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FOREWORD

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ISO/IEC 30147 has been prepared by subcommittee 41: Internet of Things and related technologies, of ISO/IEC joint technical committee 1: Information technology. It is an International Standard.

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

FDIS	Report on voting
JTC1-SC41/210/FDIS	JTC1-SC41/221/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

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

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1, available at www.iec.ch/members_experts/refdocs and www.iso.org/directives.

INTRODUCTION

In the Internet of Things (IoT), all IoT devices are mutually connected to each other and this is expected to bring new advantages to daily life. On the other hand, traditional system management devices (thermostats, lighting systems, traffic lights, etc.) which were not previously connected to the Internet are now being connected without regard to the level of IoT trustworthiness required by the system-of-interest. Many of these devices are being connected without the benefit of security controls and processes in place for servers, PCs, and smartphones. Flaws or failures in these devices caused by lack of IoT trustworthiness can have a deep impact on the users and system operation. This implies that there are conditions and characteristics specific to IoT systems and services which are different from those of other existing IT systems and services. Examples are as follows.

– The extent and the degree of impacts of threats are very wide and big.
– The life time of IoT systems and services, especially in operation and maintenance, is sometimes very long.
– It can be very difficult to monitor and manage some types of IoT devices.
– It can be difficult for communication entities including IoT devices to sufficiently know the environments of each other.
– The functions and performances of some IoT devices might be restricted technologically.
– In IoT systems and services, connections between entities can be made which the developers of the entities did not anticipate.

The purpose of this document is to provide guidance to realize IoT trustworthiness. This is because existing documents are targeted to each application area and do not necessarily cover all the challenges faced by the IoT system and service according to the above conditions and characteristics specific to IoT systems and services. This document provides system life cycle processes to realize IoT trustworthiness by applying and supplementing ISO/IEC/IEEE 15288:2015.

INTERNET OF THINGS (IoT) – INTEGRATION OF IoT TRUSTWORTHINESS ACTIVITIES IN ISO/IEC/IEEE 15288 SYSTEM ENGINEERING PROCESSES

1 Scope

This document provides system life cycle processes to implement and maintain trustworthiness in an IoT system or service by applying and supplementing ISO/IEC/IEEE 15288:2015. The system life cycle processes are applicable to IoT systems and services common to a wide range of application areas.

2 Normative references

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

IEC 61508 (all parts), *Functional safety of electrical/electronic/programmable electronic safety-related systems*

ISO/IEC Guide 51:2014, *Safety aspects – Guidelines for their inclusion in standards*

ISO/IEC 27005:2018, *Information technology – Security techniques – Information security risk management*

ISO/IEC 27031:2011, *Information technology – Security techniques – Guidelines for information and communication technology readiness for business continuity*

ISO/IEC 29134:2017, *Information technology – Security techniques – Guidelines for privacy impact assessment*

ISO/IEC/IEEE 15288:2015, *Systems and software engineering – System life cycle processes*

ISO 31000, *Risk management – Guidelines*