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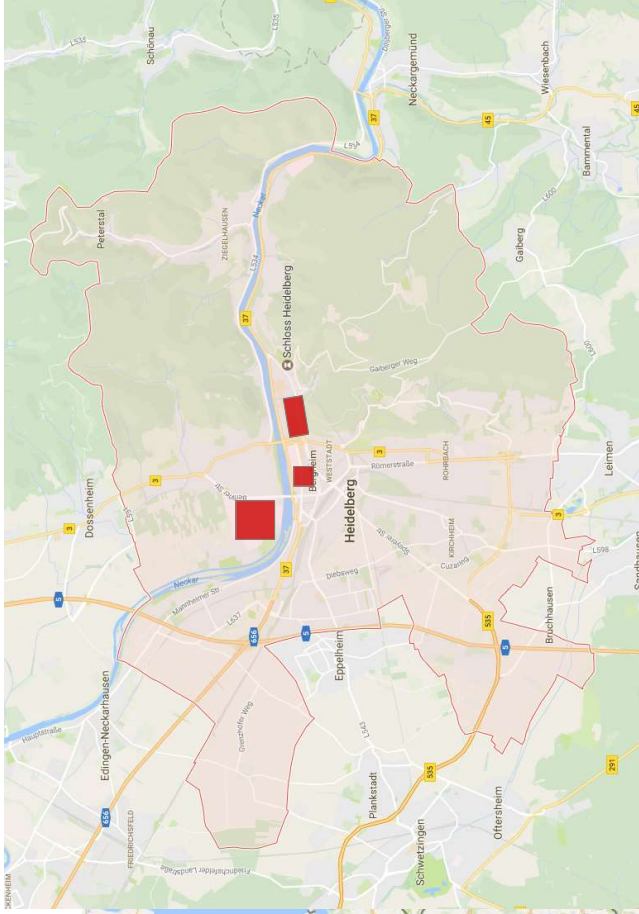
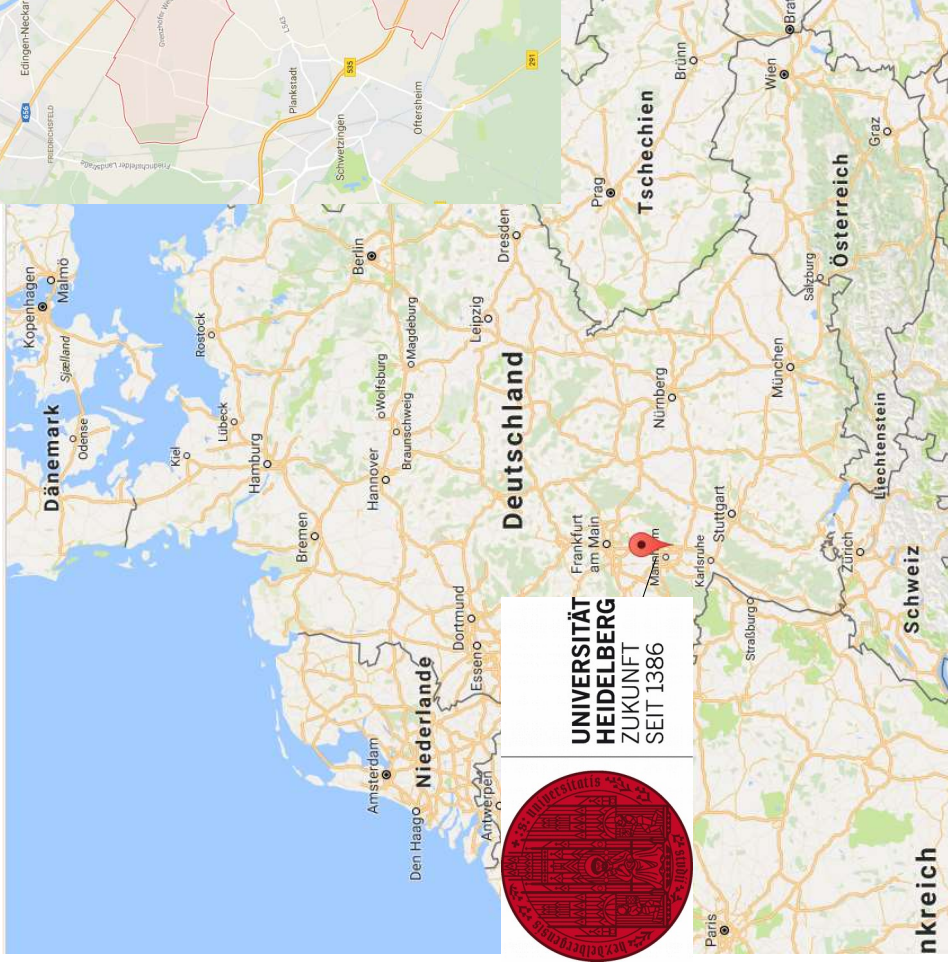
Campus Card for PhDs at Heidelberg University

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University Computing Center (URZ), Heidelberg University

Heidelberg, Germany

Where is that?



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Heidelberg

Where is that?



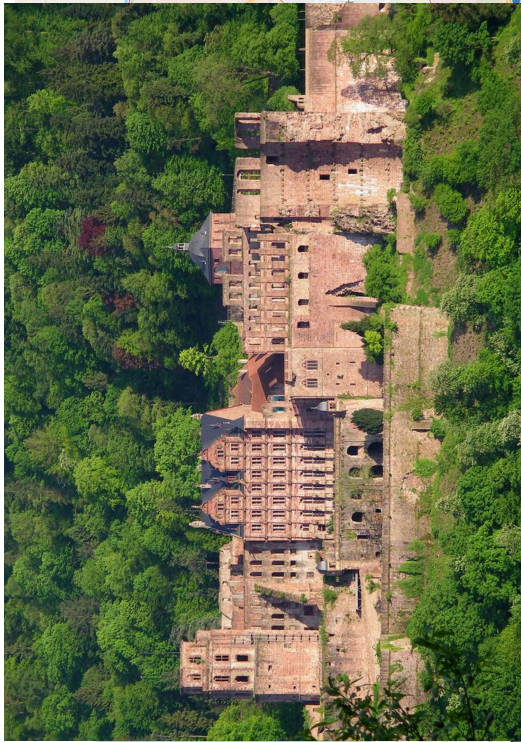
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Background



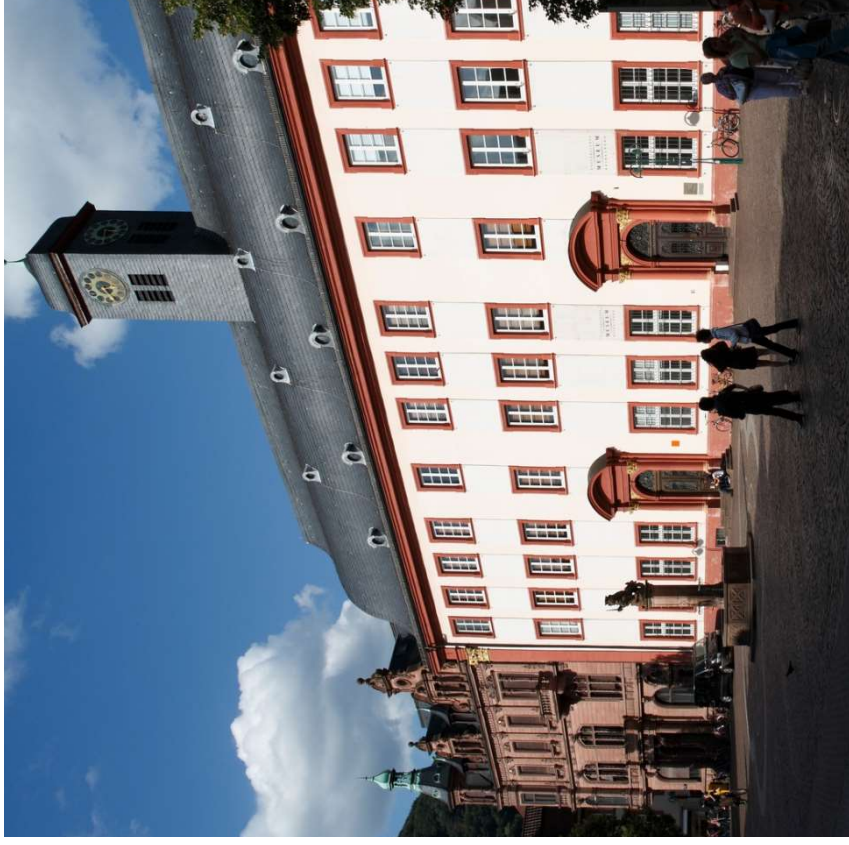
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Karl-Ruprecht-Universität Heidelberg (Heidelberg University)

- founded in 1386:
- oldest German university
- research university of international reputation
- comprehensive university with a broad spectrum of subjects
- focus on research-based teaching and well-structured training for doctoral students

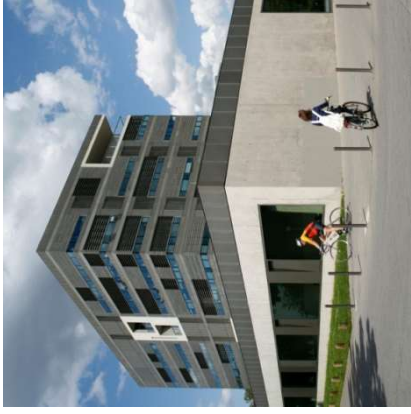


Four University Campuses

Three in Heidelberg, one in Mannheim



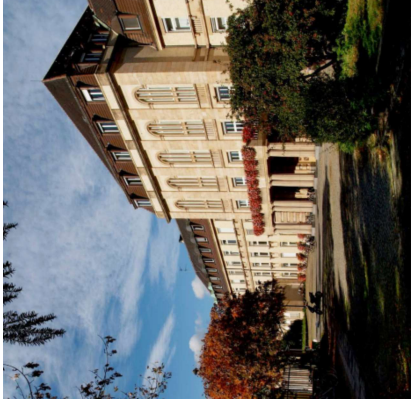
Old Town Campus
humanities and
social sciences



**Neuenheimer Feld
Campus**
natural sciences
and medicine



Bergheim Campus
sociology, political
science and
economics



Mannheim Campus
Medical Faculty
Mannheim with
Central Institute for
Mental Health,
Technical Informatics



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Background



Cards for users:

- **students** > 30,700
 - library card
 - locker usage
 - payment function (Mensa, copying, ...)
 - public transport
- **employees** > 13,400
 - library card
 - time recording

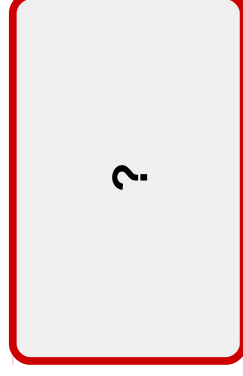


Background



Cards for users:

- **students** > 30,700
 - library card
 - locker usage
 - payment function (Mensa, copying, ...)
 - public transport
- **employees** > 13,400
 - library card
 - time recording
- **PhDs** > 7,000



Quality management
for PhD

Campus Card for PhDs



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Goal:

- affiliate PhDs with University!
- each PhD gets a campus card after admission as doctoral candidate

Quick Facts:

- tender for Campus Card → won by *Santander*
- 2 chips on card:
 1. Bank chip
 2. RFID chip



- first 3000 cards: MIFARE DESFire EV1
- all later cards: MIFARE DESFire EV2

Differences MIFARE DESFire EV1 – EV2:

- con EV1:
 - enables relay attack
 - limits number of files per application
- pro EV2:
 - state-of-the-art
 - downward compatible
 - no relay attack
 - originality check
 - Common Criteria EAL5+ certified



Functionalities of Campus Card



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same as student card

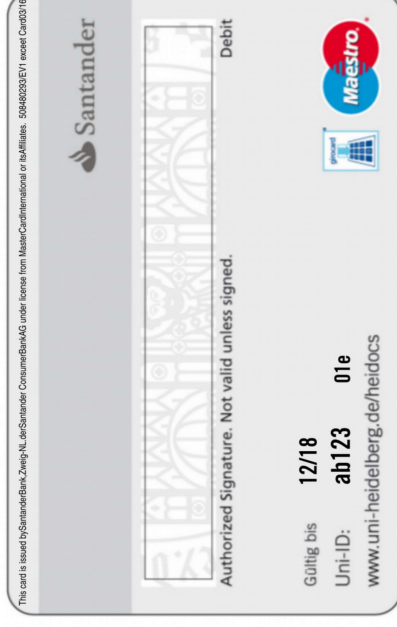
- library card
- locker usage
- payment function (Mensa, copying, vending machines, university sports)

new applications

- room reservation with access control
- digital signature, two-factor authentication
- parking
- ex-campus: discounts at theater, sports, ...
- ...

optional functionality

- if SAN bank account existent: *debit card*



Card Process (short)



CARD PRODUCTION PROCESS

PhD:
registration

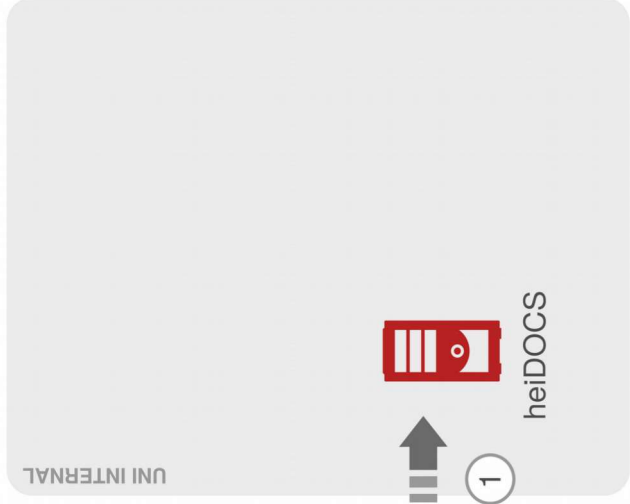


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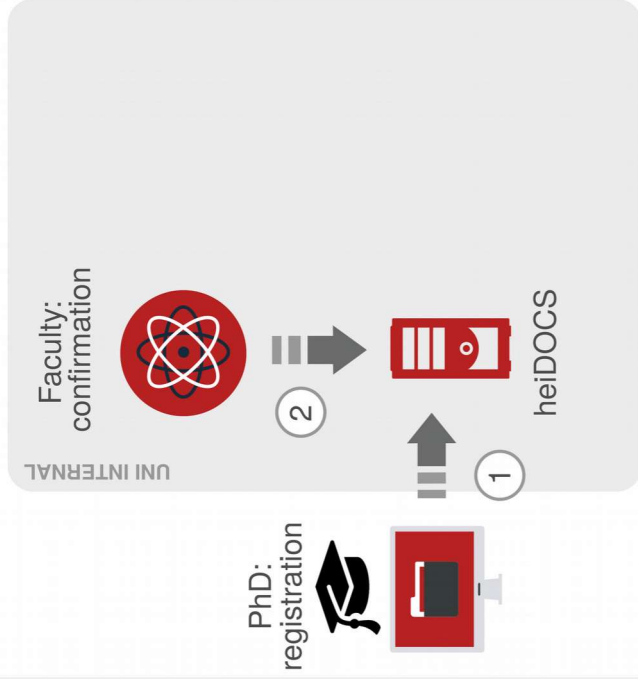
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Card Process (short)



CARD PRODUCTION PROCESS



Card Process (short)

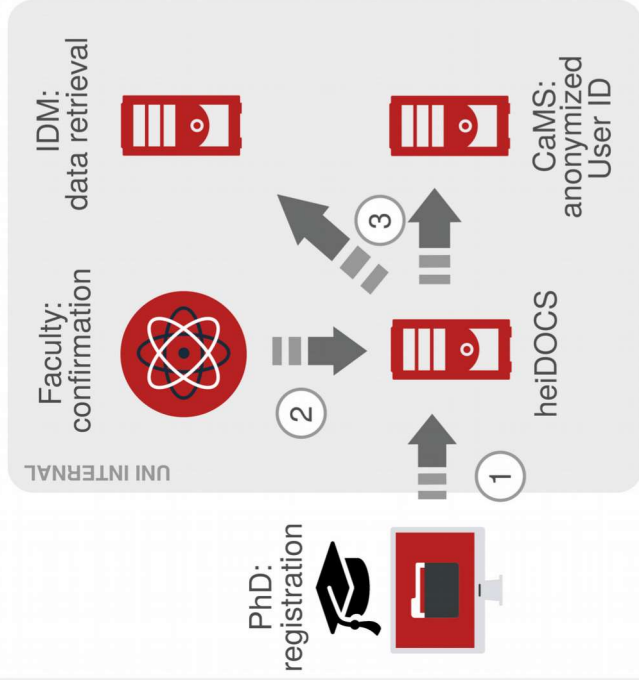


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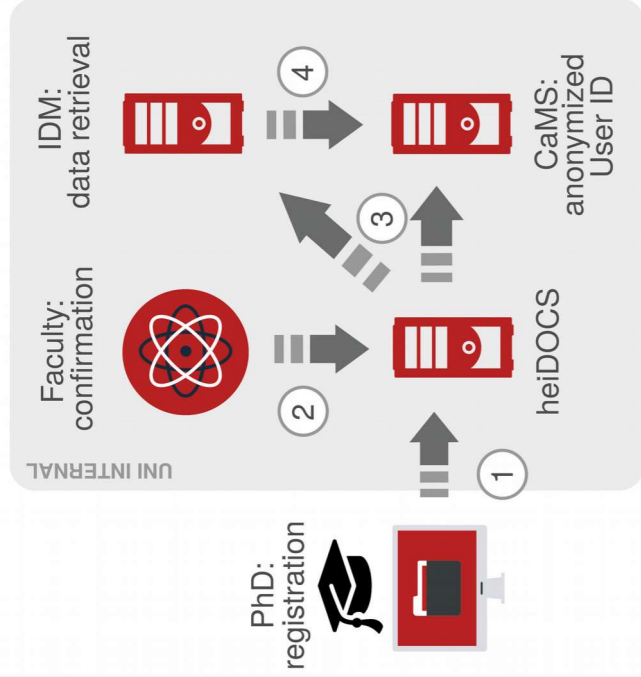
CARD PRODUCTION PROCESS



Card Process (short)



CARD PRODUCTION PROCESS



Card Process (short)

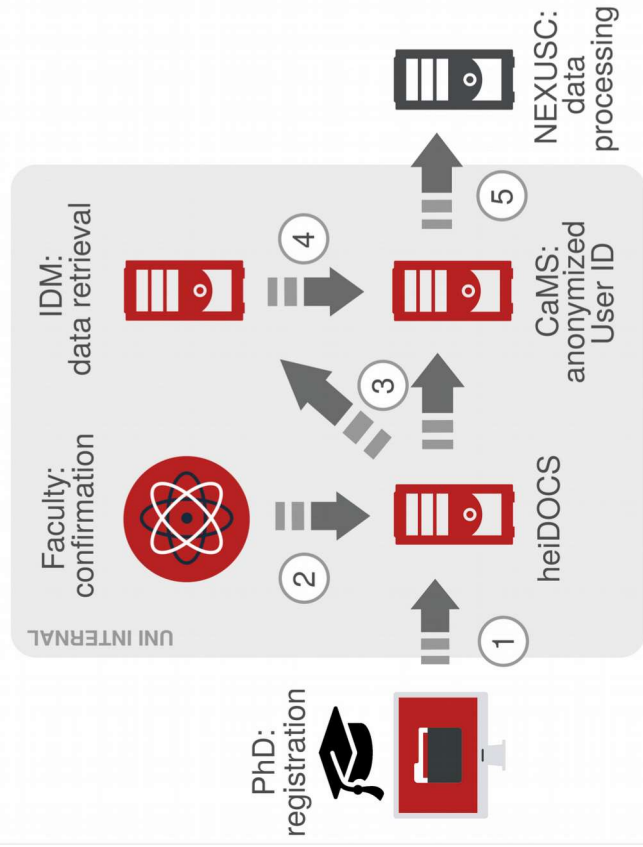


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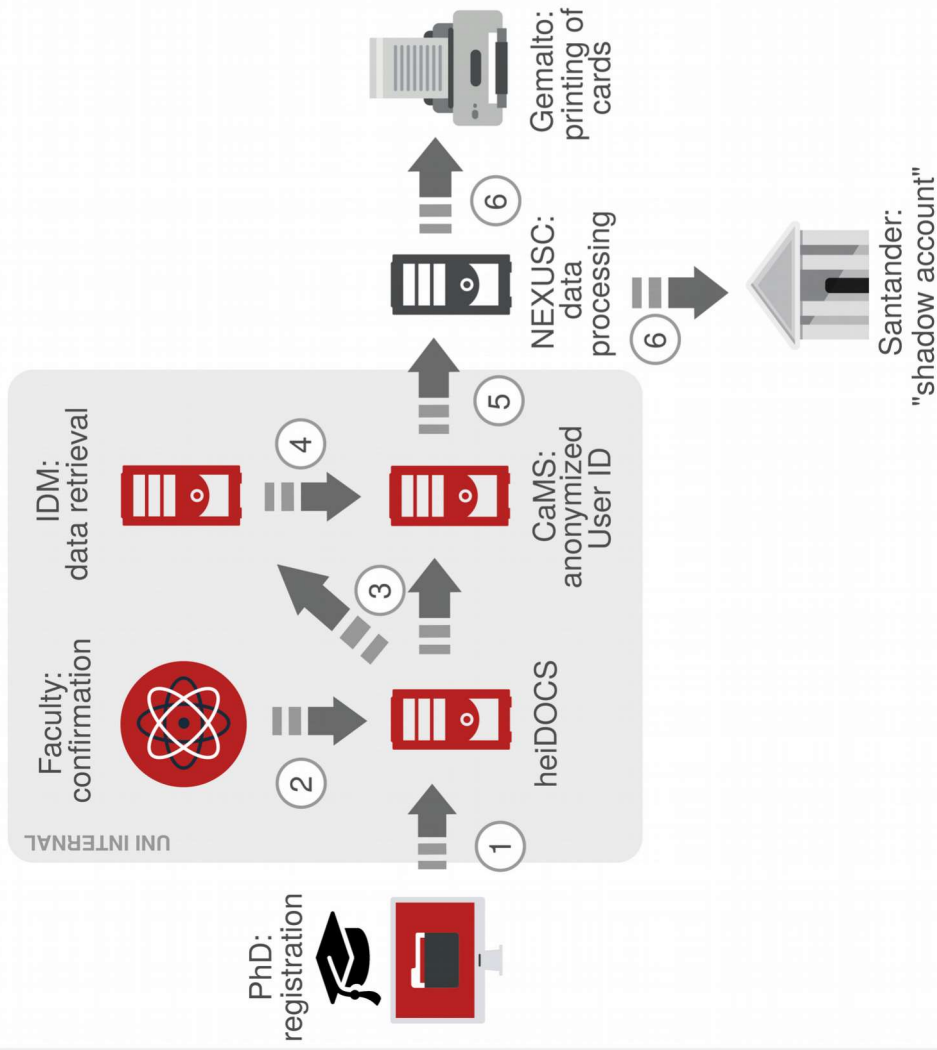
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CARD PRODUCTION PROCESS



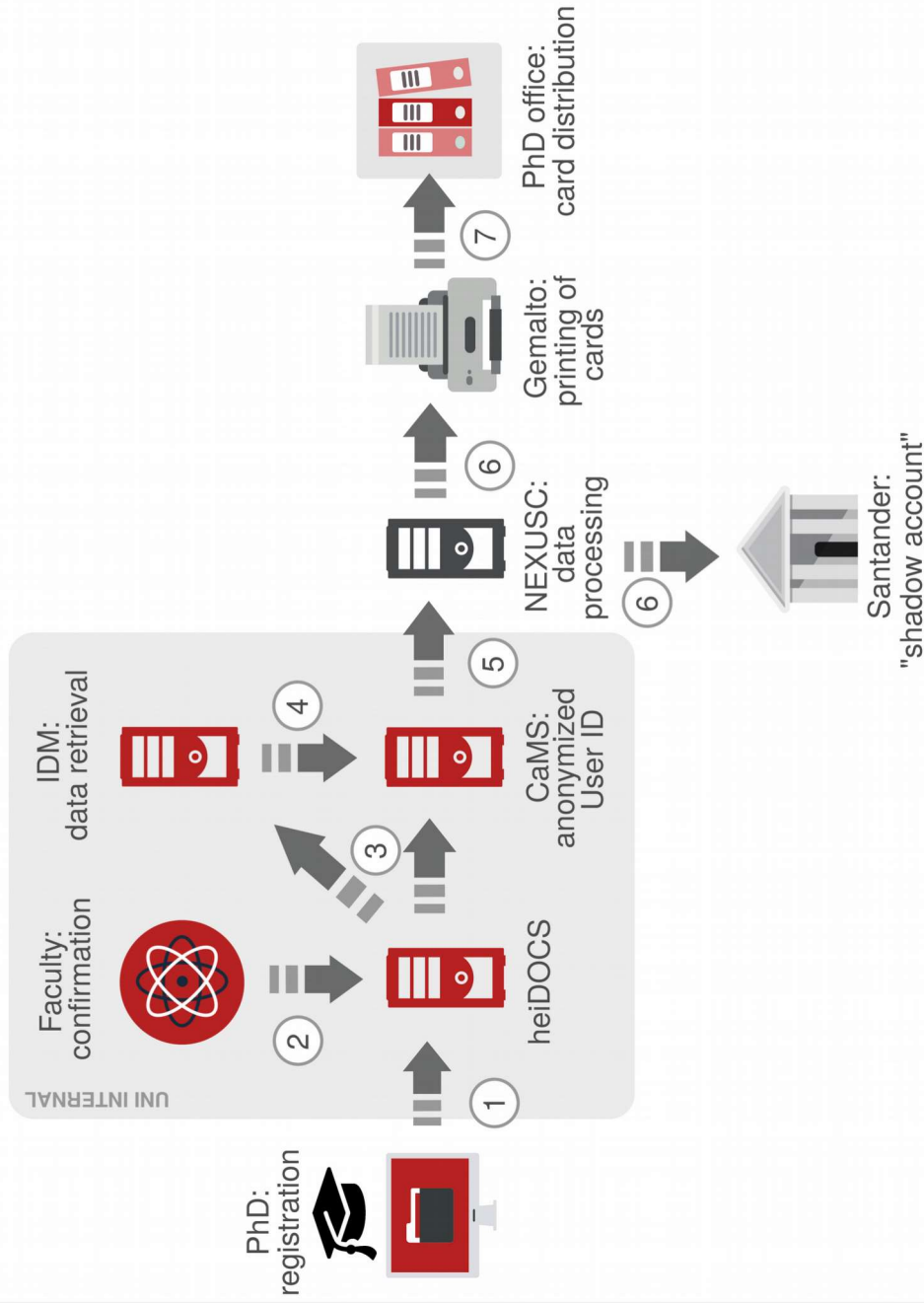
Card Process (short)

CARD PRODUCTION PROCESS



Card Process (short)

CARD PRODUCTION PROCESS



Card Process (short)

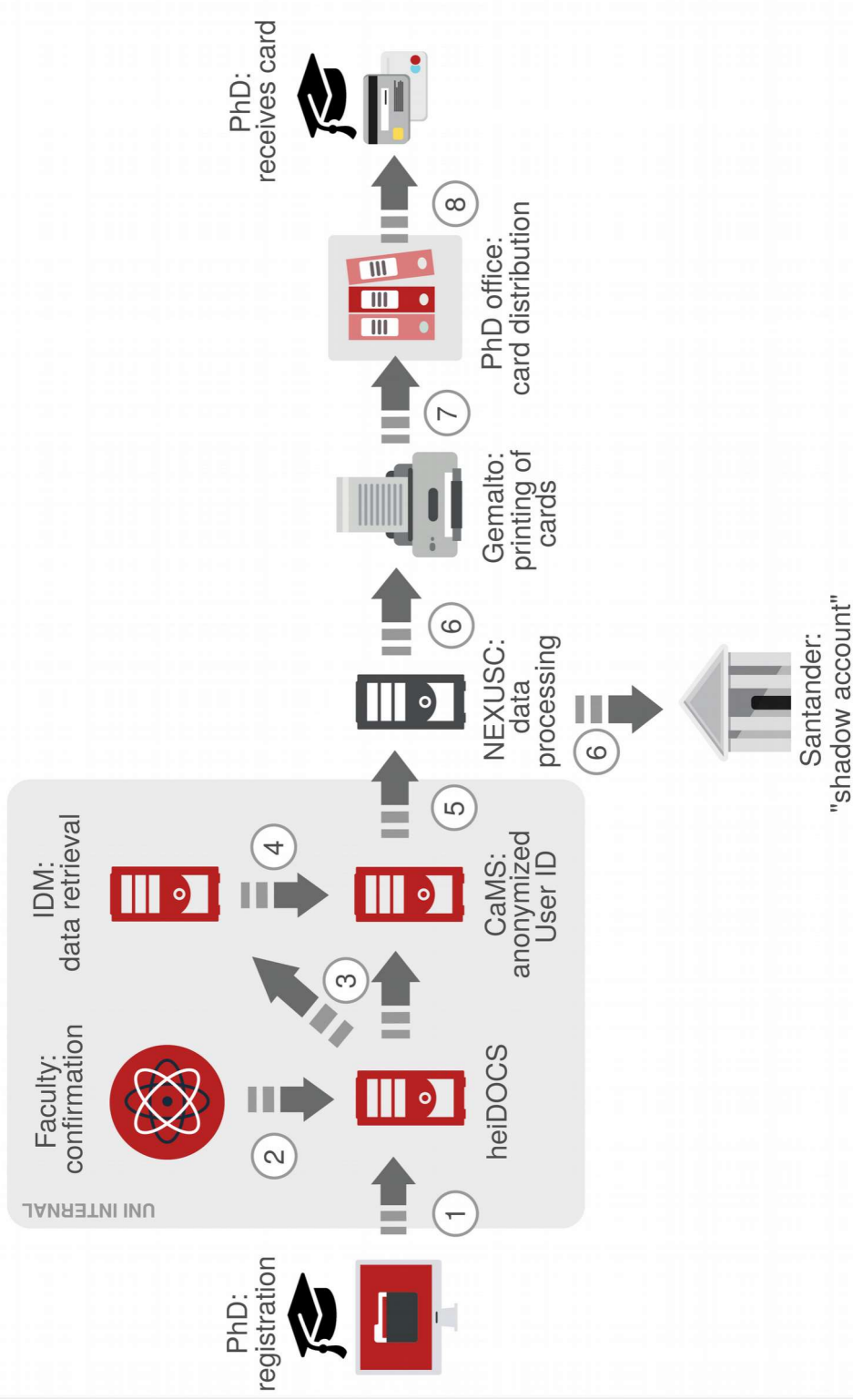


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CARD PRODUCTION PROCESS



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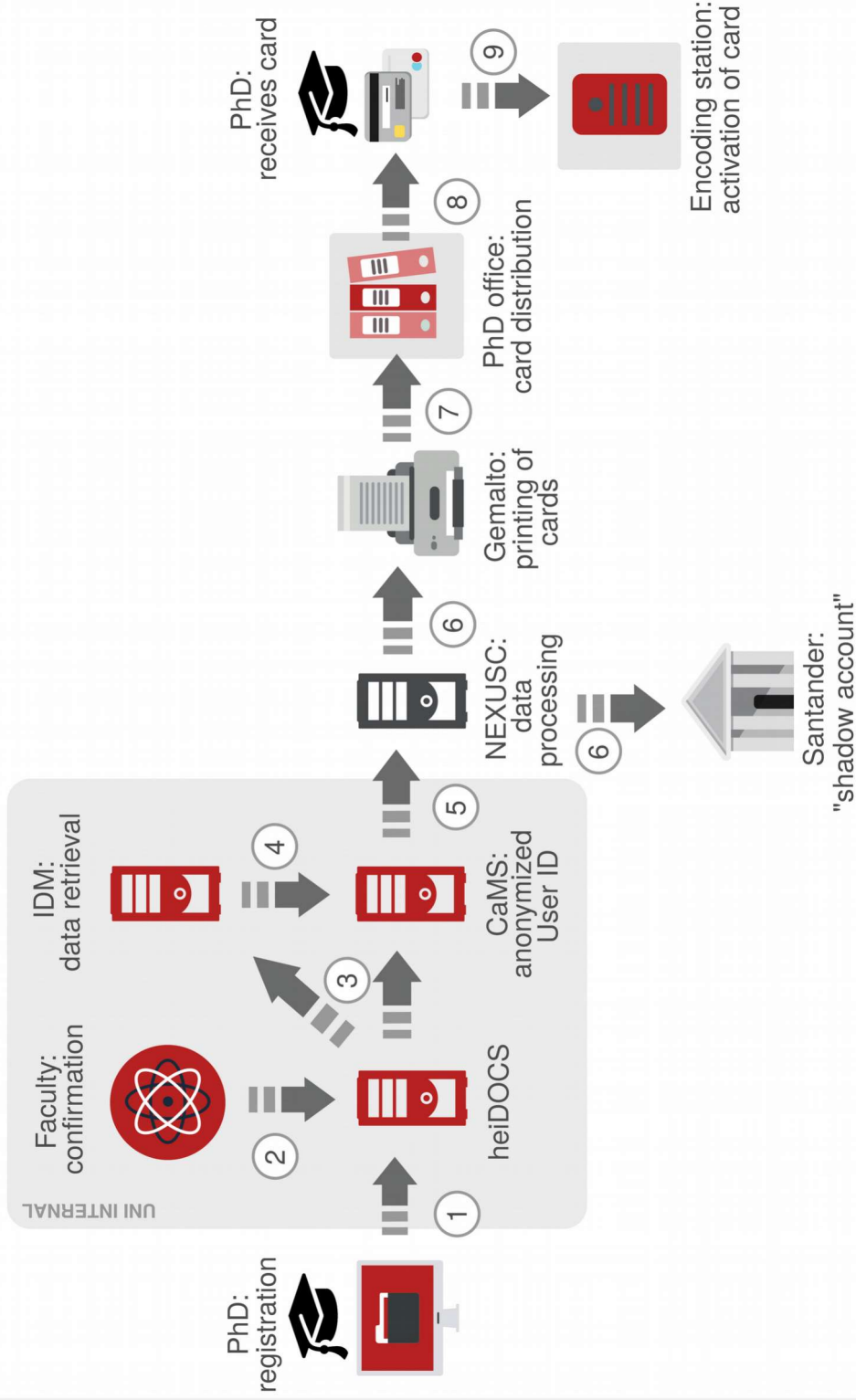


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CARD PRODUCTION PROCESS



Card Process (short)

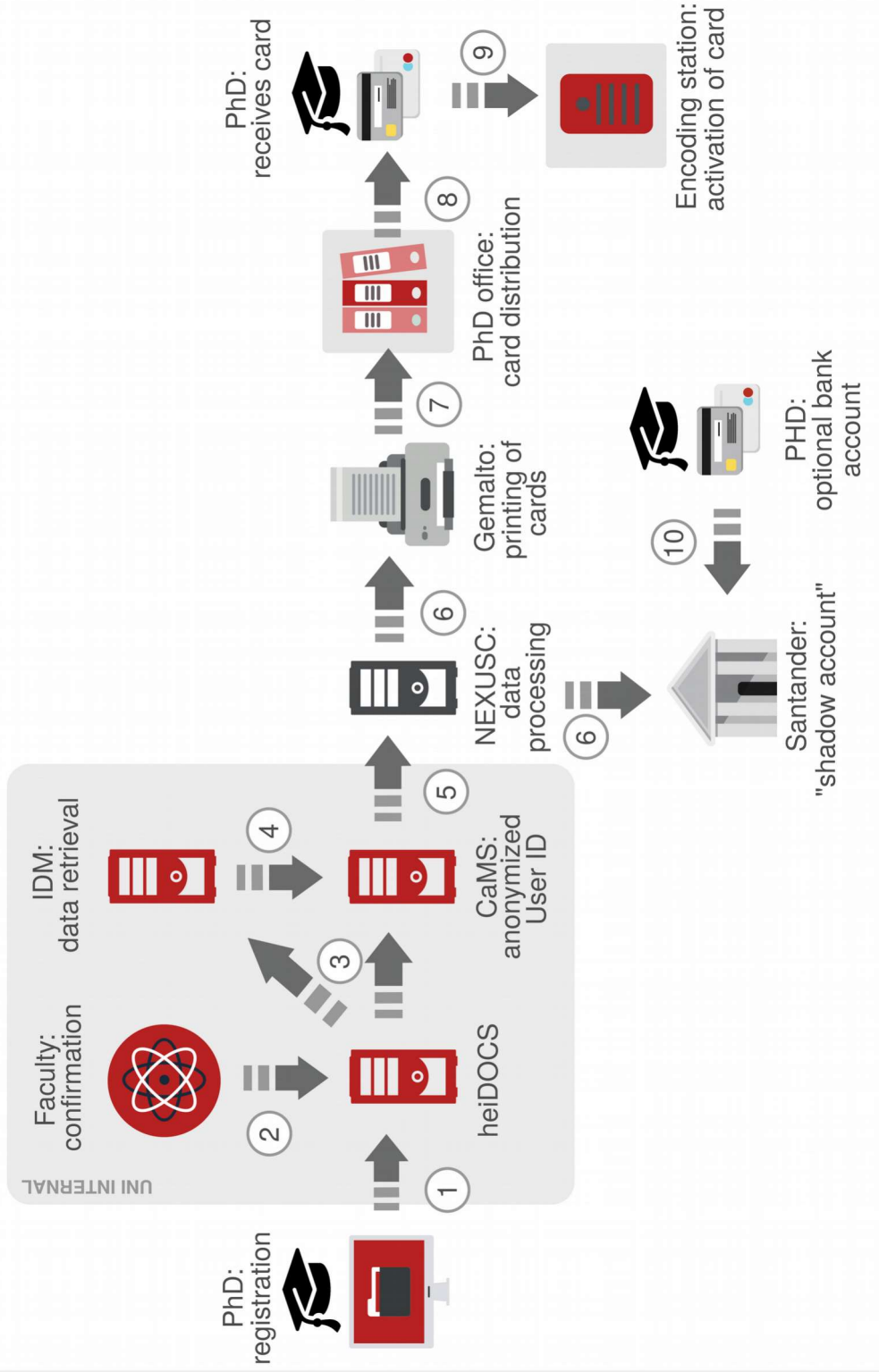


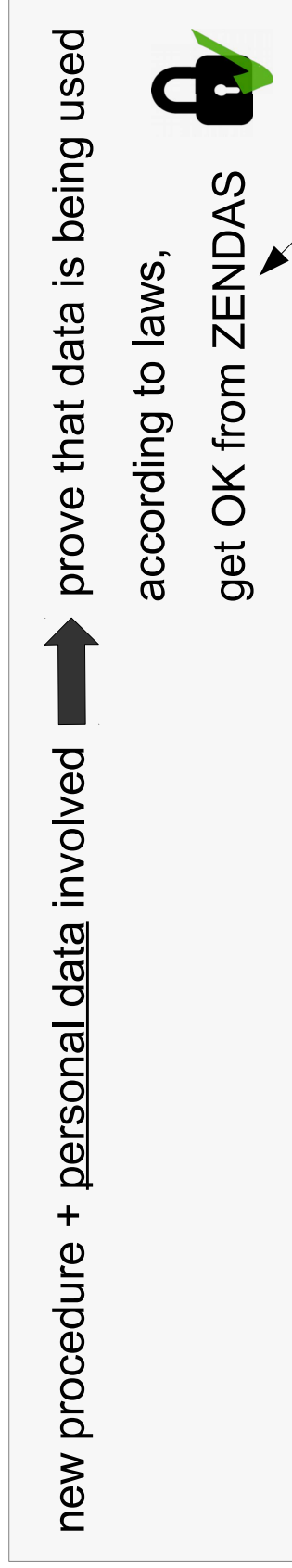
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CARD PRODUCTION PROCESS

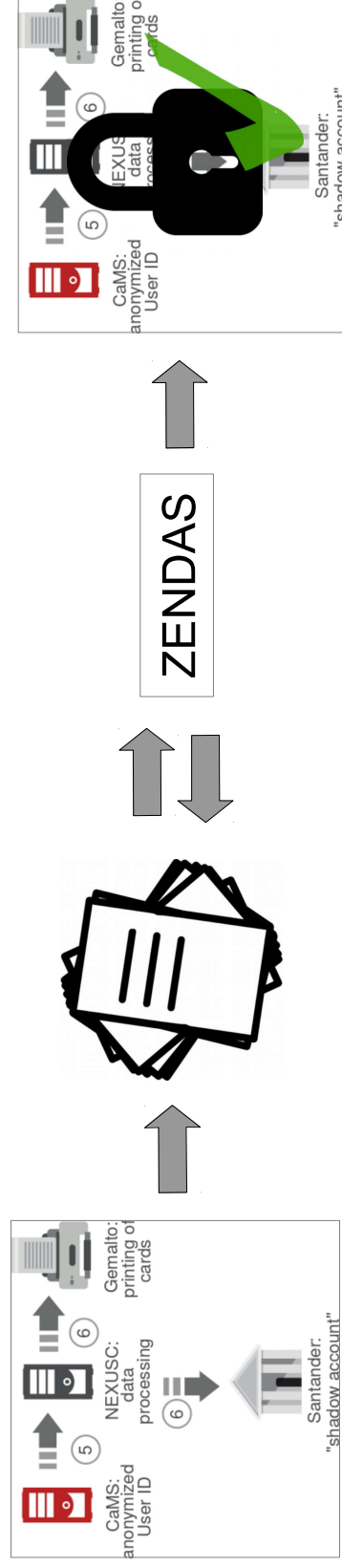




central data security
institution

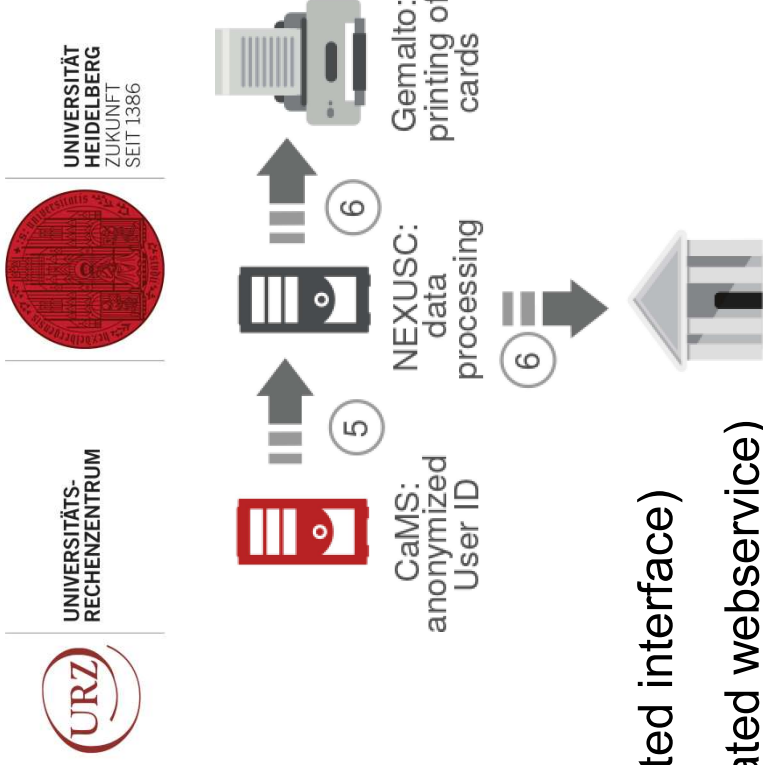
Verfahrensverzeichnis = directory of procedures

→ description of: software, workflows, data flows, ...



Card Management System (CaMS)

- manage cards
- assign each user unique NBI
- query to IDM for new PhDs
- interfaces
- IDM: get required card data (automated interface)
- NEXUSC: forward card data (automated webservice)
- applications (ex. Mensa)
- validation station
- interface to validation station
- encoding of chip depending on CaMS-deposited permissions
- user & management interface



Information needed for Card



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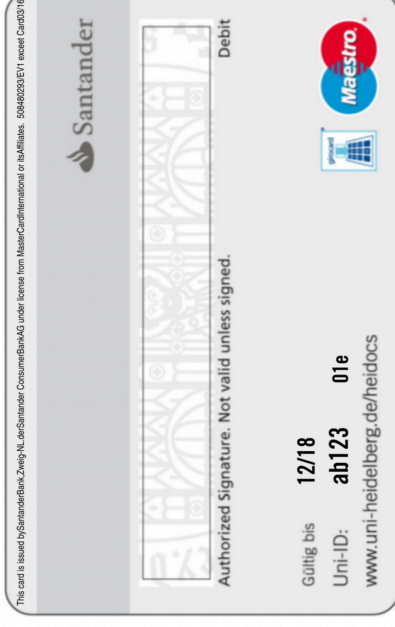
Visual:

- picture (optional)
- name (shortened version)
- Uni-ID
- card sequence number
- check digit



Not visual:

- NBI (=Nutzer-Bestell-ID, anonymized ID)
- faculty ID
- shipment mode {F, G, C}
- ü18 flag
- ID of University in NEXUSC (always 0002)
- two order codes (first card, replacement card...)



Procedures

Multiple Statuses / Multiple Cards

3 different kind of statuses:



student - S



PhD - D



employee - E

3 different kind of cards:

- S-card: campus card for students
- D-card: campus card for PhDs
- E-card: „service card“ for employees

Goal:

Each person/user gets only one card!

→ What has to be done when

the status changes?

→ What happens if a person has

not only one status? Which

card does he get?

Status



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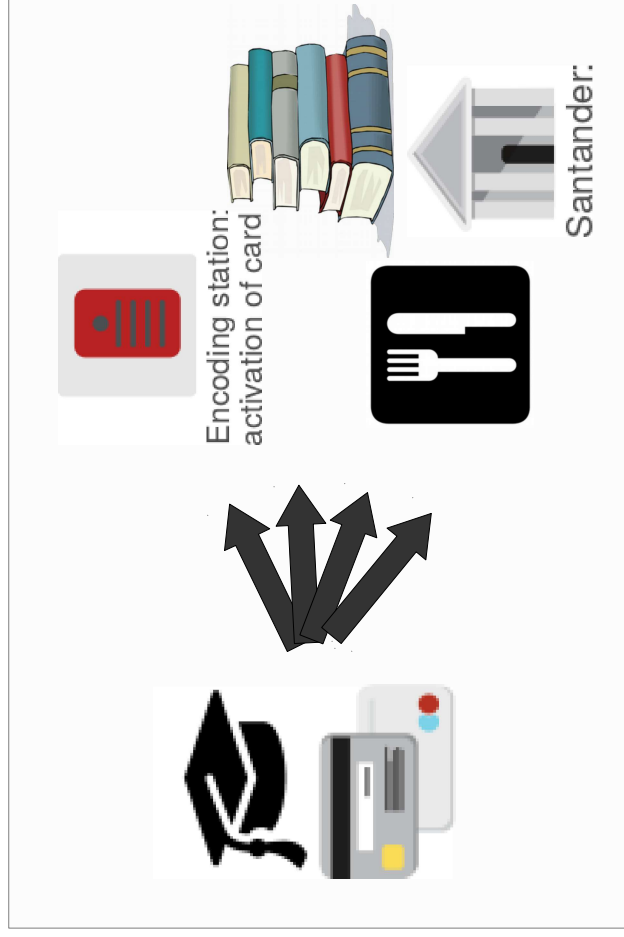
Test run I

- 50 test users: PhD, PhD+student, PhD+employee, PhD+student+employee,
→ users with all kinds of status combinations!

- test functionalities:
 - library loans
 - mensa payment
 - open bank account
 - *manual* upload of data

Test run II

- repeat test
- *automatic* upload of data via CaMS!





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Thanks for the attention!