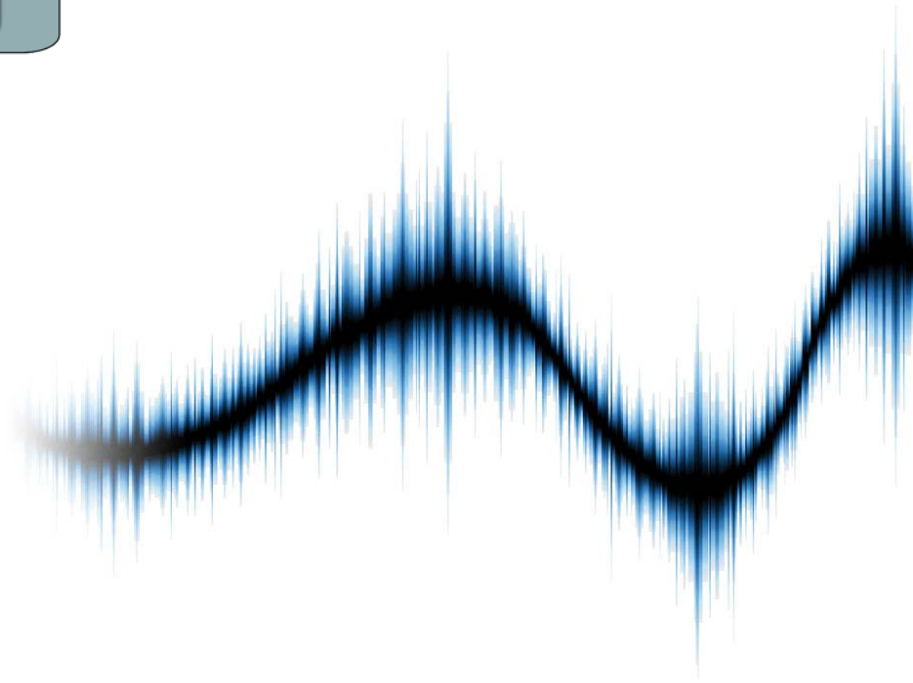


## Smart Grids und Normung

- Die internationale Dimension
- Smart Grid Standards Map
- Mitarbeit und Einflussnahme

5. Oktober 2016

Christian Gabriel  
Leitung Normung und Standardisierung  
Geschäftsführer  
Österreichisches Elektrotechnisches Komitee



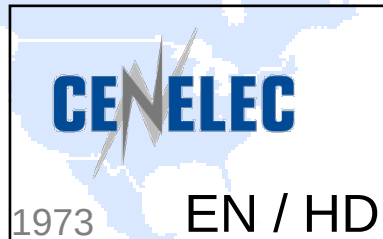
nationale europäische internationale

Ebene

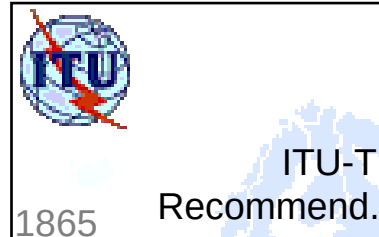
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Ebene

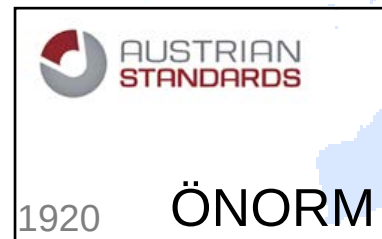
Elektrotechnik



Telekommunikation



übrige Bereiche





# Internationale Normung





# Smart Grid, Internationale Dimension

## Motivation

- Alte Infrastruktur
- Erneuerbare Energiequellen (Wind, Solar,..)
- Wettbewerb
- Versorgungssicherheit
- Energieeffizienz, Nachhaltigkeit, Umweltverträglichkeit,..
- Technische Evolution mit unterschiedlichen Geschwindigkeiten
- Keine Fragmentierung der Normung
- Geringer Bekanntheitsgrad existierender Normen



**NIST** National Institute of  
Standards and Technology  
U.S. Department of Commerce



Europäische Kommission



## Aktivitäten, international



- IEC SMB Smart Grid Strategic Group (SG3)

- Smart Grid Roadmap 2010

- World Smart Grid Forum, Berlin 2013



- Smart Grid Standards Map
- IEC System Committee (SyC) Smart Energy
- IEC System Committee (SyC) Smart Cities



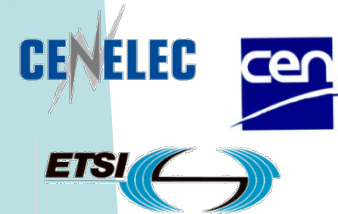
# Smart Grid, Internationale Dimension

## Aktivitäten, Europa



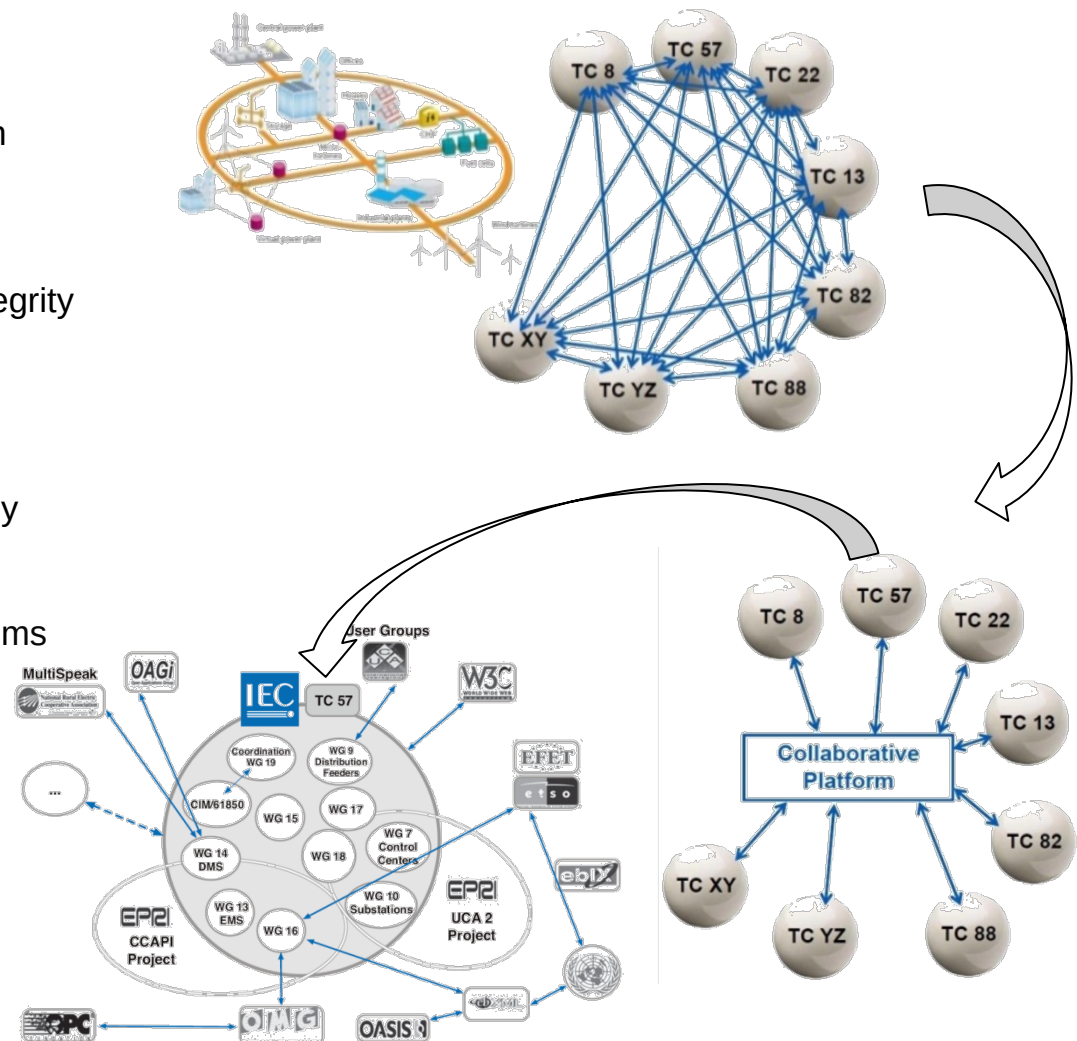
Europäische Kommission

- EU Commission Task Force for Smart Grids
- M/490/2011 Smart Grid Mandate, Standardization Mandate to European Standardisation Organisations (ESOs) to support European Smart Grid deployment
- CEN-CENELEC-ETSI Smart Grid Coordination Group (SG-CG)
- CEN-CENELEC-ETSI Smart Metering Coordination Group (Mandat M/441)



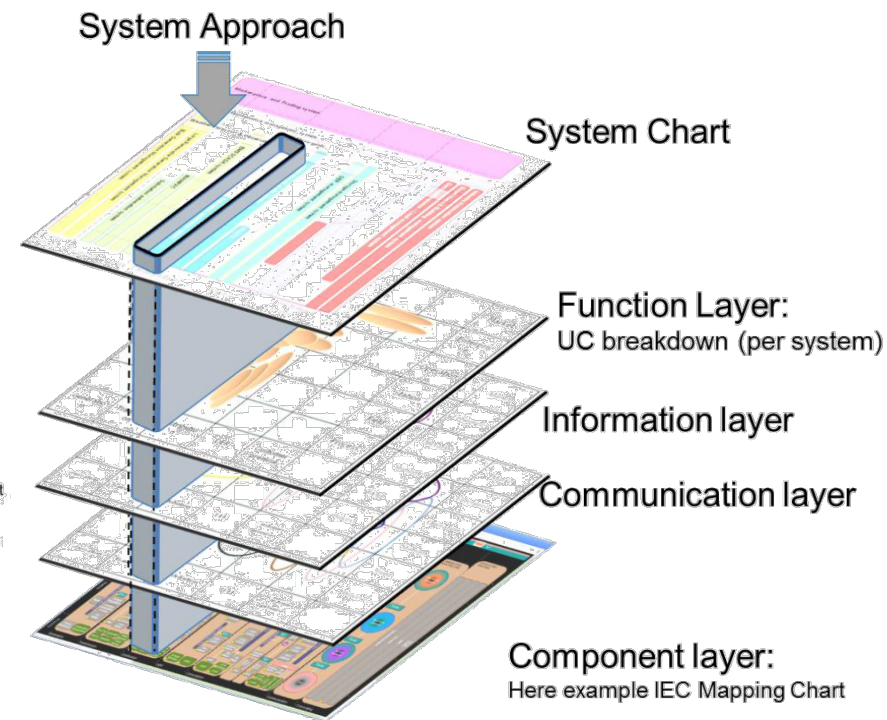
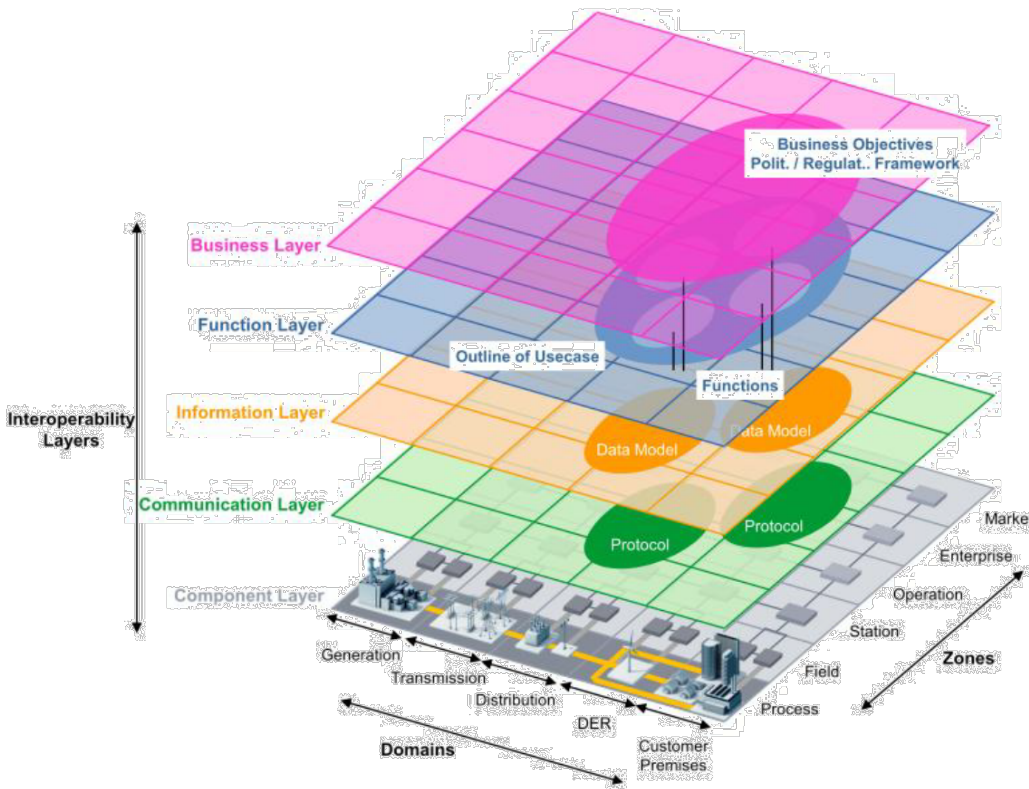
## Themenvielfalt

- Asset Management Systems and Condition Monitoring Devices
- Building Automation and Control System (BACS)
- Decision Support Systems and System Integrity Protection
- Distribution Automation and Protection
- Distribution Management System (DMS)
- Energy Management System (EMS)
- Information and Communication Technology
- Local Production
- Power Electronics
- Power Quality and Power Monitoring Systems
- Security
- Smart Consumption
- Smart Generation
- Smart Homes
- Smart Meter
- Substation Automation and Protection



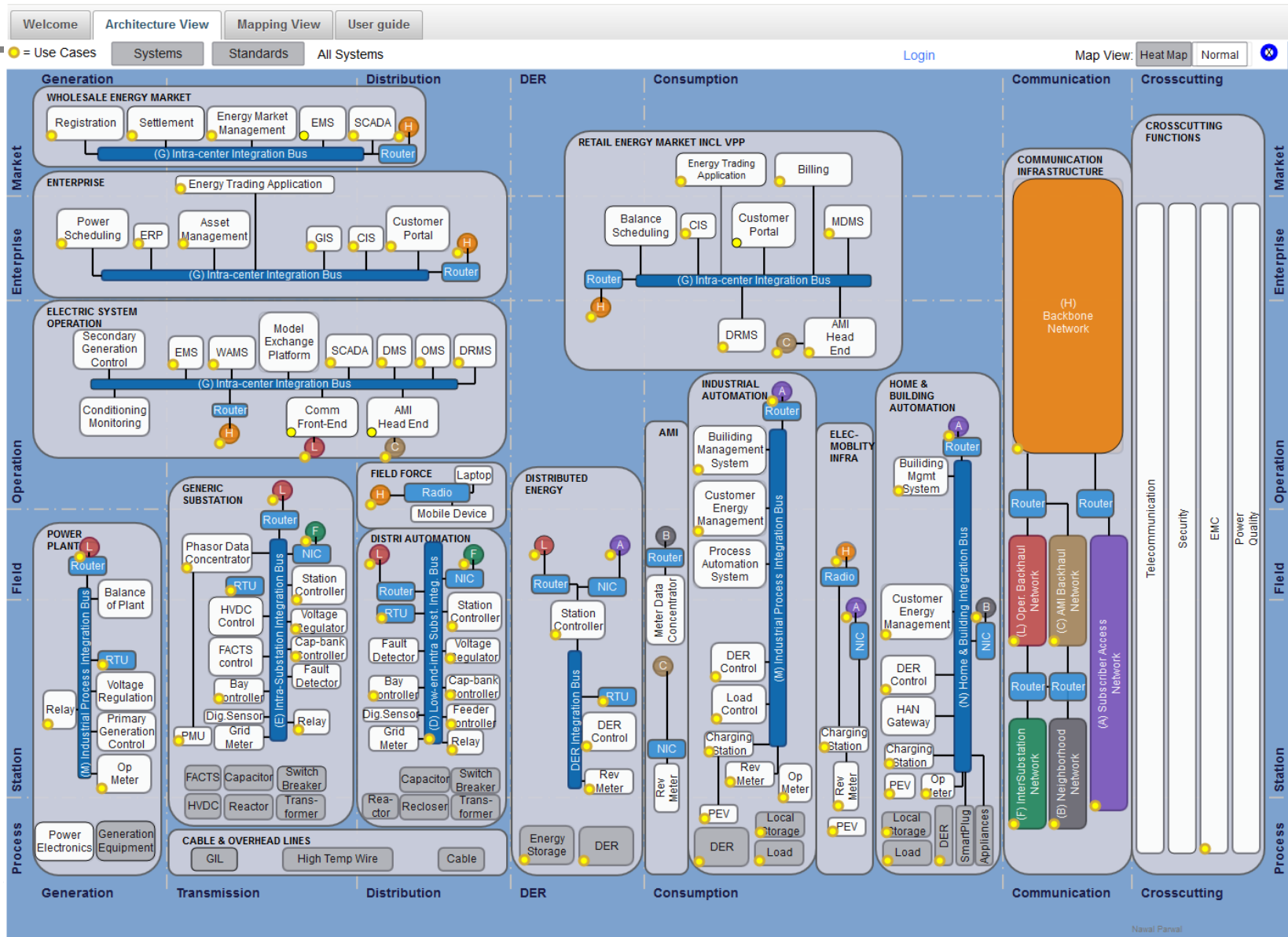


## SGAM Smart Grid Architecture Model





# IEC Smart Grid Standards Map



<http://smartgridstandardsmap.com/>

# IEC Smart Grid Standards Map

WelcomeArchitecture ViewMapping ViewUser guide

ComponentInformationCommunication

Not ClassifiedWith drawnReplaced

UserNamePasswordLogin

Selection

ComponentsStandards

OPER Backhaul Network

RouterCB

RouterHA

RouterHL

RouterLF

CROSSCUTTING FUNCTIONS

EMC

Power Quality

Security

Telecommunication

DISTRIBUTED ENERGY

Subscriber Access Network

DER Control

Integration Bus

Distributed Energy Resource

Energy Storage

Network Interface Controller

Inter Substation Network

Remote Terminal Unit

Revenue Meter

Router

Station Controller

DISTRIBUTION AUTOMATION DEVICE

Inter Substation Network

Bay Controller

Capacitor

Cap-bank Controller

Digital Sensors

Low-end-intra Subst. Inter. Bus

DISTRIBUTED ENERGY

Station Controller

Automation system monitoring and controlling the devices in a substation. Provides interface to network control center.



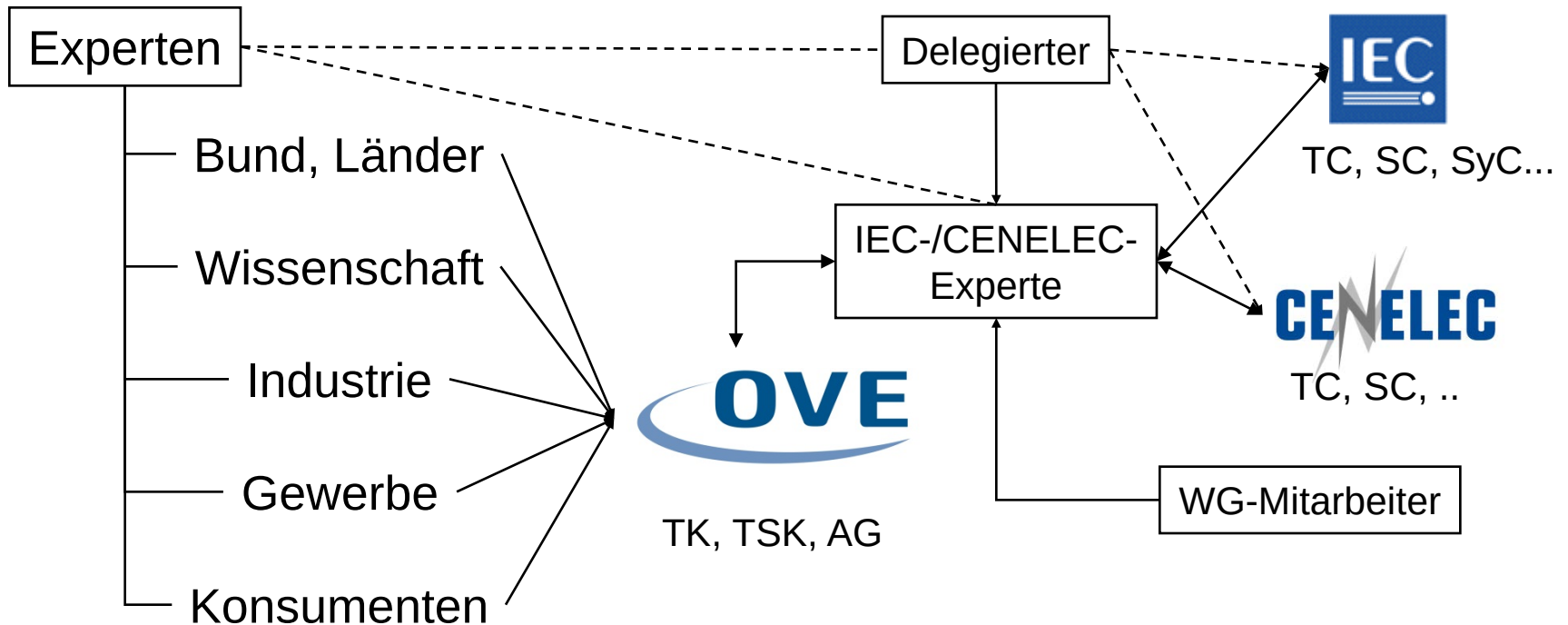
| Id    | Standards        | Preview                                                                               | Webstore                                                                              |
|-------|------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 10115 | IEC 60364        |    |    |
| 10116 | IEC 60870-5-101  |    |    |
| 10117 | IEC 60870-5-104  |    |    |
| 10118 | IEC 60870-5-5    |    |    |
| 10119 | IEC 60904 series |                                                                                       |    |
| 10120 | IEC 61131        |    |    |
| 10121 | IEC 61158 series |    |    |
| 10122 | IEC 61334-4-32   |    |    |
| 10123 | IEC 61334-4-41   |    |    |
| 10124 | IEC 61334-4-511  |    |    |
| 10125 | IEC 61334-4-512  |    |    |
| 10126 | IEC 61334-5-1    |  |  |
| 10127 | IEC 61334-61     |  |  |

94 Item(s)

Use Cases

(From external world wide web)

| Use Case Id | Use Cases                                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------------|
| 192         |  Integrated Volt/VAR Decentralized |
| 193         |  AGC Frequency Control             |
| 194         |  Fault Isolation                   |
| 195         |  Field Control Request             |
| 196         |  Volt/VAR on Substation Basis      |



Teilnahme steht allen Fachexperten offen und ist unentgeltlich

Projektantrag kann von jeder physischen oder juristischen Person  
eingebracht werden

Idee, Antrag

Projektstart  
angekündigt

★  
TK/TSK

Aktualisierung

Entwurf

Erfahrungen  
einbringen

★  
Öffentliche Stellungnahme  
[www.ove.at/entwurfsportal](http://www.ove.at/entwurfsportal)

★  
TK/TSK

Anwendung

Norm

★  
Publikation

