

ISO/IEC 15045-3-1:2024-12 (E)

Information technology - Home Electronic System (HES) gateway - Part 3-1: Privacy, security, and safety - Introduction

Contents	Page
FOREWORD.....	4
INTRODUCTION.....	6
0.1 Overview.....	6
0.2 Relation to existing work.....	6
0.3 Relevant affected stakeholder categories.....	7
1 Scope.....	9
2 Normative references.....	9
3 Terms, definitions and abbreviated terms.....	9
3.1 Terms and definitions.....	9
3.2 Abbreviated terms.....	11
4 Conformance.....	11
5 Protection of privacy, security, and safety.....	11
5.1 Privacy, security and safety concepts and principles in the HES gateway.....	11
5.2 Structural protections provided by the HES gateway system.....	11
5.3 Interface and application services protections.....	12
5.3.1 Key concepts, principles and practices.....	12
5.3.2 HES concept.....	12
5.3.3 HES gateway concept.....	12
5.3.4 Interface module concept.....	13
5.3.5 Service module concept.....	13
5.3.6 Application platform concept.....	13
5.3.7 Internal communication bus concept.....	13
5.3.8 DSS principle and practice.....	13
5.4 Operational protections.....	14
5.5 Risk management.....	14
5.5.1 Overview.....	14
5.5.2 Risk assessment.....	14
5.5.3 Risk treatment.....	27
5.6 Privacy, security, and safety guidelines and requirements.....	28
5.6.1 Privacy-by-design approach.....	28
5.6.2 External services non-reliance principle and practice.....	28
5.6.3 Use of wireless or shared media principle and practice.....	28
5.6.4 Privacy best practice.....	29
5.6.5 Privacy next best practice.....	29
5.6.6 Online update vulnerability principle.....	29
5.6.7 Online OS update vulnerability principle.....	29
5.6.8 "Social engineering" vulnerability principle.....	29
5.6.9 Privacy-by-design principle and practice.....	29
5.6.10 User priority principle.....	29
5.6.11 Fail-safe principle.....	30
5.6.12 Precautionary principle.....	30
5.6.13 Normal accident principle.....	30

5.6.14	Privacy principles	30
5.6.15	Watchdog practice	30
5.6.16	Redundancy principle	30
6	Common services	30
6.1	Common services	30
6.2	Binding map.....	31
6.3	HES gateway unique ID service module	31
6.4	Cryptographic services	31
6.5	Authorization and authentication service	31
6.6	Time service	32
Annex A (informative)	Privacy protection principles and sources	33
A.1	Privacy protection principles	33
A.2	Sources	33
Annex B (informative)	Guidance to developers.....	35
B.1	General protection	35
B.2	Privacy protection	35
B.3	Security protection.....	36
B.4	Safety protection.....	36
Bibliography.....		38

Figure 1 – ISO/IEC 15045-3-1 within the core interoperability and HES gateway standards.....	8
Figure 2 – HES gateway generalized architecture	12
Figure 3 – Risk assessment diagram	15
Figure 4 – HAN masquerade and replay.....	16
Figure 5 – WAN masquerade and replay.....	17
Figure 6 – HAN interception: eavesdropping and modification.....	18
Figure 7 – WAN interception: eavesdropping and modification	20
Figure 8 – HAN denial-of-service and resource-exhaustion attack.....	21
Figure 9 – WAN denial-of-service and resource-exhaustion attack.....	22
Figure 10 – Worm, virus or Trojan horse	23
Figure 11 – Risk level for HAN: example.....	26
Figure 12 – Risk level of data inside user objects: example	27
Figure 13 – Risk treatment and risk assessment flow.....	28
Figure A.1 – Primary sources for privacy protection principles	34