



The E-Energy Lighthouse Project
in the Region Cuxhaven



Interoperability and Standards

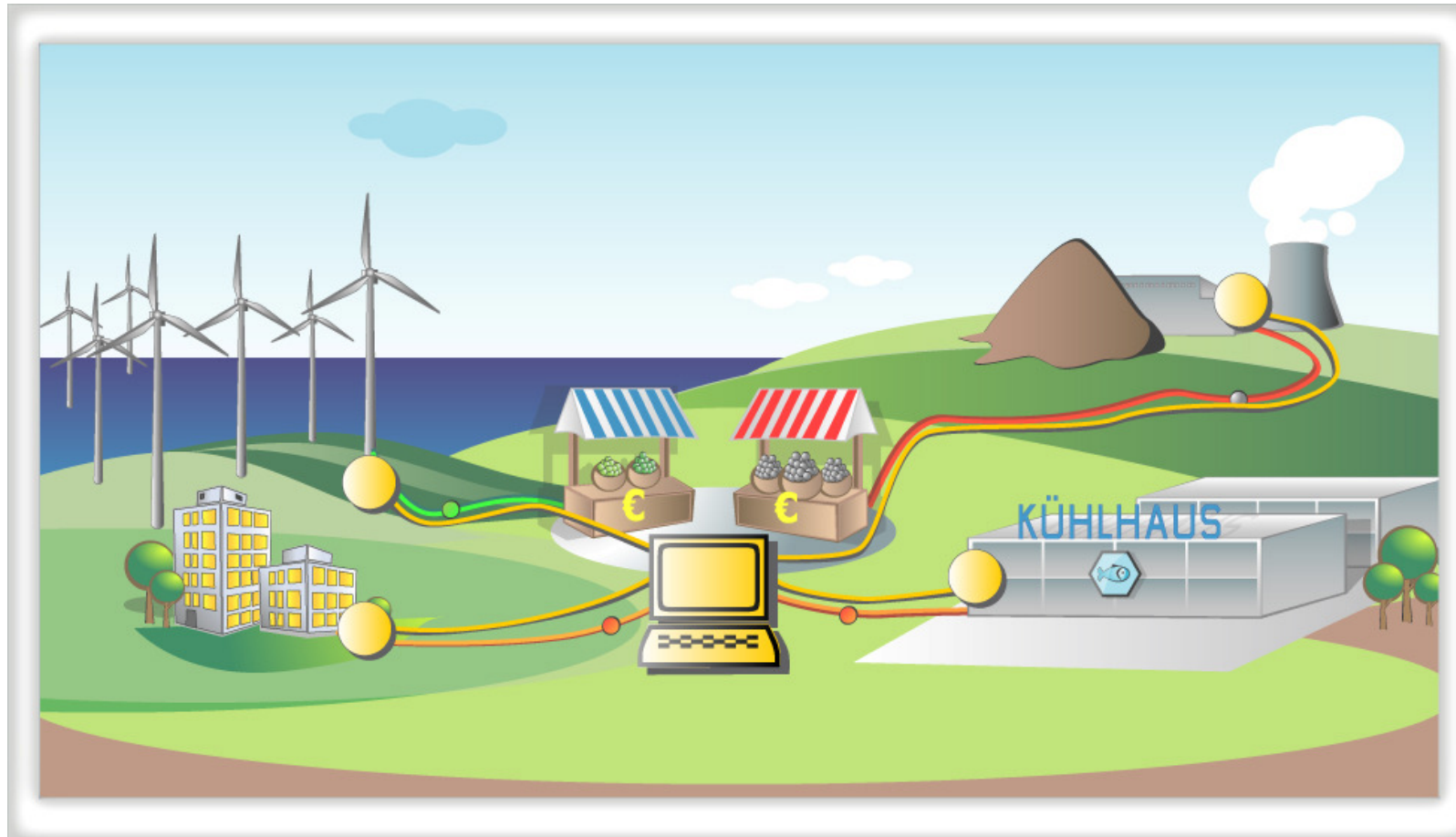
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funded by the



Bundesministerium
für Wirtschaft
und Technologie

eTelligence scenario: Components of the Power System



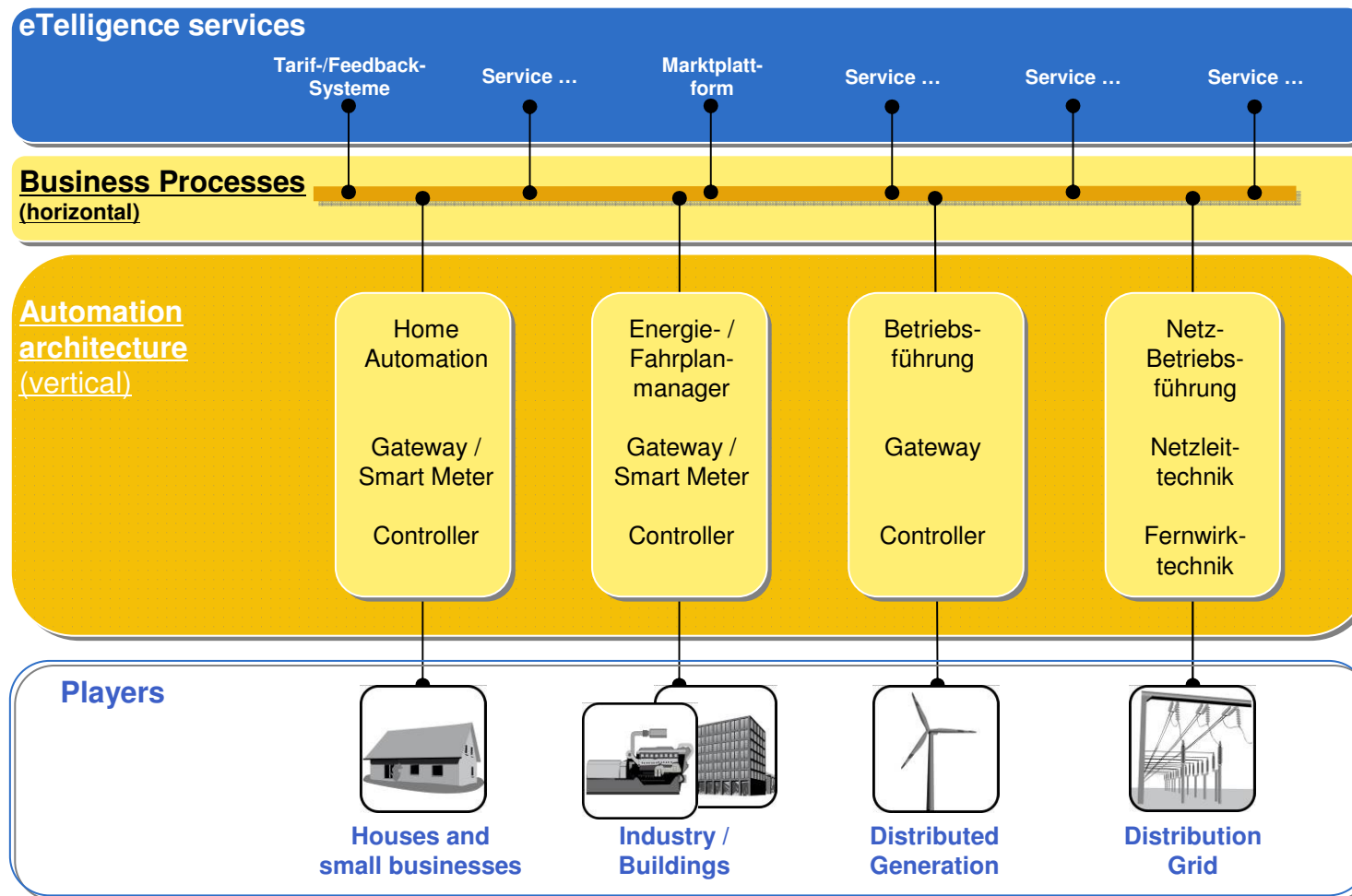
ICT as nervous system for the energy system

- Standardized communication for
 - business processes (CIM: IEC 61970 und 61968)
 - automation (IEC 61850-Familie)

- International Standards
 - enable Plug&Play-Interfaces
 - foster interoperability and reduce cost of integration
 - are necessary for scalability and broad application

- ICT is the foundation for the future energy supply system

eTelligence ICT reference architecture



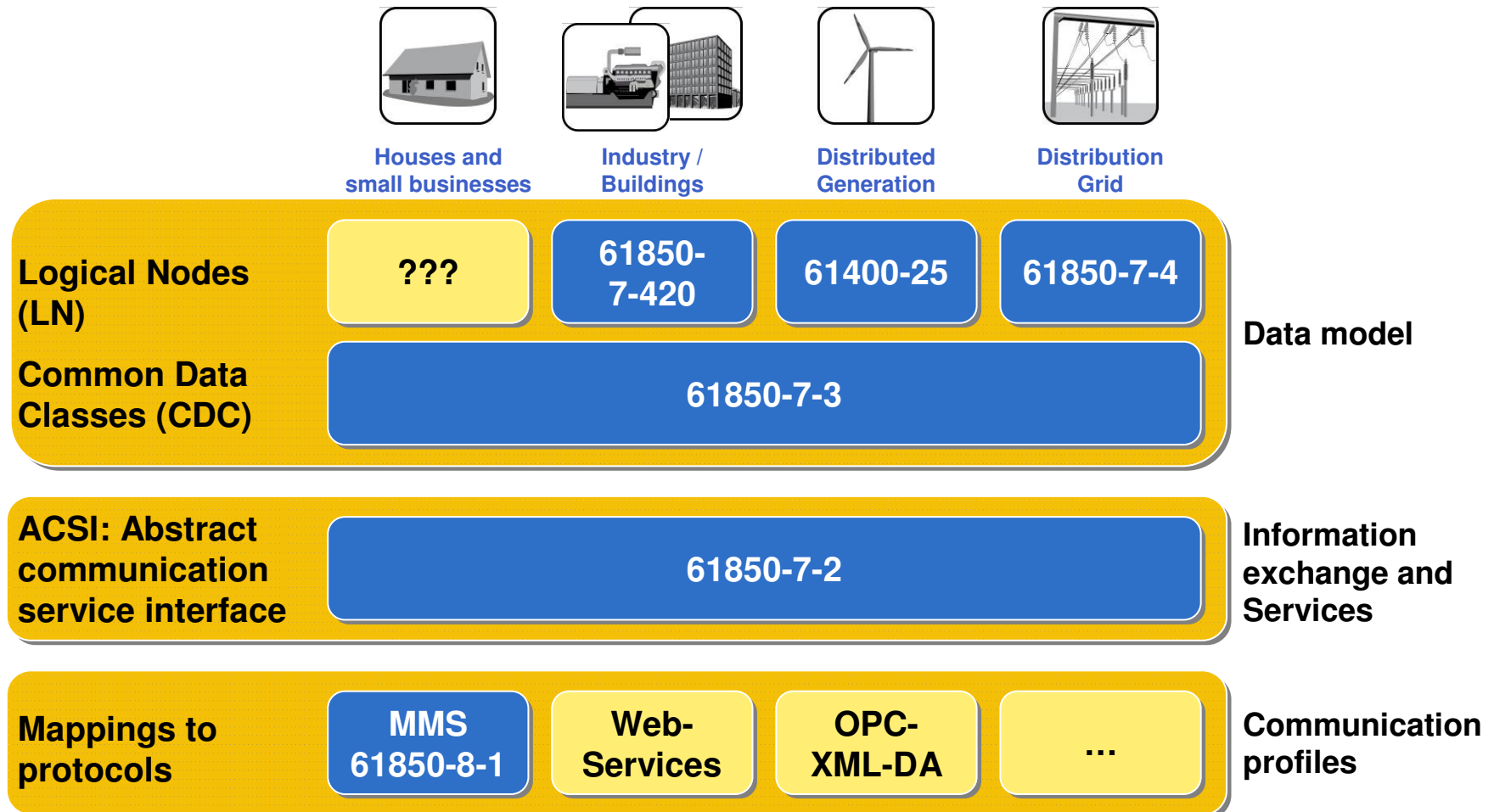
CIM:
IEC 61970
und 61968

IEC 61850

DER: 7-420
and 61400-25

Extension
to loads

IEC 61850 – Layers of Abstraction



UCTE adopts CIM



union for the co-ordination of transmission of electricity

2009-04-01

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Large-scale CIM Interoperability Test verified UCTE profile

The Union for the Co-ordination of Transmission of Electricity (UCTE) and the Electric Power Research Institute (EPRI), along with European and

UCTE adopts CIM

- Large-scale CIM Interoperability Test verified UCTE profile
- UCTE and the Electric Power Research Institute (EPRI), along with European and American vendors and Transmission System Operators (TSO) conducted one of the largest CIM interoperability tests to date.
- The test is considered as an important step in the acceptance and implementation of the CIM Standard for model exchange between UCTE TSOs.
- Source: UCTE press release from 2009-04-01

E-Energy “Accompanying Research”

- Expert Groups (Fachgruppen)
 - Coordinated discussion of certain topics overspanning all six projects
- Expert Group “System Architecture”
 - develop common understanding for system architectures
- Expert Group “Interoperability”
 - uses IEC TC 57 SIA (Seamless Integration Architecture)
 - IEC 61860, CIM etc.
 - identification of typical use cases and processes
 - Glossary to define common semantics

EU Mandate Smart Metering

- Mandate M/441 to CEN, CENELEC and ETSI
 - „CEN, CENELEC and ETSI are requested to develop:
 1. A European standard comprising a software and hardware open architecture for utility meters that supports secure bidirectional communication [...] through standardised interfaces and data exchange formats and allows advanced information and management and control systems for consumers and service suppliers [...]
 - “The deliverables shall [...] be presented to the European Commission as follows:
 - a. The *European standard for communication* shall be presented within *9 months* of the acceptance of the mandate.
 - b. The *harmonised solutions for additional functions* (European standards) shall be completed within *30 months* of the acceptance of the mandate.”

- Source: Mandate M/441 EN, European Commission, 2009-03-12

EU Mandate Smart Metering – SM-CG

- Smart Meters Coordination Group (SM-CG) as joint advisory group of the European Standards Organizations (ESOs)
- "co-ordination group (including all relevant stakeholders) to deal on the one hand with the Commission's [...] Smart Meters mandate"
- Source: CENELEC BT134/DG7694/MTG, April 2009

USA: Smart Grid Standards Interoperability Roadmap

- May 19 – 20 Smart Grid Standards Interoperability Interim Roadmap Workshop Overview
- Organized by EPRI and NIST
- The purpose of the Smart Grid Interoperability Workshop on May 19-20 2009 is to provide an opportunity for the NIST Smart Grid Domain Expert Working Groups (DEWGs) and other industry stakeholders to meet.

Conclusion

- Standards are necessary for broad implementation of VPS, Smart Grids etc.
 - Technical system, market activities and their interaction must be considered.
- Good work has already been done (CIM, 61850).
- But we have to get involved into the further development.
- E-Energy and AlpEnergy shall
 - apply and further develop international standards,
 - mirror their experience to the corresponding IEC bodies and
 - contribute to International Standards.

Contact

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