Fellesmøte for Den norske komite for CIGRE

Onsdag 09.04.2025 - kl 10.00 – 10.10

Rapport fra SC D2
Information systems, telecommunications and cybersecurity

Marit Owren Valmot

Scope of SC D2

- Mission
  - SC D2 aims to facilitate and promote **the progress of engineering on information and telecommunikcations systems for electric power systems**, as well as the **international exchange of information and knowledge in those fields**. To add value to this information and knowledge by means of summarizing state-of-the-art practices and developing recommendations and to make managers, decision-makers and regulators (between other stakeholders) in the EPI sector aware of this work.
- Scope of SC D2
  - The activities cover the **specification, design, engineering, performance, operation, maintenance, economic and management aspects of the Information and Telecommunications systems**:
    - ICT applied to digital networks from UHV to distribution (smart meter, IoT, big data, EMS, etc)
    - Communication solutions for information exchange (file format, frequency, etc.) between network operators, market players, off-grid premises
    - Cyber security issues from field equipment to corporate IT (Governance constraints, system design, implementation, testing, operation and maintenance)
    - Technologies and architecture to ensure business continuity and disaster recovery
    - IT systems to support the decision-making process in Asset Management

Organisering av SC D2

- Leder
  - Victor Tan, Australia
- Sekretær
  - Marcelo Costa de Araujo, Brasil
- Norsk studeikomitèrepresentant
  - Marit Owren Valmot tok over for Lars Konrad Silset i august 2024
- Faste medlemmer fra 32 nasjoner
- Observatører fra 10 nasjoner

Rapport om status for SC D2

- 33 papers er godkjent til Symposium i Trondheim, 11 på hvert av temaene:
  - Digital Transformation & Emerging Technologies
  - Advanced Communication & Networking in Power Systems
  - Cybersecurity & Data Protection in Power Grids

- Relativt lav aktivitet i Norge, men norske medlemmer har deltatt i
  - Sentral administrasjon av studiekomitèen
  - Paper reviews
  - Arbeidsgruppene
    - WG D2.51 Implementation of Security Operations Center (SOC) in Electric Power Industry as Pars of Situational Awareness System
    - WG B5.84 Recommendations and constraints for development and interfacing of virtual Intelligent Electronic Device implemented in Protection, Automation and Control System

- Ønsker å samle norske medlemmer i CIGRE D2 i en felles teamskanal for utveksling av informasjon om arbeidsgrupper mm
  - Ta gjerne kontakt om noen her er interessert i å bli med.

Videre planer

- Forbereder Symposium i Trondheim med
  - Årlig studiekomitèmøte
  - Workshop om "Cyber security Perspectives on Regulation, Standards and Technical Developments"
  - Flere arbeidsgruppemøter
  - Presentasjon av technical papers
- Rekruttere flere norske medlemmer, og samle alle norske medlemmer i en felles teamskanal

Arbeidets nytteverdi for CIGRE

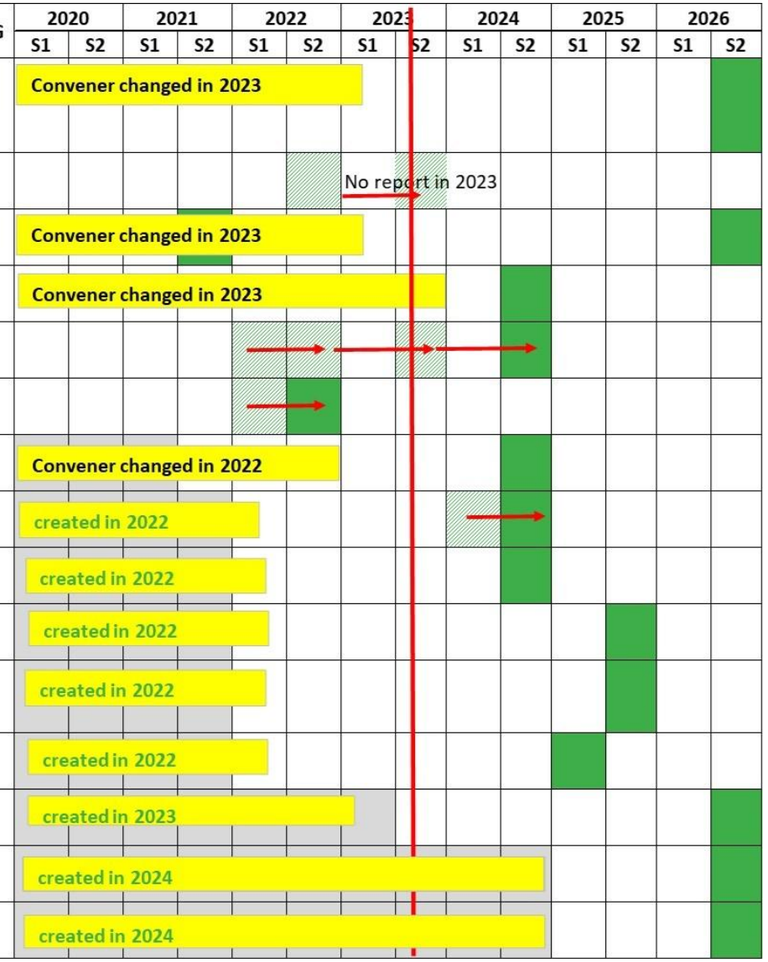
- Teknologitrender som peker seg ut som særlig interessante fremover:
  - IT-sikkerhet, og bruk av KI i cyberforsvar
  - Informasjonsmodeller, og teknologisk standardisering for å muliggjøre automatisering
  - Utforsking av mulighetsrom og trusselbilde i tilknyning til Kunstig Intelligens

Hva er spesielt viktig for Norge?

- Studiekomitè D2 dekker "Information systems, telecommunications and cybersecurity". Innenfor dette fagfeltet er følgende fokusområder i Norge:
  - IT-sikkerhet
  - Automatisering og datadrevne beslutninger, som begge krever kontroll på:
    - Informasjonsarkitektur
    - Integrasjonsmønstre
  - Generelle trender og muligheter for bransjen innen ny informasjonsteknologi

Eksisterende arbeidsgrupper

WG	Title	Convenor	Supervising AG
WG D2.44	Usage of public or private wireless communication infrastructures for monitoring and maintenance of grid assets and facilities	A. PINHEL (BR)	AGD2.03
JWG B2/D2.72	Condition Monitoring and Remote Sensing of Overhead Lines	Y. CHEN (CN) A. KULKARNI (GB)	AGD2.01
WG D2.49	Augmented reality to support EPUs operation and maintenance	C. VILLASANTI (PY)	AGD2.01
WG D2.51	Implementation of Security Operations Centers (SOC) in Electric Power Industry as Part of Situational Awareness System	Br. LARGE (AU)	AGD2.02
WG D2.52	AI Application and Technology on Power Industry	KUN LUN GAO (CN)	AGD2.01
WG D2.53	Technology and Applications of Internet of Things in Power Systems	ZHENGYUN SUN (CN)	AGD2.01
WG D2.54	Regulatory approaches to enhance EPU's cybersecurity frameworks	E. RAGAZZI (IT) U. FINARDI (IT)	AGD2.02
WG D2.55	Application of 5G Technology to Smart Grids	KUN LUN GAO (CN)	AGD2.03
WG D2.56	Interdependence and Security of Cyber-Physical Power System	QINGLAI GUO (CN)	AGD2.01
WG A2/D2.65	Transformer Digital Twin – concept and future perspectives	P. PICHER (CA)	AGD2.01
WG B3/D2.62	Life-long Supervision and Management of Substations by use of Sensors, Mobile Devices, Information and Communication Technologies	N. FANTANA (DE)	AGD2.01
WG D2.57	CIM (Common Information Model) Methodology	R. BOGOMOLOV (RU)	AGD2.01
WG D2.58	Monitoring, Maintenance and Control of Packet Networks & Services – From Situational Awareness to Network Control	B. SHEZI (ZA)	AGD2.03
WG D2.59	Intelligent Computing for Power Industry	KUN LUN GAO (CN)	AGD2.01
WG D2.61	High Voltage Power Line Carrier Communications Current State and Future Application	Anton MERKULOV (KZ)	AGD2.03



Relevante og kommende arbeidsgrupper

- Norsk deltakelse i:
  - WG D2.51 Implementation of Security Operations Center (SOC) in Electric Power Industry as Pars of Situational Awareness System
    - Hans Christian Prytz
  - WG B5.84 Recommendations and constraints for development and interfacing of virtual Intelligent Electronic Device implemented in Protection, Automation and Control System
    - Håvard Nygaard Espeland deltok en periode i oppstarten
- Flere nye arbeidsgrupper er i oppstart:
  - WG A3/D2.52 Application of Digital Twin in Switchgear
  - WG D2.60 Consumer-side Digital Models and Twins Application
  - WG D2.61 High Voltage Power Line Carrier Communications Current State and Future Application
  - WG D2.62 Efficient spectrum allocation and utilisation for electric power industry private communication networks
  - WG D2.63 Inter-Control Center Communications Protocol (ICCP) Security and Resilience for Grid Reliability
  - WG D2.64 Application of AI in Cybersecurity Defence of Power Systems