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# Information technology — Sensor networks — Generic Sensor Network Application Interface

*Technologies de l'information — Réseaux de capteurs — Interface générique pour des applications de réseaux de capteurs*

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# Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*.


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# Introduction

Sensor network is a key technology to enable building context aware smart environments for human beings, monitoring health status, cross-reality services, etc. But there are many different sensor network implementations and they are not interoperable. In general, sensor networks are developed according to the sensor network applications' requirements (in which ways sensor network applications use sensor networks) within sensor network hardware constraints.

When it comes to sensor network applications' requirements, they include transport-level requirements, sensor networks' hardware point of requirements, applications' operational requirements, etc. Of these requirements, applications' operational requirements affect sensor network implementations, even though each sensor network supports the same transport protocol and uses the same hardware specification. However, these applications' operational requirements can be generalized and can be used to derive standard application layer interfaces between sensor networks and sensor network service providers.

This International Standard specifies generic sensor network application interfaces based on the generalized sensor network applications' operational requirements with consideration on sensor network hardware constraints.

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# Information technology — Sensor networks — Generic Sensor Network Application Interface

## 1 Scope

This International Standard specifies the interfaces between the application layers of service providers and sensor network gateways, which is Protocol A in interface 3, defined in ISO/IEC 29182-5.

This International Standard covers

— description of generic sensor network applications' operational requirements,

— description of sensor network capabilities, and

— mandatory and optional interfaces between the application layers of service providers and sensor network gateways

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 29182-2:2013, *Information technology — Sensor networks: Sensor Network Reference Architecture (SNRA) — Part 2: Vocabulary and terminology*

ISO/IEC 29182-5:2013, *Information technology — Sensor networks: Sensor Network Reference Architecture (SNRA) — Part 5: Interface definitions*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**3.1**
**actuator**
device that provides a physical output in response to an input signal in a predetermined way

[SOURCE: ISO/IEC 29182-2:2013, 2.1.1]

**3.2**
**application layer**
layer that provides means for the application processes to access the OSI environment

[SOURCE: ISO/IEC 29182-2:2013, 2.3.1.1]

**3.3**
**authentication**
act of verifying the claimed identity of an entity

[SOURCE: ISO/IEC 29182-2:2013, 2.6.1]

Note 1 to entry: Entity may include sensor, actuator, or sensor network element.

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