

MIMOSA Spring 2021 open meeting 2021-02-10

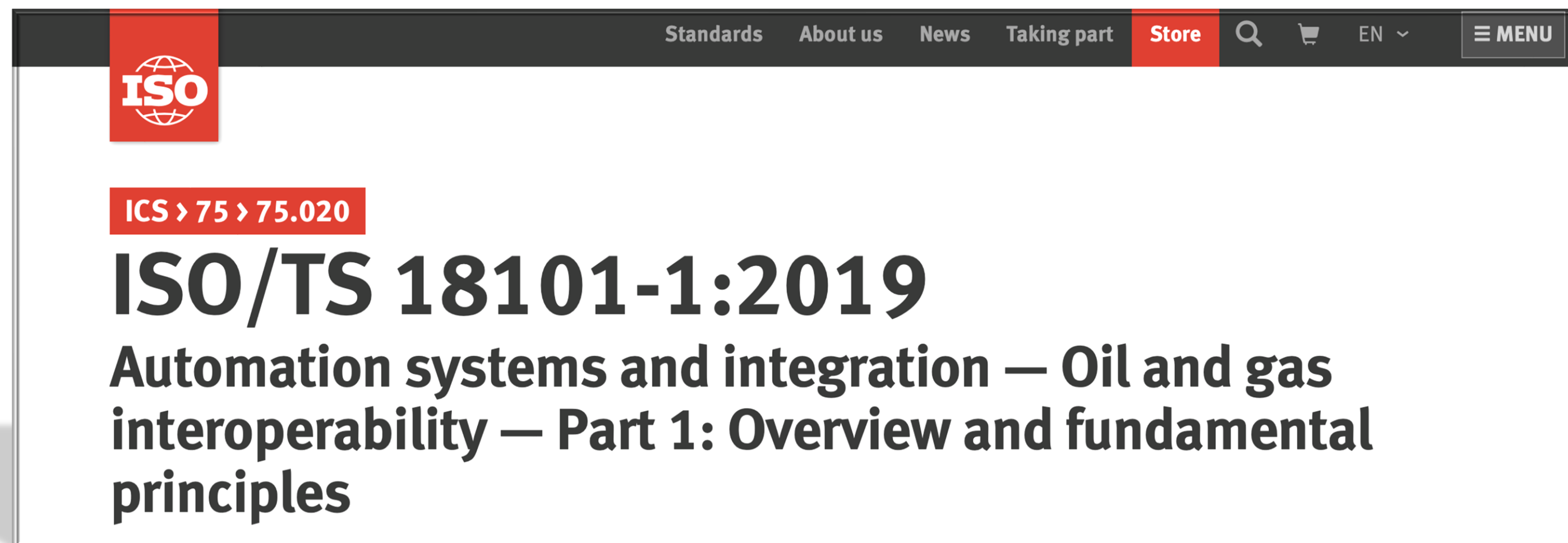
18101
8000 and
n Technical Dictionaries

How do these standards
facilitate interoperability?

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ISO

ICS > 75 > 75.020

ISO/TS 18101-1:2019

Automation systems and integration — Oil and gas interoperability — Part 1: Overview and fundamental principles



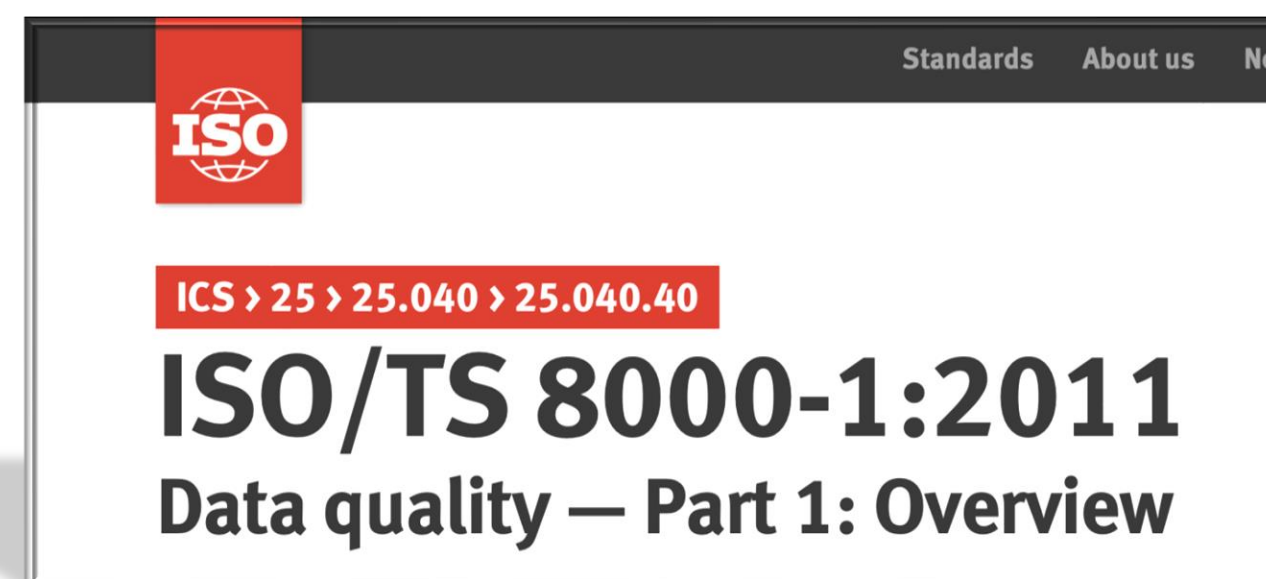
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ISO

ICS > 25 > 25.040 > 25.040.40

ISO 18435-1:2009

Industrial automation systems and integration — Diagnostics, capability assessment and maintenance applications integration — Part 1: Overview and general requirements



Standards About us News

ISO

ICS > 25 > 25.040 > 25.040.40

ISO/TS 8000-1:2011

Data quality — Part 1: Overview



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ISO

ICS > 75 > 75.020

ISO 15926-1:2004

Industrial automation systems and integration — Integration of life-cycle data for process plants including oil and gas production facilities — Part 1: Overview and fundamental principles

Please view speakers notes on each slide

TECHNICAL
SPECIFICATION

ISO/TS
18101-1

First edition
2019-06

Automation systems and
integration — Oil and gas
interoperability —

Part 1:
Overview and fundamental principles

*Systèmes d'automatisation et intégration — Interopérabilité entre les
industries du pétrole et du gaz —*

Partie 1: Vue d'ensemble et principes fondamentaux



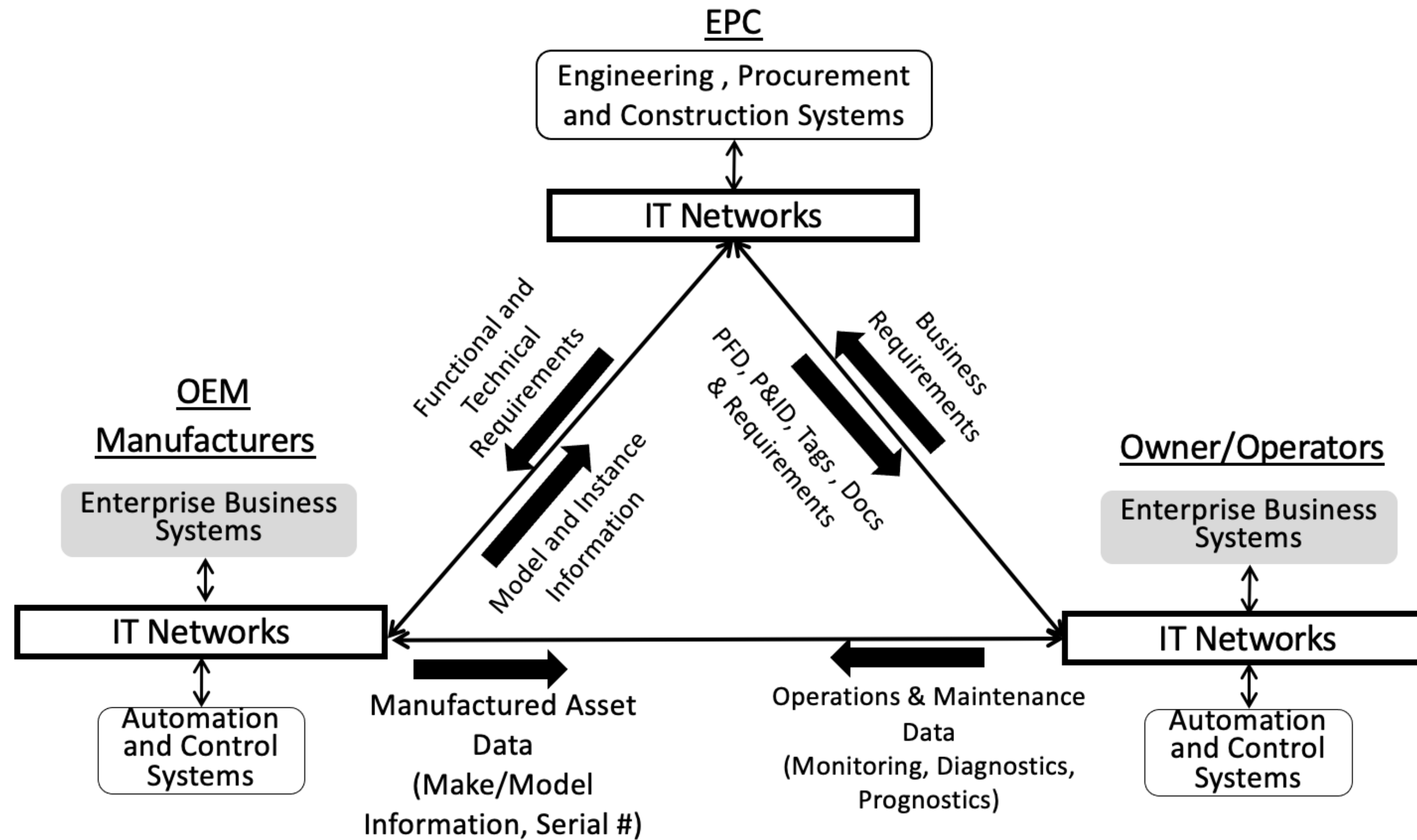
Reference number
ISO/TS 18101-1:2019(E)

© ISO 2019

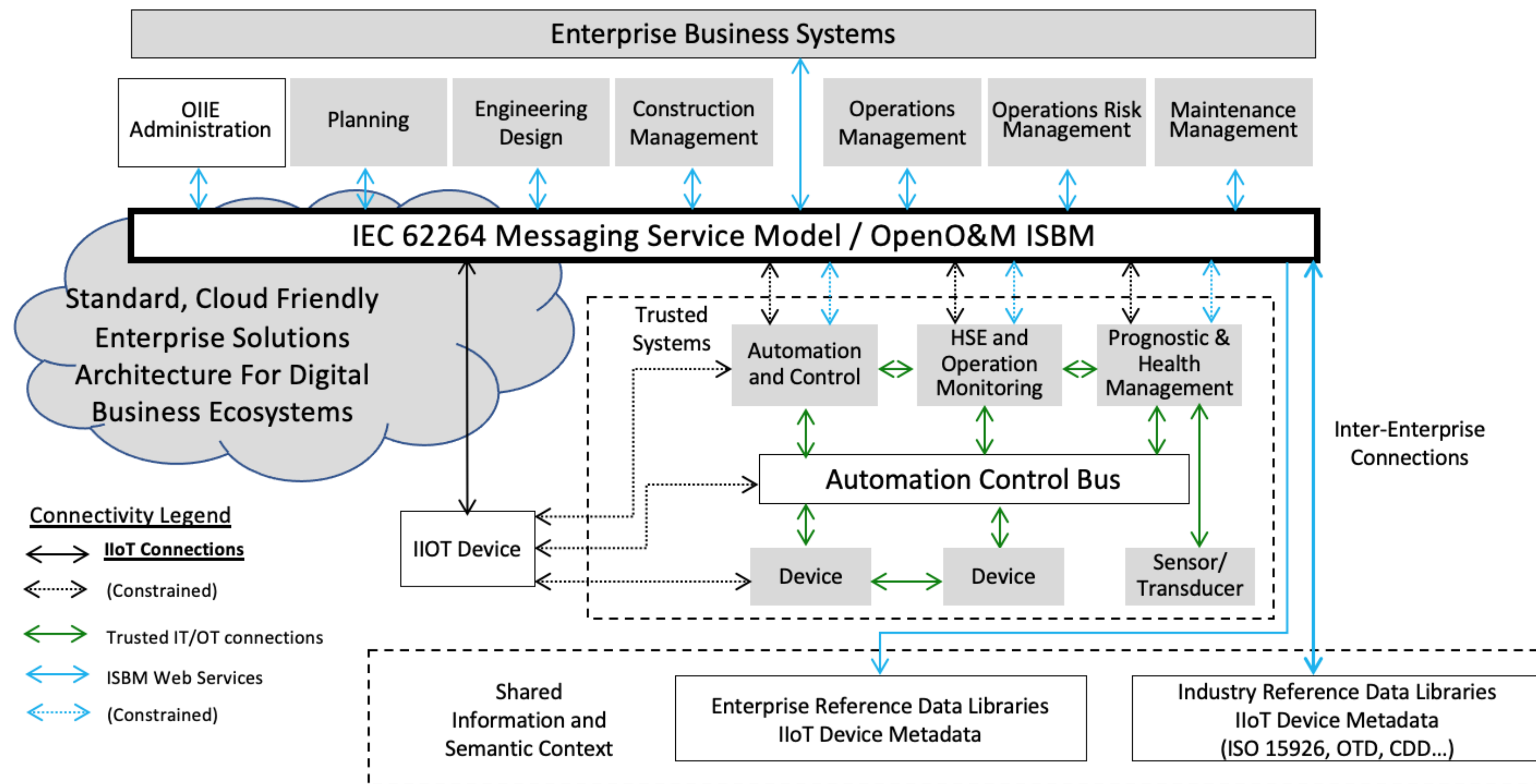
“Future parts of the ISO 18101 series will be developed including sets of industry developed use cases, once the use cases have been documented using the Open Industrial Interoperability Ecosystem (OIIE) use case architecture and validated using the OIIE Oil and Gas Interoperability (OGI) Pilot, with the results captured in Technical Reports. These use cases will incrementally define industry prioritized elements of the secondary business process, which is the scope of the ISO 18101 series.”

<https://www.iso.org/deliverables-all.html>

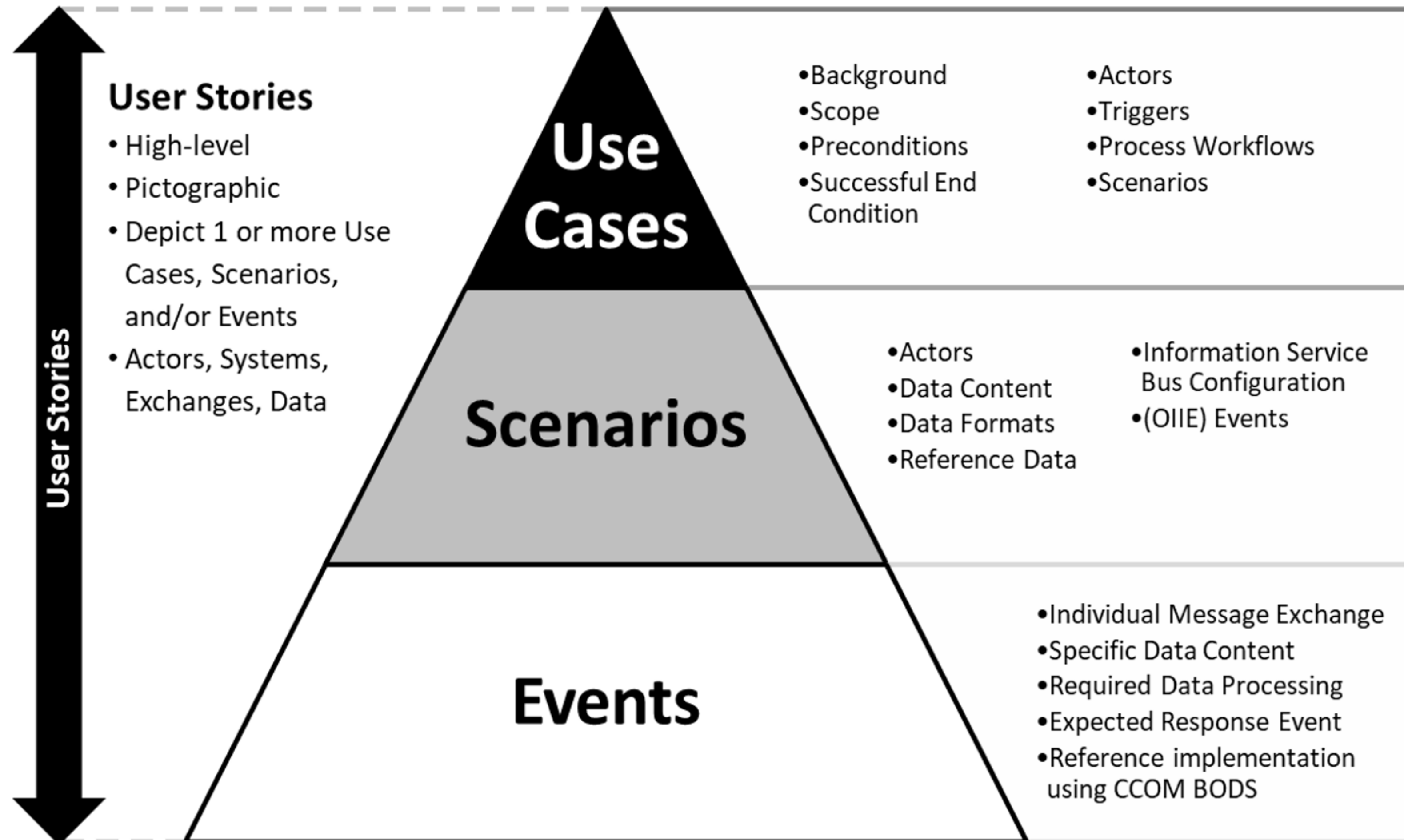
Intra-Enterprise OIIE Digital Ecosystem

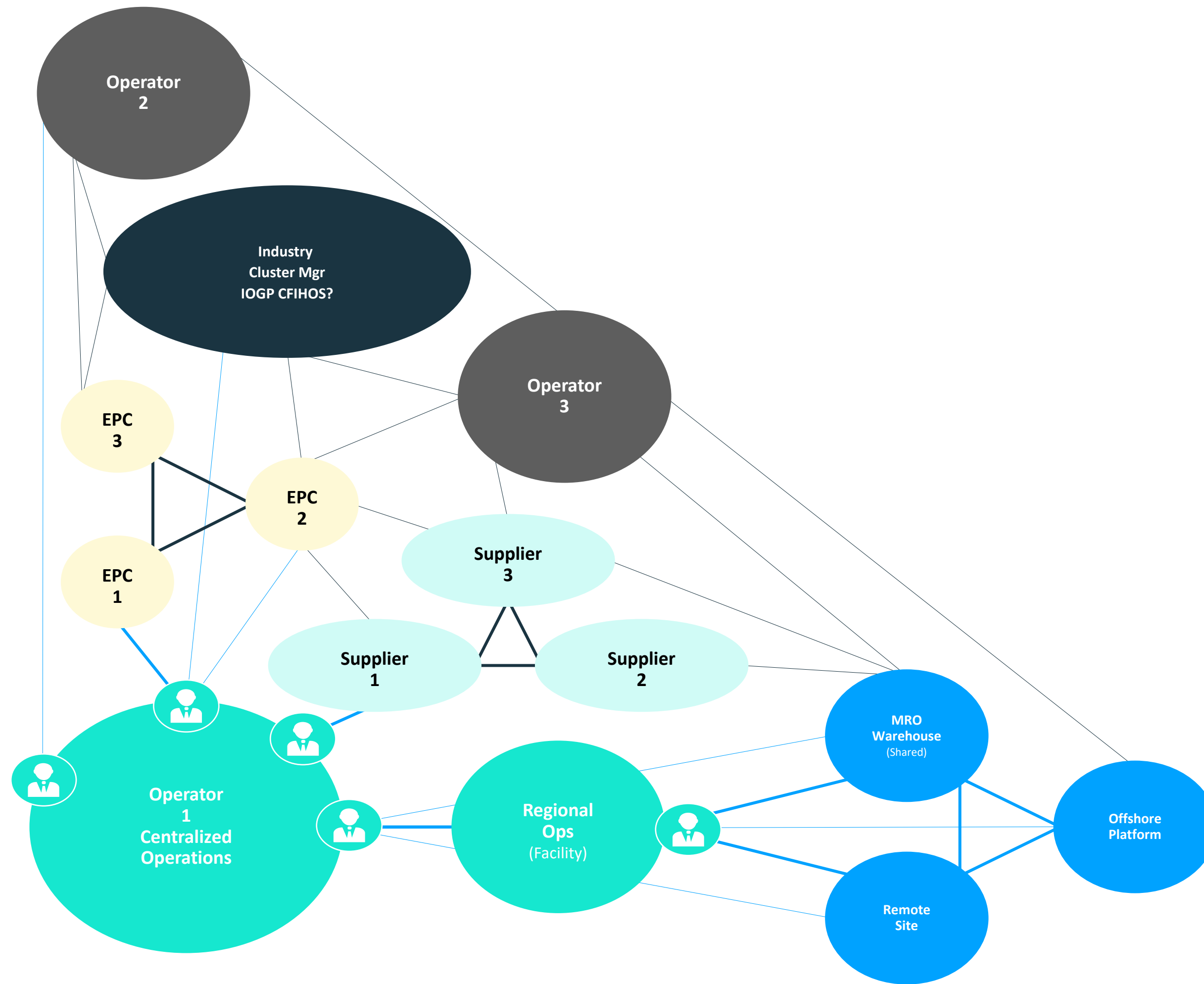


Intra-Enterprise OIIE Digital Ecosystem



OIIE Use Case Architecture



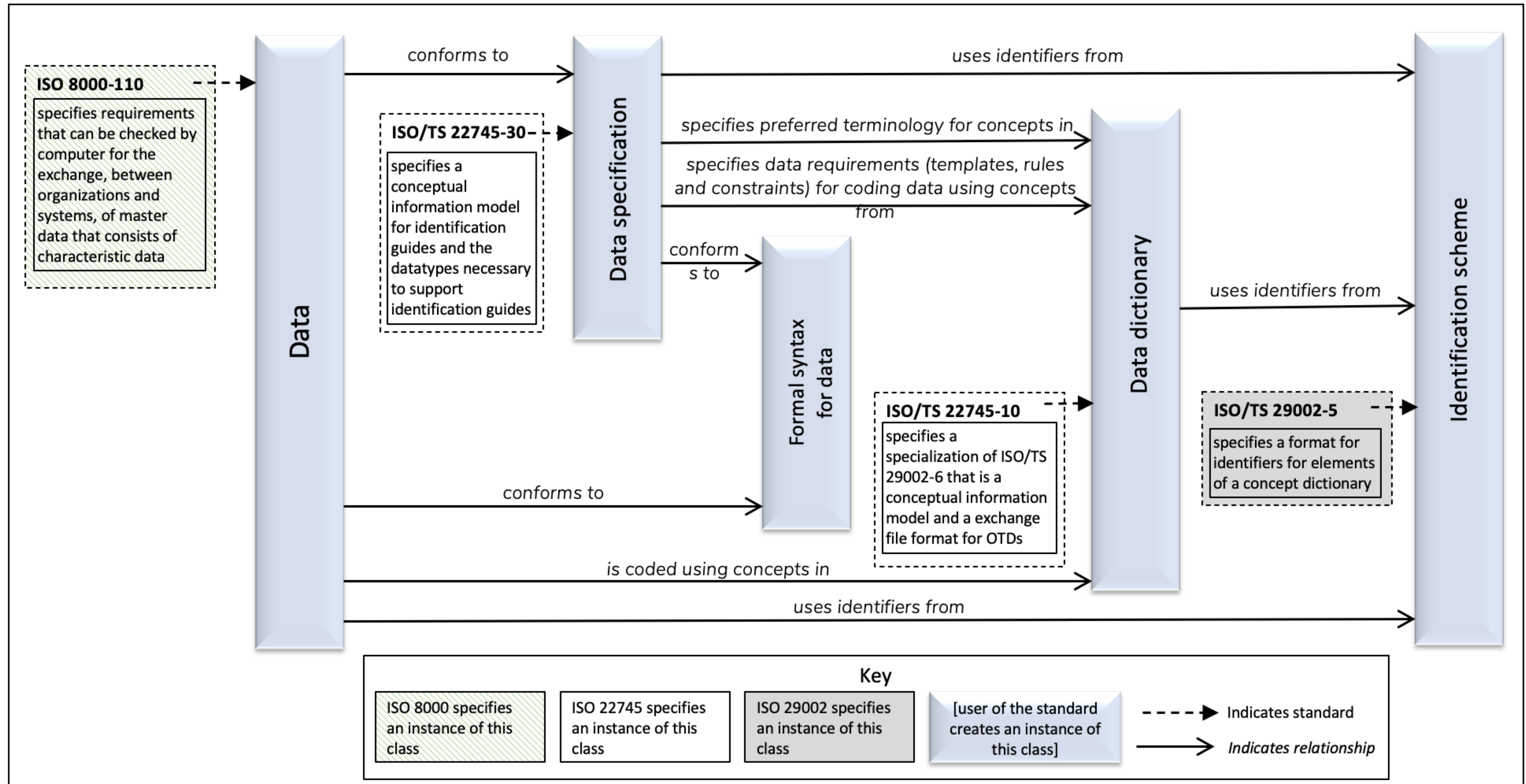


Key Functional Areas

- Interrelated Supply Chains – CAPEX and OPEX
- Industry Focused Clusters: e.g. Hydrogen Clusters
- Critical Infrastructure Management
- Standard Digital Twins (synchronized across the lifecycle)
- Includes both Data and Required Documents

Key Information Technology Features

- Specifies Vendor Neutral Industrial Digital Ecosystem
 - Standard APIs
 - Standard Directories & Registers (Ecosystem Admin)
 - Standard Data Containers (BODS)
 - Standard OIIE Use Cases
 - Standard Data Models
 - Standard Ontologies, OTDs and other reference data
 - ISO 8000 based data quality
- Includes:
 - Industry Standard Digital Utility Services
 - Standard ID Management
 - Transaction, Event and Sensor-based



“data in a format that can be easily processed by a computer without human intervention while ensuring no semantic meaning is lost”



- **ISO 8000-1** is one of the three normative references in **ISO 18101-1** and will drive data quality and characteristic data exchange in that asset intensive industry interoperability standard;
- The data dictionary shown in the architecture diagram of the previous slide can be created using an **ISO 29002** concept dictionary, or an **ISO 22745** open technical dictionary;
- The data dictionary is an effective way of compiling the differing classes and properties from multiple sources, such as an **ISO 13584** parts library, an **ISO 15926** reference data library, or the **IEC 61360** common data dictionary (IEC-CDD);
- The identification scheme in **ISO 29002** is used by the IEC-CDD, the ecl@ss classification schema, **IEC 62832** Industrie 4.0 (I4.0) components, including the administration shell, and also by KOIOS Master Data in their Open Technical Dictionary.

The screenshot displays the Open Technical Dictionary (OTD) interface. A central modal window provides detailed information for the concept '(bearing) bore diameter'. The modal includes a search bar at the top right with a magnifying glass icon and the text 'MF'. Below the search bar, the concept type is listed as 'Property' and the concept identifier as '0194-1#02-DF5G67#1'. A 'Remove' button is located in the top right corner of the modal. A horizontal bar with various national flags is positioned below the identifier. The modal is divided into two main sections: 'Terms' on the left and 'Definitions' on the right. The 'Terms' section lists several terms with their respective sources and languages, each accompanied by a heart icon and a flag. The 'Definitions' section lists definitions with their sources and languages, also accompanied by heart icons and flags. The background of the interface shows a list of related terms and definitions, with 'View Entry' and 'Remove' buttons for each entry. The bottom right corner of the interface features the 'Powered by KOIOS Core' logo and the text 'quality data engine'. The page number '10' is visible at the bottom center.

Concept Type: Property

Concept Identifier: 0194-1#02-DF5G67#1

Remove

Terms

- (bearing) bore diameter
ISO 5593:1997(en-US), 04.03.02
English, United States
- d - bore
TIMKEN 2017(en-US) - <http://www.timkenbearings.com/en-in/knowledge/glossary/pages/BearingTermsGlossary.aspx>
English, United States
- bore diameter, d
SKF 2017(en-US)
English, United States
- diamètre de l'alésage (d'un roulement [d'une butée])
2 terms
- диаметр отверстия (подшипника)
2 terms
- Průměr díry
1 terms

Definitions

- (bearing) bore diameter: inner ring bore diameter of a radial bearing or the shaft washer bore diameter of a thrust bearing - ISO 5593:1997(en), 04.03.02
ISO 5593:1997(en-US), 04.03.02
English, United States
- The inside diameter of the inner ring or cone.
TIMKEN 2017(en-US) - <http://www.timkenbearings.com/en-in/knowledge/glossary/pages/BearingTermsGlossary.aspx>
English, United States
- Inner Ring (cone) design inside diameter (Bore), typically labeled as "d" on Timken drawings
TIMKEN 2017(en-US)
English, United States
- diamètre de l'alésage de la bague intérieure [de la rondelle arbre] d'un roulement [d'une butée]
1 definitions

10

Powered by KOIOS Core quality data engine

🔍 🔍 🇺🇸 MF

Identification Guide: rotational ac motor (SI (Metric))

[Download Template](#)
[Upload Master Data](#)

Type Catalogue Item	Class Concept rotational ac motor	Measurement System SI (Metric)	Unit of Issue each, ea
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Property Details

Properties	Data Type	Representation	Unit of Measure	Qualifier of Measure	Required	Network
ac motor synchronism	list-of-values asynchronous synchronous reluctance synchronous				<input checked="" type="checkbox"/>	
rated input voltage (ac)	measured value	2 decimal places	volt, V	nominal	<input checked="" type="checkbox"/>	
synchronous speed	measured value	2 decimal places	revolutions per minute, rpm	nominal	<input checked="" type="checkbox"/>	
rated speed	measured value	2 decimal places	revolutions per minute, rpm	nominal	<input checked="" type="checkbox"/>	
starting torque	measured value	2 decimal places	newton metre, Nm	minimum	<input checked="" type="checkbox"/>	
main class of component	list-of-values electric/electronic component electromechanical component mechanical component magnetic part				<input checked="" type="checkbox"/>	
terminal shape	list-of-values bus end cap flat printed wiring pin screw solid-lead stud				<input checked="" type="checkbox"/>	



- Derived from entries in an data (concept) dictionary;
- Structured data;
- Machine readable;
- Exchangeable without loss of meaning;
- Portable between systems.