

ISO/IEC JTC 1/WG 7
Working Group on Sensor Networks

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1 April 2010

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Dear Ms. Lee:

ISO/IEC JTC 1/SC 31 takes note of WGSN-N034 (*List of SDOs, Consortia, and Fora on Sensor Networks for possible Liaison*) and WGSN-N026 (*Liaison statement from JTC 1/WG 7 to JTC 1/SC 31*). We are truly concerned regarding N026, SC 31's absence from N034 since SC 31 has standards in place. We attempted to clarify this issue in the Liaison Letter sent by our Liaison Officer, Mr. Craig K. Harmon, to your attention on March 1st. In those comments to 29182, which was discussed at length in London, we drew your attention to the standards under Subcommittee 31 (on sensor specifications) that should be incorporated into the work product of Working Group 7 (on sensor networks). We once again provide that information in Annex B of this letter. We also would invite your attention to the business case of sensors being an automatic identification and data capture technique, under the remit of Subcommittee 31.

We would like to pose a question regarding WGSN-N036. This document contains a list of participants at your March 2010 meeting in London. Other JTC 1 Subcommittees submitted liaison statements to Working Group 7, consistent with JTC 1 Resolution 34, 3a from Tel Aviv, and were not in attendance, but no Subcommittee was singled out as not having personal representation at your meeting other than SC 31. What prompted specific criticism targeted to SC 31?

We also take note that while Working Group 7 “welcomes the request to establish an Internal Liaison [with SC 31]” and the appointment of liaison officers, there was no reciprocation to appoint a liaison representative from Working Group 7 to SC 31. We fully agree with JTC 1 and believe that the best and fullest collaboration occurs when the liaison relationship is operating in both directions. Your attention is cordially invited to the following citation from the JTC 1 Directives:

3.3.1.3 *It is emphasised that in order to be effective, liaison shall operate in both directions, and committee Secretariats should ensure that reciprocal arrangements are made by those organisations that are liaison members.*

Further as noted in N026, this is an Internal Liaison, subject to the following citations from the JTC 1 Directives.

3.3.3.1.3 *An SC may designate liaison representatives to follow the work of another SC or several of its WGs. Notice of the designation of such representatives shall be given to the Secretariat of the SC concerned, which shall furnish all relevant documents to the representative(s) or to the Secretariat of that SC, or both.*

3.3.3.1.4 *Such representatives shall have the right to participate in the meetings of the SC or WG whose work they have been designated to follow but shall not have the right to vote. They may contribute to the discussion in meetings, including the submission of written contributions, on matters within the competence of their own SC.*

The request was not for a Technical Liaison, whereupon the criticism may have been appropriate.

3.3.2.1 Technical liaison

A technical liaison is a specific technical working relationship between JTC 1, its SCs or WGs and another organisation to accomplish a specific technical coordination purpose. For a technical liaison, an official liaison representative must be appointed by JTC 1 or an SC. The liaison representative(s) is responsible for attending the meetings of the outside organisation and for preparing written liaison reports in a timely manner

While we appreciate Working Group 7's concern and support for its work items, SC 31 simply requests that JTC 1/WG 7 honor the work of SC 31 and its PSDO partner IEEE.

Sincerely,

A handwritten signature in black ink, appearing to be "Charles E. Biss".

Charles E. Biss
ISO/IEC JTC1 SC 31 Chairman
(Interim)

Cc: Mr. Yongjin Kim, JTC 1/WG 7 Convenor, (E): cap@modacom.co.kr, Karen Higgenbottom ISO/IEC JTC 1 Chair, Lisa Rjachel ISO/IEC JTC 1 Secretariat, Keith Brannon, Ray Delnicki@SC31, C Harmon@SC31/WG6,

Annex A – SC 31 Standards of Importance to JTC 1/WG 7

- ISO/IEC/IEEE 21450, *Information technology — Smart Transducer Interface for Sensors and Actuators — Common Functions, Communication Protocols, and Transducer Electronic Data Sheet (TEDS) Formats*

- ISO/IEC/IEEE 21451-1, *Information technology — Smart Transducer Interface for Sensors and Actuators — Network Capable Application Processor (NCAP) Information Model*

- ISO/IEC/IEEE 21451-2, *Information technology — Smart Transducer Interface for Sensors and Actuators — Transducer to Microprocessor Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats*

- ISO/IEC/IEEE 21451-4, *Information technology — Smart Transducer Interface for Sensors and Actuators — Mixed-Mode Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats*

- ISO/IEC/IEEE 8802-15-4, *Information technology — Local and metropolitan area networks— Specific requirements, Part 15.4: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low-Rate Wireless, Personal Area Networks (WPANs)*

Annex B – Business Case for SC 31’s Involvement in Sensors

Of any SC within JTC 1, JTC 1/SC 31 has the earliest work in sensor technology. The optical sensor and its use in bar code scanning has its earliest use more than 60 years ago and optical scanning was the first work of SC 31 to be standardized – in 1996.

Sensor technology is an automatic identification and data capture technique. SC 31 accepts that a *sensor is a device that observes phenomenon/phenomena, measures physical property and quantity of the observation, and converts the measurement into a signal.* [WGSN-N007]. Clearly such a device is a data capture technique. Further, the SC 31/WG 6 Work Item 21451-4 provides for the unique identification of sensors, ergo, sensor technology is both an automatic identification and data capture technique.

The work of SC 31/WG 6 (then an ad hoc) began in 2006 and originally contained standardization of ubiquitous sensor networks. JTC 1/SC 6 noted that while they had nothing in their existing work program to address sensor networks, they felt that sensor networks should belong to them. As a result of the SC 6 comments at the JTC 1 Plenary, JTC 1 formed a Study Group on Sensor Networks to address the issue. SC 31 accepts the following definition of “sensor network”.

A sensor network is a system of distributed sensor nodes interacting with each other and also interacting with other environments in order to acquire, process, transfer, and provide information extracted from a physical world in order to perform certain responses to the physical world. [WGSN-N007].

Therefore, in the formation of SC 31/WG 6, the approved Scope purposely omitted sensor networks:

Standardization of automatic identification and data collection techniques that are anticipated to be connected to wired or wireless networks, including sensor specifications, combining RFID with mobile telephony, and combining optically readable media with mobile telephony.

The SGSN and WGSN have continually mischaracterized this work as only having to do with the sensor interface to RFID. The work pointed to is that of ISO/IEC/IEEE 21451-7 (Approved committee draft), which is but one of a suite of sensor standards. As can be seen in Annex A, SC 31’s involvement is beyond that of the sensor interface to RFID.

Even in the newly formed JTC 1/WG 7 on sensor networks, there is nothing that points to sensor specifications, which are clearly an automatic identification and data capture technique. In fact, references in the scope of WG 7 (Res. 34, j1n9856) use the collective term “sensor network” in all cases and never simply “sensors.”

SC 31/WG 6 has the following sensor standards within its remit:

- IEEE 1451 Standards to SC 31/WG 6 under PSDO
 - ISO/IEC/IEEE 21450 [IEEE 1451.0], *Information technology — Standard for a Smart Transducer Interface for Sensors and Actuators — Common Functions, Communication Protocols, and Transducer Electronic Data Sheet (TEDS) Formats*
 - ISO/IEC/IEEE 21451-1 [IEEE 1451.1], *Information technology — Standard for a Smart Transducer Interface for Sensors and Actuators — Network Capable Application Processor (NCAP) Information Model*
 - ISO/IEC/IEEE 21451-2 [IEEE 1451.2], *Information technology — Standard for a Smart Transducer Interface for Sensors and Actuators — Transducer to Microprocessor Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats*
 - ISO/IEC/IEEE 21451-4 [IEEE 1451.4], *Information technology — Standard for a Smart Transducer Interface for Sensors and Actuators — Mixed-Mode Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats*
- IEEE 1451.7 to SC 31/WG 6 under PSDO Joint Development
 - ISO/IEC/IEEE 21451-7, *Information technology — Standard for a Smart Transducer Interface for Sensors and Actuators - Transducers to Radio Frequency Identification (RFID) Systems Communication Protocols and Transducer Electronic Data Sheet Formats*

These five standards come close to completing the full suite of sensor standards required up and until one gets to the network. We have defined the hardwired interfaces and are closing in on the wireless interface. There is substantial difference between an “interface” and a “network.”

Two standards remain to complete the sensor specification series:

- IEEE 1451.5, *Standard for a Smart Transducer Interface for Sensors and Actuators – Wireless Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats*
- IEEE 802, Part 15.4: *Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low-Rate Wireless Personal Area Networks (WPANs)*

IEEE 1451.5 specifically calls out IEEE 802.15.4 as a wireless sensor interface. So as to complete the suite, prior to bringing 1451.5 in under the PSDO, we thought it best to also bring in 802.15.4-2006.

It is instructive that sensors had not been part of the JTC 1 work plan until initiated by the work of SC 31. As we move through this maze of sensor standards, we must decide, “make vs. buy.” SC 31/WG 6 is quite happy with the expertise brought forward within IEEE 1451 and IEEE 802.15 and are content to not “make” potentially conflicting sensor standards, but to “buy” those of IEEE.