BS ISO/IEC 19944-2:2022

BSI Standards Publication

# Cloud computing and distributed platforms — Data flow, data categories and data use

Part 2: Guidance on application and extensibility

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# National foreword

This British Standard is the UK implementation of ISO/IEC 19944-2:2022.

The UK participation in its preparation was entrusted to Technical Committee IST/38, Cloud Computing and Distributed Platforms.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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## Part 2: Guidance on application and extensibility

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# Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see https://patents.iec.ch).

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This document was prepared by Technical Committee, ISO/IEC JTC 1, *Information technology*, Subcommittee SC 38, *Cloud computing and distributed platforms.*

A list of all parts in the ISO/IEC 19944 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

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# Introduction

ISO/IEC 19944-1 provides a data taxonomy, data processing and use categories and other descriptive facets that can be applied to data. All aspects of ISO/IEC 19944-1 are extensible to meet the needs of diverse users. The standardized ability to categorize data, describe uses of data and apply other facets is useful in several scenarios including the application of policy to data and in describing the use of data to stakeholders.

The aim of this document is to assist users of ISO/IEC 19944-1 by providing examples and guidance for its use across several domains. Additionally, this document provides users who need to extend ISO/IEC 19944-1 with examples and guidance.


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# Cloud computing and distributed platforms — Data flow, data categories and data use —

# Part 2: Guidance on application and extensibility

## 1 Scope

This document provides guidance on the application of the taxonomy and use statements from ISO/IEC 19944-1 in real world scenarios, and how to develop extensions to the data taxonomy, data processing and use categories and data use statements.

## 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.

ISO/IEC 19944-1:2020, *Cloud computing and distributed platforms — Data flow, data categories and data use — Part 1: Fundamentals*

ISO/IEC 22123-1, *Information technology — Cloud computing — Part 1: Vocabulary*

ISO/IEC 22989,[1)] *Information technology — Artificial intelligence — Artificial intelligence concepts and terminology*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19944-1, ISO/IEC 22123-1, ISO/IEC 22989 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

**3.1**
**Internet of Things**
**IoT**
infrastructure of interconnected entities, people, systems and information resources together with services which processes and reacts to information from the physical world and virtual world

[SOURCE: ISO/IEC 20924:2021, 3.2.1]

**3.2**
**PII principal**
natural person to whom the personally identifiable information (PII) relates

Note 1 to entry: Depending on the jurisdiction and the particular data protection and privacy legislation, the synonym "data subject" can also be used instead of the term "PII principal".

1) Under preparation. Stage at the time of publication: ISO/IEC FDIS 22989.

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[SOURCE: ISO/IEC 29100:2011, 2.11]

## 4 Abbreviated terms

| | |
|---|---|
| AI | Artificial Intelligence |
| CSA | Cloud Service Agreement |
| CSC | Cloud Service Customer |
| CSP | Cloud Service Provider |
| DNN | Deep Neural Network |
| EV | Electric Vehicle |
| IaaS | Infrastructure as a Service |
| IoT | Internet of Things |
| IPR | Intellectual Property Rights |
| OPD | Organizational Protected Data |
| PaaS | Platform as a Service |
| PII | Personally Identifiable Information |
| SKU | Stock Keeping Unit |

## 5 Presentation of ISO/IEC 19944-1

To improve transparency and guidance about data flows and data use, ISO/IEC 19944-1 names and describes the flows of data between a device and a supporting cloud service, and how to describe the use of different categories of data by the CSP.

ISO/IEC 19944-1 provides a comprehensive set of elements which can be used to:

— assign a data category to a given dataset, e.g. personally identifiable information, organizational protected data, customer content data;

— provide a set of actions applied to data, e.g. use to provide a service, to optimize it, to provide marketing information;

— define the qualifiers for the level of de-identification applied to a dataset, e.g. "identified", "anonymized", "aggregated";

— describe a use of a certain category of data for a specified purpose with a scope of its usage.

To maintain trust between the stakeholders in the ecosystem of cloud services and to meet the requirements of laws and regulations, it is necessary for service providers to be transparent about their use of the various data types that flow within the ecosystem. ISO/IEC 19944-1 also deals with organizational data and the need to treat some organizational data in particular ways in order to ensure properties such as confidentiality and integrity are maintained.

ISO/IEC 19944-1 introduces the concept of data facets, and data facets are used to extend the expressiveness of data use statements, including adding the concept of which individuals or organizations have control over data.


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# 6 How to apply ISO/IEC 19944-1

## 6.1 General

This clause provides examples of ISO/IEC 19944-1 applied to several different scenarios. Readers of this document can use the examples in this clause to then apply the data categories, data use statements and other facets to their situation.

## 6.2 Generic eCommerce example

### 6.2.1 General

Modern eCommerce applications use and generate many of the data categories specified in ISO/IEC 19944-1. Additionally, the data in eCommerce applications involves other components of ISO/IEC 19944-1 including data identification qualifiers, orthogonal facets, data processing and use categories, scopes, and data use statements. eCommerce applications ordinarily involve organizational protected data such as sales volumes, pricing, customer lists and inventory data.

This clause provides descriptions and examples of how the components of ISO/IEC 19944-1 can be used in a generic retail eCommerce application.

NOTE 1 Per the definition of CSP in ISO/IEC 22123-1:2021, the operator of an eCommerce application is a CSP to its CSCs, even if the application is run on third-party services of infrastructure or platform capabilities types.

NOTE 2 Unless otherwise indicated, all references to CSC and CSP in this document refer to the party, not to the corresponding roles.

### 6.2.2 Customer content data

**credentials:** CSCs can provide data objects such as username, password, certificates and biometrics, to access eCommerce services.

**financial details:** CSCs can provide financial details such as credit card numbers, bank information or other payment information, to pay for purchased products and services.

### 6.2.3 Derived data

#### 6.2.3.1 End user identifiable information

**telemetry data:** The CSP can collect data about the use of purchased products and services.

**connectivity data:** The CSP can collect data about the CSC's connectivity to provide the eCommerce service. For example, the CSP can use IP address information to determine the CSC's location for shipping or pickup information.

**observed usage of the service capability:** The CSP can collect data about the CSCs preferences and settings for the eCommerce application along with commands issued to the application (e.g. clicking the Submit button).

**demographic information:** The CSP can collect demographic data (e.g. age, gender) about the CSC.

**profiling data:** The CSP can use the various categories and instances of data to build a user profile that helps the CSP understand the CSCs interests and preferences.

**content consumption data:** In cases where the eCommerce application offers content, the CSP can collect data on the CSC's content consumption.

**client-side browsing history:** The CSP can collect client-side browsing history to help build a profile of the CSC's interests and preferences.

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