

Designing & Implementing a 'mobile European Student Card'

The Erasmus Student eCard



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Tim Ohlendorf, Fraunhofer AISEC, Germany (formerly FU Berlin)

Agenda

- The StudIES+ Project
- Student ID Card
- Student ID Demo





StudIES+

Student's Identification and
Electronic Signature Services

Consortium



▲ Hochschule Harz



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

2017 CEF Telecom Call - eldentification & eSignature

Short Overview



Higher education institution processes

Facilitating and digitalizing workflows and processes.



Student identity

Keeping track of academic and national IDs across borders, institutions and devices.



Document signatures

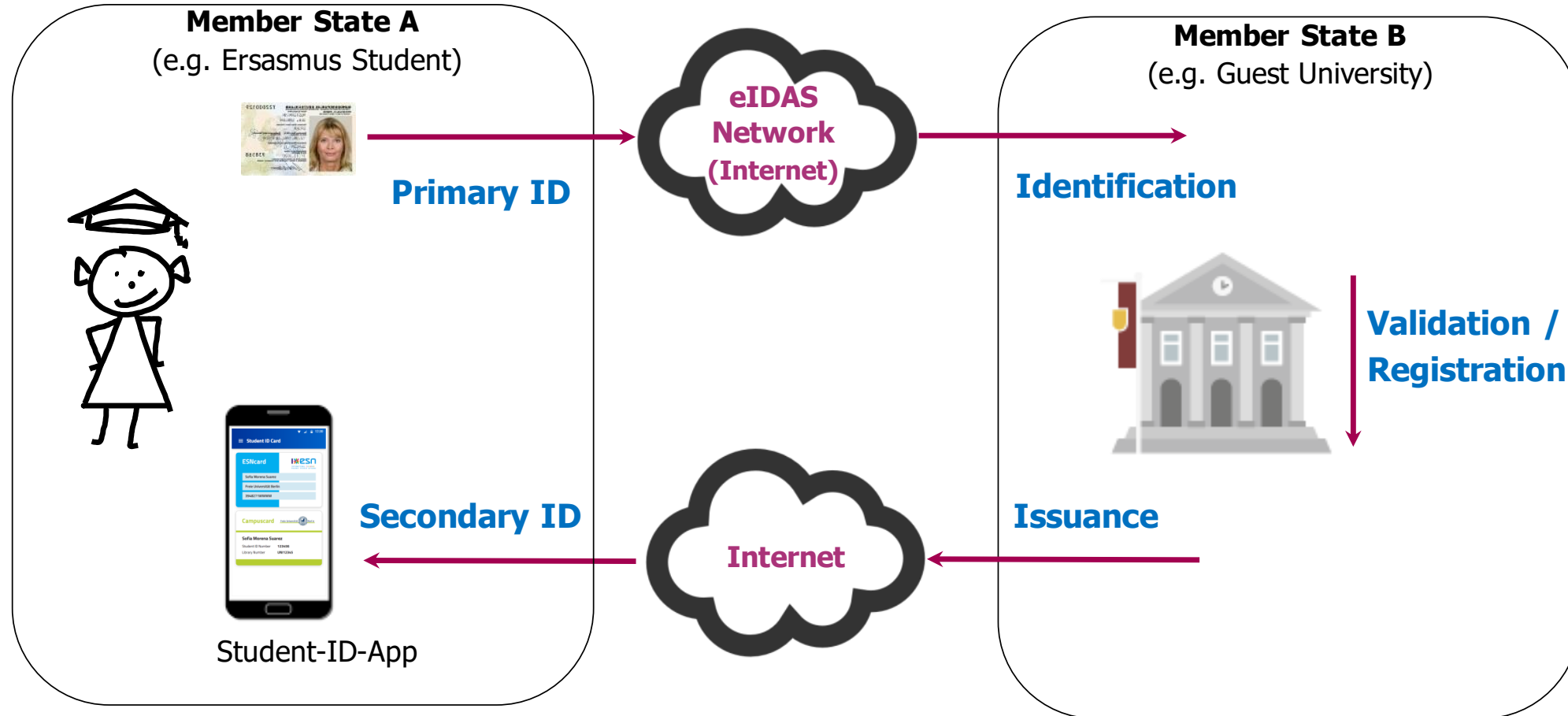
Taking documents, signatures and security to the digital age.



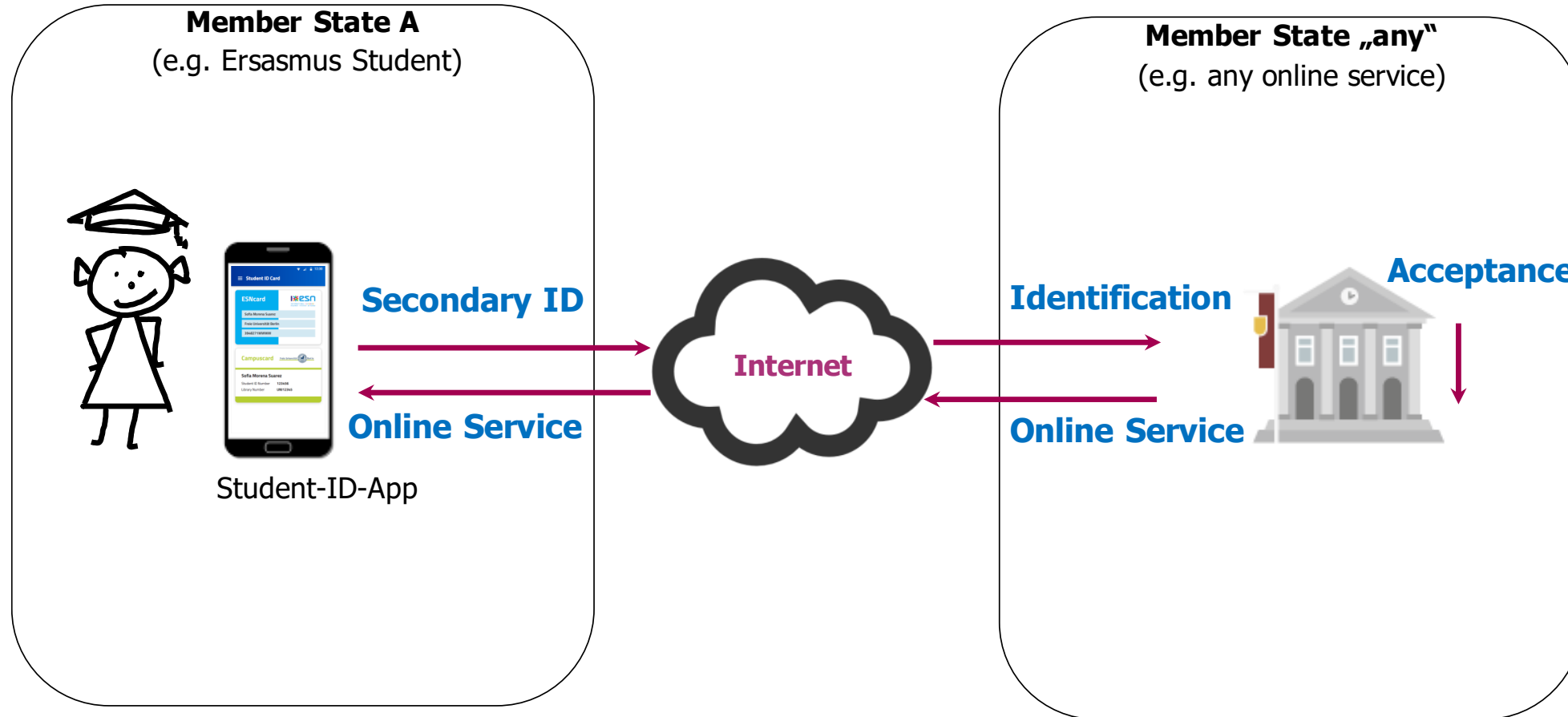
Student ID Card

The Digital Student ID on the Smartphone

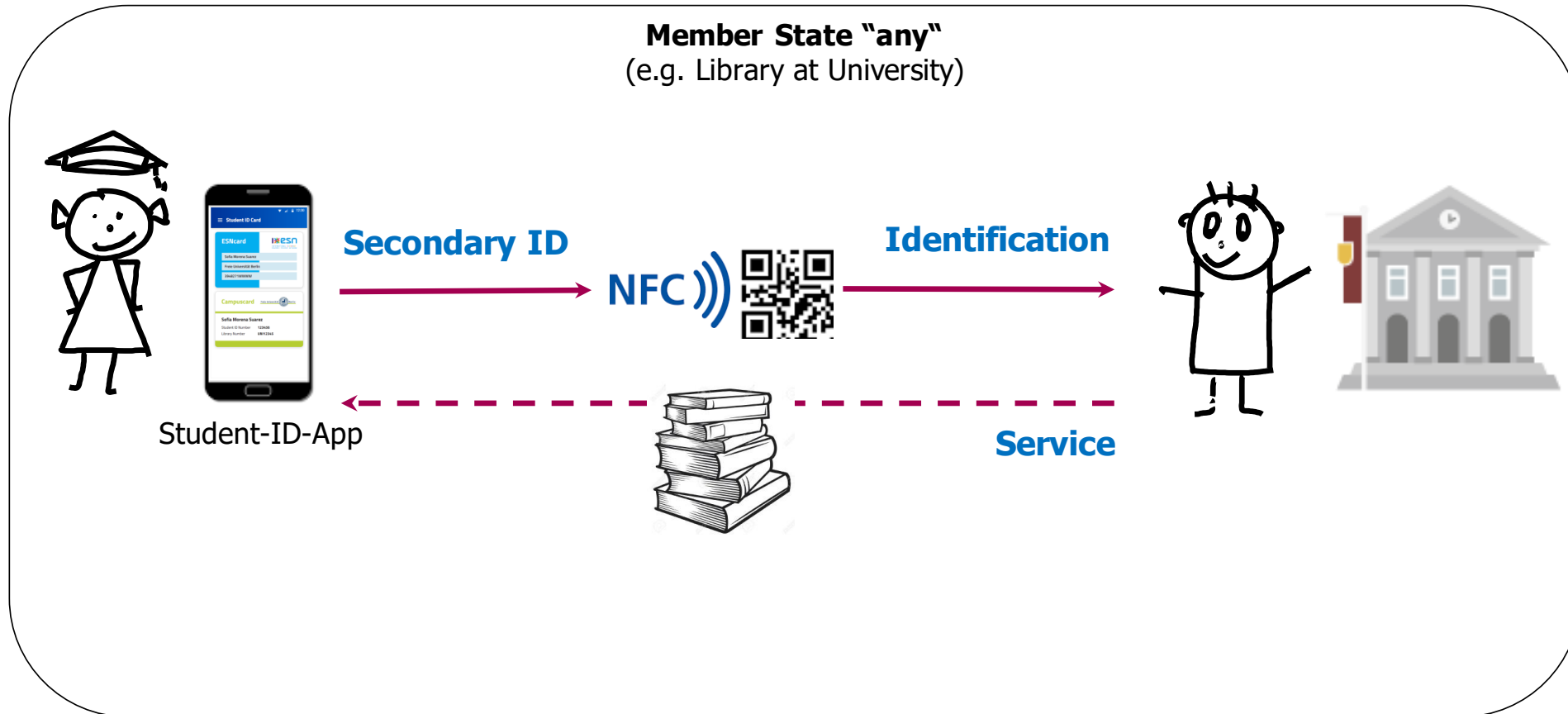
Student ID Approach: Secondary ID – Issuance Use Case



Student ID Approach: Secondary ID – Online Use Case



Student ID Approach: Secondary ID – Local Use Case



Student ID Approach: Secondary ID – Attribute Management



Primary ID

(get Attributes from eIDAS-Network)

Minimum Data Set (MDS):

- Family Name
- First Name
- Date of Birth
- Person Identifier

Optional Data Set

- First Name at Birth
- Family Name at Birth
- Place of Birth
- Current Address
- Gender

Implicitly known Attributes

- Nationality
- ID-Document

Secondary ID

(put Attributes onto "Student ID Card")

Source eIDAS:

- Family Name
- First Name
- Date of Birth

Source HEI-DB:

- Student Number (ESCN)
- Course of study
- Degree program

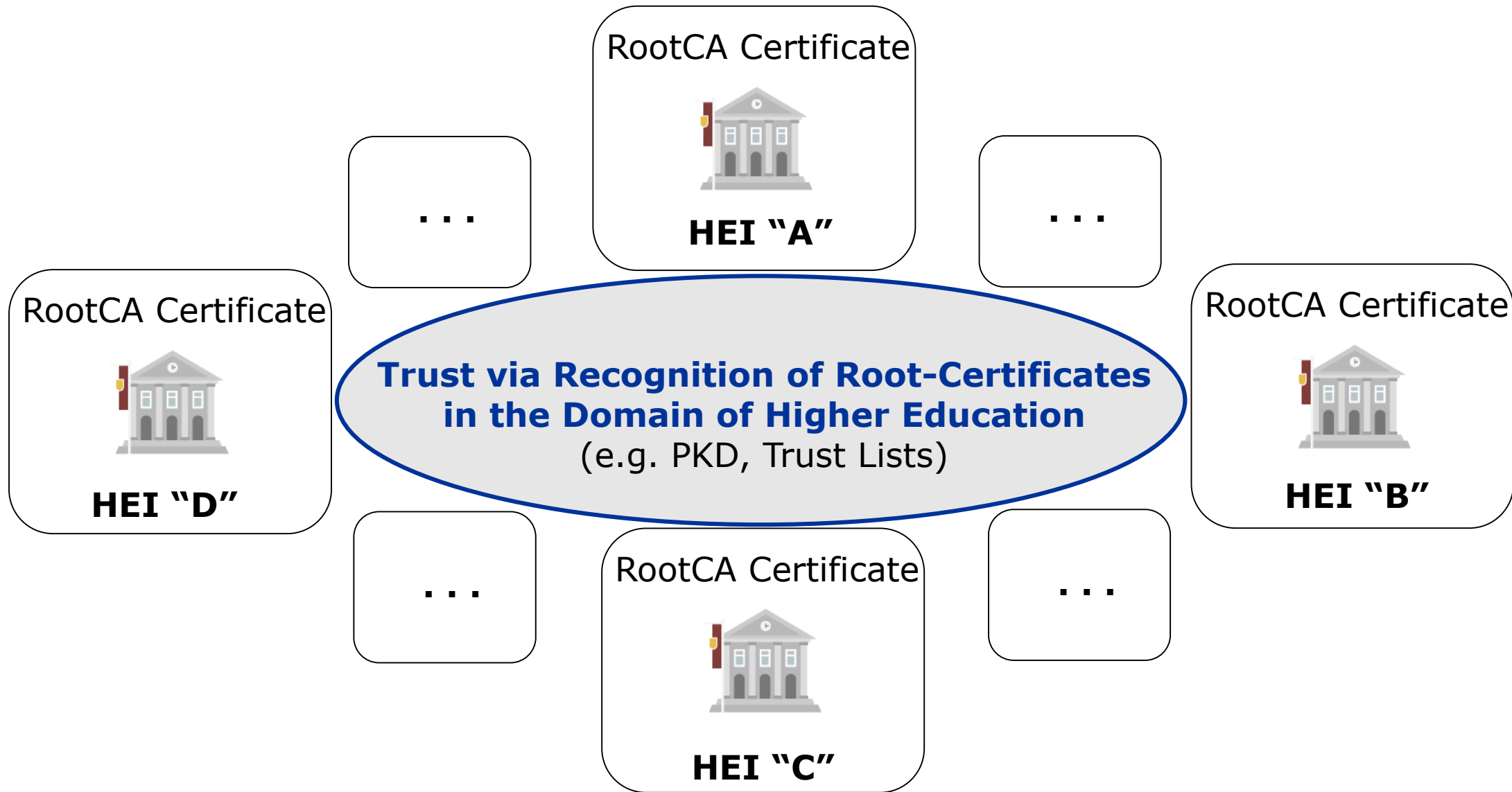
Source Self-enrolled:

- Portrait Image
- Local Address

Other, e.g.

Public Transport data (Images, 2D Barcode)

Student ID Approach: Secondary ID – Trust Model





Student ID Approach: Summary

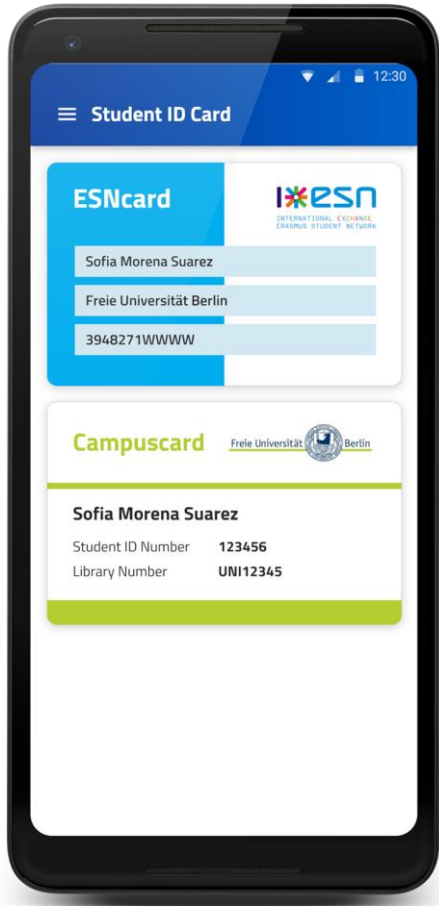
1. **Attributes are locally stored on the mobile device as Secondary ID via issuing service of HEI.**
2. **No Identity Provider at HEI required for online and local identification.**
3. **Authenticity of attributes is achieved by X.509 Certificates**
4. **Authenticity of Online Service is achieved by X.509 Certificates**
5. **Trust Model relies on bilateral recognition of RootCA certificates in the domain of higher education.**



Student ID Demo

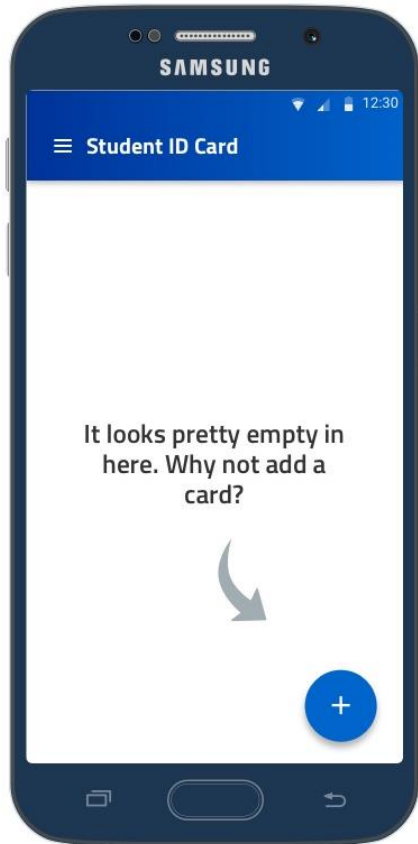
Prototype for Android and iOS

Student ID Card: Overview

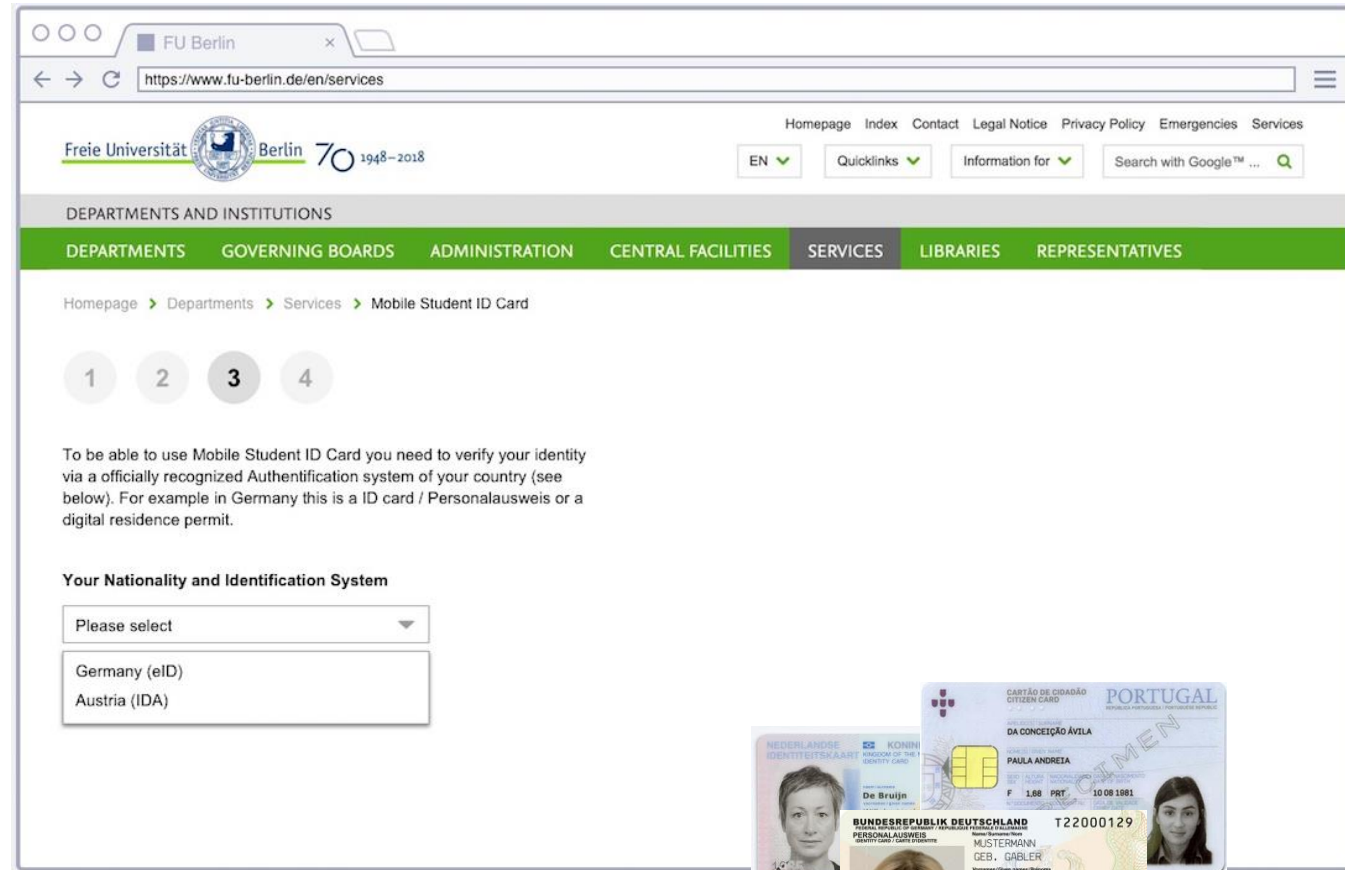
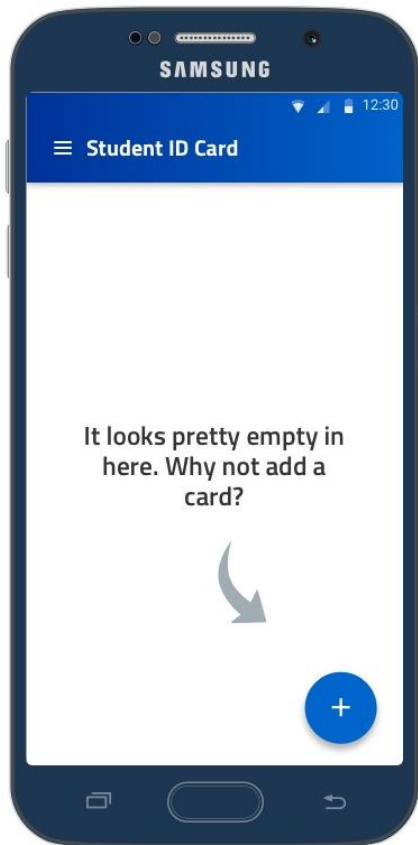


- Simple registration from home
- Online and offline use cases
- Secure and privacy-preserving
- Standalone app or module
- Open ecosystem for further services and ID cards

Student ID Card App: Registration & Issuance



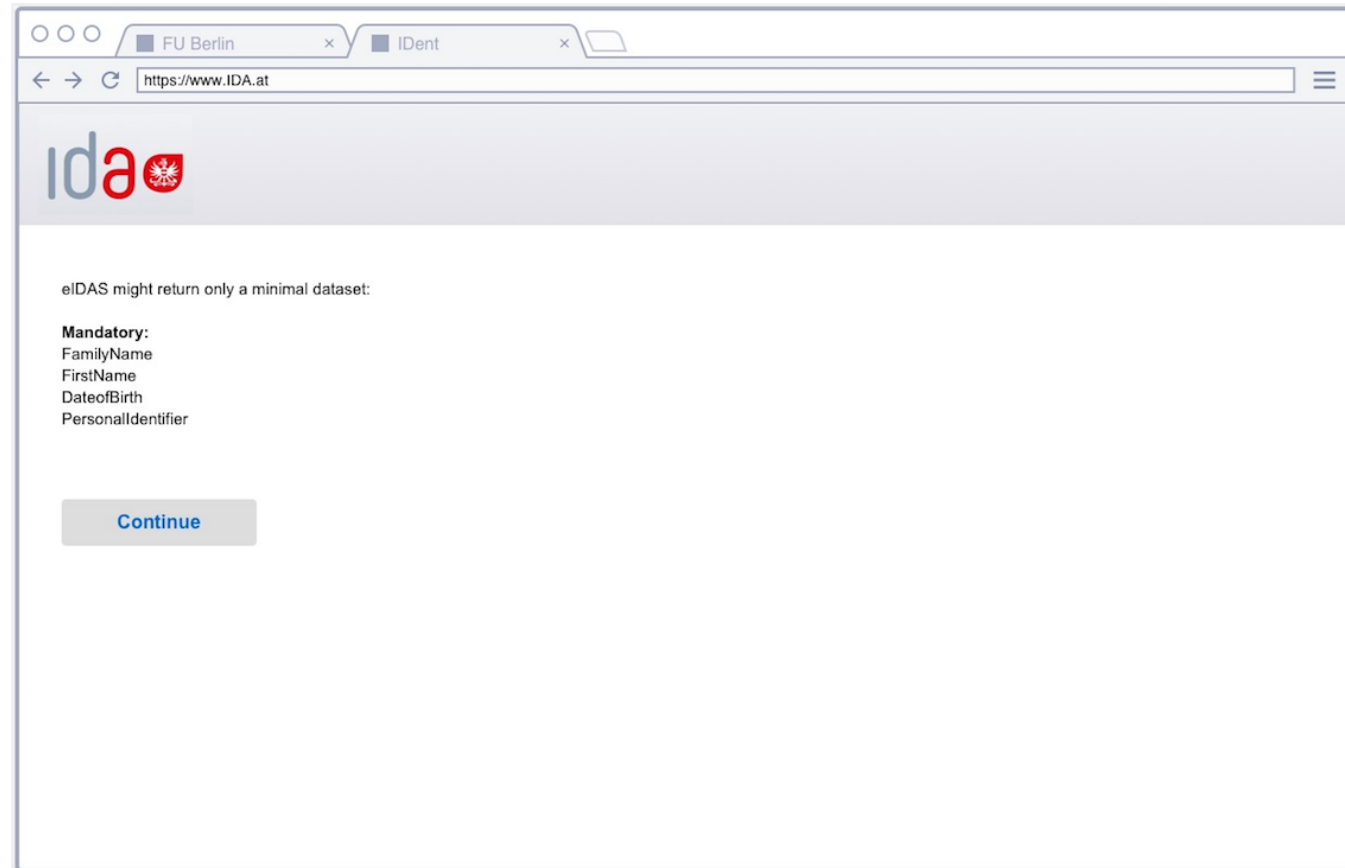
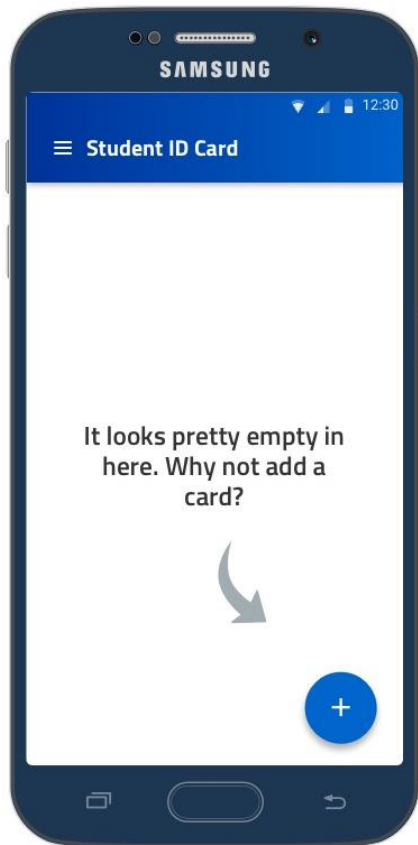
Student ID Card App: Registration & Issuance



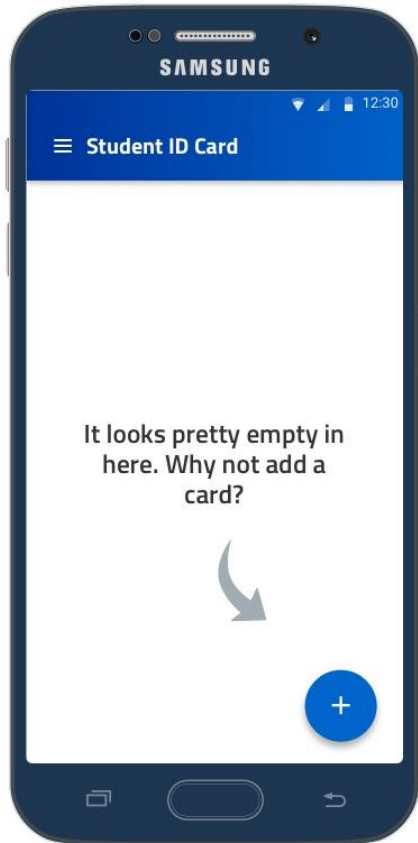
[1]

eID.AS

Student ID Card App: Registration & Issuance



Student ID Card App: Registration & Issuance



Freie Universität Berlin 70 1948–2018

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DEPARTMENTS AND INSTITUTIONS

DEPARTMENTS GOVERNING BOARDS ADMINISTRATION CENTRAL FACILITIES SERVICES LIBRARIES REPRESENTATIVES

Homepage > Departments > Services > Mobile Student ID Card

1 2 3 4

Hello Sepp Obermeyer,

the following data have been transmitted:

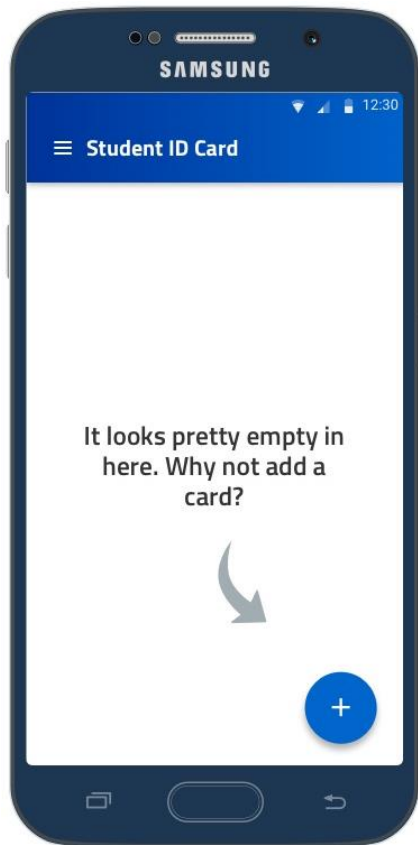
Family Name	Obermeyer
First Name	Sepp
Date of Birth	24.12.1980
Person Identifier	AT123456

Please provide your matriculation number (Matrikelnummer FU Berlin) so we can make sure it's you:

s53276432587

Continue

Student ID Card App: Registration & Issuance



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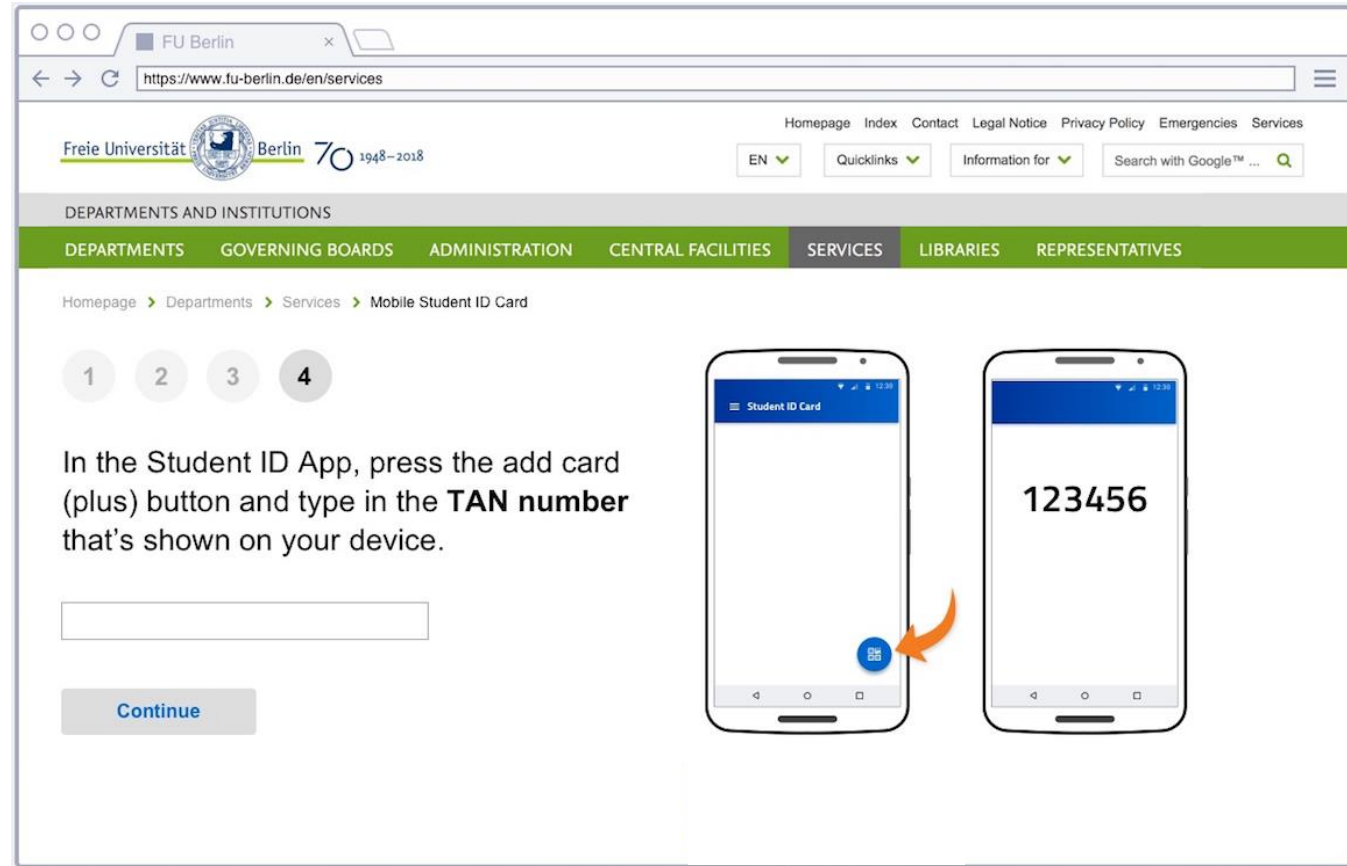
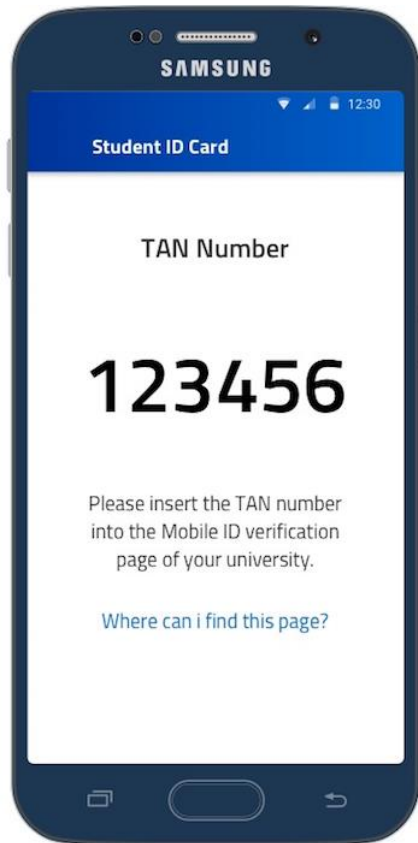
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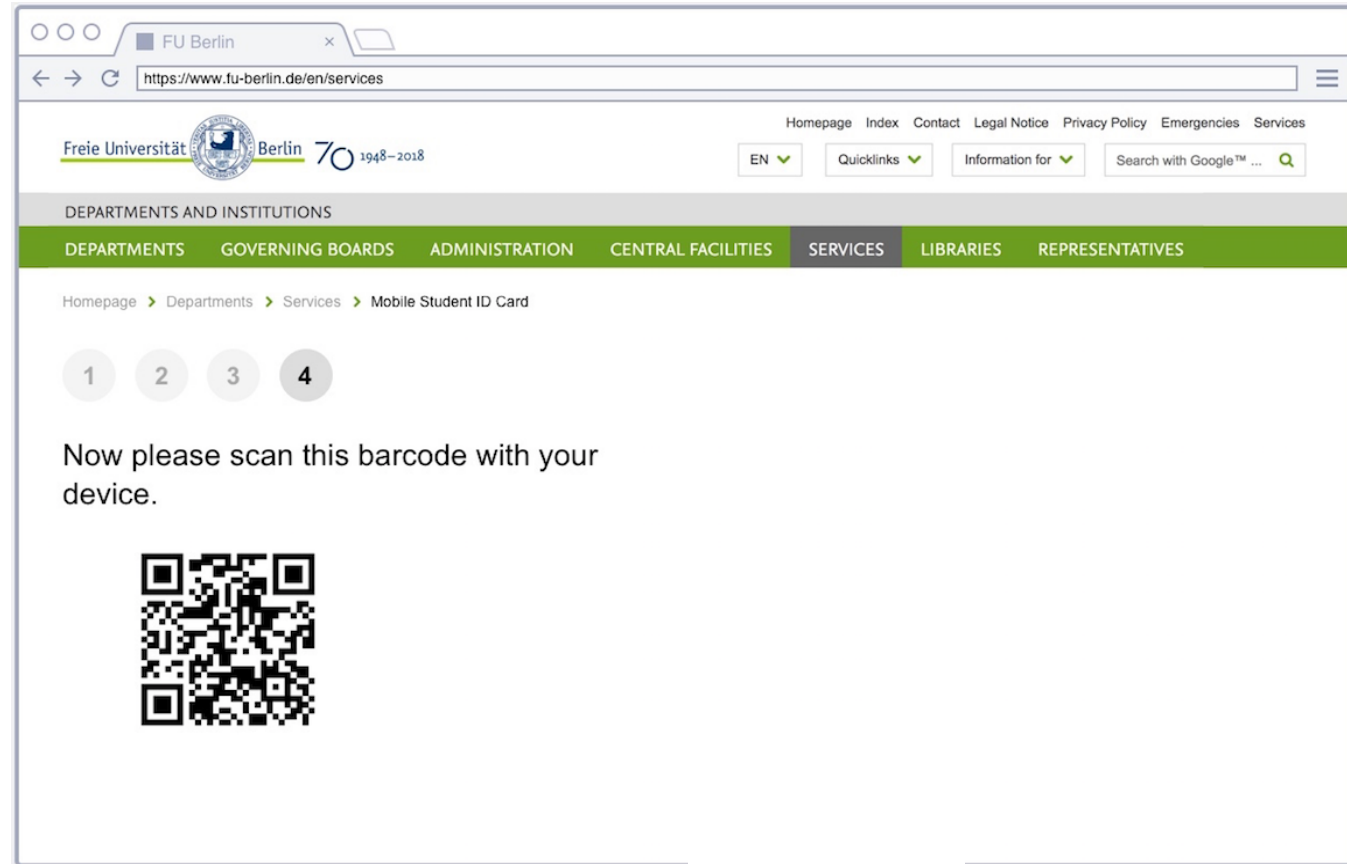
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Continue

Student ID Card App: Registration & Issuance



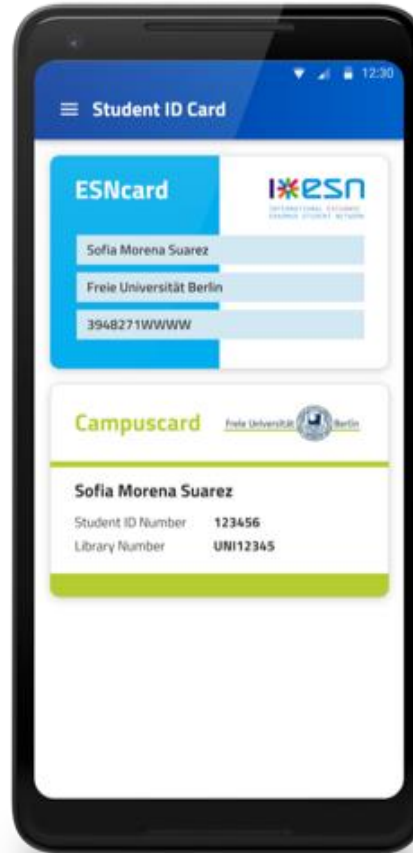
Student ID Card App: Registration & Issuance



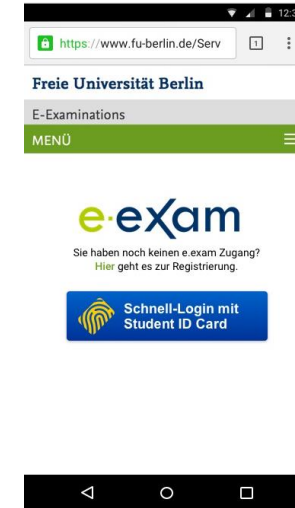
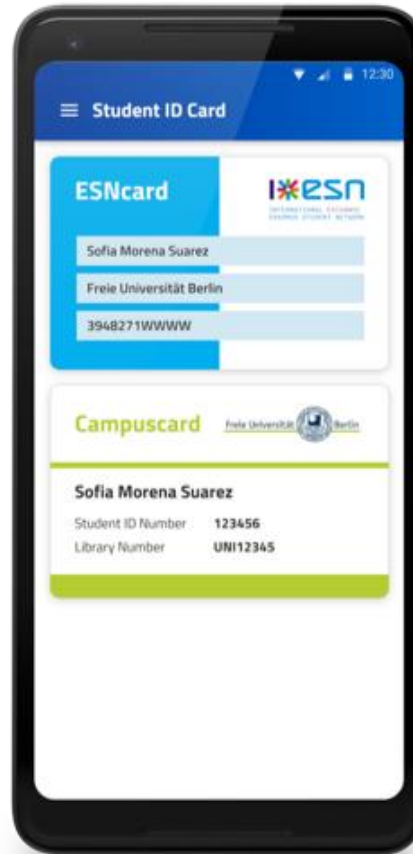
Student ID Card App: Use Cases on Campus



Student ID Card App: Use Cases on Campus



Student ID Card App: Use Cases on Campus



Student ID Card App: Use Cases eExam Results



eExamResults



Student ID Card App: Use Cases eExam Results



eExamResults

The screenshot shows a mobile app interface for 'FU Campuscard'. At the top, there's a green header with a back arrow and the text 'FU Campuscard'. Below this, the title 'Authentication for e.exam' is centered. Under the title, there are two fields: 'Service Provider' with a logo for 'Freie Universität Berlin' and 'Purpose' with the text 'Login to E-Exam'. Below these fields, a section titled 'Data transmitted to the Service Provider' contains a table of user information:

Family Name	First Name
Moreno Suárez	Sofía
Date of Birth	Student ID Number
16.09.1998	123456

At the bottom of the screen, there is a large blue button labeled 'Authenticate'.

Student ID Card App: Use Cases eExam Results



eExamResults

← FU Campuscard

Authentication for e.exam

Service Provider

Purpose

Login to E-Exam

Data transmitted to the Service Provider

Family Name

Moreno Suárez

First Name

Sofia

Date of Birth

16.09.1998

Student ID Number

123456

Authenticate

Modul	Not e
Technische Informatik	1.7
Projektmanagement	1.3
Kryptografie	1.3

Student ID Card App: Use Cases eExam Results



eExamResults

eLibrary

← FU Campuscard

12:30

Authentication for e.exam

Service Provider

Purpose

Freie Universität Berlin

Login to E-Exam

Data transmitted to the Service Provider

Family Name

First Name

Moreno Suárez

Sofia

Date of Birth

Student ID Number

16.09.1998

123456

Authenticate

Modul	Note
Technische Informatik	1.7
Projektmanagement	1.3
Kryptografie	1.3

Student ID Card

12:30

ESNcard

INTERNATIONAL EXCHANGE ERASMUS STUDENT NETWORK

Sofia Morena Suarez

Freie Universität Berlin

3948271WWWW

Campuscard

Freie Universität Berlin

Sofia Morena Suarez

Student ID Number 123456

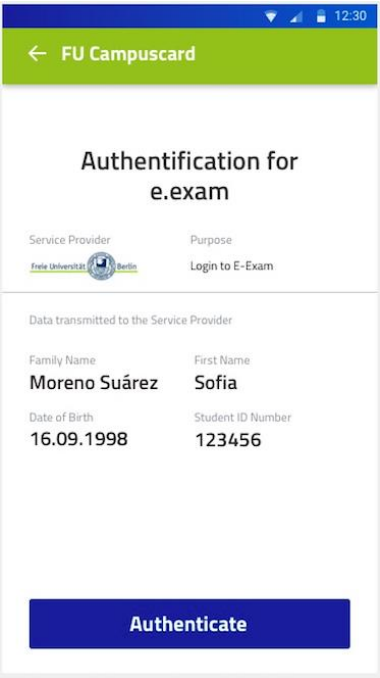
Library Number UNI12345

Student ID Card App: Use Cases eExam Results

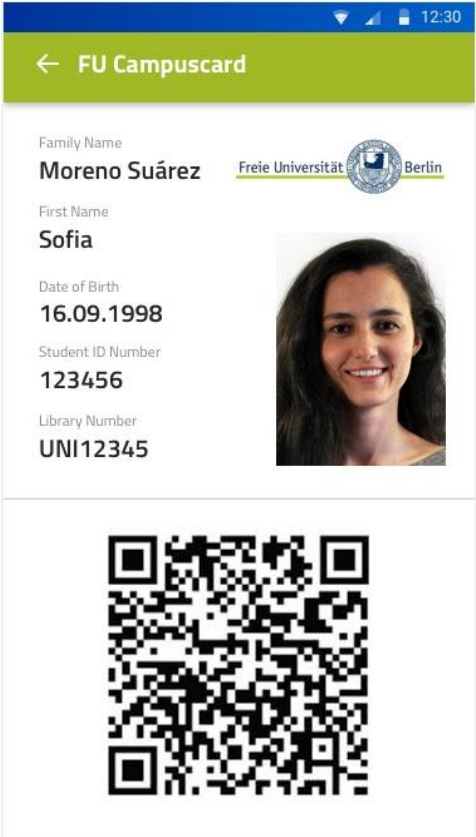


eExamResults

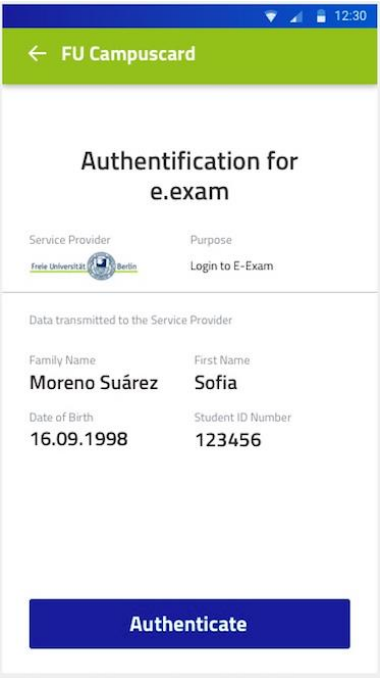
eLibrary



Modul	Not e
Technische Informatik	1.7
Projektmanagement	1.3
Kryptografie	1.3

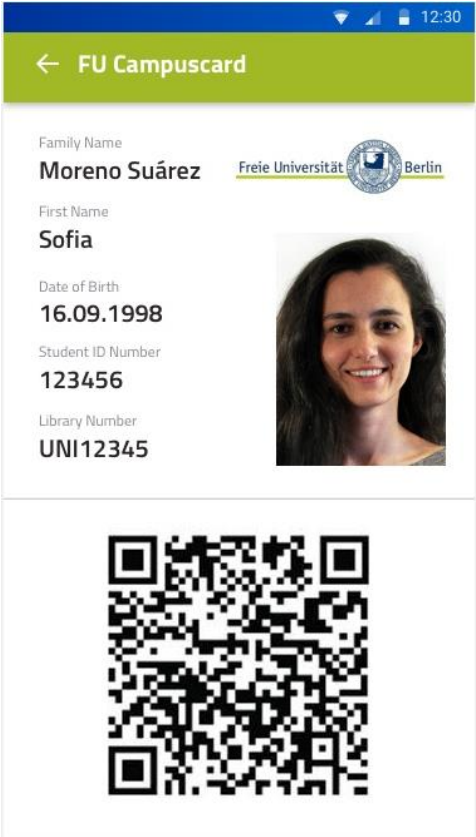


eExamResults



Modul	Not e
Technische Informatik	1.7
Projektmanagement	1.3
Kryptografie	1.3

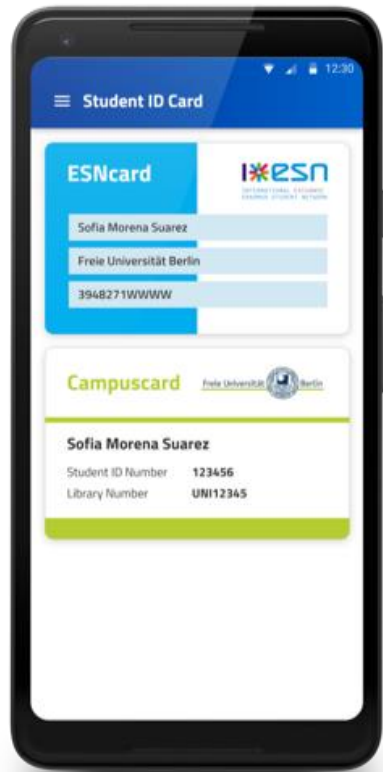
eLibrary



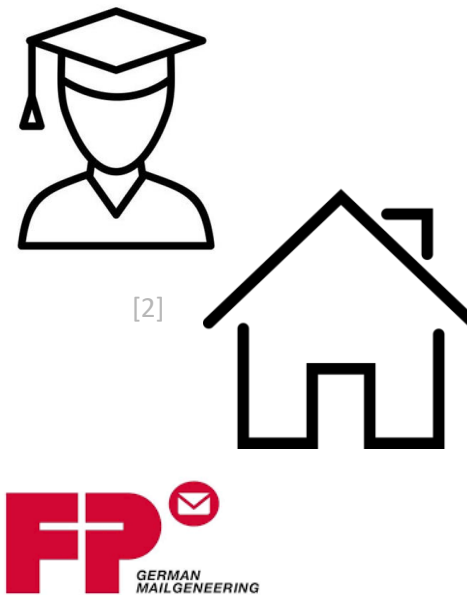
Student ID Card App: Further Use Cases



On-Campus



Off-Campus



Companies, eGov & eHealth





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Principal Security & PKI
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Tim Ohlendorf, M.Sc.
Security Researcher
Secure Systems Engineering

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Resources

1. eIDAS Logo: <https://www.eid.as/fileadmin/eidas-files/img/logo-schriftzug.png>
German nPA: https://commons.wikimedia.org/wiki/File:Mustermann_nPA.jpg
Portuguese ID Card:
https://en.wikipedia.org/wiki/File:Cart%C3%A3o_de_Cidad%C3%A3o_Portugu%C3%AAs.jpg
Dutch ID Card:
https://en.wikipedia.org/wiki/File:Dutch_identity_card_front_specimen_issued_9_March_2014.jpg
2. Student Icon:
https://de.pngtree.com/freepng/vector-male-student-icon_3785524.html
3. Electronic Health Card:
https://de.wikipedia.org/wiki/Elektronische_Gesundheitskarte#/media/Datei:Elektronische_Gesundheitskarte_2011.svg