

# An Update on reaching the German Government via Matrix

Piloting a Matrix-based next-generation communication infrastructure for digital government services

2025-10-16 | Matrix Conference | networkException

## —○ An Update on...



### Beyond Instant Messaging: Matrix in the Public Sector

Its openness and adaptability is what makes Matrix particularly interesting for government organizations. Recently,...

Marco Holz (FITKO), Thimo Zarth (BMDS)

Public Sector

LAB 4

[View slides](#) 

# Deutschland in der matrix

Digitale Souveränität durch  
dezentrale Kommunikation



# Conclusion

We're missing an overall strategy for using Matrix

Just claiming that "it's E2EE" isn't cutting it

Ein tatsächlich sinnvolles Beispiel für "European Software"

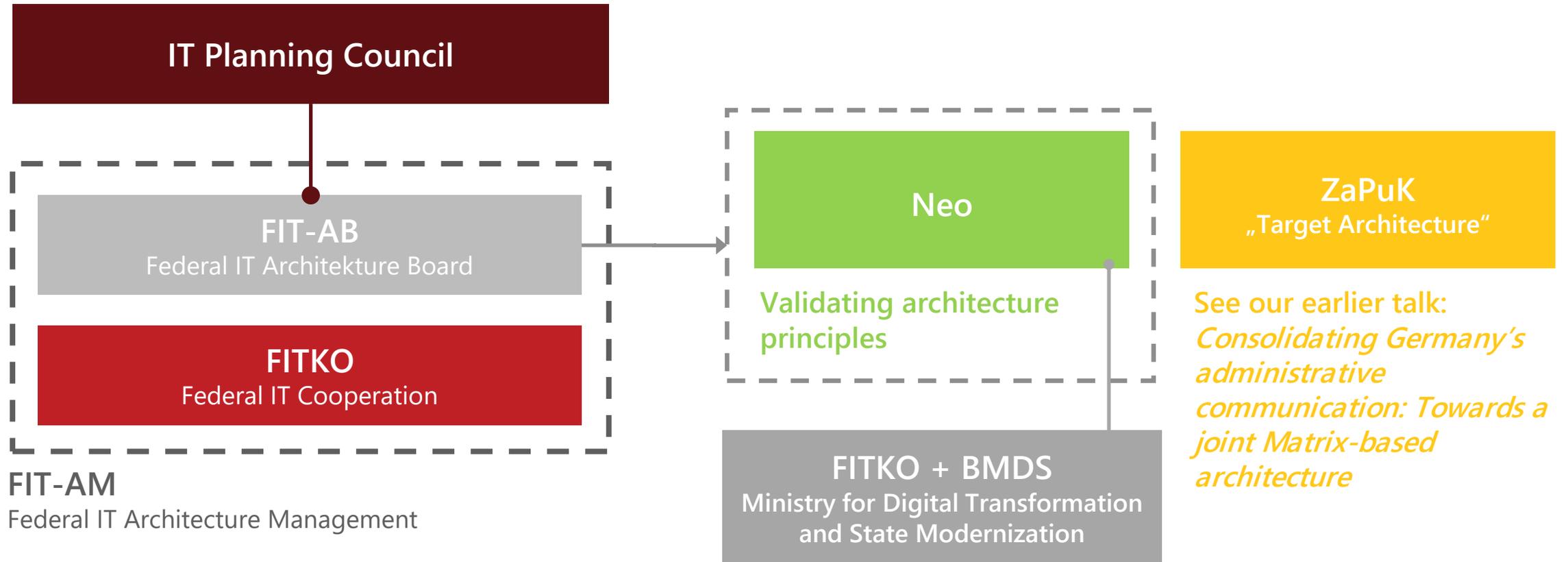
Interoperable Messenger kommen



# Project Context



# Project Context



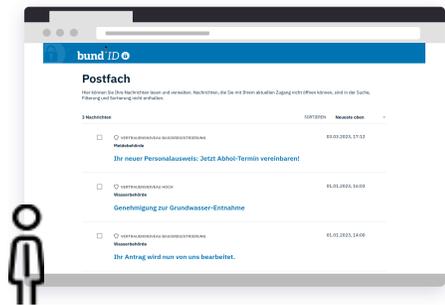
See our earlier talk:  
*Consolidating Germany's administrative communication: Towards a joint Matrix-based architecture*

# Communication via the BundID-Mailbox

## Requesting a government service



## Follow-up communication



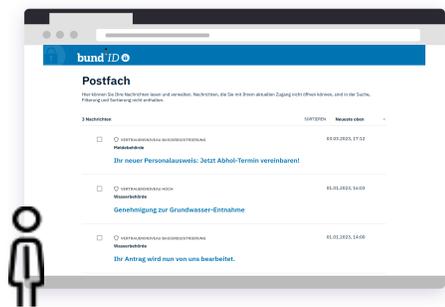
Domain specific  
IT system

# Communication via the BundID-Mailbox

## Requesting a government service



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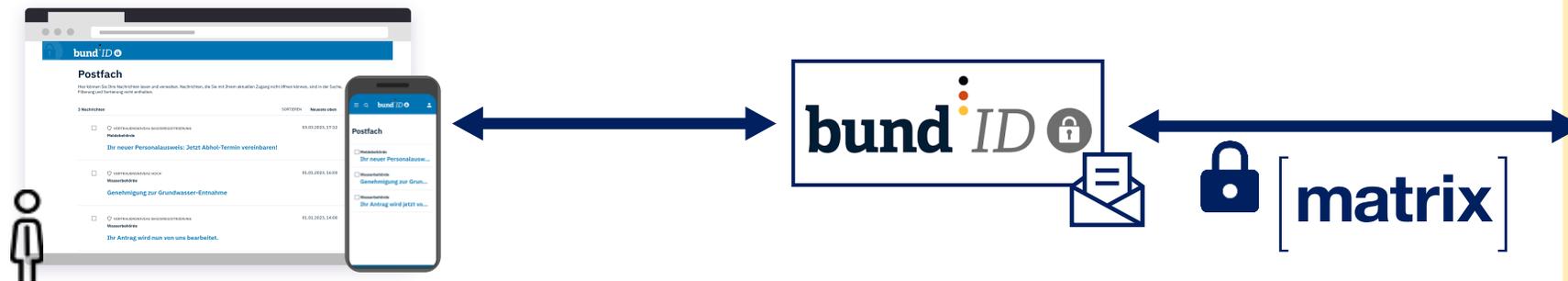
# Matrix as an additional technology in the BundID-Mailbox

Requesting a government service



 Authority

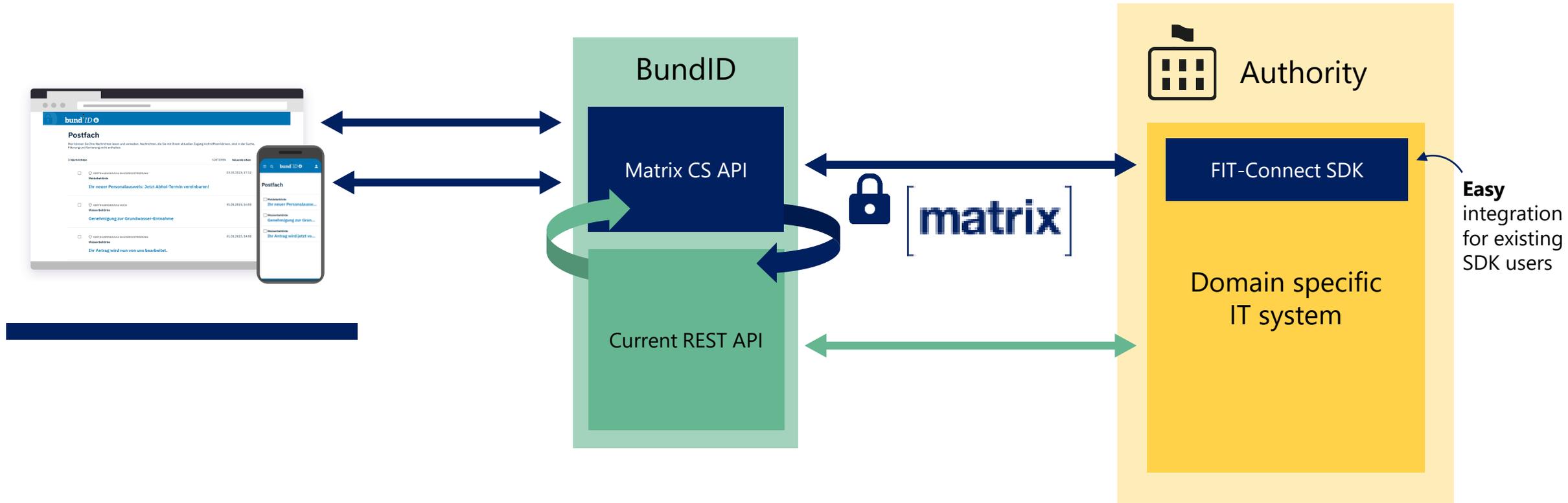
Follow-up communication



Domain specific  
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# Matrix as an additional technology in the BundID-Mailbox

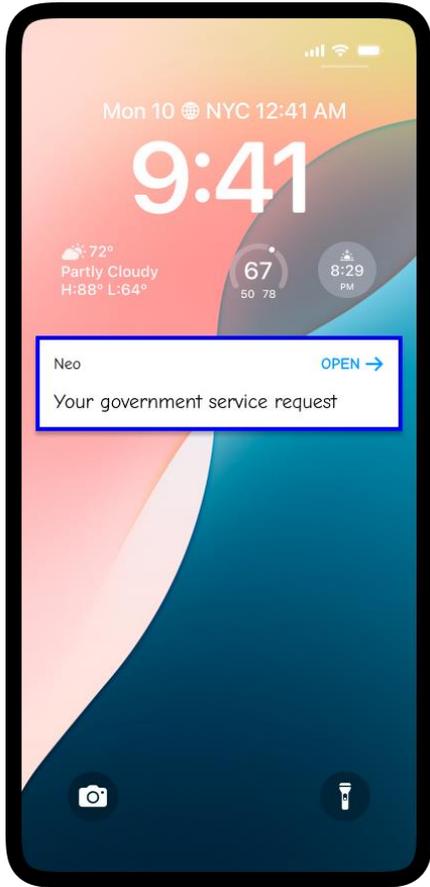
High level architecture



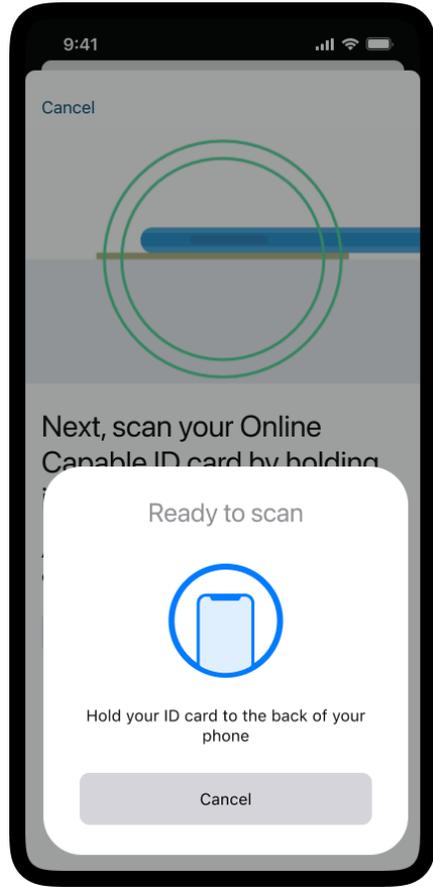
# Feature Overview

A high level user journey

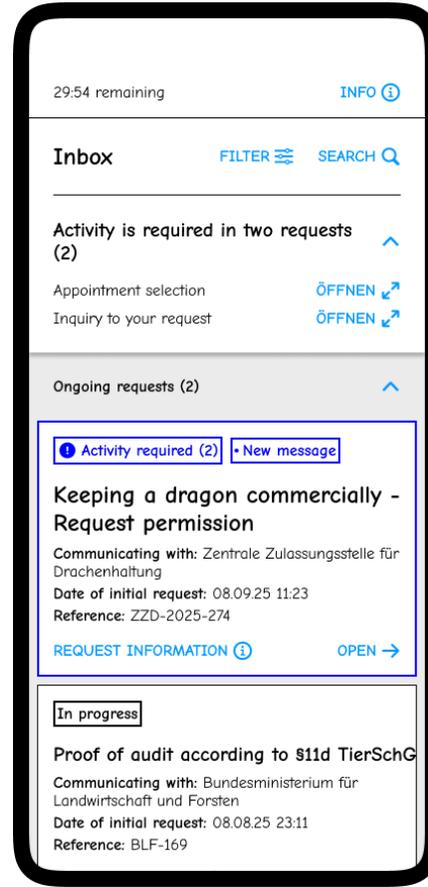
Work in progress  
UI Prototype



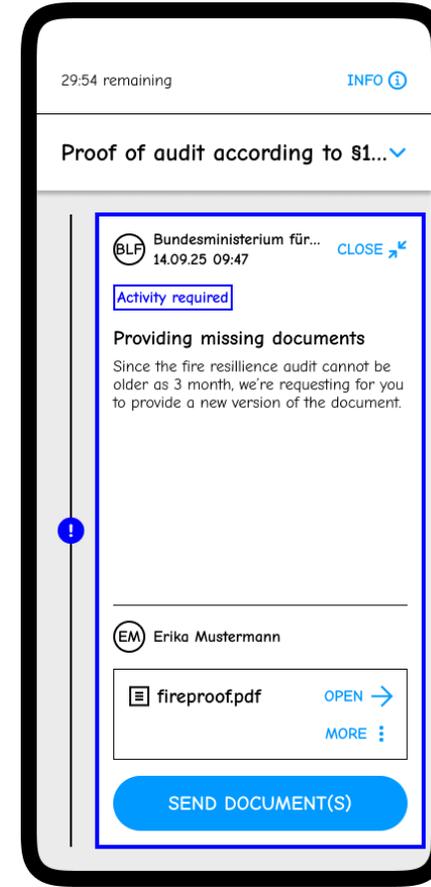
Push notifications



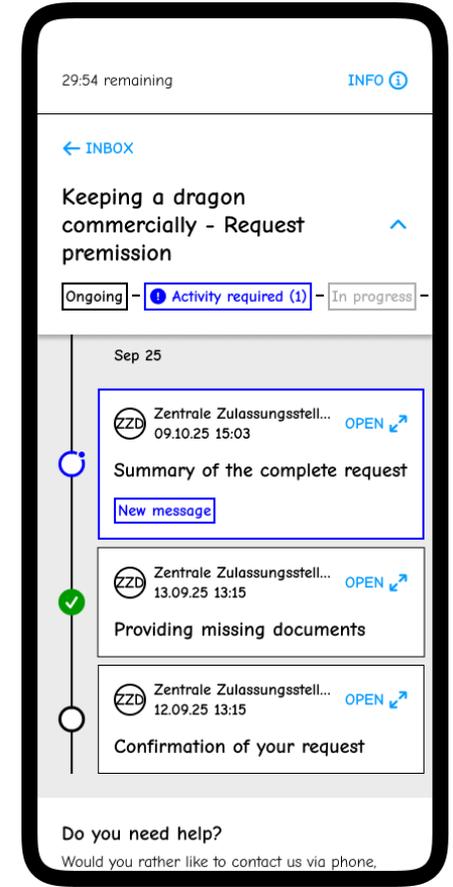
Login using ID card



Request overview and status



Follow-up inquiries



Formal confirmations



# Why Matrix?



## Why Matrix?

- **Existing, international and open Standard**
  - We want to rely on established solutions rather than reinvent the wheel
  - Other public organizations pushing Matrix is making it viable for us as well
- **Important features out of the box**
  - End to end encryption
  - Multi device capable
  - Push notifications
  - Still designed for customizability in mind
- **Established security guarantees**
  - Based on the “industry standard” Signal protocol
  - Audited implementation with vodozamac





# Our Approach



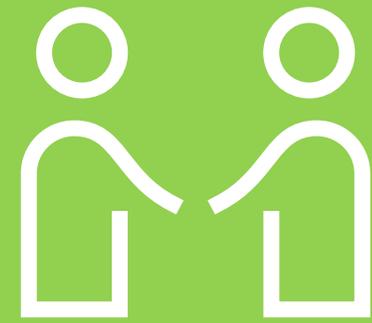
## Our Approach



Usability by  
Design

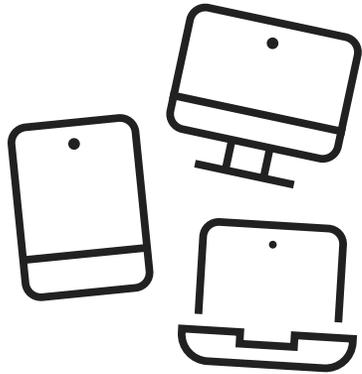


Security and Privacy  
by Design



Openness and  
Collaboration

# Our Approach: 1.) Usability by Design



Multi Device



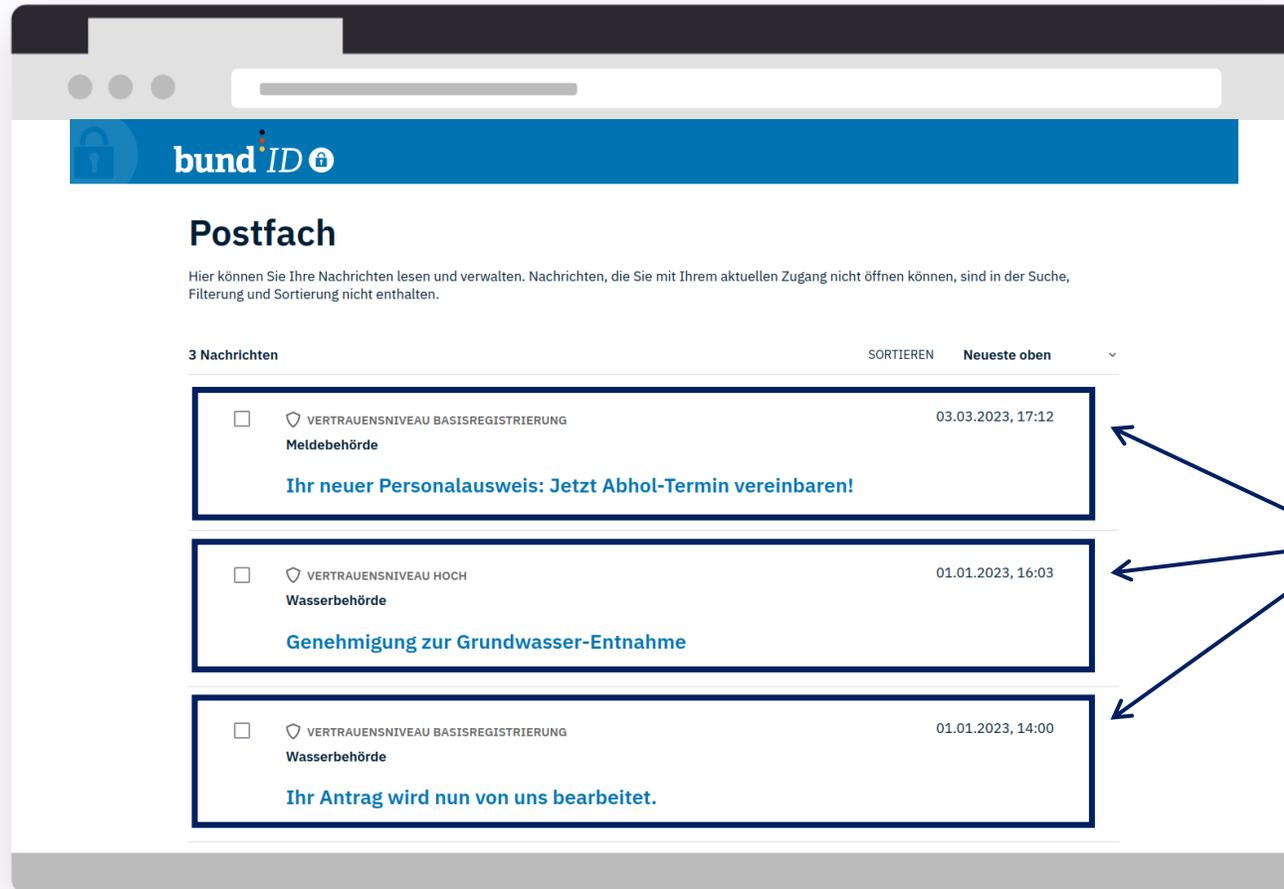
Intuitive Design



Easy and without paper  
- even for the Government

# Mobile and Web as first class citizens

Usability by Design

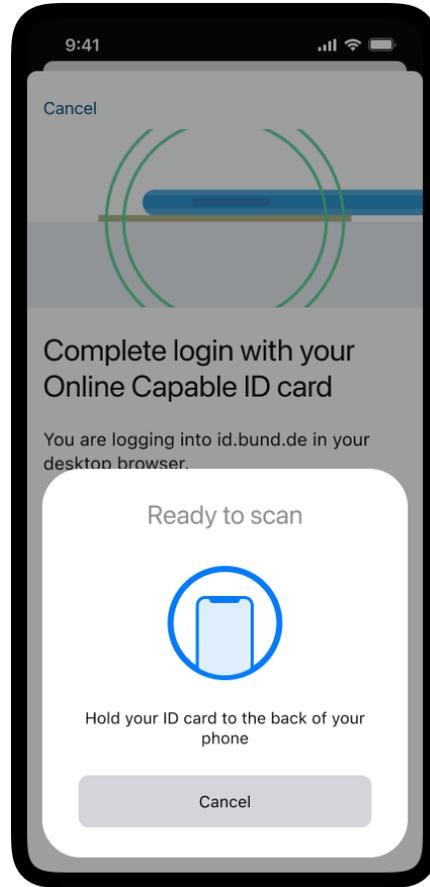
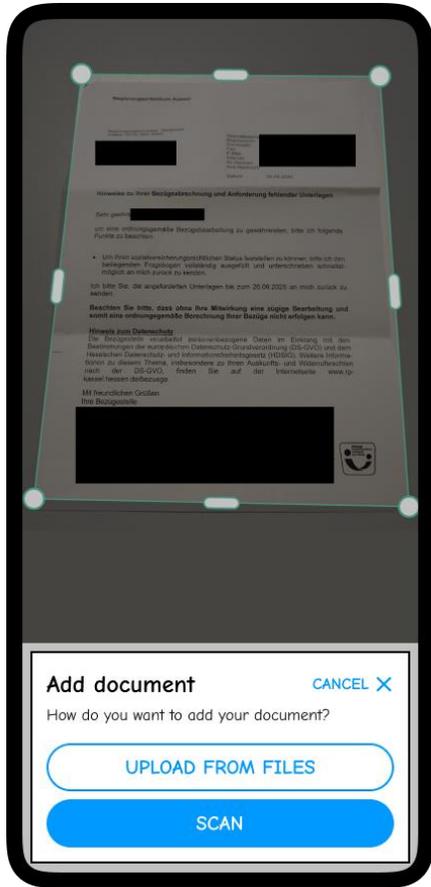


**Rooms and messages kept in sync by Matrix out of the box**



# Taking advantage of Mobile Platform Features

Usability by Design



- Scanning and uploading documents directly using the camera
- Reading physical ID cards using NFC for strong authentication
- Receiving native push notifications
- Logging into the web client by scanning a QR code
- Relying on long lived user sessions with reasonable, TPM based security

# Intuitive Interactions

## Usability by Design



**Appointment selection**  
Dear Mrs Mustermann, the fishing permit you requested can be picked up at Fischereiamt Berlin. Please choose from

19.09.25 09:00  21.09.25 12:00   
22.09.25 14:00

NONE OF THE ABOVE

BOOK APPOINTMENT

**Inquiry about your request**  
Dear Mrs Mustermann, to be able to request a fishing permit you need to provide us with a summary of the intended

Answer...

SEND ANSWER

**Documents required**  
Dear Mrs Mustermann, to approve a fishing permit we need an up to date copy of your ID card. Please send us a scan via

ADD DOCUMENT

SEND DOCUMENT(S)

**Inquiry concerning your request**  
Dear Mrs Mustermann, to complete your request for obtaining a fishing permit, please choose from one of the delivery

Local pickup   
Delivery via mail

SEND ANSWER

**Inquiry about your request**  
Dear Mrs Mustermann, to be able to request a fishing permit you need to

INFO

FB

EM

App

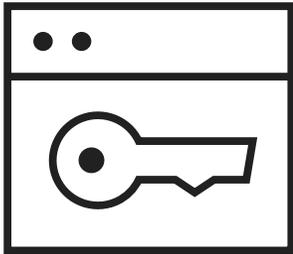
Dear we y please than

19.0

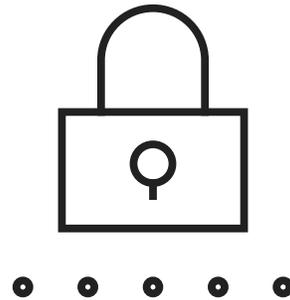
- Supporting different government domains, processes, and use cases
- Focusing on structured, machine readable data to allow meaningful automations
- Prioritizing common pain points for both sides, allowing for more customization and extensibility in the future
- Doing lots of User Research!



## Our Approach: 2.) Security and Privacy by Design



End to End Encryption



Zero Trust Architecture



Metadata Reduction

# End to End Encryption

Security and Privacy by Design



...but it isn't as easy as this, the ends still need to know each other's key from *somewhere*

## Zero Trust

Security and Privacy by Design



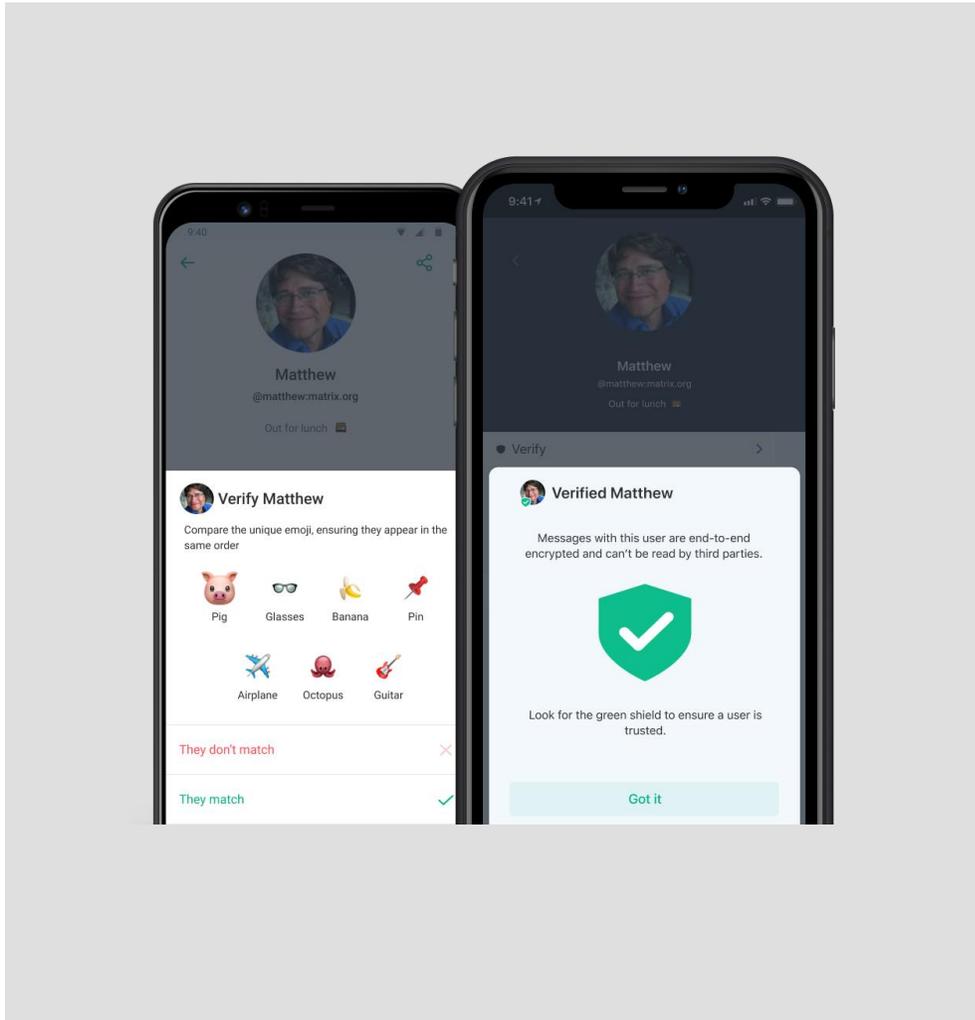
Lets look at Zero Trust practically, with **one bund ID** , a **few thousand**  and up to **80 million** :

Designing against high impact by applying *assume breach* to centralized infrastructure

...but what do we trust in now?

# Zero Trust with E2EE: Device Verification

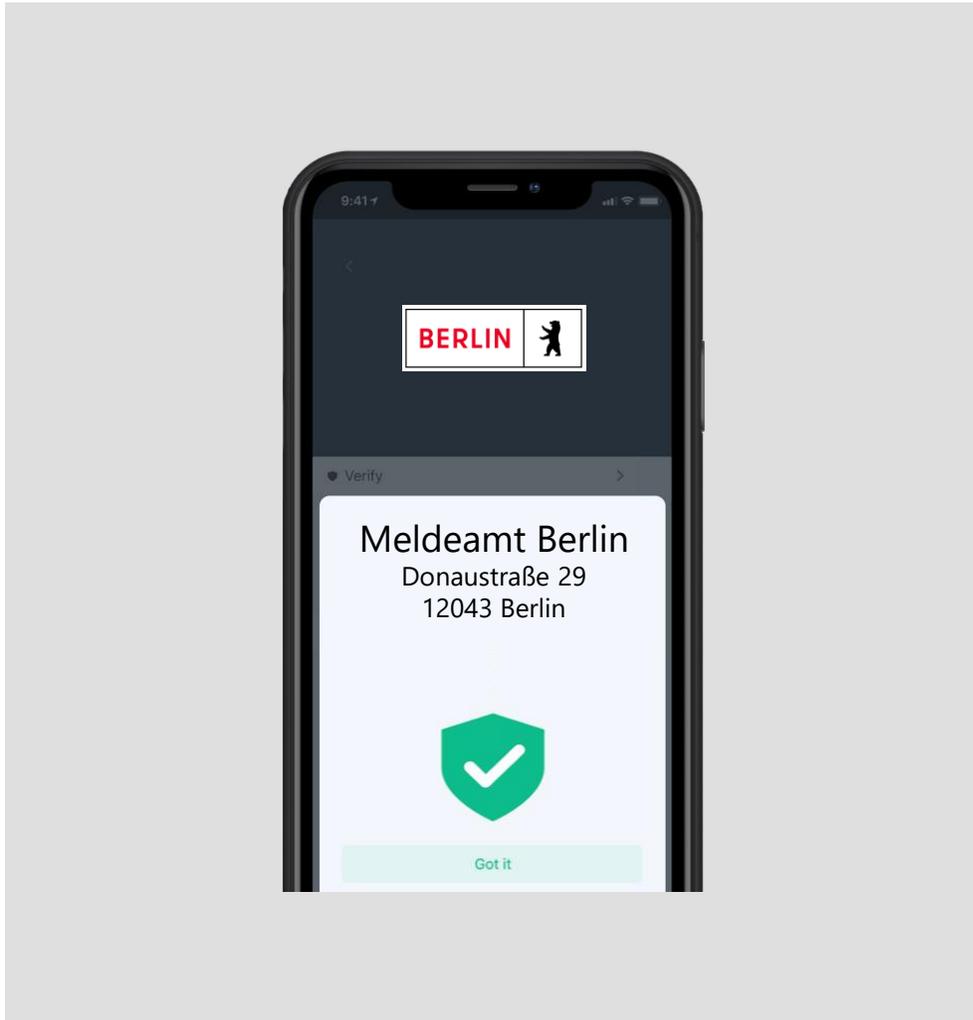
Security and Privacy by Design



- Manually entering emojis or scanning QR codes doesn't scale
- We can do better than Trust On First Use
- Security and key management should be invisible and "just work"

# Zero Trust with E2EE: Device Verification

Security and Privacy by Design



- Verification for every device by default
- X.509 Certificates for agencies, eID for citizens

# „Zero Trust“ for High Quality Metadata

Security and Privacy by Design



Let's look at privacy implications the same way, where **one bund ID** Matrix Server knows all identity metadata.

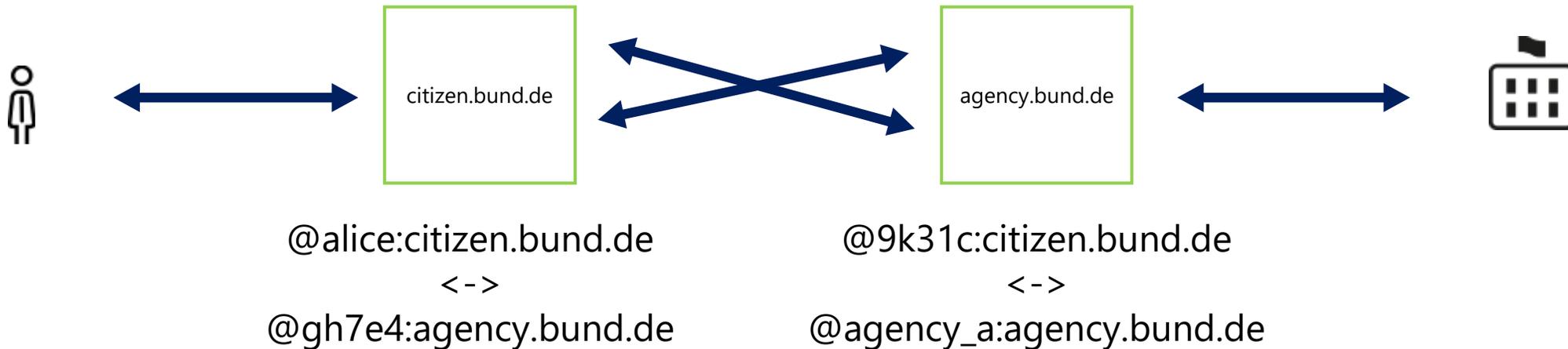


# „Zero Trust“ for High Quality Metadata

Security and Privacy by Design



Splitting accounts into **two** Matrix Servers allows for *unlinkability*



## More Topics we're looking into

Security and Privacy by Design



Post Quantum Security

More Supply Chain Security

Reproducible Builds and Binary Transparency  
– especially on the web

Modular Architecture with auditable  
Components

Secure and Memory Safe Implementation (with Rust)

## Our Approach: 3.) Openness and Collaboration

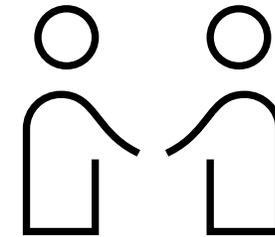


[**matrix**]

„MSC first“



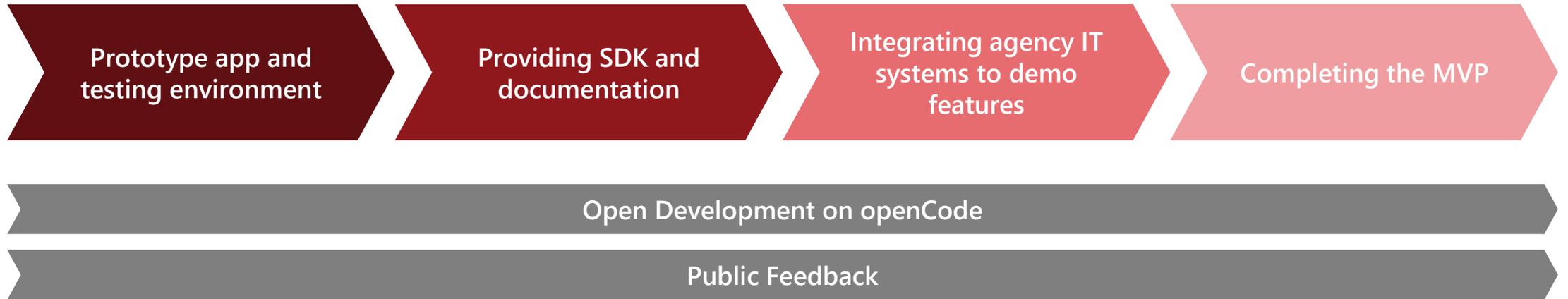
Open Source and  
developed in the open



Collaboration with  
other public organizations

# ○ Roadmap until mid 2026

Next steps



# Info - Pilotierung Messenger-Kommunikationskanal für die G2C-Kommunikation

  Unstar 8  Fork 0 

README.md

## Matrix-basierte Antrags-Folgekommunikation mit der Verwaltung

### Hintergrund

Im Kontext der OZG-Umsetzung enden Digitalisierungsvorhaben oft mit dem Eingang eines Antrags bei der zuständigen Fachbehörde. Nach dem digitalem Eingang eines Antrages erfolgen Rückfragen, Status-Updates zum Bearbeitungsstand und/oder Bescheidzustellungen oft postalisch.

Für Privatpersonen / Organisationen erzeugt dieser Medienbruch Aufwand und Unzufriedenheit mit der Qualität der von der Verwaltung angebotenen Dienstleistungen. Privatpersonen und private Organisationen erwarten einfach nutzbare Lösungen zur Interaktion mit staatlichen Stellen auf demselben Qualitätsniveau vergleichbarer Angebote der Privatwirtschaft.

Der Kommunikationsprozess zwischen Behörden und Privatpersonen / privaten Organisationen ist neben der mangelnden UX auch aus architektonischer Sicht komplex, aufwändig, kostspielig und teilweise modernisierungsbedürftig.

Im Vorhaben „Pilotierung Messenger-Kommunikationskanal für die G2C-Kommunikation“ sollen in einem ersten Schritt neue technologische Ansätze für die Antrags-Folgekommunikation öffentlichen Stellen (Government) und Privatpersonen (Citizen) auf Grundlage des bestehenden rechtlichen Rahmens (§ 9 OZG i.V.m. § 8 Abs. 5 OZG) evaluiert werden. Fokus liegt auf der Erprobung von neuen Interaktionsmustern zur Optimierung der User Experience (insb. Multi-Device-Ansatz mit App-basiertem Zugang, strukturierte maschinenlesbare Kommunikation) sowie der Verbesserung von Datenschutz- und IT-Sicherheitseigenschaften (insb. Zero-Trust-Architektur, Security-/Privacy-by-Design sowie Umsetzung einer Ende-zu-Ende-Verschlüsselung gemäß § 2 Abs. 5 OZG).

Das Vorhaben ist ein Vorhaben des [Föderalen IT-Architekturboards des IT-Planungsrat \(FIT-AB\)](#) in gemeinsamer Umsetzung der [FITKO](#) mit dem [BMI](#).

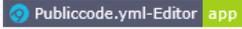
### Zielbild

Das folgende Zielbild zeigt die Matrix-basierte Kommunikation zwischen Privatpersonen und Fachbehörden:

### Project information

Informationen zum Vorhaben "Pilotierung Messenger-Kommunikationskanal für die G2C-Kommunikation" des Föderalen IT-Architekturboards

Föderales IT... Matrix OZG + 1 more

-  Publiccode.yml-Editor app
-  Open CoDE-Wiki app

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 30 Commits

 1 Branch

 0 Tags

 1.4 MiB Project Storage

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 README

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- [+ Add CHANGELOG](#)
- [+ Add CONTRIBUTING](#)
- [+ Enable Auto DevOps](#)
- [+ Add Kubernetes cluster](#)
- [+ Set up CI/CD](#)
- [+ Add Wiki](#)
- [+ Configure Integrations](#)



[gitlab.opencode.de/fitko/matrix-g2x](https://gitlab.opencode.de/fitko/matrix-g2x)