
Offene Objektmodelle, Kommunikation und Konfiguration gemäß der Norm IEC 61850

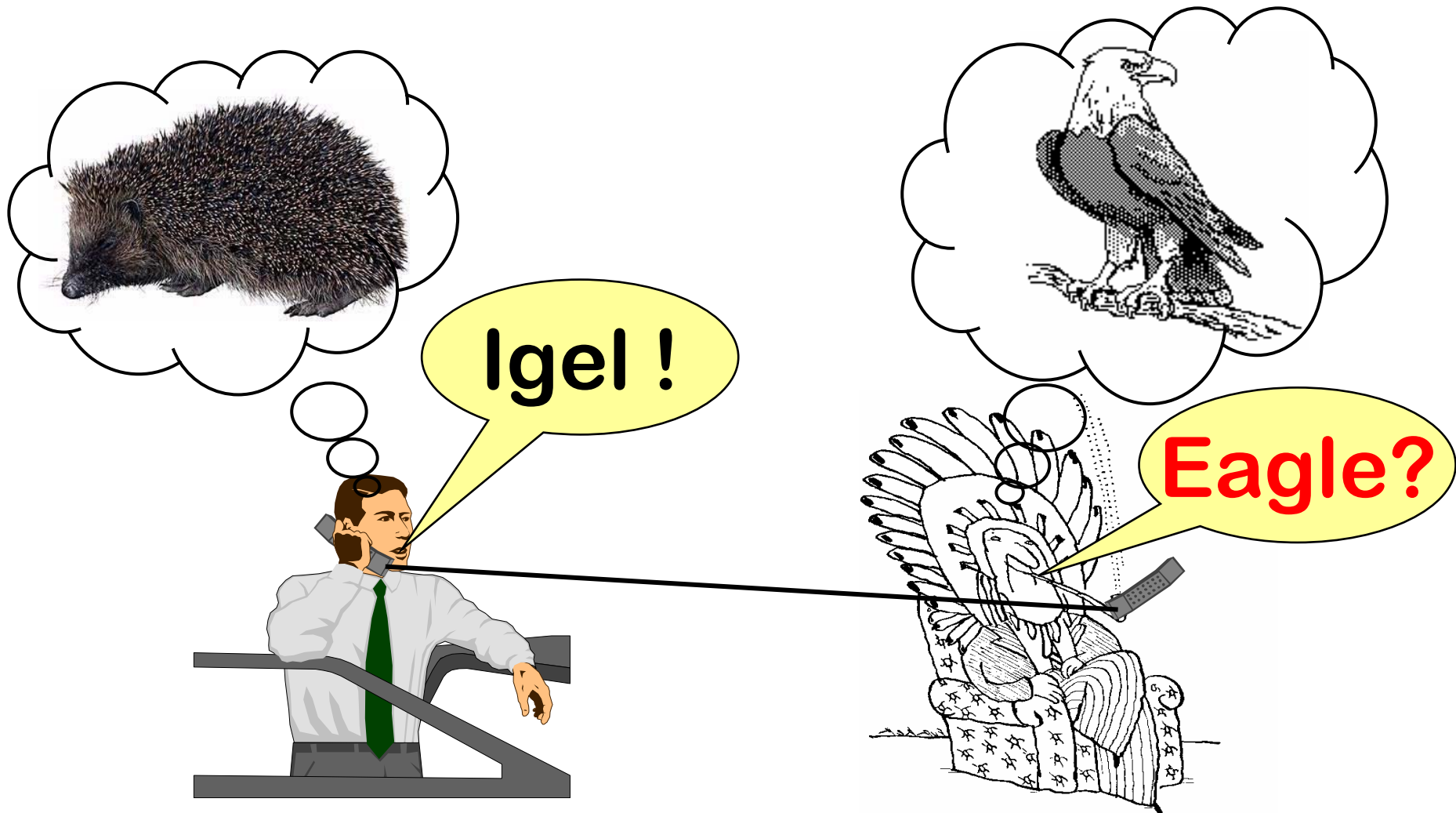
Präsentation
SPS/IPC/Drives
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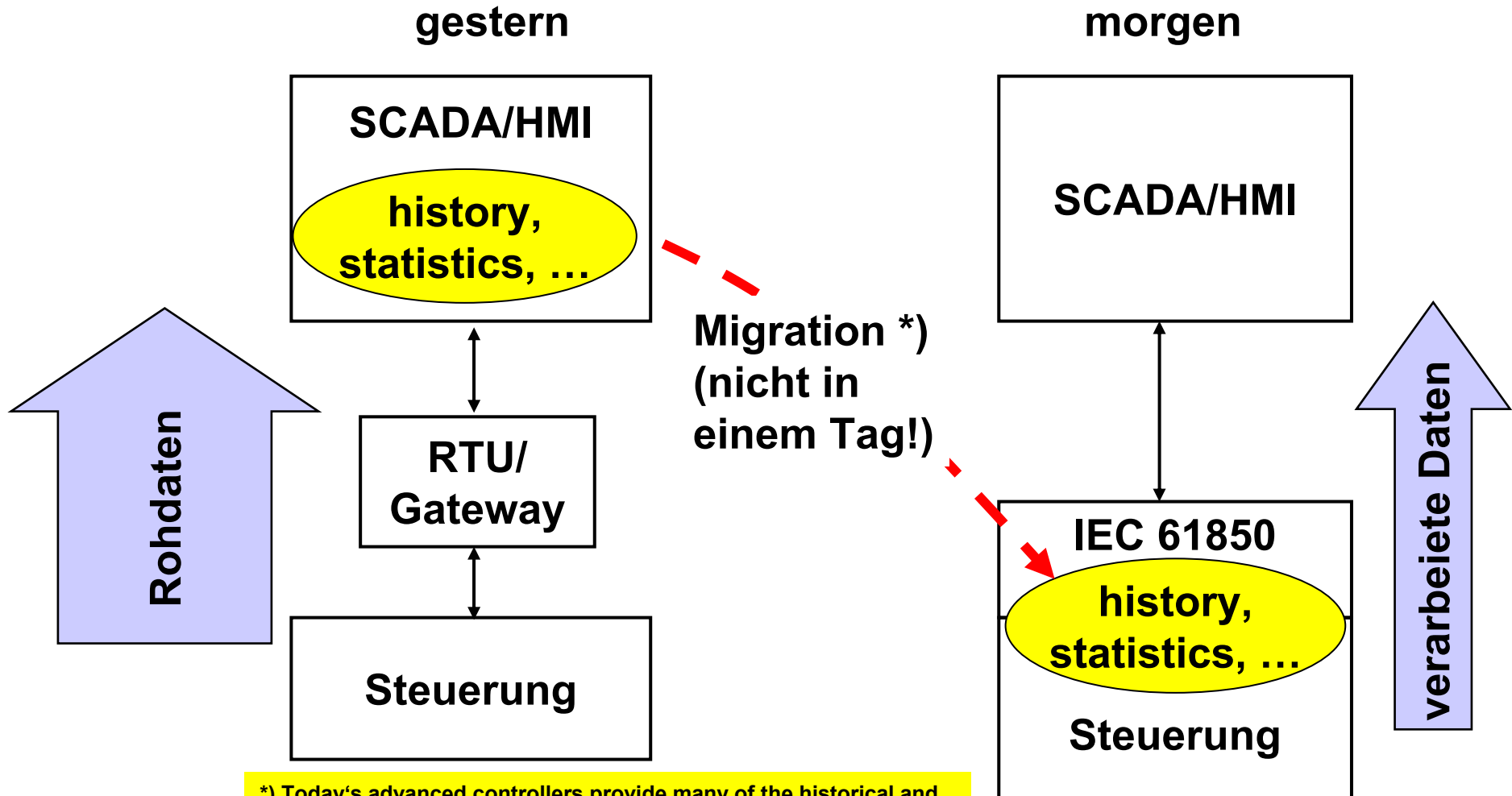
Verbindung ist nicht Kommunikation



Ziel der Normung von IEC 61850

- **Vereinfachung** des Engineerings von Geräten und Systemen in **Schaltanlagen** durch:
 - **Verschmelzen** von Steuern, Regeln, Fernwirken und SCADA-Funktionen in den intelligenten „Feldgeräten“ (IED – intelligent electronic devices),
 - **Definition und Wiederverwendung** von (Basis-) Objektmodellen,
 - **Selbstbeschreibung** von Geräten,
 - **Einsatz von Standards** wie XML, TCP/IP, Ethernet, ...
 - ...

Migration (prinzipiell)



*) Today's advanced controllers provide many of the historical and statistical information. In this regard the standards IEC 61850 and IEC 61400-25 follow the market - not vice versa.

IEC TC 57 → IEC 61850 - Communication networks and systems in substations

System Aspects

- 1 Introduction and Overview [Technical Report]
- 2 Glossary [IS]
- 3 General Requirements [IS]
- 4 System and Project Management [IS]
- 5 Communication Requirements for Functions and Device Models [IS]

Configuration

- 6 Configuration Language for electrical Substation IEDs (SCL) [FDIS]

Modelling Introduction

- 7-1 Principles and Models [IS]

Information Models

- 7-4 Compatible Logical Node Classes and Data Classes [IS]
- 7-3 Common Data Classes [IS]

Information Exchange Methods

- 7-2 Abstract Communication Services [IS]

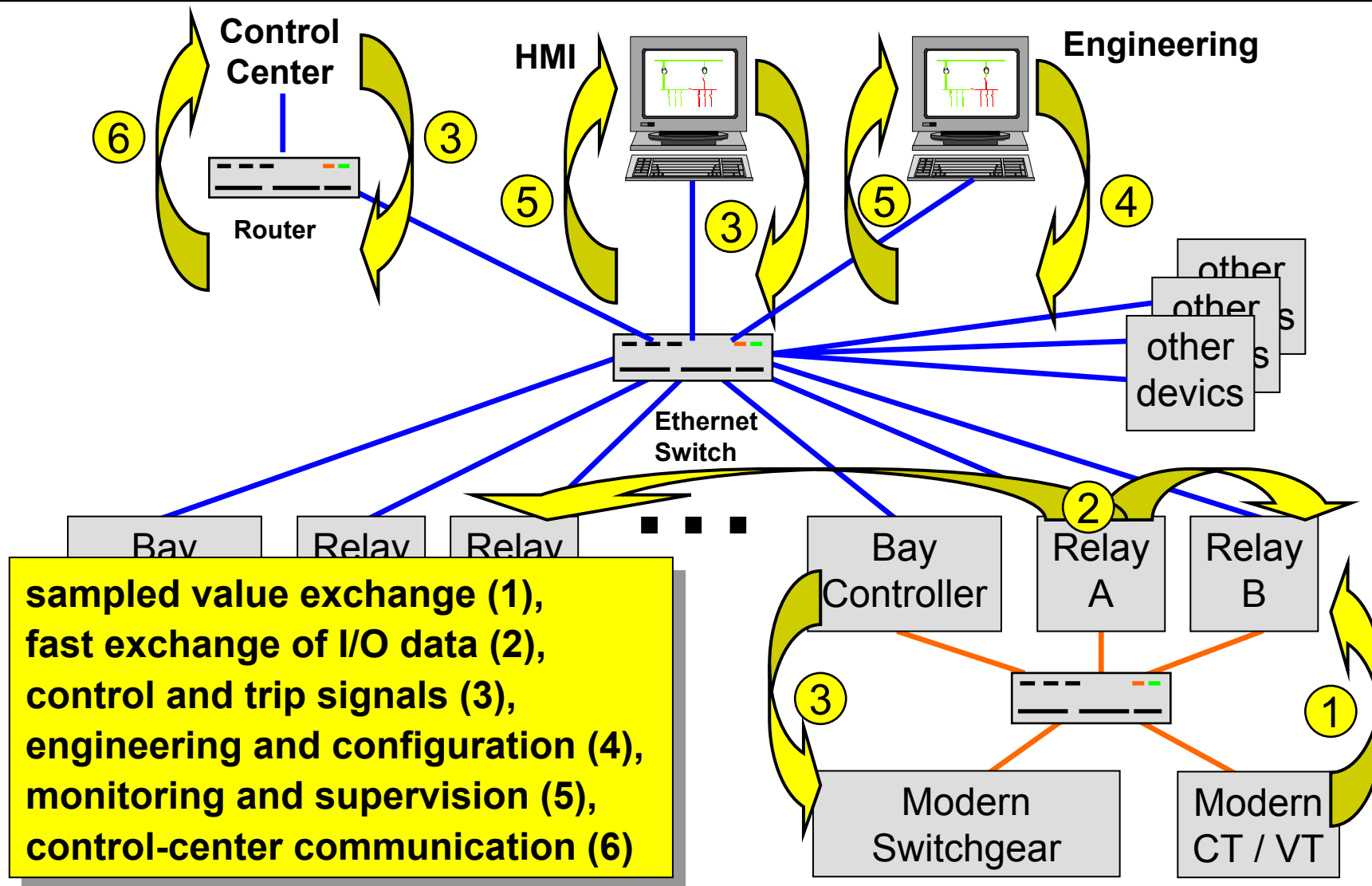
Mapping to real Comm. Networks (SCSM)

- 8-1 Mappings to MMS (ISO/IEC 9506-1/-2) and to ISO/IEC 8802-3 [FDIS]
- 9-1 Sampled values over serial unidir. multidrop point to point link [IS]
- 9-2 Sampled values over ISO/IEC 8802-3 [FDIS]

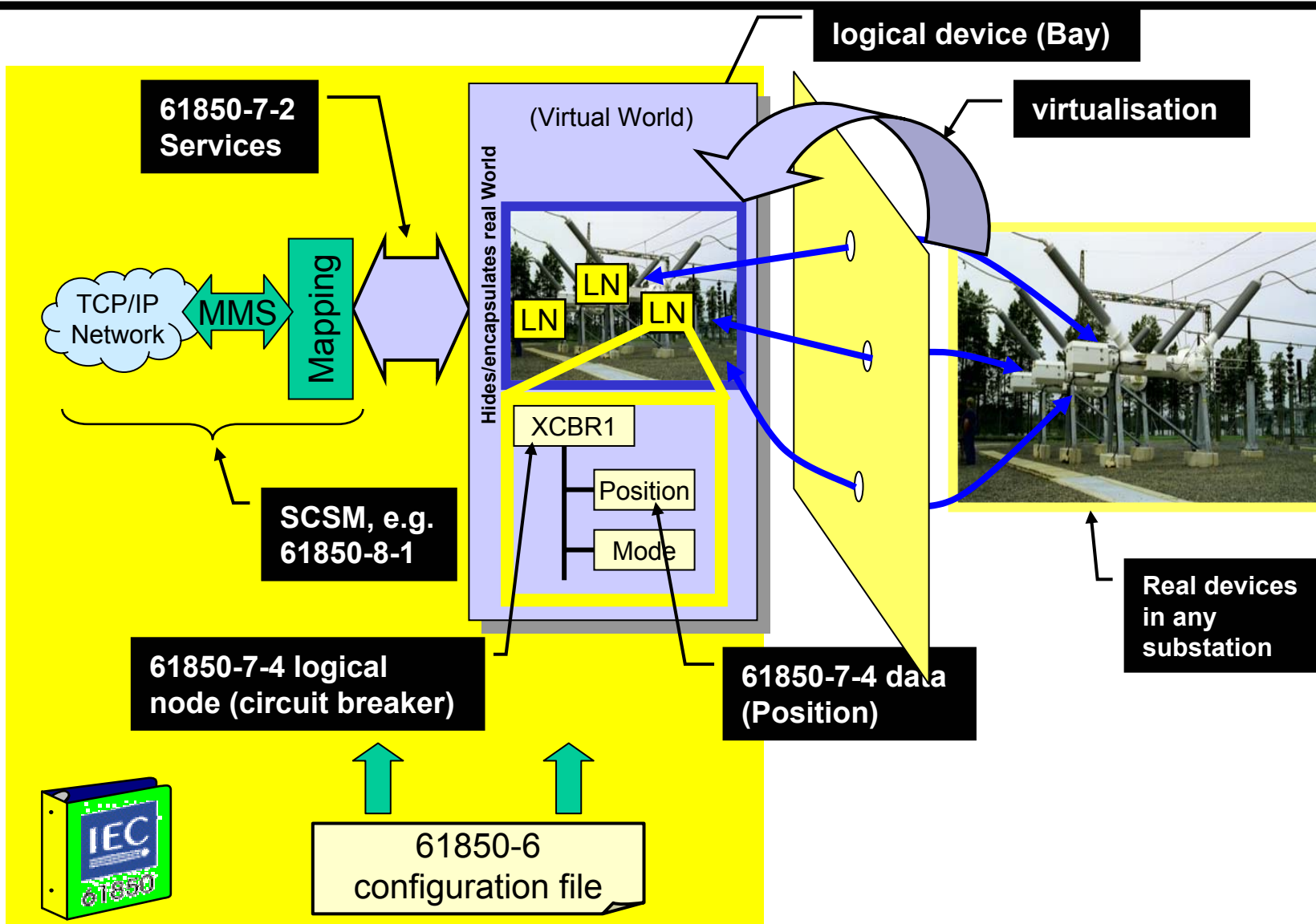
Testing

- 10 Conformance Testing [CDV]

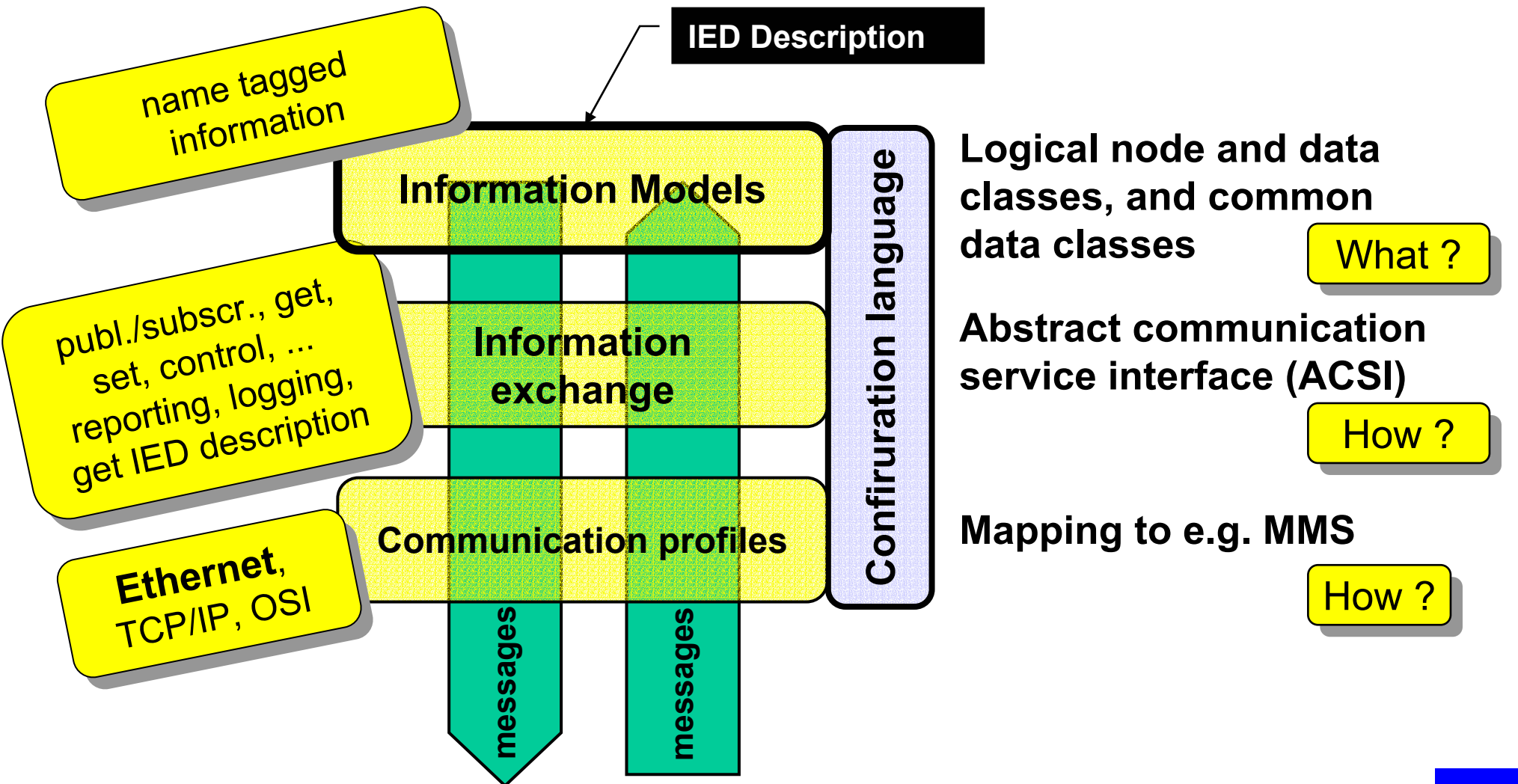
Moderne Schaltanlage



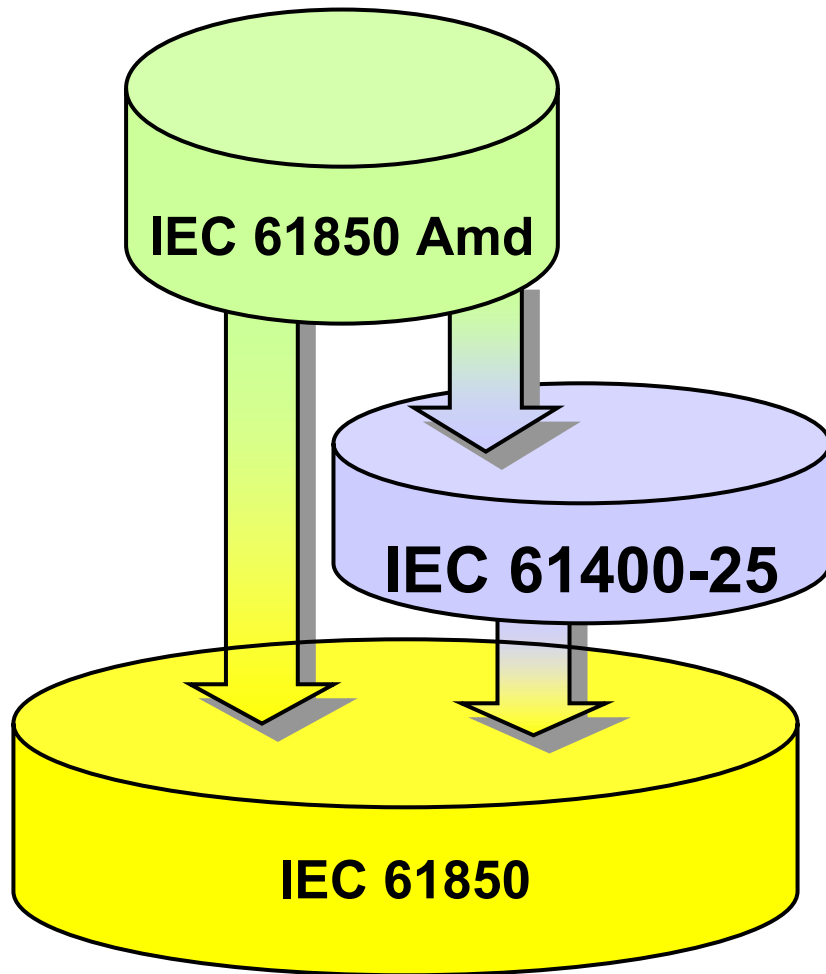
Vom Gerät zum Modell



Themen der IEC 61850



Wiederverwendung



Hydro Power Plants,
Power Quality Measurements,
Decentralized Energy Resources
→ IEC 61850 Amendment

Wind Power Plants
→ IEC 61400-25

Substations (HV, MV)
→ IEC 61850

IEC 61850 (61400-25) Models

90 (10+) Standard LN Models (PDIS, XCBR, ...)

500 (200+) Standard Data (Pos, ...)

OPC: Item

OPC: Properties

100 (100+) Standard Data Attributes (stVal, q, t, ...)

30 (10+) Standard Common Data Classes

10 (10) Standard Comm.-Service Models

MV, WYE, ...

Auszug:

<http://www.nettedautomation.com/qanda/iec61850/information-service.html#>

Engineering nach IEC 61850-6

- Engineering nach IEC 61850-6 für die **Geräte- und der Systemkonfiguration** (XML basiert)
- **Systemspezifikation** (SSD - System Specification Description),
- **Gerätekonfiguration** (ICD - IED Capability Description)
- **Systemkonfiguration** (SCD - System Configuration Description)
- **Parameterdateien für Geräte** proprietär oder CID
(Configured IED Description)

192.66.76.22

Gerätemodell

Server

Logical Device

Data on demand

nameplate, health

MyLD

TotEgyAt

Logical Node

Control

Data on demand

diagnostics

Data

Data on demand

reference

reference

values on change, event, periodic

Report Control Block (monitoring and processed information)

Data Set

Query by time

Log Control Block

Log Control Block

Log

Data Values

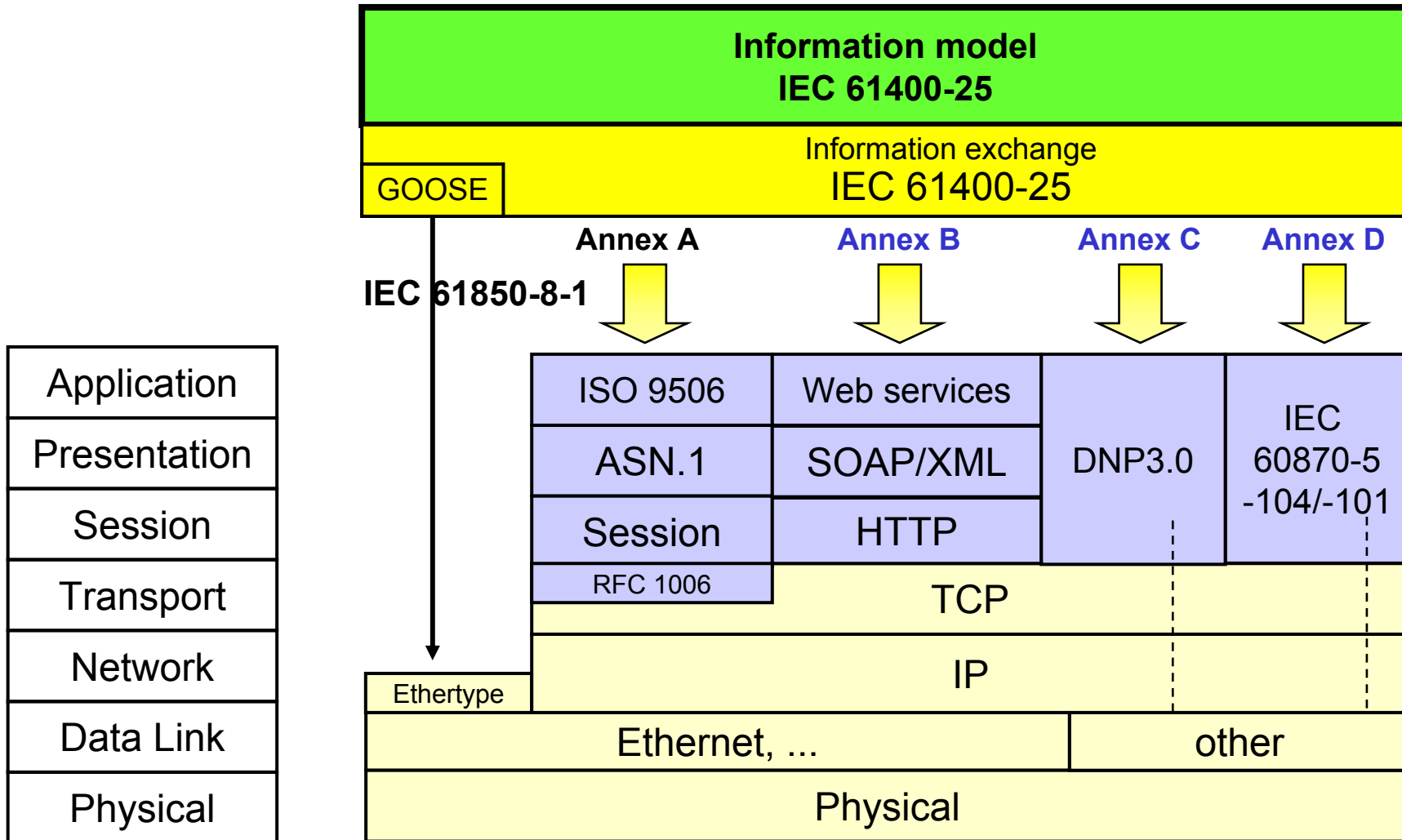
Authorisation

Setup

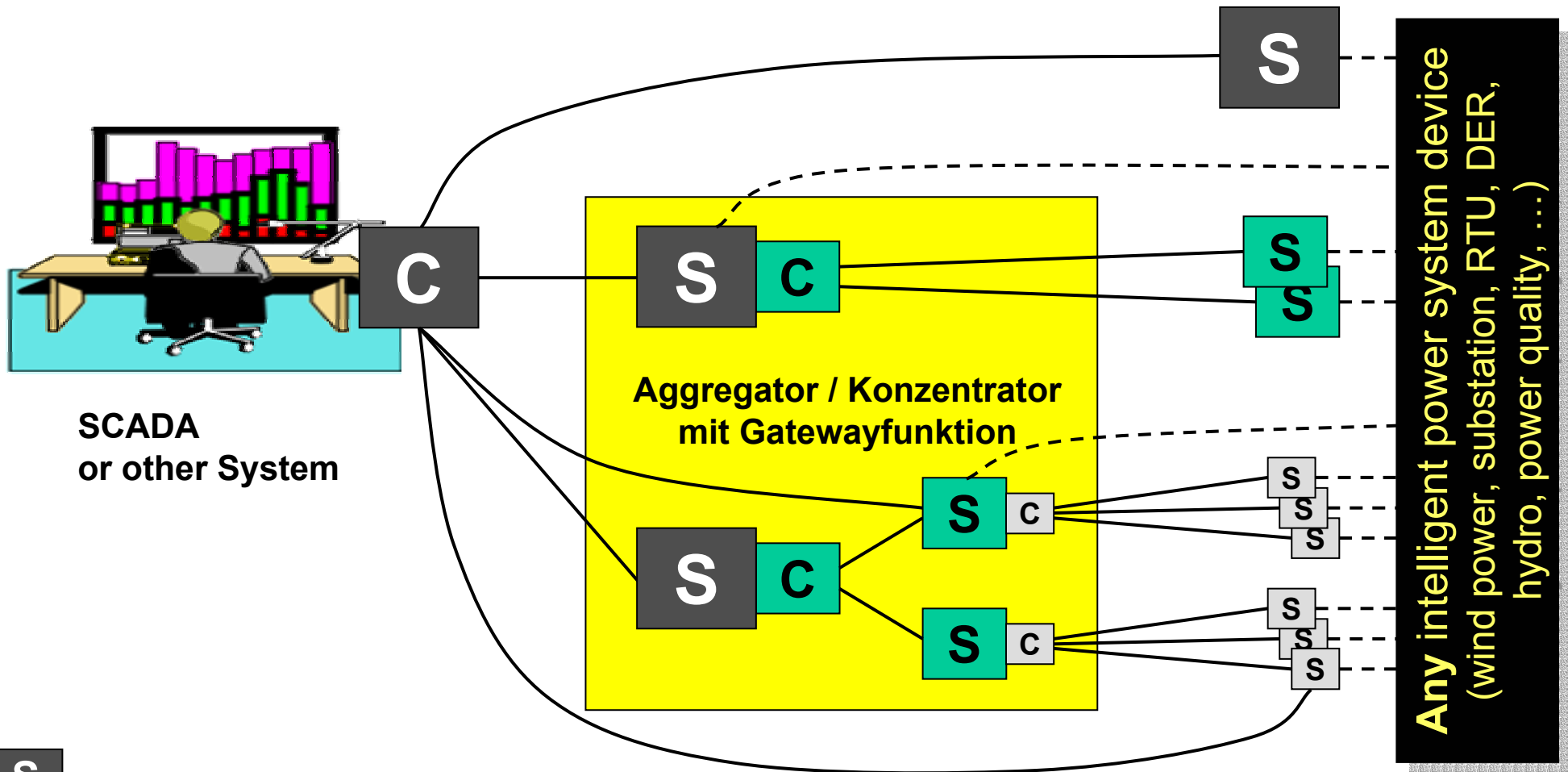
Time Synchronisation

File Transfer

IEC 61850 (61400-25) Mappings



Distributed Monitoring for Power Systems



S very comprehensive 61400-25/61850 information model / exchange; Client/Server

S more comprehensive information model / exchange

S Simple information model / exchange

———— IEC 61400-25/61850

- - - - non IEC 61400-25/61850



**Folienkopie:
www.nettedautomation.com/news**