IoT Standardization
in ISO/IEC/JTC1/SC41

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SDOs from European Perspective

- National Bodies (e.g. DIN, AFNOR, BSI, UNI)
- National Committees (e.g. DKE, UTE, BSI, CEI)

National Bodies are the entry point to European and International Standardisation
Voting in ballots on International and European Standards on national level
Cooperation among SDOs and Consortia through JTCs, JWG, Liaison, etc
1. JTC1 is the ISO/IEC joint technical committee for IT Standardization
2. JTC1 started working on IoT by a Special Working Group (SWG5) in 2013 and created a IoT Sub Committee (SC41) in 2017
ISO/IEC/JTC1/SC41 IoT

Scope

Standardization in the area of IoT and related technologies

Term of References

1. Serve as the focus and proponent for JTC 1's standardization program 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.
ISO/IEC/JTC1/SC41 IoT Structure

1. With involvement of 30 National Bodies, Chair Dr. F Coallier (CA)
2. Advisory Group is the management board of SC41
3. Standards are developed and maintained under Working Groups
4. Study Group works on new potential standard topics
ISO/IEC/JTC1/SC41 WG3

Scope

- Title: IoT Architecture
- ToR: Standardization in the area of IoT vocabulary, architecture, and frameworks.

Team

- Chair: Mrs Erin Bournival (US)
- Members: 144 Experts

Projects

- Assigned: 29182-1, 2, 3 (Sensor Network Reference Architecture)
- Ongoing: 30141 (IoT Reference Architecture), 20924 (IoT Vocabulary)
ISO/IEC/JTC1/SC41 WG4

Scope
- Title: IoT Interoperability
- ToR: Standardization in the area of IoT interoperability, connectivity, conformance and testing.

Team
- Chair: Dr. Quan Wang (CN)
- Members: 146 Experts

Projects
- Assigned: 19637, 29182-7 (Sensor Network Testing Framework, Interoperability)
- Ongoing: 21823 -1, -2, -3 (IoT Interoperability)
ISO/IEC/JTC1/SC41 WG4

Scope

• Title: IoT Applications
• ToR: Standardization in the area of IoT applications, Uses Cases, IoT platforms, middleware, tools and implementation guidance.

Team

• Chair: Dr. Yongjin Kim (KR)
• Members: 152 Experts

Projects

• Assigned: 29182-4,5,6; 20005; 30101; 30128 (sensor network application, interfaces, information processing etc.)
• Ongoing: 22417; 22560; 30140-1,2,3,4 (IoT use cases, Sensor network active air-flow control, underwater acoustic sensor networks)
ISO/IEC/SC41 SGs

Wearables  Trustworthiness  Industrial IoT  IoT Edge Computing  Realtime IoT

Tasks: doing pre-study, collecting requirements, analyzing gaps, identifying liaisons and cooperation, making recommendations, submitting study report
The ISO/IEC/30141: IoT Reference Architecture

- A general IoT reference architecture standard in terms of defining characteristics, models and architecture views for IoT.
- Served as a base on which to develop specific IoT applications.

**2015**
WD started AHGs for different topics, 5 releases/updates

**2016**
CD Ballot 1st CD 434 comments 2nd CD 437 comments

**2017**
DIS Ongoing
The ISO/IEC/30141: Characteristics, Models and Architecture Views

1. Characteristics are considered by

2. Conceptual Model derives

3. Reference Model develops

4. Architecture Views

Top down Design Approach
The ISO/IEC/30141: Trustworthiness

Trustworthiness clause provides guidelines, rules and relevant standards of Safety, Privacy and Security in context of IoT Reference Architecture.
ISO/IEC other ongoing IoT projects

ISO/IEC CD 20924  
IoT - Definition and Vocabulary

ISO/IEC WD 21823-1  
IoT Interoperability - Part 1: Framework

ISO/IEC AWI 21823-2  
IoT Interoperability - Part 2: Network connectivity

ISO/IEC AWI 21823-3  
IoT Interoperability - Part 3: Semantic interoperability
ISO/IEC/JTC1/SC41 Dashboard

Further information about SC41 can be found under:

Thank you