



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)*



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

[www.eugloh.eu](http://www.eugloh.eu)

# eduTAP – educational tapping

- ✓ tap to identify yourself,
- ✓ tap to claim a discount,
- ✓ tap to pay (open and close loop-payments),

**TAP TO PAY**

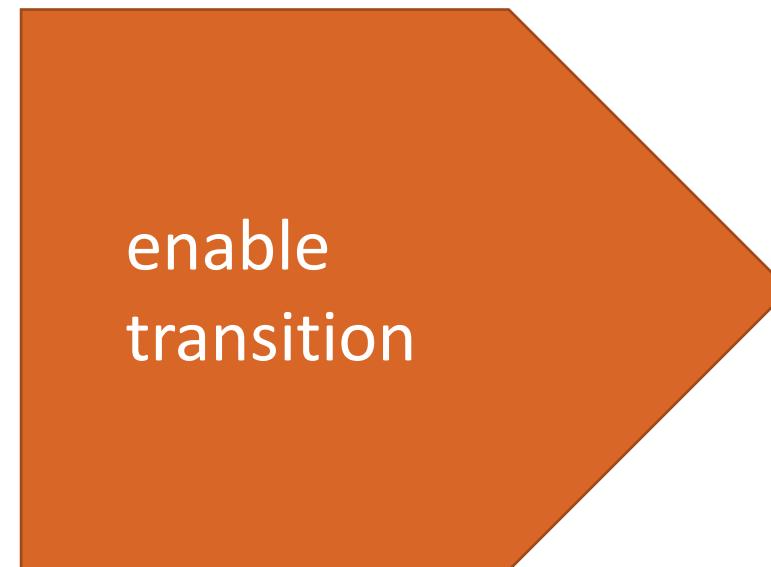
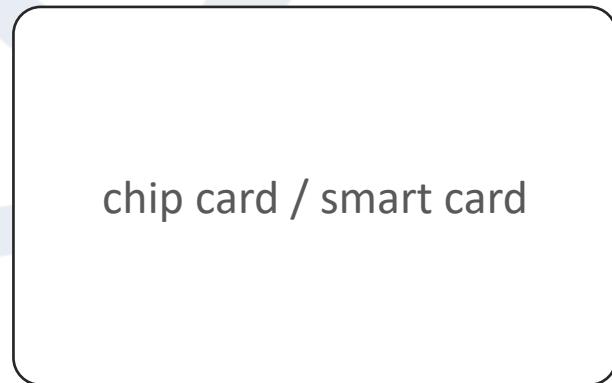


- ✓ tap to open a door,
- ✓ tap to lend a book,
- ✓ tap to take a campus shuttle.



## eduTAP – mission:

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



- 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

# 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

# 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 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**



# 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

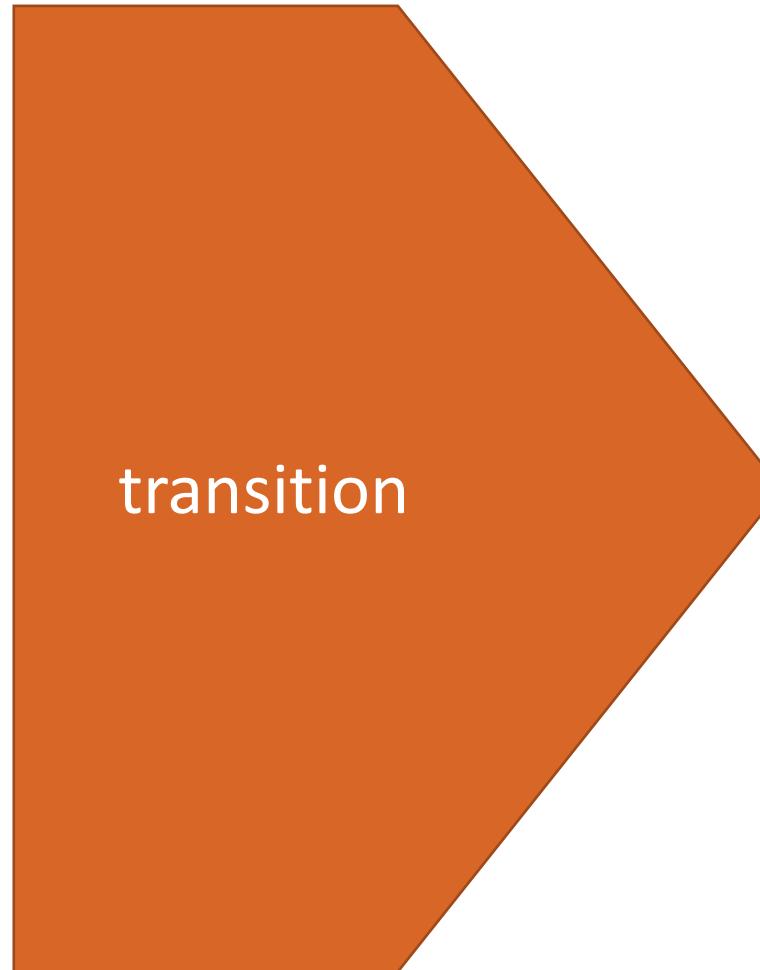
- NXP Mifare Classic Cards / Java Cards with Mifare Classic emulation
- Library
- Physical Access Control
- Canteen & cafeterias
- Printing Service
- Attendance

Not compatible technologies

# Path to an interoperable campus card



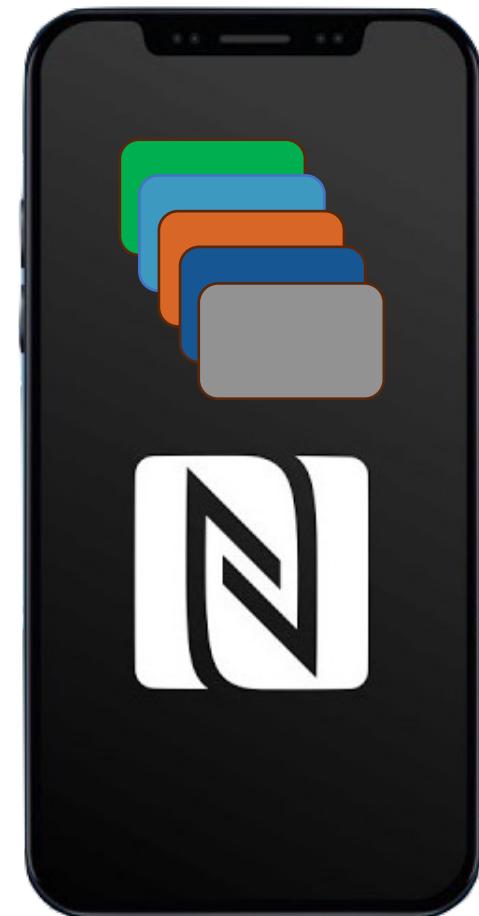
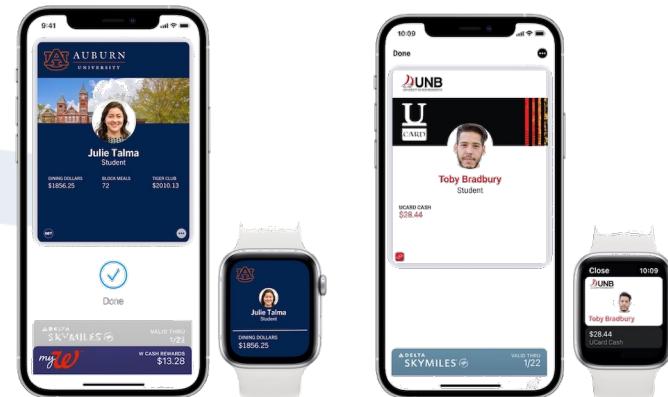
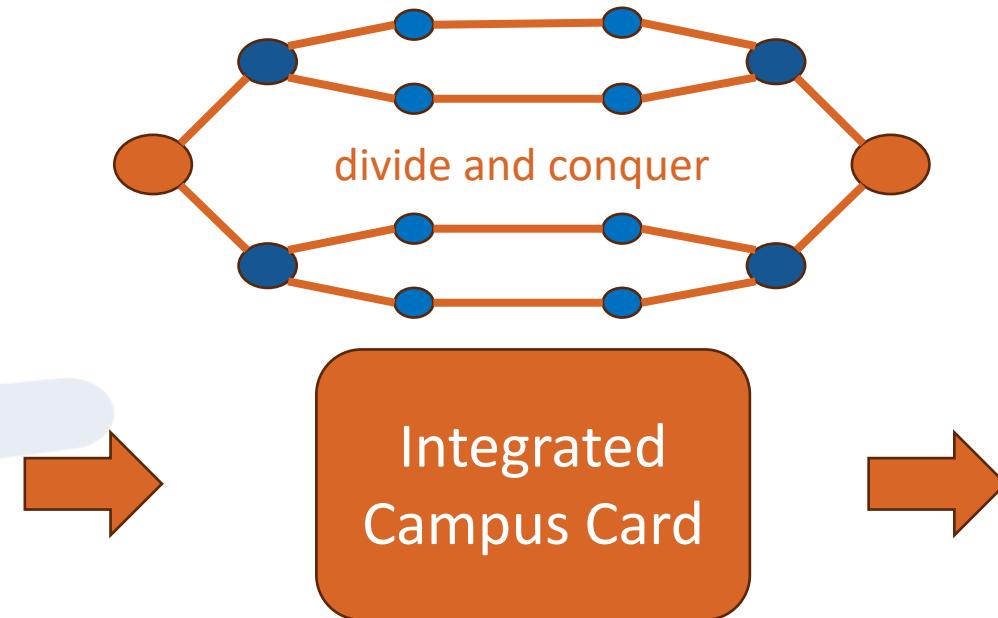
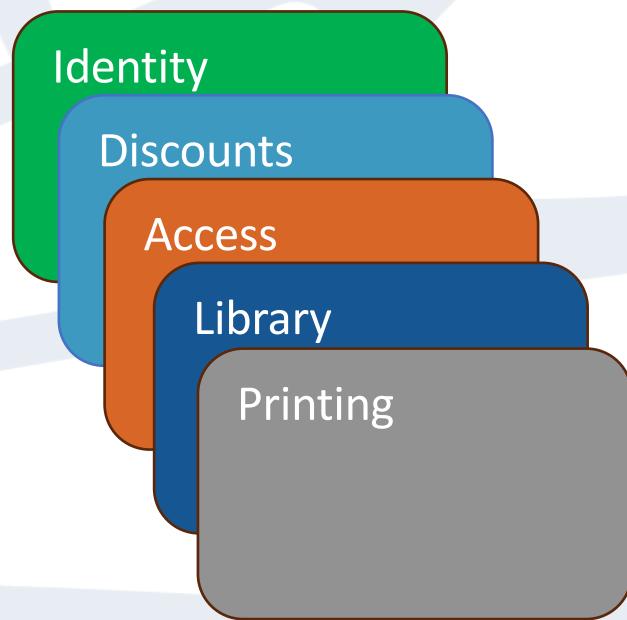
Trust-Level: NO-TRUST



**eduTAP**

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

# Path to an interoperable campus card



# 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)
  - “Proof of entitlement”
  - sport tickets
  - e of / “discount”

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

separate service passes

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

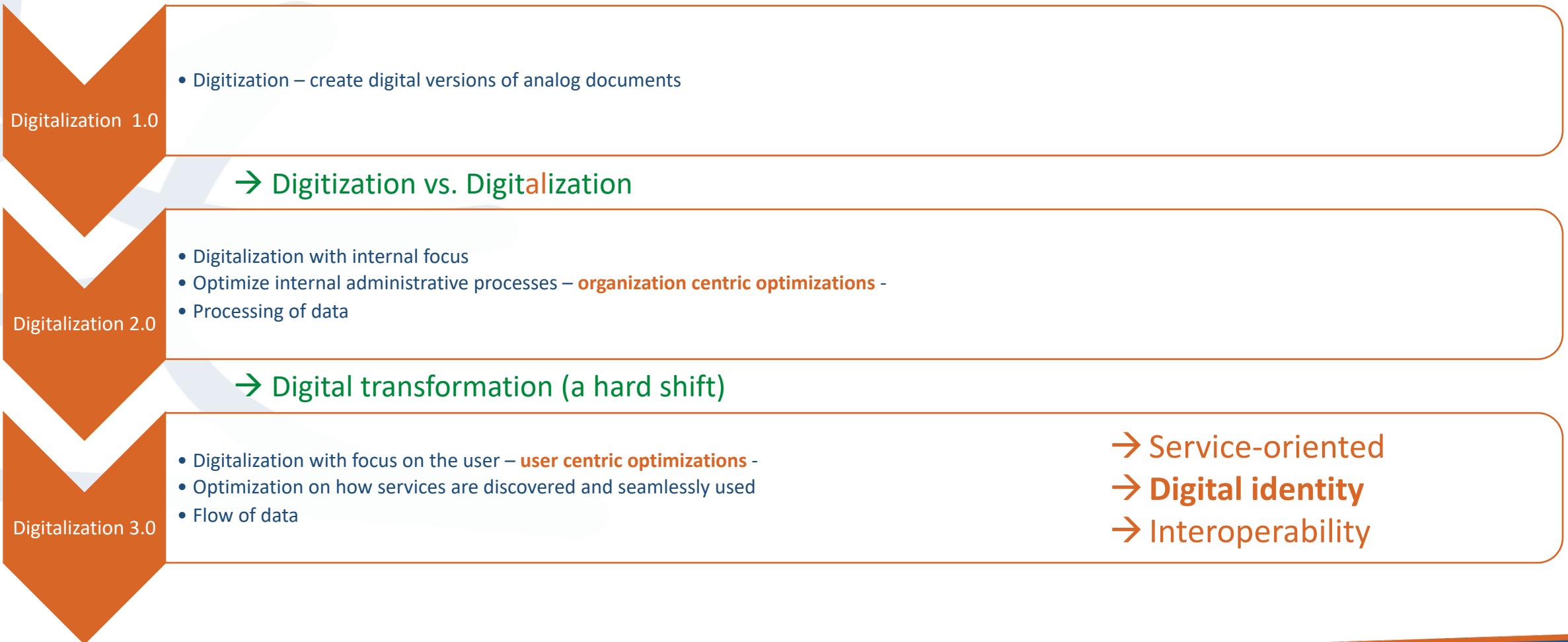
A common ID pass  
 for all HEIs  
 (ISO/IEC 18013-5 based)



providing service → create benefits

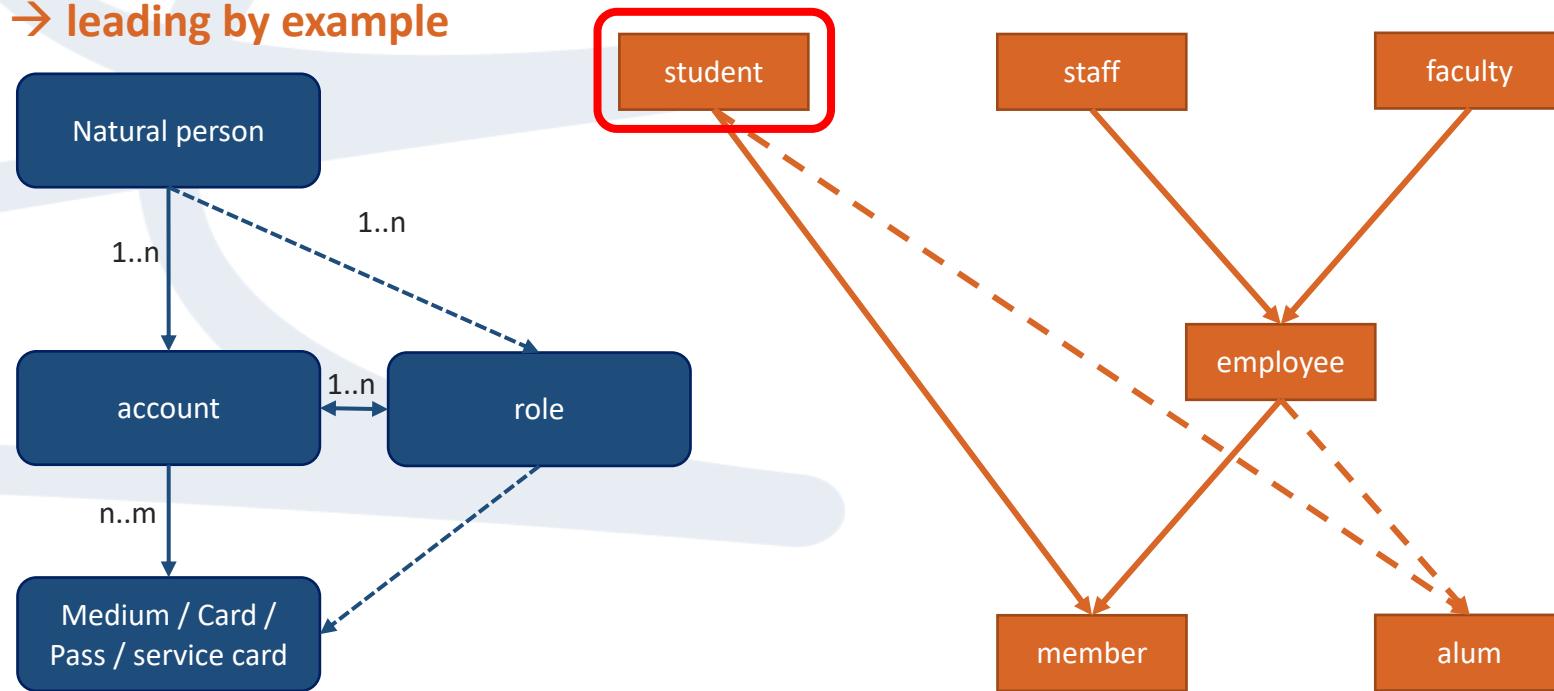
# Digitizing cards vs. leveraging the possibilities of smart devices

## → Stages of Digitalization – Period of Digital transformation



# 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**



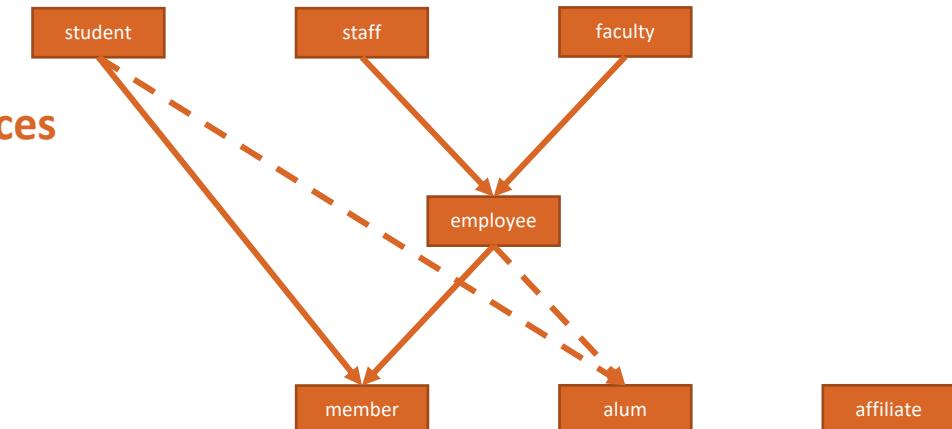
ISCED:2011 Level

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

# 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

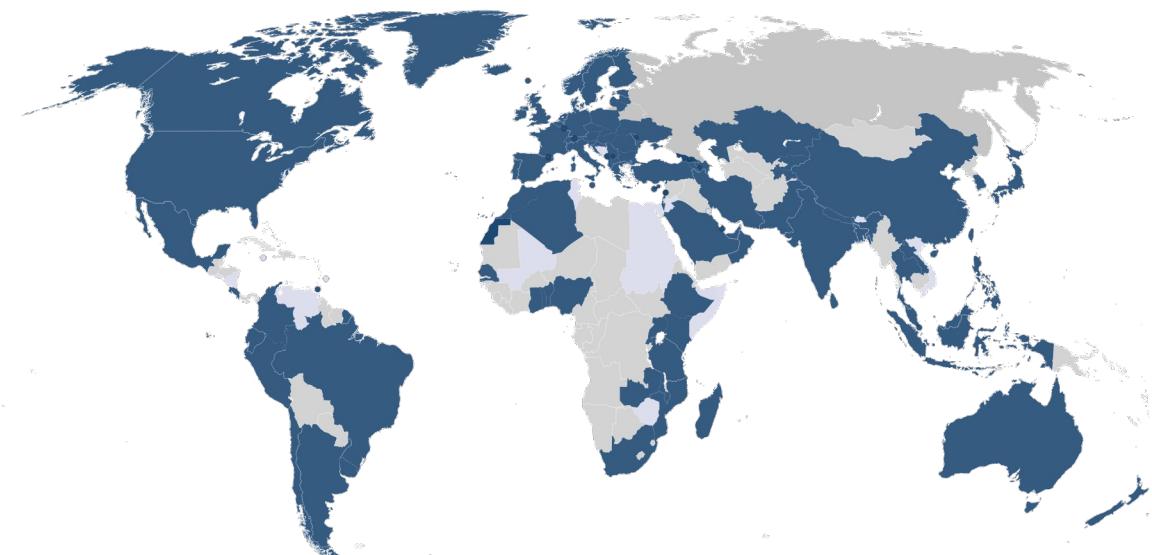
- identification / authentication / authorization to access services on-site
- uses eduGAIN and legacy system attributes for service access

# eduGAIN & eduroam Member Countries

→ eduGAIN Federation Members



→ eduroam Service Providers

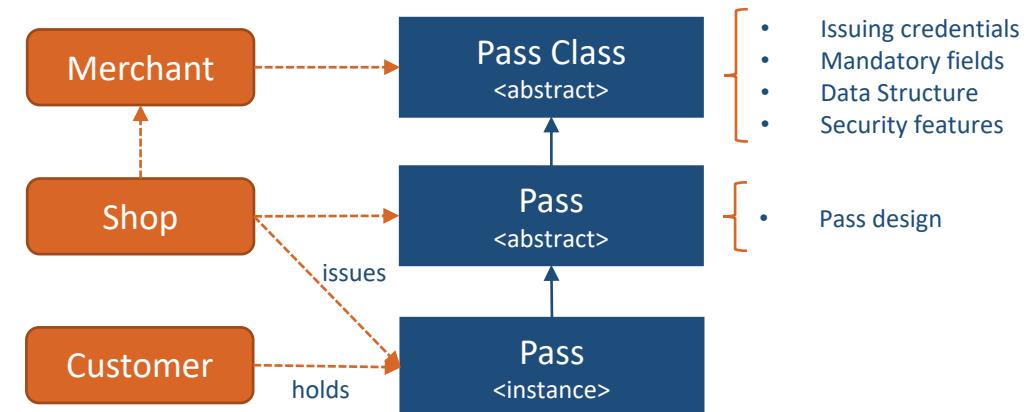


# Technical details and features of Wallets / Passes

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

## Technical features:

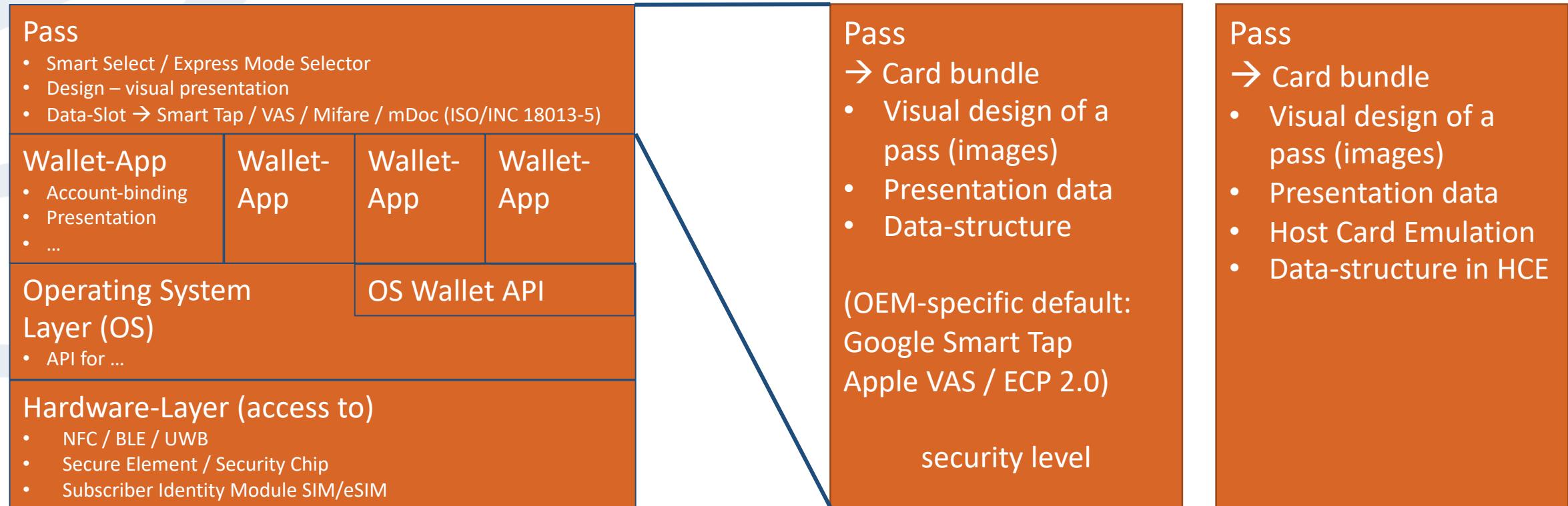
- Smart / Quick Select option (Express-Mode) ← reader selects the specific pass to interact with (if available)
- Battery reserve (important for keys, transit tickets, payment)
- Authentication requirements ← security features
- Groupable
- Validity dates
- Remote updateable / revokable
- Offline usable (→ non traceable)
- Host Card Emulation possible



# Technical details and features of Wallets / Passes

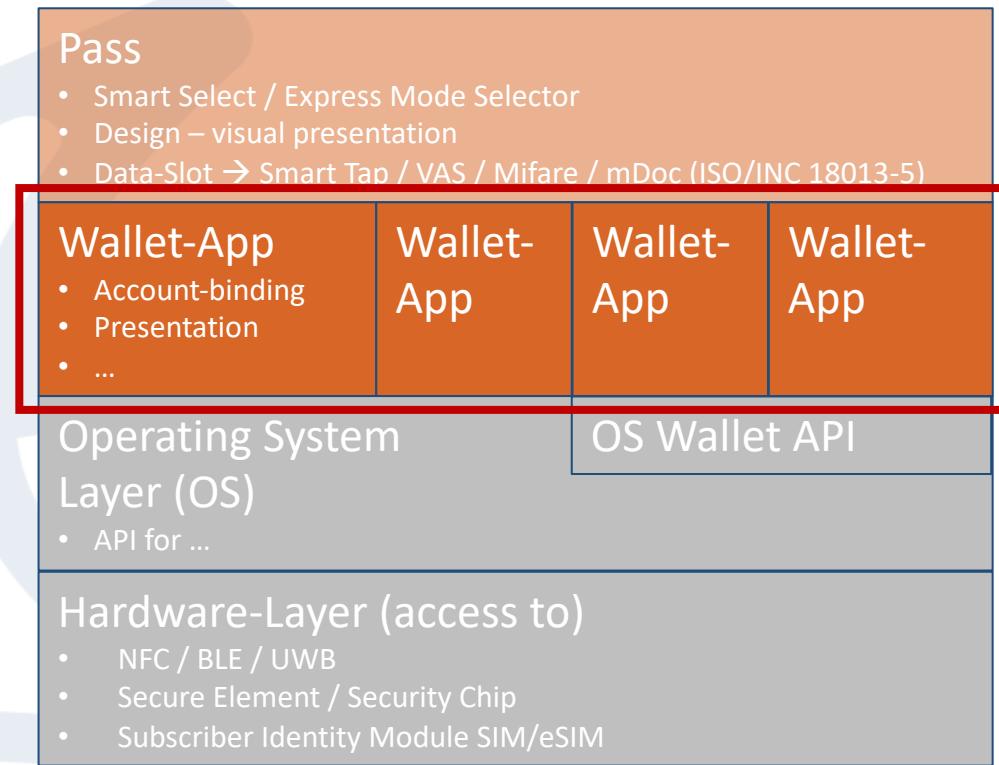
- ✓ Technical details and features of Wallets / Passes → Path to an **interoperable** campus card
- ✓ if each pass (technology) can be individually selected and leveraged, and the Pass in the Wallet can be selected by the reader (**Smart Select**)

→ one pass per service



# Technical details and features of Wallets / Passes

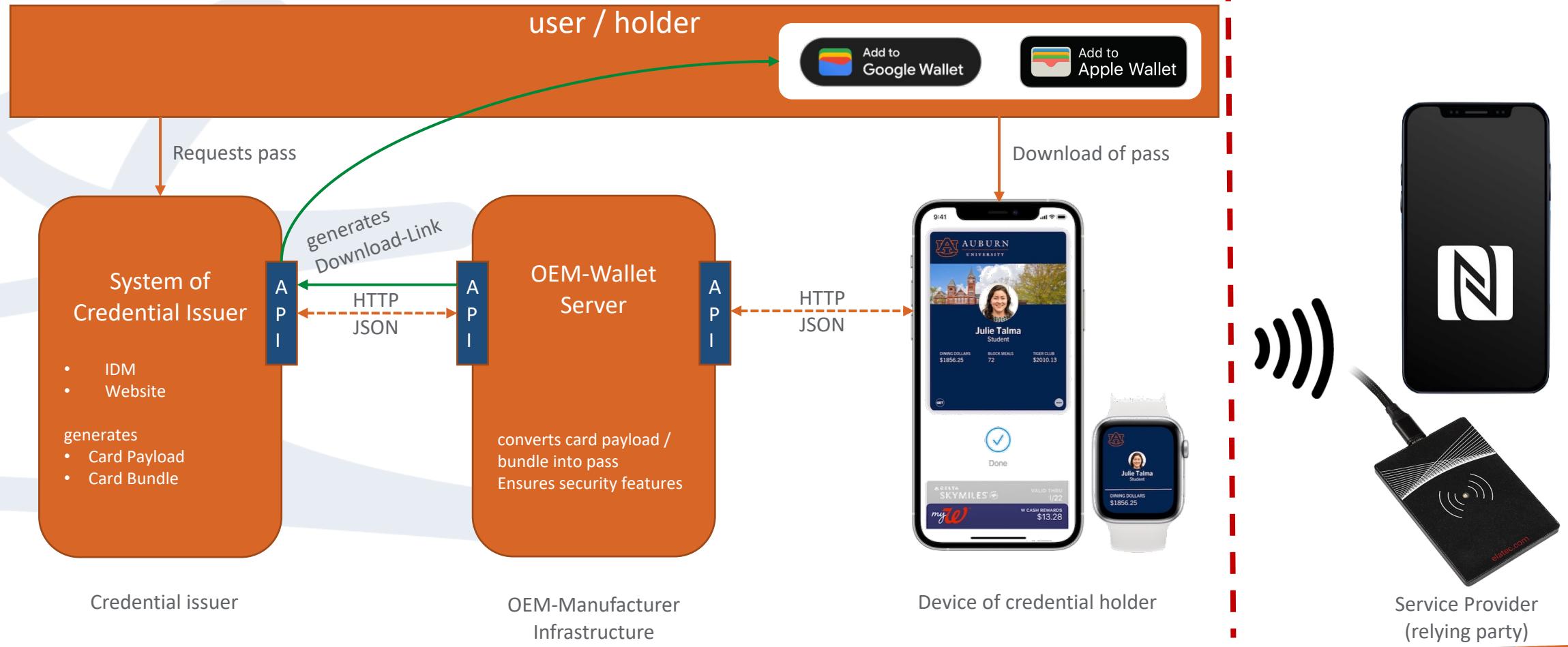
Detail view on the Wallet



- 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

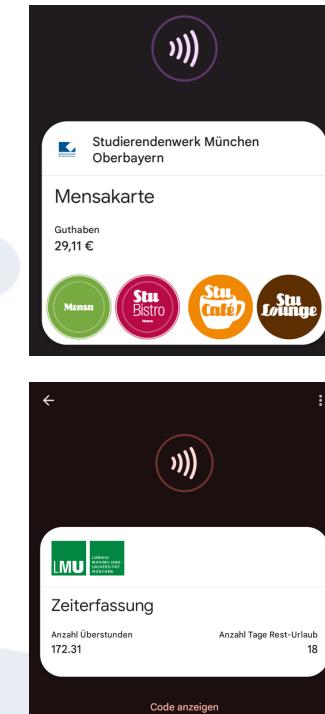
→ importance for the users – always the same process



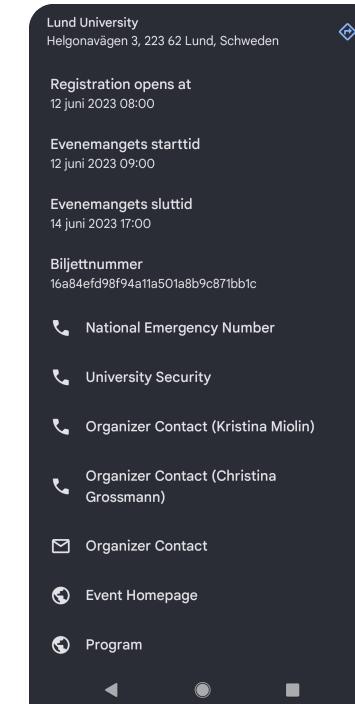
# Transition of credentials into the Smartphone Wallets

## Examples:

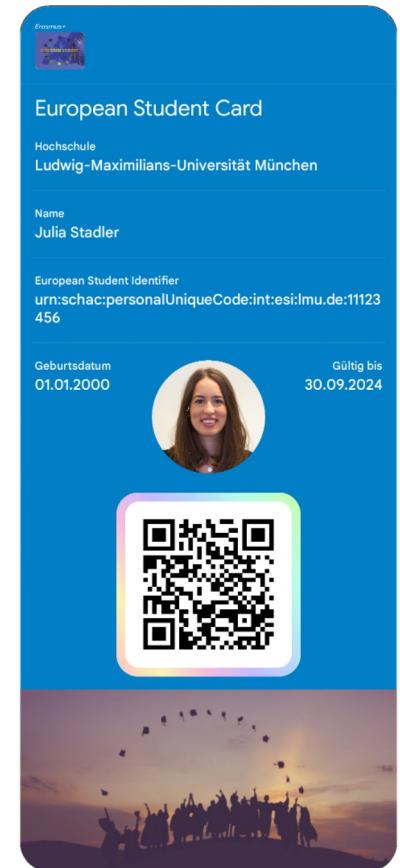
potential IDs for LMU Munich



Event-ticket for  
EUGLOH Annual Summit 2023 in Lund



European Student Card

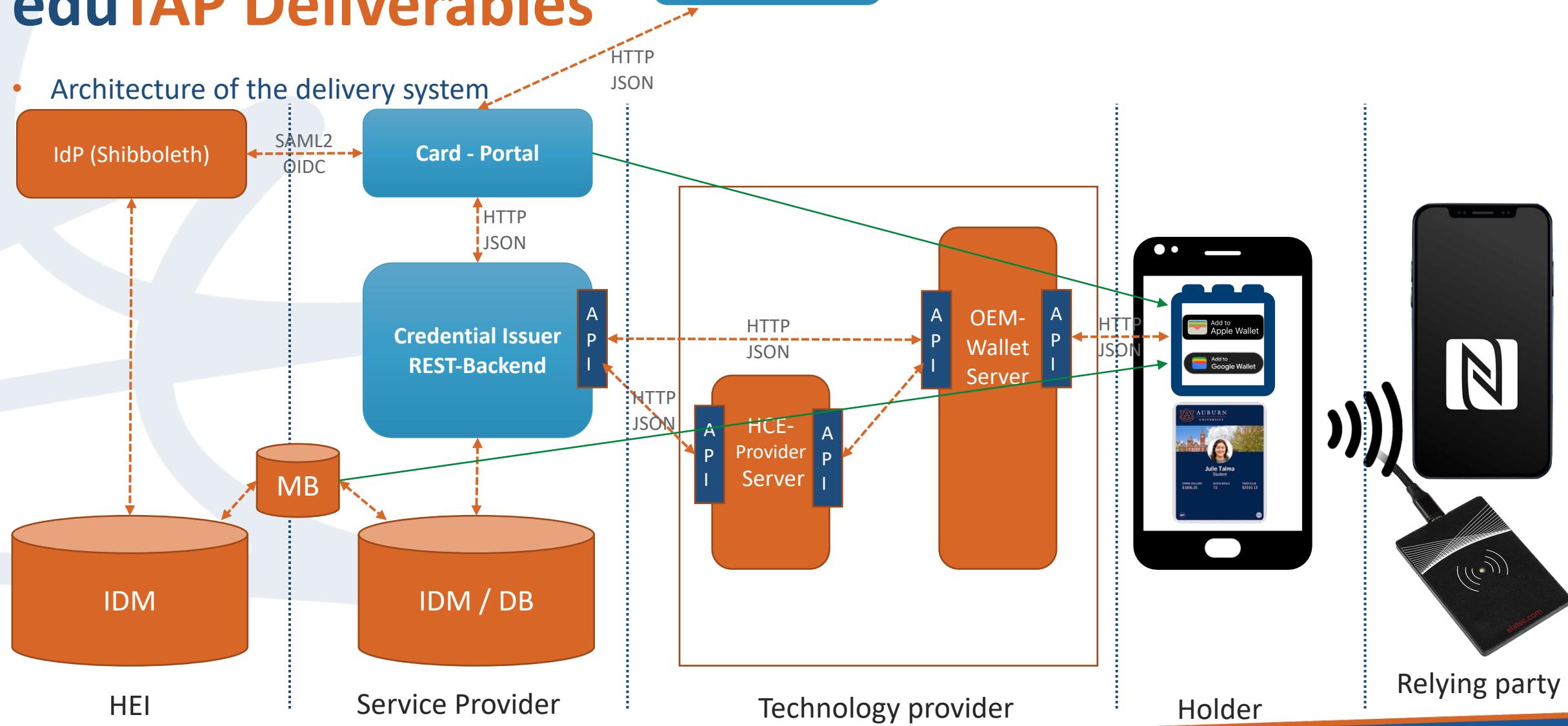


→ all NFC enabled



# eduTAP Deliverables

- Architecture of the delivery system



# eduTAP 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

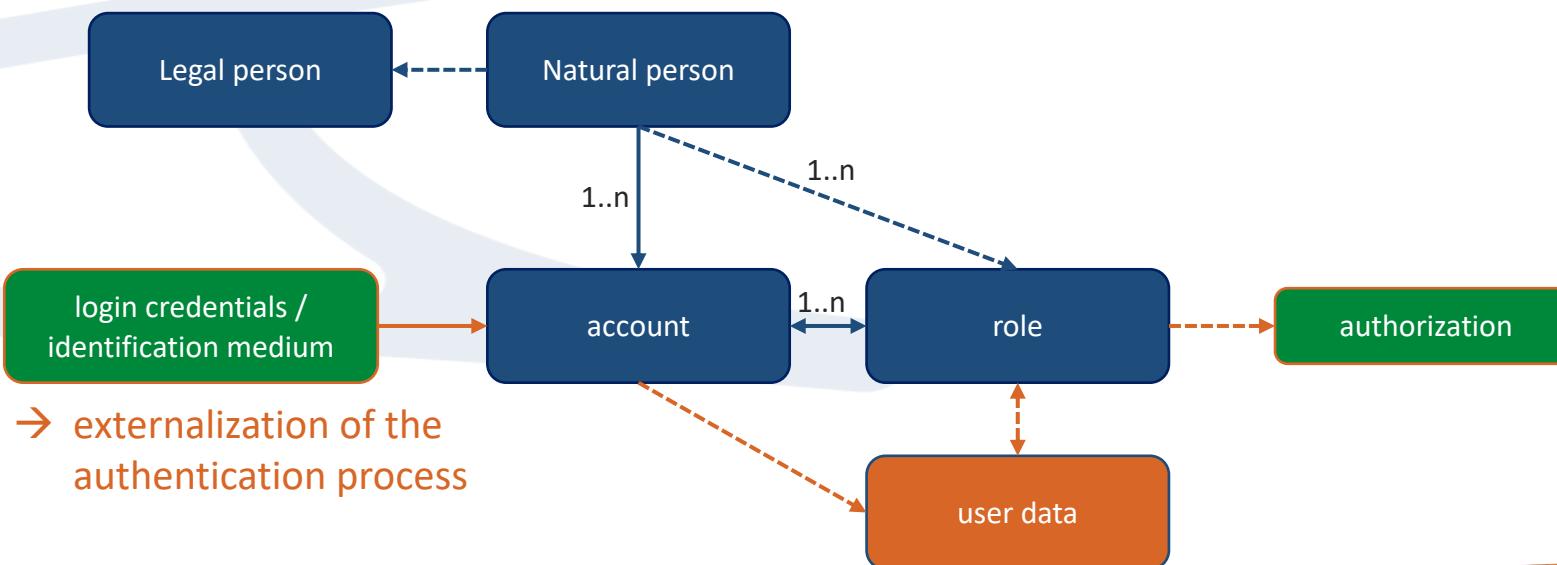
- Mandant Specific Applications (MasA) → eduTAP@institution implementation

eduTAP is community open source

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

# Identity Linking → reduced amount of logins

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





**MyAcademicID**

Login with

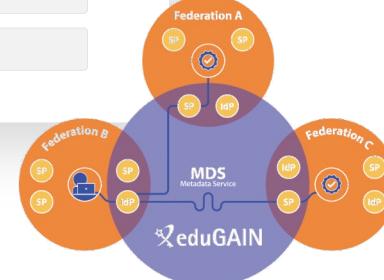
Search the extended list of Identity Providers

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or

 Login with eIDAS

 Login with Google



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

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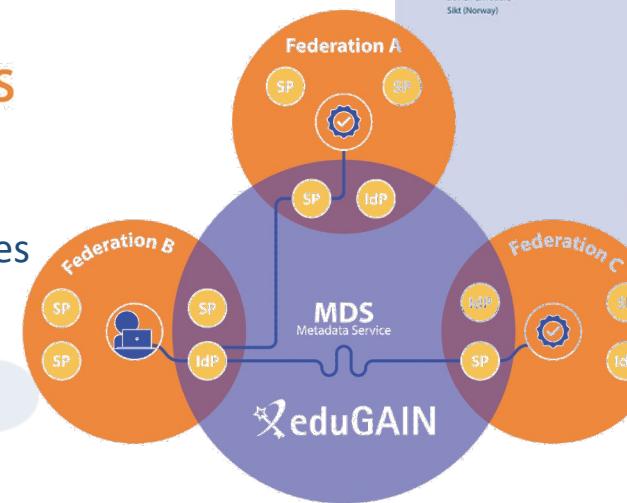
MyAcademicID Support Helpdesk | eduTEAMS by GÉANT | Privacy Policy



# 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



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