Report to the CIGRE Australian Technical Council

Study Committee SC D2 and Australian Panel AU D2 Activities

D2
Information systems and telecommunication
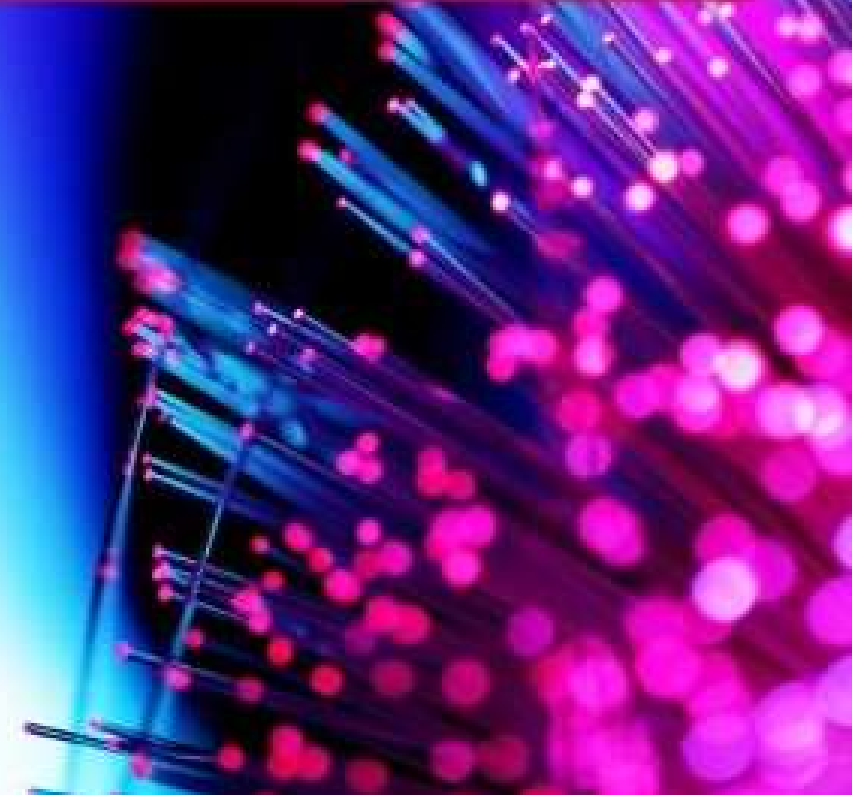
Louise Watts

Convenor CIGRE AU D2

AU D2 Report 2023

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cigre
For power system expertise

2023 Global Activities and Trends

Cairns International Symposium 2023

SC D2 Regular Annual Meeting

19 attendees locally, 12 remote

Updates on strategy, working groups, country reports and general business

Paper Presentations

The 22 papers presented were grouped into three distinct topics:
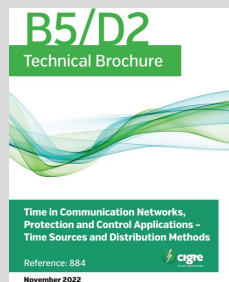
- **Digital transformation and AI in asset management**
- **Network infrastructure and telecommunications**
- **Cybersecurity**

2023 Global Activities and Trends

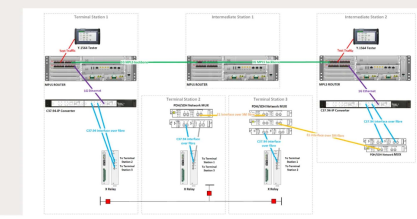Time in Communications Networks, Protection and Control Applications

Presented by:
Antti Viro (TB. 884)

Enabling Teleprotection over Packet Switched Networks

Presented by:
Brenton Aardenburg, James Cole & Santosh Koirala

2023 Publications & Proposed Working Groups

- Technical brochure

WG number	Name of the Publication	Publication details
WG D2.45	Impact of governance regulations and constraints on EPU sensitive data distribution and location of data storage	H. KLIMA (AT), Convenor D. Holstein (US), Secretary G. Dondossola (IT)

- Proposed Working Groups
  - *Cybersecurity of Energy Operators Supply Chain*
  - *An assessment of EPU digital certificate management schemes*
  - *Monitoring, Maintenance and Control of Packet Network & Services*

Active Working Groups

WG number	Title	Convenor	End Date
WG D2.44	Usage of public or private wireless communications infrastructures for monitoring and maintenance of grid assets and facilities	A. Pinhel (BR)	2026 S2
JWG D2/C6.47	Advanced consumer side energy resource management	A.A. Nebera (RU)	TBA
JWG D2/C2.48	Enhanced information and data exchange to enable future transmission and distribution interoperability	G. Taylor (GB)	2023 S2
JWG B2/D2.72	Condition monitoring and remote sensing of overhead lines	Y. Chen (CN) A. Kulkarni (GB)	2023 S2
WG D2.49	Augmented reality to support EPUs operations and maintenance	S.H. Khalaj (IR)	TBA
WG D2.51	Implementation of Security Operations Centers (SOC) in Electric Power Industry as part of situational awareness	A.B. Sengupta (IN)	2024 S2
WG D2.52	AI application and technology in power industry	Kun Lun Gao (CN)	2023 S2
WG D2.53	Technology and applications of internet of things in power systems	Zhengyun Sun (CN)	2023 S2
WG D2.54	Regulatory approaches to enhance EPU's cybersecurity frameworks	E. Ragazzi (IT) U. Finardi (IT)	2024 S2
WG D2.55	Application of 5G technology to smart grids	Kun Lun Gao (CN)	2024 S1
WG D2.56	Interdependence and security of cyber-physical power system	Qunglai Guo (CN)	2024 S2
WG A2/D2.65	Transformer digital twin – concept and future perspectives	P. Picher (CA)	2025 S2
WG B3/D2.62	Life-long supervision and management of substations by use of sensors, mobile devices, information and communications technologies	N. Fantana (DE)	2025 S2
WG D2.57	CIM (Common Information Model) Methodology	R. Bogomolov (RU)	2025 S1

2023 Local Activities and Trends

AU/NZ D2 Panel
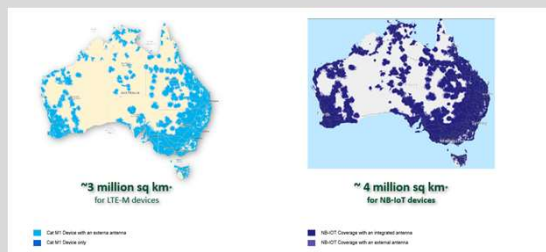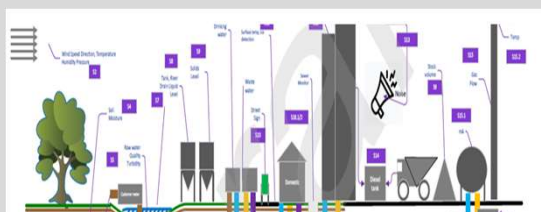
27 Regular Members, 5 Observers

Aiming for increase in members experienced in Information Systems and Cybersecurity

2023 Local Activities and Trends

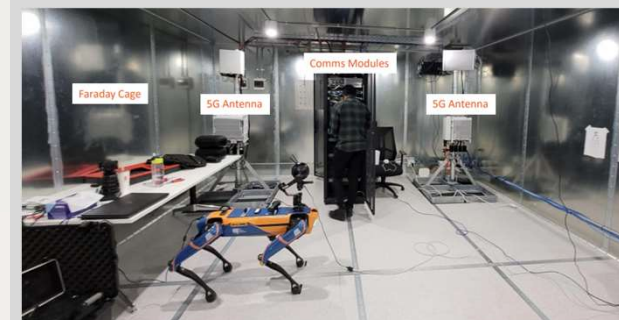ROUNDTABLE – 2nd March 2023

5G Technologies and Applications

~3 million sq km·
for LTE-M devices

~ 4 million sq km·
for NB-IoT devices

Presented by:
John Carter, David Sexton, Mark Atkinson (Telstra)

IOT Development at Origin Energy

Presented by:
Ahmad Taufiq (Origin Energy)

Testing Applications of 5G Technology

Faraday Cage   Comms Modules   5G Antenna   5G Antenna

Presented by:
Muen Chen (SA Power Networks)

2023 Local Activities and Trends

AU D2 Panel Meeting September 2023 Topics

Data networks resiliency and growth
  i.   IP/MPLS & MPLS-TP migrations from TDM
  ii. Synchronisation and timing
  iii. Renewables and growth of DER - big growth proposed in Queensland.
  iv. Asset management and monitoring systems
  v.   Asset management with drones

Supply chain issues have mostly resolved since Covid-19.

Skills shortages in telecommunications networking and cyber security, with aging workforces becoming an issue.

Wireless networks
  i.   Telstra 3G Decommissioning is ongoing (mid 2024 target)
  ii. IOT applications and proof of concepts

Western Power Asset Management with Drones

2023 Local Activities and Trends

Endeavour Energy Microwave Redeployment

AU D2 Panel Meeting September 2023 Topics

Cyber Security with much increased focus on Operational Technology

   i. AESCSF benchmarking
   ii. Security Operation Centre (SOC) development and improvements
   iii. Encryption
   iv. Securing legacy systems
   v. Vulnerability management in OT environments
   vi. Cyber security uplift in staff numbers

Native birds roosting in towers.

Ongoing major asset replacement

   i. DC System replacements
   ii. Maintaining ongoing major asset replacements in addition to other areas of growth is becoming a problem for some.
   iii. Data networks and now more focus on transition of protection signaling.

Looking forward to 2024

Paris Session
August 2024
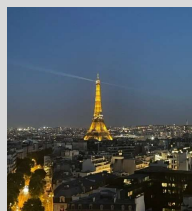
Roundtable
March 2024

AU/NZ Panel Meeting
July 2024