



SLOVENSKI STANDARD
oSIST prEN IEC 63430:2024
01-julij-2024

Shranjevanje podatkov za nosljivi senzor

Data container for wearable sensor

Conteneur de données pour capteur prêt-à-porter

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TITLE:

Data Container for Wearable Sensor

PROPOSED STABILITY DATE: 2030

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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DATA CONTAINER FORMAT FOR WEARABLE SENSOR

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FOREWORD

100 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising
 101 all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international
 102 co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and
 103 in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports,
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 105 preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with
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 126 expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.

127 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is
 128 indispensable for the correct application of this publication.

129 International Standard IEC XXXXX has been prepared by Technical Area 18: Multimedia home
 130 systems and applications for end-user networks, of IEC Technical Committee 100: Audio, video
 131 and multimedia systems and equipment.

132 The text of this International Standard is based on the following documents:

FDIS	Report on voting
100/XX/FDIS	100/XX/RVD

133

134 Full information on the voting for the approval of this International Standard can be found in the
 135 report on voting indicated in the above table.

136 The language used for the development of this International Standard is English.

137 This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

138 The committee has decided that the contents of this document will remain unchanged until the
 139 stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to
 140 the specific document. At this date, the document will be

- 141 • reconfirmed,
142 • withdrawn,
143 • replaced by a revised edition, or
144 • amended.

145

146 The National Committees are requested to note that for this document the stability date
147 is 20XX..

148 THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED
149 AT THE PUBLICATION STAGE.

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INTRODUCTION

154 TC100 is developing International Standard (IS) define container format for sensing data and
155 its system requirements.

156 This IS captures the results the work of TC100 Technical Area 18 on multimedia home systems
157 and applications for end-user networks. The document reflects contributions and discussions
158 by TC100 experts, mirror committees, liaison members. This IS contains material gathered from
159 reports and group output from the TC100 meetings in May 2019 (London), October 2019
160 (Shanghai), October 2020 (Online), May 2021 (Online) as well as information obtained during
161 various web meetings.

162 This document is also positioned as a result of the activities of a collaboration framework
163 between TC100, IEC SyC. AAL and TC124. At the IEC General Meeting in Busan in 2018, three
164 Committees related to wearable systems and technologies, SyC. AAL, TC 100 and TC 124 had
165 a joint workshop and agreed to collaborate for developing relevant standards and to have their
166 role sharing. This collaboration agreement was advanced to a Joint Advisory Group (JAG) and
167 the JAG was established managed by SyC. AAL in 2019.

168 The target audience for the IS include the following stakeholders who have an interest in the
169 systems and services using wearable devices:

- 170 ● Consumer Electronics (CE) and Information Communications Technology (ICT) device
171 manufacturers.
- 172 ● System integrators who want to utilize wearable device and technologies.
- 173 ● Service operators who are interested in the IoT and multimedia systems and services.
- 174 ● Stakeholders who want to understand the technologies and requirements for wireless
175 connectivity between wearable sensor nodes and hub coordinator.

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DATA CONTAINER FORMAT FOR WEARABLE SENSOR

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179 **1. Scope**

180 This International Standard (IS) specifies container format for sensing data and its system
181 requirements. This IS applies to edge computing devices such as smartphone, home gateway,
182 multimedia coordinator etc. and cloud systems.

183 This document describes the following technical specifications;

- 184 - Container format for wearable sensor data,
185 - Schema Repository that defines parameter and syntax of sensor data,
186 - Communication and system requirements between edge computing device and Schema
187 Repository.

188 **2. Normative references**

189 The following documents are referred to in the text in such a way that some or all of their content
190 constitutes requirements of this document. For dated references, only the edition cited applies.
191 For undated references, the latest edition of the referenced document (including any
192 amendments) applies.

193 [1]

194 **3. Terms and definitions**

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

196 ISO and IEC maintain terminological databases for use in standardization at the following
197 addresses:

- 198 • IEC Electropedia: available at <http://www.electropedia.org/>
199 • ISO Online browsing platform: available at <http://www.iso.org/obp>

200 **3.1**

201 **Container**

202 data structure that encapsulates one or multiple numbers of digital data. Each digital data
203 consists of various kinds of data such as sensor signals, audio signals, video signals, metadata,
204 programs, etc.

205 **3.2**

206 **Schema Information**

207 structural information that represents the data structure of a Container payload

208 **3.3**

209 **Schema Repository**

210 server that stores Schema Information

211

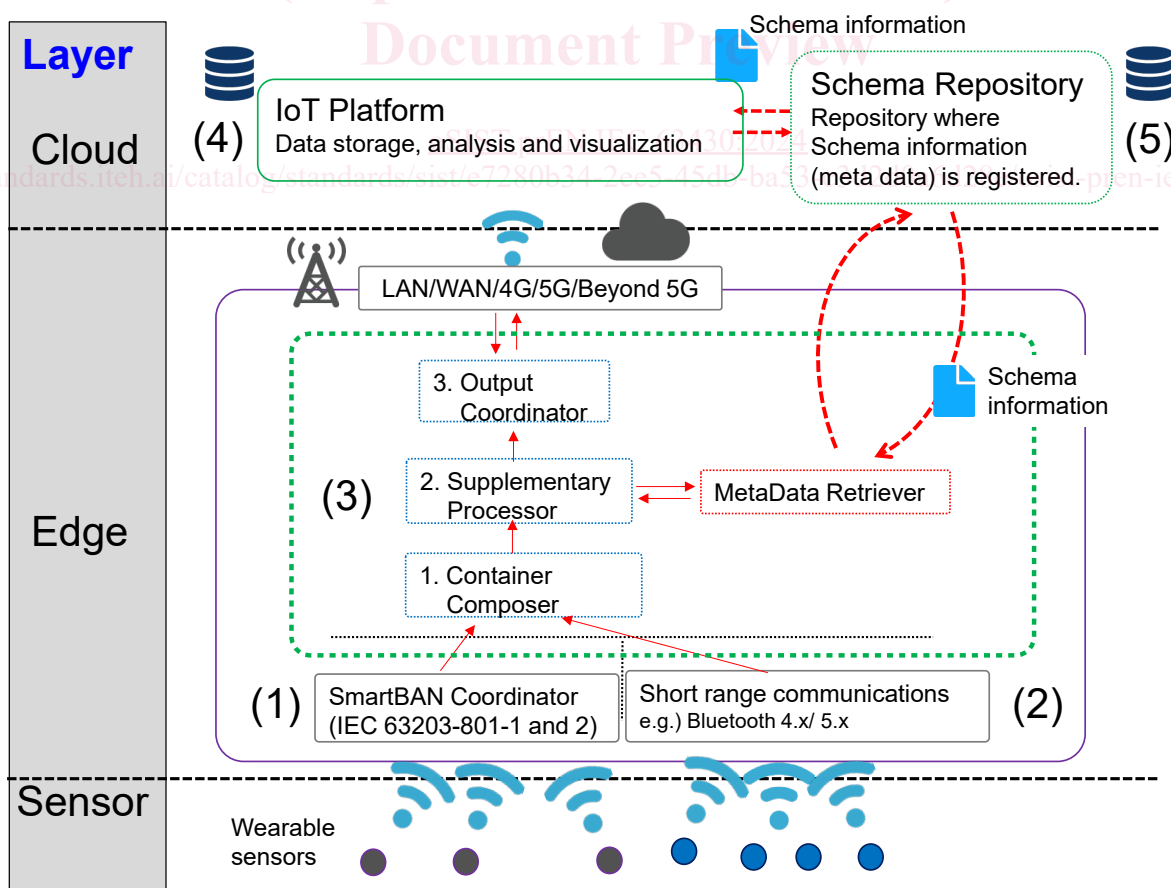
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213 **4. Abbreviated terms**

214	BAN	Body area network
215	CRC	Cyclic redundancy check
216	FEC	Forward error correction
217	GTIN	Global trade item number
218	IANA	Internet assigned numbers authority
219	ID	Identifier
220	IoT	Internet of Things
221	MAC	Medium access control
222	RS	Reed Solomon
223	UUID	Universal unique identifier

224 **5. System structure**225 **5.1 System overview**

226 Sensing data detected by wearable sensors (e.g. vital sensors, environmental sensors, etc.) is
 227 transmitted from wearable sensors to edge computing devices (e.g. wearable signal
 228 aggregators, smartphones, etc.) through BAN(e.g. SmartBAN [1],[2]), Bluetooth [3] and other
 229 short range communications. Figure 1 shows a diagram in which (1) SmartBAN hub and (2)
 230 Bluetooth client are installed in one (3) edge computing device for convenience. In reality, either
 231 (1) SmartBAN or (2) Bluetooth client may be installed. The sensing data collected by either
 232 wireless method is encapsulated into a container as a function of (3) edge computing device.
 233 Then, the container is transferred to an (4) IoT platform located in a cloud. When formatting the
 234 data collected by (1) SmartBAN hub or (2) Bluetooth client into a container in (3) edge
 235 computing device, the edge computing device can obtain the header configuration and payload
 236 information how to encapsulate the sensing data into the container from (5) Schema Repository
 237 if the edge computing device does not have any pre-set header configuration nor payload
 238 information for the above-mentioned wearable sensors.
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Figure 1– System overview