

union for the co-ordination of transmission of electricity

European Electricity Regulatory Forum 8-9 July 2003

UCTE – Operation Handbook - Progress Report -

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Contents

- **The Operation Handbook** (slide 3)
 - Transforming rules and recommendations into Security and Reliability Standards
 - Short review
- **The Consultation Process** (slide 21)
 - Meetings with CEER, DGTREN, EURELECTRIC
 - UCTE Workshop on 4 June 2003
- **Next steps/Timeframe of Work** (slide 23)



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.)

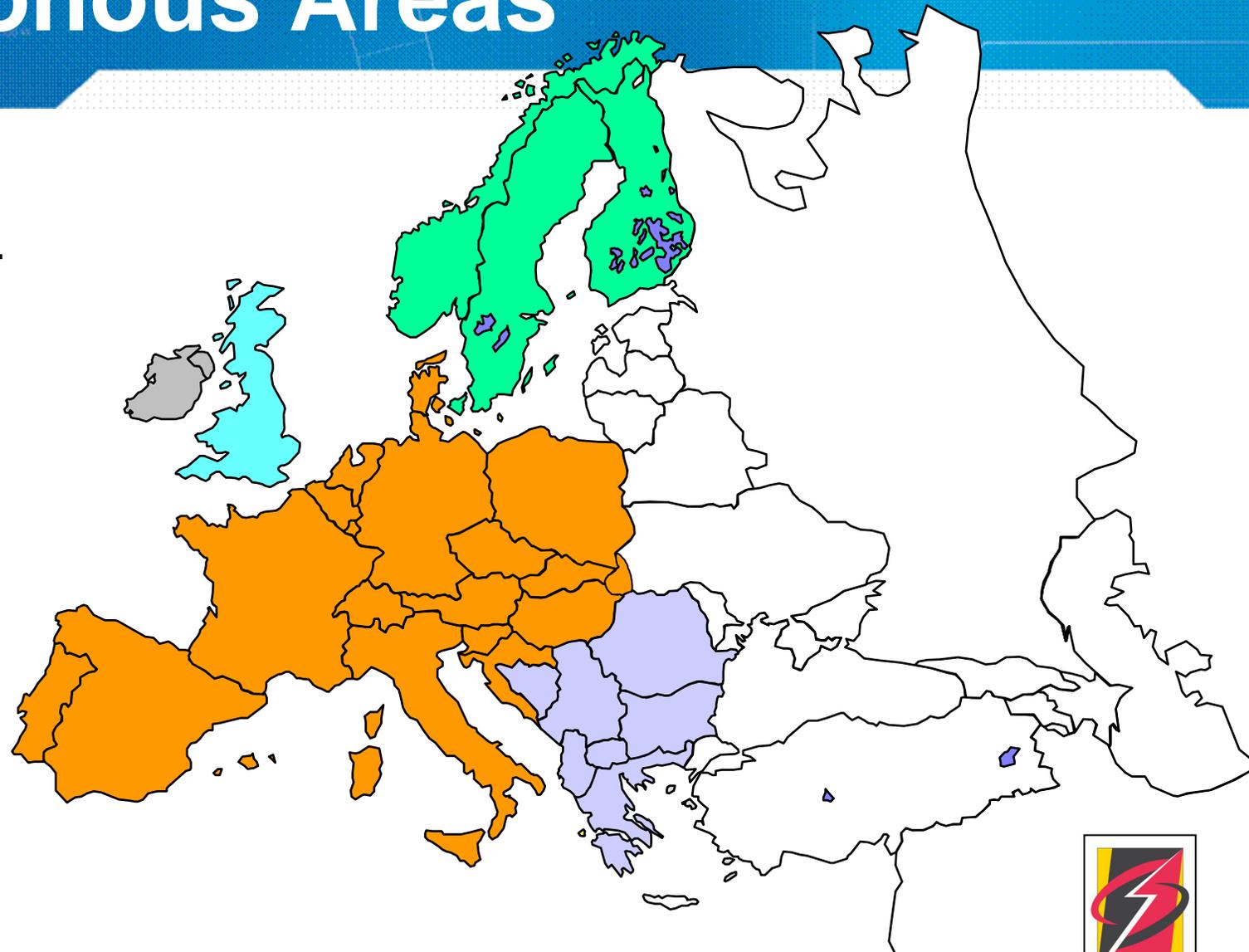
Today's code of conduct (2)

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



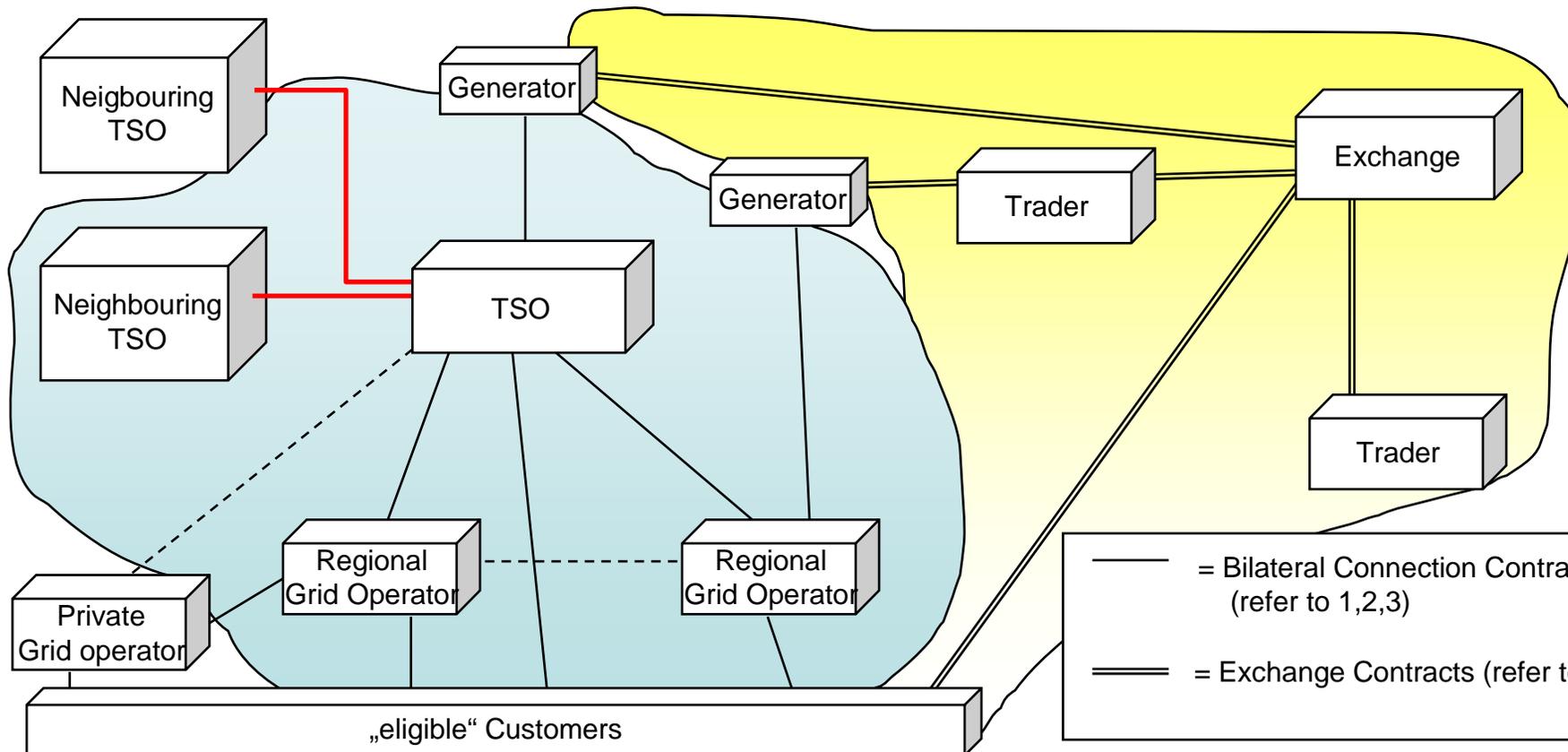
Synchronous Areas

- UCTE Area 1
- UCTE Area 2 + AL
- Ireland
- Nordel
- UK

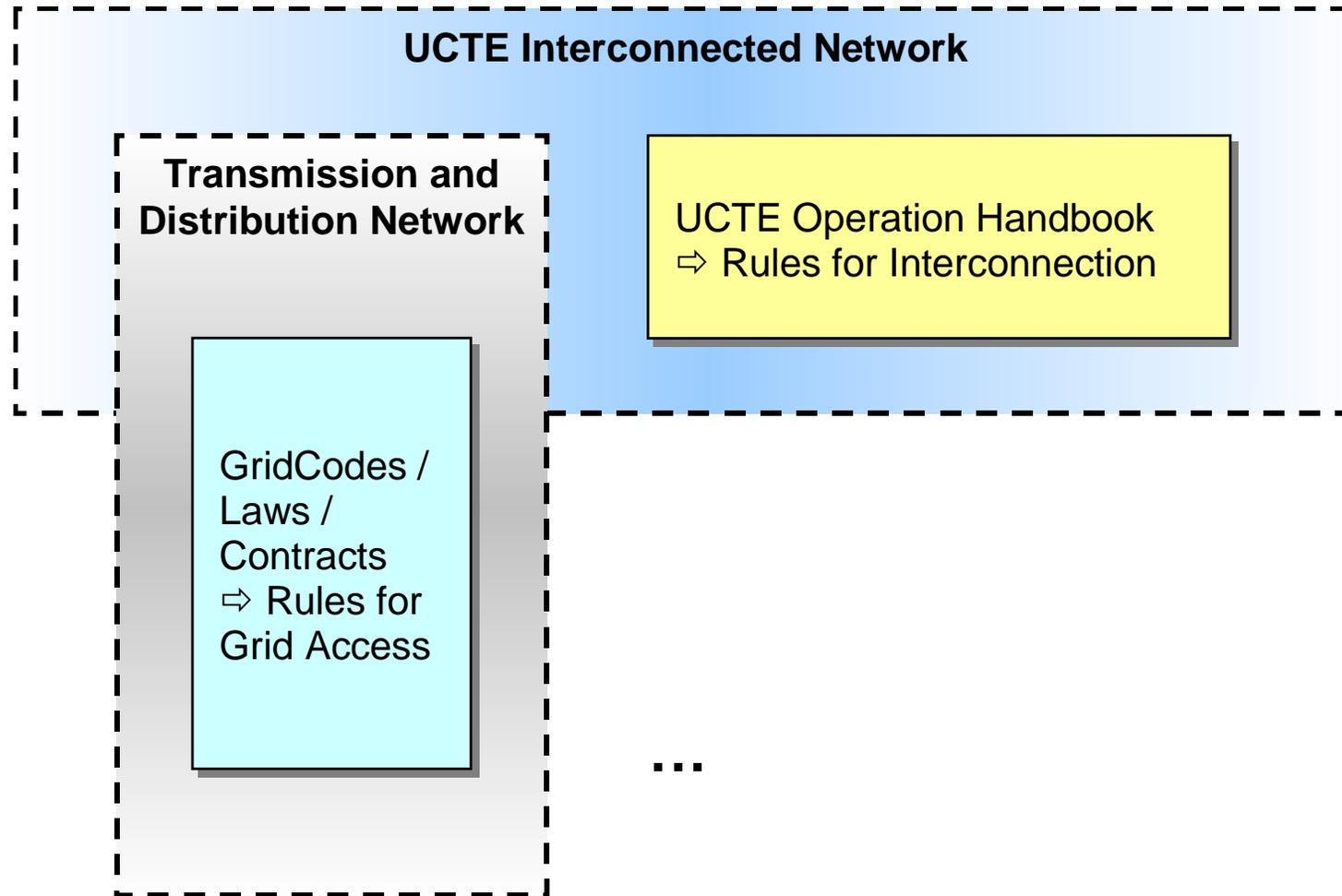


Contractual framework

basic rules:



Overview: Target for OpHB



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

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 consultation process has been initiated

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.

Current Status of the OpHB

Op&Sec 12/7/1

I – Introduction [D]

Subsections

- A. UCTE's basic needs for an Operation Handbook
- B. Target audience for the Operation Handbook
- C. Main chart
- D. Main scope
- E. Basic terms
- F. Procedures
- G. General notes
- H. UCTE logo
- I. Contacts

History of changes

v1.8 draft 04
v1.7a draft 23.4
v1.6 draft 04

Current status

The 'Union for the transmission system secure electric power' (UCTE) has been recommended by the additional rules that are in force. This version of the document (version 1.7, level C, draft 23.4) has "preliminary draft" status.

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Op&Sec 12/7/2

G – Glossary [C]

Subsections

- A. Glossary of terms
- B. Acronyms

History of changes

v1.7 draft 19.05.2003 Op&HB Team comments from TSO Forum
v1.6 draft 04.04.2003 Op&HB Team comments and changes from WG and SG
v1.5 draft 18.02.2003 Op&HB Team minor changes and corrections.

Current status

This glossary is a growing list of terms used during the development of policies and appendices for the operation handbook. All terms listed in this glossary shall be formatted as "DEFINITION" but not written in capital letters when used within a policy or appendix. Additional terms to be included in this glossary shall be submitted to the WG Op&Sec secretary.

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Op&Sec 12/7/3

P1 – Policy 1: Load-Frequency Control and Performance [D]

Policy Subsections

- A. Primary Control
- B. Secondary Control
- C. Tertiary Control
- D. Time Constant
- E. Measurement
- F. Performance
- G. Technical Requirements

Introduction

The generation of power is monitored for across the technical reserves perform daily against with different characteristics:

- PRIMARY CONTROL
- SECONDARY CONTROL
- TERTIARY CONTROL
- TIME CONSTANT

History of changes

v1.8 draft 04
v1.5 draft 22.4
v1.4 draft 07.4

Current status

This document aims performance issues evaluation and advice UCTE Operation Handbook. This policy will cover PRIMARY and SECONDARY CONTROL.

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Op&Sec 12/7/4

P2 – Policy 2: Scheduling and Accounting [D]

Policy Subsections

- A. Scheduling
- B. Online Observation
- C. Accounting

Introduction

To operate a large power commercial electricity border by means of the notwithstanding SUCOM reason it is necessary to the inadvertent deviation on the long term.

History of changes

v1.5 draft 22.05.4
v1.4 draft 21.02.4

Current status

This policy will cover the coordination of the recording of the following UCPTE:

- UCPTE Control Room, 1999
- UCPTE Recommendation interconnection new
- UCPTE Recommendation interconnection new

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Op&Sec 12/7/5

P3 – Policy 3: Operational Security [C]

Policy Subsections

- A. N-1 Security (operational planning and real time operation)
- B. Voltage control and reactive power management
- C. Network faults clearing and short circuit currents
- D. Stability
- E. Outages scheduling
- F. Information exchanges between TSOs for security of system operation

Introduction

The operation of the interconnected network is founded on the principle that each partner is responsible for its own network. In order to harmonize the operating methods for the interconnected network, UCTE has since the beginning worked out rules, instructions and suggestions to which the operation of each network has to make reference in order to ease inter-operations.

TSOs are in charge of managing the security of operation of their own networks in a subsidiary way. The most relevant rules for the security of the interconnected system are related mainly to the functioning of interconnections. TSOs adapt continuously together the different rules (and the possibility to be applied mainly at the borders of their countries) to the consequences of the borders of countries / blocks. These rules create favorable conditions for cross-border cooperation. The operation of network users and of TSOs themselves. All the existing rules cover every other existing national commitments for network security legal by contractual or legal administration networks when they exist. The control of performance of the interconnection system remains under the responsibility of TSOs in the context of their own management.

This policy describes the requirements for the TSOs to maintain security. Each country has a TRANSMISSION SYSTEM OPERATOR - TSO is responsible of procedures for reliable operation through a responsible time period with a view of real time conditions, with CONTINGENCY and emergency procedures, and of their preparation. Co-ordination between TSOs prevents disturbances, the consequences and provides remedying strategies after a collapse. It continues to be reviewed and developed, covering nowadays new aspects related to market mechanisms.

History of changes

v1.10 draft 16.05.2003 WG Op&Sec Remarks TSO Forum
v1.9 draft 14.04.2003 WG Op&Sec Remarks WG Brussel

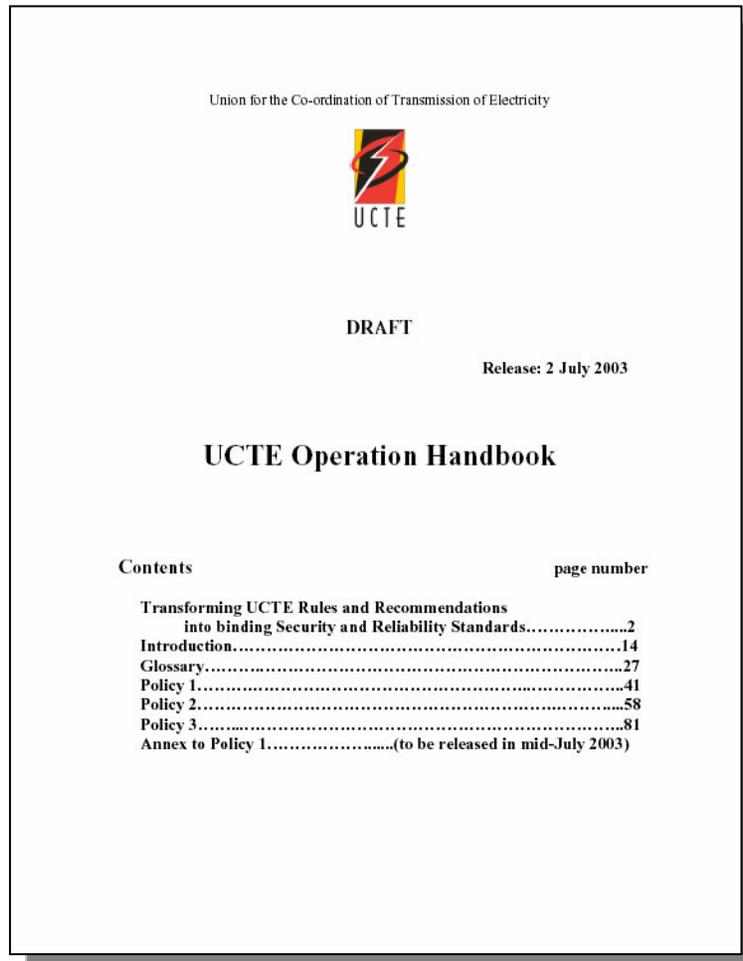
Current status

This policy focuses only on security aspects in operation (and not long term planning), commercial rules are out of the scope accordingly (see section 3.4) in the introduction of the handbook. Attention of the UCTE Steering Committee members is drawn on different issues:

- This version of the policy describes (as agreed) the existing UCTE rules and recommendations and the "common practices"; further versions will include new targets.
- this policy doesn't aim to deal with costs of prices aspects for measures to be applied e.g. (i) the methods to reimburse TSOs in case of cross-border contribution for re-dispatching in the frame of congestion management or (ii) an acceptable commitment of rules to manage any change of cross-border programs when emergency situations, which can be bilateral.



Transparency on UCTE Website



Contents of the OpHB (preliminary release 2nd July 2003, 99 pages in total):

- Transferring UCTE Rules...
- Introduction (v2.0)
- Glossary (v1.8)
- Policy 1 (v1.7)
- Policy 2 (v1.6)
- Policy 3 (v1.11)

Updated List of OpHB-Policies

- 1. Load-Frequency Control and Performance [D]**
- 2. Scheduling and Accounting [D]**
- 3. Operational Security [D]**
- 4. Co-ordinated Operational Planning [B]**
- 5. Emergency Procedures [B]**
- 6. Communication Infrastructure [B]**
- 7. Data Exchanges [B]**
- 8. Operational Training [A]**

Table of Contents of the OpHB (1)

1. Load-Frequency-Control and Performance (Policy and appendix)

Primary control

Secondary control

Tertiary control

Time control

Measures for emergency situations

Performance Standards and Control Surveys

Technical Requirements and Qualifications for Generation

2. Scheduling and Accounting

Scheduling

Online Observation

Accounting

Table of Contents of the OpHB (2)

3. Operational Security

N-1 Security (operational planning and real time operation)

Voltage control and reactive power management

Networks faults elimination, short circuit currents

Stability

Outage scheduling

Information exchanges between TSO's for security of system operation

4. Coordinated Operational Planning

Day Ahead Congestion Forecast

System Planning

Transfer Capability calculations

Re-dispatch measures

Table of Contents of the OpHB (3)

5. Emergency Procedures

Defense plans

Restoration

Voltage collapse

Treatment of forecasted non-normal situations

Borders and Limits of Responsibility

Decision process in case of emergencies

6. Communication Infrastructure

Communication between TSOs / to GENCOSs

Real time data exchange

Security of Access

Compatibility rules for IT Infrastructure

Table of Contents of the OpHB (4)

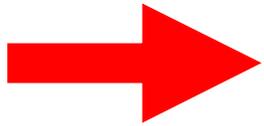
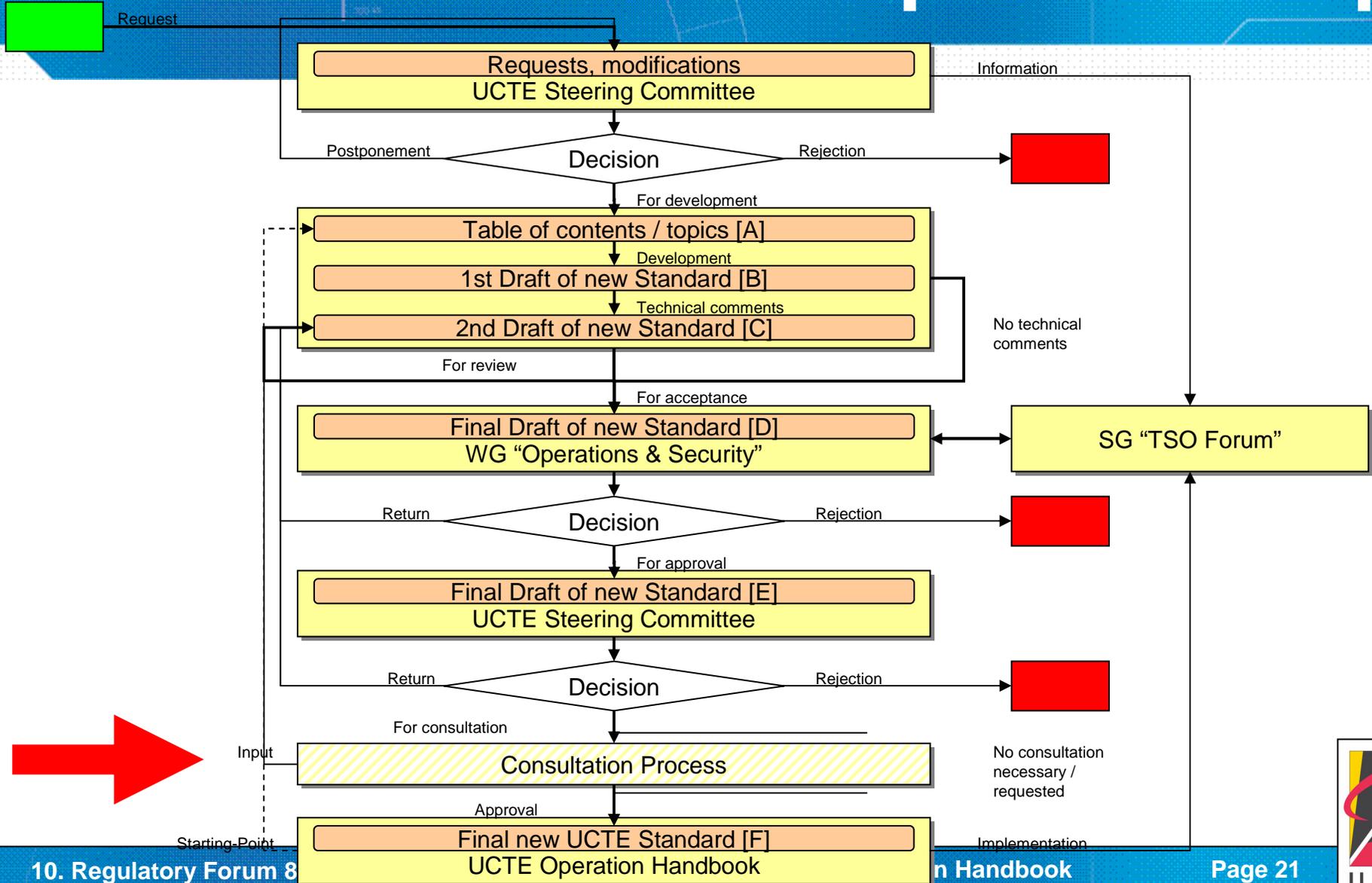
7. Data Exchanges

- Data exchanges
- Data archiving and monitoring
- Data ownership
- Data confidentiality
- Statistics of operational data
- Data publication

8. Operational Training

- Operator's certification
- Training tools
- Basic training guidelines
- Emergency training

Consultation is an important step



Consultation Process

- Dialog on OpHB between UCTE and CEER, EURELECTRIC and DGTREN successfully started
- Transparency via publication on UCTE WEB-site
- Subscriber list to be informed via e-mail
- UCTE Workshop on 4 June 2003 in Brussels



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 will focus on the development of the OpHB and issue draft versions of Policies 4,5,6 and 7 in the near future
- A complete OpHB shall be ready at the end of 2004
- UCTE is very much in favour to continue 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