

TeleTrust-Auditorium "IT-Sicherheit"

it-sa Forum M10 - Management

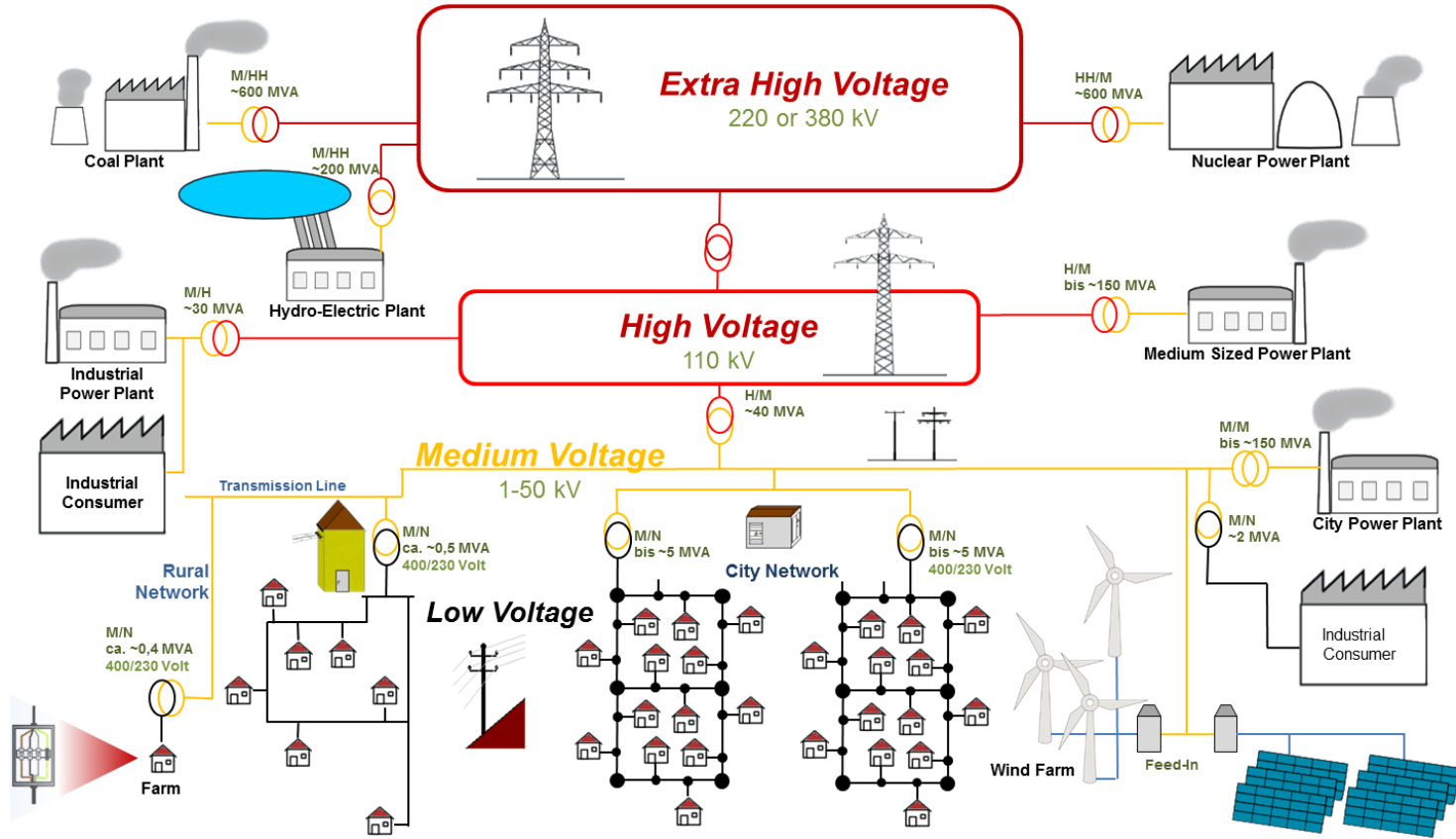
Nürnberg, 09.10.2018

Das hochsichere Deutsche Smart Meter System des BSI

Markus Bartsch, Business Development IT Security

TÜV Informationstechnik GmbH, TÜV NORD GROUP

Energy today



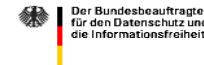
Energy: Smart Grid / - Meter

PPs for the Smart Meter Gateway

1. **BSI** (Federal Office of Information Security)
2. **BMWi** (Ministry of Economics)
3. **BNetzA** (Federal Network Agency)
4. **PTB** (Physical Technical Authority)
5. **BfDI** (Federal Commissioner for Data Protection and Freedom of Information)

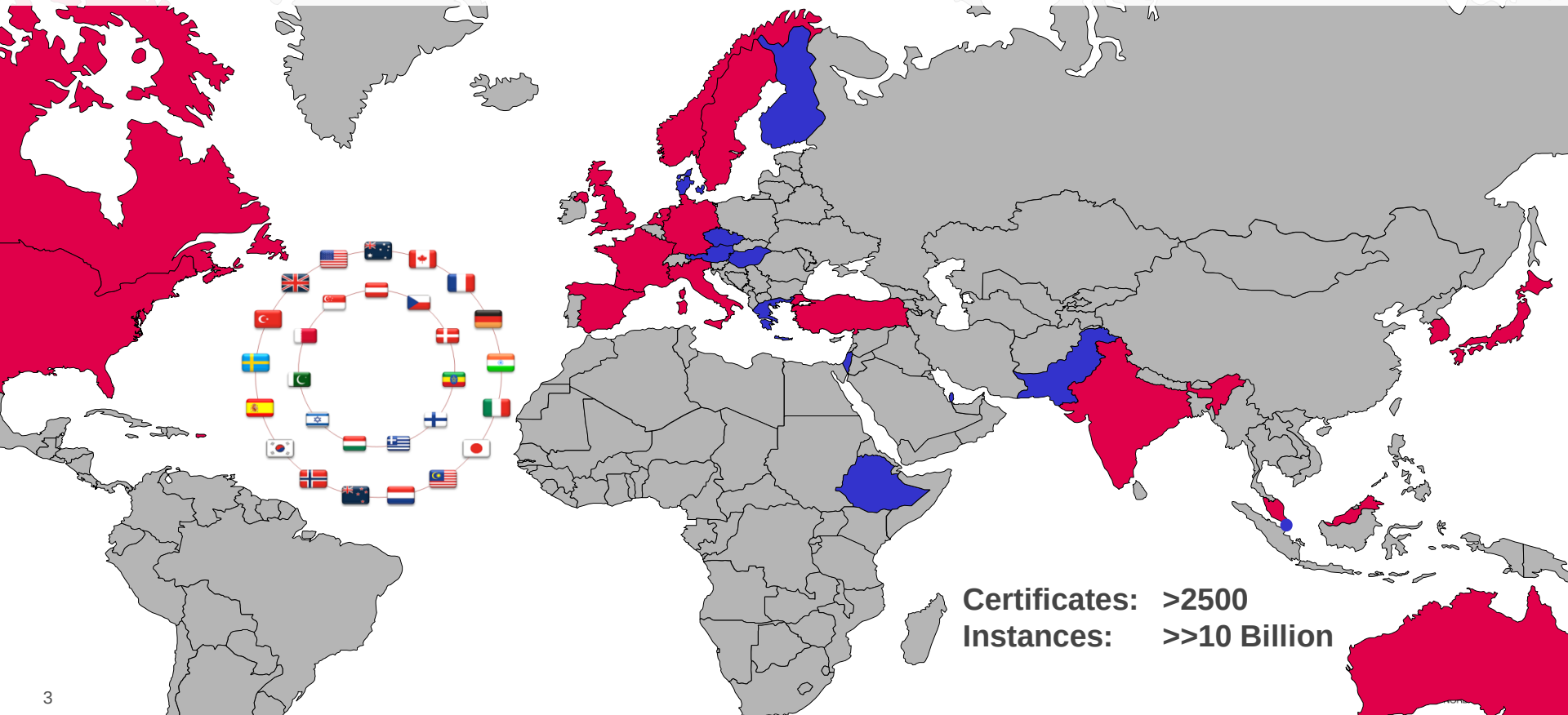


Specification by:



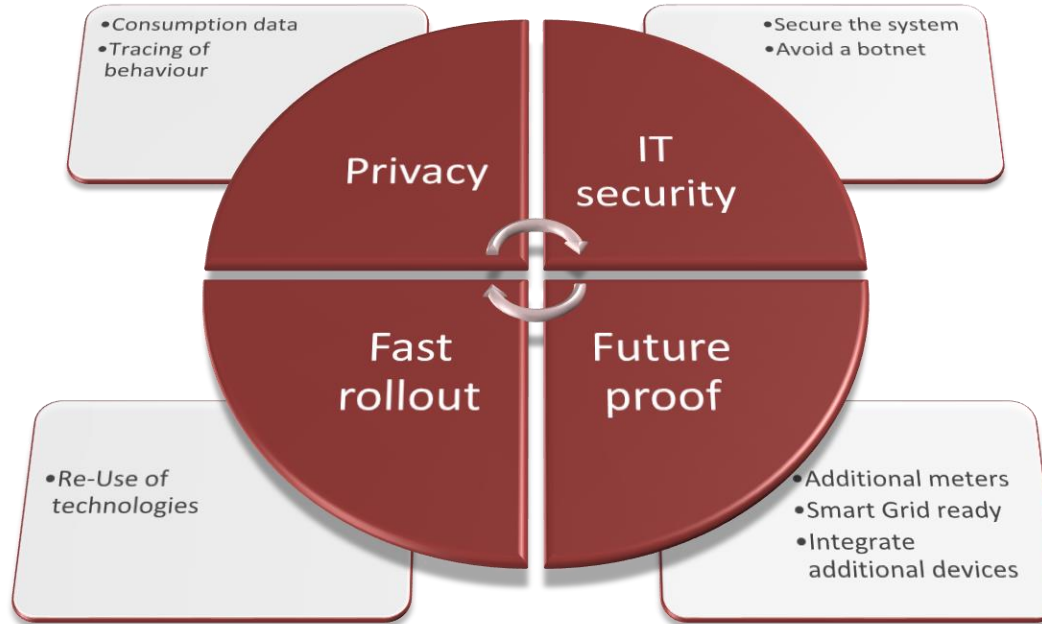
Common Criteria – CCRA (~EAL2)

Certificate Issuing and Consuming Nations - **Certificate Consuming Nations**



Certificates: >2500
Instances: >>10 Billion

The German Smart Meter System - The Technical Challenge

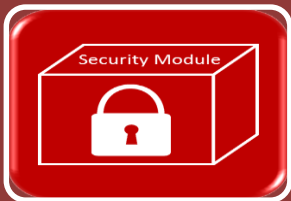


The German Smart Meter System - The System Approach



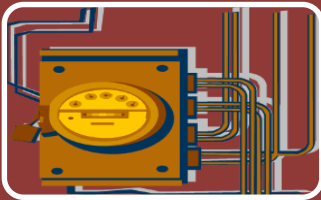
Gateway

- Central component of the smart metering system
- Rich in functionality
- Evaluated in depth



Security Module

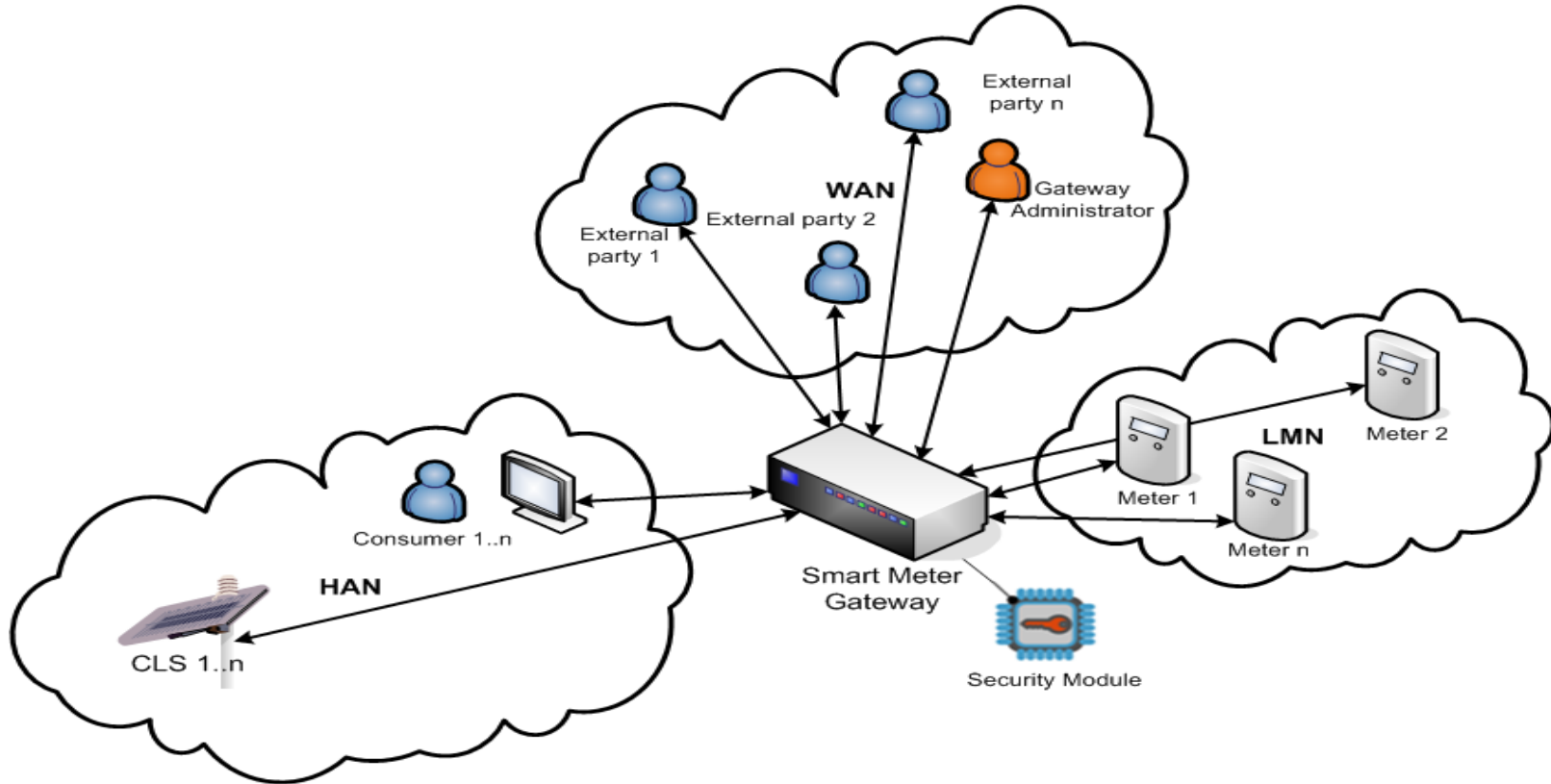
- Implementation of cryptographic primitives
- Secure Handling of key material
- Facilitate a fast rollout by re-use of existing technologies



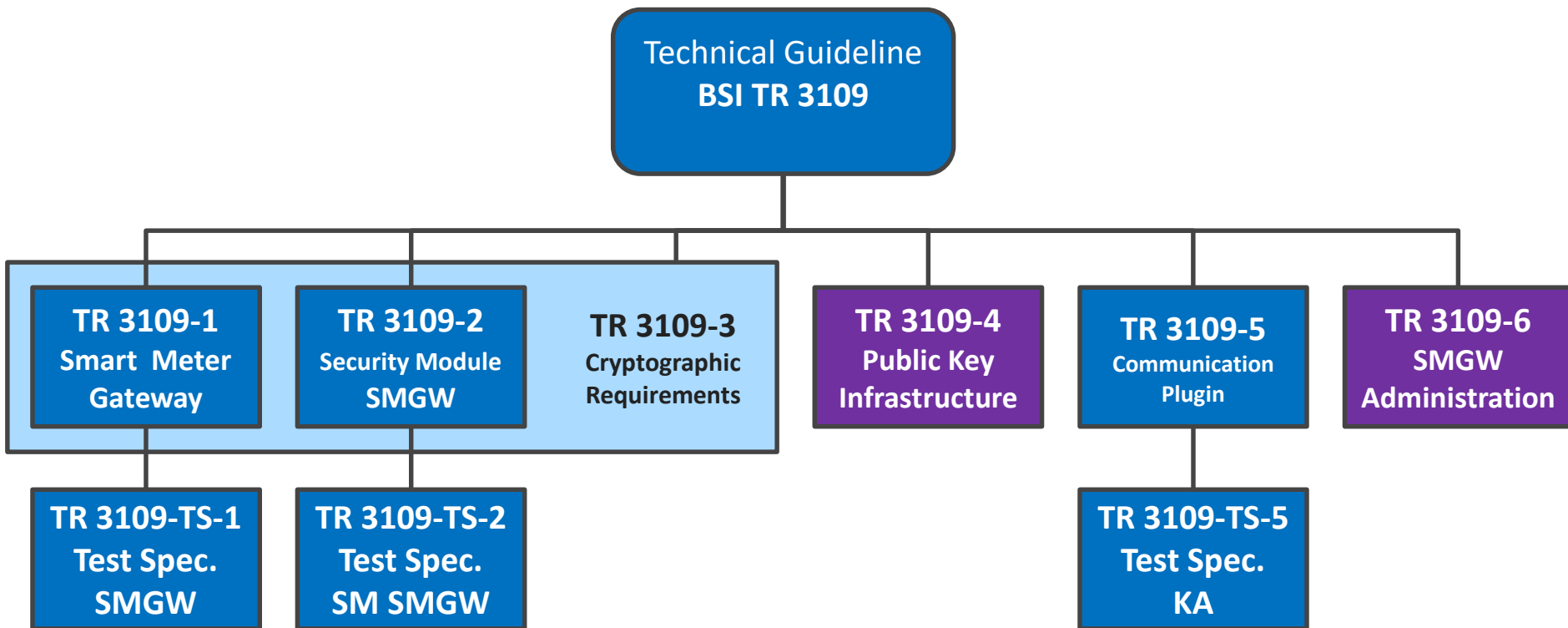
Smart Metering System

- Comprising a Gateway and multiple meters

The German Smart Meter System - Communication: SMGW



TR-03109



Smart Meter Gateway

Guidelines, Evaluations & Tests

Protection Profiles – PP

Minimal Security
Requirements

Gateway
PP-0073

Security Module
PP-0077

Technical Guidelines TR 3109

Minimal Functionalities
Interoperability

1. Gateway
2. Security Module
3. Cryptography
4. PKI
5. Communication Plugin
6. SMGW Administrator

Type Approval Conformity Tests

Calibration Law

PTB 50.8

*no Security req. for meters
→ MID 2004/22EG*

Requirements for Smart Meter Gateway Generations

Standards Generation 1 (G1) SMGW as Basis for Interim Model of Market Communication

- PP-0073 v1.3 → **CC Certificate mandatory**
- TR-03109-1 v1.0 → Conformity tests not necessary
- PTB A50.8 → **Conformity tests mandatory**

Standards Generation 2 (G2) SMGW as Basis for final Market Communication Model

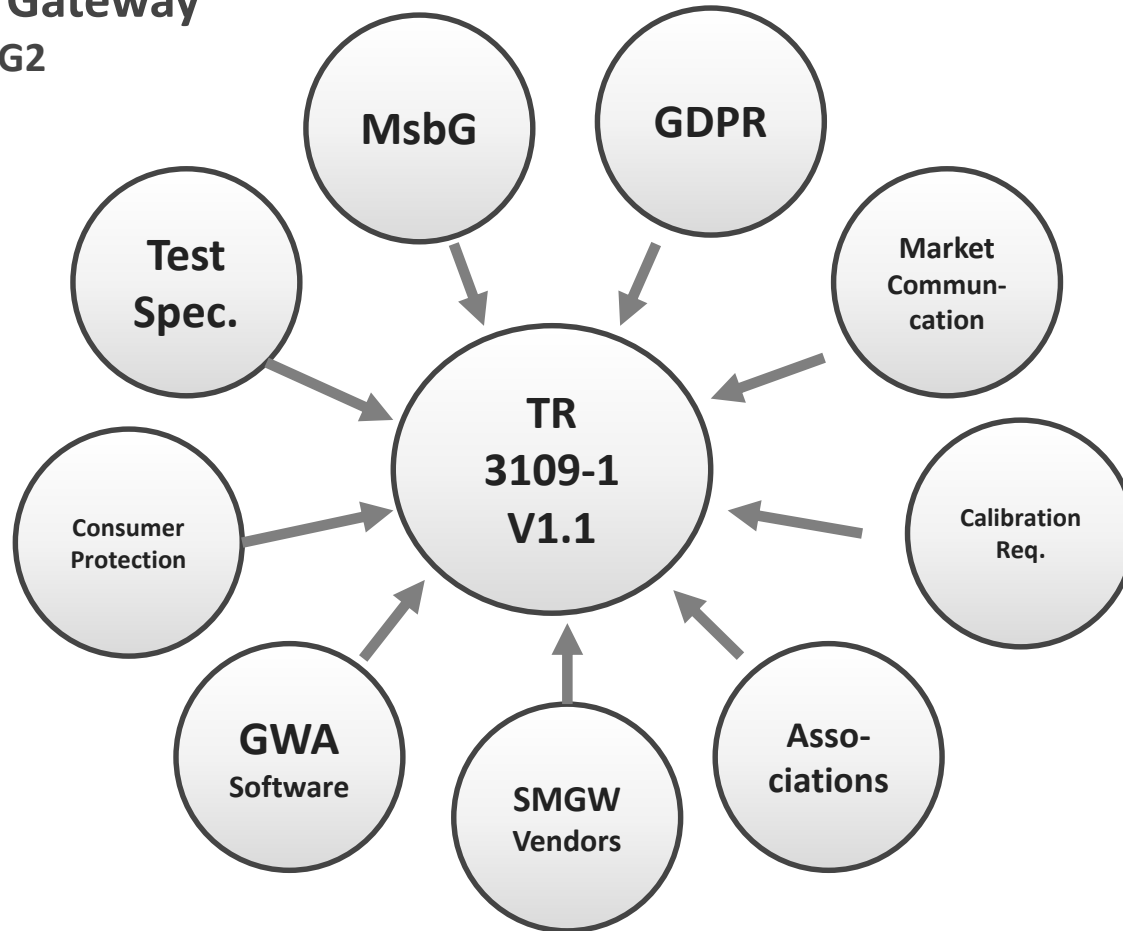
- PP-0073 v1.4 → **CC Certificate mandatory**
- TR-03109-1 v1.1 → **TR Certificate mandatory**
- PTB A50.8 → PTB A50.8 Integration finalized, TR Certificate sufficient

Current technical Standards → Maintainability of SMGW

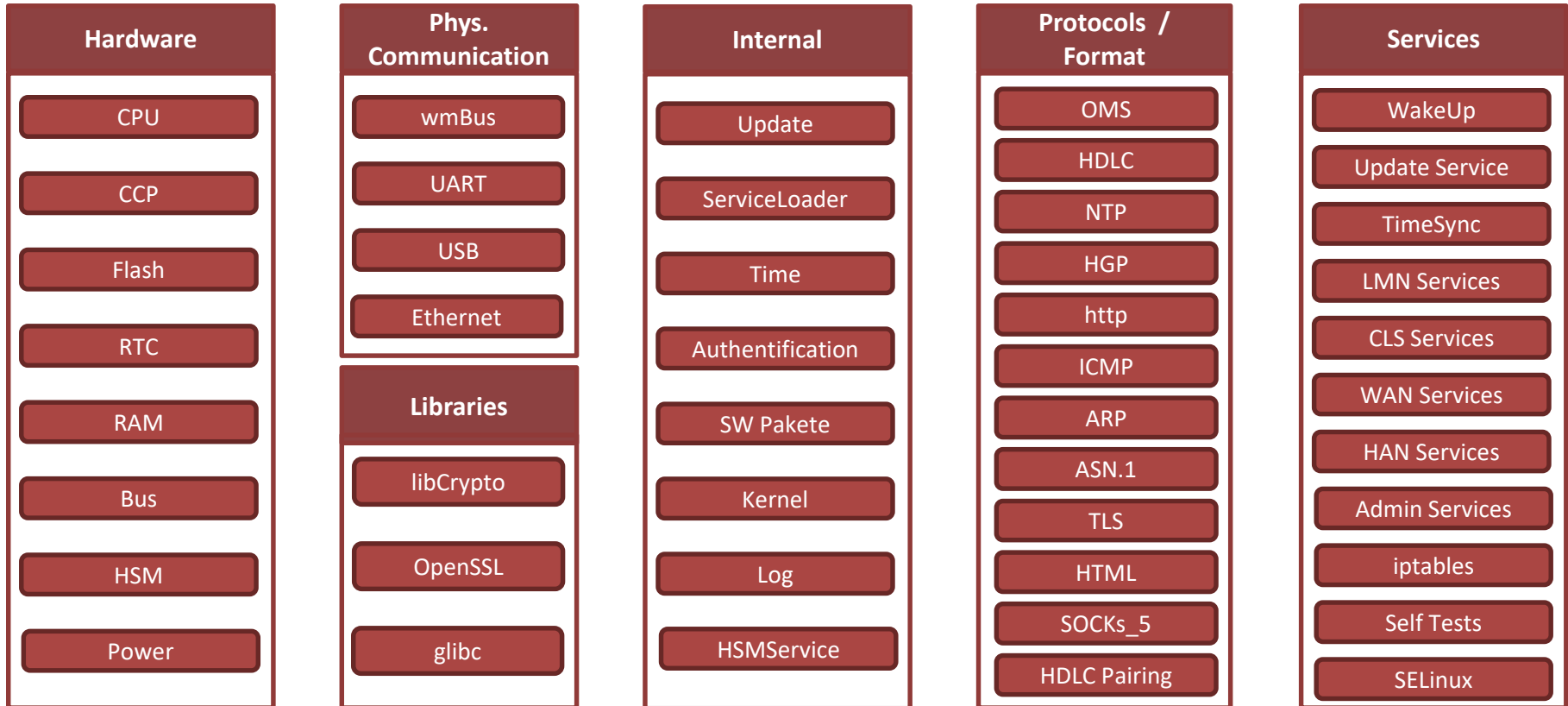
- Secure Firmware-Update Process → Common Criteria
- Migration process of G1→G2 specified by BSI so that Software updates (G1→G2) are feasible

Smart Meter Gateway

Influence G1 → G2

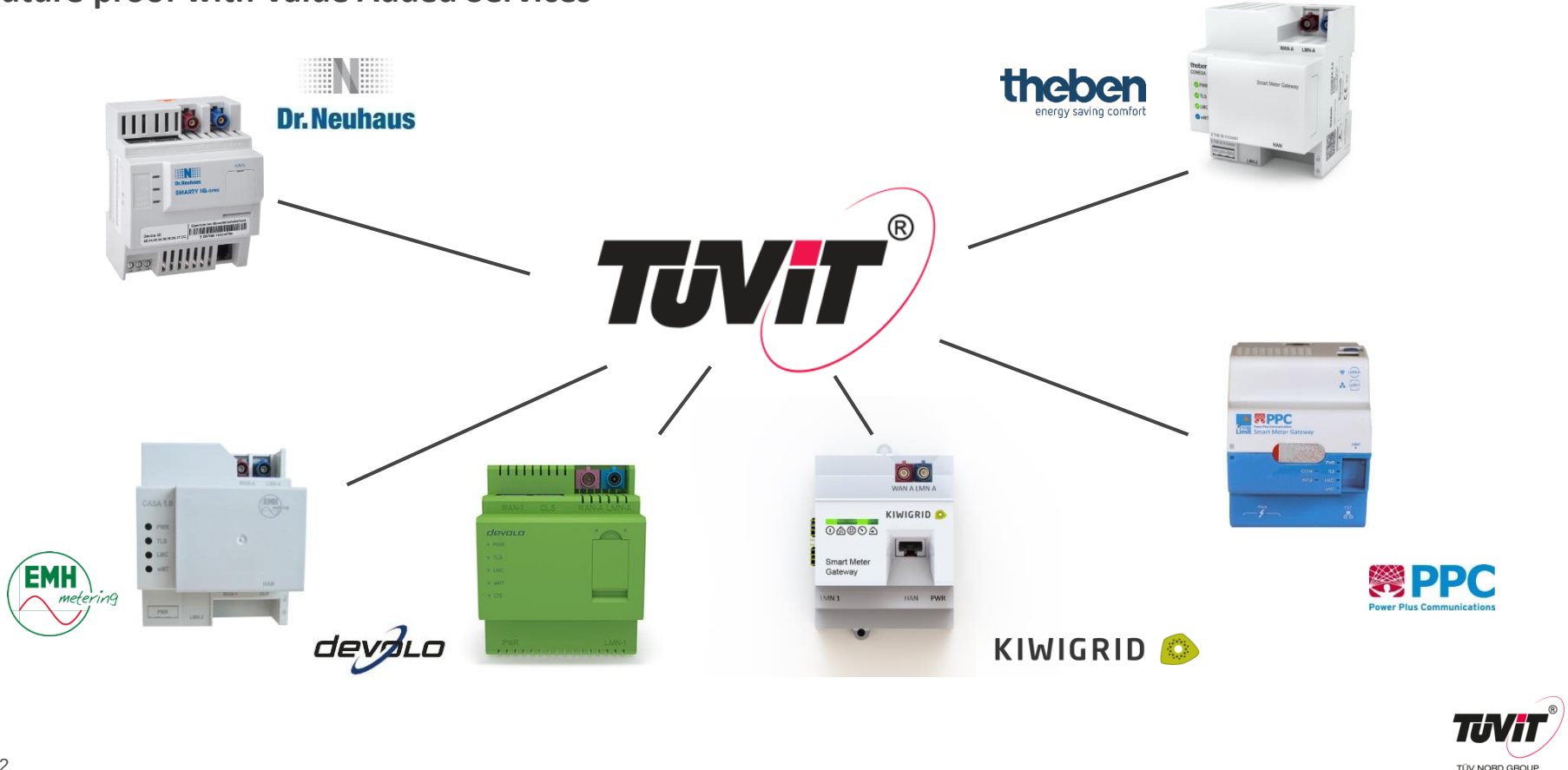


Vulnerability Analyses



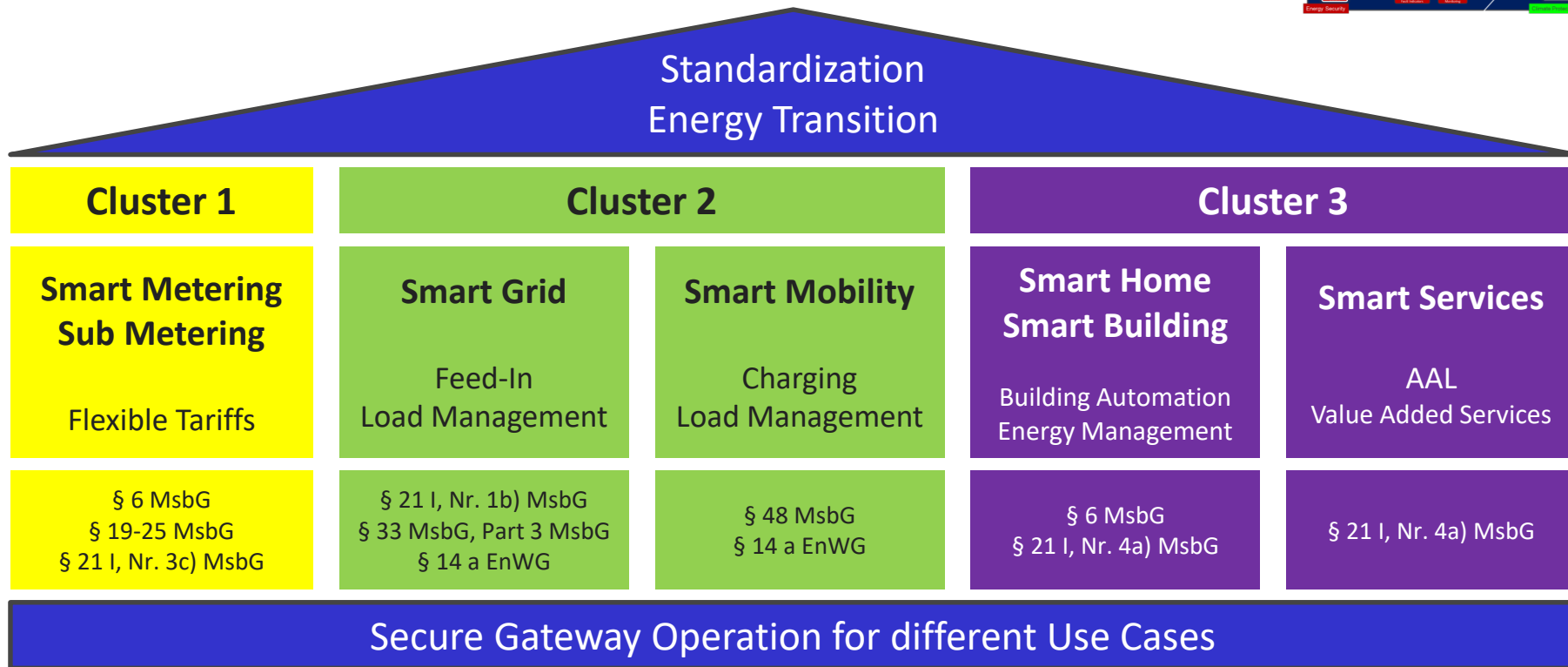
Six Smart Meter Gateway Evaluations

future proof with Value Added Services



BMWi-BSI Roadmap

Future Development of Standards acc. to GDEW



Thank you very much for your attention!

TÜV Informationstechnik GmbH
Member of TÜV NORD Group

Markus Bartsch
IT Security

Langemarckstrasse 20
45141 Essen, Germany

Phone: +49 201 8999 – 616
Fax: +49 201 8999 – 666
E-Mail: m.bartsch@tuvit.de
URL: www.tuvit.net

