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Visualization elements of PLM-MES interface

Part 1: Overview

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National foreword

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Visualization elements of PLM-MES interface —

Part 1: **Overview**

Éléments de visualisation pour l'échange de données entre systèmes d'information de gestion du cycle de vie de produits (PLM) et de pilotage de la production (MES) – vue d'ensemble —

Partie 1: Vue d'ensemble

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Foreword

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This document was prepared by Technical Committee ISO/TC 184, *Automation systems and integration*, Subcommittee SC 4, *Industrial data*.

A list of all parts in the ISO 3151 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.

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Introduction

This document is an overview of the ISO 3151 series of standards. It explains the main scope of the ISO 3151 series as well as why the Product Lifecycle Management and Manufacturing Execution System (PLM-MES) interface is needed. It also describes the elements constituting the PLM-MES interface and the visualization elements of the PLM-MES interface.

Product Lifecycle Management (PLM) is a technical item often covered within ISO/TC 184/SC 4 and in IEC/TC 65 where there is a standard for different lifecycles of various product parts. Conversely, Manufacturing Execution System (MES) is a technical item covered within ISO/TC 184/SC5, IEC/TC 65 and ISA (International Society of Automation). ISO/TC 184/SC 4 and SC 1 also cover the standard technology for the automatic machining of the product. Cooperation between these standards organizations is needed for standards in a PLM-MES interface.

Although literature is referenced to introduce the elements that make up the PLM-MES interface, more items are also referenced in [1-5] for the basis of this document.

Figure 1 shows the overall PLM-MES interface defined by this document and ISO 3151-2[1)]. The left side in Figure 1 shows the contents of this document, and the right side shows the contents of ISO 3151-2.

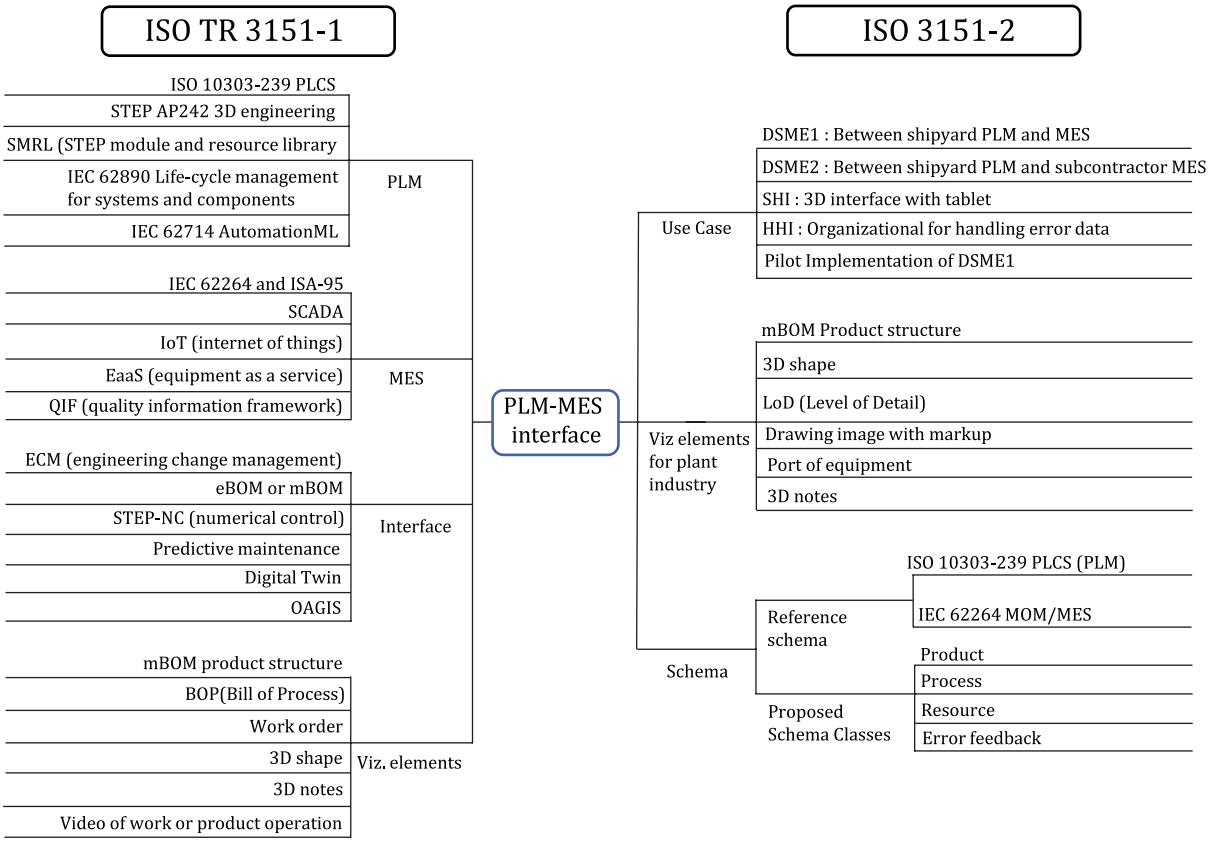


Figure 1 — Concept diagram of PLM-MES interface

The AP242 contains Product and Manufacturing Information (PMI), but its primary concern is to communicate design information to the manufacturing department. It is understood that the feedback loop from the manufacturing department to the design department is not well-supported. ISO 3151-2focuses on a 3D interface that feeds back errors found by the production department to the design department.

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TECHNICAL REPORT **ISO/TR 3151-1:2023**

Visualization elements of PLM-MES interface —

Part 1: Overview

1 Scope

This document outlines the visualization elements for data exchange between the Product Lifecycle Management and Manufacturing Execution System (PLM-MES) or Manufacturing Operations Management (MOM).

The following are within the scope of this document:

— the need for a PLM-MES interface;

— the technical elements that make up the PLM-MES interface;

— the visualization elements of the PLM-MES interface.

The following is outside the scope of this document:

— application of the PLM-MES interface and its visualization elements.

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 20924, *Information technology — Internet of Things (IoT) — Vocabulary*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms and definitions given in ISO/IEC 20924 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 Terms and definitions

3.1.1
3D note
3D text information attached to graphical information of a digital shape model of a product

3.1.2
batch size
number of jointly processed (semi-finished) products

[SOURCE: ISO 22468:2020, 3.1]

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