

AD PAG Glossary

Acronyms and Terms, Definitions, Sources, and Synonyms

Release 7.0

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AEROSPACE & DEFENSE PLM ACTION GROUP

Abstract

The terminology used within the aerospace and defense (A&D) industry for product lifecycle management (PLM) concepts, processes, and artifacts is extensive and complex. When the A&D PLM Action Group (AD PAG) was founded in 2014 with the mission to identify and remediate common PLM-related pain points, one of the first problems that the members confronted was the communication barrier posed by inconsistent use of language. Over the years, AD PAG project teams have published reports and position papers on a range of topics. In this document, the AD PAG project teams have collaborated to create a comprehensive, common glossary that applies across all of their projects' work products. This glossary of acronyms and terms draws from industry standard publications such as EIA-649, EIA-836, ATA Specification 2000, and the CIMdata PLM Glossary. This “living” document will continue to be updated to meet the needs of the AD PAG members and is published for the benefit of the aerospace and defense industry as a whole.

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Revision Record

Release	Date	Description
1.0	August 2019	Internal Release
2.0	October 2019	Clarified definitions based on review
3.0	December 2019	Quarterly update; incorporated terms from the <i>MBSE Data Interoperability Specification</i> document's glossary, also added INCOSE definition of Requirement and NAFEMS definition of System.
4.0	April 2020	Quarterly update; incorporated terms (JT, PRC) from the <i>Minimum Model-Based Definition (MBD) for Type Design Certification</i> position paper. Updated with CIMdata PLM Glossary terms and clarifications: 3D PDF, SBOM, and BOM references (EBOM, MBOM, SBOM).
5.0	July 2020	Quarterly update; added or clarified definitions for Bill of Information, Cost of Capital, Discount Rate, Manufacturing Enterprise Innovation Platform, Optional Part, Product Structure, Variant, and Version.
6.0	October 2020	Quarterly update; clarified some sources and added terms from the MBSE team: AFNet, ARCADIA, AVSI, BDD, IBD, ICD, IMA, NDIA, NIST, prosotep ivip, ReqIF, and V-Model.
7.0	June 2021	Quarterly update; added or revised definitions from the Global Collaboration project team for Asynchronous Collaboration, Synchronous Collaboration, Collaboration, Collaboration Foundations and Control, Collaborative Communities, Collaborative Workspace, and Technical Data Package.

AD PAG Glossary

Introduction

One of the first issues that emerged during conversations involving different Aerospace and Defense Product Lifecycle Management Action Group members (AD PAG) was the inability to effectively communicate due to the use of different terms and acronyms for similar concepts (or sometimes, even the use of the same terms for contradictory concepts). To overcome this obstacle, a glossary has been prepared with strong reliance on publications such as EIA-649, EIA-836, ATA Specification 2000, and the CIMdata PLM Glossary.

The result is a list of agreed-to terms and acronyms with precise definitions, the source (in case it was directly adopted or based on a different publication), and a list of synonyms.

The glossary will be revised to support effective communication in future subjects and in planned revisions/updates to position papers. The released version of the glossary is available for public download at www.ad-pag.com.

Problem Statement

As a result of adopting PLM solutions from different software providers, as well as developing different processes to tackle similar business use cases, Original Equipment Manufacturers (OEMs) – in isolation from each other – have historically created very different vocabularies to describe similar concepts. The business consequence is an overall inability for experts in the field to communicate effectively.

This inability to communicate exists in a range of contexts:

- AD PAG members with their supply chain,
- AD PAG members with software providers,
- AD PAG members with other AD PAG members (e.g., Airbus-with-Rolls-Royce), and
- Even Subject Matter Experts (SMEs) with SMEs within an AD PAG member company.

The project team members recognized that with such a major barrier to effective communication, it would be virtually impossible to exchange information necessary to define and solve problems in this domain. Agreement was unanimous that the highest priority and first sub-project would be to create a shared glossary.

Desired State

Going forward with a common glossary, especially one with cross-references to terms used within each member company, the barrier to communication is mitigated and real progress on persistent problems within the A&D industry becomes possible.

The first business benefit of the glossary is that it supports effective communication between the AD PAG project team members. The team members are now able to proceed with their defined sub-projects.

The second benefit is that it supports effective communication with external parties, such as PLM software providers, by providing a precise vocabulary for use in all technical documents released by the project team.

Glossary

Acronym or Term	Definition	Source of Definition	Synonym
0D Model	<p>Variables (unknowns) are not a function of any dimension. An example is $F=ma$, force = mass x acceleration.</p> <p>Related term <i>Model-Based Systems Engineering</i>.</p>	CIMdata PLM Glossary	Lumped parameter
150% BOM	Union of all EBOM elements for all Aircraft Identification Numbers of a specific product.	CIMdata AD PLM AG – Multi-view BOM project team	Super BOM, Overloaded BOM, Unconfigured BOM
1D Model	<p>Variables are a function of one dimension only. Examples are flow and pressure pulsations in long pipes or forces in structures composed of slender trusses.</p> <p>Related term <i>Model-Based Systems Engineering</i>.</p>	CIMdata PLM Glossary	
2D Drawing	A document that discloses (directly or by reference), by means of graphic or textual presentations or by combinations of both, the physical or functional requirements of an item. An engineering drawing may also describe requirements for disposal, distribution, maintenance, manufacturing and build, operations, packaging, quality management, test, and training of a product.	Based on Engineering Drawing from EIA-836-A 2007	
2D Model	Variables are functions of two dimensions. Examples are axisymmetric flow or structures composed of thin plates. The variation in one of the	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>dimensions (thickness) is neglected.</p> <p>Related term Model-Based Systems Engineering.</p>		
3D Model	<p>Variables depend on all three dimensions (length, width, height). This is true for most fluid flows and for "chunky" solids. Note that most automotive body analyses and aircraft structures are idealized as 2D plus thickness.</p> <p>Related term Model-Based Systems Engineering</p>	CIMdata PLM Glossary	
3D PDF	<p>A form of PDF that can contain 3D data that can be manipulated directly in the PDF file. It uses the PRC (Product Representation Format), a 3D file format that can be used to embed 3D data into a PDF file. 3D PDF is ISO 14739. It is maintained by the 3D PDF Consortium.</p>	CIMdata PLM Glossary	
3D Printing	<p>Related term Additive Manufacturing.</p>	CIMdata PLM Glossary	
4D Model	<p>Often used for three physical dimensions plus time variation. For example, molten metal mold filling with solidification.</p> <p>Related term Model-Based Systems Engineering.</p>	CIMdata PLM Glossary	
A/C	Aircraft.	CIMdata PLM Glossary	
A&D	Aerospace & Defense industry segment.	CIMdata PLM Glossary	AD
A&D PAG	Aerospace & Defense PLM Action Group.	CIMdata PLM Glossary	AD PAG, AD PLM AG

Acronym or Term	Definition	Source of Definition	Synonym
Accountability Conflict	Configuration mismatch between EBOM and MBOM for a dedicated Aircraft Identification Number as described in the Accountability Map.	CIMdata AD PLM AG - Multi-view BOM project team	
Accountability Map	A set of rules that evaluate the authority effectivity and ensure / enforce that manufacturing effectivity changes are equal to the authority effectivity. Rules also cover quantity and part number, manufacturing-only changes, and substitute and optional parts checks to ensure compliance between two structures, such as EBOM, MBOM, BOP (bill of process), and SBOM if any.	CIMdata AD PLM AG - Multi-view BOM project team	
Additive Manufacturing (AM)	<p>The processes used to create a part using a 3D printer that joins materials layer upon layer to make objects from 3D model data. From a PLM perspective, these processes include:</p> <ul style="list-style-type: none"> • CAD software to model the 3D part (related terms DfAM and Generative Design) • Analysis software to optimize the part (related term Topology Optimization) • Software to drive the printer • Materials selection based on part usage • 3D printer technology for intended implementation 	CIMdata PLM Glossary	Rapid prototyping, Direct digital manufacturing, Layered manufacturing, Additive fabrication

Acronym or Term	Definition	Source of Definition	Synonym
	<ul style="list-style-type: none"> Part attribute lifecycle management (i.e. usage, in-service tracking, repair, and disposal) 		
ADL	Architecture Description Language.	CIMdata PLM Glossary	
AEC	Related term Architecture, Engineering, and Construction .	CIMdata PLM Glossary	
AFNet	French Network Users Assoc., digital practices in industry	AFNeT	
AI	Artificial Intelligence.	CIMdata PLM Glossary	
AI	Application Interface.	CIMdata PLM Glossary	
Aircraft Identification Number	The manufacturer’s permanently-applied serial number for the airframe.	ATA-SPEC-2000_2011-01	MSN
Alert	<p>A mechanism that detects some action or change in the state of some object in the PDM system and as a result, may initiate some subsequent action, such as sending a message to other users.</p> <p>Related term Trigger.</p>	CIMdata PLM Glossary	
Allocation	The process of associating g a function or requirement to an element of the architecture.	MBSE Data Interoperability Specification	

Acronym or Term	Definition	Source of Definition	Synonym
Alternate Part Number	<p>A part that fully meets required functional and 106, 2200, structural specifications of the primary part number, and is approved for use in lieu of the primary part number.</p> <p>Specific: A part that fully meets required functional and structural specifications, but differs either in overall dimensions, connections, installations, and/or mounting provisions and requires additional parts, rework, or modification to install it as an alternative to the primary part.</p> <p>The understanding of Alternate Part Number must be considered in relation with certification Part 21 and Part 145. Alternate part must be defined as global or local.</p>	ATA-SPEC-2000_2011-01	Interchangeable, Optional Part, Substitute, Replaceable
Alternative Part	<p>A part that can be used to replace another part in a product without altering the functionality of the product. The two parts may differ in material, manufacturer, or some other factors.</p> <p>Related terms Optional Part and Substitute Part.</p>	CIMdata PLM Glossary	
Analytics	<p>Analytics is the use of quantitative methods to process data to reveal patterns, create new information, and support decision making.</p> <p>Historically the term <i>analytics</i> referred to processing structured data using solutions like business intelligence (BI) to</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>provide such insights. However, with the emergence of social computing and other Web-based technologies the need arose to store and process unstructured data, like social media streams and comments, blog posts, and the like with similar rigor.</p> <p>If the Internet of Things (IoT) is to reach its full potential, analytics must also evolve to handle the huge quantities of data produced by the billions of things forecast to be actively connected in the market in the coming years.</p> <p>Related term Reporting and Analytics.</p> <p>Also part of SMAC.</p>		
AP	Application Protocol.	CIMdata PLM Glossary	
AP242 (ISO 10303-242)	Application Protocol 242 <i>Managed model-based 3D engineering</i> .	CIMdata PLM Glossary	
API	Related term Application Programming Interface .	CIMdata PLM Glossary	
Applet	A Java program that can be included in an HTML page, much in the same manner an image is included. When a Java-compatible browser is used to view a page that contains a Java applet, the applet's code is transferred to the viewing computer system and executed by the browser.	CIMdata PLM Glossary	
Application Integration	An interface from an external application that provides access to the functional capabilities and	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>database of the PDM system. The interface is usually built from a library of routines (the API) that may be embedded within other applications or programs to call PDM functions and to access or update the PDM database.</p> <p>Related terms Encapsulation, Integration, and Interface.</p>		
Application Interface	<p>An interface to an external application that allows its users access to the functional capabilities and database of the cPDM solution and vice versa. The interface is usually built from a library of accessible functions (APIs) that may be embedded within other applications or programs to invoke cPDM functions and allow access to or updates to the managed database.</p>	CIMdata PLM Glossary	
Application Lifecycle Management (ALM)	<p>A system that manages the software application development lifecycle process and data from specification to design throughout development, testing, implementation and retirement of software-based systems. Application lifecycles may be managed in PDM systems.</p>	CIMdata PLM Glossary	
Application Programming Interface (API)	<p>A mechanism by which an external application can interact with a system through pre-defined hooks to the system's user interface, technical functions, and data model.</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Approval	The process by which a reviewer or releaser indicates their agreement with changes to a document or controlled data item, a package of documents, creation of a new document or controlled data item, or of a proposed change.	CIMdata PLM Glossary	
Approval Action Notice	Messages sent to people whose approvals are required by the PDM-defined review, release or promotion procedure.	CIMdata PLM Glossary	
Approval Notification	Messages sent to people telling them that an item or package has been approved.	CIMdata PLM Glossary	
APT	Advanced Persistent Threat.	CIMdata PLM Glossary	
ARCADIA	ARChitecture Analysis and Design Integrated Approach	Thales Group	
Architecture, Engineering, and Construction (AEC)	A class of CAD solutions used to design, engineer, build, and operate large constructed assets such as roadways, bridges, buildings, industrial process and power plants, and utility networks. They include solutions for 2D design and 3D modeling, constraint, and feature-based design, piping, process and instrumentation diagrams (P&ID), integrated engineering analysis, data management, collaboration, estimating, catalogs, and specifications.	CIMdata PLM Glossary	
Archive	Historical or inactive PDM data and PDM-managed files that have been removed from the system and stored on tape, optical disk, or other media for	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	safekeeping and future use. References to the archived data and files are maintained within the active PDM system.		
As-Built	The configuration of a product instance after completion of build per the As-Planned baseline as reflected in records of completed work. May differ from As-Planned baseline due to resolution of nonconformance and other exceptions reflected in the records of completed work, which comprise the As-Built baseline.	As per LOTAR	
As-Designed	The approved design (under revision control). Differs from In Development in that it only includes design at a status which authorizes use in the As-Planned baseline.	As per LOTAR	
As-Maintained	The configuration of a product instance as repairs and modifications are incorporated over its lifecycle as reflected in records of completed work. Depending on organization and use case, As-Maintained may also be defined as data providing design available for incorporation into units in operation, but another organization is responsible for completing incorporation (e.g., airline).	As per LOTAR	
As-Planned	The manufacturing product structure. Differs from the As-Designed baseline by only including elements with effectivity applied (i.e., resolved), possibly reorganized	As per LOTAR	

Acronym or Term	Definition	Source of Definition	Synonym
	for manufacturing, and consumables added.		
ASME	American Society of Mechanical Engineers; a professional association promotes the art, science, and practice of multidisciplinary engineering. https://www.asme.org/	CIMdata PLM Glossary	
Assembly	A group of items that can be treated as a single item.	CIMdata AD PLM AG – Multi-view BOM project team, based in EIA-836-A 2007	
Assembly Line	The physical location where the certified end product (complete aircraft or other major end items) is achieved (including testing). It is based on manufacturing and assembly skills assuring product compliance to the specified requirement in a repetitive manufacturing environment.	CIMdata AD PLM AG – Multi-view BOM project team	Final Assembly
Asset Management	Asset management is the process of managing the physical assets of a plant, oil rig, or other facility or infrastructure including the facilities used in production. It enables companies to optimize and improve maintenance productivity and facility uptime.	CIMdata PLM Glossary	
Asynchronous Collaboration	A work methodology that allows a team to work serially on something such as an approval, where the data being worked on is sent from one person to the next until the process is complete.	CIMdata AD PLM AG – Collaboration project team	

Acronym or Term	Definition	Source of Definition	Synonym
Attribute Field	A field in the meta-database containing information related to managed data, files, or parts. Examples are: Release Date, Designer, Material Code, Authorization Class, Promotion Level, etc.	CIMdata PLM Glossary	
Authorization	The level of functionality and access to PDM-managed information granted a specific user. Examples of access authorization include read, write, update, copy, and view. Examples of functional authorization include the ability to add users, review or release items, or launch an application.	CIMdata PLM Glossary	
AVI	Audio Video Interleave (File Type Extension).	CIMdata PLM Glossary	
AVSI	Aerospace Vehicle Systems Institute	AVSI	
Back-Up	The process of copying a subset of files to a secure medium to be used for data recovery in the case of system or data loss. Typical customer environments have formal procedures for daily, weekly, and monthly back-ups.	CIMdata PLM Glossary	
Base Number	Identifier for parts within the same family (variants and evolutions).The concept applies to parts, installations, and assemblies.	CIMdata AD PLM AG – Multi-view BOM project team	
Baseline	An established configuration definition and associated items (specifications, documents, CAD designs, drawings, etc.)	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	that becomes a point from which configuration changes will be tracked and documented. Multiple baselines are generally established. Examples of baselines are: functional, allocated, prototype, and production.		
BDD	SysML block definition diagram	MBSE Data Interoperability Specification Report	
Benchmarking	The comparison of an internal process or practice to those employed by one or more external organizations to determine how the existing process or practice can and should be improved. Ideally, one of those external organizations being evaluated should be recognized as having an industry “best practice” for the process or practice.	CIMdata PLM Glossary	
BFE	Buyer-Furnished Equipment.	CIMdata PLM Glossary	
BI	Business Intelligence.	CIMdata PLM Glossary	
Bill of Information (BOI)	<p>A bill of information is a superset of a bill-of-material (BOM).</p> <p>It includes all the item-to-item (parts, documents, process definitions, etc.) relationships and structure important to defining a product’s components and related processes. The BOI includes all relationships among the product’s various components—</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>that is, all mechanical, electrical, software, documentation, formulaic, physics-based, and process-related aspects. It also includes all requirements, quality, test, validation, PMI, and other information associated with the product and related processes.</p> <p>A BOI supports the concept of multiple views of a product’s BOM including the EBOM, MBOM, SBOM, as-maintained BOMs, etc., and traceability links among these. The bill of information is a core part of a product lifecycle management environment and provides traceability throughout.</p>		
Bill of Materials (BOM)	<p>An ordered list of the parts, sub-assemblies, assemblies, and raw materials that define a product. Normally created and maintained within the Project Structure Management function, it defines the type, number, quantity, and relationships of parts and assemblies. BOM is the generic term for any BOM.</p> <p>Related terms Engineering BOM, Manufacturing BOM, and Service BOM.</p>	CIMdata PLM Glossary	BOM
BIM	<p>Related term Building Information Management.</p>	CIMdata PLM Glossary	
BMP	<p>Bit Map (File Type Extension).</p>	CIMdata PLM Glossary	
BOM	<p>Related term Bill of Materials.</p>		
Bottom-Up Design	<p>A structured approach to organizing design data where</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>the lowest level primitive elements are defined first, and then the higher-level functions are built using these elements. As the hierarchical definition process concludes, the overall design structure is expressed in terms of high-level functional blocks and their interconnections.</p> <p>Related term <i>Top-Down Design</i>.</p>		
Building Information Management (BIM)	Management of information specific to buildings, plants, and other facilities. Typically used in conjunction with AEC design capabilities.	CIMdata PLM Glossary	
Bundled PDM Systems	PDM systems available only as an integral part of another software application. For example, some PDM systems are only available as an option to a CAD/CAM system.	CIMdata PLM Glossary	
Business Object	Artifact created in the PLM system to support the definition of an item.	CIMdata AD PLM AG – Multi-view BOM project team	
Business Rules	The policies and procedures of an enterprise. In PDM systems, business rules are used to define the relationship(s) between entities. They specify the business-imposed constraints on the data relationships. Examples are: released data cannot be modified without an engineering change request, only engineering managers can approve mechanical designs, only program approved standard parts can be used within products.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
C	Programming Language / Source Code Program / File Type.	CIMdata PLM Glossary	
C++	Programming Language / Source Code Program / File Type.	CIMdata PLM Glossary	
CAD	Related term Computer-Aided Design .	CIMdata PLM Glossary	
CAD Framework Initiative (CFI)	An industry initiative to provide guidelines for design automation frameworks which enable the co-existence and cooperation of a variety of tools. The CFI initiative has begun to define industry requirements for the database consistency and inter-tool communication needed to track and control complex design data. The focus of this initiative has been on ECAD design environments.	CIMdata PLM Glossary	
CAE	Related terms Computer-Aided Engineering and Simulation and Analysis .	CIMdata PLM Glossary	
CALs	Continuous Acquisition and Lifecycle Support is a DoD digital data transfer protocol. It is intended to provide standard mechanisms for the delivery of digital data and enabling concurrent engineering for DoD sponsored developments and procurements. The CALs initiative has endorsed IGES and STEP as formats for digital data. CALs includes standards for electronic data interchange, electronic technical documentation, and guidelines for process improvement.	CIMdata PLM Glossary	Known formerly as Computer Aided Logistics System

Acronym or Term	Definition	Source of Definition	Synonym
CAM	Related term Computer-Aided Manufacturing .	CIMdata PLM Glossary	
CAR	Canadian Aviation Regulations.	CIMdata PLM Glossar	
CASE	Related term Computer-Aided Software Engineering .	CIMdata PLM Glossary	
CATDrawing	CATIA V5 Designed Drawing.	CIMdata PLM Glossary	
CATIA	Computer-Aided Three-Dimensional Interactive Application from Dassault Systèmes.	CIMdata PLM Glossary	
CATPart	CATIA Designed Part.	CIMdata PLM Glossary	
CATProduct	CATIA Designed Product.	CIMdata PLM Glossary	
CAX-IF	The CAX Implementor Forum is a joint testing effort between AFNet, PDES, Inc. and prostep ivip. The objective of the forum is to accelerate CAX translator development and ensure that users' requirements are satisfied. https://www.cax-if.org/	CIMdata PLM Glossary	
CCD	CADAM CATIA V5 Drafting / Drawing (File Type Extension).	CIMdata PLM Glossary	
CE	Related term Concurrent Engineering .	CIMdata PLM Glossary	
CGM	Computer Graphic Metafile (File Type Extension).	CIMdata PLM Glossary	
Change	A modification to a part, component, configuration, or document from currently defined and approved status. Changes cause version or	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	revision levels of affected items to be updated.		
Change Control	The process and procedures that manage how changes are proposed, reviewed, and approved, and then incorporated into a product and its associated documentation. Change Control is a part of overall configuration management and uses review and release processes to enforce compliance with company change policies.	CIMdata PLM Glossary	
Change Package	A group of documents defined by an ECO that must be modified as a group to effect a change.	CIMdata PLM Glossary	
Check-In	The process of placing new or returning modified product data or information under PDM control. If a new revision is being created this procedure usually initiates a review/approval process controlled by the PDM system.	CIMdata PLM Glossary	
Check-Out	The process of accessing PDM-managed product data or information under PDM controlled procedures. This access may be for viewing, reference and use in another design or manufacturing task, or for making a design change. The PDM system prevents multiple, simultaneous change activities in order to maintain product data integrity.	CIMdata PLM Glossary	
CIM	Related term Computer-Integrated Manufacturing .	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
CITIS	Related term Customer Integrated Technical Information Service .	CIMdata PLM Glossary	
Classification	<p>The assignment of attributes and other defining metadata to managed objects and information maintained within a PDM system. The metadata for classification may include definition of complete classification tables or hierarchies, which define relationships between various classes of objects. These metadata are then used for finding data with similar characteristics. Classification is also used to create and maintain standard part and information libraries.</p> <p>Related terms Part Classification and Group Technology.</p>	CIMdata PLM Glossary	
Client	Refers to both the hardware and software used in a distributed, client-server architecture where the server provides clients with data and information on a demand basis. Typically the trend is to use non-proprietary Web browser software on the client hardware to access cPDM managed data and services.	CIMdata PLM Glossary	
Cloud	Part of SMAC. Cloud computing is a type of Internet-based computing that provides shared computer processing resources and data to computers and other devices on demand. It is a model for enabling ubiquitous, on-demand access to	<p>CIMdata PLM Glossary</p> <p>Wikipedia</p>	

Acronym or Term	Definition	Source of Definition	Synonym
	a shared pool of configurable computing resources (e.g., computer networks, servers, storage, applications, services), which can be rapidly provisioned and released with minimal management effort.		
CM	Related term Configuration Management .	CIMdata PLM Glossary	
CMII	Configuration Management II.	CIMdata PLM Glossary	
Collaboration	<p>A work methodology that allows for the management, sharing, and processing of files, documents, and other types of data, among several users and systems, anytime and anywhere in real time. It includes the exchange of ideas/knowledge and interaction among several project stakeholders for product introduction where design engineering, manufacturing engineering, and other functions are integrated to enable the product lifecycle.</p> <p>The two main types of collaboration are asynchronous and synchronous.</p>	CIMdata PLM Glossary	
Collaboration Foundations and Control	Details the necessary foundations for collaboration with multiple partners or suppliers on projects.	CIMdata AD PLM AG – Collaboration project team	
Collaborative Commerce	c-Commerce is a form of electronic business (e-Business); conducting business on the Internet, not only buying and selling but also servicing customers and collaborating	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>with business partners. Collaborative Commerce is conducted via inter-enterprise Internet connections and enables multiple enterprises to work interactively online to find ways to save and make money and to solve business problems.</p>		
Collaborative Communities	<p>Consist of two or more people from different groups or companies that are working jointly on a project.</p>	CIMdata AD PLM AG – Collaboration project team	
Collaborative Product Commerce (CPC)	<p>Enterprise-capable Web-based solutions that use the Internet to allow employees, customers, and suppliers to collaboratively develop, build, manage, sell, and support products throughout their lifecycle. These solutions are enablers for c-Commerce.</p>	CIMdata PLM Glossary	
collaborative Product Definition management (cPDm)	<p>cPDm is a strategic business approach; applying a consistent set of business solutions that collaboratively manage the product or plant definition lifecycle across the extended enterprise.</p>	CIMdata PLM Glossary	
Collaborative Workspace	<p>Location where data is stored, processed, exchanged, and managed, facilitating interoperability between project stakeholders.</p>	CIMdata AD PLM AG – Collaboration project team	
Compliance Management	<p>Compliance management includes definition, tracking and reporting of all product-related information and activities required to confirm that a product meets certain regulatory compliance metrics, e.g., REACH, WEEE, RoHS.</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Component	One of the hardware, electronic, software, or documentation items (e.g., parts, sub-assemblies) that make up a system. A component may be subdivided into other components.	CIMdata PLM Glossary	
Component Data	All the information that describes a component. This data should contain the information required by all design disciplines.	CIMdata PLM Glossary	
Component Supplier Management (CSM)	Systems that support the classification and retrieval of standard and common parts, components, and assemblies that are used in product designs. These systems may also support monitoring and ranking suppliers. CSM systems use hierarchical classification schemes to facilitate finding components. Related terms Part Classification and Group Technology .	CIMdata PLM Glossary	
Computer Graphics Metafile (CGM)	A standard that defines the format of electronic vector-based graphical data. The MIL-STD for CGM is MIL-D-28003.		
Computer Integrated Manufacturing Open Systems Architecture (CIM-OSA)	A European initiative sponsored by AMICE Consortium (a European ESPRIT project) to develop a reference architecture for information systems.	CIMdata PLM Glossary	
Computer-Aided Design (CAD)	The process of using computer-based tools that assist in the design, drafting, and physical	CIMdata PLM Glossary	CAD

Acronym or Term	Definition	Source of Definition	Synonym
	<p>layout of mechanical and electronic products.</p> <p>Related terms Mechanical Computer-Aided Design and Electronic Computer-Aided Design.</p>		
Computer-Aided Engineering (CAE)	<p>The use of computer-based tools to assist in analyzing one or more aspects of a product design such as structural and mechanism analysis.</p> <p>Related term Simulation & Analysis.</p>	CIMdata PLM Glossary	
Computer-Aided Manufacturing (CAM)	<p>The use of computer-based tools to program, direct, and control production equipment in the fabrication of manufactured items. CAM includes applications that support manufacturing engineering, such as NC programming, process planning, factory layout, and simulation.</p>	CIMdata PLM Glossary	CAM
Computer-Aided Software Engineering (CASE)	<p>The use of computer-based tools to aid in the software engineering process. CASE tools are used in software design, database design, configuration management, requirements tracing, code production, testing, document generation, and other software development activities</p>	CIMdata PLM Glossary	CASE
Computer-Integrated Manufacturing (CIM)	<p>An approach to product design, development, and manufacture that encompasses the use of computers and computer-based tools for all aspects of the product life cycle.</p>	CIMdata PLM Glossary	CIM

Acronym or Term	Definition	Source of Definition	Synonym
	Related terms CAD , CAM , and CAE .		
Concurrence	The occurrence of two or more activities within the same period of time, achieved either by interleaving the activities or by simultaneously executing the activities.	CIMdata PLM Glossary	
Concurrent Engineering (CE)	Defined by IDA Report R-338 as a “systematic approach to the integrated, concurrent design of products and their related processes, including manufacture and support. This approach is intended to cause the developer, from the outset, to consider all elements of the product life cycle from conception through disposal, including quality, cost, schedule and user requirements.”	CIMdata PLM Glossary	
Concurrent Engineering Environment	The collection of services and the culture necessary to support concurrent engineering. The four CE environment factors are: organization, communication infrastructure, requirements, and product development.	CIMdata PLM Glossary	
Conditions of Supply	The form of a part as delivered by a supplier that deviates from the final engineering definition. It could be a part or an assembly. This intermediate definition can be required, according to industrial constraints, to map with requirements from the manufacturing integrator to ensure or perform:	CIMdata AD PLM AG – Multi-view BOM project team	

Acronym or Term	Definition	Source of Definition	Synonym
	<ul style="list-style-type: none"> • logistic manipulations (e.g., Lugs allowing to assist handling operations), • assembly/installation operations of mechanical sub-assemblies (e.g., pilot holes), • ground tests at assembly/installation stages (e.g., tubes or pipes over-length), and • late post machining operations (e.g., over-thickness, extended surface). <p>Conditions of Supply are derived from assembly constraints and deal with condition of delivery of an Aircraft Constituent Item. They can be requested by manufacturing or Customer Support.</p>		
Configuration	The grouping of a component or product as defined by the number, nature, and interconnections of its constituent parts.	CIMdata PLM Glossary	
Configuration Audit	<p>Checking an item for compliance with the configuration identification.</p> <p>Related term <u>Configuration Management</u>.</p>	CIMdata PLM Glossary	
Configuration Change	An alteration to a product and/or its product configuration information (as documented in a request for change).	EIA-649-A 2004	

Acronym or Term	Definition	Source of Definition	Synonym
Configuration Control	<p>Controlling changes to the configuration and its identification documentation.</p> <p>Related term Configuration Management.</p>	CIMdata PLM Glossary	
Configuration Control Zone (CCZ)	<p>A boundary that enables to define business rules around our interaction with data contained within and that is managed within the same scope as the master object. It is not necessarily a formal group of data with an identification number. CCZ enables life cycle dependencies between different objects.</p>	CIMdata AD PLM AG – Multi-view BOM project team	
Configuration Identification	<p>The CM function which (1) establishes a structure for products and product configuration information; (2) selects, defines, documents, and baselines product attributes; and (3) assigns unique identifiers to each product and product configuration information.</p>	EIA-649-A 2004	
Configuration Identification	<p>Selection of the documents that identify and define the configuration baseline characteristics of an item.</p> <p>Related term Configuration Management.</p>	CIMdata PLM Glossary	
Configuration Item (CI)	<p>Any object, component, part, product, or document that is to be configuration controlled. Examples are: engines, cars, computers, planes, toys, and publications.</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
<p>Configuration Management (CM)</p>	<p>A process that establishes and maintains consistency of a product’s attributes with its requirements and product configuration information throughout the product’s life cycle.</p> <p>The five CM functions are: 1) Configuration Management Planning and Management, 2) Configuration Identification, 3) Configuration Change Management, 4) Configuration Status Accounting, and 5) Configuration Verification & Audit.</p>	<p>EIA-649-A 2004</p>	
<p>Configuration Management (CM)</p>	<p>An engineering discipline that provides direction and monitoring of configuration items including processes for defining and controlling product structure (configuration) and its related documentation. CM includes maintaining revision control and history information about all changes to a document or product. CM responsibilities include activities to identify, document, and control changes to functional and physical characteristics; to document change processing and implementation status; and to verify compliance with specified requirements (configuration identification, configuration control, configuration status accounting, configuration audit).</p>	<p>CIMdata PLM Glossary</p>	

Acronym or Term	Definition	Source of Definition	Synonym
	Related term Configuration Control .		
Configurator	A process or tool used to define product configurations that may be built-to-customer order. Configurators allow customers to select appropriate options and assure that the configuration is complete and correct according to a company's product configuration rules.	CIMdata PLM Glossary	
Constraints Model	See Observer Model .	MBSE Data Interoperability Specification	
Consumer	A class of PLM user who accesses and uses information to perform their assigned work tasks but who is not a primary data creator. Related terms Creator and Reviewer .	CIMdata PLM Glossary	
Content Management	The management and control of all forms of electronic data and information. Content management includes data storage, access control and some level of version control. Related terms Data Vaulting and Image Management .	CIMdata PLM Glossary	
Cost of Capital	The return required by a company to decide if a project or investment is worthwhile. Expressed as a percent. Related term Discount Rate .	CIMdata PLM Glossary	
COTS	Commercial Off-the-Shelf.	CIMdata PLM Glossary	
CPC	Related term Collaborative Product Commerce .	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
cPDm	Related term collaborative Product Definition management .	CIMdata PLM Glossary	
CPPS	Cyber-Physical Physical Systems.		
CPS	Cyber-Physical Systems.		
Creator	A class of PLM user who creates and edits information that is stored in the PLM environment. Related terms Consumer and Reviewer .	CIMdata PLM Glossary	
CRM	Compliance Risk Management.	CIMdata PLM Glossary	
CRM	Related term Customer Relationship Management .	CIMdata PLM Glossary	
CSM	Related term Component Supplier Management .	CIMdata PLM Glossary	
CSV	Comma Separated Values (File Type Extension).	CIMdata PLM Glossary	
Customer Integrated Technical Information Service (CITIS)	A service in which customers maintain databases of information for a program and provide electronic access to that database to government agencies and suppliers working on that program.	CIMdata PLM Glossary	
Customer Relationship Management	A computer-based system used to manage data and processes about the lifecycle of the interaction between an organization and its customers, which can include marketing management, the sales cycle, and post-sales customer service and support.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Customer Requirements	The performance, features, and general characteristics of a product as defined by a customer.	CIMdata PLM Glossary	
Customization	The act of modifying or extending a PDM system by writing additional modules or routines that are added to, extend, or replace standard PDM system functionality.	CIMdata PLM Glossary	
Dash Number	The alphanumeric assignment applied after the base number to uniquely identify the part. As an example: Base number + Dash number = Part Number. Dash number changes due to FFF (Fit, Form, Function) changes.	CIMdata AD PLM AG – Multi-view BOM project team	
Data Dictionary	A repository for the definition of data elements: their attributes, representations, and descriptions.	CIMdata PLM Glossary	
Data Model	The definition of all data elements (and their relationships) to be maintained within a PDM system or comparable data repository. The data model defines the database schema for the PDM system or repository.	CIMdata PLM Glossary	
Data Translation	Translation of data from one format to another via converters such as IGES or vendor- and user-supplied translators.	CIMdata PLM Glossary	
Data Transport	The action of moving PDM-managed information to meet the needs of distributed environments. Information may be either moved or copied. Unlike data translation, data	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	transport maintains a consistent data format.		
Data Vaulting	The process of controlling and securing product definition information. Components of data vaulting include secure database and file servers, management of linked or related data, check-in/check-out functions, release level maintenance, access security, and promotion authorization.	CIMdata PLM Glossary	
DCF	Related term <u>Discounted Cash Flow</u> .	CIMdata PLM Glossary	
Decision Support	Design decision made with the aid of on-line data. For example, a decision support tool could determine component selection based on factors such as cost and availability.	CIMdata PLM Glossary	
Design	The process of defining the architecture, components, interfaces, and other characteristics of a system or component. Design can also refer to the result of this process.	CIMdata PLM Glossary	
Design Capture	The process of preparing a design in an electronic environment, as when a person uses a computer-aided tool to draw a solid model, schematic, or other drawing.	CIMdata PLM Glossary	
Design Cycle	The sequence of phases through which a design evolves. For example: concept, design, analysis, simulation, and test.	CIMdata PLM Glossary	
Design Element	Explicitly identifiable portion of a design that can be described	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>and modeled as an entity. Design elements may be primitives, interconnections of primitives, or interconnections of larger elements.</p>		
Design for Manufacturability (DFM)	<p>A design process whereby deliberate effort is expended to assure that a product may be easily and effectively manufactured.</p>	CIMdata PLM Glossary	
Design for Testability	<p>A design process whereby deliberate effort is expended to assure that a product may be thoroughly tested with a minimum effort, and that high confidence may be ascribed to test results.</p>	CIMdata PLM Glossary	
Design Model	<p>A model that describes the system solution which implements a functional model. The model is based on the component breakdown, with each component having their own interfaces and allocated functions.</p> <p>A software design model defines any software design such as a low-level requirement, a software architecture, algorithms, component internal data structures, and data flow and/or control flow. A model used to generate source code is a design model.</p>	MBSE Data Interoperability Specification	
Design Release Management	<p>The process of controlling design data. Components include check-in, check-out, release level maintenance, access security, and promotion authorization.</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Design Variant	Used in the product structure to indicate a different view of the product structure as used by different disciplines. Examples are: an engineering functional structure, a manufacturing assembly structure, or others. These views “present” the same product according to different organizations of the structure.	CIMdata PLM Glossary	
Deviation	Advance permission to purposely not comply with one or more requirements of the product specifications on a limited basis.	CIMdata PLM Glossary	
DfAM	Design for additive manufacturing.		
DID	Data Item Description.	CIMdata PLM Glossary	
Digital Manufacturing	Solutions that support collaborative manufacturing process planning between engineering disciplines, such as design and manufacturing. The solutions use best practices and access to the full digital product definition, including tooling and manufacturing process data that support integrated tool suites that work with the product definition to support visualization, simulation, and other analyses necessary to optimize the product and manufacturing process design.	CIMdata PLM Glossary	
Digital Mockup, Digital Mock-Up (DMU)	Computer systems that allow users to view and manipulate three-dimensional representations of product models for the purpose of	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	verifying product design accuracy and integrity. DMU systems typically provide assembly collision detection, disassembly, and visualization of product models.		
Digital Thread	The digital thread refers to the communication framework that allows a connected data flow and integrated view of an asset's data (i.e., its Digital Twin) throughout its lifecycle across traditionally siloed functional perspectives.	CIMdata PLM Glossary	
Digital Twin	A physics-based description of a system resulting from the generation, management, and application of data, models, and information from authoritative sources across the system's lifecycle. The Digital Twin must be more than just a descriptive model or collection of related digital information (e.g., a SysML model). It is a complete physical description including all behaviors.	CIMdata PLM Glossary	
Digitalization	<p>The use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business.</p> <p>Related term Digitization (based on Gartner definition).</p>	CIMdata PLM Glossary	
Digitization	The process of moving information from paper to digital forms (e.g., computer files, connected data elements representing a product,	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>managing a configuration and all its dependencies). Basically, the process of changing from analog to digital form.</p> <p>Related term Digitalization.</p>		
Direct Modeling	<p>A form of CAD design development in which users interact directly with geometric elements of a design, manipulating them by pushing, pulling, or otherwise changing them in a WYSIWYG manner.</p> <p>Related terms History-Based Modeling and Parametric Modeling.</p>	CIMdata PLM Glossary	
Discount Rate	<p>The rate used to discount future cash flows. Often an organization's weighted average cost of raising capital. The discount rate is used to determine the Net Present Value of an organization's investments.</p> <p>Related term Net Present Value and Cost of Capital.</p>	CIMdata PLM Glossary	
Discounted Cash Flow (DCF)	<p>A valuation of the future net cash flows of an endeavor, discounted to their present-day value.</p> <p>Related terms Internal Rate of Return and Net Present Value.</p>	CIMdata PLM Glossary	
DMU	<p>Related term Digital Mockup.</p>	CIMdata PLM Glossary	
DOC	<p>Microsoft WORD (Pre-2007) Document (File Type Extension).</p>	CIMdata PLM Glossary	
Document Management	<p>The processes, procedures, and tools focused on creating,</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	maintaining and managing documents. Comprehensive applications are available that provide authoring, scanning, structuring, rendering, and printing of documents.		
DOCX	Microsoft WORD (Post-2007) Document (File Type Extension).	CIMdata PLM Glossary	
DOD	Department of Defense United States.	CIMdata PLM Glossary	
DR	Disaster Recovery.	CIMdata PLM Glossary	
DRL	Document Requirements List.	CIMdata PLM Glossary	
DSL	Domain-Specific Language.	CIMdata PLM Glossary	
DTF	Data Transfer File.	CIMdata PLM Glossary	
DTS	Data Transfer Service.	CIMdata PLM Glossary	
DWG	Autodesk's AutoCAD Drawing (File Type Extension).	CIMdata PLM Glossary	
DXF	Autodesk's Drawing Interchange Format that stores AutoCAD drawings in ASCII (text) format. This format has become a de-facto standard for moving geometric data among low-end CAD systems.	CIMdata PLM Glossary	
EAA	Electronic Access Agreement.	CIMdata PLM Glossary	
EAR	Export Administration Regulations.	CIMdata PLM Glossary	
EASA	European Aviation Safety Agency.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
EBOM (Engineering Bill of Materials)	The product structure breakdown representing the As-Designed engineering view. EBOM: Engineering Bill of Materials	CIMdata AD PLM AG – Multi-view BOM project team	
EBOM (Engineering Bill of Materials)	A Bill of Materials that defines the configuration of a product as it was designed.	CIMdata PLM Glossary	
EBOM Change	<u>Product and configuration changes</u> made to an Engineering Bill of Materials (EBOM). They include: <ul style="list-style-type: none"> • Engineering effectivity changes • Items definition changes 	CIMdata AD PLM AG – Multi-view BOM project team	
ECAD	Related term <i>Electronic Computer-Aided Design</i> .	CIMdata PLM Glossary	
ECCN	Export Control Classification Number.		
ECN	Related term <i>Engineering Change Notice</i> .	CIMdata PLM Glossary	
ECO	Related term <i>Engineering Change Order</i> .	CIMdata PLM Glossary Synopsys , 2011	
ECR	Related term <i>Engineering Change Request</i> .	CIMdata PLM Glossary	
EDA	Electronic Design Automation.	CIMdata PLM Glossary	Electronic Computer-Aided Design
EDM	Related terms <i>Engineering Data Management</i> or <i>Engineering Document Management</i> .	CIMdata PLM Glossary	
Effectivity	A designation defining the product or product range; e.g., serial numbers, lot numbers, model, dates, or event at which	Based in EIA-649-A 2004	Applicability

Acronym or Term	Definition	Source of Definition	Synonym
	the usage of a specific product configuration applies, a change to a specific product is to be or has been impacted, or to which a variance applies.		
Effectivity	An indicator in a product structure that specifies when a specific component part is used. These indicators generally specify a range of either dates, serial numbers, or build lots. Effectivity indicators are typically considered as “conditions” on the parent-child relationships in a standard product structure.	CIMdata PLM Glossary	
Effectivity Expression	A logical expression (usually expressed in Boolean logic) used to determine the effectivity of the element to which it is applied.	CIMdata AD PLM AG – Multi-view BOM project team	Effectivity Statement
Effectivity Incorporation Point	The event, date, or product identifier at which the engineering usage of a specific product changes.	CIMdata AD PLM AG – Multi-view BOM project team	
Electronic Computer-Aided Design (ECAD)	Computer applications used to design and analyze electronic and electrical products, parts, and components.	CIMdata PLM Glossary	
Electronic Data Interchange (EDI)	The exchange of information in electronic form.	CIMdata PLM Glossary	
Electronic Design Interchange Format (EDIF)	The EIA-548 Standard for interchanging electronic data among CAD/CAE tools and systems. EDIF gives users the ability to move graphics or data between different tools and includes a way for updating, improving, and maintaining the format. Standard formats are	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	ANSI X.12 in the U.S. and EDIFACT in Europe.		
Electronic Mail	A service that allows users and organizations to communicate electronically. This may include distribution of formatted documents and messages to mailboxes (special computer files) and notifying users of incoming mail. PDM systems use Email to route action notifications.	CIMdata PLM Glossary	Email
Embedded Software	Software that is used to control a product system and is written into the firmware of the product.	CIMdata PLM Glossary	
EMI	Electromagnetic Interference.	CIMdata PLM Glossary	
Encapsulation	The simplest form of application integration. Encapsulated applications can be launched by the PDM system, and a data file can be passed to the application, but data does not dynamically flow between the PDM system and the application. Related terms Integration and Interface .	CIMdata PLM Glossary	
End Item	A product sold as a completed item or repair part. End items are subject to a customer order or sales forecast.	CIMdata PLM Glossary	
Engineering Change Notice (ECN)	A document that formally releases an engineering change or change package for inclusion into the product.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Engineering Change Order (ECO)	<p>A document that identifies and describes a change to configuration(s), component(s), or document(s) in response to an ECP or ECR. ECOs identify all affected items and may also identify related items affected by the change. Additionally, metadata about the change are also defined, e.g., change class, requester, approver, program. An ECO is generally the defining document for a change or release package.</p> <p>Related term Change Package / Release Package.</p>	CIMdata PLM Glossary	
Engineering Change Proposal (ECP)	<p>A document requesting proposed changes to a configuration(s), component(s) or document(s). ECPs may be submitted by customers, vendors, suppliers, and any member of the product owning organization such as engineering or manufacturing.</p>	CIMdata PLM Glossary	
Engineering Change Request (ECR)	<p>Related term Engineering Change Proposal.</p>	CIMdata PLM Glossary	
Engineering Data Management (EDM)	<p>Similar to Product Data Management except generally limited to managing engineering and design information.</p> <p>Related term PDM.</p>	CIMdata PLM Glossary	
Engineering Document Management (EDM)	<p>Similar to Product Data Management except generally limited to managing engineering drawings.</p> <p>Related term PDM.</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Engineering Only Assembly	Part with no counterpart linked to a Manufacturing Bill of Materials (MBOM). Its components are consumed as individual parts in the MBOM.	CIMdata AD PLM AG – Multi-view BOM project team	Product of Convenience, Make On Assembly, Phantom Assembly
ENOVIA	Enterprise InNOVation Interactive Application from Dassault Systèmes.	CIMdata PLM Glossary	
Enterprise	A portion of a company that is related by a common interest in a product or group of products. An enterprise may also logically include a network of subcontractors involved in the common product. PDM systems are often applied across an enterprise.	CIMdata PLM Glossary	
Enterprise Resource Planning (ERP)	Systems that help organizations plan their manufacturing processes and control how products are created. ERP systems typically allow companies to control all aspects of manufacturing including inventory, purchasing, process planning, warehousing and delivery, human resources, finance, configurations, effectivities, etc. Related terms MRP and MRP II .	CIMdata PLM Glossary	
Enterprise Simulation Management (ESM)	Integrates and manages simulation and analysis data and processes across the product development processes. ESM’s primary components include knowledge capture and replication and integrated simulation management.	CIMdata PLM Glossary	Simulation Data Management, Simulation Lifecycle Management (SLM)

Acronym or Term	Definition	Source of Definition	Synonym
EOM	Electronic Order Management.	CIMdata PLM Glossary	
Equipment	<p>A combination of parts, components, accessories, attachments, firmware, or software that operate together to perform a function(s) within a System/Sub-System Architecture, as, or for an end-item or a system. Equipment may be a subset of an end-item based on the characteristics of the equipment. Equipment that does not meet the definition of an end-item is a component, accessory, attachment, firmware, or software. Equipment are certified end items, per TC (Type Certificate), TSO, or equivalent standard, supplied by external companies and their support and spares are under the original suppliers' responsibility.</p>	CIMdata AD PLM AG – Multi-view BOM project team	
ERP	Related term <i>Enterprise Resource Planning</i> .	CIMdata PLM Glossary	
ESM	Related term <i>Enterprise Simulation Management</i> .	CIMdata PLM Glossary	
ETL	Extract, Transformation, and Load.	CIMdata PLM Glossary	
EXE	Executable (File Type Extension).	CIMdata PLM Glossary	
EXPRESS	The information modeling language used to implement STEP data structures.	CIMdata PLM Glossary	
Extended Enterprise	An enterprise that logically includes a network of contractors, suppliers, business partners, and customers	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	involved in creating, defining, producing, operating, or supporting a common product. A supply chain is considered part of an extended enterprise.		
External Digital Data	Data that was not generated as part of a PDM environment. For example, a spreadsheet file is external digital data relative to a bundled MCAD PDM system.	CIMdata PLM Glossary	
FAA	Federal Aviation Administration United States.	CIMdata PLM Glossary	
Facility	Any permanent, semi-permanent, or temporary structure used in the creation or support of a product or performance of a service. This includes buildings and other structures, their functional systems, and equipment, including site development features such as landscaping, roads, walks, and parking areas, outside lighting and communications systems, central utility plants, utilities supply and distribution systems, and other physical plant features.	EIA-836-A 2007	Factory, Site
Feature Modeling	The construction of a geometric model by combining form features (holes, counter-bored holes, slots, bosses, et cetera) with a base model. Features can be positioned and sized in relationship to other features or a geometric datum. Feature modelers may capture design intent and process as well as the geometry of the object.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Federated Data Architecture (FDA)	A form of system structure that accommodates multiple heterogeneous databases. FDA recognizes that information required to execute business processes usually resides in multiple repositories, which often represent a completely heterogeneous mix of technologies and implementation approaches.	CIMdata PLM Glossary	
FFF	Fit Form Function (acronym)	CIMdata AD PLM AG – Multi-view BOM project team	
Fit	The ability of a product to interface or interconnect with, or become an integral part of, another product.	EIA-649-A 2004	
Fly-Away Item	Item subject to an identified interface with the aircraft definition and certified to be installed in an aircraft	CIMdata AD PLM AG – Multi-view BOM project team	
FMI	Functional Mockup Interface.	CIMdata PLM Glossary	
FMU	Functional Mockup Unit.	CIMdata PLM Glossary	
Form	The shape, size, dimensions, and other physically measurable parameters that characterize a product	EIA-649-A 2004	
Formalized Functional Requirement	A format of a modeled requirement in which the computed output or state is a function of the inputs and/or states. Example: $y = f(x,t)$.	MBSE Data Interoperability Specification	
Formalized Requirements	Requirement defined by unambiguous semantics and syntax.	MBSE Data Interoperability Specification	

Acronym or Term	Definition	Source of Definition	Synonym
Formula Management	Related term Specification Management .	CIMdata PLM Glossary	
Framework	A common user environment for cooperative use of tools to support a type of user. The environment is built from a collection of software program facilities and a set of extensible services. For example, an electronic design framework provides a common environment for the use of tools needed to perform the design function. Key facilities are common design data management, process management, and a common user interface.	CIMdata PLM Glossary	
FTP	File Transfer Program.	CIMdata PLM Glossary	
Function	The action or actions that a product is designed to perform	EIA-649-A 2004	
Functional Decomposition	The process of breaking down a function into sub-functions.	MBSE Data Interoperability Specification SEBoK	
Functional Part Number	Identifies all parts that are interchangeable at assembly but may have differences in physical characteristics or assembly components.	CIMdata AD PLM AG – Multi-view BOM project team	REF DES, Equipment, Stable ID, Significant Item Number
GAAG	Global Automotive Advisory Group.	CIMdata PLM Glossary	
GCE	Global Collaboration Environment.	CIMdata PLM Glossary	
GD&T	Geometric Dimensioning and Tolerancing.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
GenDes	Related term <i>Generative Design</i> .		
Generative Design (GenDes)	Automated tools and techniques used to create optimized product designs from requirements and constraints (such as strength, cost, weight, stiffness, natural frequencies, or other factors), rather than by creating the geometry first and then validating via simulation and analysis.	CIMdata PLM Glossary	
Geometric Model	A mathematical, graphical, or logical representation of the shape of real or conceived physical objects. The shape may be described in 2-dimensions (as in an engineering drawing) or 3-dimensions (as in a surface or solid model). Geometric models include wireframe, surface, and solid models.	CIMdata PLM Glossary	
Geometry	The data that defines the spatial placement and shape of the boundaries and surfaces of a geometric model.	CIMdata PLM Glossary	
GIF	Graphic Interchange Format (File Type Extension).	CIMdata PLM Glossary	
Graphical User Interface (GUI)	A user interface to a computer program that includes windows, menus, dialog boxes, icon palettes, and other point-and-select command selection methods, and the use of graphics to present and manipulate information. GUIs contrast with text- and forms-based user interfaces found on “dumb” terminals and in most	CIMdata PLM Glossary	GUI

Acronym or Term	Definition	Source of Definition	Synonym
	mini- and mainframe-based computing systems.		
Green	A catch-all term used to describe categories of actions or solutions that support environmental compliance or environmentally-friendly practices.	CIMdata PLM Glossary	
Group Technology (GT)	Formalized methods and algorithms for defining and classifying parts based on a set of attributes. Related terms Component Supplier Management and Part Classification .	CIMdata PLM Glossary	
GTC	Global Trade Controls.	CIMdata PLM Glossary	
GUI	Related term Graphical User Interface .	CIMdata PLM Glossary	Graphical User Interface
Heterogeneous	Describes a computing environment in which dissimilar hardware and/or software are used to perform related tasks.	CIMdata PLM Glossary	
HIL	Hardware In-the-Loop.	CIMdata PLM Glossary	
History-Based Modeling	A form of CAD that maintains a hierarchical, ordered record of all geometric manipulations of elements and features created and modified during a mechanical design process. Related terms Direct Modeling and Parametric Modeling .	CIMdata PLM Glossary	
HPGL	Hewlett Packard Graphic Language (File Type Extension).	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
HTM	Related term HyperText Markup Language (File Type Extension).	CIMdata PLM Glossary	
HTML	Related term HyperText Markup Language (File Type Extension).	CIMdata PLM Glossary	
HW	Hardware.		
HyperText Markup Language (HTML)	A structured format that allows for the construction of Web pages that contain hyper-links and data that can be accessed in a computer-independent format. HTML is based on SGML.	CIMdata PLM Glossary	
IBD	SysML internal block diagram	MBSE Data Interoperability Specification Report	
ICD	Interface Control Definition	MBSE Data Interoperability Specification Report	
ICT	Information and Communication Technology.	CIMdata PLM Glossary	
IDEF0	ICAM DEFinition language is a data modeling methodology based on the Structured Analysis and Design Technique (SADT) used to define data and data relationships. IDEF was developed under U.S. Air Force initiatives and is widely used in government and commercial programs to determine what data must be managed and how it will be managed.	CIMdata PLM Glossary	
IDEF1	An ICAM data modeling language that is based on entity-relationship methods.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
IDEF1X	An extension to IDEF1.	CIMdata PLM Glossary	
IGES	Related term <i>Initial Graphics Exchange Specification</i> .	CIMdata PLM Glossary	
IMA	Interface Modular Avionics	IEEE/AIAA DASC Conference, 2015	
Image Management	The management and control of raster images generated by image scanning and raster conversions of electronic data created in other formats.	CIMdata PLM Glossary	
In Development	Records the product design while it is being matured.	As per LOTAR	
INCOSE	International Council of Systems Engineering.	CIMdata PLM Glossary	
Independent PDM System	PDM systems that are available as independent products distinct from any other application. These systems may be integrated with any number of other applications (such as CAD/CAM), but they may be purchased and installed independently and do not require purchase of some attached application. These systems contrast with Bundled PDM Systems.	CIMdata PLM Glossary	
Initial Graphics Exchange Specification (IGES)	A standard (ASME/ANSI Y14.26M-1989) for interchanging electronic data among CAD/CAM systems including geometry, dimensions, notes, and tolerances. STEP is the planned replacement. The MIL-STD for IGES is MIL-D-28000.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	Related term <i>STEP</i> .		
Installation	A grouping of parts and processes that are designed within the context of a higher-level assembly or end item using references to interfacing parts and designs. These references within an installation design are significant because they allow installations to be independent from each other from a part number control perspective. Installations are typically single <u>usage</u> within the product and are non-storable.	CIMdata AD PLM AG – Multi-view BOM project team	Design Solution
Instance	This term is used differently in product design systems, in PDM product structure functions, and in image management systems. An instance, as used in product design, is a reference to a geometric object that allows the same geometry to be located at several places in a geometric model assembly without actually copying the geometry. When the original geometry is modified the modifications automatically appear at every instance location. Similarly, in product structures, an instance is a reference to a Part. It allows the same Part to be used in several assemblies without copying all part information into the assembly. In image management, an instance is an occurrence of an image in some format. An image management system may maintain multiple instances of the same image in	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	distributed locations to improve access performance.		
Integration	<p>Tightest method to interconnecting application programs. Both the PDM system and application look as though they are the same program. One set of user interface menus are used to perform common tasks in both programs so that the user does not have the perception that they are leaving their tool. All types of data are shared directly (that is, native to both), including metadata, documents, product structures, etc.</p> <p>Related terms Encapsulation and Interface.</p>	CIMdata PLM Glossary	
Interface	<p>The middle level of application interconnection in which the application's menus may contain direct calls to PDM functions (such as check-in) and at least some types of application data pass automatically between the PDM system and the application. Data sharing is typically more limited than in a full integration.</p> <p>Related terms Encapsulation and Integration.</p>	CIMdata PLM Glossary	
Internal Rate of Return (IRR)	<p>The true rate of return at which the Net Present Value of an investment is zero. This is calculated backwards from Discounted Cash Flows.</p> <p>Related term Discounted Cash Flow.</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Internet of Things (IoT)	The Internet of Things (IoT) refers to the use of computing networks (including the Internet) to connect devices, each with some embedded intelligence and sensors, to collect and share information. The IoT is expected to have a broad-based impact on a range of industries.	CIMdata PLM Glossary	
Interoperability	The ability of two or more systems or components to exchange information and to use the information that has been exchanged. For example, interoperable tools have access to and use the original data, not translated data or copies of the data.	CIMdata PLM Glossary	
Invariant	Artifact created in the PLM system to group items fulfilling the same function along the product lifecycle. It may represent intermediate steps of design, manufacturing, etc. to allow the procurement and integration of parts without directly handling the item's part number. Invariants placed in the product structure stop change propagation to the next higher assemblies.	CIMdata AD PLM AG – Multi-view BOM project team	Modules in Boeing - CIs in Airbus & Embraer - Reference Designator in Boeing and Gulfstream, FIN-CI in Airbus
IoT	Related term <i>Internet of Things</i> .	CIMdata PLM Glossary	
IP	Intellectual Property.	CIMdata PLM Glossary	
IPR	Instrumental Parts Request.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
IRR	Related term <i>Internal Rate of Return</i> .	CIMdata PLM Glossary	
ISO	International Standards Organization; develops high quality voluntary International Standards which facilitate international exchange of goods and services, support sustainable and equitable economic growth, promote innovation and protect health, safety and the environment.	CIMdata PLM Glossary	
ISO JT	Jupiter Tessellation (File Type Extension) – an ISO standard 3D data format used for product visualization and collaboration. JT was developed and is maintained by Siemens Digital Industries Software.	ISO STEP 14306	JT
ISO PRC	Product Representation Format, an ISO standard 3D file format that can be used to embed 3D data in a PDF file.	ISO STEP 14739	PRC
Issue	Documentation of a problem or action that needs to be taken to resolve that problem or complete some actions required to complete a process or activity.	CIMdata PLM Glossary	
IT	Information Technology.	CIMdata PLM Glossary	
ITAR	International Traffic in Arms Regulations is a set of US Government regulations that control access to, exporting and importing defense-related information based on a person's nationality, physical location, security classification of the data and other factors. Similar	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	security methods are applied by other countries, such as “UK Eyes Only.”		
ITC	International Trade Compliance.	CIMdata PLM Glossary	
Item Master	A set of data that describes an item (file) managed by the PDM system, not a part. Related term Part Master .	CIMdata PLM Glossary	
JAA	Joint Aviation Authorities.	CIMdata PLM Glossary	
JFM	Capture Classic (Accelio) (File Type Extension).	CIMdata PLM Glossary	
JPEG	Joint Photographic Experts Group (File Type Extension).	CIMdata PLM Glossary	
JPG	Joint Photographic Group (File Type Extension).	CIMdata PLM Glossary	
JT	Jupiter Tessellation (File Type Extension) – a 3D data format used for product visualization and collaboration. A Siemens Digital Industries Software file type. JT was developed and is maintained by Siemens Digital Industries Software.	CIMdata AD PLM AG – MBD-BOM project team and CIMdata PLM Glossary	ISO JT
Just-In-Time (JIT) Manufacturing	A production system where material or parts used in manufacturing are brought to the work site just as they are needed for assembly, not maintained in inventories. JIT provides for the elimination of buffer stock and minimizes inventories during manufacturing.	CIMdata PLM Glossary	
Key Performance Indicator (KPI)	A metric that is important to the business. One KPI can be made	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	up by combining a number of other metrics.		
LAAI	Limited Area Application Indicator; ASME standard object.	CIMdata PLM Glossary	
LAN	Related term Local Area Network .	CIMdata PLM Glossary	
LCA	LifeCycle Applications.	CIMdata PLM Glossary	
Legacy Systems	In-place computing and application systems that are currently being used within an organization to perform defined functions and tasks.	CIMdata PLM Glossary	
Life Cycle, Lifecycle	The description of the distinct phases through which each product passes during its product life. This includes phases such as requirements definition, concept design, production, etc.	CIMdata PLM Glossary	
Local Area Network	Communications facilities allowing locally connected computer systems, workstations, and terminals to interact. Ethernet is the dominant LAN for workstations.	CIMdata PLM Glossary	LAN
Local Data Manager	Software modules normally provided by product information authoring tool vendors to manage and control access to files and data structures created by those tools. The trend is to integrate local data managers into cPDM solutions, as they tend to offer good management capabilities for proprietary data models and file dependencies.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Long Term Archiving And Retrieval	Archival and retrieval mechanisms for long-lived product and technical information stored in digital media.	CIMdata PLM Glossary	LOTAR
LOTAR	Related term Long Term Archiving And Retrieval .	CIMdata PLM Glossary	
Maintenance, Repair, and Operation (MRO)	A strategy for keeping equipment and facilities in working order once implemented in the field. Includes managing the information (instructions, replacement parts, etc.) required to perform scheduled and preventive maintenance.	CIMdata PLM Glossary	Service Management
Managed Data	The product data maintained within the PDM system. Examples are product structures, ECOs, release packages, business rules, and administrative information. Related term Managed Files .	CIMdata PLM Glossary	
Managed Files	The elements of product data released to and controlled by the PDM system. Examples are CAD/CAM files, FEM models, NC programs, raster images, and text files. Related term Managed Data .	CIMdata PLM Glossary	
Management Data	Information required for proper control of product development. Examples include scheduling and audit history information.	CIMdata PLM Glossary	
Manufacturing Bill of Materials (MBOM)	Defines the configuration of a product as it is intended to be manufactured.	CIMdata PLM Glossary	As-Planned BOM

Acronym or Term	Definition	Source of Definition	Synonym
<p>Manufacturing Enterprise Innovation Platform</p>	<p>A specific configuration of domain-specific Innovation Platforms that enables and optimizes an enterprise’s end-to-end lifecycle activities. A Manufacturing Enterprise Innovation Platform enables an enterprise’s complete, end-to-end digital thread and its complete digital twin (i.e., the digital twin that represents the product, its production, its service processes, and its operations and performance), comprehensive simulation from materials, to structure, to system, to environment, as well as connecting administrative and other supporting domains. For manufacturers and companies in the industrial sector, it is important to establish seamless integration and closed-loop feedback between the Product Innovation Platform and the other domain-specific platforms comprising the Manufacturing Enterprise Innovation Platform so that a configured business platform can be enabled.</p> <p>Primary capabilities of a Manufacturing Enterprise Innovation Platform, above and beyond those native to the Product Innovation Platform, include:</p> <ul style="list-style-type: none"> • Create and validate digital product and process models across all relevant functional domains and disciplines (i.e., design, simulation, test, manufacturing, service, 	<p>CIMdata PLM Glossary</p>	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>technical marketing and sales, etc.).</p> <ul style="list-style-type: none"> • Provide fully managed information access across all relevant functional domains and disciplines—well beyond product development. • Develop technology-based tactics to improve business operations (e.g., virtual commissioning). • Manage suppliers and strategic sourcing activities (e.g., supplier communication including intellectual property design, co-creation, as well as transfer, cost management, optimization, and quality performance). • Forecast, plan, schedule, execute, track, and measure the resources, components, and equipment required to manufacture and/or service a part, component, or full product (operations and production). • Support comprehensive portfolio and true end-to-end lifecycle profitability management (product and process). • Support customer management and interaction. 		
<p>Manufacturing Execution System (MES)</p>	<p>Control systems for managing and monitoring work-in-process on a factory floor. MES is used in manufacturing to track and document the processes from raw materials to finished</p>	<p>CIMdata PLM Glossary</p>	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>products. MES provides information in near real time to identify current conditions on the plant floor and how to optimize resources (e.g., people, machines).</p> <p>MES operates across multiple function areas: resource scheduling, order execution, production analysis, equipment availability, quality, material tracking and exception processing. MES creates the "as-built" record, capturing the data, processes and outcomes of the manufacturing process.</p> <p>MES's relationship to PLM is a bidirectional interface with PLM hosting the as-planned product definition and MES providing the as-built definition.</p>		
<p>Manufacturing Only Assembly</p>	<p>Assembly (or Installation) used primarily in Manufacturing Bill of Material (MBOM) restructuring to optimize assembly activities by merging or splitting engineering items. Manufacturing Only Assemblies are created by Manufacturing Engineering / Production organizations with no Fly-Away (engineering) part number counterpart linked to an EBOM.</p>	<p>CIMdata AD PLM AG – Multi-view BOM project team</p>	
<p>Manufacturing Plan</p>	<p>Document setting out the specific manufacturing practices, technical resources, and sequences of activities relevant to the production of a particular product including any specified acceptance criteria at each stage.</p>	<p>EIA-836-A 2007</p>	<p>Installation Plan, Work Order</p>

Acronym or Term	Definition	Source of Definition	Synonym
	This plan should make reference to applicable methods, procedures, and work instructions.		
Manufacturing Resource Planning (MRP II)	<p>Similar to MRP, except the concepts are broadened considerably. MRP II systems are newer generation systems than MRP systems.</p> <p>Related terms Enterprise Resource Planning.</p>	CIMdata PLM Glossary	
Markup	<p>To put comments and annotations on overlays of a graphic or textual object without changing or modifying the original. Generally, markup refers to annotating images for use in change processes. Multiple overlays and colors are used to allow many persons to input their annotations, comments, and proposed changes. A user requests the original and the overlays to review all comments.</p> <p>Related terms Viewer and Redline.</p>	CIMdata PLM Glossary	
Materials Requirements Planning (MRP)	<p>A methodology and system used to plan and manage manufacturing operations. The BOM for products released to manufacturing and the product routing definition are key parts of the MRP system's database.</p> <p>Related terms Manufacturing Resource Planning and Enterprise Resource Planning.</p>	CIMdata PLM Glossary	
MBD	Related term Model-Based Definition .	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>Model Based Design, or Model Based Development defines real-time, high fidelity, causal/acausal system models that use mathematical and visual methods to define behaviors, controls, and performance. Often constructed as lumped parameter models representing the systems functions, signal processing, and communication systems. The MBD methodology supports code generation and the design of embedded software.</p>		
MBE	<p>Related terms Model-Based Engineering and Model-Based Enterprise.</p>	CIMdata PLM Glossary	
MBOM	<p>The As-Planned product structure breakdown that represents the manufacturing view of the As-Designed configuration. It creates a logical sequence to assemble the end product.</p> <p>MBOM uses an indented, descriptive, and quantitative listing of all components, subassemblies, and raw materials that go into a parent assembly or installation. It identifies what is to be bought and/or manufactured to provide delivery of business segment products.</p> <p>Related term Manufacturing Bill of Materials.</p>	CIMdata AD PLM AG – Multi-view BOM project team	As-Planned BOM
MBOM Change	<p>Product and configuration changes made to a</p>	CIMdata AD PLM AG – Multi-view BOM project team	

Acronym or Term	Definition	Source of Definition	Synonym
	Manufacturing Bill of Materials. They include: <ul style="list-style-type: none"> • Changes pushed by EBOM changes • Breakdown and effectivity changes due to merging and splitting of MBOM • Creation of Manufacturing Only Assemblies 		
MBSE	Related term Model-Based Systems Engineering .	CIMdata PLM Glossary	
MCAD	Related term Mechanical Computer-Aided Design .	CIMdata PLM Glossary	
MCAE	Mechanical Computer-Aided Engineering. Related term Simulation & Analysis .	CIMdata PLM Glossary	
MDB	Microsoft (Access) DataBase (File Type Extension).		
Mean Time Between Failure (MTBF)	A measure of the reliability of a product (or process) that uses the time from implementation of the product and when an issue arises that causes the product to no longer work properly.	CIMdata PLM Glossary	
Mechanical Computer-Aided Design (MCAD)	Computer-based tools for designing and analyzing mechanical products, assemblies and components.	CIMdata PLM Glossary	
Mechatronics	A product development environment that supports the design and analysis of products that are comprised of mechanical, electronic, and software components. Mechatronics can be considered a subset of Systems Engineering, an	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	interdisciplinary approach and means for enabling the realization and deployment of successful systems that include mechanical, electronic, and software components.		
Merge Restructure	Action of joining two or more EBOM in one single MBOM for an installation activity.	CIMdata AD PLM AG – Multi-view BOM project team	
MES	Related term Manufacturing Execution System .	CIMdata PLM Glossary	
Metadata	1) Information about data 2) Content model datatype, identification references, and other “atomic” properties associated with the character data or child elements of the associated element.	EIA-649-A 2004	
Metadata	Information about the data controlled by the PDM system or comparable data repository. For example, drawing number is metadata about a drawing. This definition differs from that used by information systems professionals as a definition of a database’s underlying schema.	CIMdata PLM Glossary	
Metric	A quantitative measurement of a system, component, or process to determine the degree to which it possesses a given attribute. Metrics are often used to measure quality and process improvement.	CIMdata PLM Glossary	
MIL	Model In-the-Loop.	CIMdata PLM Glossary	
MILitary STandarD (MIL-STD)	The set of standards issued by the U.S. DoD that specify how information and products are to	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>be delivered to and supported for U.S. military agencies. Some applicable MIL-STDs are MIL-D-28000 (IGES), MIL-D-28001 (SGML), MIL-D-28002 (raster images), and MIL-D-28003 (CGM).</p>		
<p>Mobile</p>	<p>Part of SMAC. Historically, mobile referred to mobile telephones. But with the introduction of the smart phone, a bundle of complex technologies that are most often delivered in a touch screen interface. Mobile devices include mobile telephones and tablet computing devices, and these powerful computing devices can also high resolution still and video camera, local storage and compute power ions services, WiFi and Bluetooth, accelerometers, and other hardware. The devices have a range of purpose-built applications that leverage some or all of the hardware capabilities.</p>	<p>CIMdata PLM Glossary</p>	
<p>Model</p>	<p>An abstraction, or information item (separately identifiable body of information that is produced, stored, and delivered), aiming at understanding, communicating, explaining, or designing aspects of interest. This information item respects a certain model kind (i.e., conventions for a type of modeling) to support analyses (as opposed to a <u>document</u> written in informal natural language).</p>	<p>MBSE Data Interoperability Specification</p>	

Acronym or Term	Definition	Source of Definition	Synonym
Model-Based Definition (MBD)	Model-Based Definition is the practice of using 3D solid models to document additional information about a design, such as PMI (product manufacturing information such as GD&T, surface finish, inspection datums) and associated metadata used in manufacturing. The PMI information is embedded directly in the solid models and is associated with the geometric elements of the design.	CIMdata PLM Glossary	
Model-Based Engineering (MBE)	<p>An approach to engineering that uses mathematical models (not only CAD models) as an integral part of the technical baseline definition that includes the requirements, analysis, design, implementation, and verification of a capability, system, or product throughout the acquisition lifecycle.¹</p> <p>The design may be documented in associated drawings or as Model-Based Designs. Models are the authoritative definition of the system. Recent references to model-based engineering have focused on “Model-Based Systems Engineering.”</p>	<p>CIMdata PLM Glossary</p> <p>See footnote</p>	
Model-Based Enterprise (MBE)	An integrated and collaborative environment founded on 3D product definition detailed and shared across the enterprise—to enable rapid, seamless, and affordable deployment of	CIMdata PLM Glossary	

¹ This Model-Based Engineering definition is based on:
http://www.ndia.org/Divisions/Divisions/SystemsEngineering/Documents/Committees/M_S%20Committee/Reports/MBE_Final_Report_Document_%282011-04-22%29_Marked_Final_Draft.pdf

Acronym or Term	Definition	Source of Definition	Synonym
	<p>products from concept through life. The foundational element of a Model-Based Enterprise is the use of configuration controlled digital master data set containing the 3D model and all necessary product data in a managed secure and controlled environment that supports maximum data reuse for all aspects of development, production, maintenance, and operations.²</p> <p>MBE is a methodology that leverages enterprise platforms including the Product Innovation Platform to manage complexity of data and processes that develop, represent, produce, and service the product; abstracted into connected systems and subsystems. Modeling and simulation capabilities enable full lifecycle optimization to maximize performance and profitability with minimum risk.</p>	See footnote	
Model-Based Systems Engineering (MBSE)	Model-Based Systems Engineering is the formalized application of various levels of modeling (from 0D to 3D) to evaluate system requirements, design, analysis, verification, and validation activities beginning in the conceptual design phase and continuing throughout development and later lifecycle phases. ³ In its most direct form, MBSE applies a continuous modeling	CIMdata PLM Glossary See footnote	

² This Model-Based Enterprise definition is adapted from: <http://model-based-enterprise.org/index.html>

³ INCOSE Systems Engineering Vision 2020. INCOSE-TP-2004-02. San Diego, CA. September, 2007.

Acronym or Term	Definition	Source of Definition	Synonym
	paradigm (0D, 1D, 2D, 3D...) to define systems, progressing from the most simple (0D) form to a fully defined 3D representation, and on to higher order models to understand temporal issues. This is done in addition to and in the context of written requirements and 2D and 3D CAD designs. The models are used to validate from very early stages that the system will function as conceived and defined by its requirements.		
MPP	Microsoft Project File (File Type Extension).	CIMdata PLM Glossary	
MRO	Related term Maintenance, Repair, & Operation .	CIMdata PLM Glossary	
MRP	Related terms Materials Requirements Planning and Manufacturing Resource Planning .	CIMdata PLM Glossary	
MRP II	Related term Manufacturing Resource Planning .	CIMdata PLM Glossary	
MS	Microsoft.	CIMdata PLM Glossary	
MSG	Outlook Mail Message (File Type Extension).	CIMdata PLM Glossary	
NATO	North Atlantic Treaty Organization.	CIMdata PLM Glossary	
NDIA	National <i>Defense</i> Industrial Association	NDIA	
Net Present Value (NPV)	The value that results from discounting all cash inflows and outlays for an activity by the activity's discount rate. Related term Discount Rate .	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Next Higher Assembly	Installation or Assembly where an item is used.	CIMdata AD PLM AG – Multi-view BOM project team	Parent Assembly
NIPDE	National Initiative for Product Data Exchange is jointly sponsored by the US DoD and US Department of Commerce to lay out how the multitude of international data exchange standards (STEP, IGES, VDA, SET, and others) can be consolidated.	CIMdata PLM Glossary	
NIST	National Institute of Standards and Technology	NIST	
NPV	Related term Net Present Value .	CIMdata PLM Glossary	
Object-Oriented Database Management System (OODBMS)	A DBMS in which data objects are encapsulated by classes that have pre-defined characteristics. Objects added to the database automatically acquire (inherit) the characteristics of their class. These data are accessible only through messages which they recognize.	CIMdata PLM Glossary	
Observer Model	A format of a modelled requirement that defines an unambiguous constraint relationship between the inputs, outputs, and states without specifying a complete design of exactly how to compute the output from the inputs and states. Example: $y < f(x, t \pm dt)$ This kind of model is also called a Constraints Model or Property-Based Model .	MBSE Data Interoperability Specification	

Acronym or Term	Definition	Source of Definition	Synonym
Occurrence (Absolute)	Identifies within a product (root) a specific part, function, logic, or requirement. This identification can be qualified with configuration, knowledgeable attributes, such as absolute position within the product, functional data (ATA, etc.). An absolute occurrence is derived from a set of one or more relative occurrences.	CIMdata AD PLM AG – Multi-view BOM project team	Instance, Usage
Occurrence (Relative)	Direct relationship between a parent and a child object. This identification can be qualified with configuration, knowledgeable attributes, such as relative position within its parent, functional data (ATA, etc.).	CIMdata AD PLM AG – Multi-view BOM project team	Usage, Instance, Assembly Relation
OEM	Original Equipment Manufacturer.	CIMdata PLM Glossary	
Office Document Interchange Format (ODIF)	A set of standards that define the electronic formats to be used to interchange standard business information such as purchase orders, invoices, etc.	CIMdata PLM Glossary	
OIG	Office of Internal Governance.	CIMdata PLM Glossary	
On-Premise Software	A means of software delivery in which most or all functionality is delivered using programs that are locally installed on a client or server at the using organization. Related term Software as a Service (SaaS) .	CIMdata PLM Glossary	
Open Software Foundation (OSF)	An industry group that promotes a standard,	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	interoperable computing environment.		
Open Systems Interchange (OSI)	The communications interchange definition and standards established by the International Standards Organization. OSI is used in the DoD GOSIP standard.	CIMdata PLM Glossary	
Operational Scenario	An operational scenario is a temporally ordered set of activities needed to fulfill a mission, under normal and abnormal conditions.	MBSE Data Interoperability Specification	
Optional Part	<p>A replacement option is an optional part of a structure that, if selected, replaces some other part of the structure. A second type of option includes addition of items when the option is selected but does not itself specifically replace any other items. This type of option supports defining multiple models of the same end item each having a different BOM. For example, a 4-cylinder auto versus a 6-cylinder auto. Design options may be composed of multiple components of the product configuration such as 6-cylinder engine, 4-speed transmission, and anti-lock brakes. Selecting or viewing a specific design option displays all the related changes to the product structure and configuration.</p> <p>Related terms Substitute Part and Alternative Part.</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Orphan Item	Product Structure items not linked to any next higher assembly.	CIMdata AD PLM AG – Multi-view BOM project team	
OSAM	Overall System Architecture Model, comprising a view for functional decomposition, a view for product breakdown into components, and a view for a 3D envelope.	MBSE Data Interoperability Specification	
Outside Operation	Access to the PDM system functions and managed information from applications and systems not executing under PDM control.	CIMdata PLM Glossary	
OWL	Web Ontology Language.	CIMdata PLM Glossary	
PAG	PLM Action Group.	Product Lifecycle Management Action Group	Product Lifecycle Management Action Group
Parametric Modeling	<p>A form of CAD product design in which surfaces, features, and other design elements can be defined by a set of mathematical, geometric and logical functions that describe the relationships among these elements. This approach enables models that can be semi-automatically updated based on changes to the underlying parameters used in the embedded geometric, logical or mathematical functions.</p> <p>Related terms Direct Modeling and History-Based Modeling.</p>	CIMdata PLM Glossary	
Part	<p>“The elements that identify:</p> <p>1) A part or material that forms a portion of an assembly or</p>	EIA-836-A 2007	Item

Acronym or Term	Definition	Source of Definition	Synonym
	<p>subassembly, or 2) A part or material that forms a piece of a group designated for a specific purpose. The group may serve a purpose together, like a modification kit, or may be totally dissimilar things, like those put together for a shipment.”</p>		
Part	<p>A discreet item that is included in a design, such as a mechanical, electrical, or software item. Parts combine into sub-assemblies and assemblies to define products. Parts are often assigned unique identifying numbers, often called part numbers.</p> <p>Related term Component.</p>	CIMdata PLM Glossary	
Part Classification	<p>Mechanisms to classify parts and other elements of a product by their function or by the processes used to manufacture them. Part classification is used to find PDM-managed components to use in a product design or PDM-managed processes to use in the design of similar processes.</p> <p>Related terms Component, Supplier Management and Group Technology.</p>	CIMdata PLM Glossary	
Part Description	<p>The textual description or functional name given to an equipment item, manufacturer proprietary part, or standard part.</p>	ATA-SPEC-2000_2011-01	
Part Master	<p>A set of data (information) about a part that serves as the</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	control definition of the part. This might include information such as part number, date created, currently active revision level, department responsible for design changes, et cetera. The Part Master will have relationships to other information that describes the part's use in assemblies.		
Part Number	Name or alphanumeric identifier, unique to the issuing organization, used to designate products of the same configuration and to differentiate them from other products.	EIA-649-A 2004	Product Identifier, Identifier
Part Number Roll	The re-identification criteria (part number controlled) where the dash number of the part number rolls to the next higher available number.	CIMdata AD PLM AG – Multi-view BOM project team	
Part Referencing	Instancing of a virtual image of data from one file into another without copying the original. CAD systems that utilize standard parts are examples of part referencing applications.	CIMdata PLM Glossary	
PDA	Personal Digital Assistant.	CIMdata PLM Glossary	
PDF	(Adobe Acrobat) Portable Document File (File Type Extension).	CIMdata PLM Glossary	
PDM	Physical Data Model.	CIMdata PLM Glossary	
PDM	Related term Product Data Management .	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Physical Part Number Control	Assignment of part number controlling part definition. Part may be used in any aircraft and a new identifier is assigned whenever a variation in attributes can have a meaningful effect on the item's form, fit, or function (FFF) in the application.	CIMdata AD PLM AG – Multi-view BOM project team	
PIA	Proprietary Information Agreement.	CIMdata PLM Glossary	
PIM	Related term Product Information Management .	CIMdata PLM Glossary	
PLM	Related term Product Lifecycle Management .	CIMdata PLM Glossary	
PMI	Related terms Product Manufacturing Information and Project Management Institute .	CIMdata PLM Glossary	
PoC	Proof of Concept.	CIMdata PLM Glossary	
Point Translator	A commercial or user-built system to translate CAD/CAM or other files from one specific application's format to another. Point translators do not use a neutral definition.	CIMdata PLM Glossary	
Portable Operating System Interface (POSIX)	A standard that defines a common interface to an operating system. Any application built using POSIX standards should execute on any POSIX-compliant operating system.	CIMdata PLM Glossary	
PPT	Microsoft PowerPoint (Pre-2007) (File Type Extension).	CIMdata PLM Glossary	
PPTX	Microsoft PowerPoint (Post-2007) (File Type Extension).	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
PRC	Product Representation Format, a 3D file format that can be used to embed 3D data in a PDF file.	CIMdata AD PLM AG – MBD-BOM project team	ISO PRC
Procedural Interface	A set of calls that invoke standard PDM system procedures. Procedural interfaces are normally part of an Application Interface.	CIMdata PLM Glossary	
Process	(noun) An ordered sequence of steps performed for a given purpose, such as the software development process. (verb) To perform an operation on data. Related term Product Development Process .	CIMdata PLM Glossary	
Product	Intended or accomplished result of labor or of a natural or artificial process	As per LOTAR	
Product	A generic term for whatever is produced by a process, whether goods or services. Any deliverable item of a project or program.	CIMdata PLM Glossary	
Product Change	Term used to identify any configuration variation in a product structure whether by change to the aircraft standard definition, customer technical definition, or by the introduction of improvements and all under the surveillance of the authorities. Within group activities, change triggers EBOM and MBOM changes.	CIMdata AD PLM AG – Multi-view BOM project team	
Product Data	A set of data that uniquely defines a product for the enterprise in the environment for its intended use. The	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	expression of what a product is, ideally, with sufficient clarity to be able to manufacture the product.		
Product Data Browser	A tool that can perform a non-sequential query or search of a product database. An example would be to find parts based on a specified range of characteristics.	CIMdata PLM Glossary	
Product Data Exchange using STEP	The United States activity in support of the International Standards Organization (ISO) technical committee standard known as STEP.	CIMdata PLM Glossary	
Product Data Management (PDM)	Solutions and methodologies used within an enterprise to: 1) organize, access, and control data related to its products, and 2) manage the lifecycle of those products. A single PDM solution may work with CAD, CAM, CAE, other software applications, and with traditional non-computer systems that generate or use product data (such as paper documents). It also provides access and security controls, maintains relationships among product data items, enforce rules that describe and control data flows and processes, and provides notification and messaging facilities. PDM	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	systems are used by managers, administrators, and end-users.		
Product Development Process	The set of activities, tools, methods, and procedures by which customer needs are translated into a product. This process involves translating customer needs into product requirements, transforming the requirements into a design, implementing and testing the design, up to the preparation of work instructions, including routings, the MBOM, and the manufacturing tools/tooling definition for all the manufacturing process preparation ready to be executed by manufacturing.	CIMdata PLM Glossary	
Product Innovation Platform	A product innovation platform is a set of functional domains— process, lifecycle stage, and technical domains such as system ideation, profitability management, and quality and compliance, that would support all product related disciplines and users through the entire product lifecycle. These are orchestrated by the platform with a “system of systems” approach that, in essence, makes a product innovation platform the enabler of the next generation of PLM-enabling solutions needed to develop and produce products. An effective platform optimizes across these multiple lifecycle domains from a product’s conception through its entire life.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Product Life Cycle	Related term Life Cycle .	CIMdata PLM Glossary	
Product Lifecycle	Period from the conceptual idea to the ultimate disposal of a product	As per LOTAR	
Product Lifecycle Management (PLM)	The tracking, control, and status control of product data, either as files or through a database. PLM extends the scope of PDM to include each physical product produced from a design, including deviations from the design and usage of the product.	As per LOTAR	
Product Lifecycle Management (PLM)	A strategic business approach that applies a consistent set of business solutions in support of the collaborative creation, management, dissemination, and use of product definition information across the extended enterprise and spanning from product concept to end of life—integrating people, processes, business systems, and information.	CIMdata PLM Glossary	
Product Management Data	The data describe the primary technical data generically in a PDM framework, independent of their specific type (e.g., CAD data), which are described in the domain specific parts of EN 9300 series.	As per LOTAR	
Product Manufacturing Information (PMI)	Data pertinent to manufacturing a product including information such as tolerances, reference dimensions, datum points for quality processes, surface finish, material specifications, etc. This data has historically been included in drawings to be used	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>in manufacturing operations. MCAD solutions may also store the PMI in the 3D CAD model, from where it can be added automatically to drawings or accessed by viewing the 3D CAD model.</p> <p>Related term Model-Based Definition.</p>		
Product Model	<p>A Product Model is a model that represents a solution architecture including its constituent elements (components, hardware, and software), their interactions, and the functions allocated to those elements.</p>	MBSE Data Interoperability Specification	
Product Portfolio Management	<p>Focuses on identifying, evaluating, and managing the “family” or portfolio of products that a company develops, offers and maintains.</p>	CIMdata PLM Glossary	
Product Structure	<p>A hierarchical view of the relationship of products and component products. Embodies the organization of all of the design and production data for a product. It includes hierarchical relationships of the assemblies and other parts that comprise a product. It may also include references to associated items such as documents, files, processes, etc.</p>	EIA-649-A 2004 CIMdata PLM Glossary	
Product Structure View	<p>A specific way of interpreting product configuration information. Product structure views may be quite different for different disciplines such as design assembly, manufacturing</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	assembly, purchasing, documentation, maintenance, etc. Parts can have different representations in two views, for instance a weldment may be treated as a single part in the design assembly and as several parts in the manufacturing assembly.		
Production Line Number	The number assigned to each production airplane that describes the build sequence through in the production order base.	CIMdata AD PLM AG – Multi-view BOM project team	Production Rank, Line Number
Program Management	The planning, directing, and controlling of human and non-human resources to achieve specific program or project objectives. Program management tracks factors such as technical performance in terms of cost and time and generally includes a work breakdown structure of tasks and sub-tasks.	CIMdata PLM Glossary	Project Management
Program Portfolio Management	Focuses on managing the group of projects (a program) that a company executes to create, build, and support their product suite.	CIMdata PLM Glossary	
Programmatic Interface	Related term Application Interface .	CIMdata PLM Glossary	
Project Management	Related term Program Management .	CIMdata PLM Glossary	Program Management
Project Management Institute (PMI)	A professional organization that provides information related to managing projects. PMI also has a certification program for	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	project management professionals. See http://www.pmi.org/ .		
Promotion	The process of moving product information from one defined Promotion Level to another. Promotion generally includes review and approval of information being promoted as part of the promotion process. Promotion includes enacting all access and control changes associated with the new Promotion Level.	CIMdata PLM Glossary	
Promotion Level	The state, status, or access level of product information at a point in time during its life cycle. Promotion levels are defined according to organizational business rules. Example level names are Preliminary Release, Prototype Release, and Production Release. Each Promotion Level has its own set of business rules that describe authorizations for access, use, and approval.	CIMdata PLM Glossary	
Property-Based Model	See Observer Model .	MBSE Data Interoperability Specification	
prostep ivip	International trade organization focused on standards and methods supporting the industry's digital transformation	prostep ivip	
PRT	Unigraphics Part File (File Type Extension).	CIMdata PLM Glossary	
PTC	Parametric Technology Corporation.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Quality	The degree to which a system, component, or process meets specified requirements or meets customer expectations.	CIMdata PLM Glossary	
Quality Assurance (QA)	A planned and systematic approach to determine that a product conforms to established technical requirements.	CIMdata PLM Glossary	
Quantity	Unit of measure for parts, components, etc. to be ordered, installed, or removed.	ATA-SPEC-2000_2011-01	
RBE (Requirement-Based Engineering)	Specification and design process based on requirements tracing, allocation, and decomposition as an answer to ARP4754/DO178 policy.	MBSE Data Interoperability Specification	
R&D	Research and Development.	CIMdata PLM Glossary	
RAA	Responsibility, Accountability, and Authority.	CIMdata PLM Glossary	
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals. A European Community regulation that is intended to manage the risks from chemicals and to provide safety information on substances. Manufacturers and importers are required to gather and report information on the chemical substances used in their products and manufacturing processes. REACH also calls for the substitution of the most dangerous chemicals when suitable alternatives have been identified.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Recipe Management	Related term Specification Management .	CIMdata PLM Glossary	
REDARS	Reference Engineering Data Automated Retrieval System.	CIMdata PLM Glossary	
Redline	To annotate a graphic or text object such as a drawing by placing comments either on the original or on overlays with the original. Related terms Markup and Viewer .	CIMdata PLM Glossary	
Relational Database Management Systems (RDBMS)	Database management systems that maintain data records and indices in tables. Relationships may be created and maintained across and among the data and tables.	CIMdata PLM Glossary	
Release Action Notice	Message sent to people whose action is required as part of a release process.	CIMdata PLM Glossary	
Release Level	Related term Promotion Level .	CIMdata PLM Glossary	
Release Package	Related term Change Package .	CIMdata PLM Glossary	
Release Status	The current status of an object being reviewed and released. Examples are: submitted, pending release, rejected, and approved.	CIMdata PLM Glossary	
Reporting and Analytics	The process and tools that support analyzing and searching through data and producing reports based on the results.	CIMdata PLM Glossary	
ReqIF	Requirements Interchange Format	OMG	
Requirement	A statement that translates or expresses a stakeholder need	ISO/IEC/IEEE 29148:2011	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>and its associated constraints and conditions.</p> <p>A statement that identifies a system, product, or process characteristic or constraint, which is unambiguous, clear, unique, consistent, standalone (not grouped), and verifiable, and is deemed necessary for stakeholder acceptability.</p>	<p>MBSE Data Interoperability Specification</p> <p>INCOSE</p>	
Requirement Decomposition	<p>The process of detailing / breaking down requirements to the next lower level of requirement.</p>	<p>MBSE Data Interoperability Specification</p>	
Requirements Management	<p>Gathering and managing user, business, technical, and functional requirements within a product development project. Four types of requirements must be considered: user requirements, business requirements, technical requirements, and process or operational requirements.</p>	<p>CIMdata PLM Glossary</p>	
Requirement Validation	<p>Determination that the requirements are correct and complete.</p>	<p>ARP4754</p> <p>MBSE Data Interoperability Specification</p>	
Return on Investment (ROI)	<p>The value of an investment’s return to the organization, expressed as a percentage.</p>	<p>CIMdata PLM Glossary</p>	
Review	<p>A process in which one or more persons check changed documents or data to determine if the changes have been correctly performed.</p>	<p>CIMdata PLM Glossary</p>	
Review Action Notice	<p>Messages sent to people whose review is required for a defined release procedure.</p>	<p>CIMdata PLM Glossary</p>	

Acronym or Term	Definition	Source of Definition	Synonym
Reviewer	<p>A class of PLM user who is responsible for reviewing information or changes to information to ensure that the information or change is correct.</p> <p>Related terms Creator and Consumer.</p>	CIMdata PLM Glossary	
Revision	<p>Technical update of an existing Part Number definition without <u>Part Number roll</u>.</p> <p>Example:</p> <ul style="list-style-type: none"> • Part Number A11111111-2 is released with Revision A (issue is not stamped on physical parts). • If a change modifies Form, Fit or Function (FFF), Part Number rolls to A11111111-3 • If a change does not modify FFF, Part Number A11111111-2 is updated and released with Revision B (no Part Number roll) 	CIMdata AD PLM AG – Multi-view BOM project team	Issue, Version
Revision	<p>A modification of an item during the process of developing a product. Many organizations use some form of code in the item number to indicate which revision of the item is being examined. Item revisions may also produce a variant item, that is one that is different for some specified reason.</p> <p>Related terms Variant and Version.</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Revision Level	The current authorized and documented level of a component, configuration or document. Revision Levels are defined and updated according to configuration management change control rules including review and approval of the changes to affected items.	CIMdata PLM Glossary	
RFLP	Requirement, Functional, Logical, and Physical: An acronym from the Systems Engineering community that refers to defining requirements, and then mapping those requirements to the functional, logical, and physical instantiations of that system.	CIMdata PLM Glossary	
RoHS	Restriction of Hazardous Substances (RoHS) is initially a European Union directive to ensure that electrical and electronic equipment produced or sold in the EU does not contain any of six banned substances: cadmium, hexavalent chromium, lead, mercury, poly-brominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE), in quantities exceeding a maximum concentration value. This directive is being adopted by many countries outside the EU.	CIMdata PLM Glossary	
ROI	Related term <i>Return on Investment</i> .	CIMdata PLM Glossary	
Role	Describes responsibilities associated with a specific job type. Examples include project manager, designer, and	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	reviewer. In cPDM solutions, a role is used to assign authorization and access restrictions. Users are assigned to roles to inherit the authorizations and access restrictions required to perform the assigned work of that role.		
RTF	Rich Text Format (File Type Extension).	CIMdata PLM Glossary	
S&A	Simulation and Analysis. Related term Computer-Aided Engineering .	CIMdata PLM Glossary	
SaaS	Related term Software as a Service .	CIMdata PLM Glossary	
SBOM	Related term Service Bill of Materials .	CIMdata PLM Glossary	
SBP	Special Business Provisions.	CIMdata PLM Glossary	
SCADA (Supervisory Control And Data Acquisition)	A system that supports industrial communication and control of industrial equipment. The control system may be combined with a data acquisition system to gather information about the status of equipment and processes.	CIMdata PLM Glossary	
SCD	Specification Control Drawing.	CIMdata PLM Glossary	
SCM	Software Configuration Management.	CIMdata PLM Glossary	
SDM	Simulation Data Management. Related terms Enterprise Simulation Management and Simulation Lifecycle Management .	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Serial Number (S/N)	Used to identify individual units within an item family. Serial numbers shall be used when identical parts or kits having the same part number must be distinguished from each other for tracking in service, and lot or batch identification is not sufficient. They provide for traceability of items that are manufactured, tested, and operated individually and can be used to determine the physical location of a particular item on a particular aircraft.	ATA- SPEC-2000_2011-01	
Service Bill of Materials (SBOM)	The structure of the product, initially as it was built (the MBOM), but then modified as the product is installed and serviced in operation.	CIMdata PLM Glossary	
SFE	Seller Furnished Equipment.	CIMdata PLM Glossary	
SGML	Related term Structured Generalized Markup Language .	CIMdata PLM Glossary	
Shape Search	The act of searching for 3D data based on its geometric shape. Solutions can find parts and assemblies that exactly or closely match a given 3D shape.	CIMdata PLM Glossary	
SIL	Software In-the-Loop.		
Simulation & Analysis	Modeling, exercising, and analyzing a design's behavior without physically building the design. The simulator and simulation model have all the necessary attributes of the physical design. Related term Computer-Aided Engineering .	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
Simulation and Process Data Management (SPDM)	<p>A system that manages simulation and analysis data and processes across the product development processes.</p> <p>Related term Enterprise Simulation Management.</p>		
Simulation Data Management (SDM)	<p>A system that manages simulation and analysis data across the product development processes. Simulation data may be managed in PDM systems.</p> <p>Related term Enterprise Simulation Management.</p>	CIMdata PLM Glossary	
Simulation Lifecycle Management (SLM)	<p>A system that manages simulation lifecycle processes and data.</p> <p>Related term Enterprise Simulation Management.</p>	CIMdata PLM Glossary	Enterprise Simulation Management
SMAC	<p>Related terms Social, Mobile, Analytics, and Cloud</p>	CIMdata PLM Glossary	
SmartSE	<p>Smart Systems Engineering.</p>		
SMB	<p>Small to Medium Business, variously defined as companies with revenues lower than a certain threshold (e.g., \$1B).</p>	CIMdata PLM Glossary	
Social	<p>Part of SMAC. Social is located at the intersection of computational systems and social behavior and is based on supporting different aspects of human social behavior and interaction through the use of software and technology. Blogs, email, social networks, instant messaging, and many different kinds of social interaction apps are examples. Different from, but related to things like</p>	<p>CIMdata PLM Glossary</p> <p>Adapted from Wikipedia</p>	

Acronym or Term	Definition	Source of Definition	Synonym
	SIGCHI, where psychologists and computer scientists meet.		
Software	A set of instructions, data, or programs used to operate computers and execute specific tasks.	MBSE Data Interoperability Specification	
Software Architecture	The structure of a software system comprising software elements, relations among them, and properties of both elements and relations.	MBSE Data Interoperability Specification	
Software as a Service (SaaS)	<p>A means of software delivery in which all functionality is provided over the Internet or Virtual Private Network.</p> <p>Related term <i>On-Premise Software</i>.</p>	CIMdata PLM Glossary	
Specification Management	Used within process industries in a similar manner that product structure management is used within discrete industries. A recipe or formula defines the components of a product, how the product will be “assembled” and all the specifications and requirements associated with those products and their relationship and interdependencies.	CIMdata PLM Glossary	Formula Management, Recipe Management
Specification Model	<p>A model that represents requirements which specify functional, performance, interface, or safety characteristics without consideration of the design implementation.</p> <p>An executable specification is a model of a system’s behavior that can be executed at least for</p>	MBSE Data Interoperability Specification	

Acronym or Term	Definition	Source of Definition	Synonym
	purposes of its own validation. The execution can be either simulation (e.g., in Simulink) or animation (e.g., SysML in Rhapsody).		
Specified Item	An item for which a specification is issued and addressed to one or several supplier(s) possessing the know-how in terms of technologies and techniques to manufacture the item. Supplier(s) will perform the detailed definition, design, and complete development (manufacturing, testing, etc.).	CIMdata AD PLM AG – Multi-view BOM project team	Supplier Controlled Drawing, Source Control, Specification Drawing
Split Restructure	Action of separating one EBOM in two or more MBOMs. Allows the MBOM to separate engineering part numbers into separate manufacturing quantities to facilitate the manufacturing build sequence (Applicable to any two structures, not just EBOM and MBOM.)	CIMdata AD PLM AG – Multi-view BOM project team	
SRM	Related term <i>Supplier Relationship Management</i> .	CIMdata PLM Glossary	
Standard d’Echange et de Transfert (SET)	A European standard for the interchange of CAD/CAM data, particularly used in the aerospace industry.	CIMdata PLM Glossary	
Standard for the Exchange of Product Data (STEP)	An evolving international product data representation standard (ISO 10303). STEP is being designed top down to represent data from all aspects of the design and manufacturing processes and for different product types. STEP focuses on	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>exchanging digital product models with sufficient information content so they can be interpreted directly by advanced CAD/CAM/CAE application programs. STEP will support a wide range of geometric and non-geometric data such as manufacturing features, tolerance specifications, material properties, configurations, specifications, and surface finish specifications. STEP is based on a neutral mechanism capable of completely representing product model data throughout the life cycle of a product.</p>		
<p>Standard Generalized Markup Language (SGML)</p>	<p>An ISO standard (ISO 8879:1986) that provides a formal notation for the definition of generalized markup languages. HTML, SGML, and XML (Extensible Markup Language) provide for structuring and hypertext linking documents and database information in a vendor and computer-neutral, human-readable format.</p> <p>Related term HTML.</p>	<p>CIMdata PLM Glossary</p>	
<p>Standard Material</p>	<p>Item manufactured in conformance with an international or company standard, published and maintained by consensus and approved by a recognized body that provides, for common and repeated use, rules and characteristics.</p>	<p>CIMdata AD PLM AG – Multi-view BOM project team</p>	

Acronym or Term	Definition	Source of Definition	Synonym
Standard Part	<p>Expendable hardware item having relatively high usage, numerous applications and normally available from industrial supply outlets. Includes items such as nuts, bolts, screws, fasteners, rivets, resistors, capacitors, diodes, etc.</p> <p>Manufacturer Codes utilized with standard parts identify the industry or government agency controlling the design and assignment of part numbers.</p>	ATA-SPEC-2000_2011-01	
State Change	<p>Change status of an object (e.g., Drawing, Models, Bill of Materials, etc.) in a lifecycle. For example, from work in progress to approved.</p>	CIMdata AD PLM AG – Multi-view BOM project team	
Station	<p>A sequential Physical or Virtual place for manufacturing activities within a factory production area.</p>	CIMdata AD PLM AG – Multi-view BOM project team	
STEP	<p>Related term <i>Standard for the Exchange of Product Data</i>.</p>	CIMdata PLM Glossary	
Structured Query Language (SQL)	<p>The ANSI standard data access (query) language for relational database systems.</p>	CIMdata PLM Glossary	
Substitute Part	<p>A part that is approved to be used in a specific design instead of a preferred part, if conditions warrant.</p>	CIMdata PLM Glossary	
Supplier Relationship Management (SRM)	<p>A computer-based system to manage data and processes about the lifecycle of the interaction between an organization and its suppliers, which can include requests for proposal, information, or quotation (RFP, RFI, RFQ),</p>	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	supplier qualification, and supplier quality management functions.		
SW	Software.	CIMdata PLM Glossary	
Synchronous Collaboration	A work methodology that allows a team to work simultaneously on a process, seeing each other’s data and comments and allowing the team to reach a consensus quickly.	CIMdata AD PLM AG – Collaboration project team	
SysML	Systems Modeling Language.	OMG CIMdata PLM Glossary	
System	<p>An ordered arrangement of components with links to comprise a whole where the components mutually interact together toward achieving a common objective. It can be regarded as a set of interrelated components that perform one or more functions.</p> <p>An integrated set of elements, subsystems, or assemblies that accomplish an objective (defined or undefined). These elements include products (hardware, software, firmware), processes, people, information, techniques, facilities, services, and other support elements</p>	<p>ISO/ IEC 15288</p> <p>MBSE Data Interoperability Specification</p> <p>nafems.org (Resources, Glossary)</p>	
System Administrator	The person who sets up, manages, and customizes the PDM system to meet the enterprise’s needs.	CIMdata PLM Glossary	
System Architecture	Fundamental concepts or properties of a system, its	ISO/IEC/ IEEE 42010:2011	

Acronym or Term	Definition	Source of Definition	Synonym
	environment embodied in its elements, relationships, and the principles of its design and evolution.		
System of Systems (SoS)	Brings together a set of systems for a task that none of the systems can accomplish on its own. Each constituent system keeps its own management, goals, and resources, while coordinating within the SoS and adapting to meet SoS goals.	ISO/IEC/IEEE 15288 Annex G (ISO, 2015)	
System Requirements	The required performance, features, and characteristics of a complex system or product. These requirements lead to the system specification.	CIMdata PLM Glossary	
Systems Design	The act of designing a complex system that entails many components and subassemblies and involves several engineering disciplines.	CIMdata PLM Glossary	
Systems Engineering	Systems engineering is an interdisciplinary approach and means to enable the realization of successful systems. It focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, and then proceeding with design synthesis and system validation while considering the complete problem: operations, cost and schedule, performance, training and support, test, manufacturing, and disposal. Systems Engineering integrates all the disciplines and specialty groups into a team effort forming a structured	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>development process that proceeds from concept to production to operation. Systems Engineering considers both the business and the technical needs of all customers with the goal of providing a quality product that meets the user needs.⁴</p> <p>A system is a combination of interacting elements organized to achieve one or more stated purposes. It may also be an integrated set of elements, subsystems, or assemblies that accomplish a defined objective. These elements include products (hardware, software, firmware), processes, people, information, techniques, facilities, services, and other support elements. An example would be an air transportation system.⁵</p>	<p>See footnote</p> <p>See footnote</p>	
Tailoring	<p>Changing the defaults and options of a PDM system by setting preferences. Tailoring is done without writing or integrating code that modifies the PDM system.</p> <p>Related terms Application Interface and Customization.</p>	CIMdata PLM Glossary	
TDM	Tooling Data Management.	CIMdata PLM Glossary	
TDM	<p>Technical Data Management and Technical Document Management.</p> <p>Related term PDM.</p>	CIMdata PLM Glossary	Product Data Management

⁴ INCOSE. What is Systems Engineering? <http://www.incose.org/practice/whatissystemseng.aspx>. 14 June 2004.

⁵ Haskins, Cecilia, Ed. Systems Engineering Handbook. INCOSE-TP-2003-002-03.2.1. San Diego, CA. January 2011.

Acronym or Term	Definition	Source of Definition	Synonym
Technical Data Management (TDM)	Related term PDM .	CIMdata PLM Glossary	Product Data Management
Technical Document Management (TDM)	Related term PDM .	CIMdata PLM Glossary	Product Data Management
Technical Information Management (TIM)	Related term PDM .	CIMdata PLM Glossary	Product Data Management
Technical Data Package (TDP)	Any collection of information as defined by the recipient requirement obligations. The collected technical data is gathered at a specific lifecycle stage. The technical data package will describe the contents in an organized way. This information may include, but is not limited to, engineering data, purchasing data, manufacturing data, certification data, test data, service data, etc. Some examples of these types of data are design definition, test reports, administrative agreement, installation instruction, component maintenance manual, etc..	CIMdata AD PLM AG – Collaboration project team	
TIF	Tagged Image File (File Type Extension).	CIMdata PLM Glossary	
TIFF	Tagged Image File Format (File Type Extension).	CIMdata PLM Glossary	
TIM	Related term Technical Information Management .	CIMdata PLM Glossary	
Top-Down Design	A design method that combines the use of divide-and-conquer techniques with one of adding	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>increasing detail as the design processes. Top-down is typically used at the beginning of the design process.</p> <p>Related term Bottom-Up Design.</p>		
Topology Optimization	Automatic methods that optimize material layout (geometry) within given design spaces driven by a given set of functional requirements that may include loads, boundary conditions, constraints, and other design parameters.	CIMdata PLM Glossary	
Total Quality Management (TQM)	<p>A broad approach to quality, including product quality, but extending well beyond to virtually everything done by an organization for external as well as “internal” customers (what marketing does for manufacturing for example) that encourages an enterprise-wide emphasis on quality and doing the job right the first time.</p> <p>Continuous improvement is sought toward measurable, ever-more-difficult quality targets.</p>	CIMdata PLM Glossary	
Transmission Control Protocol/Internet Protocol (TCP/IP)	A communication standard for connecting computing systems. It includes interactive, file, and mail interchange standards.	CIMdata PLM Glossary	
Trigger	A mechanism that detects some activity or change in state of some object in the PDM system and as a result, can initiate some subsequent action.	CIMdata PLM Glossary	
TSO	Technical Standard Order.	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
TXT	Text File (File Type Extension).	CIMdata PLM Glossary	
UML	Unified Modeling Language.	OMG CIMdata PLM Glossary	
UMLDI	UML Diagram Interchange Specification.	OMG CIMdata PLM Glossary	
UPS	Uninterruptible Power Supply.	CIMdata PLM Glossary	
Use Case	Description of a particular situation in which the system is used. Use cases form a part of the UML methodology (cf. EN 9300-004 section 5 and UML reference).	As per LOTAR	
USML	United States Munitions List.	CIMdata PLM Glossary	
V-Model	Systems development lifecycle	INCOSE, <i>Systems Engineering Handbook</i>	
Validation	The evaluation if the right thing was developed in its functions.	SEBoK MBSE Data Interoperability Specification	
Variant	A planned for, permitted version of a product (its structure) that is allowed to be manufactured and delivered to customers. The concept allows different versions of the same product to be created. Related terms Revision and Version .	CIMdata PLM Glossary	Version
Vault	The PDM system's computerized data storage area and databases. Information stored in PDM vaults are	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	controlled by system rules and processes.		
Verification	The evaluation if the development was done right in its requirement traceability.	SEBoK MBSE Data Interoperability Specification	
Version	An approved and controlled change or set of changes to an item or portions of its data. Version changes are often forced when the result is a change to the form, fit, or function of an item. Multiple versions of the same Revision Level may be created. Versions allow variations of components, configurations, and documents to be developed and used without requiring formal changes to the Revision or Baseline of an item. Related terms Revision and Variant .	CIMdata PLM Glossary	Variant
Viewer	Application used to display graphical objects, generally in raster format. Viewer applications allow users to zoom, pan, and otherwise modify the display of the object. Related terms Markup and Redline .	CIMdata PLM Glossary	
Virtual Reality Modeling Language (VRML)	A standard that enables designers to create interactive, animated 3D virtual worlds that can be explored through various display technologies including virtual reality caves.	CIMdata PLM Glossary	
Visualization and Simulation	Systems that allow users to see all types of product data without	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	<p>having to have access to the data's authoring application. This includes 3D CAD models, assemblies, drawings, and any type of documents. Typically these systems allow users to view, manipulate, annotate, and transmit data to other users. Some systems also allow users to create animations or simulations of product designs that can be viewed in motion.</p> <p>Related term Digital Mockup.</p>		
VSD	Microsoft Visio File (File Type Extension).	CIMdata PLM Glossary	
Waiver	Approval to deliver a product when it has been found during inspection or testing that a Configuration Item does not comply with the requirements of its technical documentation.	CIMdata PLM Glossary	
WAN	Related term Wide Area Network .	CIMdata PLM Glossary	
WBS	Related term Work Breakdown Structure .	CIMdata PLM Glossary	
WEEE	Waste Electrical and Electronic Equipment (WEEE) is a European Union directive intended to reduce the amount of electrical and electronic equipment being produced and to encourage its recovery, reuse, and recycling. The WEEE directive also intends to improve the environmental performance of businesses that manufacture, supply, use, recycle and recover electrical and electronic equipment. This	CIMdata PLM Glossary	

Acronym or Term	Definition	Source of Definition	Synonym
	directive is being adopted by many countries outside the EU.		
Wide Area Network	A communication network that spans a large, geographically distributed, multi-site environment. WANs typically use protocols that provide higher transmission rates than LANs.	CIMdata PLM Glossary	WAN
WMV	Windows Media Video File (File Type Extension).	Wikipedia	
Work Breakdown Structure (WBS)	Used to plan and manage the process of developing a product design, to produce a product, and to support it. A WBS is a mechanism for breaking work (generally related to some specific project) into smaller elements that can be used for assigning resources, budgets, schedules, et cetera. The WBS provides a basis for controlling projects.	CIMdata PLM Glossary	
Work Instruction	Printed or virtual document describing tasks, safety instruction, information delivered to manufacturing workers to perform parts manufacturing or assembly activities targeted in the MBOM.	CIMdata AD PLM AG – Multi-view BOM project team	
Workgroup	Any group of people working toward a common goal as a team. An enterprise will typically have a number of workgroups involved in a product development project.	CIMdata PLM Glossary	
Workstation	A system consisting of a desktop or desk-side computer, a set of applications or tools,	CIMdata PLM Glossary	Engineering Workstation

Acronym or Term	Definition	Source of Definition	Synonym
	and integrated interactive graphics capabilities primarily used by one person.		
World-Class	Being better than or as good as every other company in your industry in at least one important performance criteria of manufacturing such as cost, quality, dependability, flexibility, or innovation.	CIMdata PLM Glossary	
WYSIWYG	Acronym used to denote a form of computer user interface in which users see onscreen elements, text, and graphics as they would be shown, for instance, in a printed format.	CIMdata PLM Glossary	What you see is what you get
XLS	Microsoft Excel File (Pre-2007) (File Type Extension).	Wikipedia	
XLSX	Microsoft Excel File (Post-2007) (File Type Extension).	Wikipedia	
XMI	XML Metadata Interchange (Canonical XMI).	OMG A&D MBSE	
XML	Extensible Markup Language	Wikipedia	

About A&D PLM Action Group

The Aerospace and Defense PLM Action Group (www.ad-pag.com) is an association of aerospace and defense companies within CIMdata's globally recognized PLM Community Program, which functions as a PLM advocacy group to:

- Set the direction for the aerospace & defense industry on PLM-related topics that matter to members (*including promoting, not duplicating, the work of standards bodies*)
- Promote common industry PLM processes and practices
- Define requirements for common interest PLM-related capabilities
- Communicate with a unified voice to PLM solution providers
- Sponsor collaborative PLM research on prioritized industry and technology topics

CIMdata administers Group operations, coordinates research, and manages the progression of policy formulation.

About CIMdata

CIMdata, a leading independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM) solutions. Since its founding over thirty years ago, CIMdata has delivered world-class knowledge, expertise, and best-practice methods on PLM solutions. These solutions incorporate both business processes and a wide-ranging set of PLM-enabling technologies.

CIMdata works with both industrial organizations and providers of technologies and services seeking competitive advantage in the global economy. CIMdata helps industrial organizations establish effective PLM strategies, assists in the identification of requirements and selection of PLM technologies, helps organizations optimize their operational structure and processes to implement solutions, and assists in the deployment of these solutions. For PLM solution providers, CIMdata helps define business and market strategies, delivers worldwide market information and analyses, provides education and support for internal sales and marketing teams, as well as overall support at all stages of business and product programs to make them optimally effective in their markets.

In addition to consulting, CIMdata conducts research, provides PLM-focused subscription services, and produces several commercial publications. The company also provides industry education through PLM certification programs, seminars, and conferences worldwide. CIMdata serves clients around the world from offices in North America, Europe, and Asia-Pacific.

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