



Fellesmøte for Den norske komite for CIGRE

Onsdag 09.04.2025 - kl 09.30 – 15.00

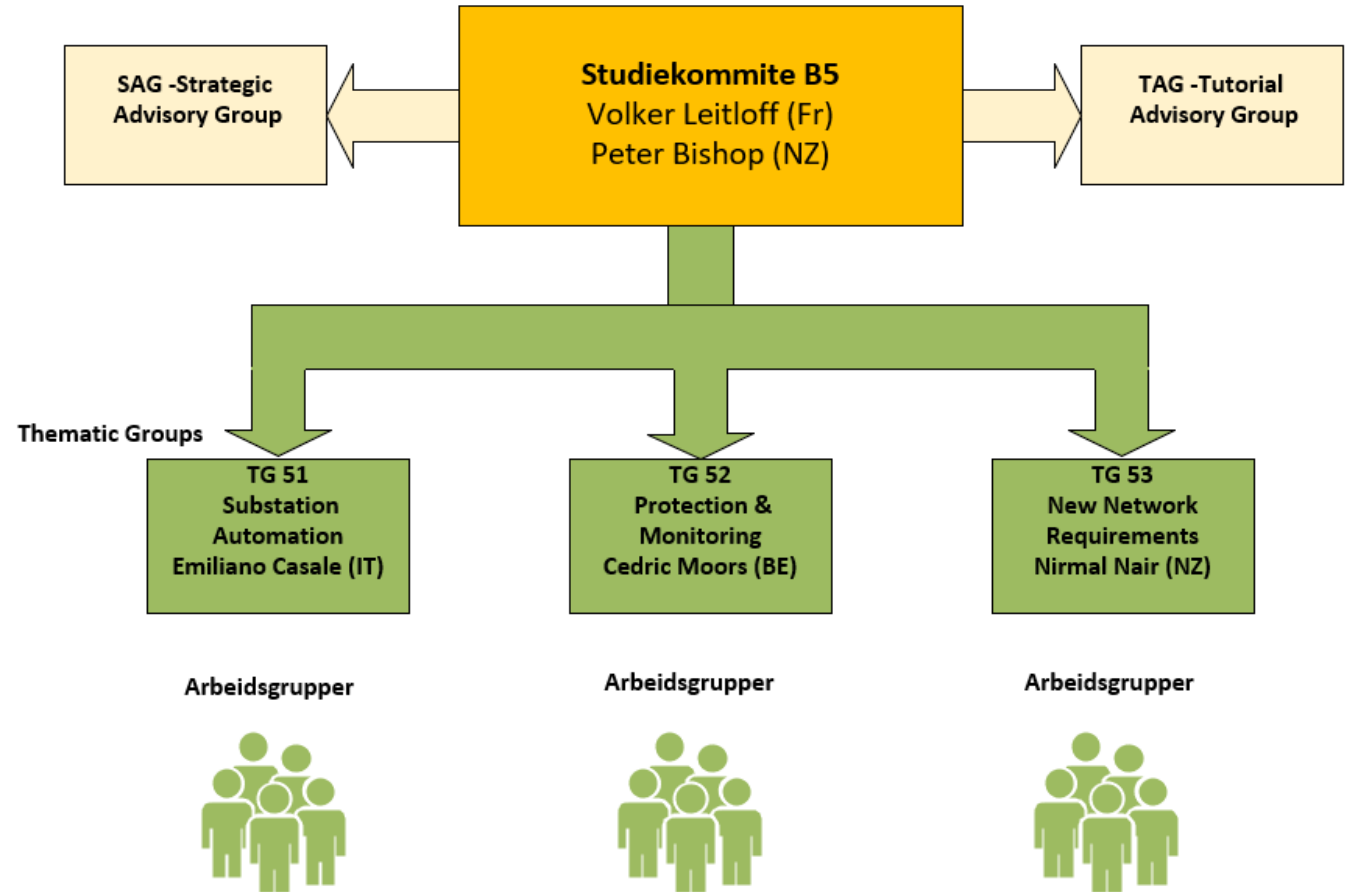
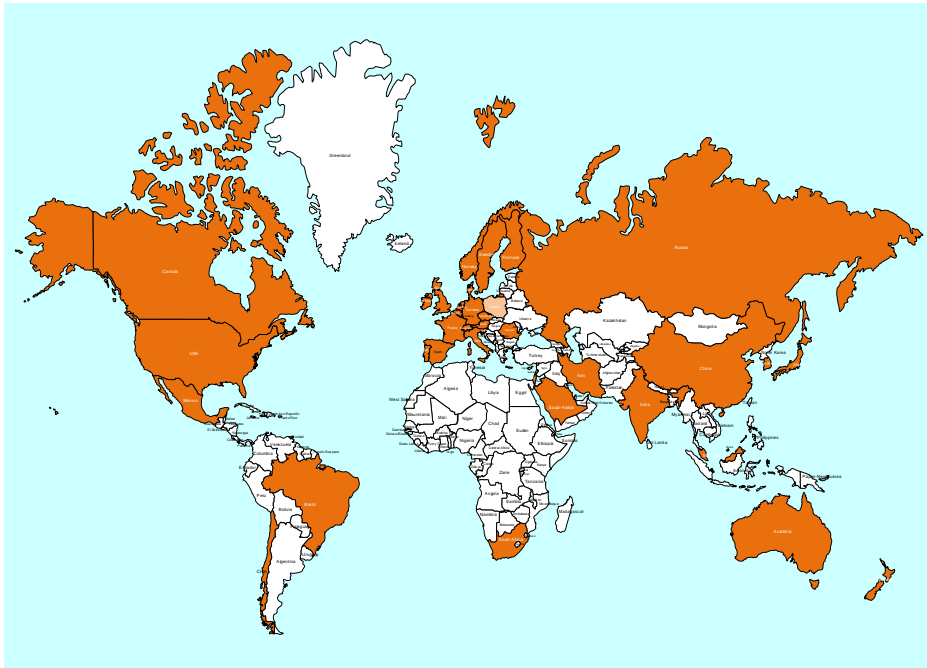
Rapport fra SC B5 – Protection and Automation

Christopher Gebs – Elvia
Tore Soltvedt - Statnett SF



Studiekomite B5 – Protection and Automation

CIGRE SC B5

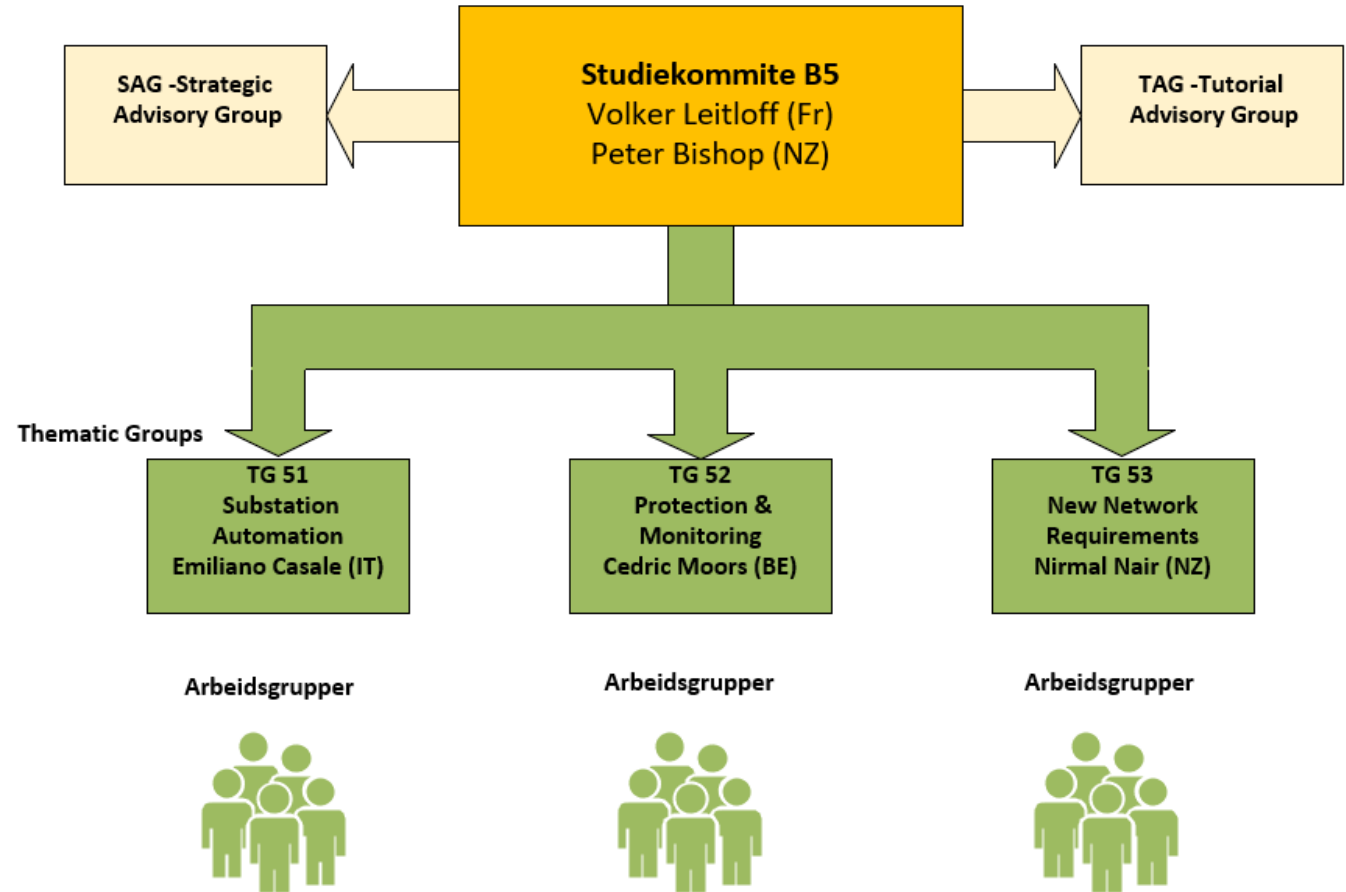
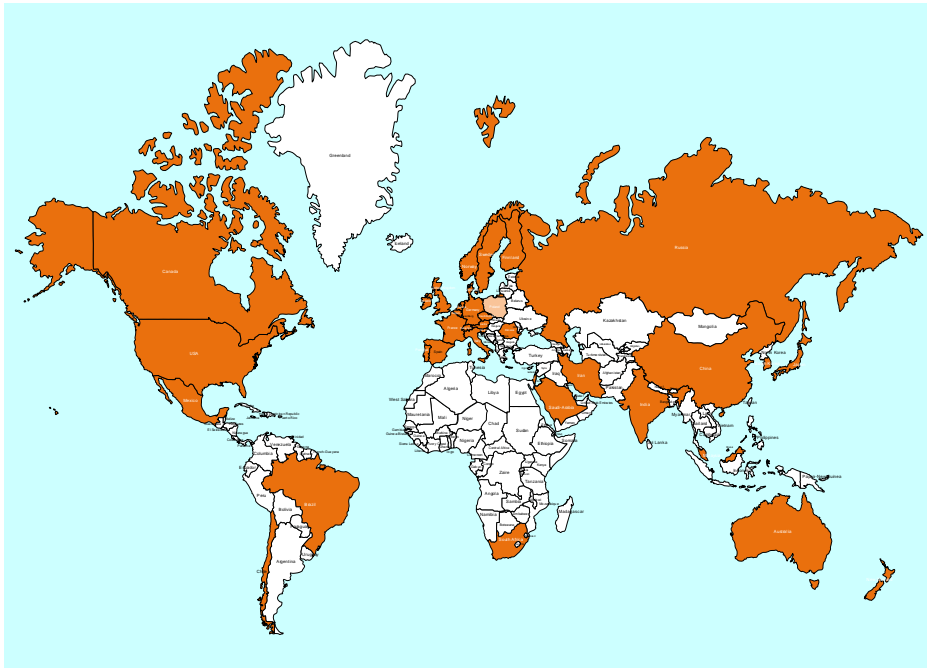


Norske regulære medlemmer av B5:

- Tore Soltvedt – Statnett (TG 51)
- Christopher Gebbs – Elvia (TG 52)

Studiekomite B5 – Protection and Automation

CIGRE SC B5



Norske regulære medlemmer av B5:

- Tore Soltvedt – Statnett (TG 51)
- Christopher Gebbs – Elvia (TG 52)

Regular members 34
Additional members 4
7 observers, 1 NGN, 1 WiE, 15 Advisor/Liaison

Studiekomite B5 og Paris Sesjonen – August 2024

PS1 – Practical experiences and new developments of process bus

ID: 10265

B5 PROTECTION AND AUTOMATION - Full Papers

Topics: B5 PS1 - Practical Experiences and new Developments of Process Bus

Keywords: Process bus implementation

Review by WG B5.69 of published Experience Feedback on Process Bus Implementation

Volker LEITLOFF¹, Alex APOSTOLOV², Thomas CHARTON³, Rannveig LØKEN⁴, Julien SAUNIER⁵, Dieter BINON⁶, Takaya SHONO⁷, René TROOST⁸, Sakis MELIOPOULOS⁹

¹RTE, France; ²OMICRON, United-states; ³National grid, Great Britain; ⁴Statnett, Norway; ⁵Hitachy Energy, France; ⁶ELIA, Belgique; ⁷Toshiba, Japan; ⁸Sedin, Netherlands; ⁹Georgia tech, United-states

ID: 10969

B5 PROTECTION AND AUTOMATION - Full Papers

Topics: B5 PS1 - Practical Experiences and new Developments of Process Bus

Keywords: LPIT, Optical Current Transformer (OCT), Digital Substation, Process Bus, IEC 61850

LPIT operational experiences and challenges in a Norwegian digital substation

Karl POLLESTAD¹, Thomas JUDENDORFER², Christopher GEBS³

¹Bane NOR Norway; ²Trench Germany; ³Elvia Norway

Studiekomite B5 og Paris Sesjonen – August 2024

PS2 -Acceptance, Commissioning, and Field Testing for Protection, Automation and Control Systems Keywords: Field Testing, MPLS-TP, Teleprotection, Line Differential, Inter-substation Communications

- Ingen Norske papers

PS3 - Integration of intelligence on substations (Joint PS with B3)

- Ingen Norske papers

B5 – Årsmøte August 2024

Stammespråk: PACS =

Protection Automation and Control Systems

Valgte "Preferential Subjects" for Osaka 2025:

PS1 – IEC 61850 based Interoperability of IEDs of different manufacturers and technologies integrated in one PACS

PS2 – PACS Life Cycle Performance and Longevity

PS3 – Sharing of best practices on revised principles enabled by modern protection IEDs

Valgte "Preferential Subjects" for Paris 2026:

PS1 - New requirements, developments and experience of network protection and control for non-conventional sources

PS2 - Knowledge management in the field of Protection, Automation, Control, Metering and Monitoring

B5 – Årsmøte August 2024

Stammespråk: PACS =

Protection Automation and Control Systems

Nye arbeidsgrupper i Paris 2024:

1. Digital Transformation of PACS: beyond the Application of IEC 61850
2. Implementation guide for fully digital IEC 61850 based PACS
3. Challenges and solutions for backup protections in modern power systems

CIGRE B5 – Aktive arbeidsgrupper per 9.april 2025

Arbeidsgruppe	Norsk medlem
B5.51 - Application of Remotely Accessed Information for SAS Maintenance and Operation	
B5.55 - Application of Travelling Wave Technology for Protection and Automation	
B5.57 - New challenges for frequency protection (will be finalized for Trondheim)	
B5.58 - Faster protection and network automation systems: implications and requirements	
B5.59 - Requirements for Near-Process Intelligent Electronic Devices	
B5/C4.61 - Impact of Low Inertia Network on Protection and Control	Salvatore D'Arco
B5.63 - Protection, Automation and Control System Asset Management	Inger Lise Rødseth
B5.65 - Enhancing Protection System Performance by Optimizing the Response of Inverter-Based Sources (brochure should be finalized for the end of 2025)	Jorun Marvik
B5.68 - Optimisation of the IEC 61850 PACS engineering process and tools	Joar Mikkelsen
B5.71 - Protection, Automation and Control Systems Communication Requirements for Inter-Substation and Wide Area Applications	
B5.72 - Modelling, Assessment, and Mitigation of Protection Performance Issues caused by power plants during Dynamic Grid Events	
B5.73 - Experiences and future trends related to functional integration	Tore Soltvedt

CIGRE B5 – Aktive arbeidsgrupper (forts.)

	Norsk medlem
B5.74 - Busbar Protection Considerations When Using IEC 61850 Process Bus	
B5.75 - Documentation and Version Handling Related to Protection, Automation and Control functions	
B5.76 - Architecture, Standards and Specification for metering system in a Digital Substation and protection, Automation and Control (PACS) Environment	Leif Egil Stene Dahl
B5.77 - Requirements for Information Technologies (IT) and Operational Technology (OT) managed of Protection, Automation and Control Systems (PACS)	
B5.78 - New requirements of network protection and control for renewable energy integration	
B5/C4.79 - Protection Roadmap for Low Inertia and Low Fault Current Networks	
B5.81 – Obsolescence Management for Protection, Automation and Control Systems	
B5.82 - Education, Qualification and Continuing Professional Development of Engineers in Protection, Automation and Control (brochure should be finalized in 2025)	
B5.83 - Protection for modern distribution networks	Kristine Valentinsen Espen Masvik
B5.84 - Recommendations and constraints for development and interfacing of virtual Intelligent Electronic Device implemented in Protection, Automation and Control Systems	Ruben Hodnebrug Tore Soltvedt
B5.85 - Protection, Control and Supervision principles of “Grid Stabilizing Generation”	
B5.86 - Protection Automation and Control System interfaced asset management and condition monitoring using innovative technologies	
C2/B5.46 - System Integrity Protection Schemes and the (N-1) criteria	Stein Ingebrigtsen

CIGRE B5 – Aktive arbeidsgrupper (forts.)

	Norsk medlem
B5.87 - Digital Transformation of Protection, Automation and Control Systems expanding the Application of IEC 61850	
B5.88 - Implementation Guide for fully digital IEC 61850-based Protection, Automation and Control Systems	

WG B5.89 Protection Redundancy and Backup for Modern Power Systems, **voted in Paris session (20 votes!) but ... convenor still sought. ToR available.**

Studiekomite B5 - aktuelle problemstillinger som vedrører Norge

- Fortsatt sterkt fokus på digital stasjon med økende antall operative anlegg. Ecodis har gitt et tettere samarbeid mellom TSO og DSOer.
- Fokus på fornybare energikilder med lave kortslutningsytelser skaper en del utfordringer for vern systemene. En av preferential subjects i Paris 2022 angikk dette og det er flere pågående WG på feltet, og det ble også startet en ny arbeidsgruppe høsten 2022. Problemstillingen er fortsatt aktuell.
- Norge er sterkt delaktig i B5.84 om Virtuelle og sentraliserte vern og kontrollanlegg.



Takk for oppmerksomheten!