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ISO/IEC JTC 1
Study Group on Sensor Networks

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SGSN Report to JTC 1

September 2009

Submitted by Yongjin Kim, Convenor of SGSN

Table of Contents

Introduction

- SGSN was established at the 22nd ISO/IEC JTC 1 Plenary meeting in 2007 in Gold Coast, Australia.

- SGSN was re-confirmed at the 23rd ISO/IEC JTC 1 Plenary meeting, 15th November 2008 in Nara, Japan with the following Terms of Reference (JTC 1 Nara Resolution 44):

1) Review the current definitions and visions and requirements for target applications of Sensor Networks within JTC 1 and outside JTC 1 in connection with different application areas (e.g. home, medical informatics, transport informatics, industrial communications, RFID etc) as well as JTC 1 SCs roles in these application areas

2) Review and identify

- the unique characteristics of Sensor Networks and the commonalities and differences with other networks
- the system architectures of Sensor Networks in terms of functionalities
- the entities that together comprise Sensor Networks and their characteristics
- existing protocols that can be used for Sensor Networks and the elements of protocols that are unique to Sensor Networks
- the scope of infrastructure that can be considered to be a Sensor Network
- the types of data that need to be handled (acquired, processed, transported, stored, rendered etc) by Sensor Networks and any specific QoS attributes required by those categories
- the interfaces that need to be supported by Sensor Networks
- the services that need to be supported by Sensor Networks
- aspects such as security, privacy, identification that may be relevant to specific Sensor Networks

3) Monitor other activities in international standardisation bodies and consortia and fora where specifications related to Sensor Networks are being developed.

4) Produce a report covering 1) and 2) above and information on other relevant standardization Activities

5) In the light of published SC scopes and work programmes and the results of 1) to 3) recommend potential areas of work to JTC1 and appropriate SCs and establishment of appropriate liaison relationships to ensure that all necessary aspects of Sensor Networks within the scope of JTC1 are standardized

6) Recommend how the work on Sensor Networks can be efficiently coordinated in JTC1.

7) The SGSN may hold workshops to gather requirements or publicise the results

8) Meetings of the group may be physical or via electronic means

Membership in the SG will be open to:
- JTC 1 National Bodies and Category A Liaisons, AROs and PAS submitters
- JTC 1 SCs
- members of ISO and IEC Central Office

> • ISO or IEC TCs, SCs, WGs in liaison with JTC 1 or its subgroups
>
> In addition, the Convener may invite experts with specific expertise in the field

- Dr. Yongjin Kim (Korea) is the Convenor of SGSN and Ms. Jooran Lee (Korea) is the Secretariat.

- SGSN members are as follows:

  - 9 NBs: Canada, China, France, Germany, Japan, Korea, Norway, UK and USA.
  - JTC 1 SC 6, SC 31 and SC 36
  - ISO TC 211
  - IEC TC 65 and TC 100

- SGSN members list is in Annex 2.

Summary of Activities (Since the 2008 JTC 1 Plenary)

- The 3rd meeting was held on 19-23 January 2009 in Sydney, Australia.

  - 17 participants from 4 NBs and 2 LOs attended the meeting.
  - Produced Version 2 of SGSN Technical Document
  - Approved six resolutions regarding follow-up of JTC 1 Nara Resolution 31, SGSN Seoul Workshop and so on.
  - The 3rd Meeting Report was given in JTC 1 N9515 (SGSN N069).

- The 4th meeting was held on 29 June – 3 July 2009 in Oslo, Norway.

  - 24 participants from 6 NBs and 5 LOs attended the meeting.
  - Produced Version 3 of SGSN Technical Document for submission to JTC 1.
  - Approved six resolutions for Middleware, Privacy and so on.
  - A Recommendation to JTC 1 regarding SGSN long term role.
  - The 4th Meeting Report was given in JTC 1 N9647 (SGSN N144).

- SGSN produced SGSN Technical Document Ver.3 (TD) answering the ToR of SGSN

  - The TD was given in SGSN N149 and also circulated as JTC 1 N-document.
  - The contents of the TD are the SGSN study results as follows:
    - ✓ stating SN vision and mission statements and defining key SN terminology (Chapter 2)
    - ✓ providing the scope of JTC 1 SN standardization and discussing the scope (Chapter 3)
    - ✓ collecting and describing sensor network applications in different market segments (Chapter 4 and Annex A)
    - ✓ generating generic and generalized SN system and functional requirements (Chapter 5)
    - ✓ developing a foundation for SN reference architecture (Chapter 6 and Annex B)
    - ✓ identifying and describing SN standardization areas (Chapter 7),
    - ✓ recommending the allocation of the identified standardization areas to JTC 1 SCs, identifying other SDOs for potential collaboration, and also recommending on how SN standardization work can be effectively coordinated and performed in JTC 1 (Chapter 8, Annex C, and Annex D)
    - ✓ listing the liaison organization supplied standards relevant or potentially relevant to SN standards (Annex E)

- Sensor Network Workshop was held on 15-17 April 2009 in Seoul, Korea.

  - 209 participants attended from 8 National Bodies
  - Successfully shared emerging technologies, standardization trend and experience
  - Featured on 15 Korean newspapers

Recommendation to JTC 1

The following recommendation was submitted to JTC 1 for 2009 JTC 1 Plenary resolutions in Tel Aviv, Israel.

- **SGSN Recommendation to JTC 1 on SGSN long term role**

    SGSN recommends to JTC 1, subject to approval of appropriate work items, a working group directly under JTC 1. One or more proposals for new work item(s) will be submitted to JTC 1 for consideration at the JTC 1 Plenary meeting to establish the working group.

Replying to JTC 1 Nara Resolution 31 on Middleware and Privacy

For "Sensor networks issues explored on middleware replying to JTC 1 Nara Resolution 31", SGSN defined the middleware for Sensor Networks, analyzed existing middleware systems, and developed a functional model and standardization areas for middleware. SGSN Report on middleware was submitted to JTC 1 (SGSN N151). The relevant SCs with middleware are JTC 1/SC 6, SC 25, SC 29, SC 32 and SC 36.

For "Sensor networks issues explored on privacy replying to JTC 1 Nara Resolution 31", SGSN has received contributions from the following sub-committees in JTC 1/SC6, SC17, SC24, SC27, SC29, SC36 and SC37. Based on the contributions SGSN report on Privacy was submitted to JTC 1 (SGSN N152). There are a number of security related ISO Standards (including the ISO 2700X series) which may assist in the achievement of privacy, and guidance is needed for sensor networks. A basic framework for privacy has been contributed from SC27 (ISO/IEC 29100). Relevant SCs with privacy are JTC 1/SC6, SC17, SC24, SC27, SC29, SC36 and SC37.

Study on ToR

SGSN Technical Document Ver.3 (SGSN N149) shows the SGSN's answers to its ToR.

Mapping of ToR to the SGSN Technical Document Chapters or Sections

ToR #	Chapter and Section
1	Chapters 2, 4, Section 8.2 and Annex A
2	Chapters 3, 5, 6, Section 7.5.2, 7.11, 7.13 and Annex E
3	Section 8.1 and Annex C, D
4	The report is produced, which is this SGSN Technical Document (Version 3)

5	Chapter 7 (for potential work areas); Section 8.2 (for appropriate SCs); and Section 8.3 (for potential collaboration with non-ISO organizations)
6	Section 8.4
7	Sensor Network Workshop was held on 15-17 April 2009 in Seoul, Korea
8	Two physical meetings were held: 3rd meeting in January 2009, Sydney, Australia and 4th meeting in June 2009, Oslo, Norway.

- Study on ToR 1

    - 90 Sensor Networks applications from 21 market segments were identified (Chapter 4 of TD).
    - Among them, 12 target applications of Sensor Networks within JTC 1 and outside JTC 1 including smart grid system, health care system, ITS, and security were studied for their motivations (including definitions and visions), solution approaches and requirements (Annex A).
    - Generic vision and mission statement for Sensor Networks were developed (Chapter 2).
    - JTC 1 SCs roles were studied for each standardization area on Sensor networks (Section 8.2).

- Study on ToR 2

    - Unique characteristics of Sensor Networks were analyzed and generic requirements of Sensor Networks based on the 12 target applications were defined (Chapter 5).
    - Reference architecture of Sensor Networks in terms of functionalities and the entities comprising Sensor Networks were studied and defined (Chapter 6).
    - Existing protocols that can be used for Sensor Networks were studied (Annex E).
    - Scope and generic interfaces for Sensor Networks standardization were studied (Chapter 3).
    - Types of data that need to be handled by Sensor Networks were studied (Section 7.5.2).
    - Data delivery model and taxonomy analysis of QoS in Sensor Networks were studied (Section 7.11).
    - Services that need to be supported by Sensor Networks were studied for basic function layer, service layer, application layer, and for device management entity

(Section 6.2.2).

- Security and privacy relevant to Sensor Networks were intensively studied (Section 7.13).

- Study on ToR 3

  - Sensor Networks related activities within JTC 1 and outside of JTC 1 were studied (Section 8.1, Annex C and D).
  - The following SDOs, consortia and fora outside of JTC 1 were studied for their specification activities related to Sensor Networks.
    - . ISO (TC 22, TC 184/SC5, TC 204, TC 205)
    - . IEC (TC 17, TC 22, TC 57, TC 65)
    - . ITU-T (SG13, 16, 17)
    - . IEEE (802.15, 1451, 1588)
    - . ISA 100 / ISA 100.11
    - . ZigBee Alliance
    - . IETF (6LOWPAN WG, ROLL WG)
    - . OGC (SWE)

- Study on ToR 4

  - SGSN Technical Document Ver.3 (SGSN N149) was produced.

- Study on ToR 5

  - Potential standardization areas of work to JTC 1 and appropriate SCs were analyzed and produced in a table as below.
  - **Bold letters** indicates that the SC has relevant projects or activities in the SN standardization areas.
  - .

Standardization Areas	ISO/IEC JTC 1 SCs
Terminology	**JTC 1 (all SCs)**
Requirements Analysis	**SC 6, SC 17, SC 25, SC 32, SC 36, SC 37**
Reference Architecture	**SC 6**
Application Profiles	SC 25, SC 31, SC 32, SC 36, SC 37

Standardization Areas	ISO/IEC JTC 1 SCs
Sensor Interfaces	SC 6, [SC 25), SC 31, SC 37
Data type and Data Format	SC 6, SC 22, SC, 24, SC 25, SC 32, SC 36, SC 37
Communications	**SC 6**, [SC 25]
Mobility Support	SC 6, [SC 25]
Network Management	SC 6, [SC 25]
Collaborative Information Processing	SC 32, SC 37
Information Service Supporting	**SC 6**, SC 24, [SC 25], SC 29, SC 31, SC 32
Quality of Service (QoS)	SC 6, [SC 25]
Middleware	SC 6, SC 25, SC 29, SC 32, SC 36
Security & Privacy	**SC 6**, SC 17, [SC 25], SC 27, SC 29, SC 32, SC 36, SC 37
Conformance, Interoperability, Performance Testing	None Known [SC 25]

Note: Items allocated to SC 25 in bracket were proposed by SC 25 Secretariat at the SGSN Oslo meeting; however, they were not agreed during the SGSN Oslo meeting.

- Study on ToR 6

  - Standardization of sensor networks is a complex and challenging task. SGSN was established in order to coordinate the SN standardization activities with JTC 1 SCs and SDOs outside JTC 1. SGSN has identified standardization areas for sensor networks and allocated each area to adequate SCs in JTC 1. SGSN also monitored activities in other SDOs, consortia and fora where specifications related to Sensor Networks are being developed.

  - The study makes quite clear that large part of standardization areas can be handled by existing SCs. However, the study results also show that there are some aspects of sensor networks standardization areas that are not addressed by existing SCs today.   The question is how the gaps can be filled. In order to resolve the issue, SGSN members desired to have a permanent entity having a standard development role as well as a coordination role. Several alternatives for the permanent entity were discussed during the SGSN physical meetings in Germany,

Australia, and Norway. Summarizing the discussion held on this topic produced the following five options for sensor network standard development and coordination:

1. No new organizations, but let an existing subcommittee (SC) or working group (WG)

Since there are the needs for sensor network standardization, this option is not considered desirable. With no new organization, the stovepipe standards development for sensor networks will continue creating the interoperability issues.

2. A new WG under an existing subcommittee

This option is not desirable as the scope of WG is limited by the hosting SC's scope and there could be potential issues on coordinating with other JTC 1 SCs and SDOs outside JTC 1. In addition, potentially a lengthy process will take to establish a new WG under a SC, and which SC is also a question to be answered.

3. A new SC

Although this option is less limited compared to Option 2 above, the sensor networks covers diverse technologies, applications, and market domains. Thus, this option may cause objections from other JTC 1 SCs. The timeline is also a concern as establishing a new SC could take a length process and to start a new project. It may also have potential issue on coordinating other SCs and SDOs outside JTC 1.

4. A new Special Working Group (SWG) directly under JTC 1

Traditionally SWG does not develop standards, and there has been no SWG with standards development role.

5. A new WG directly under JTC 1

SGSN members desired to have the new entity to have a standard development role and also a coordination role. This option could be accomplished by transforming SGSN to a Working Group on Sensor Networks (WGSN). WGSN is to coordinate the SN standardization activities with JTC 1 SCs and SDOs outside JTC 1 and to develop standards within the SN need areas that no SC has the work scope.

- Study on ToR 7

    - The Sensor Network Workshop was held on 15-17 April 2009 in Seoul, Korea.

- Study on ToR 8

    - Two physical meetings were held: 3rd meeting in January 2009, Sydney, Australia and 4th meeting in June 2009, Oslo, Norway.

9

SGSN Document Register (N050-N154)

SGSN Doc No.	Title	Source
N050	Document Register, N001-N050	SGSN Secretary
N051	SGSN Report to JTC 1	SGSN Convenor
N052	Liaison Statement on USN Terms and Definitions	ITU-T JCA NID
N053	JTC 1/SC 6 Liaison statement to JTC 1/SC 27, JTC 1/SGSN and ITUT SG 17 for collaboration work on sensor networks security	JTC 1/SC 6
N054	JTC 1/SC 6 Liaison statement JTC 1/SGSN for collaboration work on Sensor Networks	JTC 1/SC 6
N055	Disposition of Comments on ISO/IEC NP 29180 Security framework for sensor networks	JTC 1/SC 6
N056	Disposition of Comments on ISO/IEC NP 29182 Reference architecture model for Sensor network applications and services	JTC 1/SC 6
N057	Report of the 23rd ISO/IEC JTC 1 Plenary meeting, 10-15 November 2009 in Nara, Japan and SGSN Actions to follow up the JTC 1 Nara Resolutions	SGSN Secretary
N058	2nd Revised draft agenda for the 3rd Meeting of ISO/IEC JTC 1 Study Group on Sensor Networks, Sydney, Australia, 19-23 January 2009	SGSN Convenor
N059	Creating Ubiquitous Services with Sensor Networks	JTC 1 Technology Watch Session at the JTC 1 Plenary meeting, 11th November 2008, Nara, Japan
N060	3rd Revised draft agenda for the 3rd Meeting of ISO/IEC JTC 1 Study Group on Sensor Networks, Sydney, Australia, 19-23 January 2009	SGSN Convenor
N061	Liaison Statement from JTC 1 SGSN to JTC 1 SCs	SGSN Sydney meeting
N062	Liaison Contribution from JTC 1 SGSN to JTC 1 Category A liaisons, Approved Referenced Specification Originator Organizations (ARO) and	SGSN Sydney meeting

	Publicly Available Specifications (PAS) Submitters	
N063	Liaison Statement from JTC 1 SGSN to ITU-T JCA NID on USN Terms and Definition	SGSN Sydney meeting
N064	Liaison statement from JTC 1 SGSN to JTC 1/SC 6/WG 7 on USN Security	SGSN Sydney meeting
N065	Liaison statement to JTC 1/SC 6/WG 7 from JTC 1/SGSN on SN Reference Architecture Model	SGSN Sydney meeting
N066	Liaison Contribution from JTC 1 SGSN to SDOs, fora and consortia with sensor network standardization activity	SGSN Sydney meeting
N067	Sensor Networks issues explored on privacy replying to JTC 1 Nara Resolution 31	SGSN Sydney meeting
N068	Resolutions of the 3rd ISO/IEC JTC 1 SGSN Meeting in Sydney, Australia, 19-23 January 2009	SGSN Sydney meeting
N069	Report of the 3rd ISO/IEC JTC 1 SGSN Meeting in Sydney, Australia, 19-23 January 2009	SGSN Secretary
N070	SGSN Technical Document Version 2	SGSN Sydney meeting
N071	Logistical Information and Draft Programme for the ISO/IEC JTC 1 SGSN Workshop, 15-17 April 2009, Seoul Korea	SGSN Secretary
N072	1st Draft agenda for the 4th Meeting of ISO/IEC JTC 1 Study Group on Sensor Networks, Oslo, Norway, 29 June – 3 July 2009	SGSN Convenor
N073	Meeting Announcement and Logistical information of the 4th Meeting of ISO/IEC JTC 1 Study Group on Sensor Networks, 29 June – 3 July 2009 in Oslo, Norway	SGSN Secretary
N074	Final programme for the ISO/IEC JTC 1 SGSN Workshop, 15-17 April 2009 in Seoul, Korea	SGSN Secretary
N075	Overview of Application-oriented Technique for Sensor Networks	SGSN Seoul Workshop
N076	SGSN Workshop Tutorial on Sensor Networks	SGSN Seoul Workshop
N077	Global Sensor Identification and Interface	SGSN Seoul Workshop
N078	Protocols for Sensor Networks	SGSN Seoul Workshop
N079	MANET USN's	SGSN Seoul Workshop

N080	Collaborative Information Processing on Vehicle Classification in Sensor Networks	SGSN Seoul Workshop
N081	Middleware for Sensor Networks	SGSN Seoul Workshop
N082	Chinese Strategies and Market for Sensor Networks	SGSN Seoul Workshop
N083	Sensor Networks for u-City 2	SGSN Seoul Workshop
N084	The German view on the Market for Sensor Networks	SGSN Seoul Workshop
N085	Public Service Applications of Sensor Network in China	SGSN Seoul Workshop
N086	RFID/USN in Port Logistics	SGSN Seoul Workshop
N087	Introduction of JTC 1	SGSN Seoul Workshop
N088	SGSN Activities in JTC 1	SGSN Seoul Workshop
N089	Standardization Issues in Sensor Networks	SGSN Seoul Workshop
N090	SC 6 Activities for Sensor Networks	SGSN Seoul Workshop
N091	SC 27 Activities for Sensor Networks	SGSN Seoul Workshop
N092	SC 29 Activities for Sensor Networks	SGSN Seoul Workshop
N093	ITU-T Activity : Sensor Networks – a key element in the positive effect of ICT on Climate	SGSN Seoul Workshop
N094	Standardization Activities in IEEE on Networks Sensor	SGSN Seoul Workshop
N095	Overview and Development Experience of ISA100 (Wireless Systems for Automation）	SGSN Seoul Workshop
N096	OGC and Sensor Web Enablement (SWE) Standards	SGSN Seoul Workshop
N097	New standardization activity in Europe : ETSI TC on M2M communications based on multi connectivity with sensor networks	SGSN Seoul Workshop
N098	RFID/USN Testbed & Test Tech	SGSN Seoul Workshop
N099	Smart space system for life-care	SGSN Seoul Workshop
N100	Document Register, N051-N100	SGSN Secretary
N101	Business Models Based on Sensor Networking Technologies	SGSN Seoul Workshop
N102	Surveillance and Reconnaissance Sensor Networks	SGSN Seoul Workshop

N103	Status and Future Plan for IP-USN	SGSN Seoul Workshop
N104	USN Architecture and Platform	SGSN Seoul Workshop
N105	Strategies and Markets for sensor networks	SGSN Seoul Workshop
N106	Liaison Statement from ISO/TC 211 to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	ISO/TC 211
N107	Liaison Statement from JTC 1/SC 36 to JTC 1 SGSN on Privacy replying to JTC1 Nara Resolution 31 in SGSN N067	JTC 1/SC 36
N108	Liaison Statement from ISO/TC 204 to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	ISO/TC 204
N109	Liaison Statement from JTC 1/SC 25 to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	JTC 1/SC 25
N110	Liaison Statement from JTC 1/SC 6 to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	JTC 1/SC 6
N111	Liaison Statement from W3C to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	W3C
N112	Liaison Statement from JTC 1/SC 29 to JTC 1 SGSN on Sensor Networks Issues Explored on Privacy	JTC 1/SC 29
N113	Liaison Statement from IEC/TC 65 to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	IEC/TC 65
N114	Liaison Statement from JTC 1/SC 37 to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	JTC 1/SC 37
N115	Liaison Statement from IEC TC 100 to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	IEC TC 100
N116	National Body of Korea's contribution to JTC 1 SGSN on JTC 1/SGSN Sydney Resolution 5" Request for Contributions on SGSN long term	NB of Korea

	role"	
N117	Chinese expert's contribution to JTC 1 SGSN on JTC 1/SGSN Sydney Resolution 5" Request for Contributions on SGSN long term role"	Chinese expert to SGSN
N118	Portuguese expert's contribution to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	Portuguese expert to SGSN
N119	UK expert's contribution to JTC 1 SGSN on SGSN Technical Document Version 2 in SGSN N070	UK expert to SGSN
N120	Liaison Organization Contribution from JTC 1/SC 27 to JTC 1 SGSN on Privacy issue in SGSN N067 and SGSN Technical Document Version 2 in SGSN N070	JTC 1/SC 27
N121	Korean expert contribution to JTC 1 SGSN on Middleware	Korean expert
N122	German expert contribution to JTC 1 SGSN on Middleware	German expert
N123	NB of US contribution on SGSN long term role	NB of US
N124	NB of UK contribution on SGSN long term role and TD	NB of UK
N125	2nd Revised Draft agenda for the 4th Meeting of ISO/IEC JTC 1 Study Group on Sensor Networks, Oslo, Norway, 29 June – 3 July 2009	SGSN Convenor
N126	Liaison response from JTC 1/SC 32 to JTC 1 SGSN on Privacy	JTC 1/SC 32
N127	Liaison response from JTC 1/SC 32 to JTC 1 SGSN on SGSN Technical Document SGSN N070	JTC 1/SC 32
N128	3rd Revised Draft agenda for the 4th Meeting of ISO/IEC JTC 1 Study Group on Sensor Networks, Oslo, Norway, 29 June – 3 July 2009	SGSN Convenor
N129	Liaison statement from ITU-T JCA-NID to JTC 1 SGSN on USN Terms and Definitions (SGSN N063)	ITU-T JCA-NID
N130	US expert contribution on the future organizational structure for JTC 1 SGSN	US Expert
N131	JTC 1/SCs Scopes	SGSN Secretary

N132	4th Revised Draft agenda for the 4th Meeting of ISO/IEC JTC 1 Study Group on Sensor Networks, Oslo, Norway, 29 June – 3 July 2009	SGSN Convenor
N133	Liaison Statement from JTC 1/SC 6 to JTC 1 SGSN for cooperation on sensor networks security	JTC 1/SC 6
N134	Liaison Statement from JTC 1/SC 6 to JTC 1 SGSN for cooperation on sensor networks architecture	JTC 1/SC 6
N135	Sensor Networks issues explored on privacy replying to JTC 1 Nara Resolution 31	SGSN Oslo meeting
N136	Middleware issues	SGSN Oslo meeting
N137	Final Agenda of the Oslo meeting	SGSN Convenor
N138	Report of Ad hoc group 1	Leader of Ad hoc group 1
N139	Report of Ad hoc group 2	Leader of Ad hoc group 2
N140	Report of Ad hoc group 3	Leader of Ad hoc group 3
N141	Report of the SGSN co-organized workshop on Sensor Network in Oslo	Organizer of the Workshop
N142	Integration of sensor networks and cellular networks	Chinese expert
N143	Resolutions of the 4th ISO/IEC JTC 1 SGSN Meeting in Oslo, Norway, 29 June – 3 July 2009	SGSN Oslo meeting
N144	Report of the 4th ISO/IEC JTC 1 SGSN Meeting in Oslo, Norway, 29 June – 3 July 2009	SGSN Secretary
N145	Liaison Statement from JTC 1 SGSN to ISO/TC 211	SGSN Oslo meeting
N146	Liaison Statement from JTC 1 SGSN to JTC 1/SC 25	SGSN Oslo meeting
N147	Liaison Statement from JTC 1 SGSN to IEC/TC 65	SGSN Oslo meeting
N148	Liaison Statement from JTC 1 SGSN to JTC 1/SC 32	SGSN Oslo meeting
N149	SGSN Technical Document Version 3	SGSN Oslo meeting
N150	Document Register SGSN N101-N150	SGSN Secretary
N151	Standardization Issues for USN Middleware	Ad hoc group on Middleware
N152	Sensor Networks issues explored on privacy replying to JTC 1 Nara Resolution 31	SGSN Oslo meeting
N153	Dispostion of comments on privacy issues	SGSN Oslo meeting
N154	SGSN Report to 2009 JTC 1 Plenary meeting	SGSN Convenor

Annex 2

<u>SGSN Members List</u>

		Member	Name	Organization
1	Convenor	Yongjin Kim	Modacom Co., Ltd
2	Secretary	Jooran Lee	Korean Standards Association
3	Canada	Wael Badawy	University of Calgary
4	Canada	Abdulkader Barbir	Nortel
5	China	Xing Tao	Shanghai Institute of Micro-system and Information Technology
6	China	Xu Quanping	China Electronics Standardization
7	China	Guo Nan	China Electronics Standardization
8	China	Wang Quan	College of Automation, Chongqing University of Posts and Telecommunications
9	China	Wang Zhongfeng	Shenyang Institute of Automation, Chinese Academy of Sciences
10	China	Long Shaohua	Chongqing University of Posts and Telecommunications
11	China	Tian Hui	Beijing University of Posts and Telecommunications
12	China	Wu Wenquan	Shanghai Research & Development Center of Hangzhou Homewell Intelligence Control Co., Ltd.
13	China	Li Jiandong	Xidian University
14	China	Xiao Yuelei	China IWNCOMM Co., Ltd.
15	China	Pang Liaojun	China IWNCOMM Co., Ltd.
16	France	Valérie Barnole	France Telecom
17	Japan	Yoshito Sakurai	Hitachi, Ltd.
18	Japan	Takashi Kan	Mitsubishi Electric Corporation
19	Japan	Koichi Emura	Panasonic
20	Japan	Munaka Tatsuji	Mitsubishi Electric
21	Korea	Jinseok Bae	KATS
22	Korea	Ho-In Jeon	Kyungwon University
23	Korea	Seung-Ok Lim	Korea Electronics Technology

			Institute
24	JTC 1/SC 6	Sang Keun Yoo	ETRI
25	Norway	Asbjorn Hovsto	ITS Norway
26	UK	Kate Grant	
27	UK	Philip Brown	
28	UK	Nigel Rix	Knowledge Transfer Networks
29	JTC 1/SC 31	Craig Harmon	Q.E.D. Systems
30	JTC 1/SC 31	Yuval Kost	Software Solutions Architect SandLinks
31	JTC 1/SC 31	Pankaj Sood	McMaster University
32	ISO/TC 211	Chris Body	Geoscience Australia - Corporate Information Management and Access Division Corporate Data and Web Unit
33	IEC TC 65 Secretary IEC SC65C Secretary	Bernard Dumortier	Schneider-Electric
34	US	Dr. Timothy Schoechle	Farance, Inc. 3066 6th Street Boulder, Colorado 80304 USA
35	Germany	Dr. Alexander Pflaum	Fraunhofer Centre for Applied Research on Technologies of the Logistics Service Industries
36	Germany (DKE K431 "low voltage switch and controlgear" and member of IEC 17B)	Heinz O. Walker	DKE
37	JTC 1/SC 36	Howard C. Choe	
38	IEC TC 100 (proxy)	Subing Zhang	
39	UK	Robin Tasker	
40	UK	John Larmouth	
41	Korea	Hyunkook Kahng	Korea Uni.

42	UK	Maryam Roshanaei	Westminster University
43	JTC 1/SC 31	DI Josef Preishuber-Pflügl	CTO, BU Manager RFID+RFComm
44	UK	Jack Cogman	JTC1/SC 24/WG 8 Convenor

Resolutions from SGSN meetings

SGSN Resolutions approved at the 3rd meeting (19-23 January 2009 in Sydney, Australia)

JTC 1/SGSN Sydney Resolution 1 - Liaison Contributions

SGSN instructs its Secretary to send the following liaison contributions:

Doc. #	Title	Liaison to	Note
SGSN N061	Liaison Statement from JTC 1 SGSN to JTC 1 SCs	JTC 1 SCs	Regarding JTC 1 Nara Resolution 45
SGSN N062	Liaison Statement from JTC 1 SGSN to Category A liaisons, Approved Referenced Specification Originator Organizations (ARO) and Publicly Available Specifications (PAS) Submitters	Category A liaisons, ARO, PAS Submitters	Regarding JTC 1 Nara Resolution 45
SGSN N063	Liaison Statement from JTC 1 SGSN to ITU-T JCA NID on USN Terms and Definition	ITU-T JCA-NID	Regarding SGSN 052
SGSN N064	Liaison Statement from JTC 1 SGSN to JTC 1/SC 6/WG 7 on USN Security	JTC 1/SC 6	Regarding SGSN N053
SGSN N065	Liaison Statement from JTC 1 SGSN to JTC 1/SC 6/WG 7 on SN Reference Architecture Model	JTC 1/SC 6	Regarding SGSN N054
SGSN N066	Liaison Statement from JTC 1 SGSN to other SDOs, consortia and fora	Other SDOs, consortia and fora	

- Approved

JTC 1/SGSN Sydney Resolution 2 – Privacy

SGSN approves "Sensor networks issues explored on privacy replying to JTC 1 Nara Resolution 31" in SGSN N067. And SGSN instructs its Secretary to forward it to JTC 1/SC6, SC 17, SC24, SC27, SC29, SC36 and SC37 for comments by 29 April 2009 to make an update version of it.

- Approved

JTC 1/SGSN Sydney Resolution 3 – SGSN Seoul Workshop

SGSN approves the JTC 1 SGSN Workshop to be held from 15 to 17 April 2009 in Seoul, Korea. SGSN requests its Convenor to work with the Workshop Session Chairs listed below to draft the workshop programme no later than 14 February 2009 and finalize it no later than 28 February 2009.

Titles of Workshop Sessions	Session Chairs
Session I : Technology & Applications for Sensor Networks	Howard Choe
Session II : Strategies and Market for Sensor Networks	Kate Grant
Session III : Sensor Networks Standardization in JTC 1	Dae Young KIM
Session IV : Sensor Networks Standardization in Other SDOs, Fora & Consortia	Alexander Pflaum

- Approved

JTC 1/SGSN Sydney Resolution 4 – Sensor Network Workshop in Oslo, Norway

SGSN recognizes that pHealth 2009 Workshop which will be held from 24 to 26 June 2009 in Oslo, Norway has a Session for Sensor Networks jointly organized by EFMI (European Federation Medical Informatics) Working Group Personal Portable Devices (PPD) and JTC 1 SGSN. SGSN also encourages its experts to attend the Workshop in Oslo as it is in conjunction with the 4th SGSG meeting, 29 June – 3 July 2009 in Oslo.

- Approved

JTC 1/SGSN Sydney Resolution 5 – Request for Contributions on SGSN long term role

SGSN requests its members to consider the role of the SGSN in the long term as activities related to sensor networks in JTC 1 develop and to submit the contributions to the SGSN Secretary reflecting experts' and NBs' opinions by 29 April 2009 to be discussed at the 4th SGSN meeting in Oslo.

- Approved

JTC 1/SGSN Sydney Resolution 6 – Action Agenda

SGSN approves the following action agenda for the SGSN before the JTC 1 2009 Plenary meeting.

Dates	Action	Note
15-17 April 2009	SGSN Workshop (Seoul, Korea)	Hosted by NB of Korea
29 April 2009	Submission of Contribution on TD	By JTC 1 SCs, Category A liaisons, ARO, PAS Submitters and other SDOs.
29 April 2009	Submission of contribution on TD	By SGSN members
29 April 2009	Submission of contribution on SGSN long term role	By SGSN members
26 June 2009	pHealth 2009 Workshop – Session "The Transition from Cards to Portable Devices and Sensor Networks for Wireless Personalized Health Services" (Oslo, Norway)	Jointly organized by EFMI Working Group Personal Portable Devices (PPD) and SGSN
29 June – 3 July 2009	4th SGSN meeting (Oslo, Norway)	Hosted by NB of Norway

11 September 2009	Contribution for the October 2009 JTC 1 Plenary Meeting	Submission of the SGSN report to the JTC 1 Secretariat
18-22 October 2009	JTC 1 Plenary Meeting in Tel Aviv, Israel	SGSN reporting by the Convenor to JTC 1

- Approved

<Acclamation>

JTC 1/SGSN Appreciation to the Meeting Hosts

JTC 1 SGSN expresses its gratitude to Standards Australia for their warm hospitality of this 3rd JTC 1 SGSN meeting in Sydney.

Michael Langdon	Standards Australia

And JTC 1 SGSN also expresses its special thanks to Chris Body for his arrangement of the 3rd JTC 1 SGSN meeting in Sydney.

- Acclaimed

SGSN Resolutions approved at the 4th meeting (29 June – 3 July 2009 in Oslo, Norway)

JTC 1/SGSN Oslo Resolution 1 - Liaison Contributions

SGSN instructs its Secretary to send the following liaison contributions:

Doc. #	Title	Liaison to	Note
SGSN N145	Liaison Statement to ISO/TC 211 on SGSN Technical Document	ISO/TC 211	Regarding SGSN N106
SGSN N146	Liaison Statement to JTC 1/SC 25 on SGSN Technical Document	JTC 1/SC 25	Regarding SGSN N109
SGSN N147	Liaison Statement to IEC/TC 65 on SGSN Technical Document	IEC/TC 65	Regarding SGSN N113

SGSN N148	Liaison Statement to JTC 1/SC 32 on SGSN Technical Document	JTC 1/SC 32	Regarding SGSN N127

- Approved

JTC 1/SGSN Oslo Resolution 2 – Privacy

SGSN approves Privacy issues replying to JTC 1 Nara Resolution 31 in SGSN N135. And SGSN instructs its Secretary to forward it to JTC 1 Secretariat for consideration at the 2009 JTC 1 Plenary meeting in Tel Aviv.

- Approved

JTC 1/SGSN Oslo Resolution 3 – Middleware

SGSN notes that Middleware issues replying to JTC 1 Nara Resolution 31 in SGSN N136 need to be further studied. Therefore, SGSN requests Ad-hoc group on Middleware to finalize Middleware issues and submit it to its Secretary by 31st July 2009 to forward it to JTC 1 Secretariat for consideration at the 2009 JTC 1 Plenary meeting in Tel Aviv.

- Approved

JTC 1/SGSN Oslo Resolution 4 – Circulation of Documents

SGSN instructs its Secretary to circulate the following documents to SGSN members for information.

Doc. #	Title
SGSN N138	Report of Ad hoc group 1 activities
SGSN N139	Report of Ad hoc group 2 activities
SGSN N140	Report of Ad hoc group 3 activities
SGSN N141	Report of the Oslo Workshop co-hosted by P-health 2009 and SGSN
SGSN N142	M2M Sensor Networks

SGSN N144	Report of the SGSN Oslo meeting

- Approved

JTC 1/SGSN Oslo Resolution 5 – Action Agenda

SGSN approves the following action agenda for the SGSN.

Dates	Action	Note
31 July 2009	Finalization of Middleware issues	Submission of Middleware issues to SGSN Secretary
7 August 2009	Finalization of TD Version 3	Submission of TD Version 3 by the Editor to SGSN Secretary
11 September 2009	Contribution for the October 2009 JTC 1 Plenary Meeting	Submission of the SGSN report to the JTC 1 Secretariat
18-22 October 2009	JTC 1 Plenary Meeting in Tel Aviv, Israel	SGSN reporting by the Convenor to JTC 1
8-12 March 2010	SGSN Meeting in London, UK (Subject to 2009 JTC 1 Plenary Resolution)	Hosted by NB of UK (BSI)
23-27 August 2010	SGSN Meeting in US (Subject to 2009 JTC 1 Plenary Resolution) (Tentative)	Hosted by NB of US (ANSI)

- Approved

JTC 1/SGSN Oslo Resolution 6 – SGSN Long Term Role

SGSN recommends to JTC 1, subject to approval of appropriate work items, a working group directly under JTC 1. One or more proposals for new work item(s) will be submitted to JTC 1 for consideration at the JTC 1 Plenary meeting to establish the working group.

- Approved

<Acclamation>

JTC 1/SGSN Appreciation to the Meeting Host

JTC 1 SGSN expresses its gratitude to Standards Norway for their warm hospitality of this 4th JTC 1 SGSN meeting in Oslo.

| Knut Lindelien | Standards Norway |
| Bjørnhild Sæterøy | Standards Norway |

- Acclaimed

JTC 1/SGSN Appreciation to the Meeting Sponsor

JTC 1 SGSN expresses its appreciation to ITS Norway for their sponsorship of this 4th JTC 1 SGSN meeting in Oslo.

Trond Hovland	ITS Norway
Helge Jensen	ITS Norway
Asbjørn Hovstø	ITS Norway

- Acclaimed