



International  
Standard

**ISO 16400-2**

**Automation systems and  
integration — Equipment behaviour  
catalogues for virtual production  
systems —**

**Part 2:  
Formal description of a catalogue  
template**

*Systèmes d'automatisation et intégration — Catalogues de  
comportement des équipements pour les systèmes de production  
virtuelle —*

*Partie 2: Description formelle d'un modèle de catalogue*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 ISO documents 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](http://www.iso.org/directives)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 184, *Automation systems and integration*, Subcommittee SC 5, *Interoperability, integration, and architectures for enterprise systems and automation applications*.

A list of all parts in the ISO 16400 series can be found on the ISO website.

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](http://www.iso.org/members.html).

## Introduction

The ISO 16400 series introduces a concept of an equipment behaviour catalogue (EBC), addresses the requirements of an EBC and proposes guidelines to generate an executable representing the dynamic behaviour of a nominal or physical instance of an equipment. Such executable plays a vital role when configuring virtual production systems used for simulation and verification of a future process as well as monitoring of a current process. Therefore, EBCs will constitute an important part of the evolution of smart manufacturing.

An EBC enables an efficient and standardized way for a provider of equipment to communicate its dynamic behaviour.



# Automation systems and integration — Equipment behaviour catalogues for virtual production systems —

## Part 2: Formal description of a catalogue template

### 1 Scope

This document specifies a formal structure and building rules for an equipment behaviour catalogue (EBC) template.

The formal structure of an EBC template represents a schema for descriptions of behaviour and related entities.

Building rules for an EBC template provide required processes and compliance criteria to construct an EBC template.

### 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 16400-1:2020, *Automation systems and integration — Equipment behaviour catalogues for virtual production system — Part 1: Overview*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16400-1 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/>

### 4 Abbreviated terms

|        |                              |
|--------|------------------------------|
| ID     | Identifier                   |
| JSON   | JavaScript Object Notation   |
| mathML | Mathematical Markup Language |
| UML    | Unified Modeling Language    |
| XML    | eXtensible Markup Language   |