"It's Just a Lot of Prerequisites"

A User Perception and Usability Analysis of the German ID Card as a FIDO2 Authenticator

Markus Keil [1]   Philipp Markert [1]   Markus Dürmuth [2]

[1]Ruhr University Bochum   [2]Leibniz University Hannover

Introduction
eID

- **e**lectronic **id**entification system built into German ID cards ("neuer Personalausweis", nPA)

- Full Name
- Date of Birth
- Place of Birth
- Address
- . . .
- *Cryptographic Keys*

Option 1 ⇒

Option 2 ⇒
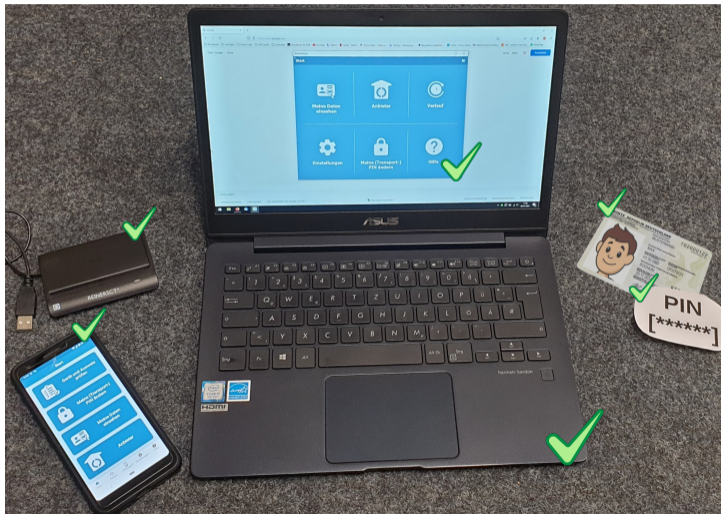
FIDELIO
User Environmet   =   eID User
Environment   +   FIDELIO browser plugin
WebAuthn-eID

Research Questions

RQ1 Are users aware of the possibility of using their German ID card as a FIDO2 authenticator?
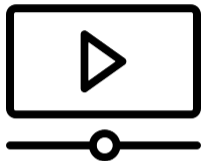
RQ2 How do users perceive the German ID as a second factor in terms of usability?
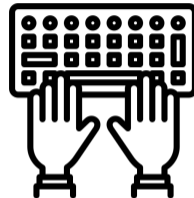
RQ3 Are users accepting the German ID as a second factor?

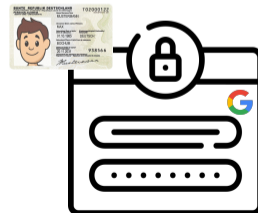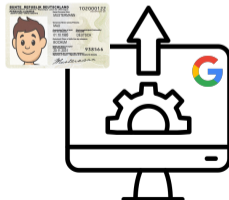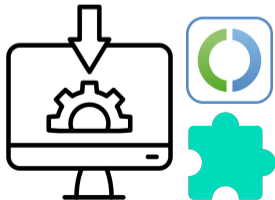RQ4 What thoughts and concerns arise in the users' minds when using the German ID as a second factor?
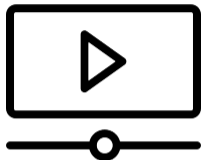
1. Videos

2. Hands-On Tasks

1. Videos

2. Hands-On Tasks

3. Survey

4. Interview

	Cardreader	**Smartphone**
Random	$Group_{CR1}$	$Group_{SM1}$
Tech-Savvy	$Group_{CR2}$	$Group_{SM2}$

Round 1

Round 2

10x Random

10x Tech-Savvy

$Group_{CR1}$	$Group_{SM1}$	$Group_{CR2}$	$Group_{SM2}$
72	62	75	59
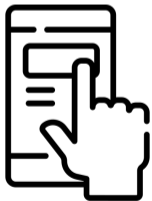
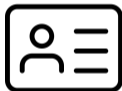$CR2_1$: "I would have had difficulties without the videos."

$SM2_4$: "There are too many things that I have to have and use."

$SM2_3$: "Virtually everyone owns a smartphone and basically every German citizen has an ID card, meaning that the system is always available as a second factor."

$CR1_3$: "*It's just a lot of prerequisites*, always having my ID card with me and remembering my PIN"

$SM1_2$: "Yes, I could imagine [using it for] finance accounts, there is no way I would use it for social media [...]"

$CR1_5$: "I don't know what happens with the data that is read from the chip, especially when Google does it."

Name
Date of Birth
Nationality
Address

Date of Expiry
Date of Issue
None

$SM2_1$: "I only checked the box for the date of expiry because I thought the second factor could expire [. . .]."

Round 1

Round 2

"What data do you think is shared with the services that you register with?"

Discussion

Security Misconceptions
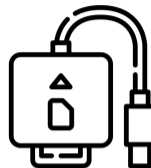
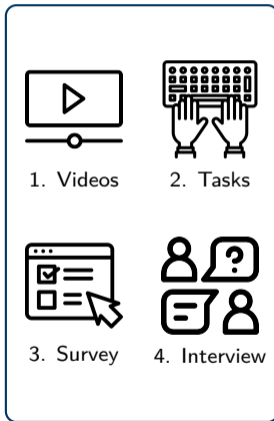Smartphone vs Cardreader

Currently No Ongoing Support

Promising Concept

Summary

FIDELIO

Study Design

1. Videos
2. Tasks
3. Survey
4. Interview

Conclusion

👎 Difficulties in Setup

👎 Unnecessarily Complex Steps

👎 Security Misconceptions

👍 Promising Concept

markus.keil@rub.de