Access to on- and off-campus services**

  → *easier* access to student services at host universities on a *mobility* programme

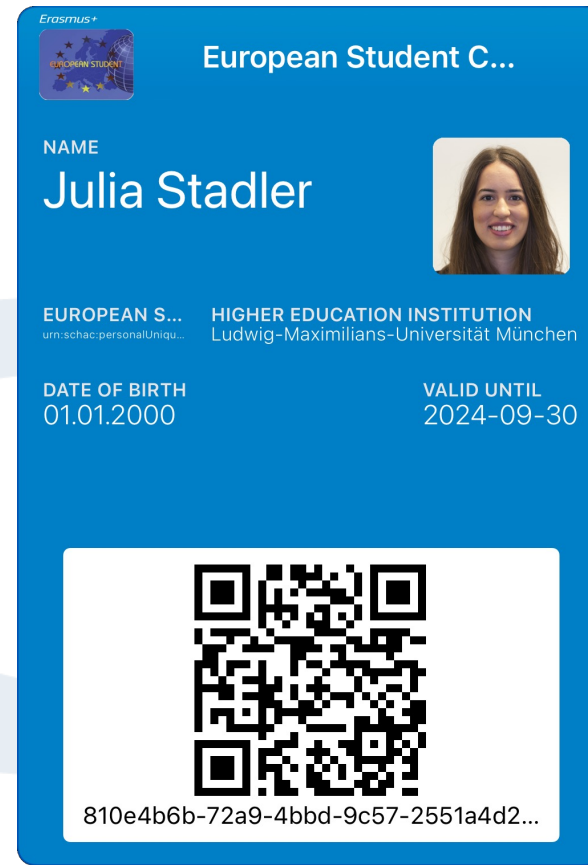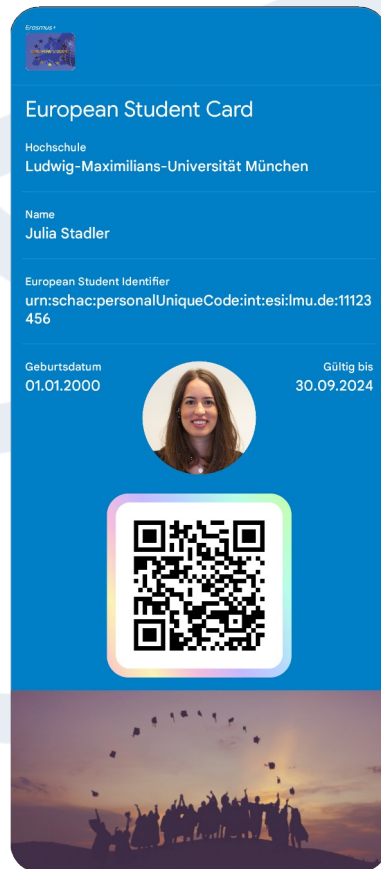✓ European Charter for Higher Education (ECHE) of the Erasmus+ Program

A great vision!

But not a good technical baseline, regarding the current state-of-technology

Transition of credentials into the Smartphone Wallets Examples: European Student Card in the Wallet

- Discount off-campus

- For usage at HEIs that accept the ESC

- No NFC or additional data
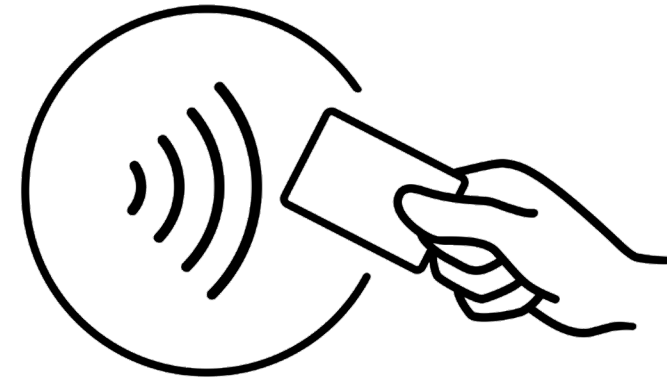
Introducing

eduTAP

eduTAP – educational tapping

tap to …

- ✓ tap to identify yourself,
- ✓ tap to verify your status,
- ✓ tap to proof your entitlement,
- ✓ tap to claim a discount,

tap to access a service on-site directly:

- ✓ tap to pay (open and close loop-payments),
- ✓ tap to open a door,
- ✓ tap to lend a book,
- ✓ tap to take a campus shuttle.

TAP TO PAY

no app, just tap!

eduTAP – mission:

- **digitizing cards** → passes in the smart device **wallet**s
- leveraging the possibilities of smart devices for **interoperability**
- enable *easy* **service access on-site**

chip card / smart card

enable transition

- enable HEIs and Service Providers to:
  - create, issue, and manage passes within the smart device wallet
  - interact with wallet passes to give access to services, identify, and verify the status of students and staff
- enable students and staff members to access services on-site, easy and consistent

Digitizing cards vs. leveraging the possibilities of smart devices

chip card / smart card

Front

Back

We are still thinking in cards terms

→ campus cards / corporate cards
(Student IDs / employee badge)

- Card as an integrated element
  → multiple applications in one card

- Front & Back of a CR80 / ID-1 card

- Limited amount of visual space

- Card as branding space (Corporate Design)

→ Passes in smart device wallets are
a disruptive technology,

→ Let's think in terms of this technology

18
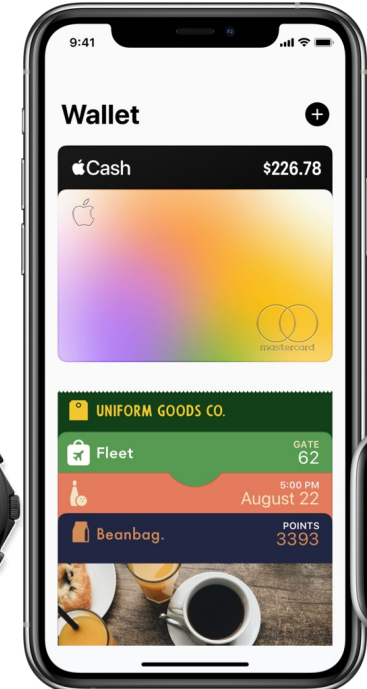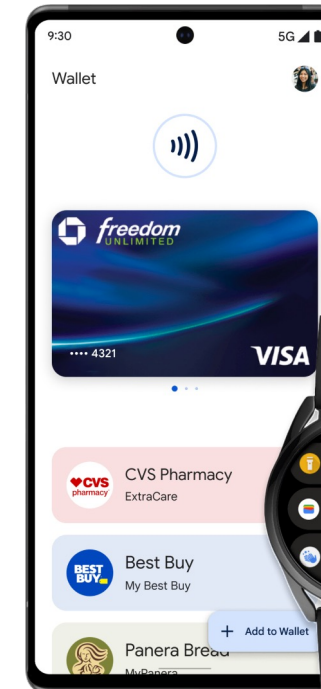
Digitizing cards vs. leveraging the possibilities of smart devices → Users Expectations

- Don't stick to old technology if your user expects something modern

- Integration and **Interoperability**

- The **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** just as plastic Student IDs

✓ Be compliant

✓ Be Secure → implement IT-Security best practices

✓ Respect privacy

✓ Respect self-sovereignty and decisions of users

→**Think from a user perspective** *(user-centric-optimization)*

Student and mobile payment 2023 Statistics
- 93 % use digital payment
- 88 % want ease of use
- 86 % require it to be secure
- 69 % prefer **native wallet** – no app

Source: touchnet –Student Financial Experience Report 2023

Digitizing cards vs. leveraging the possibilities of smart devices → Stages of Digitalization – Period of Digital transformation

Digitalization 1.0
- Digitization – create digital versions of analog documents

→ Digitization vs. Digitalization

Digitalization 2.0
- Digitalization with internal focus
- Optimize internal administrative processes – **organization centric optimizations** -
- Processing of data

→ Digital transformation (a hard shift)

Digitalization 3.0
- Digitalization with focus on the user – **user centric optimizations** -
- Optimization on how services are discovered and seamlessly used
- Flow of data

→ Service oriented
→ **Digital identity**
→ Interoperability

Access Services → a question of interoperability

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)
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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

eID.AS

providing service → create benefits

Digitizing cards vs. leveraging the possibilities of smart devices
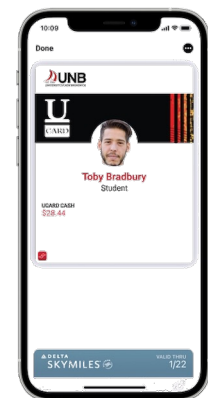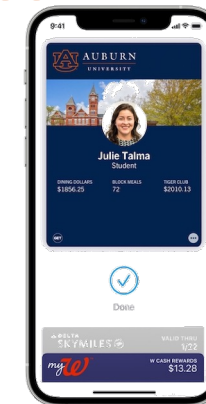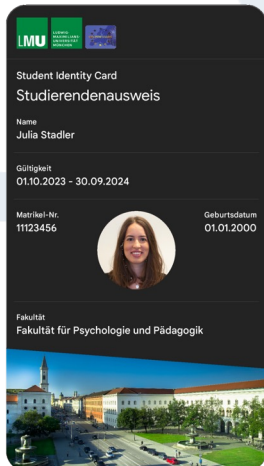# Reinvent the wheel vs. evolution of the wheel

and disruptive innovation

Wallet as a container for multiple "cards"

→ link **one service** per **wallet pass**

✓ each pass has its own design

✓ additional information for the users

✓ User can select which service they want to use
   → digital self-sovereign identity (SSI)

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
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Electronic Payment / cashless campus
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- Ticketing (*secure & fo...*)

Physical Access Control
- Areas (*campus, parking lot*)
- Buildings
- Rooms
  - Classrooms

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

Transport
- On campus services (*university shuttle service*)
- Special case of "Proof of entitlement"
  - ...sport tickets
  - ...
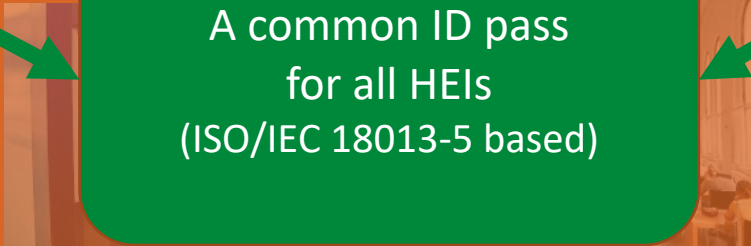 - ...e of / "discount"

Discount and promotions
- Discounts on cultural activities
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- → Special case of "Identification" / "Status verification" / "Proof of entitlement"

separate service passes
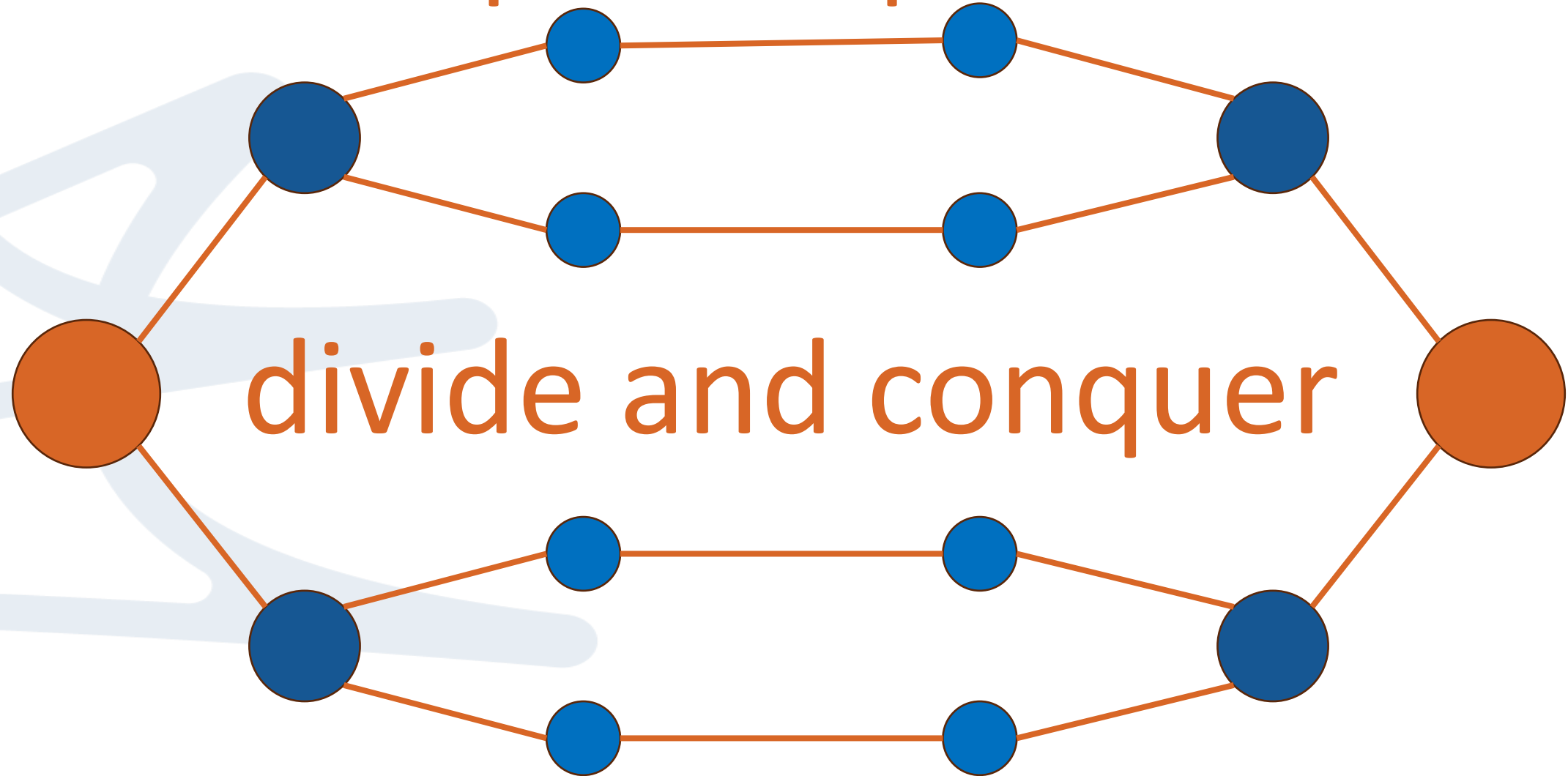
(*can chose appropriate technology*)
→ Working solutions by solutions providers
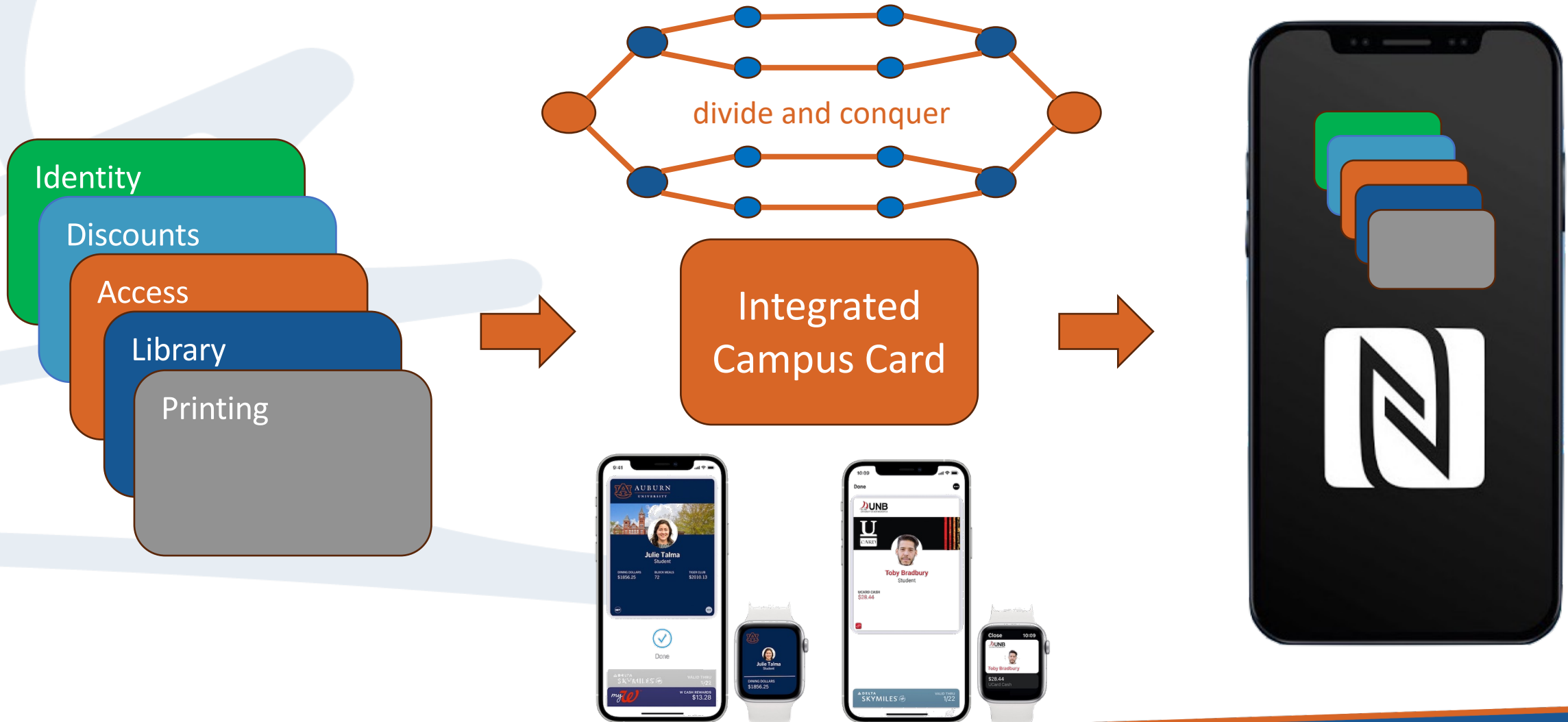
A common ID pass for all HEIs
(ISO/IEC 18013-5 based)

eID.AS

Universität

providing service → create benefits

Path to an interoperable campus card

divide and conquer

Path to an interoperable campus card

Identity
Discounts
Access
Library
Printing

divide and conquer

Integrated Campus Card
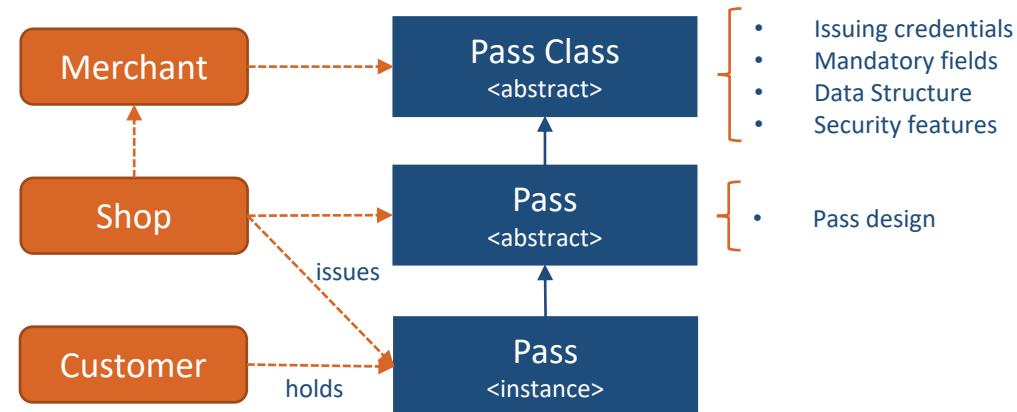
Technical details and features of Wallets / Passes

The wallet is a **container for multiple credentials → passes**

The Wallet provide access to passes and secure them (Secure Element, Cloud bases Secure Element, …)

Technical features:

- **Smart / Quick Select option (*Express-Mode*)** ← **reader selects the specific pass to interact with** (if available)

- Battery reserve (pass is still usable if phone has powered off; important for keys, transit tickets, payment)

- Selectable Authentication requirements ← **security features**

- Groupable

- Validity dates

- Remote updateable / revokable

- Offline usable (→ non traceable)

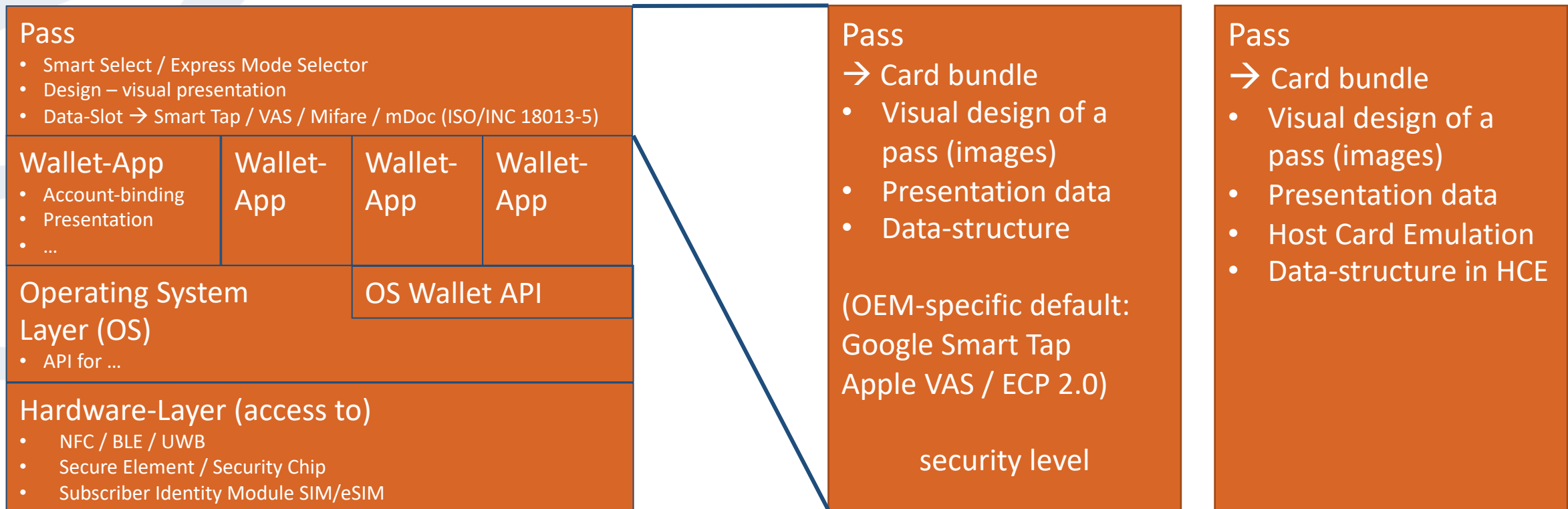- *Host Card Emulation possible*

→ Demo later

Technical details and features of Wallets / Passes

✓ Technical details and features of Wallets / Passes → Path to an **interoperable** campus card

✓ if each pass (technology) can be individually selected and leveraged, and the Pass in the Wallet can be selected by the reader (**Smart Select**)

→ **one pass per service**

Pass			
• Smart Select / Express Mode Selector • Design – visual presentation • Data-Slot → Smart Tap / VAS / Mifare / mDoc (ISO/INC 18013-5)			
Wallet-App • Account-binding • Presentation • …	**Wallet-App**	**Wallet-App**	**Wallet-App**
Operating System Layer (OS) • API for …	**OS Wallet API**		
Hardware-Layer (access to) • NFC / BLE / UWB • Secure Element / Security Chip • Subscriber Identity Module SIM/eSIM			

Pass
→ Card bundle
• Visual design of a pass (images)
• Presentation data
• Data-structure

(OEM-specific default: Google Smart Tap Apple VAS / ECP 2.0)

security level

Pass
→ Card bundle
• Visual design of a pass (images)
• Presentation data
• Host Card Emulation
• Data-structure in HCE

Technical details and features of Wallets / Passes

Detail view on the Wallet

Pass
- Smart Select / Express Mode Selector
- Design – visual presentation
- Data-Slot → Smart Tap / VAS / Mifare / mDoc (ISO/INC 18013-5)

Wallet-App	Wallet-App	Wallet-App	Wallet-App
• Account-binding • Presentation • …			

Operating System Layer (OS) | OS Wallet API
- API for …

Hardware-Layer (access to)
- NFC / BLE / UWB
- Secure Element / Security Chip
- Subscriber Identity Module SIM/eSIM

EU Digital Identity Wallet

EWC

OpenWallet FOUNDATION

Necessary to issue passes to **all relevant wallets**

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

→ eduTAP just enables HEI and Service Providers to easily **create** and **issue** wallet passes

Issuing process of wallet passes

→ **importance for the users – always the same process**

redeming

user / holder
download via website, or app

Add to Google Wallet   Add to Apple Wallet   Add to SAMSUNG Wallet

Requests pass

Download of pass

generates
Download-Link

System of Credential Issuer

| A P I |

HTTP JSON

| A P I |

OEM-Wallet Server

| A P I |

HTTP JSON

NFC / BLE

- IDM
- Website

generates
- Card Payload
- Card Bundle

converts card payload / bundle into pass
Ensures security features

Credential issuer

OEM-Manufacturer Infrastructure

Device of credential holder

Service Provider (relying party)

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separate service passes

(*can chose appropriate technology*)
→ Working solutions by solutions providers

A common ID pass
for all HEIs
(ISO/IEC 18013-5 based)

eID.AS

providing service → create benefits

Key to all Services → Identification / Authentication
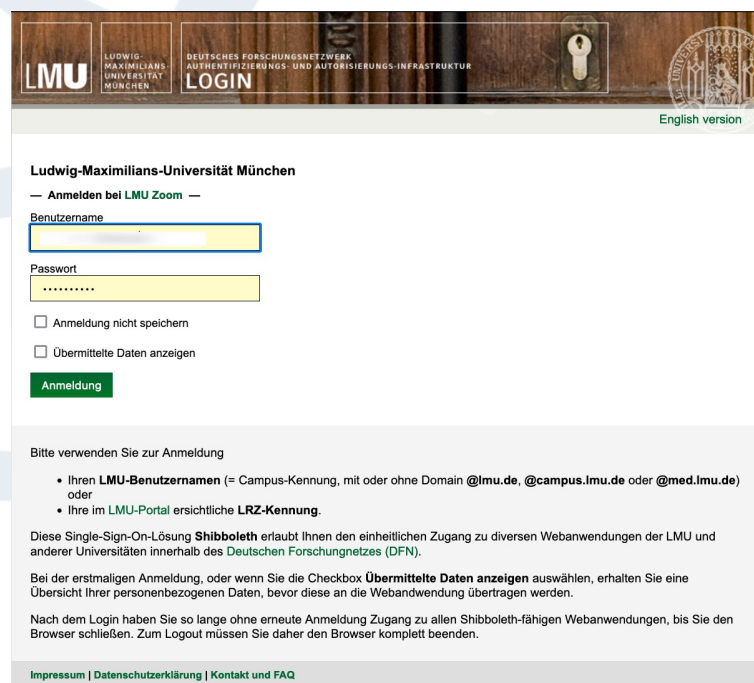
- Triple-A-System
  - (Identification)
  - ## Authentication
  - **Authorization**
  - **Accounting**

- **On-site services access** is about proving your entitlements and identity

- "*something we know*" as an authentication method for on-site service access is not very efficient, best a combination of "*something we have*" + "*something we are*" → Smartphone Wallet passes + authentication via biometrics

- We already have a powerful IDM System for **online-services** → **Shibboleth** → **eduGAIN-AAI**

Authentication Factors

Something you KNOW
- Password
- PIN

Something you HAVE
- Chip card
- Token
- Smartphone

Something you ARE
- Biometrics
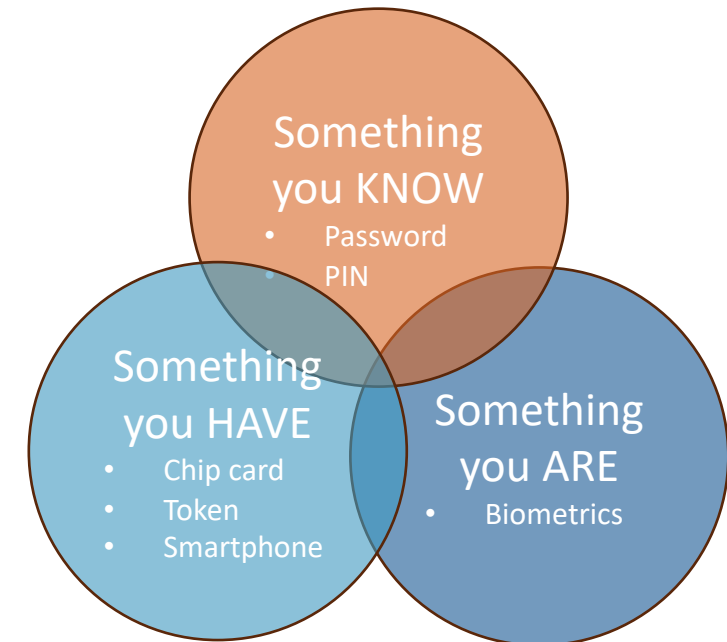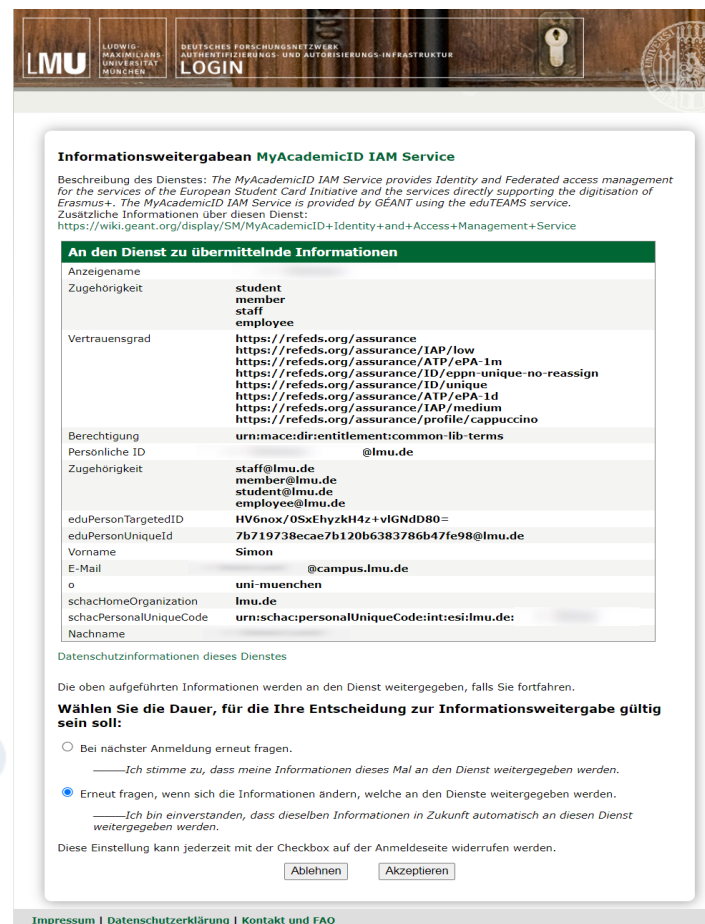
The common Authentication method in the educational sector
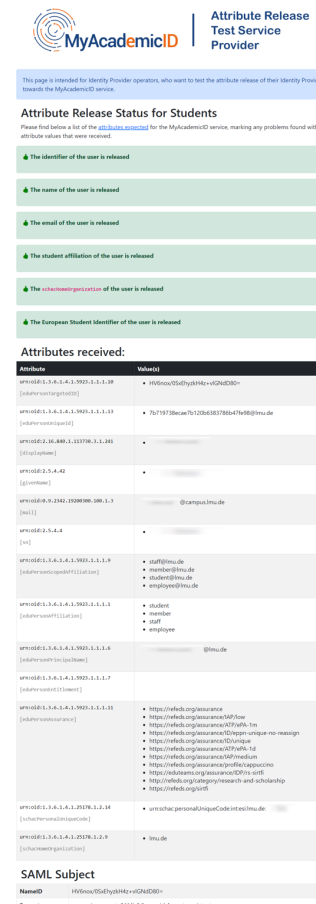
- Shibboleth – local or in federation (national or multi-national → eduGAIN-AAI) → SAML2 or OIDC

technology and information for Identifcation

User and Role bind services → Identity Management

- Existing technologies:
  - Directory Services → LDAP (Protocol and Schema definitions)
- LDAP-Schema for Higher Education
  - eduPerson (V4.3 from 30. November 2021; V1.0 from December 2007)
  - SCHAC – SCHema for ACademia (V1.6.0-prposed from 24. March 2022 / V1.5.0 from 15. April 2015; V1.0 from May 2006)
  - SAML – Security Assertion Markup Language
- Essential **LDAP-Schema Attributes**:
  - eduPersonAffiliation / eduPersonScopedAffiliation → Roles
  - eduPersonEntitlement → Mapped Entitlements ← **Services provided**
  - eduPersonAssurance → Assurance Class / Level of Data
  - schacHomeOrganization
  - schacPersonalUniqueCode → European Student Identifier
    → additional Identifiers necessary

  - Pairwise Id → Pseudonym
  - Subject Id → Unique Person Identifier
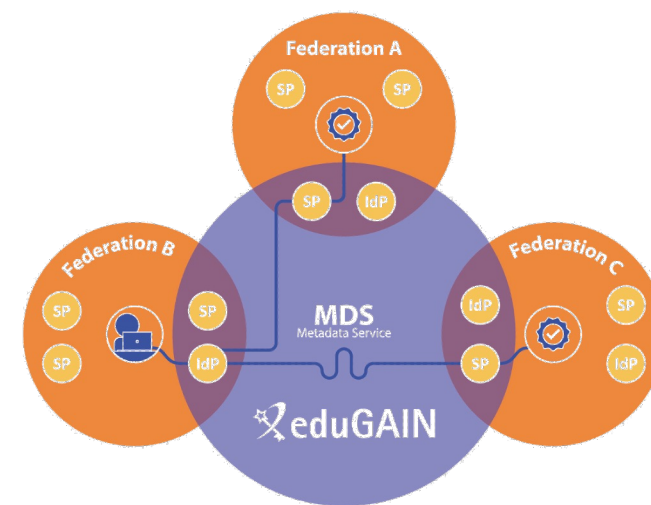
Trust level / Assurance Level

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

high

substantial / medium

normal

no trust

Authentication:
• username / email + password
Identity proofing:
→ self-asserted
→ verified e-mail address

Authentication
• certificate based
• FIDO2
• Smart ID
Identity proofing:
→ officially confirmed
→ check of a government issued photo-ID

Authentication
• eID.AS compliant
  → In eID of EU Citizen IDs
  → Provided by HEI for foreign Students
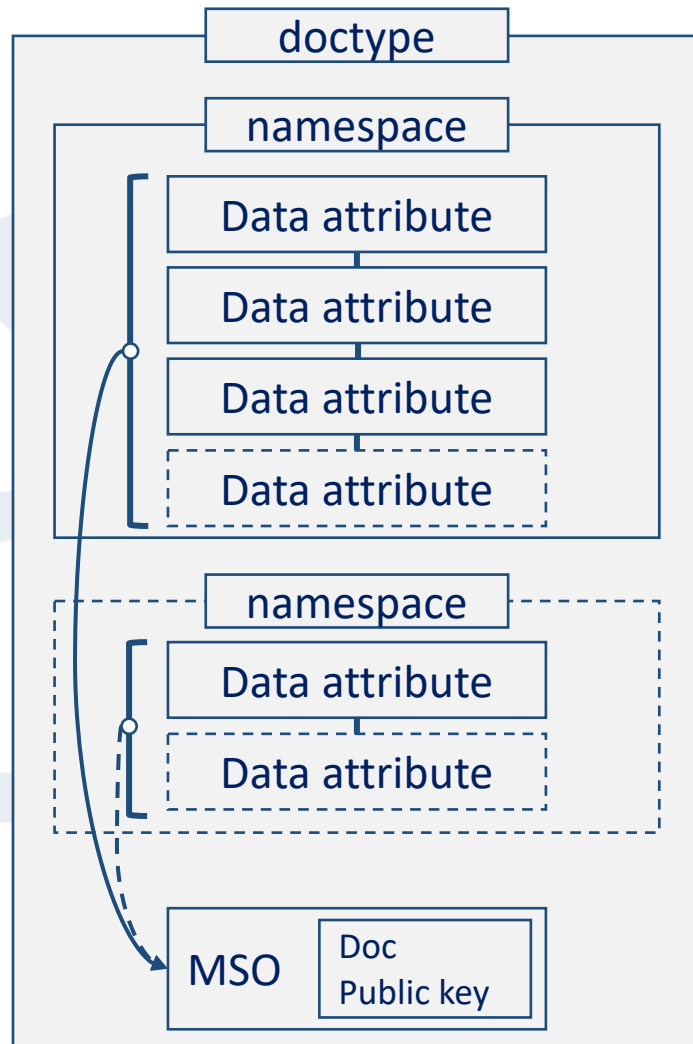Identity proofing:
→ Officially confirmed
→ Identity document checked to be genuine and represent the claimed identity
• **Qualified signature**

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)
  - Pre-consent mechanism for frequently repeated processes (e.g. discount payment at Student Affairs Unions)
  - 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 / eu.europa.ec.eudiw.pid.1
- 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

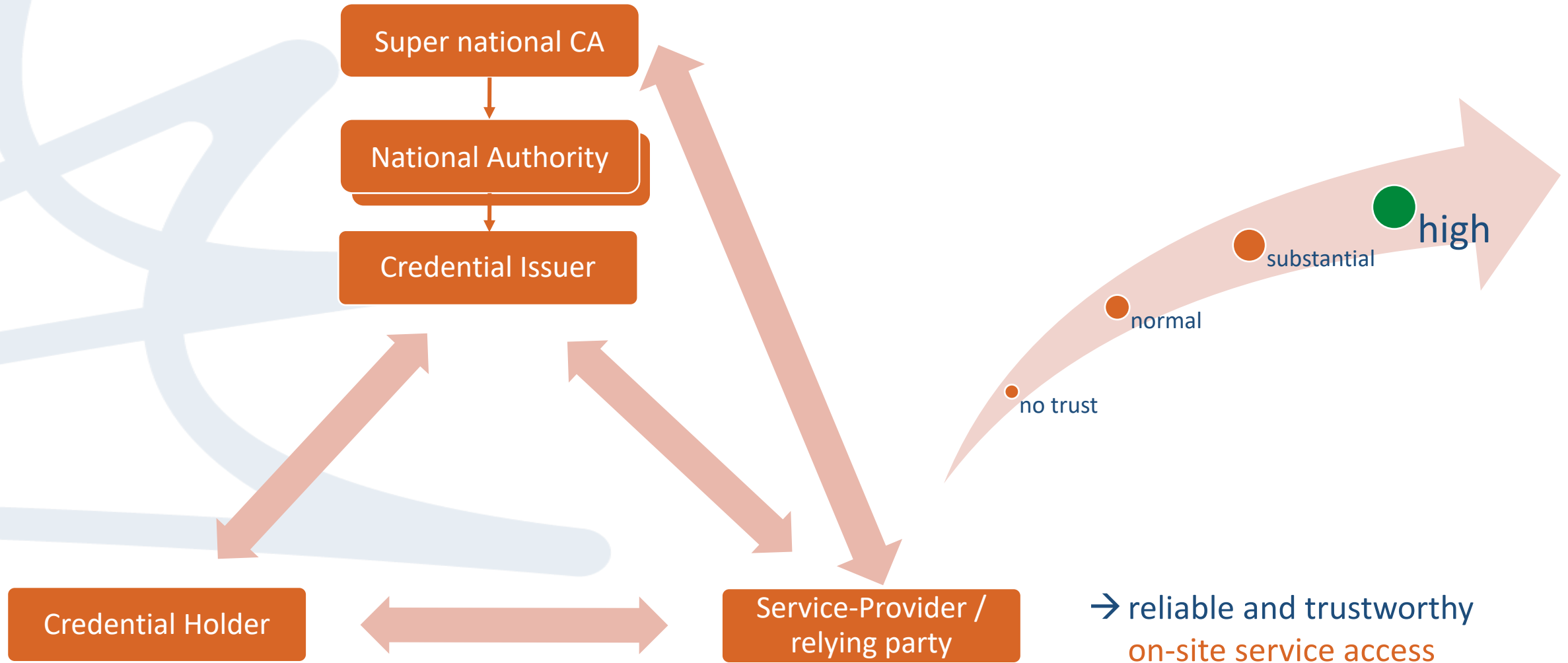Reuse of directory Data (common eduGAIN attributes): eduGAIN

- portrait (photo, *mandatory for identification documents*)
- givenNames
- sn (surname)
- email
- eduPersonAffiliation / eduPersonScopedAffiliation
- eduPersonEntitlement
- eduPersonAssurance
- schacHomeOrganization
- schacPersonalUniqueCode → European Student Identifier (ESI) - MyAcademicID
- schacDateOfBirth
- schacYearOfBirth
- schacPlaceOfBirth
- schacExpiryDate
- …

Shibboleth.

works like a Shibboleth authentication on-site → trained processes

Chain of Trust & Trust level

Super national CA

National Authority

Credential Issuer

Credential Holder

Service-Provider / relying party

no trust

normal

substantial

high

→ reliable and trustworthy
on-site service access

Access Services → a question of interoperability

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

European Student Card → Services and Service Consumers

- Why focus on students and ISCED:2011 Level 6/7/*8 for ESC*?

- It is about **providing services → eduTAP is for anyone**
  - 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
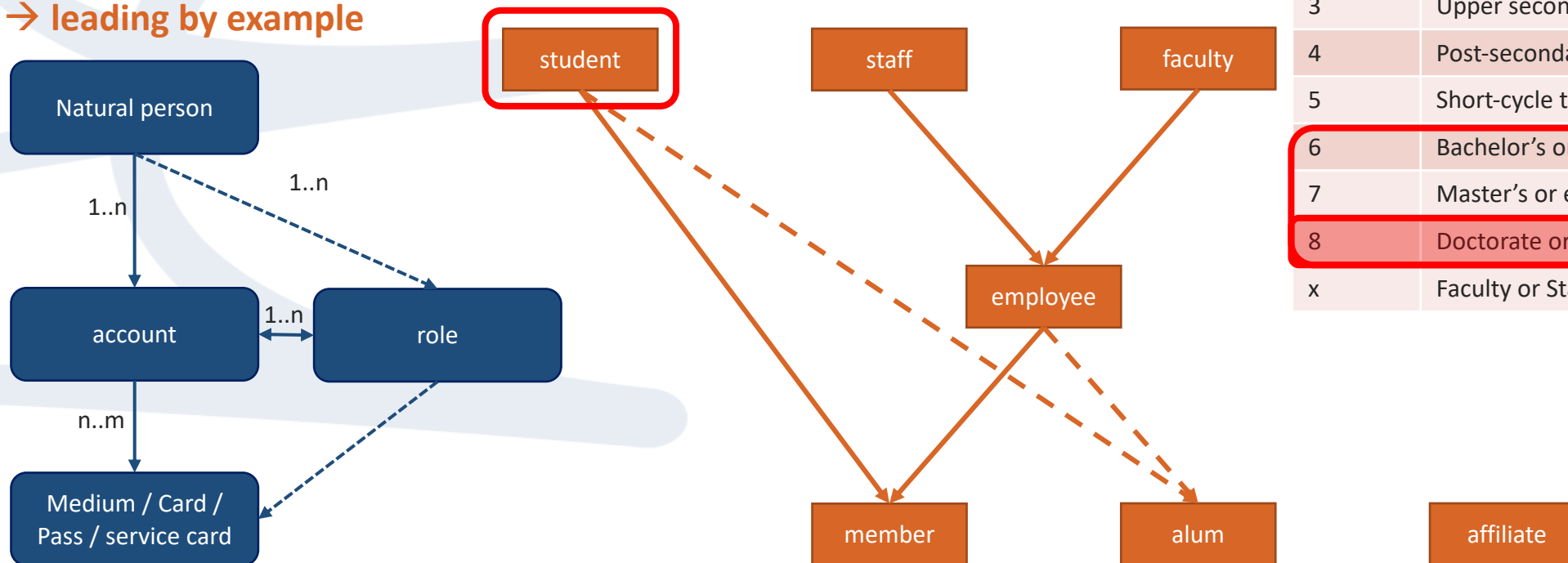
Identity Linking → from eduGAIN to eduTAP

- Utilization of decentralized / federated Authentication and Authorization Infrastructure
  - Online - fewer individual login credentials → higher assurance levels
  - Bridging online identity to mobile credentials for reliable and trustworthy on-site service access → service-oriented + interoperability-oriented
  - Focus on Flow of data
  - The medium wallet pass as an extension of a Digital Identity

→ externalization of the authentication process
→ pass in the wallet for identification
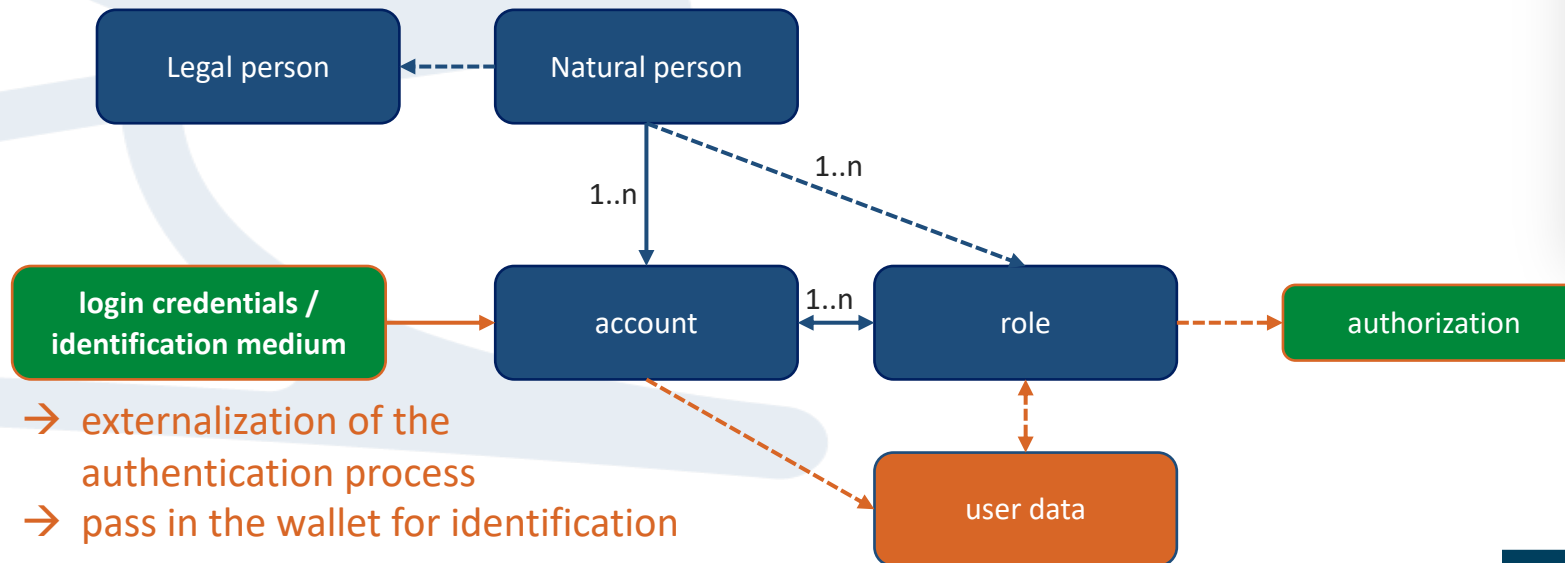
Co-financed by the Connecting Europe Facility of the European Union

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

From eduGAIN & eduroam to eduTAP

- eduGAIN is an inter-federation of identity-federations in Higher Education
  - Each Member of a Higher Education Institution (HEI) should have a user-account that allows him to access online-services
  - eduGAIN uses Shibboleth (federated SAML2 or OIDC) and is an "Authentication and Authorization Infrastructure" (AAI)
  - All HEIs Identity Management Systems uses the same common set of LDAP-Schema (eduPerson & SCHAC + SAML)
    → shared set of Attributes and understanding of those Attributes

- eduroam (educational roaming) gives all HEI members access to a WLAN service with SSID eduroam
  - WPA2/3-Enterprise with a Radius Authentication Service (based on the eduGAIN user-account - login)
  - A common WLAN at almost all HEIs world-wide and public spots

→ It is all about **accessing services**

→ eduTAP
  - identification / authentication / authorization to access services **on-site**
  - uses eduGAIN and legacy system attributes for service access

eduGAIN & eduroam Member Countries
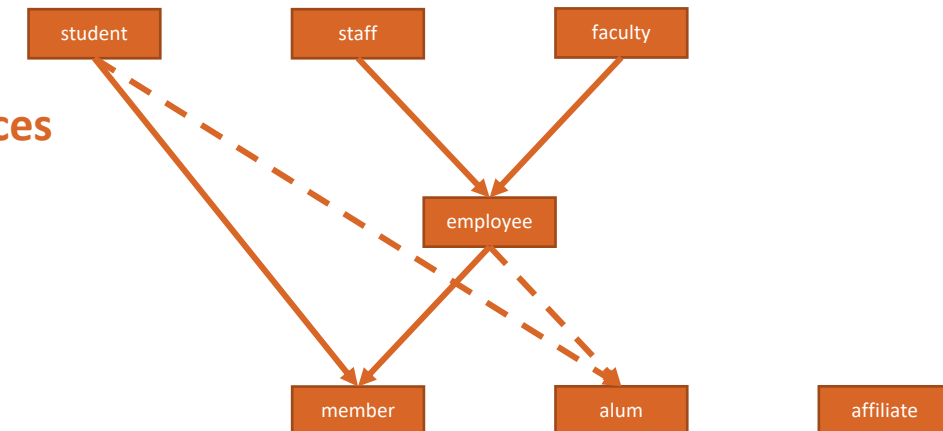
→ eduGAIN Federation Members

→ eduroam Service Providers
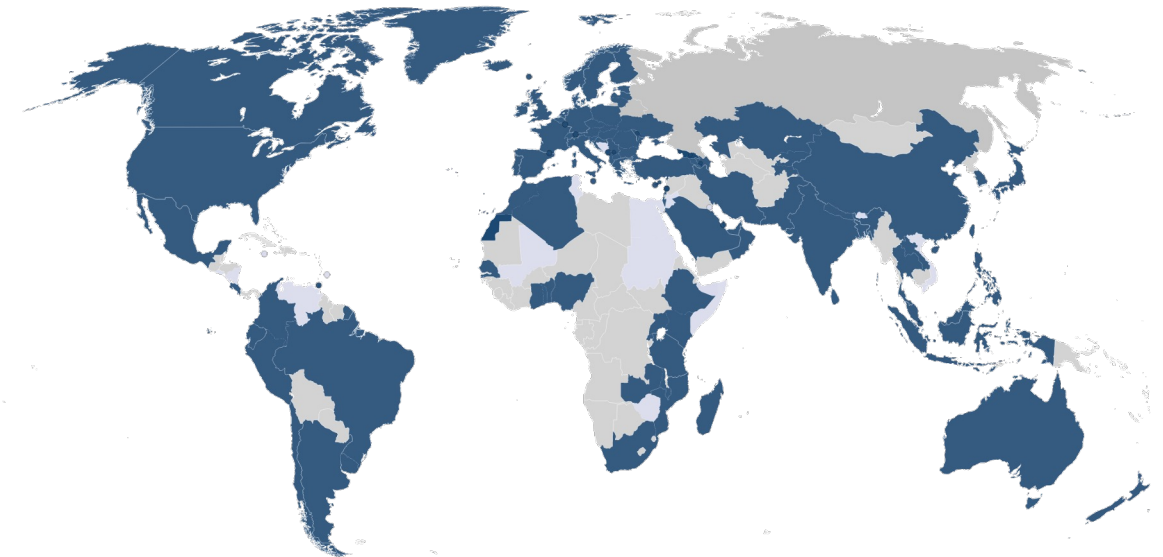
→ eduTAP fits perfectly into GÉANT Trust & Identity Services and compliments eduGAIN for offline on-site identity use cases
→ can reach the same adoption world-wide

GÉANT – The IT provider for Higher Education in Europe

The GÉANT Association is the collaboration of
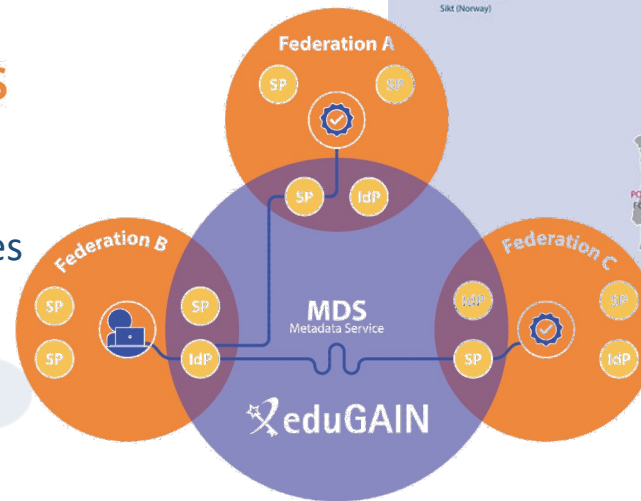European National Research and Education Networks (NRENs)

- Non-Profit Organization
- Service-Provider for IT / e-infrastructure services
  for the European Higher Education Sector

- Key Services:
  - GÉANT Trust & Identity Services

  - GÉANT Network and Connectivity Services
  - GÉANT Security Services
  - GÉANT Cloud Services
  - Procurement Agency for EU-HEIs

  → eduTAP fits perfectly into GÉANT Trust & Identity Services and compliments eduGAIN for offline on-site identity use cases

GÉANT membership

NATIONAL MEMBERS
1 per country

REPRESENTATIVE MEMBER
NORDUnet

ASSOCIATES
CERN
DeIC (Denmark)
European Space Agency
CSC/FUNET (Finland)
RHnet (Iceland)
KREN (Kosovo Research and Education)
SUNET (Sweden)
Sikt (Norway)

EUGLOH

European University Alliance for Global Health

eduTAP

eduTAP – educational tapping – What is eduTAP?

- eduTAP the concept
  - of splitting integrated campus cards into separate service passes and
  - a harmonized identity pass

- eduTAP the software / product – to enable HEIs and Service Providers to:
  - create, issue, and manage passes within the smart device wallet
  - interact with wallet passes to give access to services, identify, and verify the status of students and staff members

→ The eduTAP concept helps to fulfill the great vision of the European Student Card and enable interoperability

eduTAP Deliverables

- Architecture of the delivery system
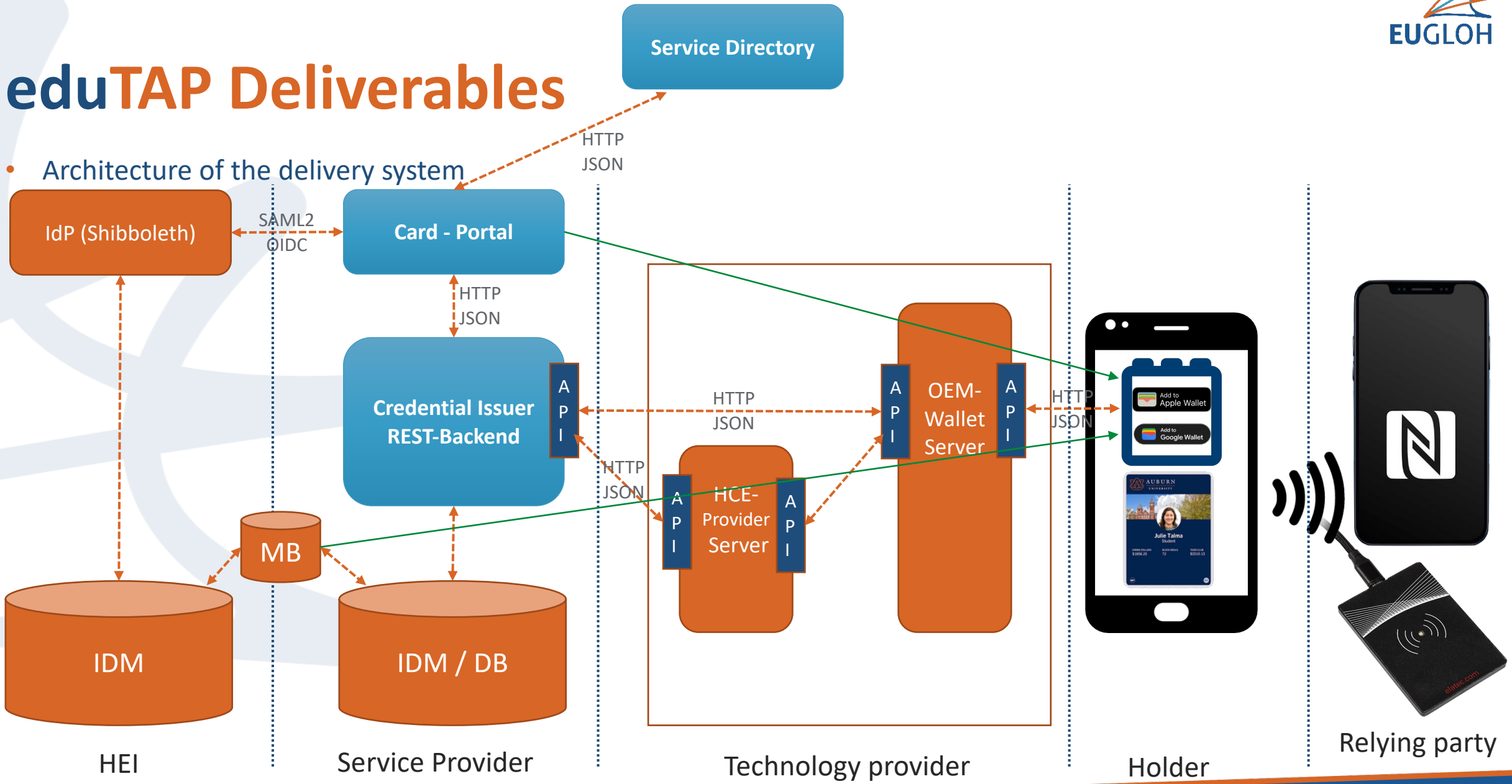
eduTAP Software / Product Deliverables

The eduTAP project and community implements

- eduTAP core → generic libraries and tools; everything to create, issue and manage passes in the wallets

- eduTAP libs → generic libraries and tools; everything to interact with and process data from a wallet pass

- eduTAP docs → Information about eduTAP and Wallets

- Central Service Directory → find service and obtain a service pass if necessary

- Infrastructure and Deployment helpers

HEIs and Service Providers that want to adopt and use eduTAP needs to implement or configure

- Mandant Specific Applications (MasA) → eduTAP@institution implementation

eduTAP is community open source

More Information's → https://eduTAP.eu • https://docs.eduTAP.eu & https://github.com/edutap-eu

eduTAP – educational tapping

tap to …

- ✓ tap to identify yourself,
- ✓ tap to verify your status,
- ✓ tap to proof your entitlement,
- ✓ tap to claim a discount,

tap to access a service on-site directly:

- ✓ tap to pay (open and close loop-payments),
- ✓ tap to open a door,
- ✓ tap to lend a book,
- ✓ tap to take a campus shuttle.

TAP TO PAY

no app, just tap!
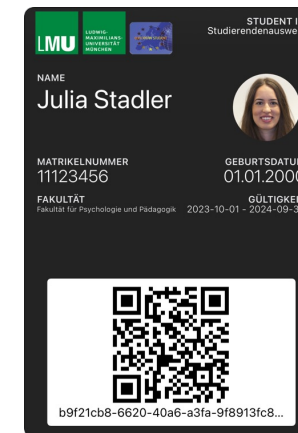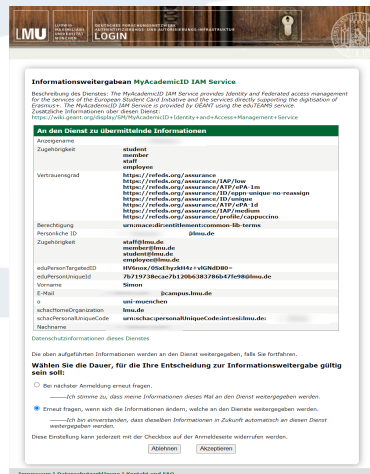
Path to an interoperable campus card

transition

Trust-Level: NO-TRUST
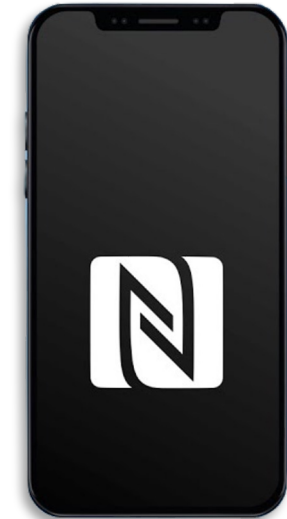
eduTAP

- ✓ state-of-art technology,
- ✓ secure and trustworthy,
- ✓ compliant to GDPR
- ✓ ensures interoperability

Transition of credentials into the Smartphone Wallets
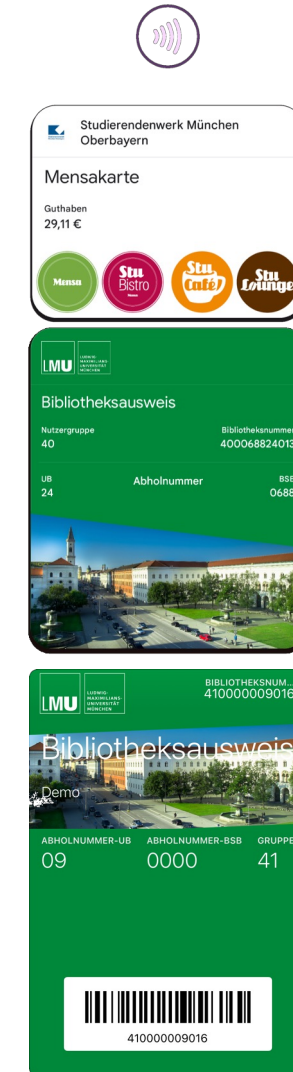
transition

Transition of credentials into the Smartphone Wallets
Examples: potential IDs for LMU Munich
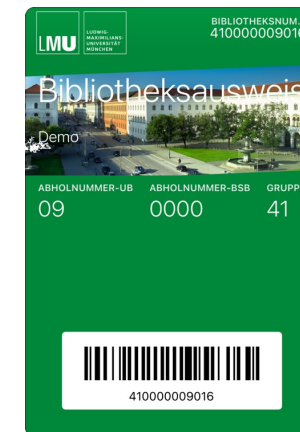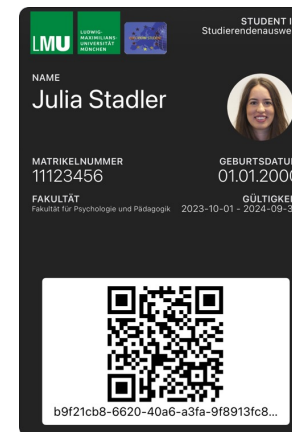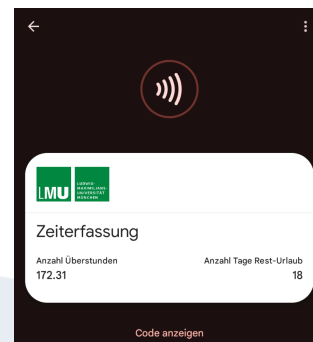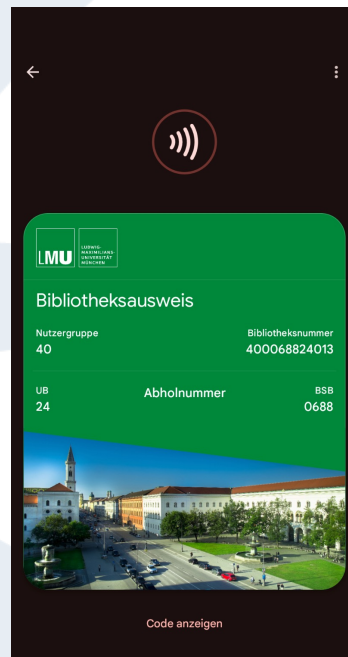
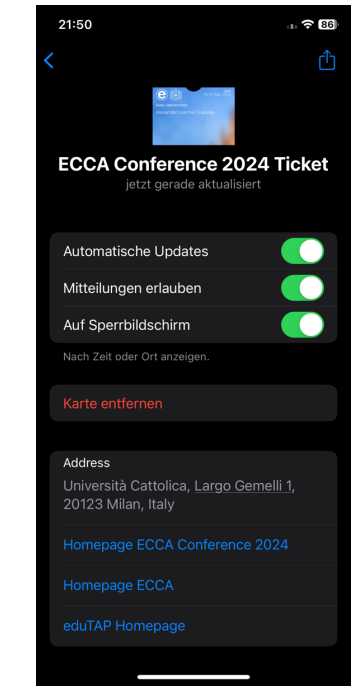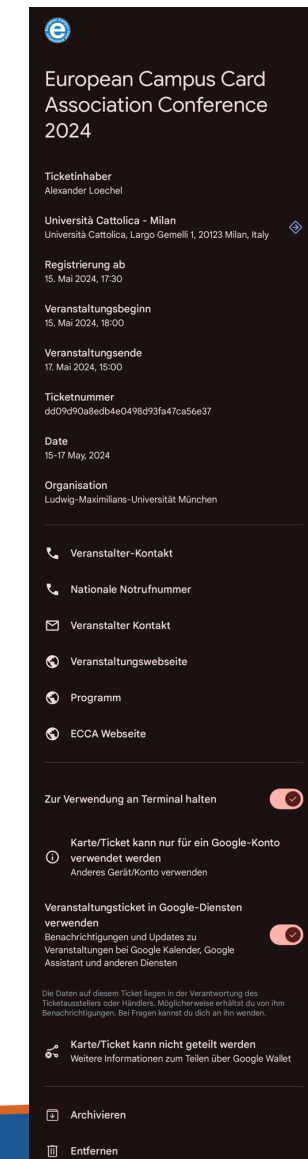→ all **NFC enabled**

Transition of credentials into the Smartphone Wallets Examples: **Event Tickets**
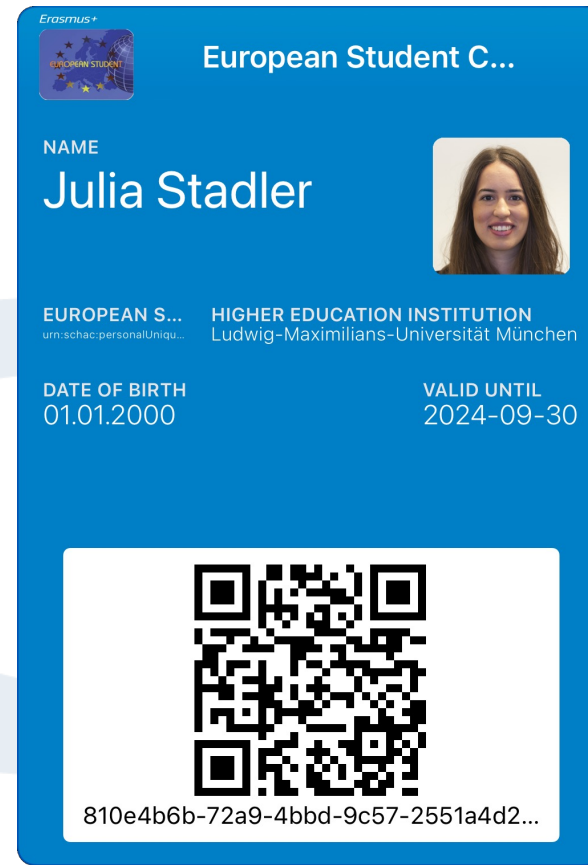
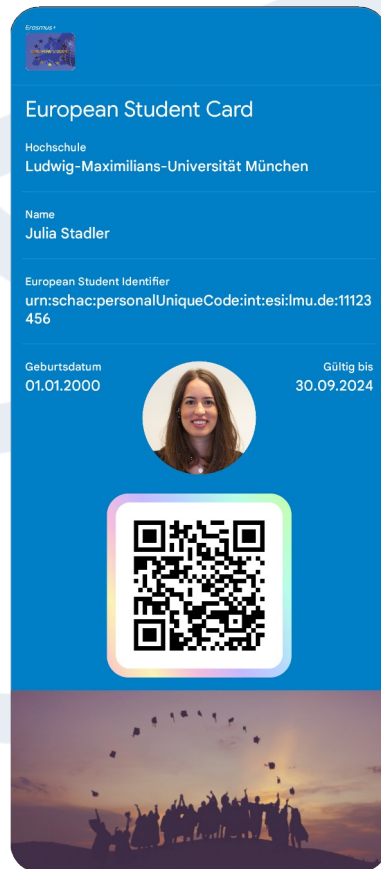## EUGLOH Annual Summit 2023 in Lund
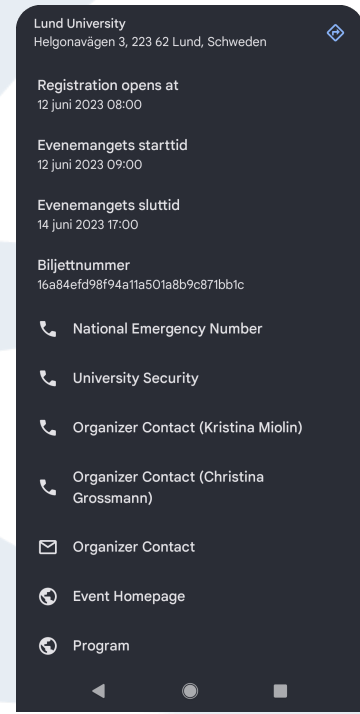
ECCA 2024

Transition of credentials into the Smartphone Wallets Examples: European Student Card in the Wallet

- Discount off-campus
- For usage at HEIs that accept the ESC

- No NFC or additional data

Demo → Download an eduTAP created pass

eduTAP

https://demo.edutap.eu/

Add to Google Wallet   Add to Apple Wallet

DEMO

Time for Demo

- Download an example pass

- Interact with a reader

- Updating a Pass

- Flow of verifying a verifiable credential

https://demo.edutap.eu/

Add to Google Wallet

Add to Apple Wallet

We'd love to hear from you!

Get in touch:

EUGLOH Work Package – Campus Life /
EUGLOH ESC Working Group (IT people):
heis.it.wp5.eugloh@up.pt

- Alexander Loechel (LMU Munich)
- José Filipe Alves (UPorto)
- Morgan Persson (LU)
- Pierre Gabrielle (Université Paris-Saclay)

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