

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

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<b>MB<sup>2</sup></b>	<b>Clause No./ Subclause No./ Annex<sup>3</sup></b>	<b>Paragraph/ Figure/ Table/ Note<sup>4</sup></b>	<b>Type of comment<sup>5</sup></b>	<b>Comment by the MB<sup>6</sup></b>	<b>Proposed change by the MB</b>	<b>Secretariat observations<sup>7</sup></b>
LU 1	6.2 Dynamic provisionin g of service		te	The description can be improved and extended with more information on sensor network as an infrastructure for dynamic service definition and execution integrating field data.	<p>Suggest replacing the current text with the following:</p> <p>“Some sensor networks may have dynamic adaptation and/or self-adaptation characteristics.</p> <p>Sensor networks accommodate specific end-user requirements through communication and collaboration among their nodes (both sensor nodes and gateway nodes, when the sensor network is connected to the “Rest of the world”), which allows them acquiring, processing, transferring, and providing information from the physical world and optionally reacting.</p> <p>Those interactions (communications and collaborations) are driven by the individual embedded sensor node and gateway node programs.</p> <p>In some areas, like Ambient Intelligence and Self-Serve applications, end-users' service requirements and expectations may be diverse and dynamically changing. Sensor networks are incorporated in these applications as field information service infrastructure, which may be combined with other data sources</p>	

<sup>1</sup> Columns 1, 2, 4, 5 are compulsory

<sup>2</sup> MB = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>3</sup> e.g. 3.1

<sup>4</sup> e.g. Table 1

<sup>5</sup> ge = general te = technical ed = editorial

<sup>6</sup> justification for change

<sup>7</sup> on each comment submitted

					<p>like private enterprises with functions including data filtering, data mining, context-aware decision making, estimation and forecasting.</p> <p>As in the example below, some users may ask for weather information from the weather information services, but due to their different needs, they have different service requirements demanding the different levels of services:</p> <ul style="list-style-type: none"> <li>- Fishermen may request on-demand and periodic weather information for fishing;</li> <li>- Tourists may request periodic and warning/alarming information of the nature's condition for a few days, a week, or a month by a service subscription;</li> <li>- Crewmen of a ship may request long-term weather forecasting information;</li> <li>- National disaster centre may request the whole weather information to observe the natural phenomena of an area and detect emergency situations.</li> </ul> <p>The above may be "hard-coded" and provided as a predefined, although diverse, set of services. Or, the sensor network may serve as a platform for runtime definition of user-specific services by dynamic programming of the sensor network. The goal of dynamic reprogramming consists in changing at runtime the rules that govern sensor network activities. All or only part of the nodes (sensor and gateway nodes) in a sensor network may be concerned by dynamic reprogramming.</p> <p>Dynamic reprogramming may be triggered manually or automatically. Typically, if the back-end network is related to a dynamic sensor network macro-programming environment or to an automated reasoning system. In these cases, the new program is computed and communicated via the back-end network. New sensor network programs may also be computed by sensor nodes themselves, being provided by another sensor node (case of intra- and inter-sensor network code mobility), or acquired directly from interacting end-users.</p> <p>This is in contrast with many of the traditional sensor networks (or sensors-on-the-network), installed for specific application</p>	
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**Comments and secretariat observations**  
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					<p>purposes where consumer service models are not considered. The examples of those include structures monitoring, street light control, agriculture monitoring and management, military surveillance, city facilities management, home utility control, and flood and fire monitoring.”</p>	
LU 2	Clause 6 Characteristics of sensor networks		te	A description concerning self-adaptive sensor networks may be added.	<p>Suggest the following paragraph:</p> <p>“In self-adaptive sensor networks, the service and basic node functions in Fig.2 may self-adapt to accommodate changing conditions, and optimize resource management and the sensor node function.”</p>	
LU 3	Clause 6.5 Extension of Internet		te	The description can be extended.	<p>Suggest adding the following paragraph:</p> <p>“The emerging sensor networks may also be regarded as an extension of Internet towards the so-called Internet of Services, Users may regard the sensor network as a provider of sensing and actuating atomic services (in the sense of service-oriented computing), and use them to compose more sophisticated services (service orchestration). For example, an atomic sensing service could be “The current temperature of Jane’s grandmother’s home”, and could be used to compose a service that checks periodically the home temperature, and if an alert level is reached, sends an email to Jane. In this case, Jane subscribes dynamically to her grandmother’s home temperature service.”</p>	
LU 4	7.2 Communications	First paragraph.	te	The paragraph can be extended.	<p>Suggest extending the paragraph with the following:</p> <p>“The communication capability among sensor nodes themselves, sensor nodes and gateway nodes, and among gateway nodes themselves, may be used for communicating both data and program.”</p>	
LU 5	7.5 Mobility support		te	The title can be made more explicit.	<p>Suggest changing the title with the following:</p> <p>“Sensor node mobility support”</p>	
LU 6	7 General requirements for sensor networks		te	Code mobility may be a major requirement in some	<p>Suggest adding the following subclause:</p> <p><b>“Code mobility support</b></p> <p>A sensor network may support code mobility to support features</p>	

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				sensor networks.	<p>like dynamic reprogramming, dynamic reorganization, dynamic resource optimization, as well as to support the implementation of QoS, scalability, security, self-healing, and other quality attribute policies. Code may move within the same sensor network (intra-mobility) and to another sensor network (inter-mobility). Also, a sensor network shall accept the transition of a sensor node code from another sensor network.</p> <p>A sensor network may support dynamic reprogramming (through code mobility) to support dynamic adaptation to changes in user requirements. Dynamic reprogramming may concern all or part of sensor nodes.</p> <p>NOTE: In contrast with 7.5, in these applications sensor nodes are not necessarily mobile (although could be), but the sensor node code is mobile for optimization reasons, or to accommodate specific end-user needs. "</p>	
LU 7	5 Overview of sensor networks	2 <sup>nd</sup> paragraph, 3 <sup>rd</sup> line	ed	Typo	Change "Date" to "Data".	
LU 8	5 Overview of sensor networks	Beginning of the 3 <sup>rd</sup> paragraph	ed	Typo	Change "Figure 2 illustrated" to "Figure 2 illustrates".	
LU 9	5 Overview of sensor networks	Third paragraph.	ed	Ambiguous numbering.	Suggest using letters (a), (b) and (c) to enumerate the three interfaces, instead of repeating (1), (2) and (3).	
LU 10	6.3 Application inter-working	First paragraph.	ed	Typo	Remove "the" in the following: "... may allow the a sensor network to be developed ..."	