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

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Terms defined in WGSN-007 (Technical Document on Sensor Networks Version 3)

- **Sensor**

A sensor is a device that observes phenomenon/phenomena, measures physical property and quantity of the observation, and converts the measurement into a signal.

Note: (1) Signal can be electrical, chemical, or other types of sensory responses; (2) Signal can be represented by 1-D, 2-D, 3-D, or higher dimensional data.

- **Actuator**

An actuator is a device that performs a physical response caused by an input signal.

- **Sensor node**

A sensor node is a device that consists of at least one sensor and zero or more actuators, and has processing and networking capabilities through wired or wireless means.

- **Sensor network gateway**

The sensor network gateway represents the bridge between the sensor network itself and the back-end system.

Note: Therefore, a sensor network gateway is required to provide wired/wireless interface(s) to other sensor nodes as well as a wired (e.g., Ethernet) or wireless (e.g., mobile Ethernet via WLAN, UMTS or SatCom) interface to the existing IT infrastructures.

- **Sensor networks**

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.

Note: Sensor network is a system, at least, consisting of sensors, actuators, and communication nodes.

- **Sensor network services**

The sensor network service is the functions offered by the sensor nodes or sensor networks.

- **User services**

The user service is a service offered to a user by a provider.

Note: A sensor network application performs value-adding functions to sensor data according to user requirements, and finally the processing results are provided as a service to the user.

- **Sensor network application**

The sensor network application is a use case of sensor networks supporting a set of sensor network services for users.

Note: The services are, for example, home utility monitoring and control, industrial automation, infrastructure and environment monitoring, weather and disaster condition monitoring and emergency alert. More examples are listed in Section 4 and the description of the sensor services are found in Annex A.

Note: Sensor network application implies the utilization of software and hardware that can be performed in a fully or partially automatic way and can be accessed locally or remotely.

Terms defined in WGSN-008 (ISO/IEC 29182 Information technology — Sensor Networks — Reference architecture for sensor network applications and services)

- **Actuator**

A device that performs a physical response caused by an input signal

- **Sensor**

A device that observes phenomenon/phenomena, measures physical property and quantity of the observation, and converts the measurement into a signal.

Note:
- Signal can be electrical, chemical, or other types of sensor responses.
- Signal can be represented by 1-D, 2-D, 3-D, or higher dimensional data.

- **Sensor network**

A system of spatially distributed sensor nodes interacting with each other and, depending on applications, interacting with other infrastructure in order to

acquire, process, transfer, and provide information extracted from the physical world.

- **Sensor network applications**

The sensor network application is a use case of sensor networks supporting a set of sensor network services for users.

Note: The services are, for example, home utility monitoring and control, industrial automation, infrastructure and environment monitoring, weather and disaster condition monitoring and emergency alert.

Note: Sensor network application implies the utilization of software and hardware that can be performed in a fully or partially automatic way and can be accessed locally or remotely.

- **Sensor network device**

The sensor network device is sensor node or sensor network gateway.

- **Sensor network gateway**

The sensor network gateway represents the bridge between the sensor network itself and the backend system.

- **Sensor network services**

A structure set of capabilities offered by the sensor nodes or sensor networks to support sensor network applications.

- **Sensor network service management**

Sensor network service situation management and execution control process, supporting flexible execution between multi-services/multi-contents in the multi-domain environment.

- **Sensor node**

A device that consists of at least one sensor and zero or more actuators, and processing and networking capabilities using wired or wireless means.

Terms defined in ITU-T Y.2201Rev1

- **Context awareness**

Context awareness is a capability to determine or influence a next action in telecommunication or process by referring to the status of relevant entities, which form a coherent environment as a context.

Terms defined in ITU-T Y.2221

- **Sensor**

Electronic device that senses a physical condition or chemical compound and delivers an electronic signal proportional to the observed characteristic.

- **Sensor network**

A network comprised of inter-connected sensor nodes exchanging sensed data by wired or wireless communication.

- **Sensor node**

A device consisting of sensor(s) and optional actuator(s) with capabilities of sensed data processing and networking.

- **Ubiquitous Sensor Network (USN)**

A conceptual network built over existing physical networks which make use of sensed data and provide knowledge services to anyone, anywhere and at anytime, and where the information is generated by using context awareness.

- **USN middleware**

A set of logical functions to support USN applications and services.

NOTE - The functionalities of USN middleware include sensor network management and connectivity, event processing, sensor data mining, etc.

Terms defined in ITU-T Recommendation F.USN-MW

- **Open application interface**

An interface used by USN applications to access USN middleware.

- **Processed data**

Data which are processed from raw sensed data by sensor network or USN middleware.

- **Sensed data**

Data sensed by a sensor which is attached to a specific sensor node.

- **Sensor network common interface**

An interface used between USN middleware and a sensor network/Radio Frequency Identification (RFID) reader.

- **Sensor network metadata**

Information about sensor network such as description of a sensor network, sensor node identifier, supported sensor type, the number of attached sensors for each sensor node, and the number of sensor nodes connected to the specific sensor network, etc.

- **Sensor network metadata directory service**

A directory service which provides sensor network metadata.

Terms defined in Draft ITU-T Recommendation H.snmf

- **Sensor network management protocol agent:**

A sensor network management protocol entity containing one or more command responder and/or notification originator applications (along with their associated sensor network management protocol engine)

- **Sensor network management protocol manager**

A sensor network management protocol entity containing one or more command generator and/or notification receiver applications (along with their associated sensor network management protocol engine)

Terminology to be defined in JTC1 WG7

- **Actuator** **(Graeme)**
- **Sensor** **(Graeme)**
- **Sensor node** **(Graeme)**
- **Sensor networks** **(Graeme)**
- **Sensor networks gateway** **(Graeme)**
- **Sensor networks device** **(Graeme)**
- **Sensor networks function / function** **(Graeme)**
- **Sensor networks service / service** **(Kate)**
- **Sensor networks application / application** **(Kate)**
- **Sensor networks operating system** **(Kate)**
- **Physical world** **(Kate)**
- **Rest of world** **(Kate)**
- **Sensor interface** **(Kate)**
- **Sensor node interface** **(Kate)**
- **Data interface** **(Nigel)**
- **Middleware** **(Nigel)**

- **Layer** **(Nigel)**
- **Service layer** **(Nigel)**
- **Application layer** **(Nigel)**
- **Basic functions layer** **(Nigel)**
- **Service access point** **(Nigel)**
- **Service management** **(Nan)**
- **Entity** **(Howard)**
- **Sensor data** **(Howard)**
- **Raw data** **(Howard)**
- **Metadata** **(Howard)**
- **Pre-processed data** **(Howard)**
- **Information** **(Nan)**
- **Knowledge** **(Nan)**
- **Identification** **(Nan)**
- **Identity** **(Nan)**
- **Reference architecture** **(Howard)**
- **Reference model** **(Howard)**
- **Collaborative information processing** **(Nan)**
- **Communication** **(Nan)**
- **Sensor networks Security & Privacy** **(Nan)**
- **Information service supporting** **(Nan)**
- **Etc…..** **(Open to everyone)**

The search engines we may use:

1. ISO concept database

   http://cdb.iso.org/ (you can login in as guest)

2. international Electrotechnical Vocabulary

   http://www.electropedia.org/

3. *TERMIUM Plus*®:

   http://www.btb.termiumplus.gc.ca (after choosing the language, just click “launch TERMIUM Plus® “on the left)

4. other search engines: Wiki, etc…

Term: **Sensor**

Definition:

A sensor is a device that observes phenomenon/phenomena, measures physical property and quantity of the observation, and converts the measurement into a signal.

Note:

- Signal can be electrical, chemical, or other types of sensory responses
- Signal can be represented by 1-D, 2-D, 3-D, or higher dimensional data

(current WGSN N007, N008)

Also used in:

Standard	Clause	Definition	Database	Note
ISO/IEC GUIDE 99:2007	2.1.5	element of a measuring system that is directly affected by a phenomenon, body, or substance carrying a quantity to be measured		
ISO 2806:1994		unit which is actuated by a physical quantity and which gives a signal representing the value of that physical quantity		
ISO/TR 11065:1992	5.6.2	A unit which is actuated by a physical quantity and which gives a signal representing the value of that physical quantity.		
ISO 14617-15:2002	3.5	primary element of a measuring chain which converts the input variable into a signal suitable for measurement		
ISO 10418:2003	3.1.51	device which automatically detects an operating condition and transmits a signal to initiate/perform a specific control function		
ISO 16484-2:2004	3.178	device or instrument designed to detect or measure a variable		
ISO/IEC 19762-4:2008	06.04.10	electronic device that senses a physical condition or chemical compound and delivers an electronic signal proportional to the observed characteristic		
ISO 23552-1:2007	3.4	device that gives a signal related to a physical property to which it responds		
ISO 5598:2008	3.2.649	device that detects		

		a condition in a system or component and produces an output signal		
ITU-T Y.2221	3.1.2	Electronic device that senses a physical condition or chemical compound and delivers an electronic signal proportional to the observed characteristic.		
ITU-T Draft ITU-T Recommendation F.USN-MW	***3.12***			
ITU-T Draft ITU-T Recommendation H.snmf	***3.1.3***			

Term: **Sensor node**

Definition:

A device that consists of at least one sensor and zero or more actuators, and processing and networking capabilities using wired or wireless means.

(current WGSN N007, N008)

Also used in:

Standard	Clause	Definition	Database	Note
ISO/IEC 14772-1:1997	3.91	A node that enables the user to interact with the world in the scene graph hierarchy. Sensor nodes respond to user interaction with geometric objects in the world, the movement of the user through the world, or the passage of time. See 4.6.7, Sensor nodes, for details.		
ITU-T Y.2221	3.1.4	A device consisting of sensor(s) and optional actuator(s) with capabilities of sensed data processing and networking.		
ITU-T Draft ITU-T Recommendation F.USN-MW	***3.14***			
ITU-T Draft ITU-T Recommendation H.snmf	***3.1.5***			