



union for the co-ordination of transmission of electricity

**Transforming UCTE Rules and Recommendations
into “Security and Reliability Standards”**

The UCTE Operation Handbook

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- Technical reciprocity
 - the backbone of security & reliability to operate synchronous interconnected grids
- Today's code of conduct
 - rules and recommendations in use
- The Operation Handbook
 - Transforming rules and recommendations into Security and Reliability Standards

Synchronous Areas

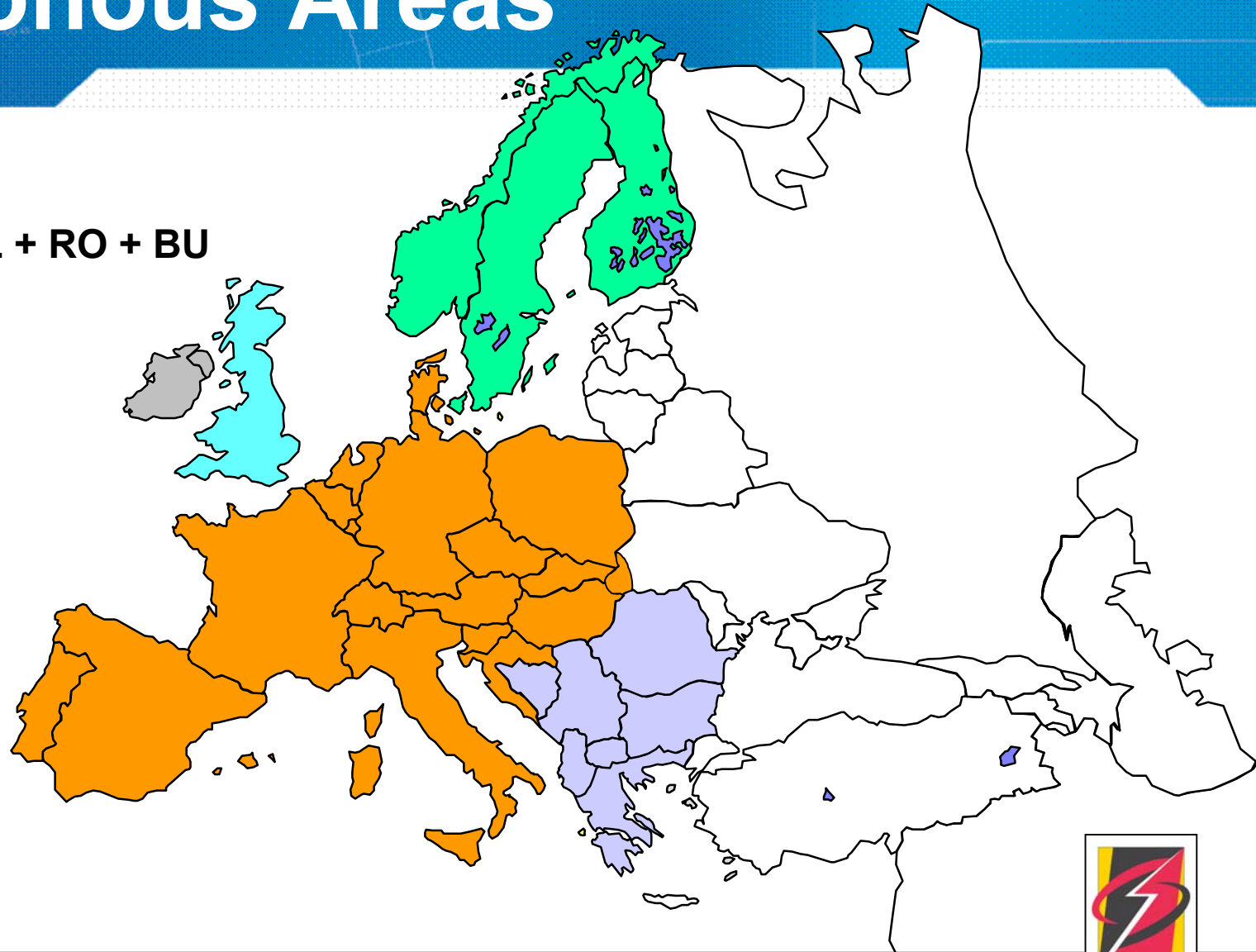
■ UCTE Area 1

■ UCTE Area 2 + AL + RO + BU

■ Ireland

■ Nordel

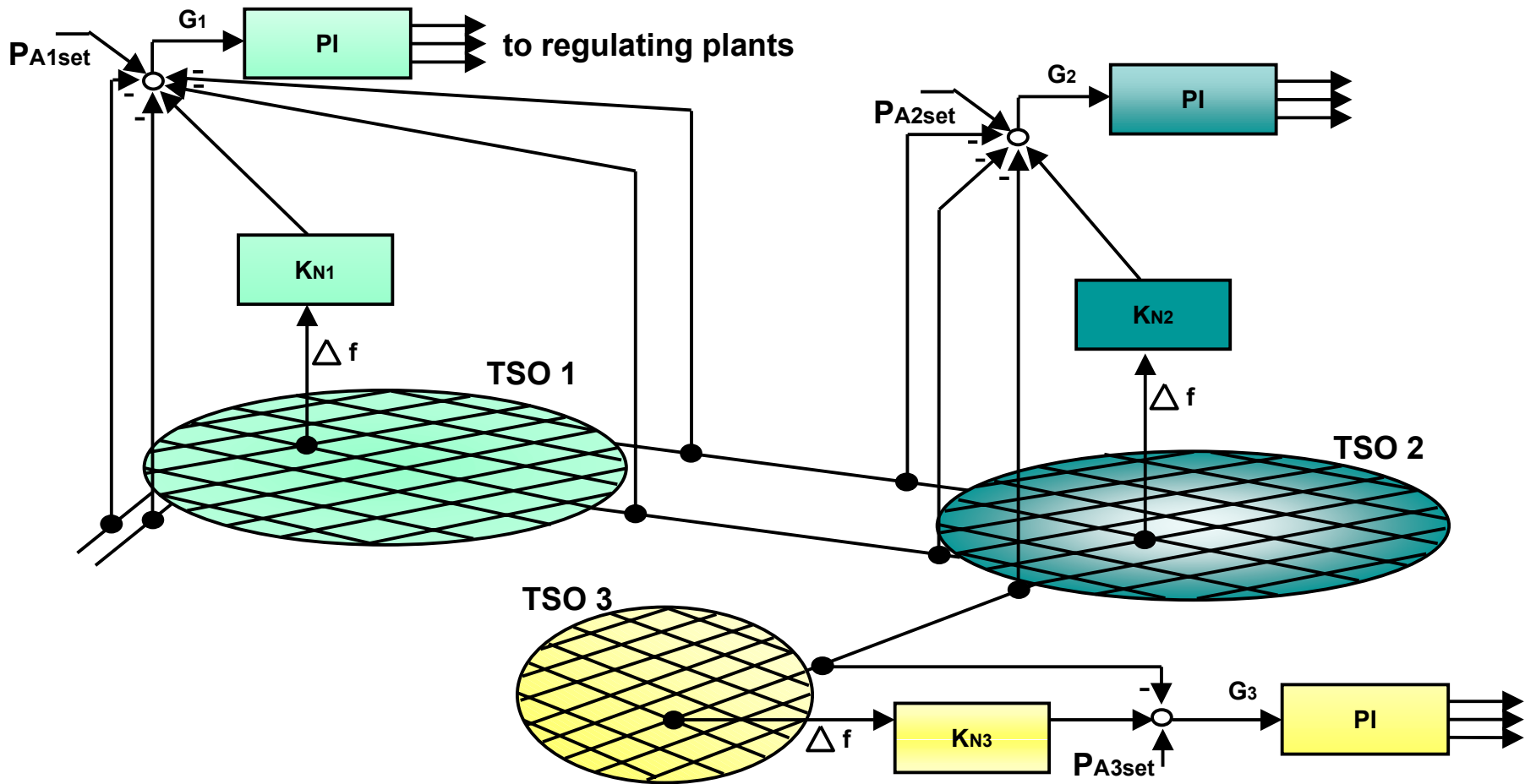
■ UK



Technical reciprocity

- **Sharing advantages & obligations**
 - joint responsibility for frequency quality by means of primary and secondary control reserve to assist each other to overcome outages
- **Providing equally good system services**
 - cross border traded electricity gains its “quality of supply” from the taking Load-Frequency-Control-area (voltage level and stability, free of flicker, n-1 security, etc.)

Security zones - LFC areas



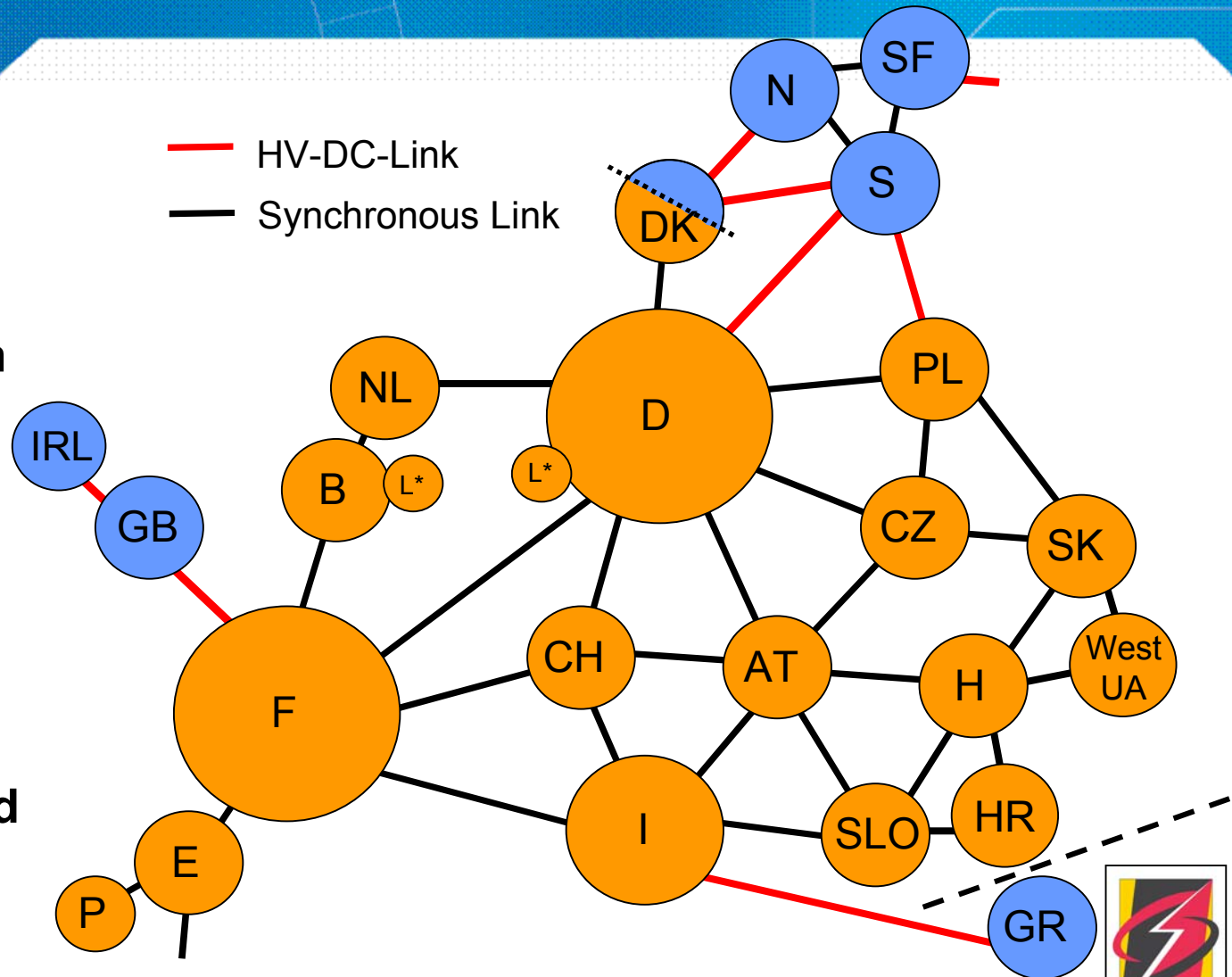
Security zones of UCTE area 1

former status:

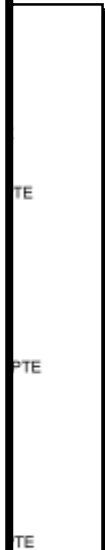
zones were nearly self balanced and ensured high system security

current status:

**due to the heavy
increase of cross
border transports
systems are operated
more often very
close to their limits**



Today's code of conduct (1)



Zusammenstellung wesentlicher Empfehlungen der UCTE für den Verbundbetrieb	
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Today's code of conduct (2)

- Essential rules and recommendations
 - 01. Application of Load-Frequency-Control in Western Europe
 - ...
 - 16. Measures against large disturbances
 - ...
 - 26. General aspects of inadvertent interchanges
 - ...
 - 36. Co-operation in the interconnection of UCTE
 - ...
 - 44. Active power control in the UCTE grid

Today's code of conduct (3)

- Voluntary compliance with rules based on association statute and recommendations
- Adoption by „peer pressure“
- Mutual assistance based on common spirit of responsibility

Changed framework

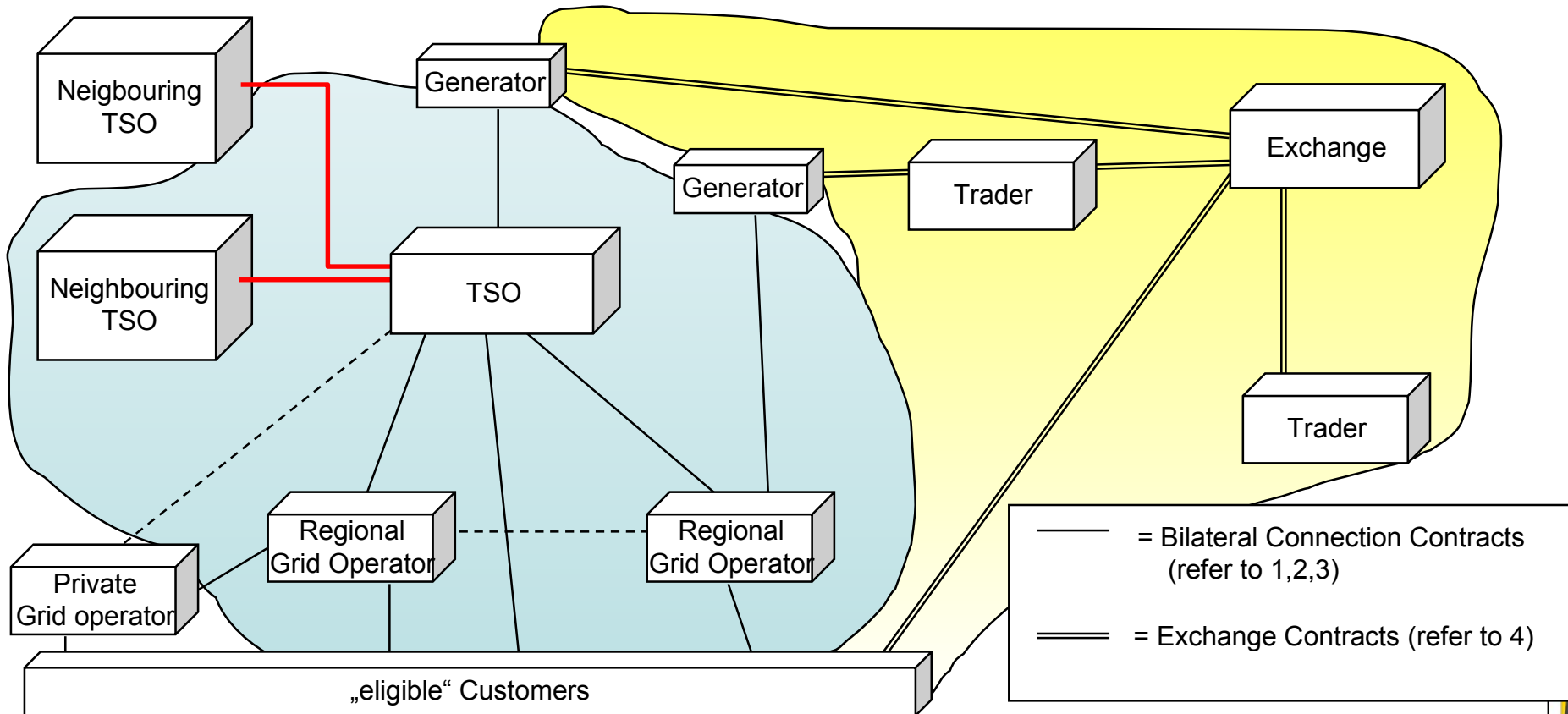
basic rules:

Grid Rules
(1)

Measurement
and Data Exchange
Rules (2)

Tariff and Price
Agreements
(3)

Market Rules
(Exchange)
(4)



Motivation (1)

TSOs tasks today: “keep the lights on”

and

“make the market happen”

**Consequences
for UCTE today:**

steep rise in number and complexity of electricity trade
business
grid is used against its design principles
increase of serious violations of reliability rules

Today's market needs legally enforceable standards on international level
between TSOs



Development of the UCTE Operation Handbook

Motivation (2)

- Need for clear and precise technical rules
- Comprehensive and structured summary of all existing documents
- More rapid establishment and review of rules
- Adaptation to new market environment
- Additional measures and monitoring criteria required
- Transforming UCTE rules into binding Security and Reliability Standards
- Legal enforceability

The Operation Handbook (1)

- Target audience for the Operation Handbook
 - System Operators
 - Generators
 - Traders
 - Customers
 - Policy and Decision Makers
- Main characteristics of the Operation Handbook
 - Transparency
 - Liability
 - Unambiguousness
 - Modularity

The Operation Handbook (2)

- Main scope of the Operation Handbook
 - a comprehensive collection of all relevant technical rules
 - a support for the technical operation of the UCTE interconnected grid
 - including operation policies for Automatic Generation Control (AGC), security criteria for system planning and operation, special operational measures
- Key characteristics of the Transmission System
 - Line Load Limits
 - Line Losses
 - Loop Flows
 - Load Frequency Control
 - Location Matters

How to read the Handbook (1)

- Preface, general information (brief UCTE history, ...)
- Overview, table of contents, versions, history
- Introduction, UCTE's structure, organisation
- Basics, operational framework, glossary, procedures
- **Operating policies** (common structure, list of policies for transport and ancillary services)
- Technical appendixes (technical criteria, definitions)
- Training documents (calculation methods, theory)
- Collections of data

How to read the Handbook (2)

■ The Policies

- ① Load-Frequency-Control and Performance
(draft available)
- ② Scheduling and Accounting (draft available)
- ③ Operational Security (draft available soon)
 - Network requirements
 - Congestion management
 - Data exchange among TSOs
- ...

How to read a Policy (1)

■ Criteria

- Criteria introduce or define specific values or a specific naming as given facts, that may be used or cited within the policy.

■ Requirements

- Requirements are (technical or organisational) prerequisites that are used within a policy. They have to be fulfilled in total before any standard can be applied.

■ Standards

- Standards define rules that are fixed and binding for the addressees. Standards are usually the core part of a policy.

How to read a Policy (2)

■ Guidelines

- Guidelines describe practical ways for typical operation or usage as recommendations, as the addressees may use them.

■ Procedures

- Procedures introduce fixed methods and alternatives for operation or usage as common practice.

■ Measures

- Measures name the actions to be taken, e.g. if a requirement is not fulfilled, a standard is violated by an addressee or a procedure is not used.

The Process of Work

- Several drafting teams work in parallel to transform all rules and recommendations into UCTE policies
- The drafting teams work in close contact with the legal experts to take into account the legal issues
- The UCTE WG Operations & Security is responsible to deliver the complete Draft Operation Handbook as soon as possible (1st priority project)

Legal Issues

- How to achieve legal enforceability of “Standards” among the Transmission System Operators?
- UCTE legal experts are working on the raised issue of legal enforceability
- Favourite Approach: A multilateral Contract

Conclusion

- UCTE is in charge of all technical and operational questions concerning the UCTE synchronous system
- UCTE understands itself as technical service provider to the market on the one hand and as watch dog to keep system security
- UCTE is very much in favour to intensify the dialog with EC, CEER and market parties to establish an intensive co-operation in all questions concerning the technical limits of the electricity transport system