



BSI Standards Publication

## Automation systems and integration — Industrial data — Visualization elements of digital twins

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## National foreword

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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 4, *Industrial data*.

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

This document analyses visualization elements to be shared or integrated between an avatar (digital replica) and a physical asset. Three component models of the digital twin, which are physical asset, avatar, and realtime interface, are adopted and elaborated in this document. The fidelity measure of the interface between the avatar and the physical asset is discussed.

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# Automation systems and integration — Industrial data — Visualization elements of digital twins

## 1 Scope

This document analyses visualization elements that are key components of the interface between the physical asset and the avatar (digital replica of the physical asset).

## 2 Normative references

There are no normative references in this document.

## 3 Terms, definitions and abbreviated terms

### 3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

#### 3.1.1

##### **administration shell**

bridge between a tangible asset and the digital world

#### 3.1.2

##### **asset**

economic resource, or something of value

#### 3.1.3

##### **avatar**

digital replica of a physical asset

#### 3.1.4

##### **digital twin**

compound model composed of a physical asset, an avatar and an interface

#### 3.1.5

##### **fidelity**

level of accuracy whereby a copy reproduces its source

#### 3.1.6

##### **level of detail**

decrease in complexity of a 3D model representation as it moves away from the viewer or according to other metrics such as object importance, viewpoint-relative speed or position

#### 3.1.7

##### **physical asset**

asset which exist in the real world