IoT standardiseringsarbeid i ISO/IEC

Internet of Things, 4. april 2019

Christer Varan
Fagsjef ekom, alarmsystemer, IoT

NEK

- EI og ekom
- 12 «Eiere»
- 12 ansatte
- 110 komiteer
- 600 eksperter

Standarder – vanlig bruksområde

- Henvisning i offentlig regulering
- Del av kontrakt B2B
- Referansenivå for produkter, metoder og tjenester
- Referansenivå ift. hva som er internasjonalt anerkjent
- Underlag for konformitetstesting

Myndighetssamarbeid

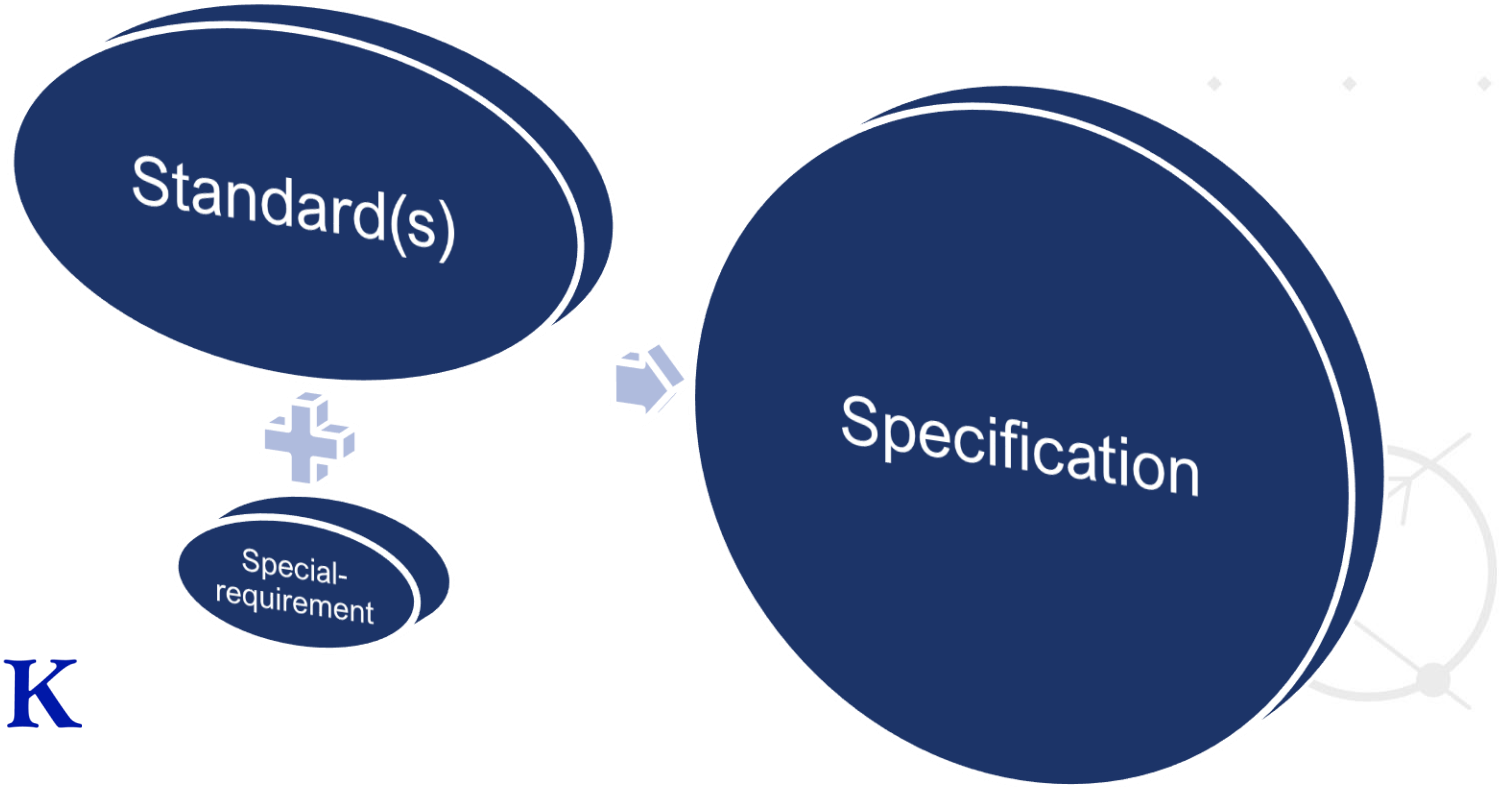
- DSB, NVE og NKOM støtter seg på NEKs nettverk og publikasjoner
- Følger samme trend som i øvrige europeiske land – «reference to standard»

Vekst

Standarder: Vekstpakker for nasjonal verdiskaping

- Produkter
- Konstruksjon
- Tjenester
- Systemer

Samfunnseffektivitet



Våre fagområder

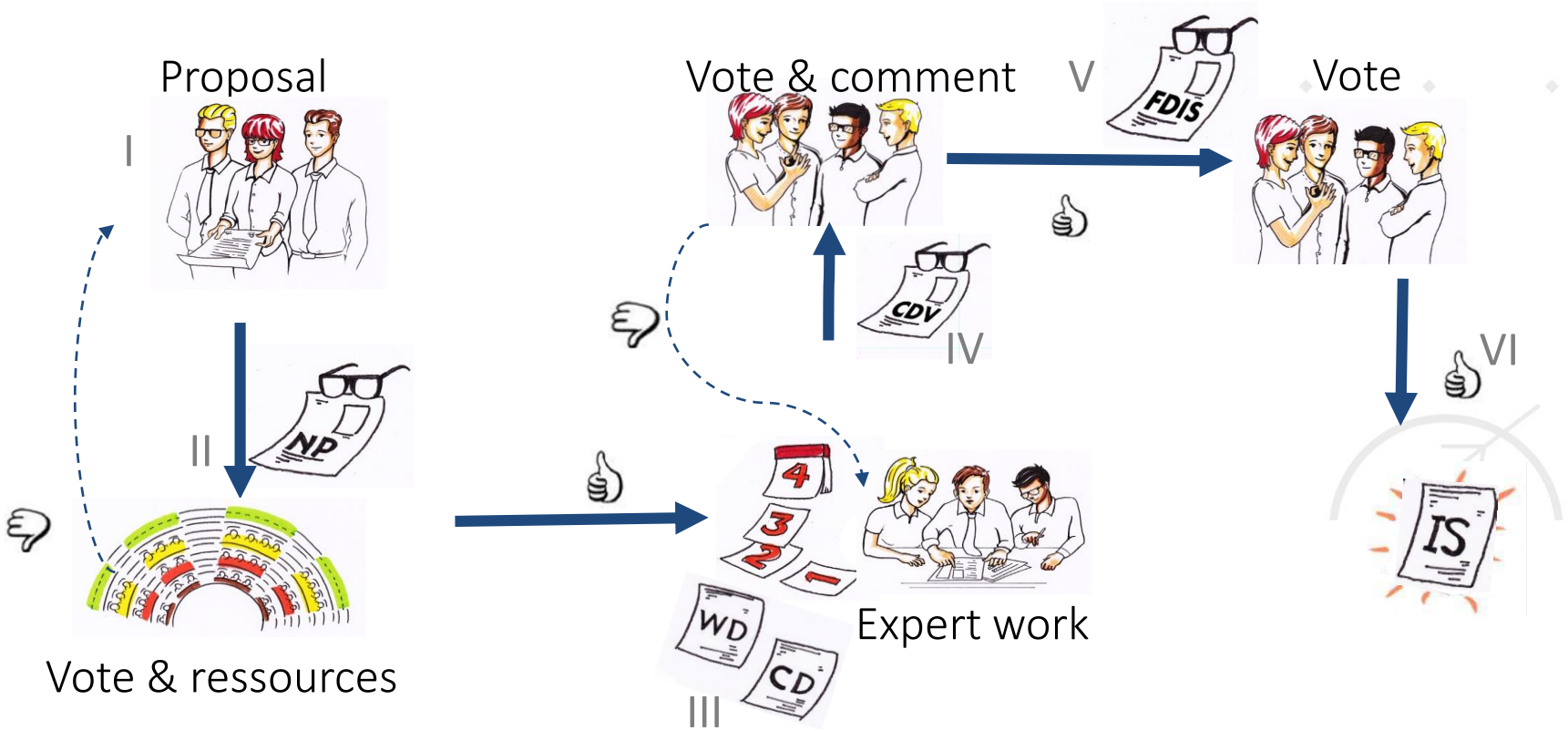
- Alarmsystemer
- Ekom
- Eldrevet transport
- Elektrisk utstyr
- Elproduksjon
- EMC
- Ex-områder
- Industri og automatisering
- Lavspenningsinstallasjoner
- Overføring og distribusjon
- Maritime elinstallasjoner
- Velferdsteknologi

Global standardisering

NEK

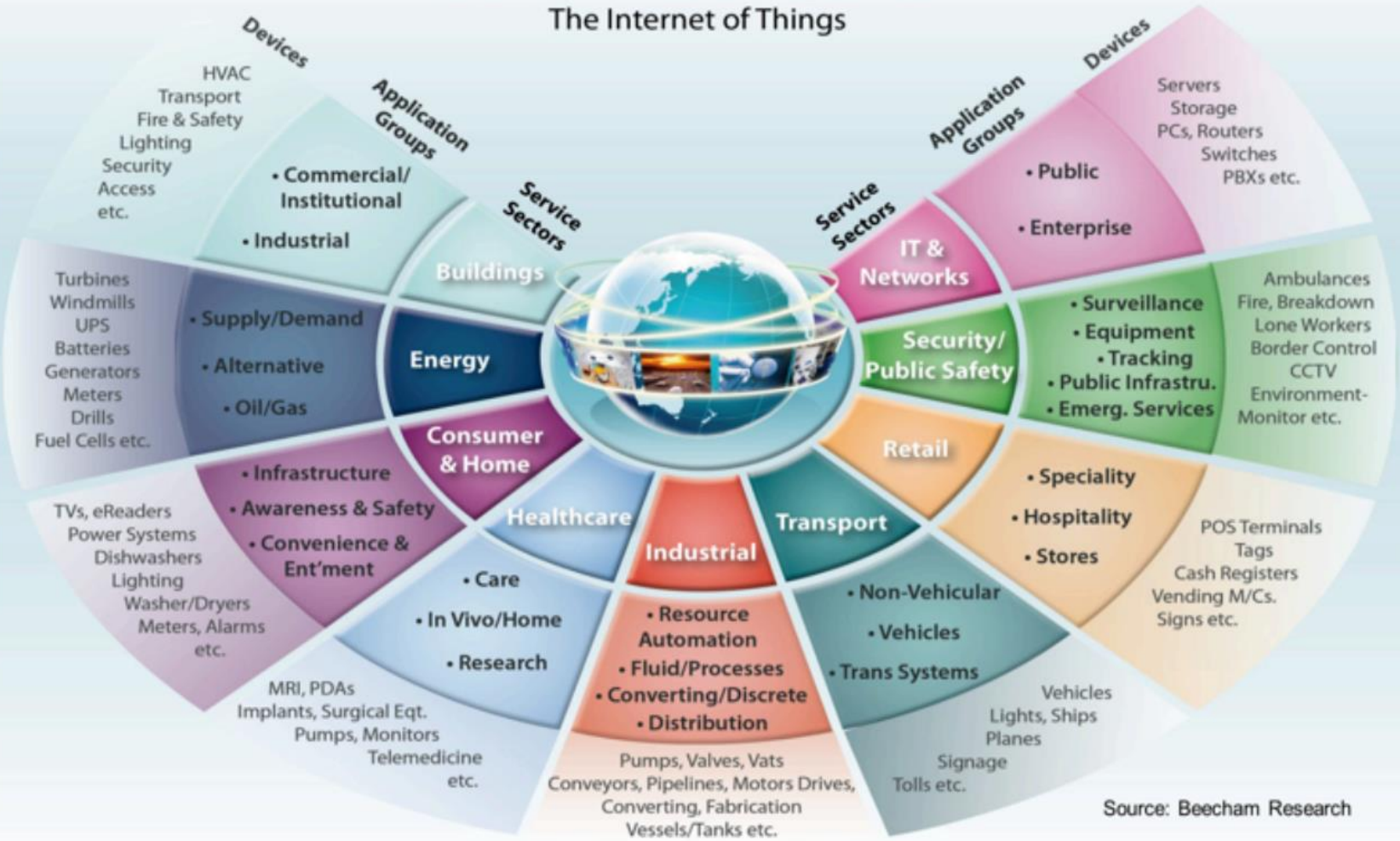
«De tre kolonner»

Standardiseringsprosessen i IEC



M2M World of Connected Services

The Internet of Things



Source: Beecham Research

Standardisering innen IoT

Source: AIOTI WG3 (IoT Standardisation) – Release 1

ISO/IEC JTC1

International Organization for Standardization

Joint Technical Committee

International Electrotechnical Commission

ISO/IEC komite for standardisering av IoT

Technical Areas	JTC1 Subcommittees and Working Groups
Application Technologies	SC 36 - Learning Technology
Cultural and Linguistic Adaptability and User Interfaces	SC 02 - Coded Character Sets SC 22/WG 20 – Internationalization SC 35 - User Interfaces
Data Capture land Identification Systems	SC 17 - Cards and Personal Identification SC 31 - Automatic Identification and Data Capture Techniques
Data Management Services	SC 32 - Data Management and Interchange
Document Description Languages	SC 34 - Document Description and Processing Languages
Information Interchange Media	SC 11 - Flexible Magnetic Media for Digital Data Interchange SC 23 - Optical Disk Cartridges for Information Interchange
Multimedia and Representation	SC 24 - Computer Graphics and Image Processing SC 29 - Coding of Audio, Picture, and Multimedia and Hypermedia Information
Networking and Middleware	SC 06 - Telecommunications and Information Exchange Between Systems SC 25 - Interconnection of Information Technology Equipment SC 38 - Cloud Computing and Distributed Platforms
Office Equipment	SC 28 - Office Equipment
Green IT	SC 39 – Sustainability for an by IT
Programming Languages and Software Interfaces	SC 22 - Programming Languages, their Environments and Systems Software Interfaces
Security	SC 27 - IT Security Techniques SC 37 - Biometrics
Software, Processes and Systems	SC 07 - Software and System Engineering SC40 – IT Governance and IT Management
Internet of Things	SC41 – Internet of Things and related technologies
Artificial Intelligence & Big Data	SC42 – Artificial Intelligence
Smart Cities	WG11 - Smart City
3D Scanning and Printing	WG12 – 3D Printing and Scanning

ISO/IEC JTC 1/SC 41 - historie

- Opprettet i november 2016
- Sammenslåing av prosjektene
  - JTC 1/WG 7 (Sensor Networks, opprettet i 2010), og
  - JTC 1/WG10 (IoT, opprettet i 2014)
- Det første Plenary Meeting ble avholdt i juni 2016 i Seoul, Korea

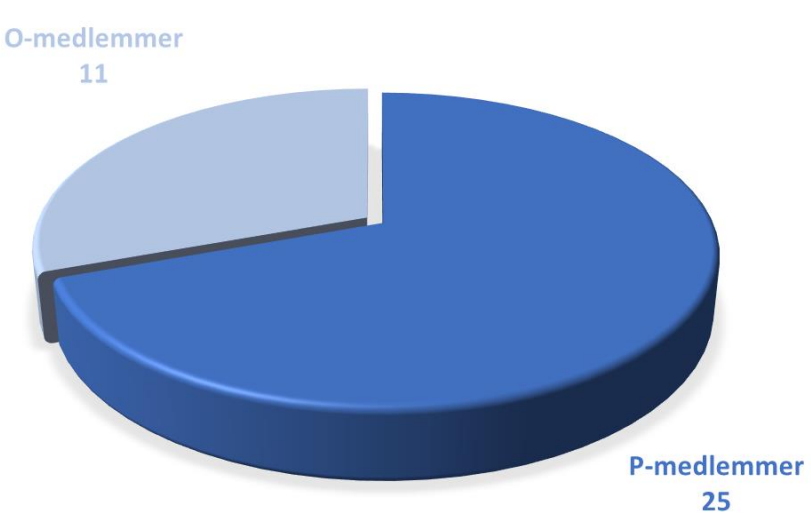
ISO/IEC JTC 1/SC 41 - scope

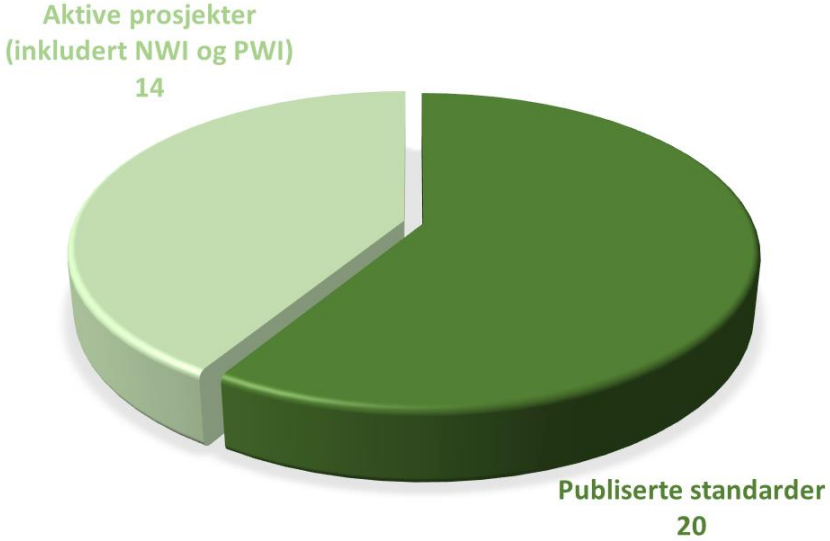
Standardization in the area of Internet of Things and related technologies.

1. Serve as the focus and proponent for JTC 1's standardization programme on the Internet of Things and related technologies, including Sensor Networks and Wearables technologies.
2. Provide guidance to JTC 1, IEC, ISO and other entities developing Internet of Things related applications.

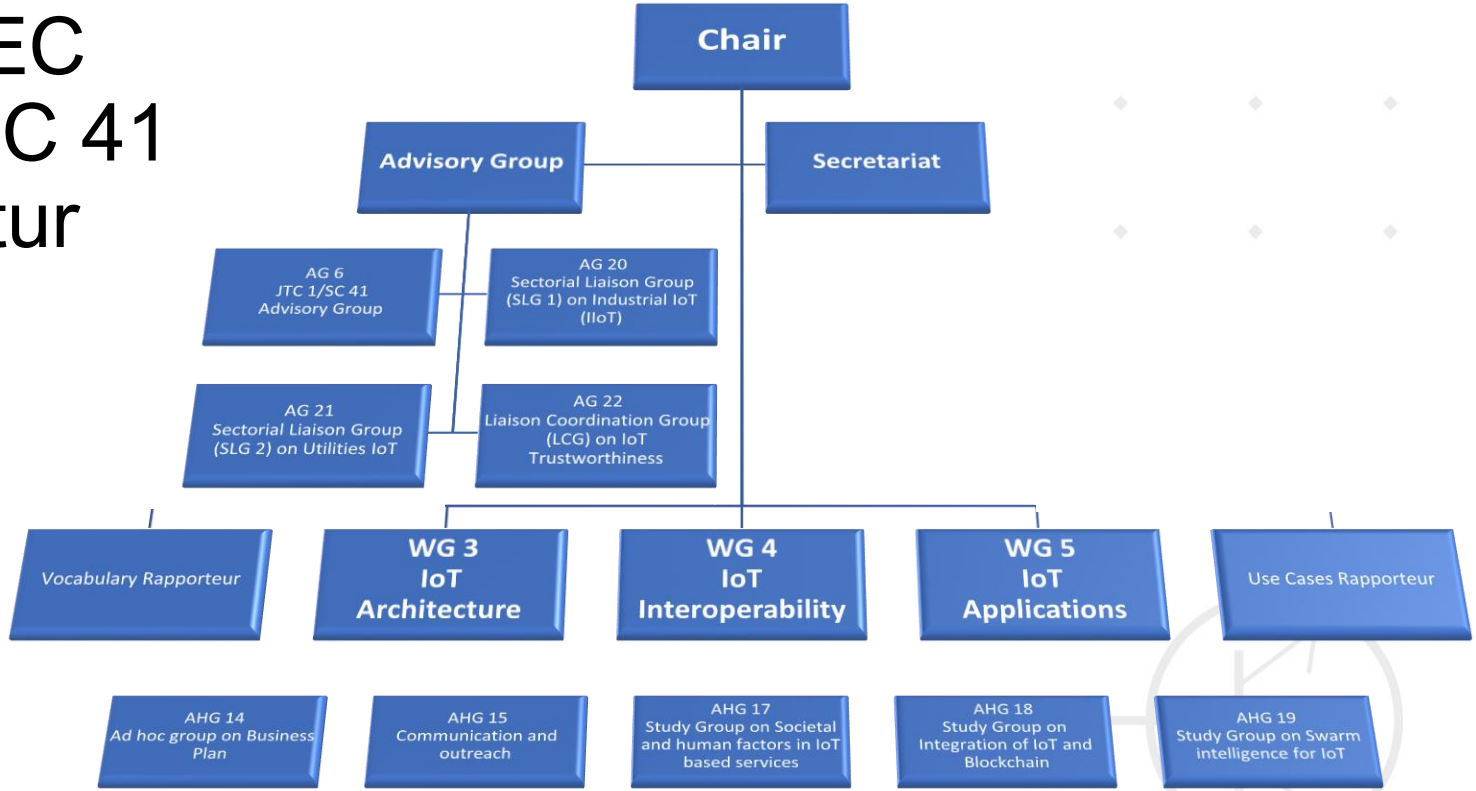
Status og Aktivitet

284 registrerte eksperter





ISO/IEC JTC 1/SC 41 struktur

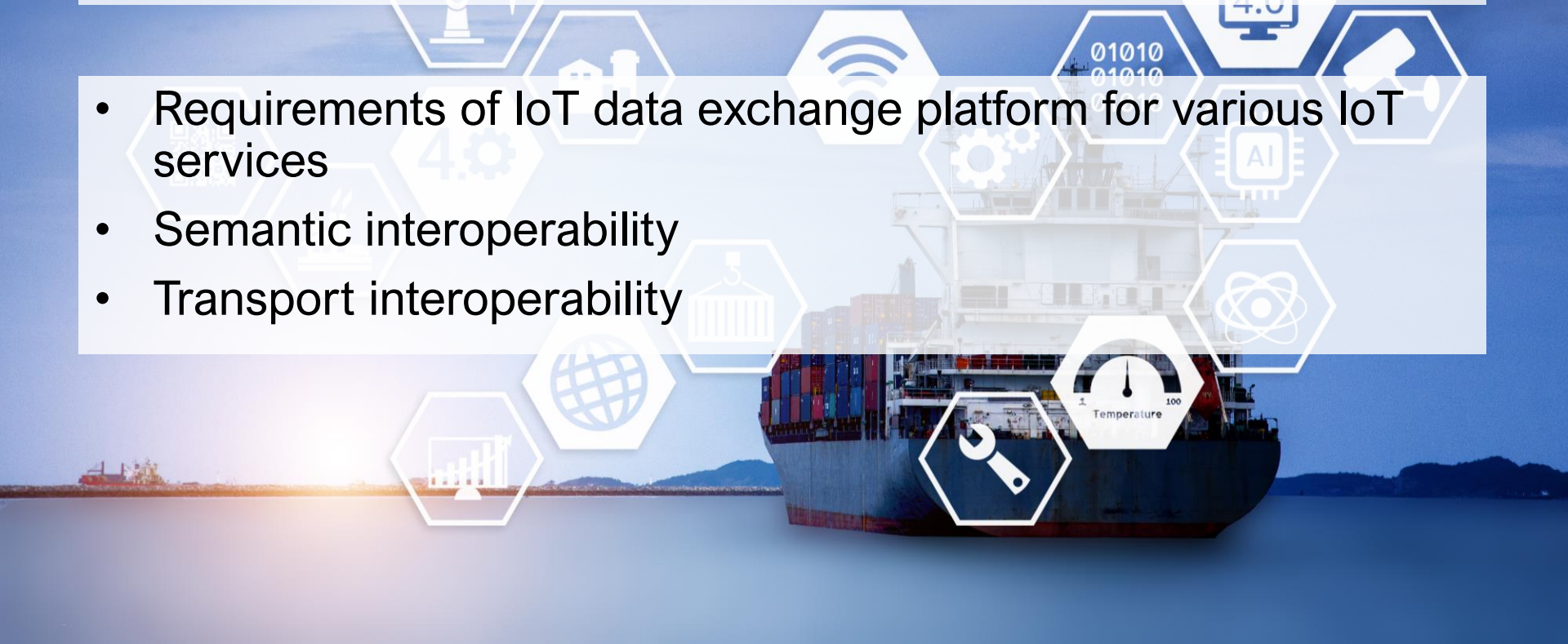


Work Group 3 - IoT Architecture

- Trustworthiness framework
- Methodology for implementing and maintaining trustworthiness of IoT systems and services
- Real-time IoT framework
- TR on Edge Computing
- Arbeid med versjon 2 av ISO/IEC 30141 - Internet of Things (IoT) - Reference Architecture (RA) er påbegynt!

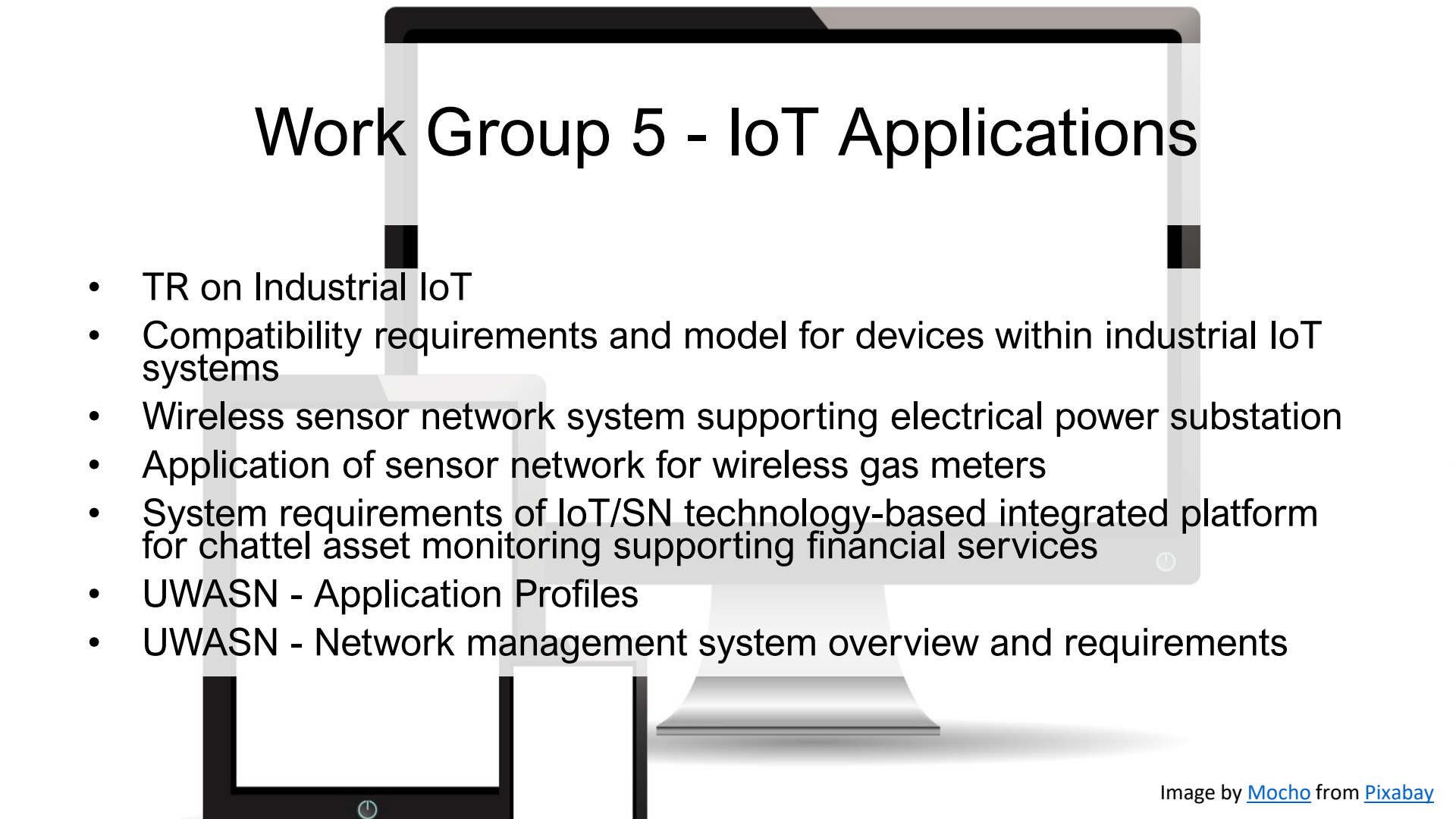
Work Group 4 - IoT Interoperability

- Requirements of IoT data exchange platform for various IoT services
- Semantic interoperability
- Transport interoperability



Work Group 5 - IoT Applications

- TR on Industrial IoT
- Compatibility requirements and model for devices within industrial IoT systems
- Wireless sensor network system supporting electrical power substation
- Application of sensor network for wireless gas meters
- System requirements of IoT/SN technology-based integrated platform for chattel asset monitoring supporting financial services
- UWASN - Application Profiles
- UWASN - Network management system overview and requirements



Tilgjengelige standarder

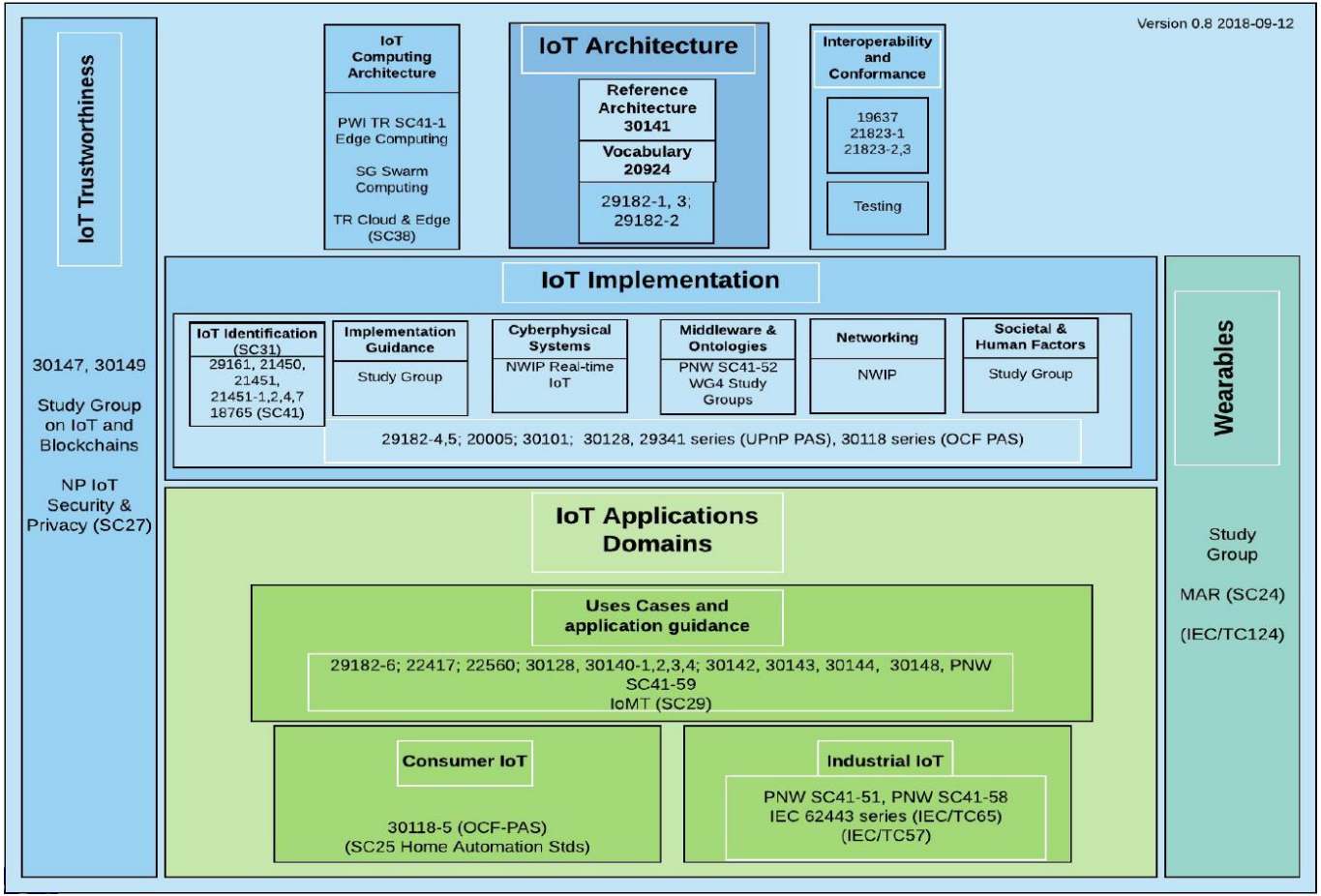
- ISO/IEC 30141 - Internet of Things (IoT) - Reference architecture
- ISO/IEC 20924 - Internet of Things (IoT) – Vocabulary
- ISO/IEC 21823-1 - Internet of Things (IoT) - Interoperability for IoT systems - Part 1: Framework
- ISO/IEC TR 22417 - Internet of things (IoT) - IoT use cases
- Standarder for Sensor networks
- Standarder for Underwater Acoustic Sensor Network (UWASN)

Koordineringsaktiviteter

- IEC Liaisons
  - TC 1, TC 8/SC 8B, TC 56, TC 65, TC 91, TC 100, TC 100/TA 16, TC 124, SyC AAL (Active Assisted Living), SyC SM (Smart Manufacturing), SyC Smart Cities
- ISO Liaisons
  - TC 68/SC 2, TC 184, TC 211, TC 215, TC 269, TC 282/SC 2, TC 307, PC 317
- JTC 1 Liaisons
  - JTC 1, SC 6, SC 7, SC 17, SC 22, SC 24, SC 25, SC 27, SC 28, SC 29, SC 31, SC 32, SC 35, SC 36, SC 37, SC 38, SC 39, SC 40, SC 42
- A Liaisons
  - AIM, AIOTI, GS1, IIC, INCOSE, ITU-T, OCF, OGC
- C Liaisons
  - IEEE P 2786

Image by skeeze from Pixabay

ISO/IEC JTC 1/SC 41 organisert



Den nasjonale komiteen på IoT

- Opprettet i februar 2019
- 8 medlemmer per 4. april 2019
- Representasjon inn
  - WG 3 IoT Architecture
  - WG 5 IoT Applications
  - AG 22 Liaison Coordination Group (LCG) on IoT Trustworthiness
  - AHG 18 Study Group on Integration of IoT and Blockchain
- Deltakelse på Plenary meeting i Chongqing, Kina i mai
- Første komitemøte ved «kritisk medlemsmasse», tentativt i mai

Kommende NEK arrangement

- Batteri- og energilagringsseminar
  - Frokostseminar 26. april fra kl. 08:30 - 11:45, i Lilleakerveien 8
  - https://www.nek.no/seminar-batteri-energilagring-2019/
- Elsikkerhetskonferanse
  - 20.- 21. november, Oslo Kongressenter, Youngs gate 11
  - https://www.nek.no/elsikkerhetskonferansen-2019/

Mustads vei 1, Lilleaker

- 12 ansatte
- Moderne lokaler, ved CC-vest
- Samlokalisert med Standard Norge og Standard Online
- Ved sentralt knutepunkt (Lysaker stasjon)

www.nek.no