



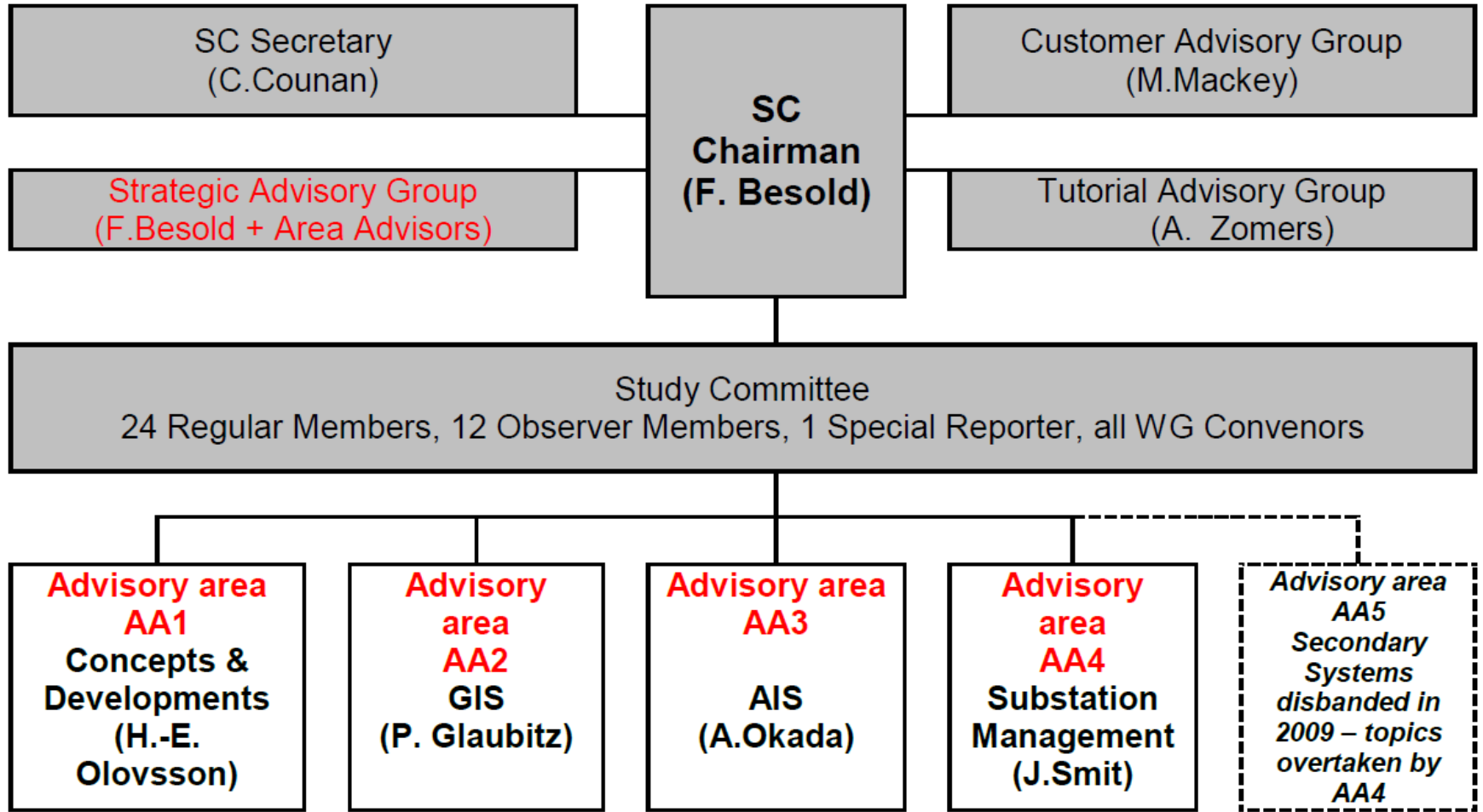
## Study Committee B3 “Substations“

**Design, construction, maintenance and ongoing management of substations and electrical installations in power stations (excluding generators)**

# SC B3 recent meetings

- **46<sup>th</sup> SC B3 meeting on 21<sup>st</sup> August 2009 in Cape Town together with SCA3 and A2 annual meetings and regional CIGRE conference**
- **47<sup>th</sup> SC B3 meeting on 25<sup>th</sup> August 2010 in Paris**

# Overview of running AA led by SC B3



Advisory areas roles will change to areas coordinators tasks

## Advisory area AA1 Concepts & Developments

- **WG B3.12 “Obtaining Value from Condition Monitoring”** (A.J. Mackrell)
- **WG B3.13 “Reducing Replacement Time of HV Equipment”** (F. Gallon)
- **WG B3.26 “Guidelines for the Design and Construction of AC Offshore Substations for Windfarms”** (J.Finn)
- **JWG B3/C1/C2-14 “Circuit Configuration Optimization”** (G. Lingner) – problem with C1 and C2 participation – WG will complete its work (50% ready)

## Advisory area AA2 Gas Insulated Substations

- **WG B3.17 “GIS Residual Life Time”** (K.Pohlink)
- **WG B3.25 “SF6 Gas Analysis for AIS, GIS, MTS assessment”** (E.Duggan)
- **New WG B3.29 “Field Test Technology on UHV Substation Construction and Operation”** (K.Uehara)

Note : *IN SCC3 there is going to be established new WGC3.12 “Greenhouse Gas Emission Inventory and report for Transmission System Operators”*

## Advisory area AA2 Gas Insulated Substations

- **New WG B3.30 “Guide to Minimize the Use of SF6 during Routine Testing of Electrical equipment”** (S.Stangherlin)
- **New JTF B1/B3.33 “Feasibility of a common dry type interface for GIS and Power cables of 52 kV and above”** (P. Argaut)
- *New JWG B3/B1.27 (TOR formulation) “Factors for Investment decisions GIL versus Cables”* (H. Koch)
- *New WG under preparation “Single Line Diagram Layout – Gas Compartments : Optimization and reliability”*

## Advisory area AA3 Air Insulated Substations

- **WG B3-21 “Turnkey Substations”** (T.Kertezs)
- **new WG B3-23 “Guideline for Uprating & Upgrading of Substations”** (H.Imagawa) - Practices in increasing rated and short-circuit I, in changing U levels, schemes, busbar material and supports, upgrading of individual equipment and auxiliary AC/DC

*New WGs under preparations :*

- *WGB3.31 “Substations in Sever Climate conditions” (M. McVey, US)*
- *WGB3.32 “Savings through Optimized Maintenance of Air Insulated Substations” (T. Messinger, Ca)*

## **Advisory area AA4 Substation Management**

- **JWG B3-06 “Substation Management” (J. Smit) :**
  - **TF 01 “Maintenance and Organization - Practical Aspects for Outsourcing Utility Services”**
  - **TF04 “Replacement Philosophy for Substation equipment”**
  - **TF05 “Practical Application of AM Information Strategies”**

Note : SCC1 is also active in AM – WG C1.16 published Brochure 422 “Transmission Asset Risk management” (ELECTRA 251, August 2010) and there is a new WGC1.25 established “Risk management and Information Processes for AM in TSO for current and future power systems” (TB 309 updating, failure statistics, risk decision making)



# WGs just finished their work

- TF B3.01/3 “Compacting S/S’s Through Insulation Reduction”**  
(paper and tutorial on web)
- WG B3.11 “Combining Innovation with Standardization”** (TB 389)
- WG B3.18 “SF6 Tightness Guide”** (TB 430)
- JWG B3/B1-09 “Application of Long High Capacity Gas Insulated Lines”** (TB 351)
- WG B3.22 “Technical Requirements for Substations Exceeding 800 kV”** (TB 400)
- WG B3-10 “Primary/Secondary System Interface Modeling for Total Asset Performance”** (TB published soon)

# Further possible SC B3 topics – after Cape Town meeting

## AA1 :

- Implementation of NCIT into substations
- DC or variable frequency off-shore substations

## AA2 : Partial discharge monitoring systems in GIS

## AA3 : Substation design for long cable lines

## AA4 :




- Smart grids (impact on substation management)
- Risk assessment based decision processes
- Commissioning of secondary systems
- Performance tests & specification for the process bus

## AA1

- ▶ **WG B3.11 : Brochure 389 “Combining Innovation with Standardization”, Summary paper ELECTRA 245, August 2009**
- ▶ **WG B3.12 : Report : “Obtaining Value from On-line Substation Condition Monitoring”, ELECTRA 249, April 2010**
- ▶ **WG B3.26 : Report “The Challenges facing AC Offshore Substations for Wind Farms”, paper prepared for publishing**

# 09/09 to 10/10 publications

## AA2

-  **WG B3.20 : Brochure 390 “Evaluation of Different Switchgear Technologies (AIS, GIS, MTS) for Rated Voltages 52 kV and Above”, Summary paper ELECTRA 245, August 2009**
-  **WG B3.22 : Brochure 400 : “Technical requirements for Substation Exceeding 800 kV”, Summary paper ELECTRA 247, December 2009**
-  **WG B3.18 : Brochure 430 “SF6 Tightness guide”, Summary paper ELECTRA 252, October 2010**



Study Committee SC B3

# SC B3 Paris Session 2012 – Preferential Subjects

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- ✓ **PS1 : Substation Solution Enabling Smart Grids** (role of the HV substations in realizing smart grid [SG], substation management enabling SG implementation, substation automation and communication systems)
- ✓ **PS2 : Future substation developments** (UHV, offshore substations, AC/DC substations, substation footprint)



Study Committee SC B3

# SCB3 Session 2011

**2011 SCB3 meeting will be in May 2011 in Chicago together  
with IEEE/CIGRE colloquium on 15<sup>th</sup> -19<sup>th</sup> May 2011**

**Thank you for your attention**