

TI_ctf – The TI Capture The Flag Event of the National Digital Health Agency in Germany

Stockholm, 26.09.2023



Das TI Capture The Flag Event

Intro

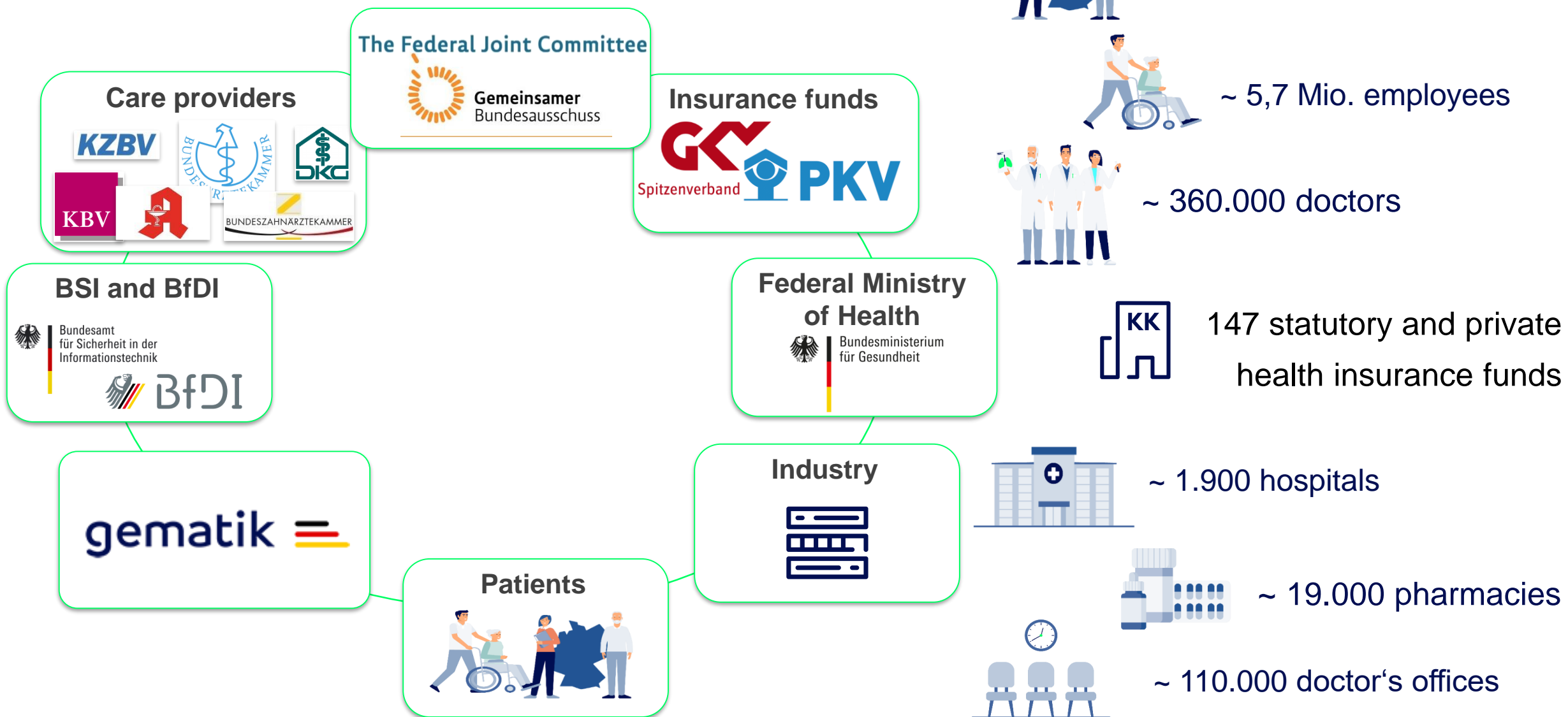
- **Who** are we and **what** are we doing? – gematik in a nutshell
- **Why** are we hosting a CTF?
- **What's** our approach?
- **How** are we implementing it?
- **Results** – Honestly, does it add up?

Health Care in Germany

An overview



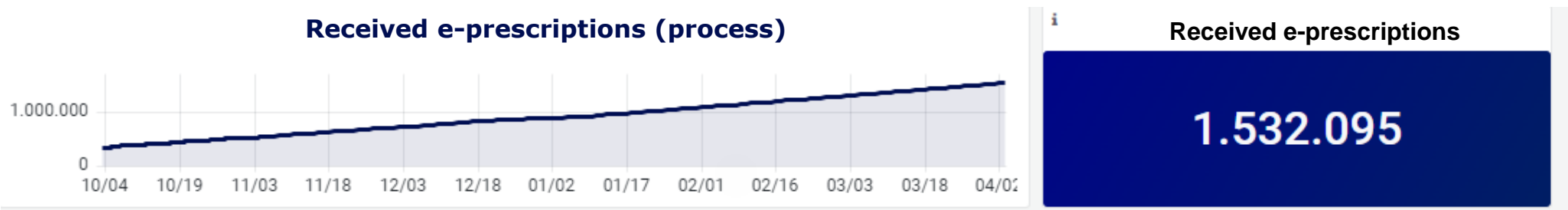
Germany's healthcare system in a nutshell



Current State of Play of main applications



E-Rezept



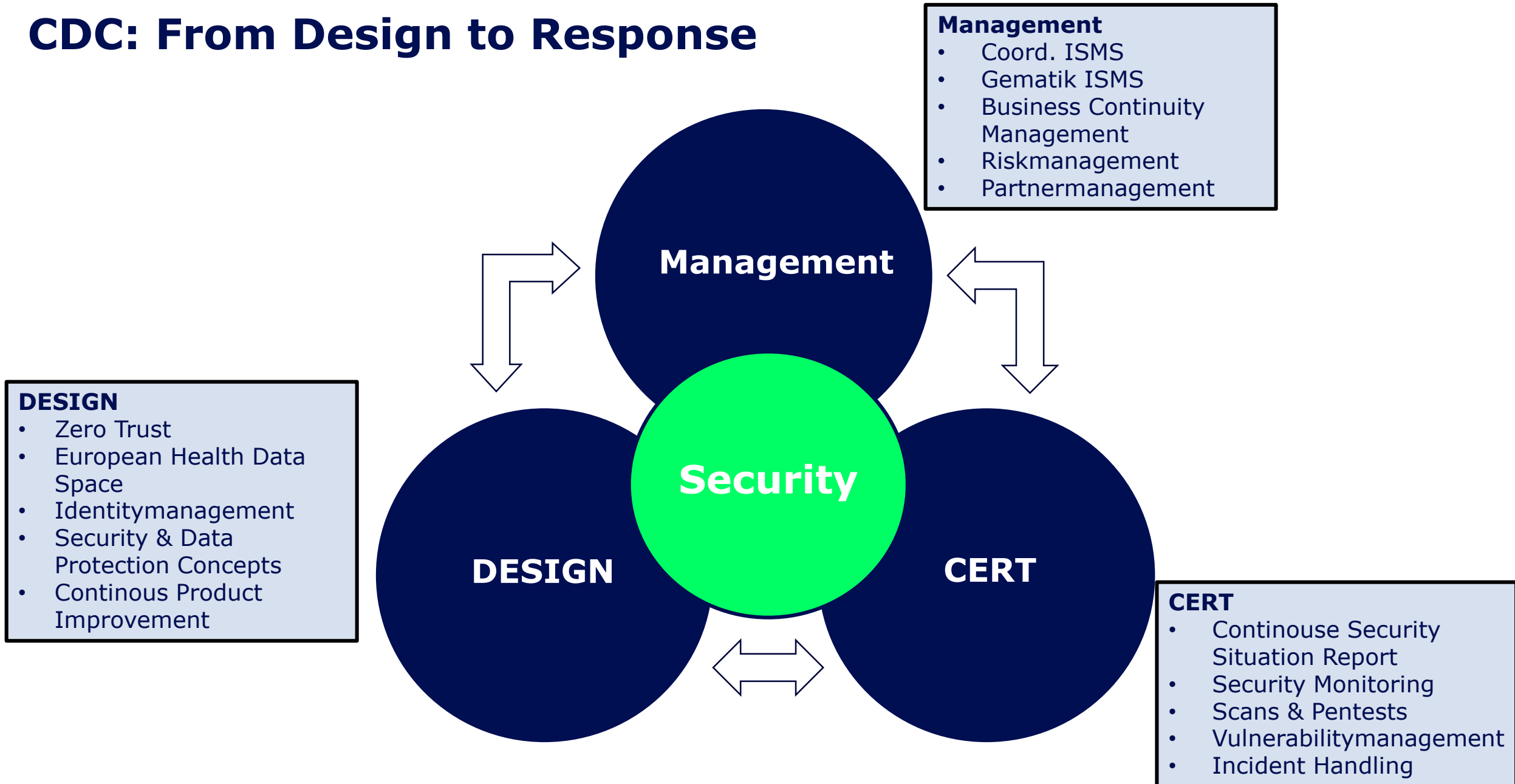
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ePA



CDC: From Design to Response



TI_ctf

- Telematik Infrastructure Capture The Flag – since 2021
- It's a Cyber Security Event with a Hacking Contest and presentations in context with e-health and security
- Product focused design
- Bringing together gamification and security



Das TI Capture The Flag Event

Why are we hosting an CTF?



gematik is a Facilitator, Host & Consultant

Visibility

Cooperation &
Collaboration

Understanding

Improve
Security
Posture

Why are we hosting an CTF?

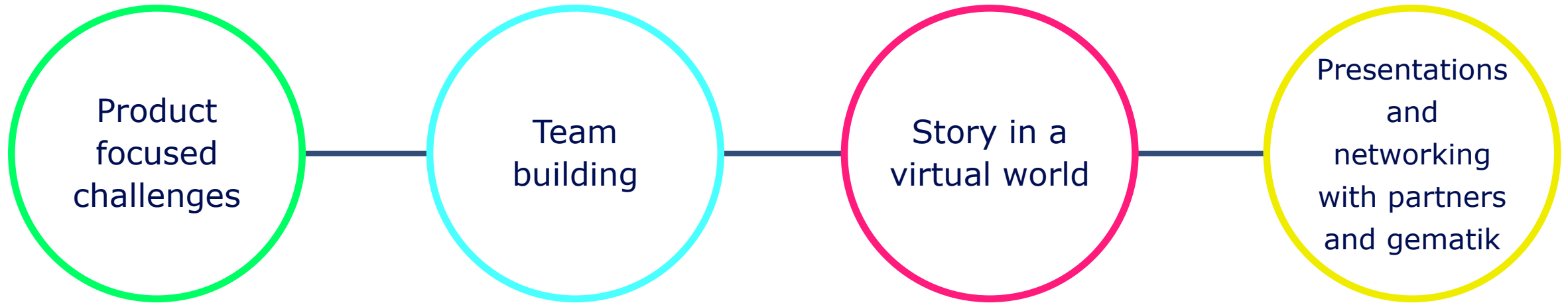
- Digitalization within health sector concerns us all
- gematik as national agency is the central enabler for digitalization of the health and care sector
- Security is a profound element of e-Health



- We want to engage with the community and bring TI products in context of security closer, such as ePA & eRx
- We want to increase cooperation & collaboration
- We want to increase visibility, networks and by that increase indirectly the overall security posture

Goal: Host a CTF Event

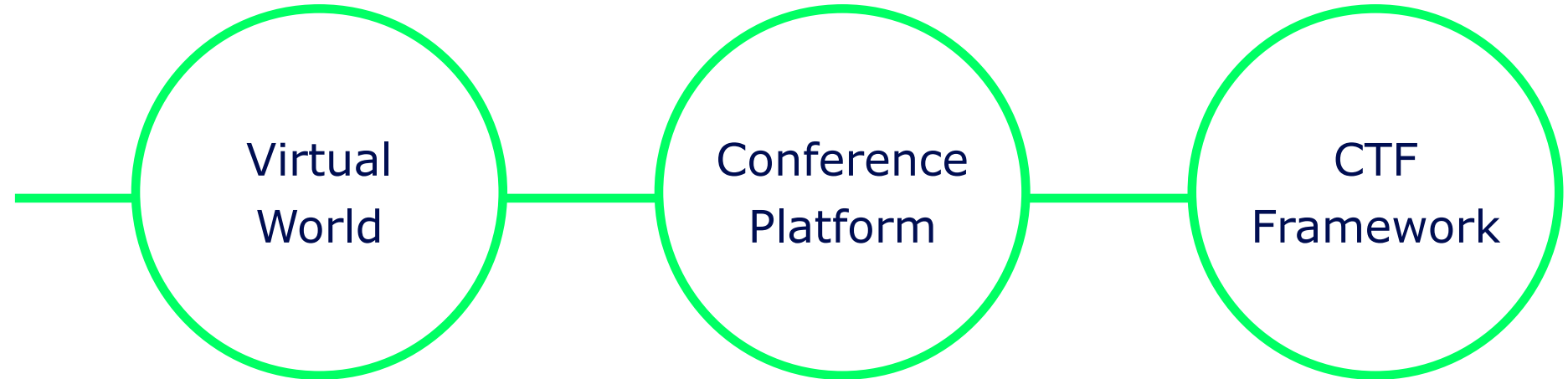
What's our approach?



Challenges:

- OSINT, Brute Force, Penetrationtesting, cryptography, programming, forensics

Overview: Technical Infrastructure



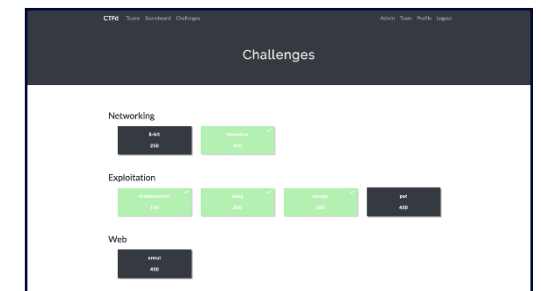
Workadventure



JitsiMeet



CTFd



ePrescription

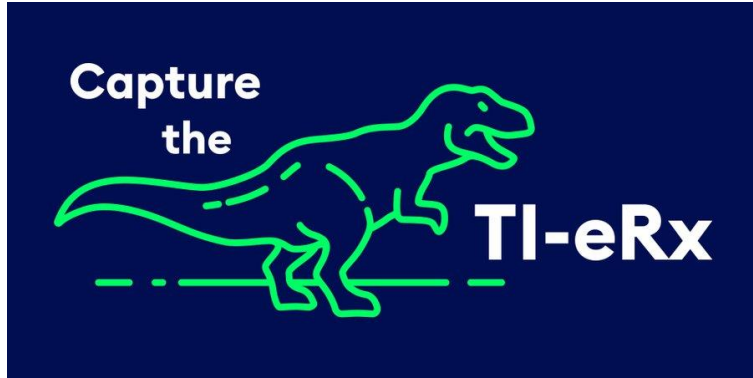
The fast and safe way to a new medicine



With the e-prescription, medicines are prescribed digitally. The e-prescription can be filled at the pharmacy via an app, a QR code or, in the future, an eGK.



Recap 2021: Capture The TI-eRx



- Over 25 challenges
- 130 contestants
- In the final hour neck-and-neck race
- Partner presentation on the community level
- Significant positive feedback from participants



ePA

Health at a glance



The electronic patient record (ePA) stores all of a patient's data and documents securely in one place. Patients can manage their data themselves and release it to their doctors.



Recap 2022: The Secret of the ePA-TI

- Over 25 challenges
- 83 contestants in 24 Teams – lower no show quote
- Mini-Level to unlock CTFd
- More Partner presentation on the community level
- Again absolutely positive feedback from participants



KIM

Secure email and data exchange



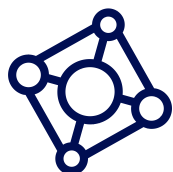
Secure communication

between all institutions connected to the telematics infrastructure (TI)



Suitable for

applications/payloads such as eAU, eHKP, billing, laboratory data, findings, doctor's letters, DMP, etc.



First **nationwide and cross-sector** service; Out of the Box - **Authenticity, Integrity and Confidentiality**

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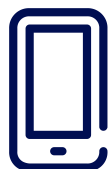
Application register at gematik, overview of all KIM applications



Sending confidential messages, data and other documents, protection of patient data



Successive **expansion of the user groups**



Potential through further specification development by gematik with **additional features**, e.g. file dispatch over 25 MB, primary system integration



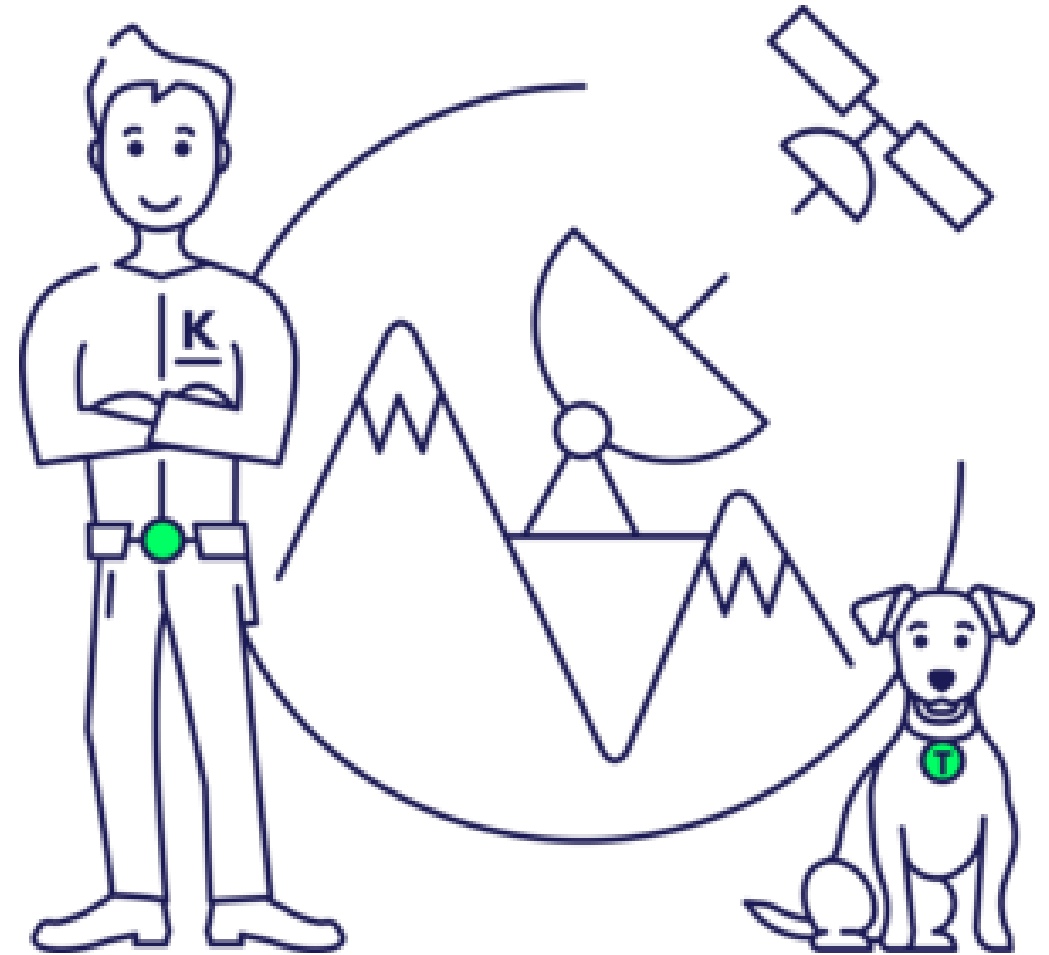
Automation of workflows through service identification

Teaser 2023:

The Adventure of KIM & TIM

Chapt. I – Mission (K)IMpossible

- Over 20 challenges already
- Goal: 35 participating teams
- Improving the Mini-Level to unlock CTFd
- Engaging with and inviting the gemmunity
- Establishing the Story of KIM and TIM



Results

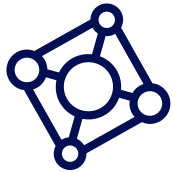
Honestly, does it add up?



Thinking & working out of the box – First CTF in Germany with a virtual world



Created an own blue print – reducing the workload



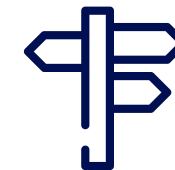
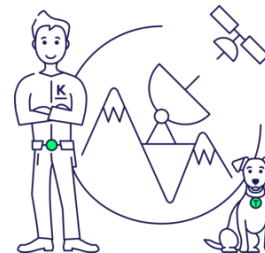
Bringing the partners together in an other setting – **internal CTF** always afterwards just for the colleagues



Connecting to the outside – People know, who to address



Presenting our approach within the community and winning new event partners



Sending new impulses into the community, redefining gematik