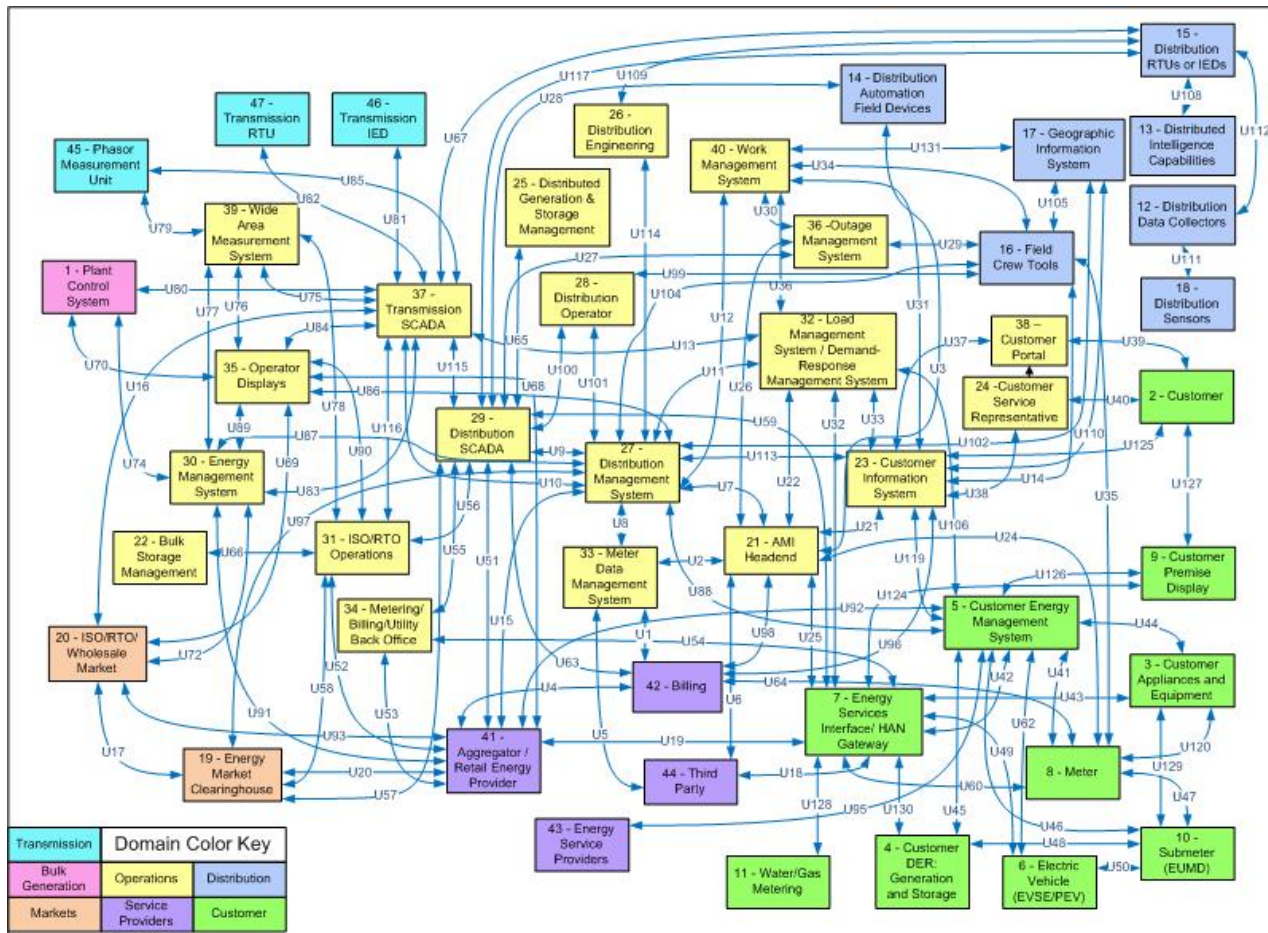


R2

System Interfaces



source: xanthus-consulting.com

What are system interfaces?

- Smart Grids require extensive cross-domain information exchange, often involving different actors.

For instance:

- Generation <-> Grid operation
- Generation <-> Markets
- Metering <-> Grid operation
- Metering <-> Energy services

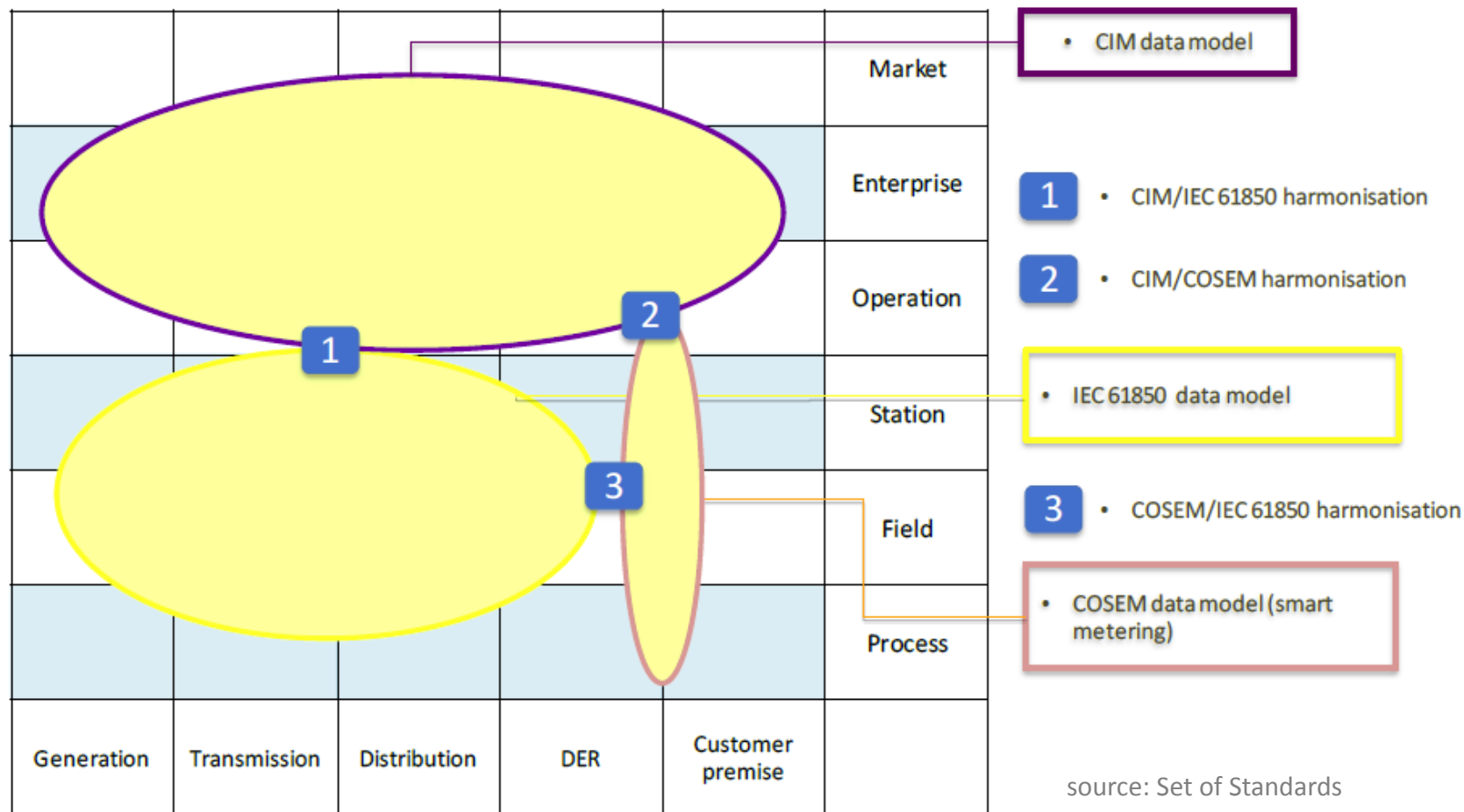
Standardisation

- Many „smart“ business models are sensitive to an efficient implementation of system interfaces
 - Stable and universal specifications are required
 - Based on agreement between stakeholders

Standardisation

- Standards coverage of system interfaces is not the main problem
 - International standards covering the most relevant system interfaces are available or under development, in particular the IEC core Smart Grid standard series 61850, 61970/61968, 62325, 62056
 - Usage of available standards greatly beneficial

Standardisation: data model



Profiles

- Actual application of standards is based on profiles
 - > System interfaces require profiles
- Development of profiles is not a classical task of the standardisation committees
- Q: **Who defines these profiles?**

Profiling: obstacles

- Lacking motivation of stakeholders to develop/apply common profiles, due to
 - tedious standardisation/profiling processes
 - standards-based technology often requires higher initial investments
 - commercial incentives may be lacking, in particular for regulated actors

Profiling: obstacles

- Lacking incentives particularly problematic for interfaces between regulated actors and market actors.
 - > Legislative action may be required in such cases

Example: Smart Metering

- EU directives do not insist on interface specification in national implementations
 - but at least British and German regulators impose specific profiles
 - GB: ZigBee SEP 1 + DLMS/COSEM
 - DE: wMBUS + DLMS/COSEM

Example: Smart Metering

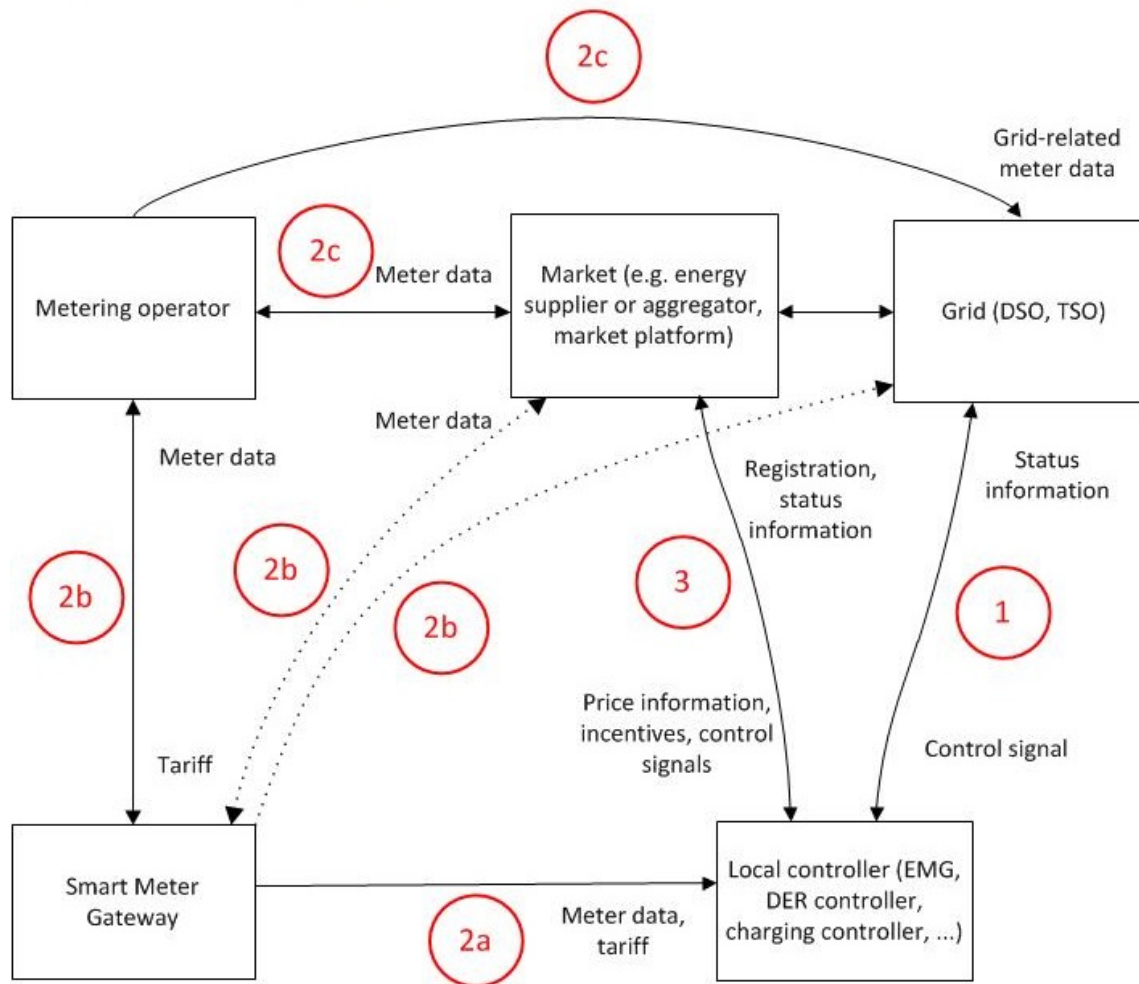
Legende

Pflicht / MUSS Optional / Offen



source:
TR 03109

System interfaces



System interfaces

- 1: Grid operator – Local controller
- 2a: SMG – Local controller
- 2b: SMG – Authorised External Entity
- 2c: Metering operator – Authorised External Entity
- 3: Authorised External Market Entity – Local Controller

Conclusion

- System interfaces require detailed profile specifications, in regulatory provisions/ industry agreements
- International standards as basis
- Development of profiles can be mandated to stakeholder group (standardisation body, industry association)

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THANK YOU

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