

# Studienkomitee C4

## System Technical Performance

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**Vorsitzender** Carlo Alberto Nucci, Univ.- Prof. (Universität Bologna)  
**Sekretär** Pouyan Pourbeik (USA, EPRI)

24 Vollmitglieder, 15 Gastmitglieder, 39 Nationen

17 Forschungsinstitutionen, 12 Energieversorgung, 12 Industrie

### **Alte Organisation**

Power Quality (AG C4.1)

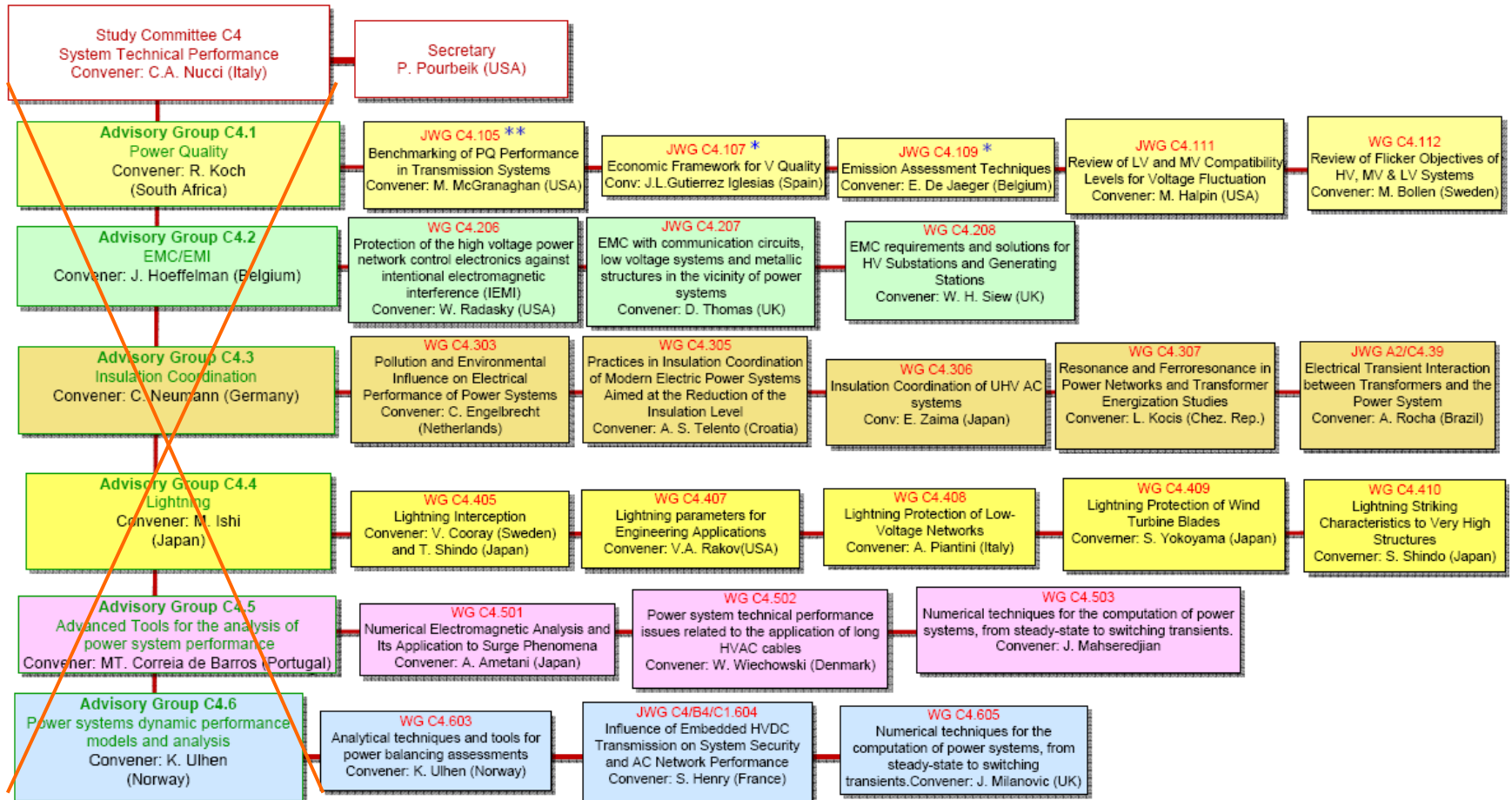
Electromagnetic Compatibility (AG C4.2)

Insulation Coordination (AG C4.3)

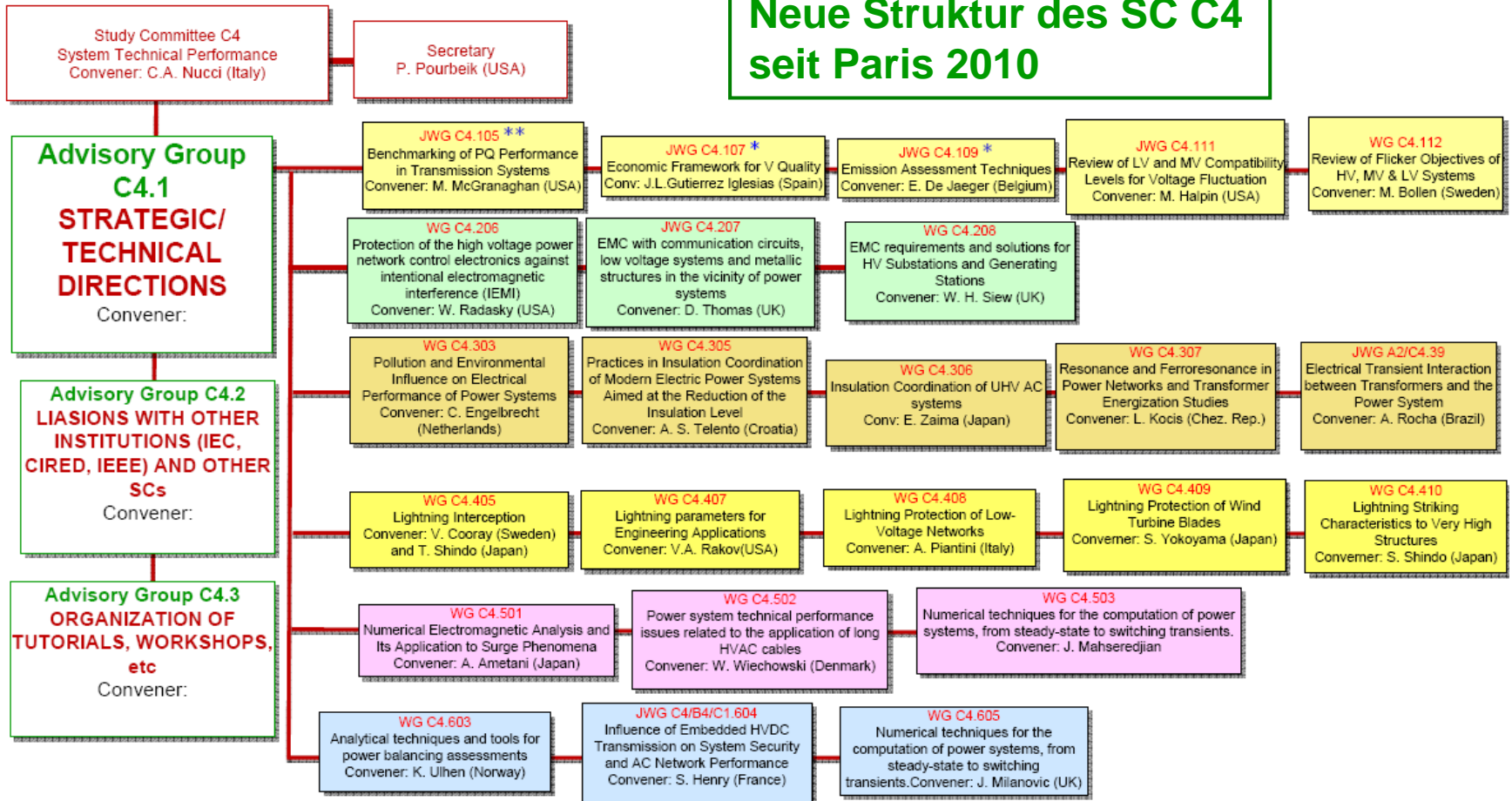
Lightning (AG C4.4)

Organisation and Liaison with Target Groups (AG C4.5)

Power System Security Assessment (AG C4.6)



## Neue Struktur des SC C4 seit Paris 2010



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## Neue Organisation des Studienkomitee SC C4

Es gibt nur mehr **3 Advisory Groups (AGs)**:

**AG C4.1** Technische und strategische Belange

Mitglieder: derzeitige AG-Vorsitzenden und weiteren anerkannten Experten aus dem SC C4

**AG C4.2** Kontakte und Koordination zu und mit anderen Studienkomitees und Institutionen wie IEEE, IEC, CIGRE etc.

**AG C4.3** Organisation von Symposien, Kolloquien, Tutorials oder Workshops

## Aktuell > Scope of C4

- Methods and tools for analysis related to power systems, with particular reference to dynamic and transient conditions
- Interaction between the power system and its apparatus/subsystems
- Interaction between the power system and external causes of stress
- Interaction between the power system and other installations

**Wichtiger Hinweis >** Design and manufacturing of components (apparatus), planning, operation, control **are not** in the scopes of C4

## Arbeitsgebiete

- Power Quality, Electromagnetic Compatibility/Electromagnetic Interference (EMC/EMI)
- Insulation coordination
- Lightning
- Advanced Tools for the analysis of power system performance, Power systems dynamic performance models and analysis.

## Highlights des SC C4 der vergangenen 2 Jahre:

- EPE Centre Conference 2009: “Power Quality in Future Networks” University of Canterbury, Christchurch, April 2009
- Symposium “Second International Symposium on Standards for Ultra High Voltage Transmission”, India, 2009
- International Colloquium - Power Frequency Electromagnetic Fields ELF EMF, Sarajevo, Bosnia and Herzegovina, 2009
- SC4 Colloquium “Harmonizing Environment, Power Quality and Power Systems” in Kushiro (Japan), June 2009
- Malaysia colloquium on Lightning protection, Kuala Lumpur, May 2010
- Vier technische Berichte und ein Electra paper, seven Technical Brochures
- Sieben neue WGs, eine neue JWG mit B4 und C1

## Zukünftige Schwerpunkte:

- Power Quality: PQ contracting; Reliability improvement assessment; Sustainable technical performance – measures and reporting.
- EMC/EMI: Influence of power installations on other installations; The ELF magnetic fields: characteristics and mitigation methods; EM vulnerability.
- Insulation coordination: Critical review of existing practice; UHV systems; Fast transients: interaction between system and transformers. Emphasis on Systems Aspects
- Lightning: Critical review of lightning parameter statistics; attachment process; correlation between lightning and voltage dips; protection of wind generators
- “Transversal” subjects: Advanced theories/tools for surge propagation studies and for dynamic performance assessment.
- Power systems dynamic performance models and analysis: Tools for power balancing assessments; Risk-based security assessment. Methods for modelling and aggregation of loads in active power networks.

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## „Technical Session“ des Studienkomitees C4 am 24. 08.2010 in Paris:

- Vorzugsthema 1: EMC/EMF and PQ for future networks - compatibility requirements, assessment techniques/tools, and technical performance improvement programmes
- Vorzugsthema 2: Advances in insulation coordination and lightning knowledge for improved performance of electric power systems.
- Vorzugsthema 3: Techniques and Tools for Power balancing assessments and Risk-based security assessment.

### Special Reporter :

Math Bollen (Norwegen)

Ante Sekso Telento (Kroatien)

Akihiro Ametani (Japan)

### Postersession in Paris

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## **CIGRE 2012 Paris Session, August 2012**

### **PS1 > Modelling and practical experience of the interaction of new generation/transmission technologies and related power electronics with the transmission and distribution systems**

- Dynamic and transient performance of the network
- Power quality and EMC issues related to the massive use of power electronics and to external phenomena

### **PS2 > Advanced tools and techniques for power system performance analysis with particular reference to stochastic methods**

- Incorporating risk in analysis through probabilistic tools and assessment in light of the increasing complexity of future networks
- Advanced numerical methods with particular reference to asymmetrical systems

### **PS3 > Lightning protection and insulation coordination as it relates to new generation and transmission technology**

- Wind generators
- UHV systems
- HVDC systems
- New models for the calculation of lightning performance of transmission lines

## Die nächsten Termine des SC C4:

- Cigrè International Symposium “Assessing and Improving Power System Security, Reliability and Performance in Light of Changing Energy Sources” Recife, Brazil, 3-6 April 2011
- Bologna Symposium 2011 “The Network of the Future ...”, Bologna, September 13-15th, 2011, ([www.cigre.org](http://www.cigre.org))
- CIGRE 2012 Paris Session, August 2012

## Nächste Treffen 2009

- SC C4 Jahresmeeting (C1, C2), Recife, Brazil, 3-8 April 2011

**Website:** [www.CIGRE-C4.org](http://www.CIGRE-C4.org)