SS 695:2023

(ICS 35.020; 35.110; 35.240.01)

SINGAPORE STANDARD

IoT interoperability for Smart Nation

Singapore Standards Council

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Foreword

This Singapore Standard was prepared by the Working Group on IoT Interoperability set up by the Technical Committee on IoT under the purview of the Information Technology Standards Committee.

This SS was developed to facilitate the sharing of IoT data, information, infrastructure and devices across multiple industry applications to support Singapore's Smart Nation vision, by providing design considerations and recommendations for common interface standards applicable for cross-domain applications and nation-wide deployments.

This SS aims to promote the use of IoT standards to lower the barriers of entry by technopreneurs, to foster the development of innovative solution, and to interwork collaboratively with other systems.

In preparing this standard, reference was made to the following publications:

1. ISO/IEC 20924:2021, Information technology – Internet of Things (IoT) – Vocabulary
2. ISO/IEC 30141:2018, Internet of Things (IoT) – Reference architecture
3. ISO/IEC 21823-1:2019, Internet of Things (IoT) – Interoperability for IoT systems – Part 1: Framework

Permission has also been sought from the International Organization for Standardization for the reproduction and adaptation of materials from the standards cited in Clause 3 and ISO/IEC 30141:2018 (as Figures 4 and 5 of this standard).

Acknowledgement is made for the use of information from the above publications.

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IoT interoperability for Smart Nation

0 Introduction

Connected devices such as smartphones, fitness trackers and remote health monitoring devices have continued to grow as the Internet of Things (IoT) connects more and more devices. As the number of connected devices increases, it is essential that devices, systems, and services from different organisations have some manner of interoperability between themselves to realise the full benefits of IoT.

A smart city is made up of both legacy systems and new projects from different domains. Standards play a critical role in enabling the interconnectivity of these legacy and green-field systems and the sharing of data and information among them.

1 Scope

This standard identifies common requirements for the interoperability of IoT systems, to support a variety of use cases and their integration. It also provides:

– guidance on a minimum set of coherent international and/or industry standards to achieve interoperability. For interoperability, this SS references the IoT architectural and functional characteristics, identified in ISO/IEC 30141:2018 Clause 7, but it does not cover the IoT characteristics for trustworthiness.
– guidance on how interoperability supports the desired characteristics of IoT.
– common requirements for the interoperability of IoT components and solutions.
– case studies to illustrate the recommendations.

It also recommends a minimal set of applicable IoT standards.

2 Normative references

There are no normative references in this standard.