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IPC-2578

Sectional Requirements for Supply Chain Communication of Bill of Material and Product Design Configuration Data - Product Data eXchange (PDX)

IPC-2578

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A standard developed by IPC

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In May 1995 the IPC's Technical Activities Executive Committee adopted Principles of Standardization as a guiding principle of IPC's standardization efforts.

Standards Should:

- Show relationship to Design for Manufacturability (DFM) and Design for the Environment (DFE)
- Minimize time to market
- Contain simple (simplified) language
- Just include spec information
- Focus on end product performance
- Include a feedback system on use and problems for future improvement

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- Increase time-to-market
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Adopted October 6, 1998

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PDX

– Bill of Material

Sectional Requirements for Supply Chain Communi- cation of Bill of Material and Product Design Configuration Data – Product Data eXchange (PDX)

A standard developed by the Bill of Material and Product Design Configuration Exchange Task Group (2-15e) of the Supply Chain Communication Subcommittee (2-15) of IPC.

The IPC-2578 standard describes the requirements for the exchange of Bills of Material (BOM), Approved Manufacturer Lists (AML), Approved Supplier Lists (ASL), as well as the description of the components involved on the Bill of Material.



Users of this standard are encouraged to participate in the development of future revisions.

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Acknowledgment

Any Standard involving a complex technology draws material from a vast number of sources. While the principal members of the Bill of Material and Product Design Configuration Exchange Task Group (2-15e) of the Supply Chain Communication Subcommittee (2-15) are shown below, it is not possible to include all of those who assisted in the evolution of this standard. To each of them, the members of the IPC extend their gratitude.

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Bill of Material and Product Design Configuration Exchange Task Group

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Sectional Requirements for Supply Chain Communication of Bill of Material and Product Design Configuration Data – Product Data eXchange

Introduction

The IPC-2571 document provides introductory and explanatory information about this standard and includes other elements that are also required or used. The IPC-2571 dictates the required package structure and XML format for information exchange using any of the subsequent IPC-257x standards such as this one. In any such exchange, a Product Data eXchange package must be defined which contains at a minimum a single pdx.xml file. This file in turn is required to contain a single ProductDataeXchangePackage element, and may contain any number of other elements from this specification. The Product Data eXchange package may optionally contain or refer to related external files.

There are relationships to other standard initiatives. These include the following:

IPC 2510 – GenCAM

The GenCAM standard (IPC 2510) describes printed boards and printed board assemblies. GenCAM describes a printed board in enough detail to be able to manufacture and assemble a board. The Product Data eXchange standard, on the other hand, is intended for high-level supply chain communication of product definition data.

RosettaNet

RosettaNet is dedicated to the development and deployment of standard electronic business interfaces to align the processes between supply chain partners on a global basis.

Open Applications Group, Incorporated (OAGI)

The Open Applications Group, Incorporated has defined standard interfaces between enterprise software applications.

1 Scope

This standard (IPC 2578) covers the sectional requirements for the exchange of Bills of Material (BOM), Approved Manufacturer Lists (AML), Approved Supplier Lists (ASL), as well as the description of the components involved on the Bill of Material. Component data includes electrical, mechanical and package type. This standard also contains change history for Engineering Change Orders (ECO), and can capture Multiple Change Order (MCO) information.

2 Applicable Documents

The following documents contain provisions, which, through reference in this text, constitute provisions of this standard. All documents are subject to revision. Parties who make agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the documents indicated below.

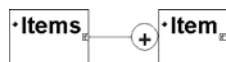
IPC-T-50	Terms and Definitions for Interconnecting and Packaging Electronic Circuits.
IPC 2510	Generic Computer Aided Manufacturing Descriptions for Printed Boards and Printed Board Assembly.
IPC-2571	Generic Requirements for Electronics Manufacturing Supply Chain Communication - Product Data eXchange (PDX)

3 Graphical Representation of Product Data eXchange

The IPC-2571 is a mandatory part of this standard. The graphical representation of the entire Product Data eXchange standard suite is detailed in the IPC-2571.

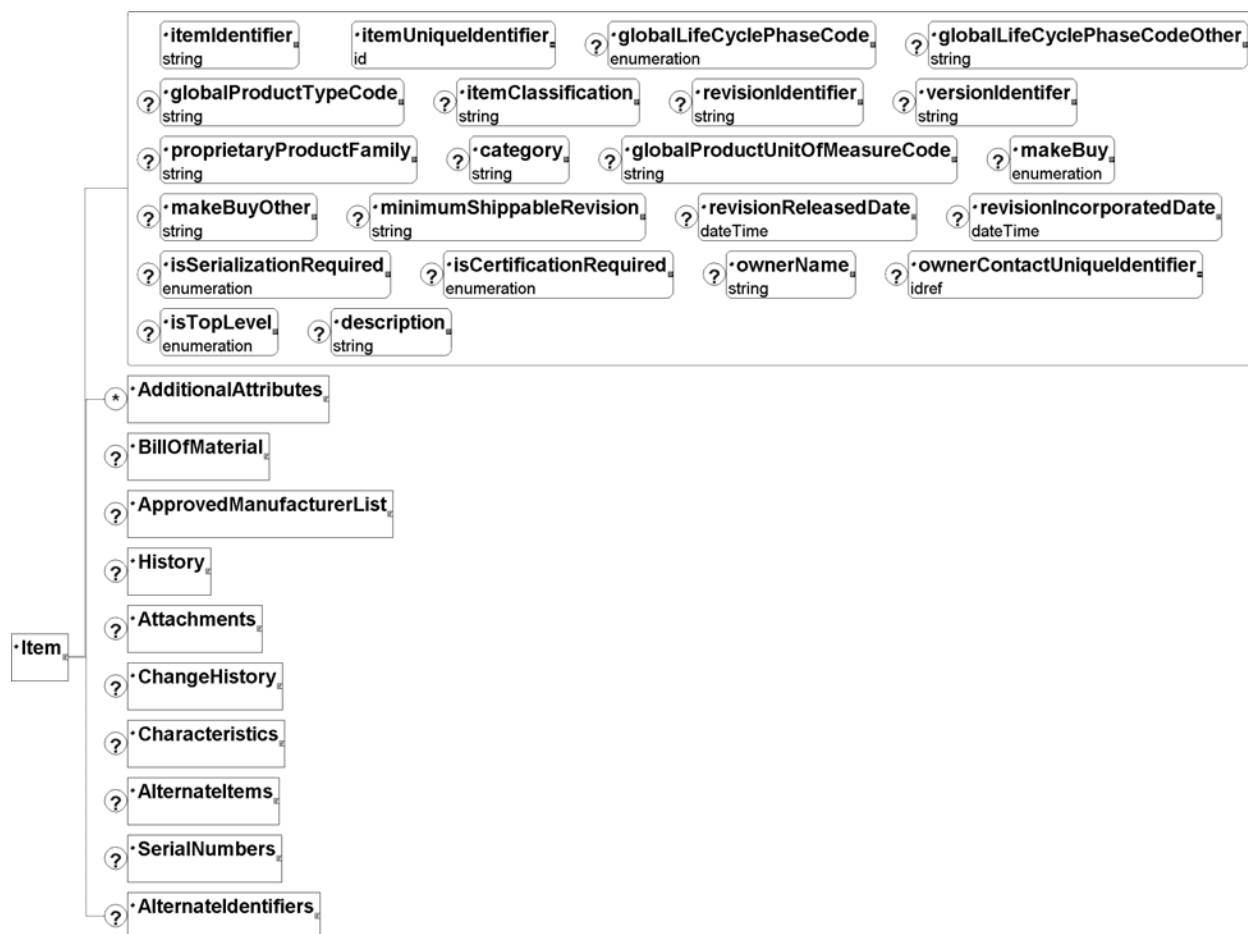
Note that graphics and a table of attribute descriptions are provided as an aid to understanding the elements in the PDX standard suite. In any instance where the XML DTD conflicts with an image or description, the DTD should be considered normative.

4 Items Element



The Items element is a collection of Item elements that define item master data for all items in the product configuration, including finished goods, parts, assemblies (including phantom assemblies), software, documentation, manuals, and drawings.

4.1 Item Element



The Item element contains item master data defined in the following table. As shown in the diagram, the Item element may be associated with a number of other elements. Note that Item may link to one or more AdditionalAttribute elements through an AdditionalAttributes element, but such usage would constitute a non-standard extension of PDX.

Attribute Name	Type	Required?	Description
itemIdentifier	CDATA	#REQUIRED	Item identifier
itemUniqueIdentifier	ID	#REQUIRED	Unique identifier for the item.
globalLifeCyclePhaseCode	(Design Preliminary Prototype Pilot Conditional Production Pending Inactive Unqualified Disqualified Obsolete Other)	#IMPLIED	Lifecycle phase of item.

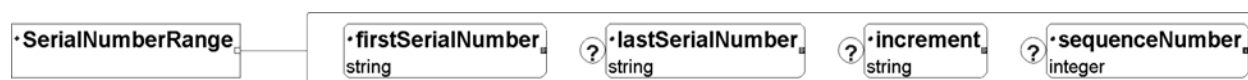
Attribute Name	Type	Required?	Description
globalLifeCyclePhaseCodeOther	CDATA	#IMPLIED	If the above globalLifeCyclePhaseCode attribute is set to "Other", use this attribute to provide a more descriptive value. If the above globalLifeCyclePhaseCode is NOT set to "Other", LEAVE THIS FIELD BLANK.
GlobalProductTypeCode	CDATA	#IMPLIED	Product type code
ItemClassification	CDATA	#IMPLIED	The classification of the item
revisionIdentifier	CDATA	#IMPLIED	Revision of item
versionIdentifier	CDATA	#IMPLIED	Version of Item. An item can have both a revision and a version
proprietaryProductFamily	CDATA	#IMPLIED	Product line(s) that the item belongs to
category	CDATA	#IMPLIED	Category of parts (electrical, mechanical, software, etc.)
globalProductUnitOfMeasureCode	CDATA	#IMPLIED	Unit of measure for item (gallons, inches, etc.)
makeBuy	(Make Buy Consigned VendorManaged Subcontracted Unspecified Other)	#IMPLIED	Make or Buy decision.
makeBuyOther	CDATA	#IMPLIED	If the above makeBuy attribute is set to "Other", use this attribute to provide a more descriptive value. If the above makeBuy attribute is NOT set to "Other", LEAVE THIS FIELD BLANK.
minimumShippableRevision	CDATA	#IMPLIED	Earliest revision that may be shipped at this time.
revisionReleasedDate	CDATA	#IMPLIED	Date the item was released
revisionIncorporatedDate	CDATA	#IMPLIED	Date the item was incorporated
isSerializationRequired	(Yes No)	#IMPLIED	Serial number required for item (default is No)
isCertificationRequired	(Yes No)	#IMPLIED	Certification Required (default is No)
ownerName	CDATA	#IMPLIED	Owner or responsible party for the item
ownerContactUniqueIdentifier	IDREF	#IMPLIED	Refers to contactUniqueIdentifier attribute of the Contact element for the owner or responsible party for the Item. See discussion of "Inclusion of Linked Objects" in IPC 2571.
IsTopLevel	(Yes No)	#REQUIRED	See Introduction document "TopLevel attribute" (Default is No)
description	CDATA	#IMPLIED	Description of the item

5 SerialNumbers Element



The SerialNumbers collection contains serial number data to be assigned to the finished product. It contains one or more SerialNumberRange or SerialNumberIdentification elements. The SerialNumberRange element **shall** be used for sequential serial number blocks. The SerialNumberIdentification element **shall** be used for non-sequential serial numbers.

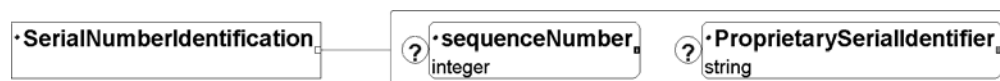
5.1 SerialNumberRange



The SerialNumberRange element **shall** be used for items that are assigned serial numbers from a sequential range.

Attribute Name	Type	Required?	Description
firstSerialNumber	CDATA	#REQUIRED	The first serial number in the range
lastSerialNumber	CDATA	#IMPLIED	The last serial number in the range
increment	CDATA	#IMPLIED	The increment by which to separate the serial numbers that are assigned. Assumed to be 1 if not specified
sequenceNumber	CDATA	#IMPLIED	Indicates the sequence in which this serial number range should be used

5.2 SerialNumberIdentification



The SerialNumber element **shall** be used for items that require a collection of non-sequential serial numbers.

Attribute Name	Type	Required?	Description
sequenceNumber	CDATA	#IMPLIED	Indicates the sequence in which this serial number should be used
proprietarySerialIdentifier	CDATA	#IMPLIED	A single Serial number to be assigned to an item