



European Student Card & eduTAP

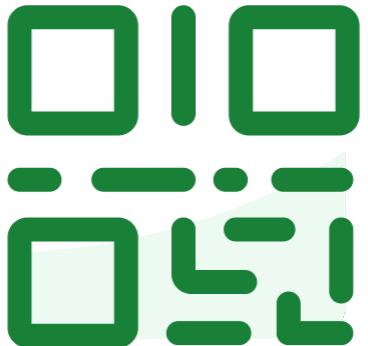
Aus einer Hochschul-Perspektive

2024-06-05

Alexander Loechel
Referent IT-Projekte

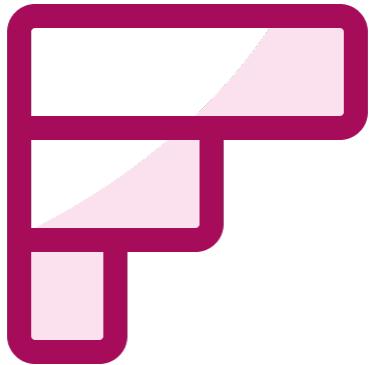


slido



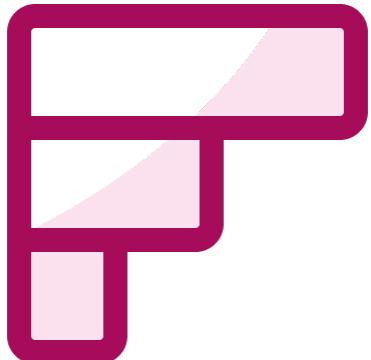
Join at [slido.com](https://www.slido.com)
#3368209

- ⓘ Start presenting to display the joining instructions on this slide.



Kennen Sie die European Student Card bereits?

- ⓘ Start presenting to display the poll results on this slide.



**Haben Sie an dem ESC-Info-Termin
des DAAD am 16.05.2024
teilgenommen?**

- ⓘ Start presenting to display the poll results on this slide.



A European Student Card to make it easier to be a mobile student

recognise your student status
across Europe

facilitate access to student services

Erasmus+

Higher education

Enriching lives, opening minds.

1 | ESC Background & Context

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



1 2 3 4 5 6 7 8

December 2015

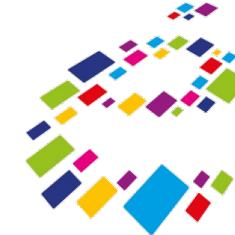
- Memorandum of Understanding
- Student Unions of 4 countries:
 - France
 - Germany
 - Ireland,
 - Italy
- Exchange within ECStA

2020 – 2022

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

2021 – 2024 –

- **ESC as a European Commission product**
(within the **European Student Card Initiative**)
- Run through a framework contract (NTT Data)
- Migration of ESC Router



Comité National
de la Carte Étudiant
et de ses Usages



ESC BACKGROUND AND CONTEXT

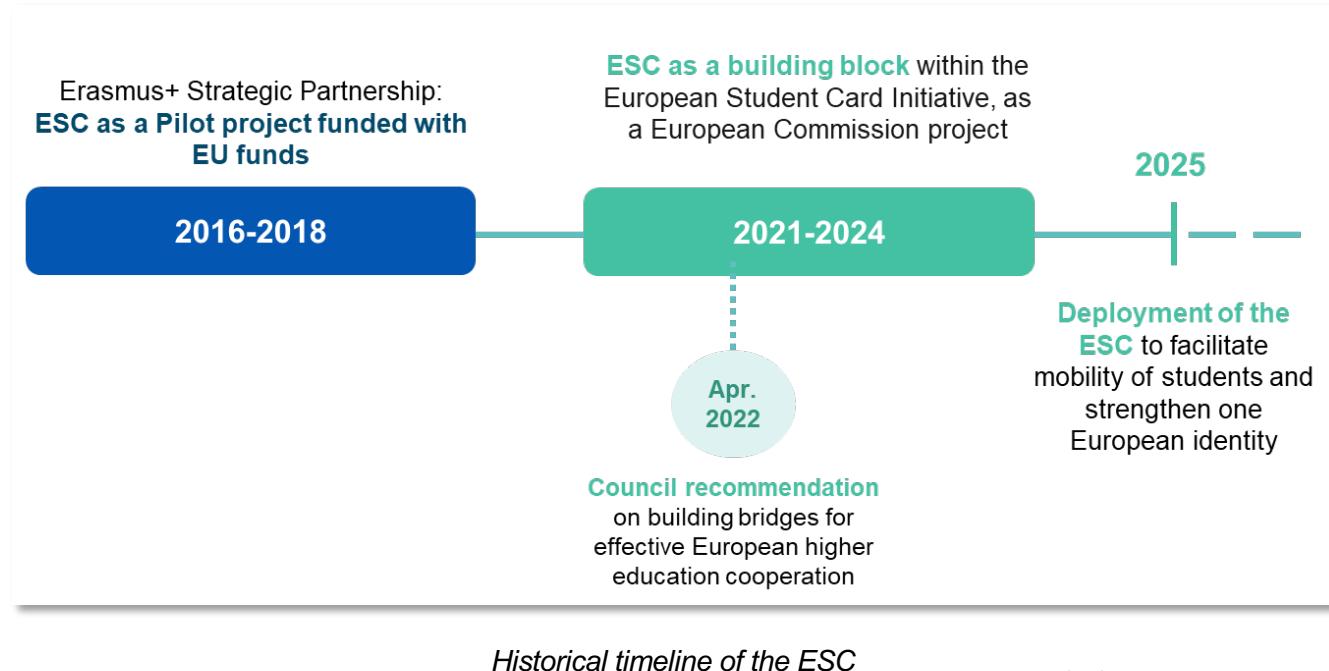
A historical look into the ESC

The European Student Card (ESC) started as an EU-funded project in 2016 and has become a **building block of the European Student Card Initiative (ESCI)**. The ESC's goal is to allow **mobile students to easily authenticate their student status** and access **on-and off-campus services**. The ESC adds **a European dimension** to existing student cards.

Goal for 2025: higher education institutions in all EU Member States and third countries associated to the Erasmus+ programme issuing European Student Cards.

Council Recommendation 5th April 2022 on building bridges for effective European higher education cooperation

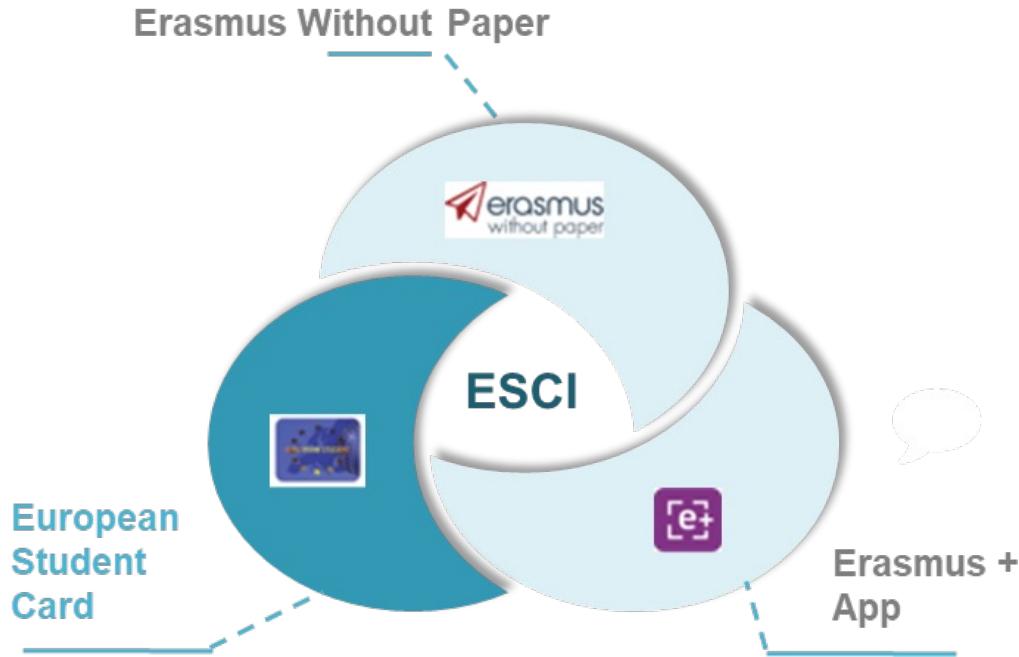
- Identifies the European Student Card Initiative (ESCI) as a key action to achieve this ambition by simplifying administration for institutions;
- Calls on the Commission and Member States to work together to widen the ESCI;
- Supports new emerging mobility cooperation models; and,
- Encourages Higher Education Institutions (HEIs) to make full use of digital tools for mobility.



ESC BACKGROUND AND CONTEXT

The European Student Card Initiative (ESCI)

The ESCI is composed of **three building blocks**: Erasmus Without Paper, Erasmus+ App and **European Student Card**.



-  **Green Erasmus+ Programme administration** through paperless workflows – from application to transcript of records;
-  **Digital Erasmus+ Programme** through once-only principle and efficiency gains for mobility management
-  **More inclusive Erasmus+ Programme** through more ready made and more targeted communication with students;
-  **Smoother mobility experience** abroad for students and a sense of a European student identity;
-  Underpinned by **Erasmus Charter Higher Education** – commitment to digitalisation of all Erasmus+ participating higher education institutions.

ESC BACKGROUND AND CONTEXT

The European Student Card Initiative (ESCI)

The ESCI is composed of **three building blocks**:

- **Erasmus Without Paper:** connects higher education institutions in Erasmus+ countries via the EWP digital network.
- **Erasmus+ App:** provides students with useful information before, during, and after their mobility abroad.
- **European Student Card:** allows students to validate their student status when on mobility abroad and access on- and off-campus services

European Student Card Initiative (ESCI)



- **Green Erasmus+ Programme administration** through paperless workflows;
- **Digital Erasmus+ Programme** through once-only principle and efficiency gains for mobility management;
- **More inclusive Erasmus+ Programme** through more tailored communication with students;

Smoother mobility experience abroad for students and a sense of European student identity;

Underpinned by the Erasmus Charter Higher Education: commitment to digitalisation by all Erasmus+ participating higher education institutions.



European Student Card (ESC)

ESC BACKGROUND AND CONTEXT

Benefits of the ESC

The European Student Card introduces a **common European identity for higher education students** so that their student status can be easily verified across Europe when in mobility abroad.



Students

- Simplify access to on- and off-campus services during mobility with their existing student card.
- Added European dimension to their student status.



Card issuers/ higher education institutions

- Avoid the need to issue a new student card for mobile students.
- Securely validate the student status of incoming mobility students.



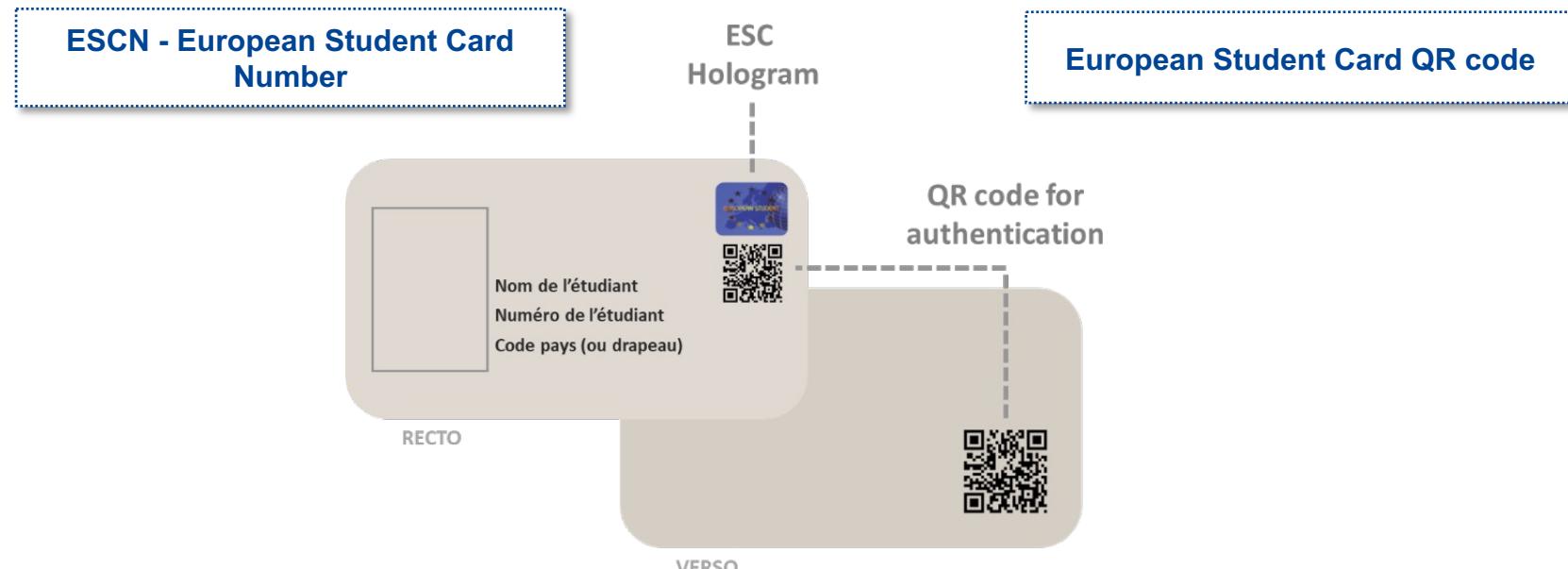
Student service providers

- Streamline the verification of student student status.
- Gain access to a wider network of users

ESC BACKGROUND AND CONTEXT

European Student Card features

Higher education institutions can **freely decide** to join and issue the ESC in a **digital or physical format**. The ESC is compatible with **any type of student card technology** (e.g., chip technology, magnetic stripe, etc).

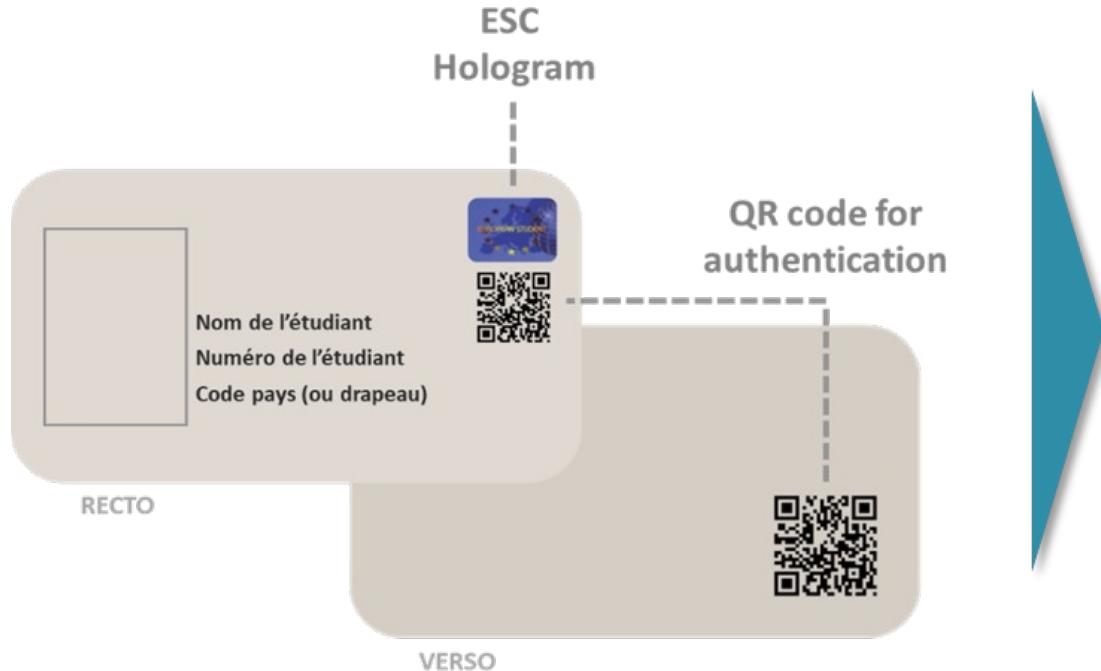


The ESC is not a new card to be issued. Its components are integrated into the existing student card of higher education institutions, thereby adding a European dimension to them.

ESC BACKGROUND AND CONTEXT

Examples of European Student Cards

Depending on the issuing process of each higher education institution (HEI), the ESC can be issued **directly** by the HEI or **co-branded**.



ESC BACKGROUND AND CONTEXT

Current state-of-play of the ESC adoption



2.33M

Students with an active card*

276

Card issuers issuing active cards



834

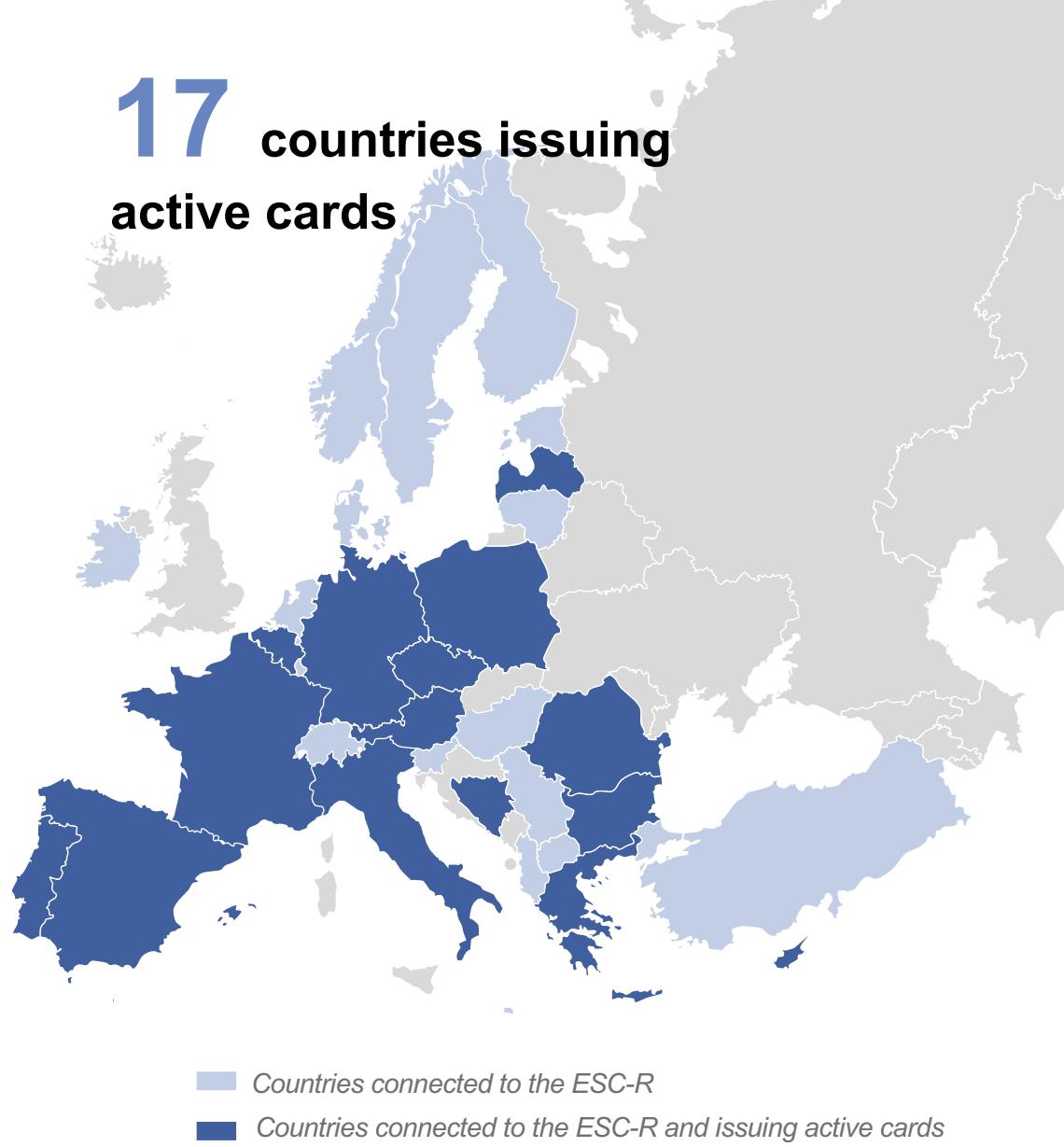
Card issuers registered in the ESC-R



5.55M

Holograms requested

17 countries issuing active cards

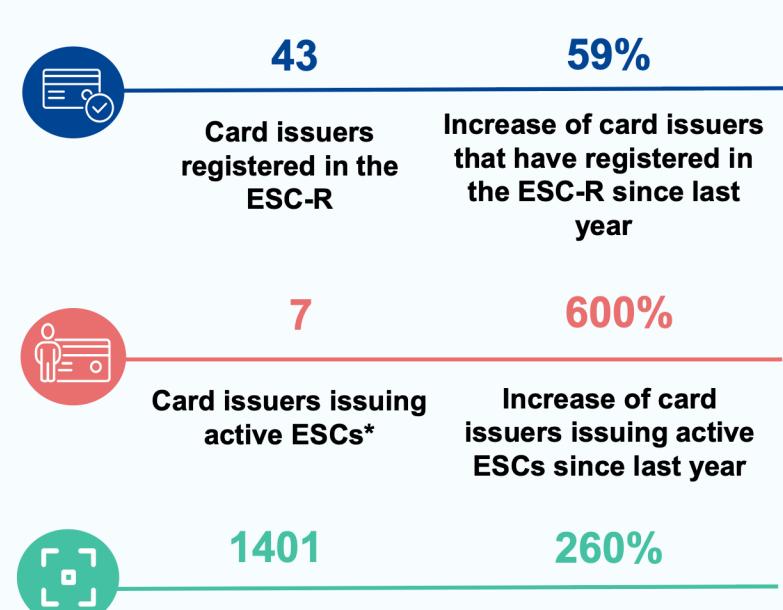


Data from May 2024

*Active card: it means that the registration process has been completed and the institution has issued an ESC with both the hologram and QR code updated to the ESC-Router.

GERMANY: CURRENT STATE-OF-PLAY

Status of ESC adoption in Germany



The extracted data is from January 2024



*Higher education institutions issuing European Student Cards in Germany: Active Cards

- Karlsruher Institut für Technologie KIT
 - Universität Konstanz
 - Universität Tübingen
 - RWTH Aachen University
 - ESCP Business School - Berlin
 - Pädagogische Hochschule Freiburg
 - Staatliche Akademie der Bildenden Künste Karlsruhe
 - Staatliche Hochschule für Musik und Darstellende Kunst Mannheim
 - Burg Giebichenstein Kunsthochschule Halle
 - Universität des Saarlandes
 - UniNow GmbH
- Weitere:**
- LMU München
 - Campus Card Berlin (Berliner Hochschulen, inclusive HU, FU und TU)



A European Student Card to make it easier to be a mobile student

recognise your student status
across Europe

facilitate access to student services

Erasmus+

Higher education

Enriching lives, opening minds.

2 | How does the ESC work?

HOW DOES THE ESC WORK?

ESC card design and co-branding

On the **digital** and **physical** cards issued by the card issuers, the hologram and QR code can be added.



Card issuers can decide how to integrate the QR code and hologram on their current cards.



Co-branding with other cards (i.e. ISIC, EYCA, ESN cards) is possible.



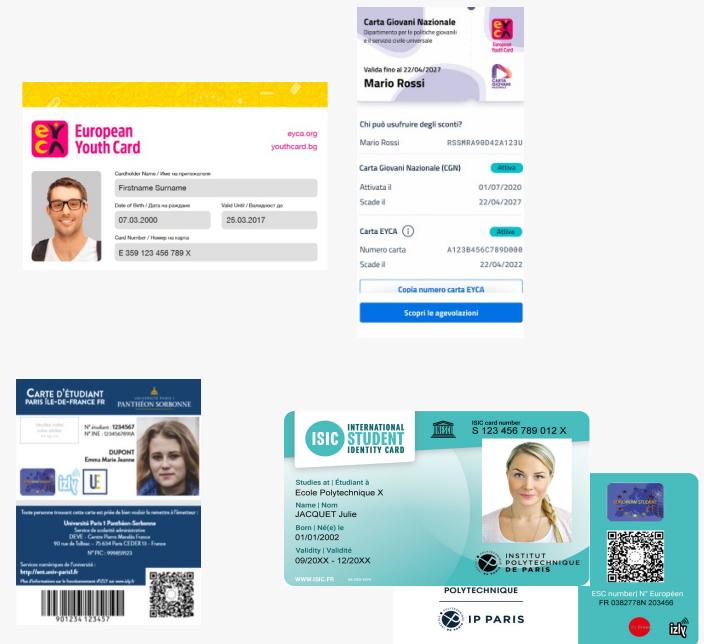
The minimum recommended size of the QR code is **15mm x 15mm**.



Holograms must be requested from the ESC hologram provider, SELP.



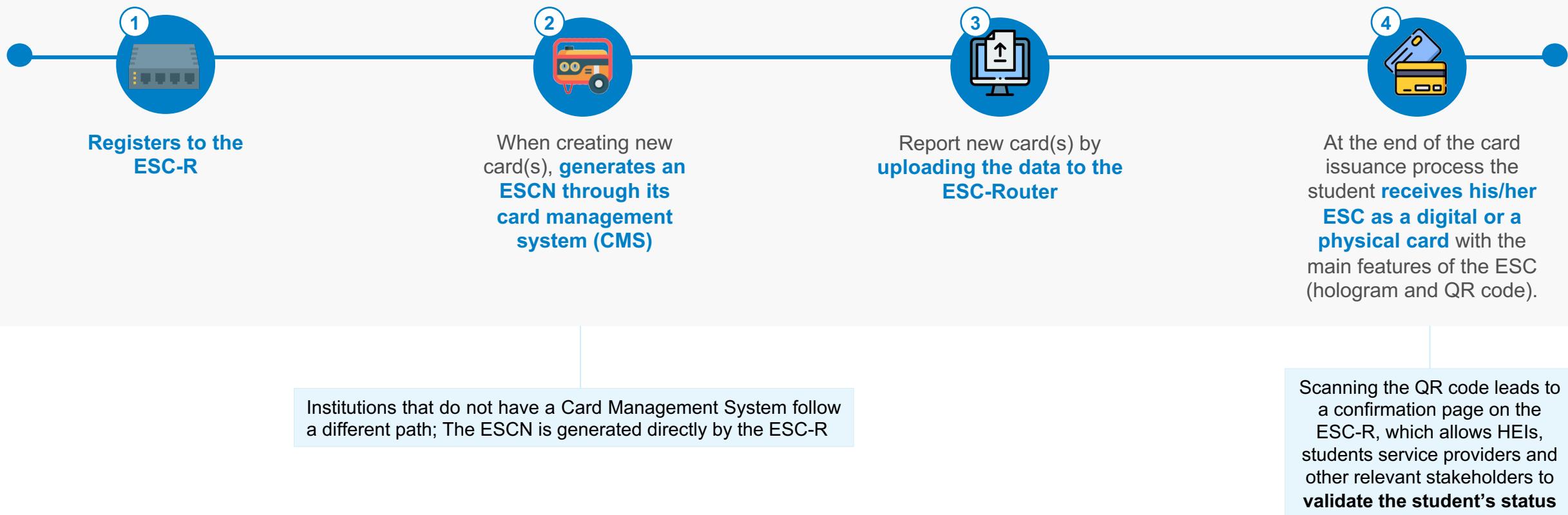
Only the QR code can be added on an extra screen or in a dedicated section of the app for digital cards.



HOW DOES THE ESC WORK?

ESC Router – Issuing active ESCs

The card issuing and activation process includes the generation of ESC features, including the ESCN and the QR code. In addition, the student data is uploaded to the ESC-R to activate the ESC. At the end of the process, the student receives the student card.



HOW DOES THE ESC WORK?

Process of validation of student status

The process by which cardholders gain access to student service provider services includes the demand of services from the student to the service provider and the verification of student status. Different ways of validating student status exist, leveraging either **physical or digital** student cards. The verification of the student status can be done manually through the website or through the QR code or chip.



The **cardholder demands a service** to the student service provider

The service provider **asks for student status verification**

The cardholder **presents their European Student Card**

The student service provider **verifies the student status**

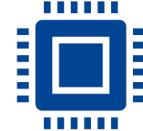
The **student status is verified**, and the student service provider provides **access to its service**

 See next slide

HOW DOES THE ESC WORK?

Levels of validation

Different ways of validating student status exist, leveraging either **physical or digital** student cards.



Hologram

Show & go without card validation

Low Discounts

Museums
Bars

- ⊕ Universal
- ⊖ No validation

QR Code Validation

Simple validation by scanning the QR Code

High Discounts

Public Transport*
Book stores

- ⊕ Universal
- ⊕ Validation

API Validation

Advanced validation through API (after scanning the QR code)

HEI Specific Services

Cafeteria*
Library*

- ⊕ Customizable
- ⊖ Limited to HEI

Chip Validation

Advanced validation by reading the card chip

HEI Specific Services

Cafeteria*
Library*

- ⊖ Convoluted
- ⊖ Hardware required

The level of security increases depending on the validation method used.

* Existing validation methods



Glauben Sie, dass das Ziel eines "interoperablen" Europäischen Studierendenausweises, der überall direkt Zugang zu Services bietet erreichbar ist? 1 Stern sehr weit entfernt, 5 Sterne das erfüllt die ESC schon heute.

- ⓘ Start presenting to display the poll results on this slide.



A European Student Card to make it easier to be a mobile student

recognise your student status
across Europe

facilitate access to student services

Erasmus+

Higher education

Enriching lives, opening minds.

3 | Future Steps for the ESC

FUTURE STEPS FOR THE ESC

Underlying principles



The ESC aims to provide a **toolbox for card issuers**, enabling different use cases and allowing them to make their student cards more international, flexible and interoperable



The vision underlying the ESC is not to create a new card, but to **build on and scale-up existing cards** and reinforce synergies across HEIs all around Europe, **promoting the digitalisation** of student cards in the process



In line with current digital trends we are exploring a strategy for the **evolution of the ESC logo**. The goal is to streamline the issuing of ESCs and facilitate their recognition

FUTURE STEPS FOR THE ESC

Beyond the validation of student status

The ESC project team is carrying out different activities to **facilitate the adoption of the ESC** in the Erasmus+ countries, as well as exploring ways to make the ESC **more flexible and adaptable** to specific contexts and new technologies.

Map & Overcome obstacles

Analysing the specific obstacles within each Erasmus+ country when it comes to the ESC implementation, considering **challenges of political, legal, organisational or technological nature**.

Conduct studies to prepare for the future

Carrying out different **feasibility studies** on innovative technologies and possible integration cases, to make sure that the ESC can anticipate and be up to speed with future trends.

Gather & Implement improvements

Organising business and technical working groups, and collecting inputs from different forums and stakeholders, with the aim to **continuously improve** the ESC Router and the features of the ESC.

FUTURE STEPS FOR THE ESC

Beyond the validation of student status

The ESC-R currently under development is just the **first iteration** of a European Student Card. Future work aims to diversify card technologies and introduce additional card types to **enhance interoperability**.

1st Generation

A central ESC-R and specification for cards

Sets the foundation for the European Student Card initiative

2nd Generation

Digital cards and standardisations for decentralised cards

Starting in 2023, new card technologies will be introduced and standardisation for different types of European Student Cards will be introduced

3rd Generation

Integration in EU Digital Identity Wallet and more advanced use cases

The European Student Card aims to be integrated in the EU Digital Identity Wallet and support more advanced use cases (such as Access Management) in the future

Now

2025

RESOURCES

Communication initiatives

The communication strategy aims at **reaching relevant ESC stakeholders** (e.g., students, higher education institutions, service providers, card providers) to promote the ESC and inform them about the **benefits of the ESC** using different channels (including events, social media, etc.).

ESCI / ESC Comm assets

- [How the ESCI building blocks interact?](#)
- [The European Student Card in brief](#)
- [Welcome to the European Student Card!](#)
- [ESCI Newsletter](#)





A European Student Card to make it easier to be a mobile student

recognise your student status
across Europe

facilitate access to student services

Erasmus+

Enriching lives, opening minds.

Higher education

Stay tuned!



ESCI Newsletter



ESCI Website

For any further questions and support, please
contact us through our helpdesk.



esc.support@nttdata.com

The European Student Card

- ✓ Vision der Europäischen Kommission: Towards a European Education Area
- ✓ Die **European Student Card Initiative** (ESCI)
 - Studierende können überall in Europa einfach ihren **Status verifiziert** bekommen
 - **Zugang zu Services on- und off-campus**
 - **Leichterer Zugang** zu Studierenden Services bei einer Gast-Hochschule während eines **Mobilitäts-Programm**
- ✓ European Charter for Higher Education (ECHE) of the Erasmus+ Program



Eine großartige Vision!



Interoperabilität?

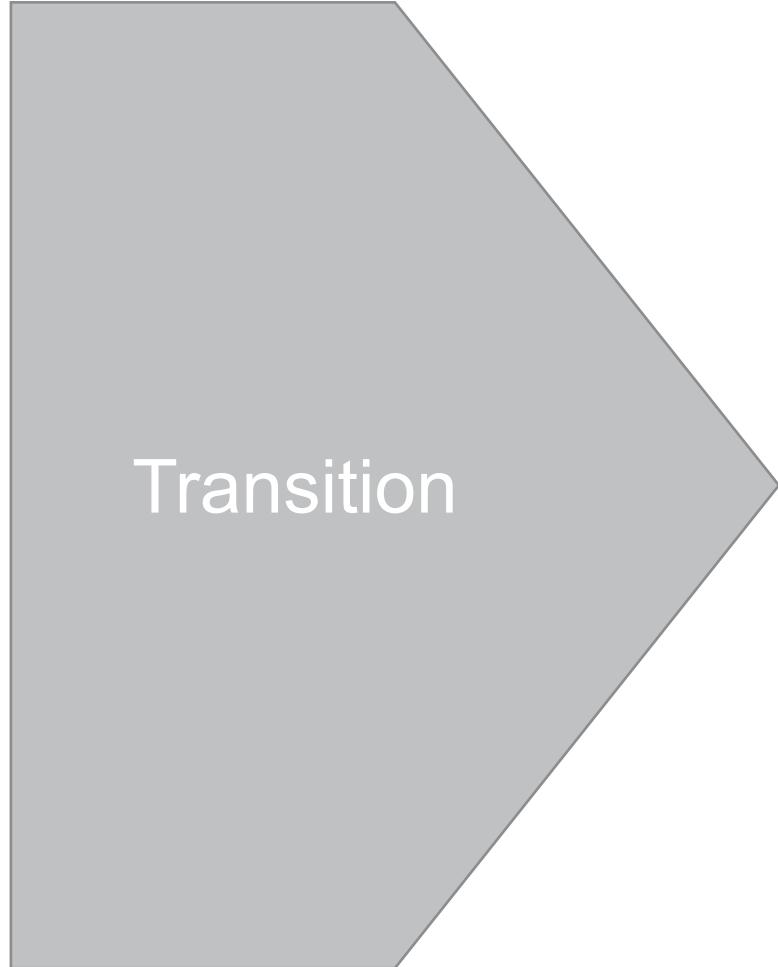
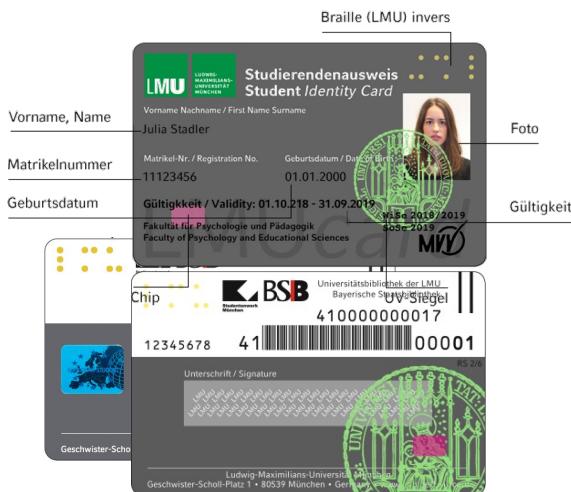
Für den Zugang zu Services auf und außerhalb des Campus?

→ Ein Hologram bietet keine Interoperabilität

Ist eine URL in einem QR-Code die Lösung?

Sicherheit, Datenschutz, ...?

Transition von Credentials ins Smartphone Wallets



Transition



European Student Card → Services

Identifikation

- Identifikation
- Status Verifikation
- „Proof of entitlement“

Beispiele:

- Anwesenheitskontrolle
 - Check-in bei Prüfungen
 - Anwesenheitskontrolle bei Lehrveranstaltungen
 - Zeiterfassung
 - Elektronische Signatur



Electronic payment / cashless campus

- Mensa und Kaffees
- Verkaufautomaten
- Drucken und Scannen (*secure & follow me printing*)
- Ticketing



Physical Access Control (PAC) Schließsysteme

- Gelände (Campus, Parkplätze)
- Gebäude
- Räume
 - Hörsäle
 - Labore
 - Computer Räume
 - Learning spaces
 - Büros
 - Unterkünfte
 - Sportstätten



Bibliothek

- Zugang und Ausleihe von
 - Physischen Medien (Bücher, Audio und Video Material)
 - E-Medien (Bücher, Audio und Video Material)
- Sonderfall von „Identifikation“ / „Status Verifikation“ / „Proof of entitlement“ oder „Payment“ / „Discount“
- Learning spaces
 - Sonderfall von „PAC“



Transport / Nahverkehr

- Nahverkehrsticket (z.B. Semesterticket) & Discounts auf Tickets
- Sonderfall von „Identifikation“ / „Status Verifikation“ / „Proof of entitlement“ oder „Payment“ / „Discount“
- On Campus Services (Universitätsshuttle)
 - Sonderfall von „Proof of entitlement“



Discount / Rabatte und Sonderangebote

- Rabatte bei Kulturellen Aktivitäten
 - Museum
 - Theaters
 - Kino
- Läden
- Restaurants
- Sonderfall von „Identifikation“ / „Status Verifikation“ / „Proof of entitlement“

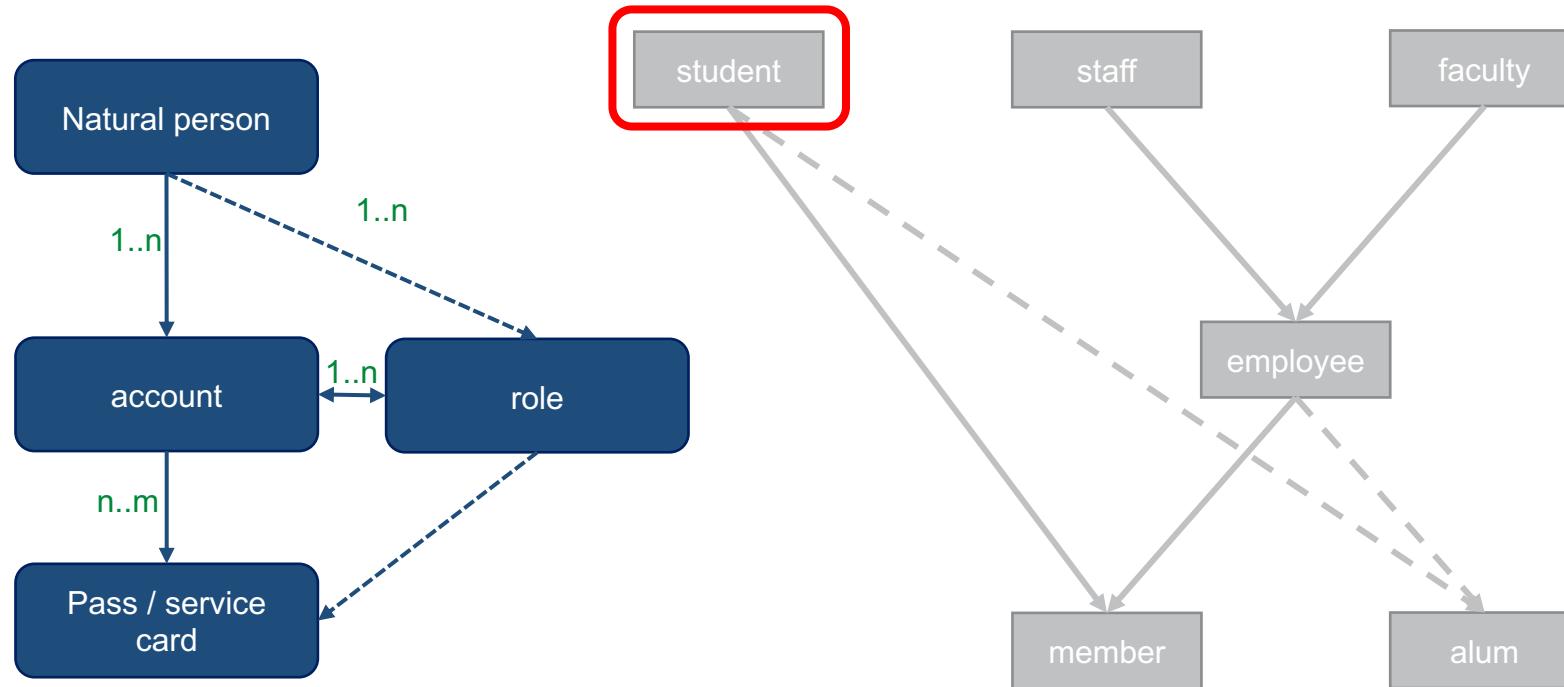
on- & off-campus → Nutzung vor Ort
Online Services



Konzept European Student Card im Smartphone Wallet

→ Zielgruppe der Services

- Warum auf Studierende fokussieren (ISCED:2011 Level 6-8)?
- Es geht um **angebotene Services**
 - ✓ Für Nutzer der (Heimat oder Gast) Institution
 - ✓ Bei Mobilität Fokus auf “short-term mobility”
- Mitarbeiter (Wissenschaftler) sind am häufigsten Unterwegs



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

ISCED:2011 Level



Rahmenbedingungen → EUGLOH



UiT The Arctic
University of Norway



UH
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Universität Hamburg

"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.
- Arbeitspaket (WP5) Campus Life:
Vereinbarung hochschulübergreifend Services
so einfach wie möglich zugänglich zu machen
 - Bibliothek
 - Bezahlfunktion → Zugang zu Mensa und Automaten



EUGLOH Campus Cards Aktueller Stand und verknüpfte Services

Status der Kerngruppe von eduTAP (IT)

→ Vision:

Alle Hochschulangehörigen sollen Services der Gast-Hochschule nutzen können, bei einer "Kurzzeit-Mobilität"



Ludwig-Maximilians-Universität München

- **Logic CTC Cards (Logic Advant + Prime)**
- Bezahlung (Studierendenwerk München)
- Cloud-Printing und Scanning (Secure-Printing und Bezahlung)
- Bibliothek
- ~~Ticket for Public Transport System~~

Université Paris-Saclay

- **NXP Mifare DESfire Cards**
- Bezahlung (izly – les Crous)
- Bibliothek
- Physical Access Control - Schließsystem

Lunds universitet

- **NXP Mifare Classic Cards**
- Physical Access Control (online und offline) - Schließsystem
- Secure-Printing (Kopierer)
- Bibliothek
- Several other services, but not any payment services

Universidade do Porto

- **NXP Mifare Classic Cards / Java Cards mit Mifare Classic Emulation**
- Bibliothek
- Physical Access Control - Schließsystem
- Canteen & Cafeterias
- Printing Service
- Attendance

Not compatible technologies

The Stakeholder-Landscape



Higher Education Sector



interoperable europe



European Commission

DG EAC | Directorate-General
For Education, Youth, Sport and Culture



Digitalization projects



EUROPEAN UNIVERSITY FOUNDATION

Erasmus+ programme of EU

European University Alliances



<https://education.ec.europa.eu/european-universities-factsheets>





Introducing eduTAP



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

www.eugloh.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!

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

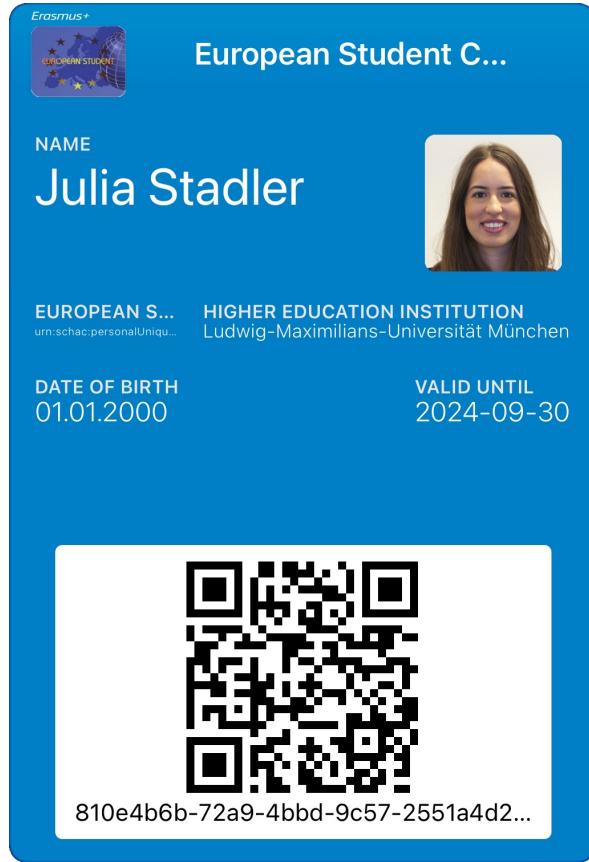
- Mandant Specific Applications (MasA) → eduTAP@institution implementation

eduTAP is community open source

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

Transition von Credentials ins Smartphone Wallet

Beispiel: European Student Card



- Rabatte off-campus
- Nutzung bei Hochschulen die die ESC v1 akzeptieren
- Kein NFC oder zusätzliche Daten

European Student Card → Services

Identifikation

- Identifikation
- Status Verifikation
- „Proof of entitlement“

Beispiele:

- Anwesenheitskontrolle
 - Check-in bei Prüfungen
 - Anwesenheitskontrolle bei Lehrveranstaltungen
 - Zeiterfassung
 - Elektronische Signatur



Electronic payment / cashless campus

- Mensa und Kaffees
- Verkaufautomaten
- Drucken und Scannen (*secure & follow me printing*)
- Ticketing

Physical Access Control (PAC) Schließsysteme

- Gelände (*Campus, Parkplätze*)
- Gebäude
- Räume
 - Hörsäle
 - Labore
 - Computer Räume
 - Learning spaces
 - Büros
 - Unterkünfte
 - Sportstätten

Bibliothek

- Zugang und Ausleihe von
 - Physischen Medien (Bücher, Audio und Video Material)
 - E-Medien (Bücher, Audio und Video Material)
- Sonderfall von „Identifikation“ / „Status Verifikation“ / „Proof of entitlement“ oder „Payment“ / „Discount“
- Learning spaces
 - Sonderfall von „PAC“

Transport / Nahverkehr

- Nahverkehrsticket (z.B. Semesterticket) & Discounts auf Tickets
- Sonderfall von „Identifikation“ / „Status Verifikation“ / „Proof of entitlement“ oder „Payment“ / „Discount“
- On Campus Services (Universitätsshuttle)
 - Sonderfall von „Proof of entitlement“

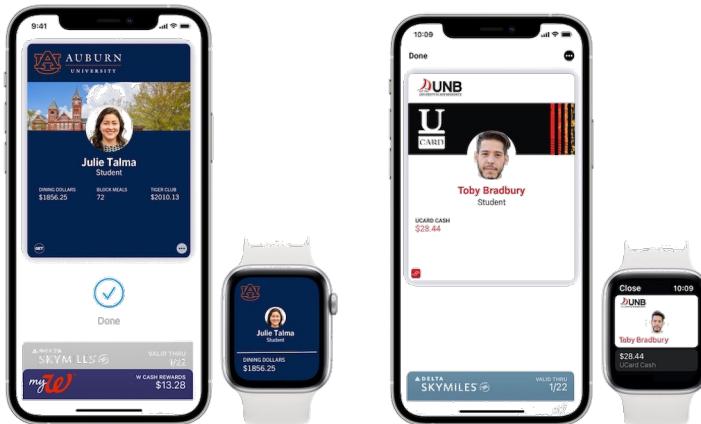
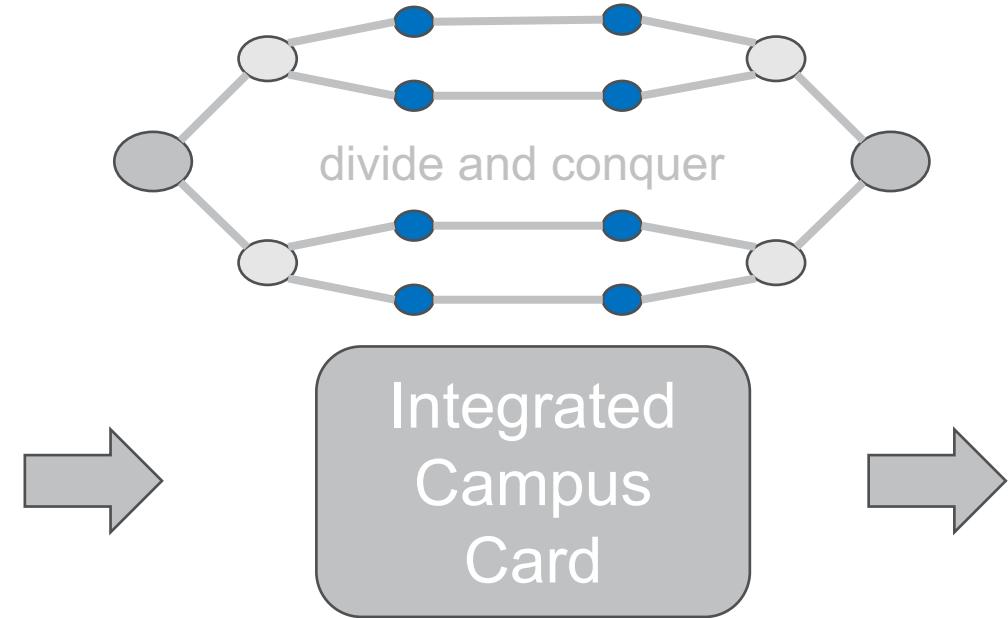
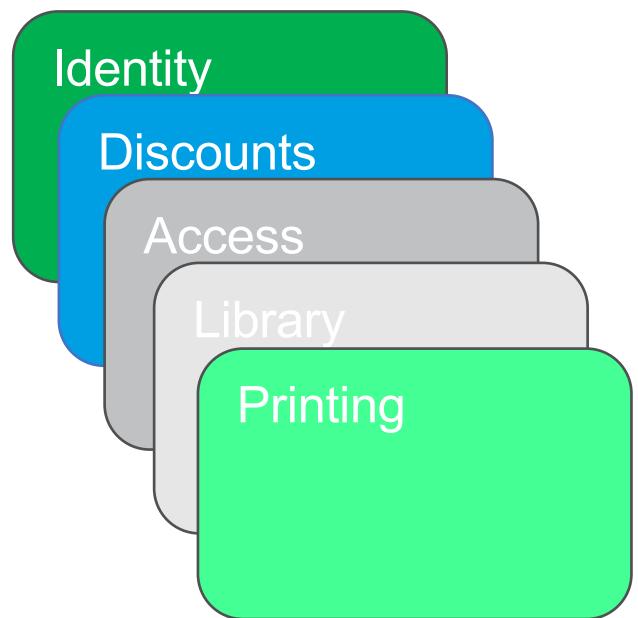
Discount / Rabatte und Sonderangebote

- Rabatte bei Kulturellen Aktivitäten
 - Museum
 - Theaters
 - Kino
- Läden
- Restaurants
- Sonderfall von „Identifikation“ / „Status Verifikation“ / „Proof of entitlement“

on- & off-campus → Nutzung vor Ort
Online Services



Path to an interoperable campus card



Konzept European Student Card im Smartphone Wallet → Services

Identifikation

- Identifikation
- Status Verifikation
- „Proof of entitlement“

Beispiele:

- Anwesenheitskontrolle
 - Check-in bei Prüfungen
 - Anwesenheitskontrolle bei Lehrveranstaltungen
 - Zeiterfassung
 - Elektronische Signatur



Electronic Payment / cashless campus

- Mensa und Kaffees
- Verkaufsautomaten
- Drucken und Scannen (*secure & follow me printing*)
- Ticketing

Physical Access Control (PAC)

- Gelände (Campus, Parkplätze)
- Gebäude
- Räume

Bibliothek

- Zugang und Ausleihe von
 - Physischen Medien (Bücher, Audio und Video Material)
 - E-Medien (Bücher, Audio und Video Material)

Transport / Nahverkehr

- Nahverkehrsticket (z.B. Semesterticket) & Discounts auf Tickets
- Sonderfall von „Identifikation“ / „Status Verifikation“ / „Proof of entitlement“ oder „Discount“
- Services (shuttle) in „Entilement“

Discount / Rabatte und Sonderangebote

- Rabatte bei Kulturellen Aktivitäten
 - Museum
 - Theaters
 - Kino
- Läden
- Restaurants
- Sonderfall von „Identifikation“ / „Status Verifikation“ / „Proof of entitlement“

Legacy Bereich
→ Systeme nicht schnell / einfach zu ersetzen

Legacy Systeme

- Legacy identifiers
- Technische Einschränkungen
- Herstellerspezifische Lösungen

→ Anbieter sind selber dabei funktionsfähige individualisierbare Lösungen anzubieten

Konzept European Student Card im Smartphone Wallet → Services

Identifikation

- Identifikation
- Status Verifikation
- „Proof of entitlement“

Beispiele:

- Anwesenheitskontrolle
 - Check-in bei Prüfungen
 - Anwesenheitskontrolle bei Lehrveranstaltungen
 - Zeiterfassung
 - Elektronische Signatur

Electronic Payment / cashless campus

Mensa und Kaffees

- Drucken und Scannen (secure & fast printing)
- Ticketing

Physical Access Control (PAC)

Gelände

(Campus, Campus, ...)

Gebäude

Bibliothek

- Zugang und Ausleihe von
 - Physischen Medien (Bücher, Audio und Video Material)

Transport / Nahverkehr

- Nahverkehrsticket (z.B. Semesterticket) & Discount auf Tickets

→ Sonderfall von „Identification“ / „Status Verification“ / „Proof of Entitlement“ oder „Discount“
Services (Busshuttle) → Sonderfall von „Identification“ / „Status Verification“ / „Proof of entitlement“

Discount / Rabatte und Sonderangebote

- Rabatte bei Kulturellen Aktivitäten
 - Museum
 - Theaters
 - Kino
 - Läden
 - Restaurants
- Sonderfall von „Identification“ / „Status Verification“ / „Proof of entitlement“

Funktionsfähige Lösungen der Anbieter

→ Separate Service Pässe
(Service Provider kann sinnvolle Technologie wählen)

on- & off-campus → Nutzung vor Ort

Technisch einheitlicher Ausweis für Hochschulen
→ ISO/IEC 18013-5

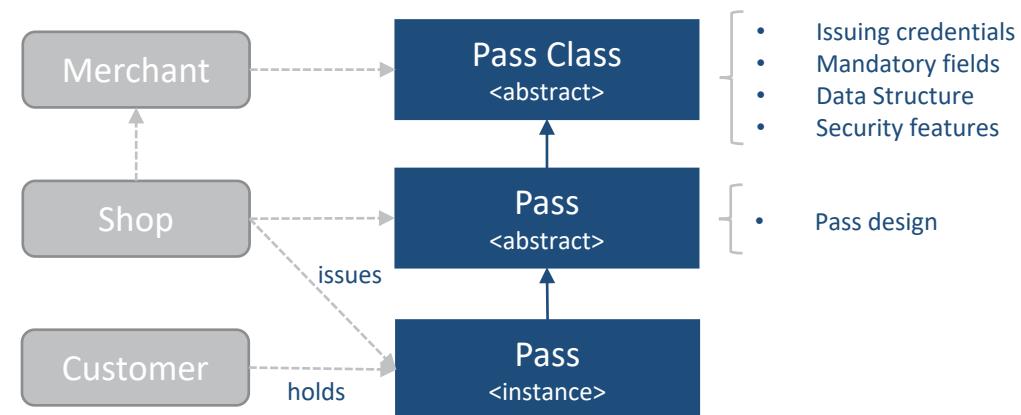
Technische Details und Fähigkeiten von Wallets / Pässen

Die Wallet ist ein Kontainer für mehrere Credential → Pässe

Die Waller **bietet Zugriff** auf Pässe und **Sichert** diese ab (Secure Element, Cloud bases Secure Element, ...).

Technical features:

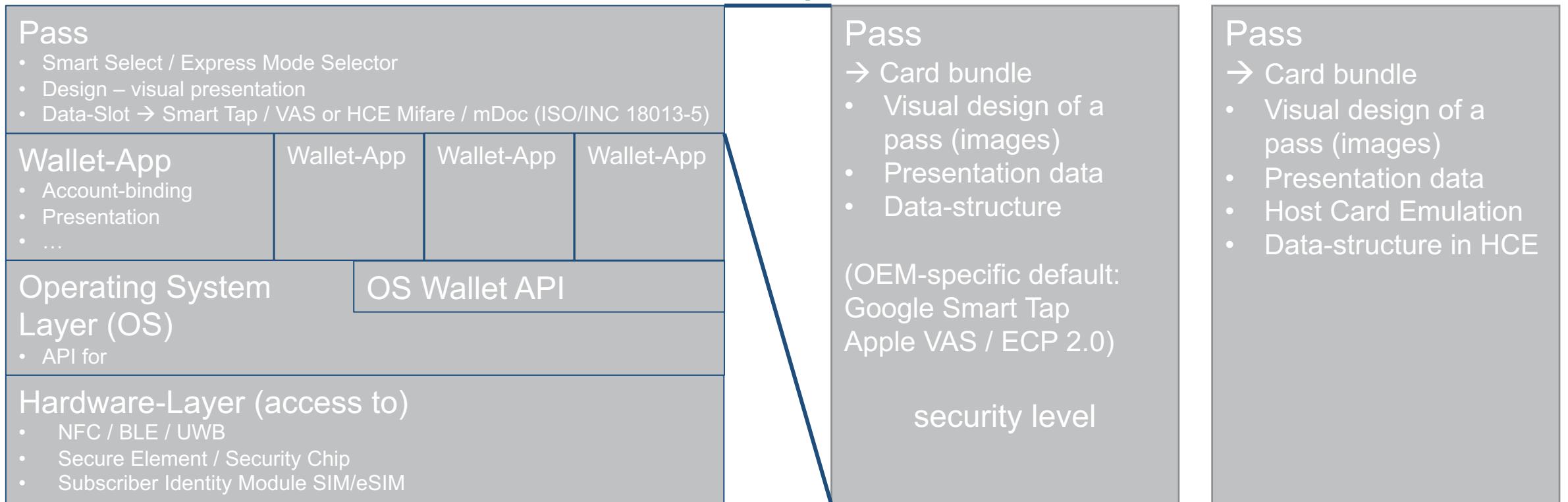
- **Smart / Quick Select option** ← Leser selektiert den spezifischen Pass
- **Battery reserve** (Pässe sind selbst dann zugänglich wenn das Smartphone wegen fehlernder Energie ausgeschaltet ist; Wichtig für Schlüssel, ÖPNV, Bezahlfunktionen)
- Selectable Authentication requirements ← security features
- Groupable
- Validity dates
- Remote updateable / revokable
- **Offline usable** (→ non traceable)
- *Host Card Emulation possible*



Technische Details und Fähigkeiten von Wallets / Pässen

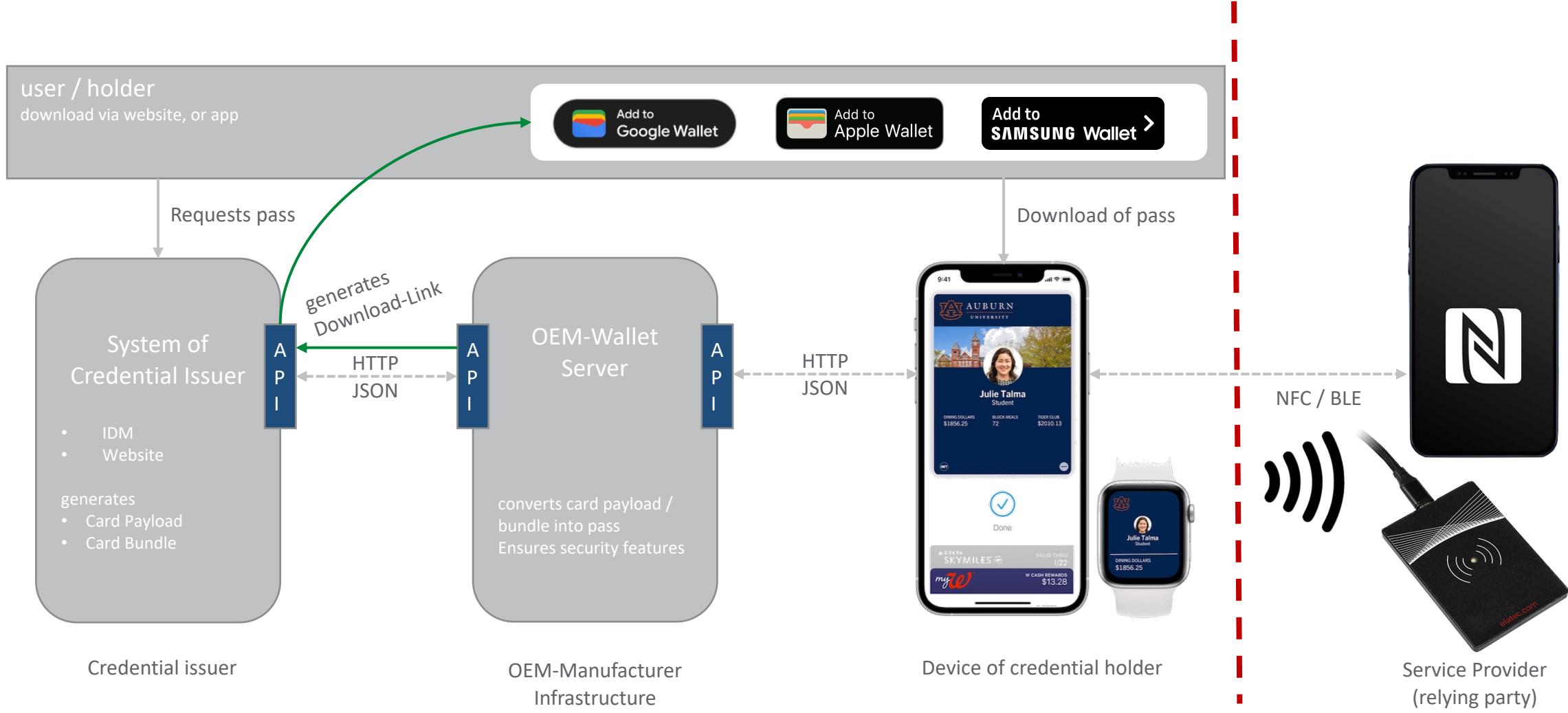
- ✓ Technische Details and Fähigkeiten von Wallets / Pässen → Weg zu einer **interoperablen** Campus Card
- ✓ Wenn jeder contactless-Pass (Technologie) von einem Kartenleser individual selektiert und genutzt werden kann (**Smart Select**), und das Datenmodell / Technologie nach den Anforderungen ausgesucht werden kann

→ Einen Pass pro Service

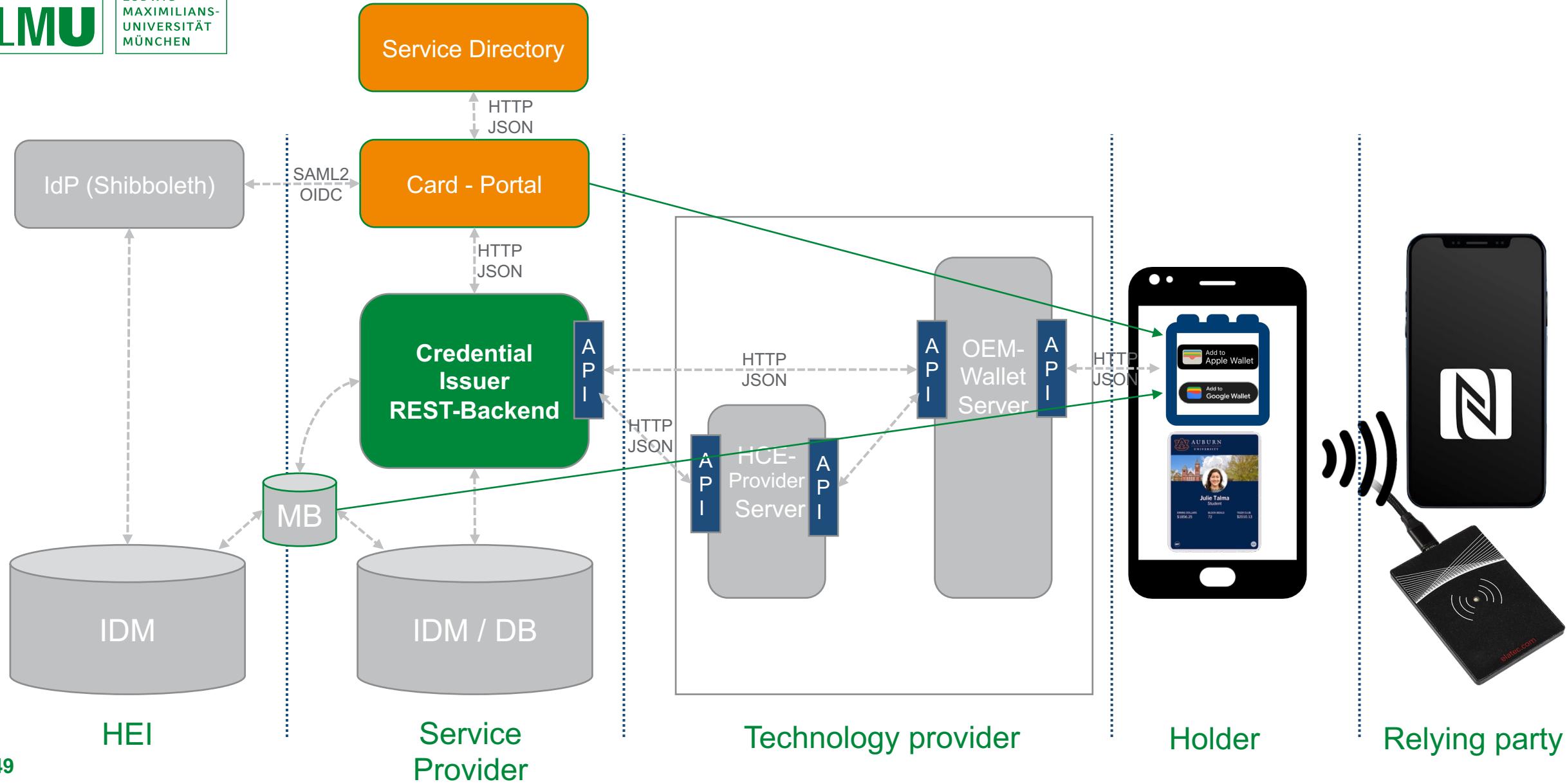


Smartphone Wallets – Ausstellungsprozess

→ Wichtig für die Nutzer – immer der gleiche Prozess



Technische Punkte zu Ausweisen im Smartphone-Wallet



Konzept European Student Card im Smartphone Wallet → Services

Identifikation

- Identifikation
- Status Verifikation
- „Proof of entitlement“

Beispiele:

- Anwesenheitskontrolle
 - Check-in bei Prüfungen
 - Anwesenheitskontrolle bei Lehrveranstaltungen
 - Zeiterfassung
 - Elektronische Signatur

Electronic Payment / cashless campus

Mensa und Kaffees

- Drucken und Scannen (secure & fast printing)
- Ticketing

Physical Access Control (PAC)

- Gelände

(Campus, Campus, ...)

- Gebäude

Bibliothek

- Zugang und Ausleihe von
 - Physischen Medien (Bücher, Audio und Video Material)

Transport / Nahverkehr

- Nahverkehrsticket (z.B. Semesterticket) & Discount auf Tickets

→ Sonderfall von „Identification“ / „Status Verification“ / „Proof of Entitlement“ oder „Discount“
Services (Busshuttle) → „Identification“ / „Status Verification“ / „Proof of entitlement“

Discount / Rabatte und Sonderangebote

- Rabatte bei Kulturellen Aktivitäten
 - Museum
 - Theaters
 - Kino
 - Läden
 - Restaurants
- Sonderfall von „Identification“ / „Status Verification“ / „Proof of entitlement“

Funktionsfähige Lösungen der Anbieter

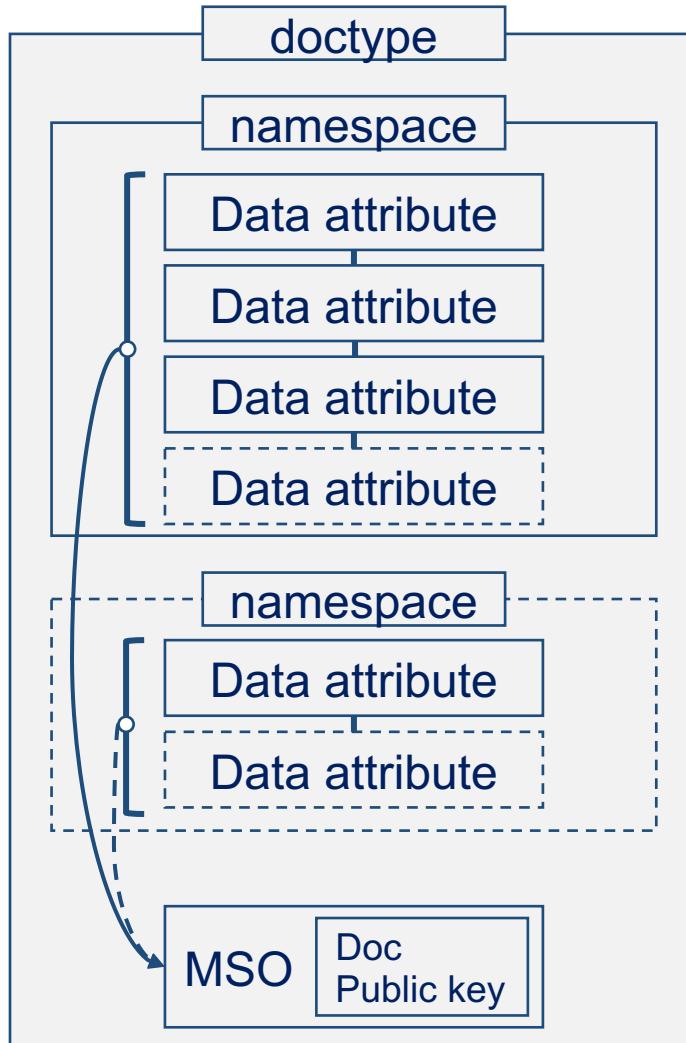
→ Separate Service Pässe
(Service Provider kann sinnvolle Technologie wählen)

on- & off-campus → Nutzung vor Ort

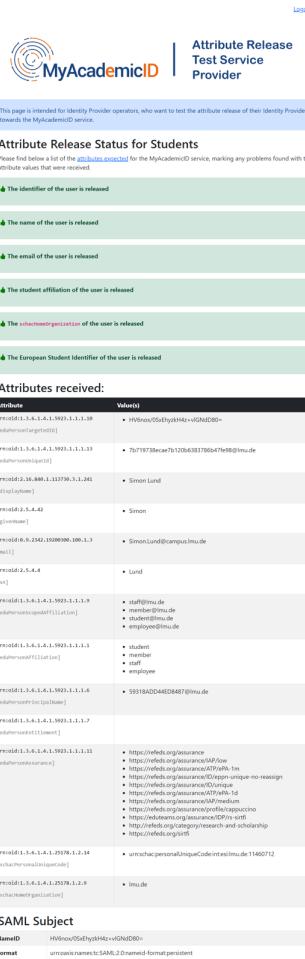
Technisch einheitlicher Ausweis für Hochschulen
→ ISO/IEC 18013-5

Konzept European Student Card im Smartphone Wallet → Common Identification pass using ISO/IEC 18013-5 model

- Das "ISO/IEC 18013-5 Personal Identification" Modell wurde entwickelt, um folgendes zu unterstützen
 - Ein Protokoll für zwei Geräte zum Aufbau eines **sicheren drahtlosen Kommunikationskanals** und zum Austausch strukturierter Anfrage- und Antwortnachrichten
 - **Identifizierung** des Inhabers des Berechtigungsnachweises (**Benutzerbindung**)
 - **Selektive Freigabe von Datenelementen** durch den Ausweisinhaber (**Datenminimierung/Zustimmung**)
 - Ein Protokoll zum Abruf von Berechtigungsdaten direkt vom mobilen Gerät des Inhabers, **rein offline**, zur Erleichterung der **Verfügbarkeit** und **Nichtrückverfolgbarkeit**
 - Ein **optionales** Protokoll zum **Abruf zusätzlicher Daten** von der ausstellenden Behörde
 - einen Mechanismus zur Feststellung der **Integrität** und **Authentizität** der Berechtigungsnachweisdaten
 - Ein Mechanismus zur Bestätigung der **Gerätebindung** (Signierung zum Zeitpunkt der Transaktion)
 - Multi-Dokument- und **Multi-Namensraum-Fähigkeit** ← erweiterbar für andere Anwendungsfälle
- Etabliertes staatliches Ausweisformat, das bereits im Einsatz ist → mobiler Führerschein
- Wird bereits von den OEM-Smartphone-Herstellern (Apple und Google) unterstützt
(siehe: <https://android-developers.googleblog.com/2020/11/privacy-preserving-features-in-mobile.html>)
- Keine zusätzlichen Infrastrukturkosten

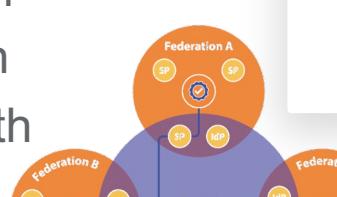
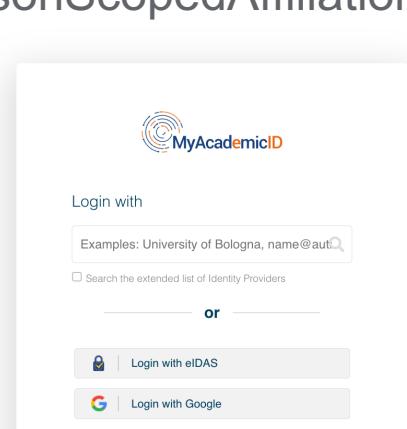


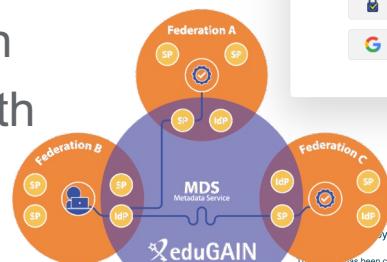
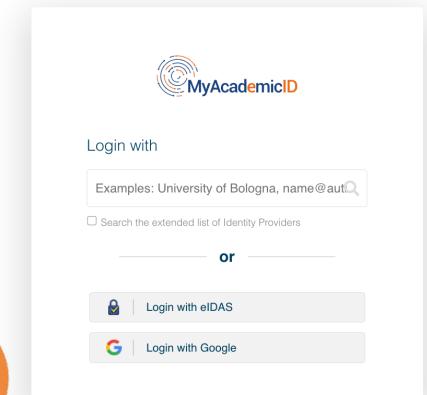
Übertrag der Identity Management Ideen von eduGAIN



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

Shibboleth®





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.

Trust level / Assurance Level

→ Very important for IDENTIFICATION & AUTHENTICATION

→ 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

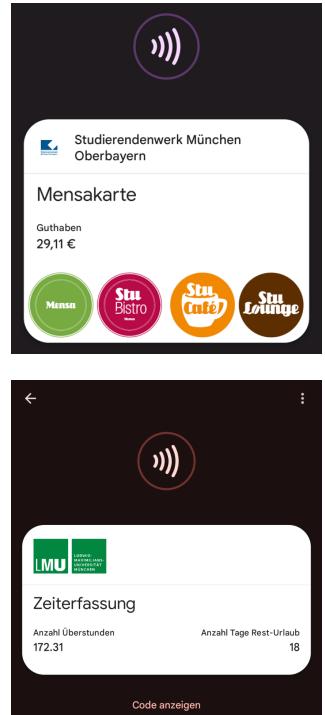
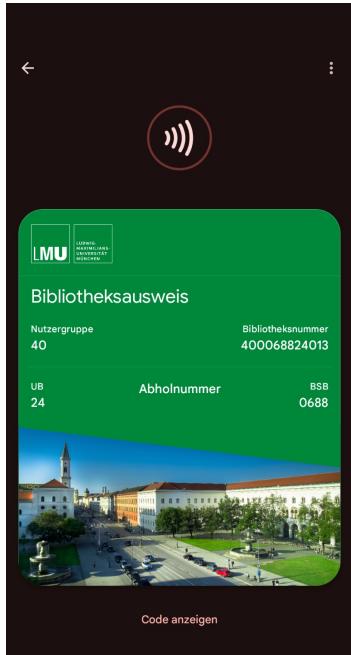
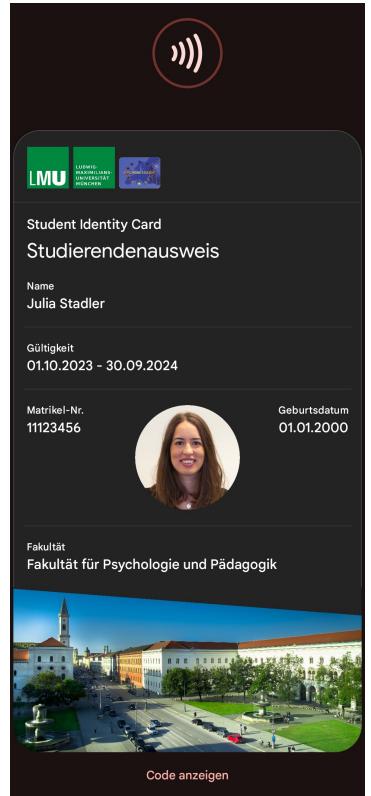
-  compliant
- In eID of EU Citizen IDs
- Provided by HEI for foreign Students

Identity proofing:

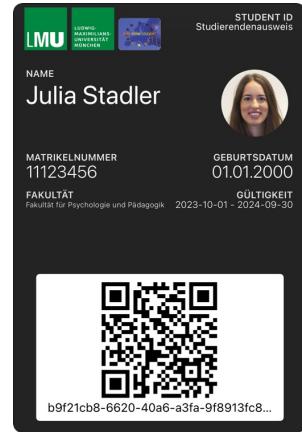
- Officially confirmed
- Identity document checked to be genuine and represent the claimed identity
- Qualified signature

Transition der Credentials ins Smartphone Wallets

Beispiel: potentielle IDs der LMU Munich



Add to
Google Wallet



Add to
Apple Wallet

→ alle NFC enabled

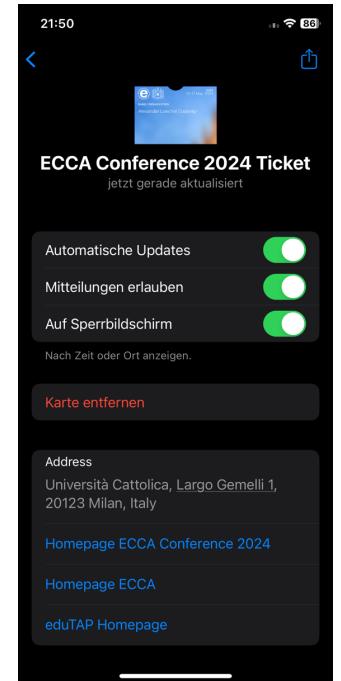
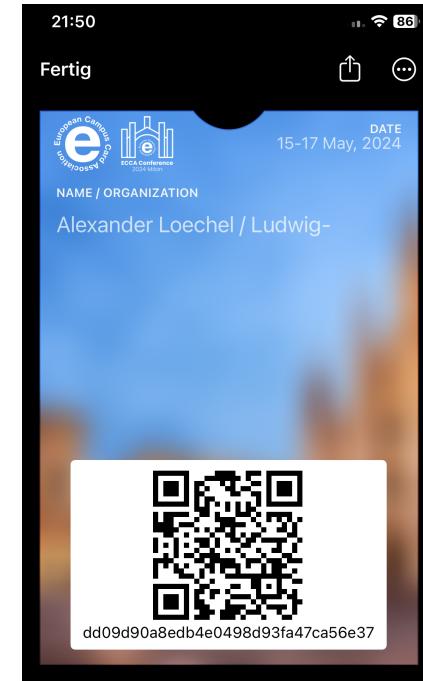
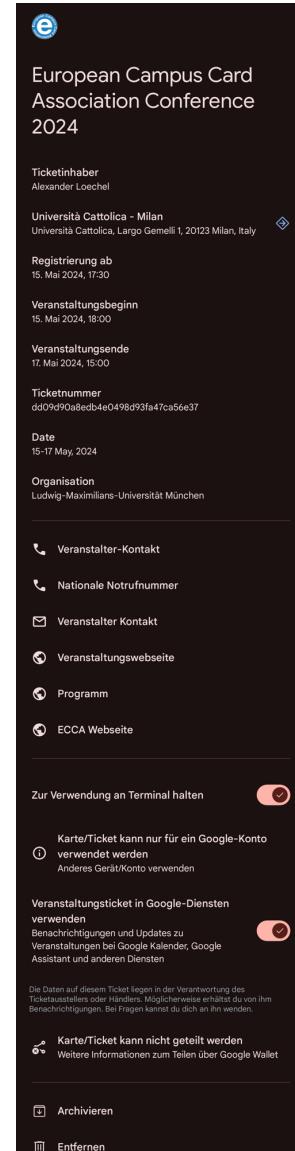
Transition der Credentials ins Smartphone Wallets

Beispiel: Event Tickets

EUGLOH Annual Summit 2023 in Lund



ECCA 2024



Demo → Laden Sie sich einen eduTAP Beispiel Pass herunter



<https://demo.edutap.eu/>



Add to Google Wallet



Add to Apple Wallet

Bei Fragen zur ESC und Deutsche Umsetzungen

Bei Fragen zu Deutschen Umsetzungen melden Sie sich gerne bei

- LMU München: Alexander.Loechel@lmu.de
- KIT: Axel.Maurer@kit.edu
- Humboldt Uni Berlin: Tamas.Molnar@cms.hu-berlin.de

Grundlegende Fragen zur European Student Card

- NTT Data – ESC Helpdesk: esc.support@nttdata.com
- Projektleitung ESC bei NTT Data: Jeroen van Lent
deutschsprachiger Ansprechpartner: Grganovic Hrvoje



Alexander Loechel
Referent IT-Projekte
Dezernat VI · Zentrale Universitätsverwaltung · Ludwig-
Maximilians-Universität München
Martiusstraße 4 · 80802 München · Tel. +49 89 2180 9831
Alexander.Loechel@lmu.de · www.lmu.de

