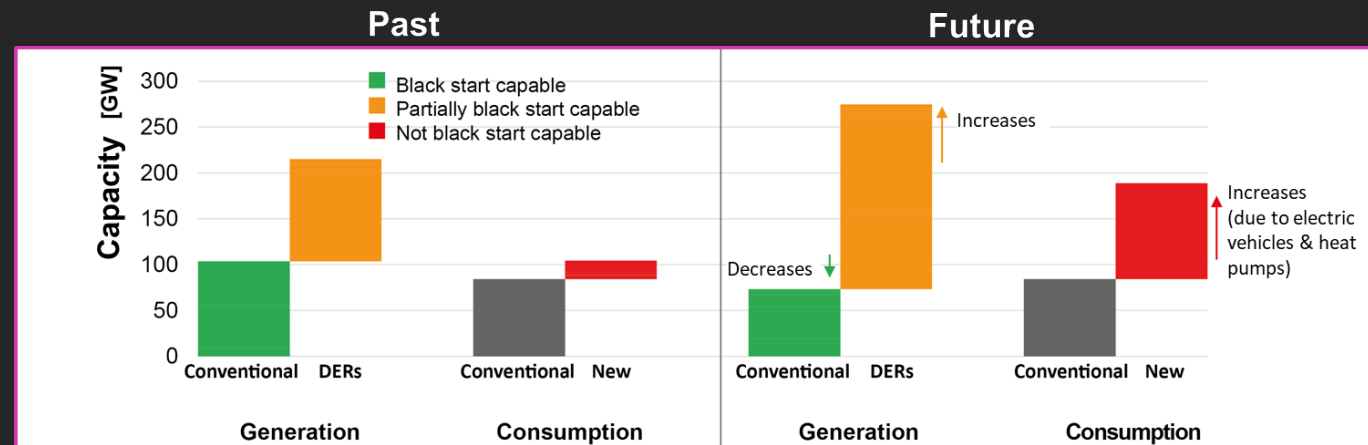
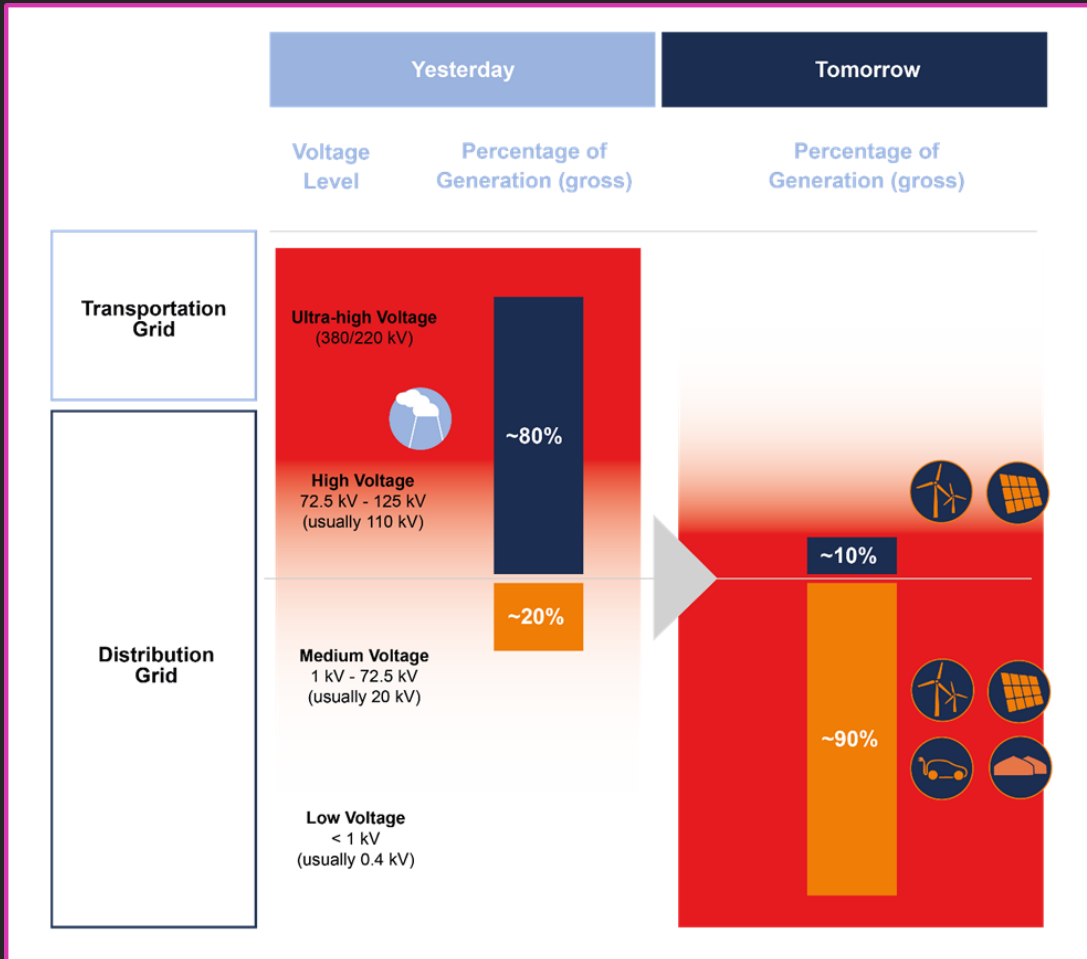


02/25/2021 – POWER SYSTEM FLEXIBILITY CAMPAIGN & 3DEN JOINT EXPERT WEBINAR

# **PRIVACY AND SECURITY BY DESIGN: THE SMART METER GATEWAY IN GERMANY**

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# THE SHIFT TOWARDS DISTRIBUTION GRIDS COMES WITH NEW VULNERABILITIES



Source: BET, 2020

# GUIDING PRINCIPLES FOR PRIVACY AND SECURITY BY DESIGN

1. **Collection and use of data** without the consumer's consent only permitted for system relevant purposes.
2. **Meter reading intervals as sparingly as possible** (no conclusions can be drawn about user behavior).
3. **Data** is only transmitted **anonymously, pseudonymized or aggregated**.
4. Data is **processed locally**.
5. Data are **transmitted to as few places** as possible.
6. **Strict data deletion periods** are specified.
7. Communication and processing steps are **visible and verifiable for the consumer** at all times.
8. Rights of **deletion, rectification and objection** are easily enforceable.
9. **Free choice of tariff**.
10. Smart meters are not **freely accessible** from the outside. **Clear profiles for authorized access** are defined.

# SETTING ARCHITECTURE AND REQUIREMENTS WITHOUT SETTING TECHNOLOGICAL PATH DEPENDENCIES

## Local Metrological Network - LMN

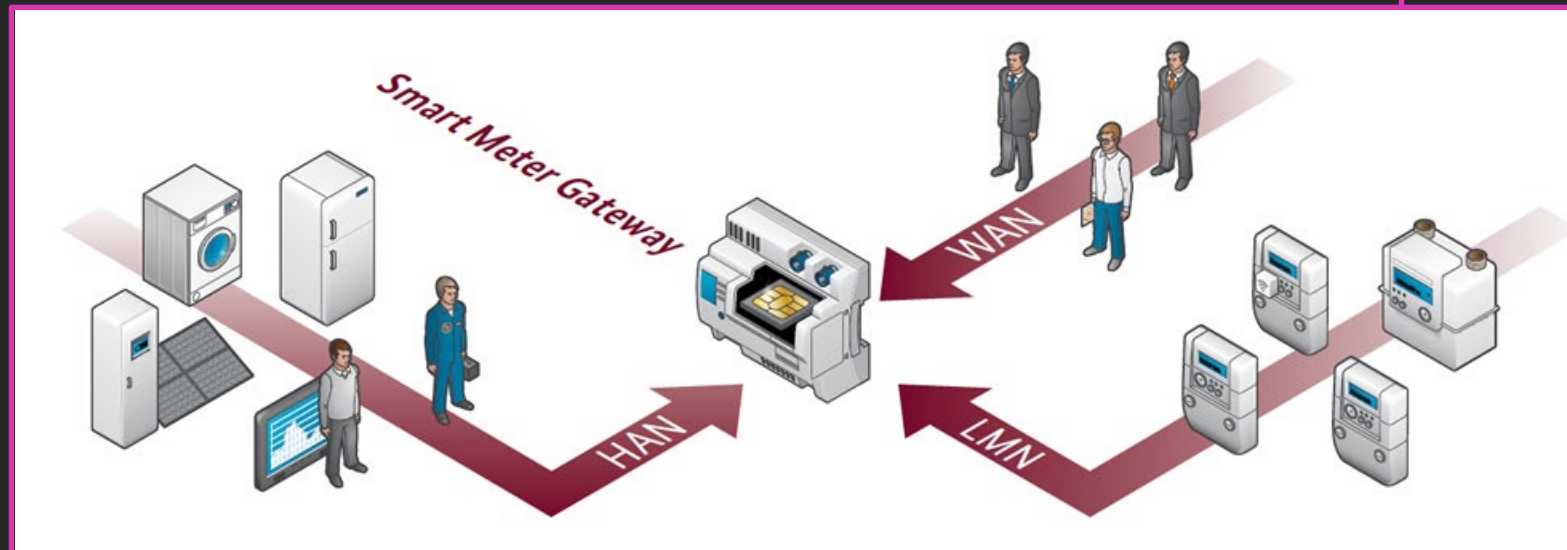
- Connection between Gateway meters

## Wide Area Network - WAN

- Interface for communicate with external market participants

## Home Area Network - HAN

- The HAN interface is assigned to the end consumer to connect controllable assets



# TECHNICAL PROTECTION REQUIREMENTS

## **Protection Profile (BSI-CC-PP-0073)**

- Describes possible threats to an SMGW and defines the minimum requirements for corresponding security measures according to Common Criteria (CC).

## **Threat Scenarios**

- The protection profile identifies possible direct threats or indirect threats via WAN to the SMGW.

## **Protection Goals**

- To counter threats, the protection profile identifies a set of security objectives.

## **Certification Process**

- Common Criteria (CC) certification proofs the security properties of the Protection Profile (PP).
- Proofs safe production and development environment at the manufacturer and safe delivery of the product to the end user.

# TECHNICAL GUIDELINE TR-03109

## Overall goals of TR-03109

- Ensuring interoperability of various components.
- Specification of protection profile and protection goals.

**TR-03109-1 Requirements for the interoperability of the communication unit of a smart metering system**

**TR-03109-2 Requirements for the functionality and interoperability of the security module Certification Process**

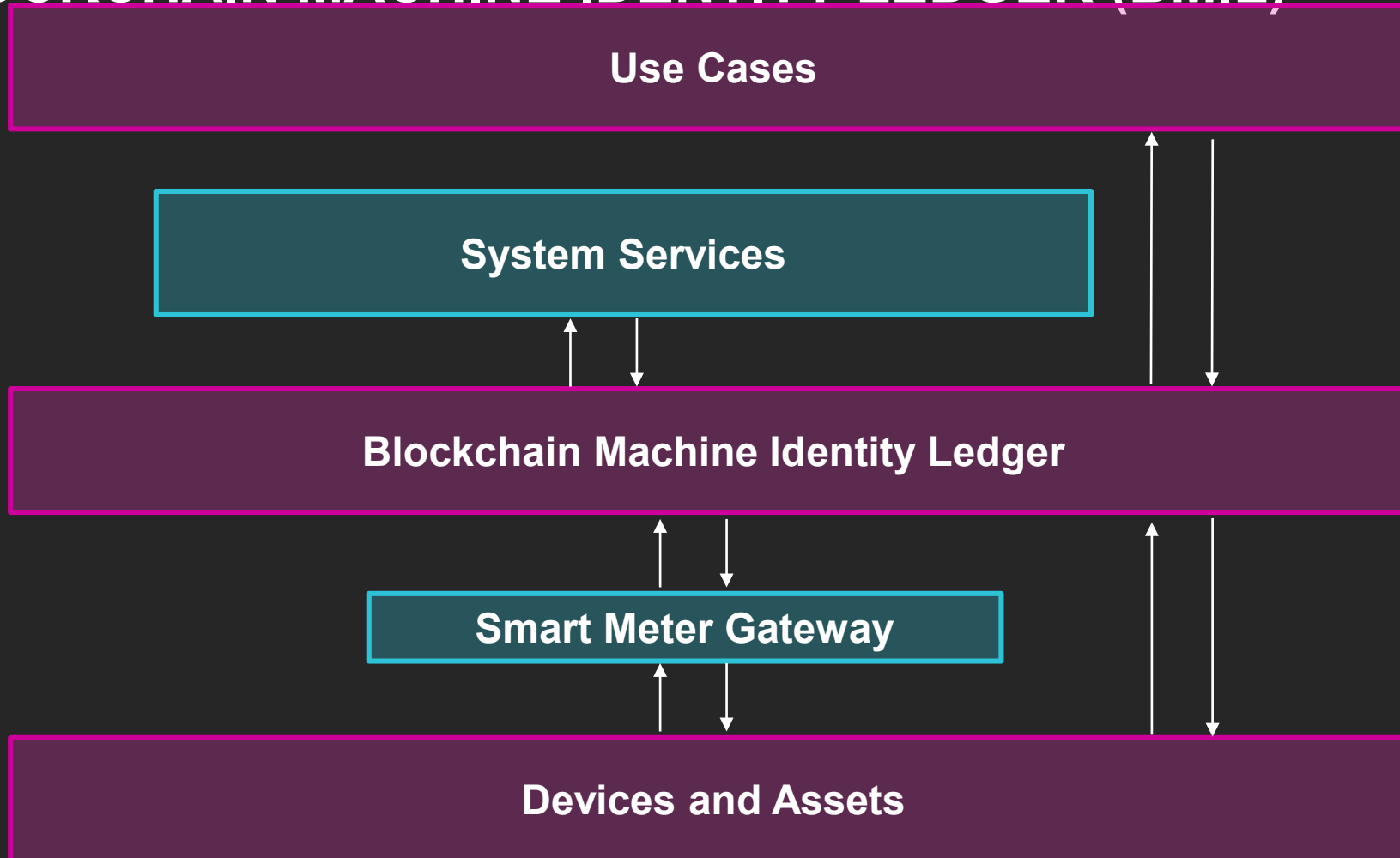
**TR-03109-3 Cryptographic specifications**

**TR-03109-4 Public key infrastructure for the SMGW**

**TR-03109-5 Communication adapter**

**TR-03109-6 Smart Meter Gateway administration**

# DIGITAL IDENTITIES ARE THE NEXT STEP: THE BLOCKCHAIN MACHINE IDENTITY LEDGER (BMIL)



**THANK YOU FOR YOUR  
ATTENTION!**

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