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From Learner's Journeys to Trust Journeys

Challenges and Concepts for Building a European Trust Infrastructure in Education
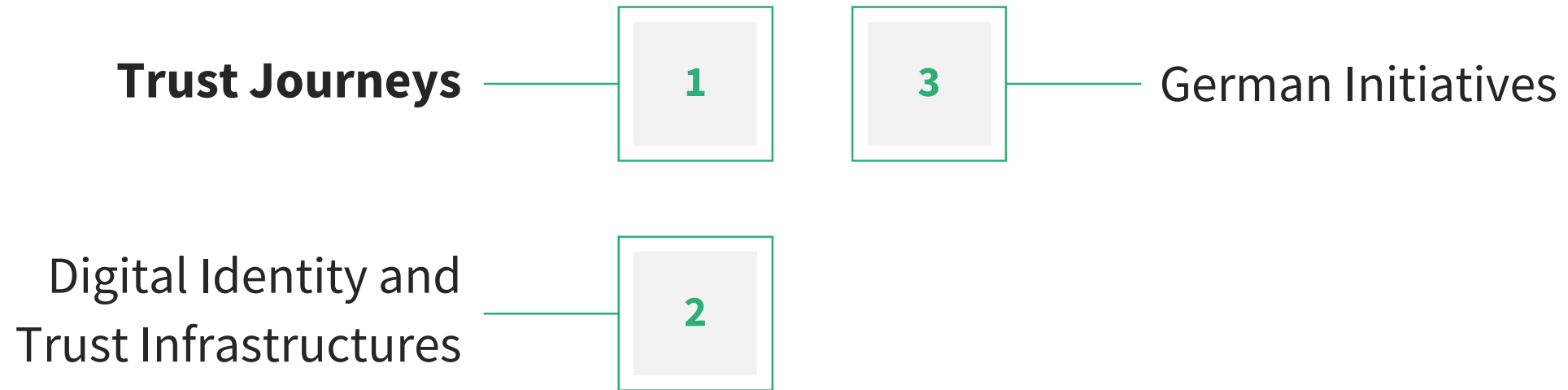
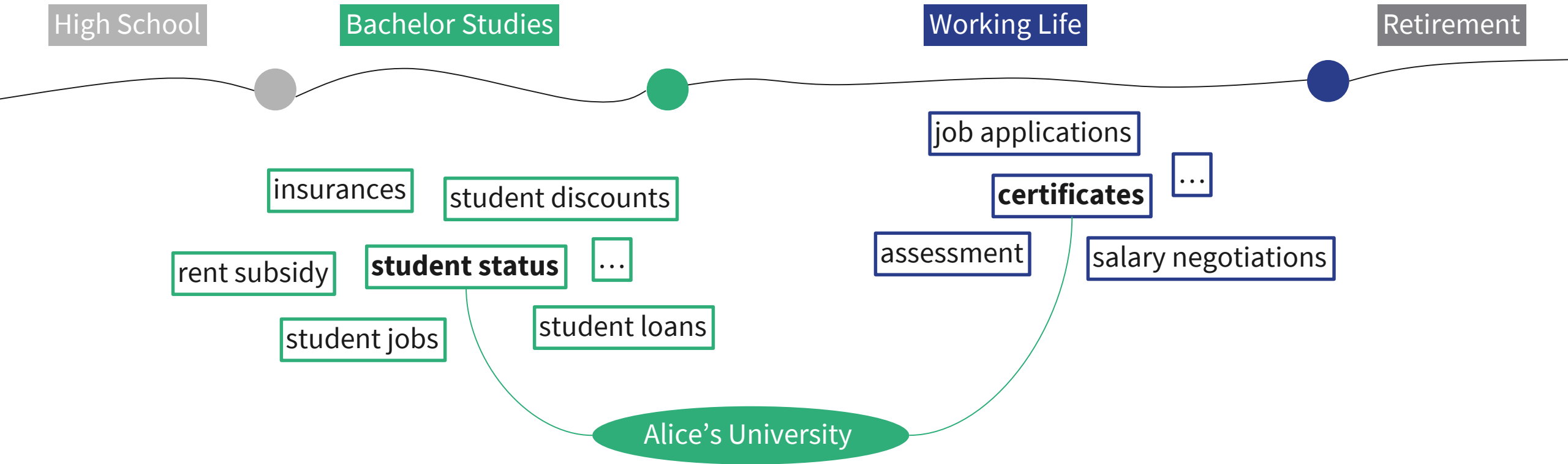Dr. Jan Sürmeli
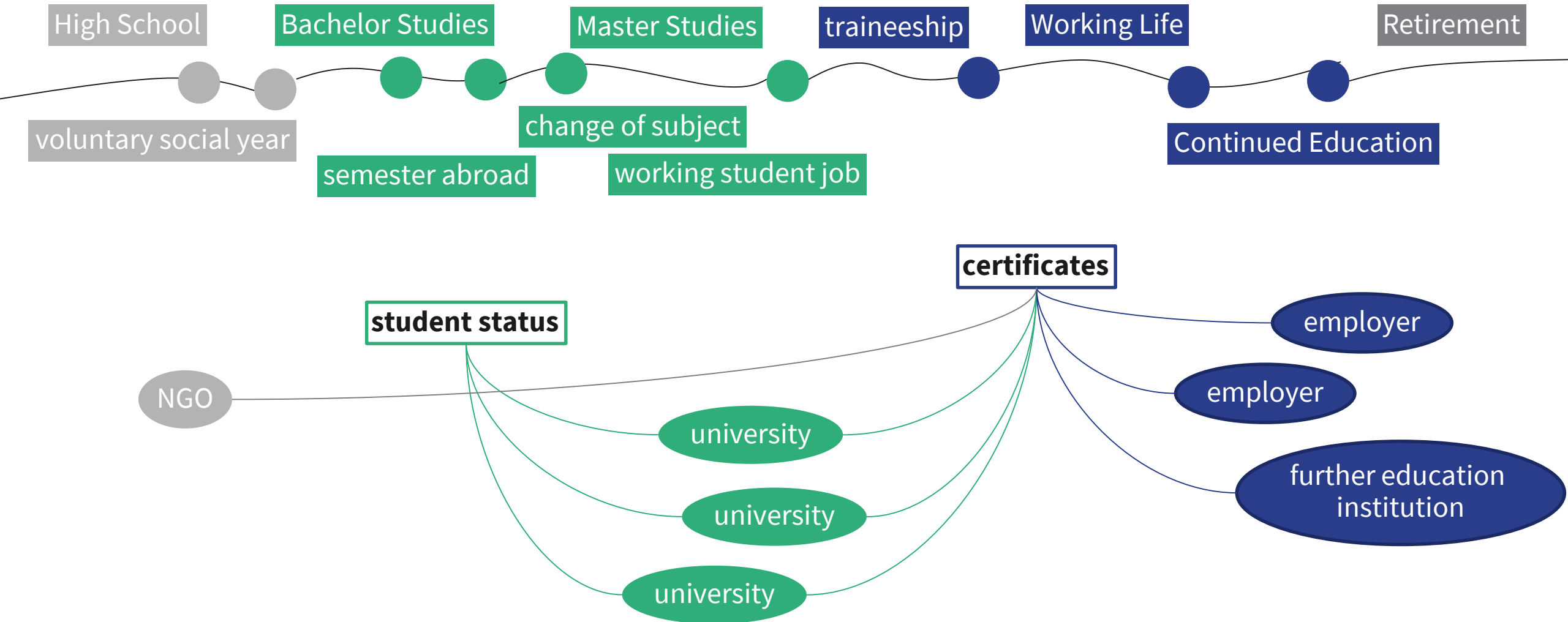
2023-12-13, @DAAD, Berlin

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— From Learner's Journeys to Trust Journeys

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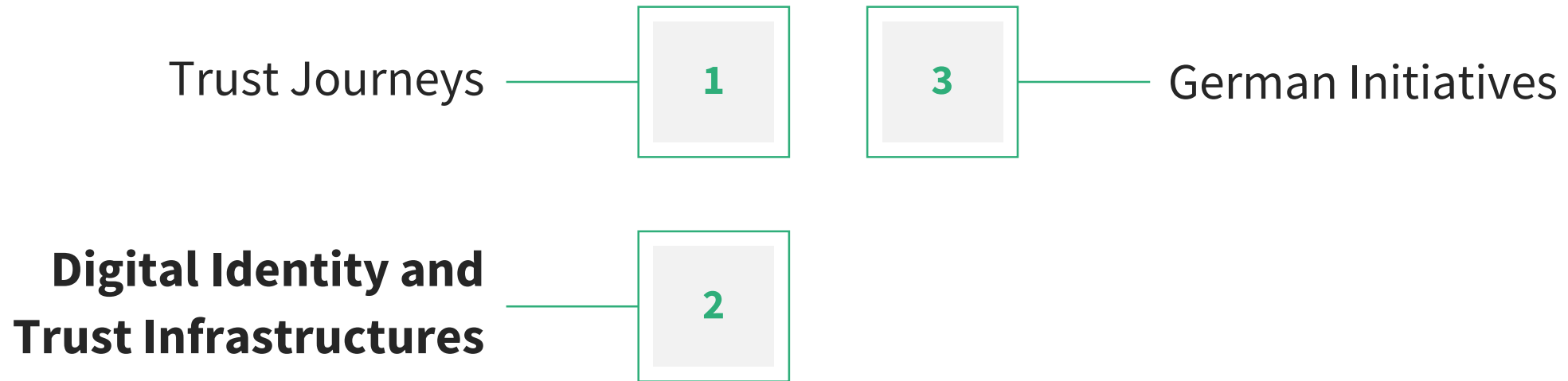**Trust Journeys** —— [1]

[3] —— German Initiatives

Digital Identity and
Trust Infrastructures —— [2]

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— **Alice's Learner's Journey (easy version)**

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— Alice's Learner's Journey (more realistic)

High School

voluntary social year

Bachelor Studies

semester abroad

Master Studies

change of subject

working student job

traineeship

Working Life

Continued Education

Retirement

certificates

student status

NGO

university

university

university

employer

employer

further education institution

— From Learner's Journeys to Trust Journeys

Trust Journeys ——— | 1 | | 3 | ——— German Initiatives

Digital Identity and Trust Infrastructures ——— | 2 |

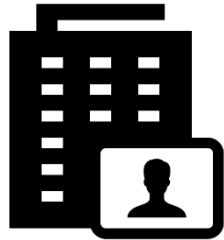FZI Research Center for Information Technology

— Digital Identity Ecosystems
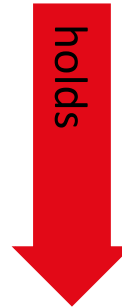
Holders: Citizens, organizations, devices
- want to use services
- need to offer data access

holds

Issuers: Trust Services
- issue credentials for people and organizations
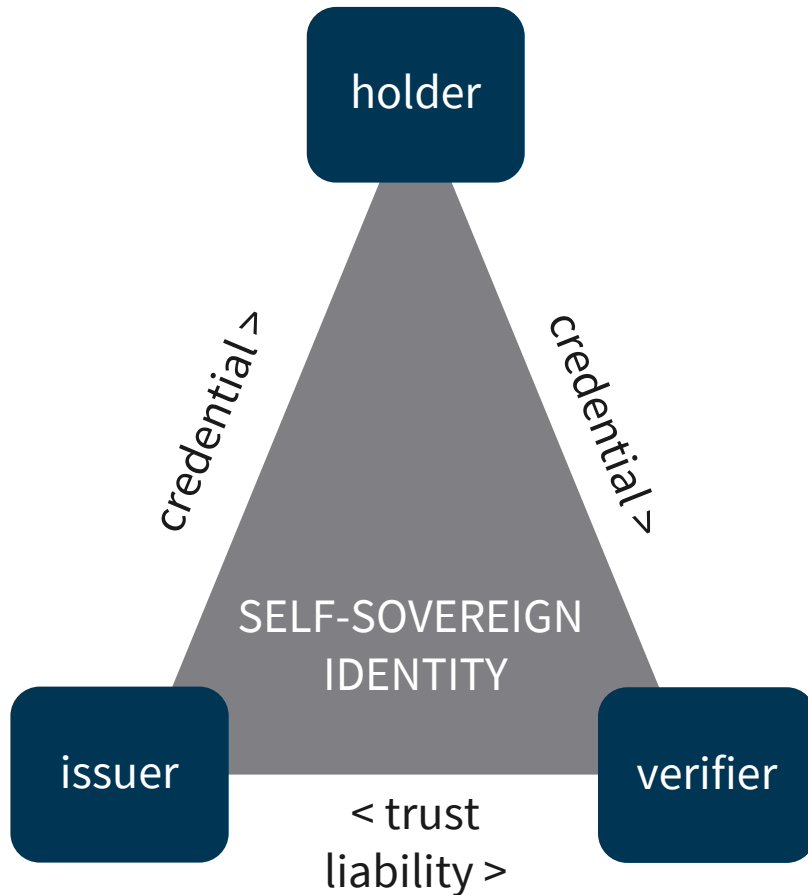- are trusted parties in certain areas of expertise

issues

verifies

Verifiers
- wants or needs access to trustworthy data
- verifies presented credentials

Credentials

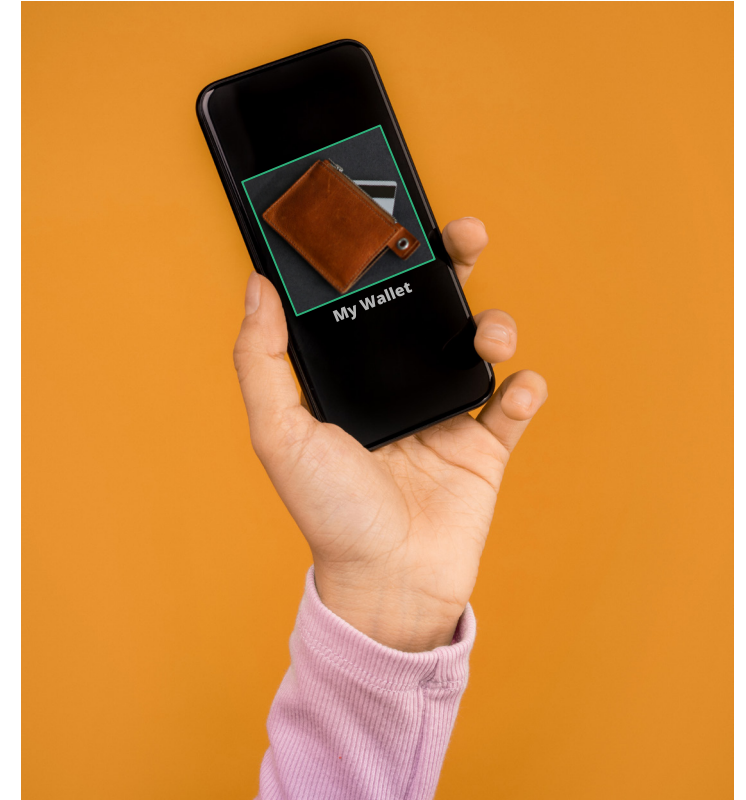FZI Research Center for Information Technology

— Self-Sovereign Identity

- Holders manage their own credentials in mobile storage

- Holders can present credentials to verifiers without a third party

- Minimal involvement by issuers in further transactions

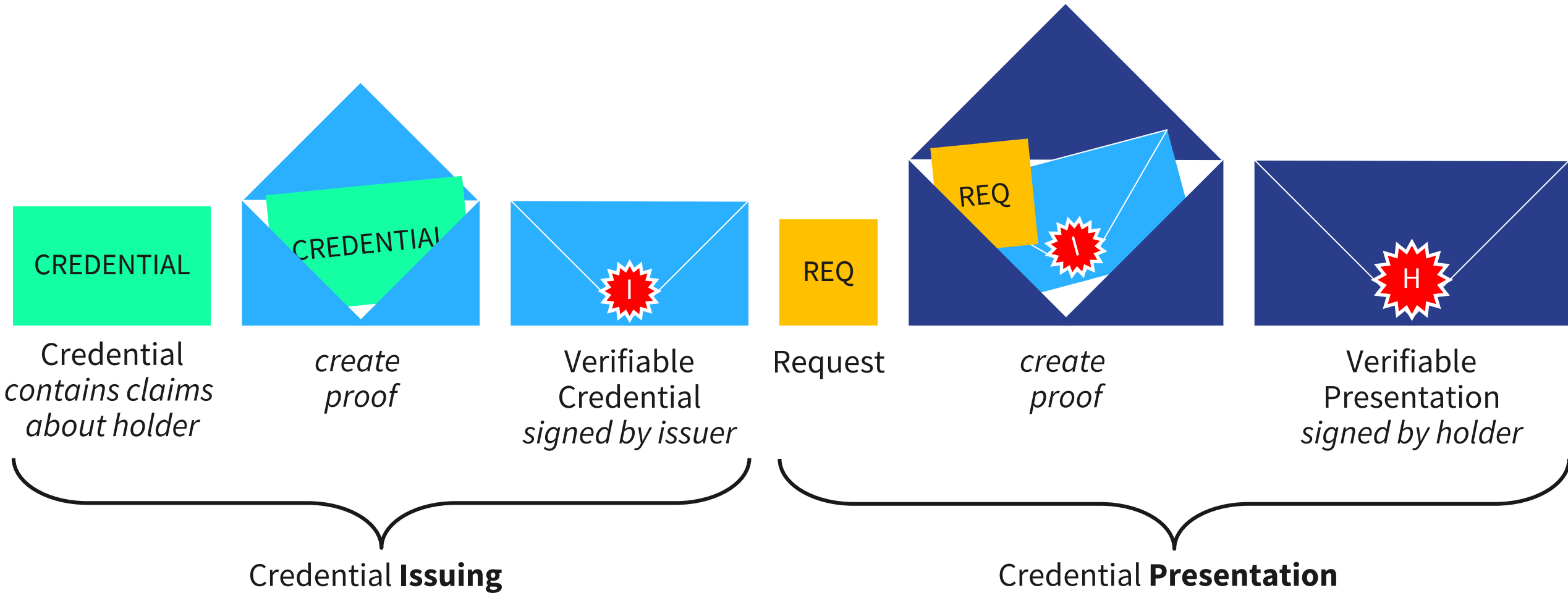- Information in credentials is still trustworthy

— Wallets

- Software application (usually mobile)

- Receive newly issued credentials

- Receive requests for credentials

- Present credentials

- Monitor credential usage

- Backup and restore credentials

- Revoke credentials

- Respond to theft / abuse

- …

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— Verifiable Credentials

Credential
contains claims about holder

create proof

Verifiable Credential
signed by issuer

Request

create proof

Verifiable Presentation
signed by holder

Credential **Issuing**

Credential **Presentation**

— Trust in Distributed Ecosystems
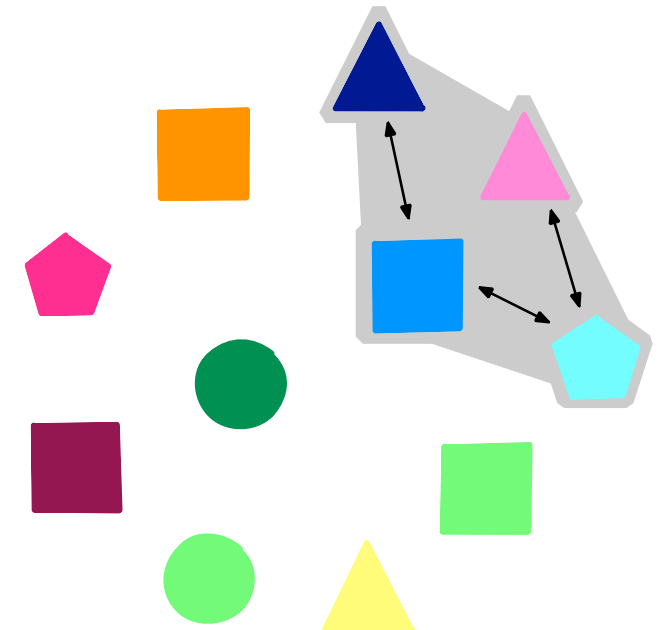
make new **connections**

utilize **data exchange**

between people, organizations, systems

Distributed ecosystems

- no inherent trust relations

- no central authorities or root of trust

- data protection and sovereignty required

— Challenge: Interoperability

- Technical
- Semantical
- Organizational   interoperability
- Economical
- …

- Interoperability on all layers is a **key success factor**.

- Who creates and maintains standards?

- Who adapts solutions? Who maintains / supports / develops further?

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— **Challenge: Sustainable Trust**
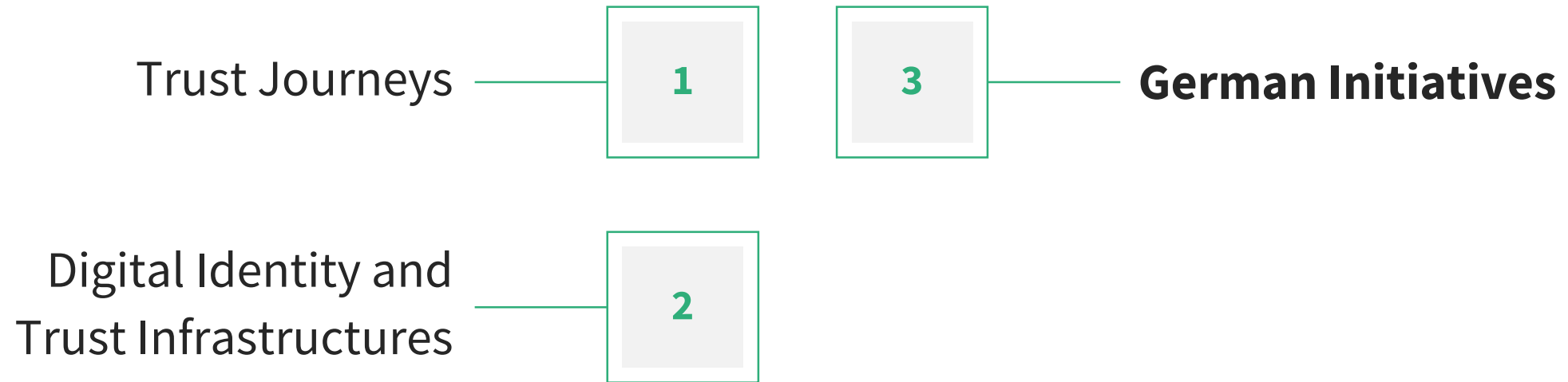
- Systems
- Organizations
- Laws

}
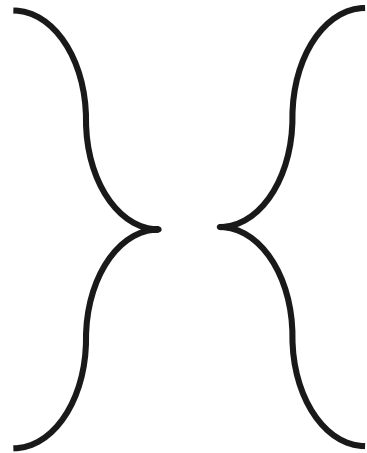
evolve.

break.

get compromised.

- Providing long-term support for credentials

    - Who?

    - How?

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— **From Learner's Journeys to Trust Journeys**

Trust Journeys —— **1**

3 —— **German Initiatives**

Digital Identity and
Trust Infrastructures —— **2**

— What's going on in Germany? (1: Showcases)

[4] [2] [3] [1] [5]

[1] https://sdika.de

[2] https://idunion.org/

[3] https://id-ideal.de/

[4] https://once-identity.de/

[5] https://digitale-identitaeten.de/

Supported by:

Federal Ministry
for Economic Affairs
and Climate Action

on the basis of a decision
by the German Bundestag

- 4 showcase projects

- accompanying research

- > 50 million Euro funding

- focus on

  - interoperability

  - self-sovereign identity

  - use cases from several domains, such as mobility, health, e-government, tourism, education, …
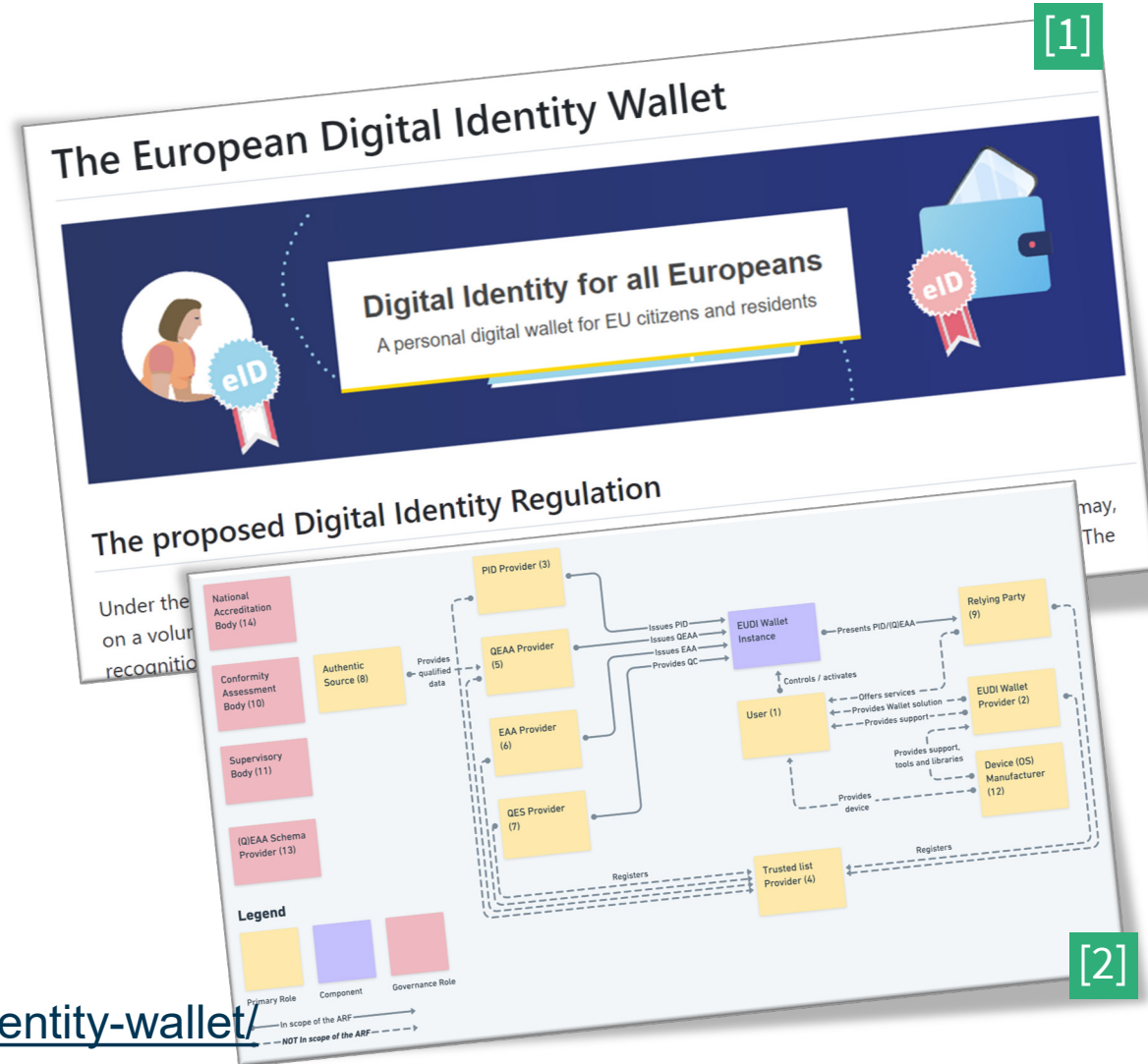
— What's going on in Germany? (2: EIDAS / ARF)

"Educational credentials and professional qualifications

Providing documents for qualification recognition procedures can be **costly and time-consuming** for end Users, companies and employers, education and training providers, and other academic institutions.

For example, digital diploma attestations could be **presented cross-border in a verifiable, trusted, and consumable format** to another education or training institution or a prospective employer.

The EUDI Wallet may be a repository for educational digital credentials as Electronic Attestations of Attributes and a means for exchanging them by a learner." [3]

[1,2,3] https://github.com/eu-digital-identity-wallet/

— What's going on in Germany? (2: EIDAS / ARF)

– "Type 1 configuration is aimed specifically at use cases where the Relying Party relies on guarantees required for the LoA High (…), to enable cross border identification using PID attributes at LoA High. Type 1 configuration is mainly designed for purposes of PID." [4]

– **"Type 2 configuration aims to enable flexibility and additional feature support** for possible (Q)EAA use cases that cannot be met by Type 1 configuration (e.g., possibly in areas of health, **education credentials**, …)." [5]

[4,5,6] https://github.com/eu-digital-identity-wallet/
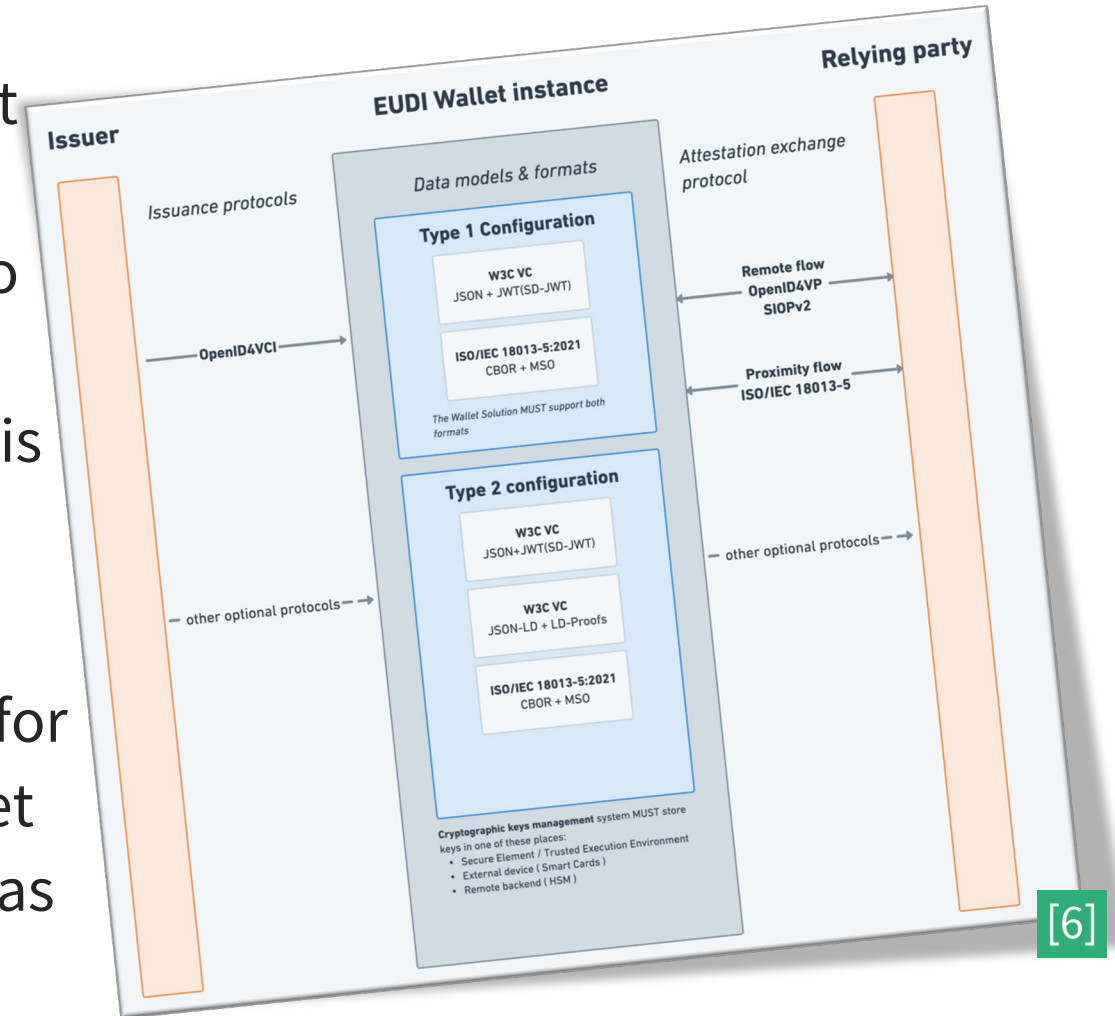
— What's going on in Germany? (3: POTENTIAL)

- 19 European Member States and Ukraine

- 6 core use cases

  - eGov Services

  - Bank Account Opening

  - SIM Card Registration

  - Mobile Driving Licence

  - Qualified eSignature

  - ePrescription

- https://www.digital-identity-wallet.eu/

— What's going on in Germany? (4: Consultation)

- Open consultation process by the German Federal Ministry of the Interior and Community

  - companies

  - research organizations

  - NGOs

- Collection of use cases

- Creation of reference architecture models

- https://gitlab.opencode.de/bmi/eidas2

FZI Research Center for Information Technology

Dr. **Jan Sürmeli**

FZI Research Center for Information Technology

suermeli@fzi.de

https://www.fzi.de/en/team/jan-suermeli/

Thank you!

Questions?

Our Research Shapes the Future