

**BUREAU OF INDIAN STANDARDS**

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**मसौदा भारतीय मानक**  
**इंटरनेट ऑफ थिंग्स (आईओटी) –**  
**आईओटी सिस्टम के लिए अंतरप्रचालनीयता-**  
**भाग 3: अर्थ संबंधी अंतरप्रचालनीयता**

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*Draft Indian Standard*

***Internet of Things (IoT) -***  
***Interoperability for IoT Systems -***  
***Part 3: Semantic Interoperability***

*ICS: 35.020; 35.110*

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## **NATIONAL FOREWORD**

(Formal clauses will be added later)

This Draft Indian Standard (Part 3) which is identical with ISO/IEC 21823-3:2021 ‘Internet of things (IoT) Interoperability for IoT systems Part 3: Semantic interoperability’ issued by the International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) *will be* adopted by the Bureau of Indian Standards on the recommendation of the Internet of Things and & Digital Twin Sectional Committee (LITD 27) and approval of the Electronics and Information Technology Division Council.

This standard (Part 3) is one of the parts of a series of standards on ‘Internet of Things (IoT) Interoperability for IoT Systems’. The other parts in this series are:

Part 1: Framework

Part 2: Transport interoperability

Part 4: Syntactic interoperability

The text of ISO/IEC Standard *may be* approved as suitable for publication as an Indian Standard without deviations. Certain conventions are however not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words ‘International Standard’ appears referring to this standard, they should be read as ‘Indian Standard’.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendment. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

<i><b>International Standard</b></i>	<i><b>Title</b></i>
ISO/IEC 20924	Internet of Things (IoT) – Vocabulary

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:2022 ‘Rules for rounding off numerical values (*Second Revision*)’. The number of significant places retained in the rounded off value should be same as that of the specified value in this standard.

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## **SCOPE OF ISO/IEC 21823-3:2021**

This document provides the basic concepts for IoT systems semantic interoperability, as described in the facet model of ISO/IEC 21823 -1, including

- requirements of the core ontologies for semantic interoperability;
- best practices and guidance on how to use ontologies and to develop domain-specific applications, including the need to allow for extensibility and connection to external ontologies;
- cross-domain specification and formalization of ontologies to provide harmonized utilization of existing ontologies;
- relevant IoT ontologies along with comparative study of the characteristics and approaches in terms of modularity, extensibility, reusability, scalability, interoperability with upper ontologies, and so on;
- use cases and service scenarios that exhibit necessities and requirements of semantic interoperability

**Note:** - The Technical content of this document has not been enclosed as these are identical with the corresponding ISO/IEC Standard. For details please refer to ISO/IEC 21823-3:2021 or kindly contact.

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