ISO/IEC JTC 1 N 9073

2008-05-16

ISO/IEC JTC 1
Information Technology

Document Type:	**Other Document(Defined)**
Document Title:	**Review of JTC 1/SC 6 Standardization Activities on Sensor Networks for consideration at the 1st SGSN Meeting, 26-27 June.**
Document Source:	**SGSN Convenor**
Reference:	
Document Status:	**This document is circulated to JTC 1 National Bodies for information**
Action ID:	**Information**
Due Date:	
No. of Pages:	**6**

Secretariat, ISO/IEC JTC 1, American National Standards Institute, 25 West 43rd Street, New York, NY 10036; Telephone: 1 212 642 4932; Facsimile: 1 212 840 2298; Email: lrajchel@ansi.org

ISO/IEC JTC 1
Study Group on Sensor Networks

Document Number:	SGSN N014
Date:	2008-05-15
Replace:	
Document Type:	Liaison Organization Contribution
Document Title:	Review of JTC 1/SC 6 Standardization Activities on Sensor Networks
Document Source:	JTC 1/SC 6
Document Status:	For consideration at the 1st SGSN Meeting, 26-27 June.
Action ID:	FYI
Due Date;	
No. of Pages:	5

SGSN Convenor: Dr. Yongjin Kim, Modacom Co., Ltd (Email: cap@modacom.co.kr)

SGSN Secretary: Ms. Jooran Lee, Korean Standards Association (Email: jooran@kisi.or.kr)

Telecommunications and Information Exchange Between Systems

ISO/IEC JTC 1/SC 6

Document Number:	N13614
Date:	2008-05-07
Replaces:	
Document Type:	Outgoing Liaison Statement
Document Title:	Review of JTC 1/SC 6 Standardization Activities on Sensor Networks
Document Source:	SC 6 liaison representative to JTC 1 SGSN
Project Number:	
Document Status:	As per the SC 6 Geneva Resolution 6.0.2, Yong Woon Kim was appointed as SC 6 liaison representative to the 1st JTC 1 SGSN meeting (25-27 June 2008, Shanghai, China). This liaison statement is forwarded to the JTC 1 SGSN from SC 6.
Action ID:	FYI
Due Date:	
No. of Pages:	4

ISO/IEC JTC1/SC6 Secretariat Ms. Jooran Lee, KSA (on behalf of KATS)

Korea Technology Center #701-7 Yeoksam-dong, Gangnam-gu, Seoul, 135-513, Republic of Korea ;

Telephone: +82 2 6009 4808 ; Facsimile: +82 2 6009 4819 ; Email : jooran@kisi.or.kr

Review of JTC 1/SC 6 Standardization Activities on Sensor Networks

ISO/IEC JTC 1/SC 6 Liaison

Yong-Woon KIM

(qkim@etri.re.kr)

This contribution has summarized standardization activities of ISO/IEC JTC 1/SC 6 related to sensor networks in order to reach, within JTC 1, a level of consensus on the direction of sensor network standards development.

SC 6 has recognized sensor networks:

Since SC 6 discussed about sensor network issues initially from its meeting held in Orlando, USA, November 2004, SC 6/WG 1 had contributions on and studied MEU (Mesh-Enabled USN) at its meetings held in Frankfurt, Germany, February 2005; Saint Paul De Vence, France, August 2005; and Prague, Czech, June 2006. SC 6 and its WGs have considered sensor network matters for its future standardization initiative. At its meeting held in Xian, China, April 2007, SC 6 approved 6N13293, SC 6 business plan, which contained sensor networks for its future standardization initiative.

Sensor networks have been considered actually as Wireless Sensor Network (WSN) which is a wireless network consisting of spatially distributed autonomous devices using sensors to cooperatively monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants, at different locations. In addition to one or more sensors, each node in a sensor network is typically equipped with a radio transceiver or other wireless communications device, a small microcontroller, and an energy source, usually a battery[1].

Existing sensor network applications have been as much simple as they captured and transmitted environmental information such as temperature, air pressure, humidity, gas leak, fire/smoke, etc. to relevant application systems. But, such simple applications can get sophisticated by application integration and sensory data processing by business logics, data mining rules, context awareness rules, data filtering rules, etc. Resulting context-aware information and knowledge services enable an intelligent information infrastructure for customers such as human consumers, public organizations, enterprises, government, etc. This information infrastructure has been called Ubiquitous Sensor Network (USN) in ITU-T.

SC 6 participated in ITU-T JCA-NID meetings:

At its meeting held in Geneva, February 2007, ITU-T TSAG reached a conclusion to ask the relevant Study Groups to urgently initiate the study of USN. The followings are considered to be the relevant Study Groups including JCA-NID (Joint Coordination Activity on Network aspects of identification systems including RFID) as a coordinating entity:

---

[1] Source: WIKIPEDIA, “Wireless Sensor Network”, http://en.wikipedia.org/wiki/WSN

- Study Group 13: Functional requirements and architectures including NGN view points;
- Study Group 16: Multimedia service descriptions and requirements aspects;
- Study Group 17: Security and Object Identifier aspects; and
- JCA-NID: Overall coordination on USN standardization activities within ITU-T Study Groups including relevant SDOs outside ITU-T. For this the Terms of References of JCA-NID should be extended to cover USN issues appropriately.

ITU-T JCA-NID extended its ToR to cover USN matters according to the recommendation of ITU-T TSAG on USN.

Ms. Valerie Barnole and Mr. Craig Harmon were appointed respectively as SC 6 and SC 31 liaison representatives to ITU-T JCA-NID. SC 6 and SC 31 participated in ITU-T JCA-NID meetings to share information about NID and USN matters.

SC 6 coordinated the sensor network standardization initiative with JTC 1/SC 31:

At its conference call meeting in April 2007, the mobile RFID ad-hoc group of SC 31/WG 4 found several anticipated work items for mobile telecommunication-based B2C RFID applications and sensor network applications with two proposals of forming a new sub-group, SG 6 under WG 4 or a new working group, WG 6 under SC 31.

SC 6 sent a liaison statement to SC 31 in May 2007 with following two major suggestions:

- The topic, sensor networks and directly related issues, be excluded from ToR of SC 31/WG 4/SG 6 or SC 31/WG 6, whichever should turn out to be the final structure; and
- SC 6 will start a new work item on sensor networks within earliest timeframe and seek liaison inputs from SC 31 on the requirements for standards to be developed in that course.

But SC 31 discussed about the liaison and suggested a joint working group with SC 6 at its plenary meeting held in Pretoria, South Africa, June 2007. Ms. Valerie Varnole participated as the SC 6 representative in the July and September 2007 meetings of ITU-T JCA-NID to give SC 6 viewpoints and concerns to the SC 31 representative. The SC 6 chairman participated in the MIIM[2] (Mobile Item Identification and Management) ad-hoc group meeting of SC 31 held in Seoul, October 30-31 2007, to cope with the work scope concerns. The Korean NB proposed to exclude sensor network issues from the work scope of MIIM at the ad-hoc meeting. Finally the MIIM ad-hoc made a resolution to exclude the sensor network area and focus only on sensor-assisted RFID issues and sensor interface standards specified by IEEE 1451.

SC 6 and ITU-T Study Groups reached consensus about close collaboration on USN activities:

Following the recommendation of ITU-T TSAG on USN, ITU-T SG 13 started a new Recommendation work, Y.USN-reqts (Requirements for support of USN applications and services in NGN environment), at its September 2007 meeting, ITU-T SG 17 initiated X.usnsec-1 (Security framework for USN) at its Geneva meeting, September 2007, and ITU-T SG 16 also approved a new draft Recommendation work, F.USN-MW (Service description and requirements of USN middleware) at the Rapporteurs' meeting of SG 16 Working Party 2 held in Seoul, January 2008.

SC 6 sent a liaison statement, SC6 N13351, to ITU-T SGs 13, 16, 17 and JCA-NID to ask collaborations on USN in September 2007. The statement summarized a motivation for

[2] It is the successor of the mobile RFID ad-hoc group of SC 31/WG 4 and belongs to SC 31.

collaboration and suggested possible common work items between SC 6/WGs and ITU-T SGs/Questions. It proposed to develop common standards.

Q.21 and Q.22 of ITU-T SG 16 replied jointly with the positive response, COM16-LS246, containing two prospective items: USN (multimedia) requirements and services descriptions, and architectural model; and, USN middleware architecture and the corresponding technologies.

Q.2 and Q.3 of ITU-T SG 13 replied with the positive response, COM13-LS208, indicating strong willingness to build a close relationship with SC 6 on the suggested items. Four specific common work items were informed: requirements on USN applications and services in NGN environment; NGN functional requirements to support USN applications and services; evaluation and mapping of NGN functional components to support USN; and, any further development and relevant standardization items related to NGN requirements and architecture.

Q.9 of ITU-T SG 17 replied with the response LS, TD 2834r1, to inform SC 6 of the current activity on USN security and an intention to develop the common text. Q.9/17 is developing X.usnsec-1 which describes security threats and security requirements to USN and categorizes security technologies by security functions that satisfy above security requirements and by the place to which the security technologies are applied in the security model of USN.

Based on those positive responses, SC 6 sent two responding liaison statements, SC6 N13477 to ITU-T SG 16, which contained a proposal to start an SC 6/SG 16 common work on USN middleware architecture, and SC6 N13478 to ITU-T SG 13, which contained a proposal to start an SC 6/SG 13 common work on Y.USN-reqts.

Q.21 and Q.22 of ITU-T SG 16 replied that they resolved to initiate the analysis study first on USN middleware service descriptions, requirements, and service scenarios instead of the USN middleware architecture. They solicited any comments on the planned work. Q.2 of ITU-T SG 13 discussed about the liaison statement, SC6 N13478, at its meeting held in Seoul, January 2008, but there was no liaison response yet.

Further information exchanges are expected between SC 6 and relevant ITU-T SGs to make progress on the anticipated common works.

SC 6 agreed to initiate a new work on sensor networks:

At its meeting held in Geneva, April 7-11, 2008, SC 6/WG 7 had contribution on a new work item proposal for a reference model for network aspects of sensor network applications and services, agreed to prepare for drafting an NWIP (New Work Item Proposal) and pre-authorized WG 7 to initiate the ballot process for the NWIP. The proposed reference model will cover a review of existing sensor networking specifications; clarification of sensor network functionalities from operation layer’s and operation relationship’s points of view; integration and interworking among various sensor network standards; and, reference model to show interface relationship among a variety of sensor network functionalities.

_____