

ISO/IEC 30179:2023-01 (E)

Internet of Things (IoT) - Overview and general requirements of IoT system for ecological environment monitoring

Contents		Page
FOREWORD.....		4
INTRODUCTION.....		5
1 Scope.....		7
2 Normative references		7
3 Terms and definitions		7
4 Symbols and abbreviated terms.....		7
5 IoT system overview for ecological environment monitoring.....		8
5.1 System infrastructure overview		8
5.2 Entities description		9
5.2.1 Entities in Physical Entity Domain (PED)		9
5.2.2 Entities in Sensing and Controlling Domain (SCD).....		9
5.2.3 Entities in Application and Service Domain (ASD).....		11
5.2.4 Entities in User Domain (UD).....		12
5.2.5 Entities in Operations and Management Domain (OMD)		12
5.2.6 Entities in Resource Access and Interchange Domain (RAID).....		13
5.3 Interface description		13
6 General requirements of IoT system for EEM.....		14
6.1 System functional requirements		14
6.1.1 Data acquisition and data collection.....		14
6.1.2 Auto configuration		15
6.1.3 IoT gateway.....		15
6.1.4 Network communication.....		15
6.1.5 Applications and services		15
6.1.6 Users and supporting facilities		16
6.1.7 Operation and maintenance management.....		16
6.1.8 Context-awareness		16
6.1.9 Discoverability		16
6.1.10 Sharing ability.....		16
6.1.11 Resource access and interchange		17
6.1.12 Identification.....		17
6.1.13 Flexibility		17
6.1.14 Regulation		17
6.1.15 Equipment, network and service scalability.....		17
6.1.16 Eco-environment analysis and alarming.....		17
6.2 System security requirements		17
6.2.1 Reliability.....		17
6.2.2 Resilience.....		18
6.2.3 Accessibility and availability		18
6.2.4 Confidentiality and privacy.....		18
6.2.5 Integrity		18
6.3 System performance requirements.....		18

6.3.1	Data acquisition sampling rate	18
6.3.2	Data accuracy	19
6.3.3	Enclosure protection	19
6.3.4	Sensor working mode	19
6.3.5	Sensor durability.....	19
6.3.6	Communication protocols.....	19
6.3.7	Data communication latency	19
6.3.8	Power supply	20
6.3.9	Synchronization	20
6.3.10	Applications and services	20
6.3.11	Users and supporting facilities	20
6.3.12	Operation and management.....	20
6.3.13	Resource access and interchange	20
Bibliography.....		21
Figure 1 – System infrastructure of IoT system for EEM.....		8
Table 1 – Entity descriptions in PED		9
Table 2 – Entity descriptions in SCD		10
Table 3 – Entity descriptions in ASD		11
Table 4 – Entity descriptions in UD		12
Table 5 – Entity descriptions in OMD		13
Table 6 – Entity descriptions in RAID		13
Table 7 – Interface description.....		14