



cigre

For power system expertise

B5 / D2 Liaison Meeting 2023

John Wright UK B5 Regular Member
GE Stafford - November 22nd, 2023

Agenda



09:00 - 10:00: Arrival and Welcome
Refreshments

10:00 - 10:10: Opening - Safety On GE Site /
Compliance - John Wright

10:10 - 10:20: Study Committee B5 Activity
Update, Including Cairns Symposium - John
Wright

10:20 - 10:30: Study Committee D2 Activity
Update, Including Cairns Symposium - Tom
Charton

10:30 - 10:45: Technical Presentation (D2) -
Application of Packet Switched Networks - James
Milsom

10:45 - 11:00: Technical Presentation (B5) -
Progress of Digital Substations - Chee-Pinp Teoh

11:00 - 11:15: Technical Presentation (D2) -
Applications of AI and ML - Steven Mbisike / Mark
Simmons

11:15 - 11:30: Technical Presentation (B5) -
Impact of Cyber Security of Digital substations -
Ryan Murphy / Prasad Balasubramani

11:30 - 12:00: Networking Refreshment Break

12:00 - 12:45: Open Discussion

12:45 - 13:00: Q&A / AOB

13:00 - 14:00: Networking Lunch

14:00: Session Close

Safety Moment



How to Drive Safely in Snow and Ice

- Take it Slow - Stopping Distances can be 10 times longer when is icy
- Before you set off
 - Allow extra time for winter journeys.
 - Plan routes around major roads, which are more likely to be cleared and gritted.
 - Try to get up at least 10 minutes early to give you time to de-ice the car.
 - Wear comfortable, dry shoes for driving so your feet don't slip on the pedals.
 - Check fuel levels – have at least a quarter of a tank in case of unexpected delays.
 - Clear all windows using a scraper and de-icer and wait until the windscreens fully demisted.
- Look After Batteries and Electrics
- Top Up Antifreeze
- Winter Car Survival Kit
 - Warm clothes, waterproofs and high-vis jackets
 - Sturdy footwear
 - Hot drinks and snacks
 - Shovel
 - Jump leads
 - Warning triangles

Reference - <https://www.theaa.com/driving-advice/seasonal/winter>

Cigre B5 Study Committee



Technological field of activity

Power system protection, substation control and automation, remote control systems and equipment, metering systems and equipment.

Scope (Not limited to:)

Asset management life-cycle phases – design to decommissioning

Performance, specification, testing and the application of testing techniques

Theory, principles and concepts, functionality, technological development, design

Application guidance, construction, erection, installation.

Cigre B5 Structure



SC B5 Chair: Rannveig Løken (Norway)

SC B5 Secretary: Richard Adams (UK)

B5 UK Regular Member & B5 UK Technical Panel Chair : John Wright (UK)

B5 UK Technical Panel : (Cross Section of The Industry, NGN, Women's Network - Support RM / Events / Technical Papers / WG Members / Strategy & Direction)

Working Group Regular Member, Corresponding Members, Mirror Groups

- **20+ Active Working Groups**
- **Over 50+ individuals contributing – Direct or Via Mirror Groups**
- **2 to 3 New WG every two years**

New Working Groups – Started 2022/2023



Number	Title	UK Member
B5.81	Obsolescence Management for Protection, Automation and Control Systems	CONV: John Wright RM: Ryan Murphy CM: Angela PP , Andrew Mills / Philip Carss / Jesudoss Savarimuthu
B5.82	Education, Qualification and Continuing Professional Development of Engineers in Protection, Automation and Control	CM: Beatrice Chong CM: David Meadows
B5.83	Protection for modern distribution networks	RM: Himanshu Bhatia CM: Deepa Shaji Kumar

New Working Groups – Proposed for 2024

- **New WG1** – PACS interfaced asset management and condition monitoring using innovative technologies.
- **New WG2** – Recommendations and constraints for development and interfacing of virtual IED implemented in PACS.
- **New WG3** – Protection, Control and Monitoring principles of synchronous condenser and generation with fly wheel
- The invitation for nominating new members will be circulated in due course once the Terms of References for the new WGs are finalised by the study committee.

Technical Brochures - <https://e-cigre.org/>



Reference	Working Group	Title
884	JWG B5/D2.67	Time in Communication Networks, Protection and Control Applications – Time Sources and Distribution Methods
891	WG B5.60	Protection, Automation and Control Architectures with Functionality Independent of Hardware
896	WG B5.48	Protection for developing network with limited fault current capability of generation

Feedback - UK Topics of Interest

- Centralised & Virtualised Protection
- Operation of distance protection with the increase on REN continues to dominate the transmission sector - The traditional algorithms are not responding correctly in certain situations. Vendors are having to modify them. Additional challenge is how to deal with the installed base of distance protection as we move towards net zero.
- Impact of Cyber Security on PAC`s - evolution of standards required.
- Continuing evolvement of IEC standards - Interoperability and IEC61850 development continue to improve flexibility. Vendor agnostic tools, top-down engineering, interchangeability (trade-off between standardisation and flexibility)
- Process bus roll out – when and at what voltage will it become business as usual?

Cairns - 4th to 7th September 2023 the B5 Symposium was combined with the South East Asia Protection Automation Conference (SEAPAC).



- Application of IEC61850 in protection and automation systems
- Metering systems
- Special protection systems & wide area protection
- Training engineers and technicians for technology transition
- Time in protection applications - Time sources & distribution applications
- Leveraging PMU data for better system protection
- Future technologies for Inter substation protection communication.
- Standardizing and updating protection with the need consider a greater number of hardware/firmware changes.
- Modelling protection systems
- Safety by design for Protection
- Protection challenges highlighted by power system events.

Future Events



- **IET DPSP Conference March 22**
- **Paris Session August 24**
 - PS1 - Practical experiences and new developments of process bus
 - PS2 – Acceptance, commissioning and field testing for protection automation and control systems
- **Cigre UK Monthly Webinar Series – Contribution Welcome**
 - <https://cigre.org.uk/events/>
- **For further details on B5 UK, TP, WG, etc contact: john.w.wright@ge.com**



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