Update for IEC TC100 AGS of the activities of IEC SEG7 and IEC SEG 8

IEC SEG 7 Smart Manufacturing

SEG 7 met in Tokyo in 2017 and finalised a report for the IEC SMB which was considered at the Vladivostok GM. As a result resolution 5.4.1 was taken:

5.4.1 SEG 7 *Smart Manufacturing*
SMB Decision 160/9 – SEG 7 *Smart Manufacturing* – SMB/6235/R*, SMB/6235A/RV
SMB agreed with the recommendations of SEG 7 and decided:
To establish an SyC with an initial title, *Smart Manufacturing* and the following initial scope
– *To provide coordination and advice in the domain of Smart Manufacturing to harmonize and advance Smart Manufacturing activities in the IEC, other SDOs and Consortia according to clause 2 in AC/22/2017.*
SMB agreed with the defined tasks and deliverables given in Recommendation A.3 and recommended that the SyC take note of the on-going work in other IEC and ISO TC/SCs related to Smart Manufacturing.
SMB agreed with the SEG 7 recommendation to set up a Joint IEC/ISO "Smart Manufacturing Standards Map" Task Force, as recommended by ISO/TMB.
SMB requested SEG 7 to prepare the proposal for the setting up of the new SyC, thanked it for its work, and agreed for it to be disbanded once the SyC holds its first meeting.

SyC Smart Manufacturing

In document **C/2076/DV**, circulated on 2017-10-27, and **C/2089/RV,** circulated on 2018-01-26, IEC National Committees (NCs) were invited to approve the proposal from SEG 7, for a new Systems Committee (SyC) on *Smart Manufacturing*.

- Forty-five (45) NCs submitted votes, all of which were positive. There were four (4) abstentions*, which are not counted as voting. Result of voting: 100% in favor of the proposal for a new Systems Committee on Smart Manufacturing. The proposal has therefore been approved.
- The Chair of the SyC Smart Manufacturing has not been decided and the SMB is working with the National Committees who have expressed interest in being the Chair.
- P-Members – 11; O-Members – 6
- NCs are encouraged to appoint all interested members of the predecessor SEG to the SyC Pool of Experts for the first three years of the SyC, subject to their willingness to meet normal NC criteria for experts (qualifications and/or fees, etc.).

SEG 7 remains active until the 1st meeting of the SyC Smart Manufacturing

IEC SEG 8 Communication Technologies and Architectures of Electro-technical Systems

Scope:
(1) Develop a sustainable process for including communication system aspects (such as interfaces, data models and behaviours) into existing and new IEC deliverables.
(2) Monitor new or emerging communication technologies and architectures that are specified or standardized outside the IEC (e.g. 5G, Low Power Wide Area Networking, Deterministic Networking, Edge Computing/Intelligence, Management & Orchestration).
(3) Monitor new market trends (e.g. IT/OT convergence) and analyse new business and development models (e.g. Open Source, DevOps) related to communication technologies and assess their impact on IEC activities.
(4) Take into account additional essential aspects of communication technologies such as security, reliability, safety, privacy, energy efficiency, and others.

(5) Evaluate the impact of these technologies, architectures and trends on current and foreseen IEC work, in particular on systems related activities, and engage with the concerned IEC committees by raising awareness and making technical recommendations.

(6) Identify key standardization stakeholders external to the IEC and propose to SMB appropriate engagement models, where required, to ensure IEC requirements are being addressed.

(7) Initialize and propose a durable IEC focal point for spectrum management related issues and coordinate with ITU-R and regional spectrum policy organizations.

(8) Evaluate gaps in standardization of communication technologies based on requirements provided by selected IEC use cases, and take appropriate actions within the IEC or through collaboration with external bodies.

(9) Review the current status of relevant TC/SC work in the IEC to identify any duplication of work or potential inconsistencies.

(10) Define a structure for the coordination of cross TC/SC work in the IEC and with external bodies, where required.

(11) Recommend to the SMB the appropriate long term structure to sustain the effective adoption and/or standardization of communication technologies across the IEC.

Structure:

There are 3 Working Groups

1) **Trend Monitoring**
   - Monitor new or emerging communication technologies and architectures that are specified or standardized outside the IEC (e.g. 5G, Low Power Wide Area Networking, Deterministic Networking, Edge Computing/Intelligence, Management & Orchestration, and others).
   - Monitor new market trends (e.g. IT/OT convergence) and analyse new business and development models (e.g. Open Source, DevOps) related to communication technologies and assess their impact on IEC activities.
   - Take into account additional essential aspects of communication technologies such as security, reliability, safety, privacy, energy efficiency, and others.
   - Evaluate the impact of these technologies, architectures and trends on current and foreseen IEC work, in particular on systems related activities, and engage with the concerned IEC committees by raising awareness and making technical recommendations.

2) **Collaboration**
   - Identify key standardization stakeholders external to the IEC and define appropriate engagement models, where required, to ensure IEC requirements are being addressed.
   - Evaluate gaps in standardization of communication technologies based on requirements provided by selected IEC use cases, and take appropriate actions within the IEC or through collaboration with external bodies.
   - Review the current status of relevant TC/SC work in the IEC to identify any duplication of work or potential inconsistencies.
   - Define a structure for the coordination of cross TC/SC work in the IEC and with external bodies, where required.

3) **Spectrum**
   - Be the IEC focal point for spectrum management related issues and coordinate with ITU-R and regional spectrum policy organizations.

IEC SEG 8 has met both physically and remotely several times since it was set up; the next meeting is 19-22nd June in Frankfurt.

In WG1 Templates for reports have been agreed and trend reports (approx. 1 page) will cover
- Introduction / background description
- Market requirements
- IEC domains impacted

- Relevant technologies (link to be made to communication technologies deliverable)
- Recommendations;

The following trend reports are envisaged to b developed:
- Internet of Things (IoT):
- IT/OT Convergence:
- Smart Markets: divided into 3 main trends:
    Smart Cities
    Smart Manufacturing
    Smart Energy
- Active Assisted Living:divided into 2 main trends:
    Aging Population (including Active Assisted Living):
    Smart Healthcare:
- Digital Transformation;
- Evolving Workforce
- Location Based Services
- Smart Farming:
- Artificial Intelligence:
- Smart Mobility: develop content including smart vehicles, V2X, intelligent transportation

The Communications Technologies deliverable will include information on:
- 5G
- IoT technologies initially including W3C Web of Things (WoT) and oneM2M
- Broadband 20/20
- Technologies studied by SG9 including
  - Deterministic Networking
  - LP-WAN
  - Flexible Ethernet:
  - Network Security for IoT
  - Smart Collaboration
  - Software Defined Networking
  - Virtualization:
  - Autonomic Networking
  - Fog Computing and Distributed Intelligence
  - Information Centric Networking
  - Cognitive Radio
  - Single Pair Ethernet:

WG2 is developing a questionnaire for TCs and external organizations, including the following questions:
- Which technologies are interesting to you and your constituents
- What is missing
- What activities use communications
- What do you plan to use going forward
- What needs do you foresee (control, monitoring)
- What security needs
- Which types (wired, wireless, powerline, power with data?)
- Which domains served
- Which relevant technologies
- Which communication layers
- Gateways between technologies and protocols
- Which time horizon (now, next 18 months, next 5 years)
- Any technology sunsetting
- Any reservation about using the information from your group to be listed