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PartModel SupplyChain Guidelines for Electronic-Device Packages – XML Requirements

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PartModel SupplyChain Guidelines for Electronic-Device Packages – XML Requirements

(From JEDEC Board Ballots JCB-17-48, JCB-24-29, JCB-24-50, JCB-24-53 and JCB-25-59, formulated under the cognizance of the JC-11 Committee on Mechanical Standardization.)

1 Scope

The JEP30 document establishes the requirements for exchanging part data between part manufacturers and their customers for electrical and electronic products. The JEP30 documents are part of a series to describe XML data exchange structure and hierarchy. The JEP30 document series will detail data exchange between companies for design at the next level, analysis, and interconnection. The parent JEP30 document specifically focuses on the parental structure, under which several sub-sections are listed, such as electrical, physical, thermal, supply chain, assembly process classification, design kit, generated ECAD models, product substrate and assemblies, and environment including material declaration. This document specifically focuses on the SupplyChain sub-section of the PartModel.

All releases of the [SupplyChain](#) sub-schema must be under the umbrella of the PartModel Schema to ensure that the PartModel schema is referencing the correct version of the SupplyChain sub-schema. In addition, this will enable the [SupplyChain](#) sub-schema to connect to the Manufacturer Part Number and the Manufacturer of the Part.

1.1 Purpose

This standard is intended to benefit part manufacturers, distributors of their parts and their customers by providing consistency and efficiency to the transfer of part data from part manufacturer to customers. This standard specifically covers data applicable to the [SupplyChain](#) modelling of the device.

2 Applicable Documents

The following documents form a part of this standard to the extent specified herein. The revision of the document in effect at the time of solicitation shall take precedence.

2.1 JEDEC (www.jedec.org)

JEP30, *PartModel Guidelines for Electronic-Device Packages – XML Requirements*

JEP30-A100, PartModel Assembly Process Classification Guidelines for Electronic-Device Packages – XML Requirements

JEP30-E100, *PartModel Electrical Guidelines for Electronic-Device Packages – XML Requirements*

JEP30-P100, PartModel Package Guidelines for Electronic-Device Packages – XML Requirements

JEP30-T100, PartModel Thermal Guidelines for Electronic-Device Packages – XML Requirements

2.1.1 JEDEC PartModel Schema and Sub-Schemas

JEP30-10, PartModel Schema

JEP30-A101, PartModel Assembly Process Classification Schema

JEP30-E101, PartModel Electrical Schema

JEP30-P101, PartModel Package Schema

JEP30-S101, PartModel Supply Chain Schema

JEP30-T101, PartModel Thermal Schema

JEP30-D10, *PartModel Schema Types Dictionary* (Required to support the PartModel Schema and each of its sectional sub-schemas.)

2.2 IEC

IEC-62474, *Material Declaration for Products of and for the Electrotechnical Industry*

2.3 JEDEC/EIA/IPC

J-Std-046, *Customer Notification Standard for Product/Process Changes by Electronic Product Suppliers*

J-Std-048, *Notification Standard for Product Discontinuance*

3 Requirements

The following terms and definitions are applicable to this XML Schema.

3.1 Terms and Definitions

All definitions and terms associated with the SupplyChain Data are defined in the JESD51 series of documents, as listed in the applicable documents section. The SupplyChain details of the part are defined in the [SupplyChainSection](#) of the XML Schema.

All common Terms and Definitions that are used by more than one sectional sub-schema, such as any of the Electrical, Package, Environmental, Assembly Process Classification, are defined in the “PartModel Schema Types Library”.

All other definitions and terms necessary to define the schema, are defined by this document.

PartModel: A PartModel is a data representation described in an XML file that conforms to the rules and structure of the PartModel XML Schema.

NOTE 1 Companies who use the PartModel XML Files and claim compliance to JEDEC, must ensure that their PartModel XML file conforms to the specific released version of the PartModel XML Schema released by JEDEC.

NOTE 2 Section 4 will define the outline of the structure of the SupplyChain XML Schema. Specific components of the XML Schema and their hierarchy are specifically controlled by the JC-15 Standards Committee who retain the expertise for these structures.

NOTE 3 The [SupplyChainSection](#) of the schema forms part of the PartModel XML Schema and is not intended to act as a standalone schema. In addition, there is a “PartModel Schema Types Library” XML Schema, which is a common set of xml structures shared across the PartModel XML Schema and all of its sub-section schemas.

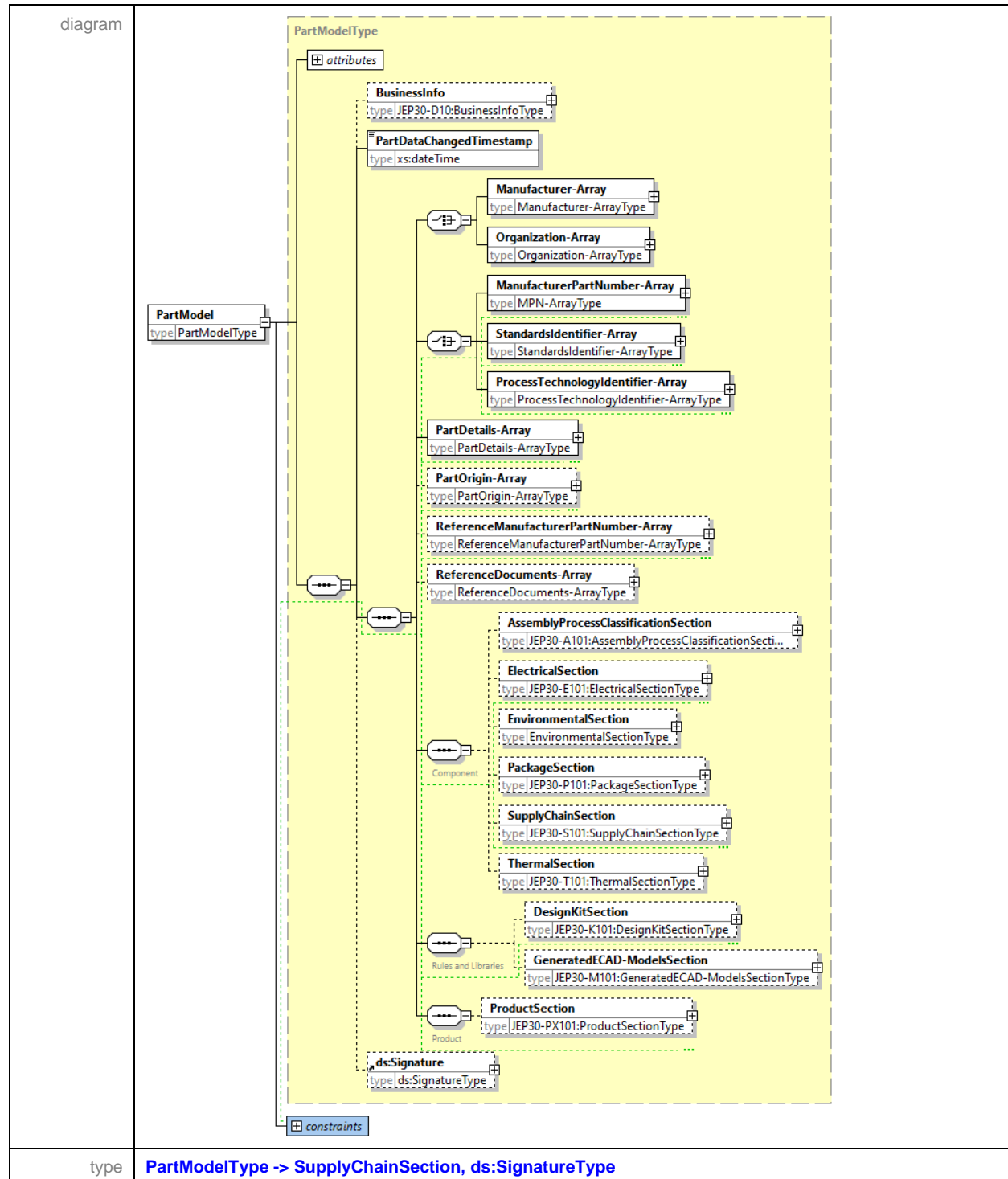
3.2 XML Schema Key Terms and Definitions

Reference the JEP30 publication for details of the "XML Schema Key Terms and Definitions".

4 PartModel Schema Definition

The following section describes the XML Schema structure.

4.1 PartModel - SupplyChain Section



4.1 PartModel - SupplyChain Section (cont'd)

The [PartModelType](#) belongs to the “PartModel XML Schema”. The [SupplyChainSection](#) belongs to the “PartModel SupplyChain XML Schema”. The primary purpose of the PartModel Schema is to provide the structure for identifying unique parts (Manufacturer and MPN), and the structure to include the sub schemas which define the part details, as outline in the JEP30 - PartModel Guidelines for Electronic-Device Packages – XML Requirements.

This document covers the [SupplyChainSection](#), which is referenced from its parent’s structure, the [PartModel](#). The contents under the [SupplyChainSection](#) are tied to the Manufacturer’s name and Manufacturer’s part number.

The [ComplianceToPartModelSchemaVersion](#) indicates the version of the Schema to which the XML file is to be validated against. All new releases to this document or XML Schema is governed by the rules outlined in JEP30, and must be released in sync with the PartModel.

“Each time that a Sub-schema gets updated, then the PartModel version also gets updated in order to release that Sub-schema under the umbrella of the PartModel. This is because the PartModel must now reference the new version of Sub-schema, since all subschemas have their own version number. The parent schema includes them by referring to a precise version, so a version bump in the subschema requires a version bump in the parent only at the time of release of the Parent.”

The [PartModelContentRevision](#) indicates the revision of the data for the Part that is submitted in the XML file. This enables the Component Manufacturer to provide a new XML file for a Part each time they wish to upgrade a new set of data for a part, in any of the sub-sections such as this [SupplyChainSection](#).

4.2 Manufacturer Part Number-Array

path	PartModel/ManufacturerPartNumber-Array.
diagram	<p>The diagram illustrates the XML Schema Definition (XSD) for the ManufacturerPartNumber-Array. It is an array of ManufacturerPartNumbers (type MPN-ArrayType). Each ManufacturerPartNumbers element contains the following attributes and elements:</p> <ul style="list-style-type: none"> ID (type xs:string): A required attribute. PartNumberSeries (type JEP30-D10:PartNumberSeriesType): A required element. OrderablePartNumber (type JEP30-D10:OrderablePartNumberType): A required element. FuturePart (type FuturePartType): A required element. ManufacturerID (type xs:string): A required element. ManufacturerSignatureDigest (type JEP30-D10:SignatureDigestLinkType): A required element. ds:Signature (type ds:SignatureType): A required element. <p>The diagram also shows a constraints section.</p>
type	MPN-ArrayType, ManufacturerPartNumbersType, PartNumberType, OrderablePartNumberType, FuturePartType, StandardsIdentifierType, ProcessTechnologyIdentifierType, JEP30-D10:SignatureDigestLinkType, ds:SignatureType.

The **ManufacturerPartNumber-Array/ManufacturerPartNumbers** provides the definition of the part number or a specific Standard, so that it can be connected to the technical specification details in the **SupplyChainSection** via the **PartDetails-Array** section.

4.3 Linking the Manufacturing Part Number to a specific SupplyChain Data set

The linking of the Parts to its technical data is done via the [PartDetails-Array](#) section as outline in the JEP30 - PartModel Guidelines for Electronic-Device Packages – XML Requirements. This consists of two sections called [PartsSelection-Array](#) and [Association-Array](#) which defines the relationship between identifying the specific set of parts and how they are associated with the supply chain content. Reference the JEP30 parent document for more details on this association.

path	PartModel/PartDetails-Array/PartDetails/Association-Array/Association/SupplyChain-Array.
diagram at the Association level	
type	SupplyChainAssociation-ArrayType , ManufacturerSupplyChainAssociationType , DistributorSupplyChainAssociationType , ProductChangeNoticeAssociationType , ProductDiscontinuanceAssociationType , AlternativePartAssociationType .
path	PartModel/SupplyChainSection
diagram at the Supply Chain Section level	
type	SupplyChainSectionType , SupplyChain-ArrayType , ManufacturerSupplyChainType , DistributorSupplyChainType , ProductChangeNoticeType , ProductDiscontinuanceType , AlternativePart-ArrayType

4.3.1 Linking the Manufacturing Part Number to Manufacturer Supply Chain

path	PartModel/PartDetails-Array/PartDetails/Association-Array/Association/SupplyChain-Array/ManufacturerSupplyChain
diagram at the Manufacturer Supply Chain Association level	
type	ManufacturerSupplyChainAssociationType , JEP30-D10:SignatureDigestLinkType .
path	PartModel/SupplyChainSection/SupplyChain-Array/ManufacturerSupplyChain
diagram at the Manufacturer Supply Chain level.	
type	ManufacturerSupplyChainType , ManufacturerPartStatusType , ManufacturerPartClassificationType , PackingType , ds:SignatureType

The [ManufacturerSupplyChainID](#) references the [ManufacturerSupplyChain/ID](#) under the [SupplyChainSection/SupplyChain-Array](#). This is enforced by the key named as [ManufacturerSupplyChainKey](#) that is assigned to the [ManufacturerSupplyChain/ID](#) element, which is referenced by the [ManufacturerSupplyChainID](#) which has a KeyRef that refers to the [JEP30-S101:ManufacturerSupplyChainKey](#).

4.3.2 Linking the Manufacturing Part Number to Distributor Supply Chain

path	PartModel/PartDetails-Array/PartDetails/Association-Array/Association/SupplyChain-Array/DistributorSupplyChain
diagram at the Distributor Supply Chain Association level	
type	DistributorSupplyChainAssociationType , JEP30-D10:SignatureDigestLinkType .
path	PartModel/SupplyChainSection/SupplyChain-Array/DistributorSupplyChain
diagram at the Distributor Supply Chain level.	
type	DistributorSupplyChainType , Distributor-ArrayType , ds:SignatureType

The [DistributorSupplyChainID](#) references the [DistributorSupplyChain/ID](#) under the [SupplyChainSection/SupplyChain-Array](#). This is enforced by the key named as [DistributorSupplyChainKey](#) that is assigned to the [DistributorSupplyChain/ID](#) element, which is referenced by the [DistributorSupplyChainID](#) which has a KeyRef that refers to the [JEP30-S101:DistributorSupplyChainKey](#).

4.3.3 Linking the Manufacturing Part Number to Product Change Notice

path	PartModel/PartDetails-Array/PartDetails/Association-Array/Association/SupplyChain-Array/ProductChangeNotice
diagram at the Product Change Notice Association level	
type	ProductChangeNoticeAssociationType , JEP30-D10:SignatureDigestLinkType .
path	PartModel/SupplyChainSection/SupplyChain-Array/ProductChangeNotice
diagram at the Product Change Notice level.	
type	ProductChangeNoticeType , ...

The [ProductChangeNoticeID](#) references the [ProductChangeNotice/ID](#) under the [SupplyChainSection/SupplyChain-Array](#). This is enforced by the key named as [ProductChangeNoticeKey](#) that is assigned to the [ProductChangeNotice/ID](#) element, which is referenced by the [ProductChangeNoticeID](#) which has a KeyRef that refers to the [JEP30-S101:ProductChangeNoticeKey](#).

4.3.4 Linking the Manufacturing Part Number to Product Discontinuance

path	PartModel/PartDetails-Array/PartDetails/Association-Array/Association/SupplyChain-Array/ProductDiscontinuance
diagram at the Product Discontinuance Association level	
type	ProductDiscontinuanceAssociationType , JEP30-D10:SignatureDigestLinkType .
path	PartModel/SupplyChainSection/SupplyChain-Array/ProductDiscontinuance
diagram at the Product Discontinuance level.	
type	ProductDiscontinuanceType , JEP30-D10:OptionalResponseType

The [ProductDiscontinuanceID](#) references the [ProductDiscontinuance/ID](#) under the [SupplyChainSection/SupplyChain-Array](#). This is enforced by the key named as [ProductDiscontinuanceKey](#) that is assigned to the [ProductDiscontinuance/ID](#) element, which is referenced by the [ProductDiscontinuanceID](#) which has a KeyRef that refers to the [JEP30-S101:ProductDiscontinuanceKey](#).

4.3.5 inking the Manufacturing Part Number to Alternative Part

path	PartModel/PartDetails-Array/PartDetails/Association-Array/Association/SupplyChain-Array/AlternativePart
diagram at the Alternative Part Association level	
type	AlternativePartAssociationType , JEP30-D10:SignatureDigestLinkType .
path	PartModel/SupplyChainSection/SupplyChain-Array/AlternativePart-Array
diagram at the Alternative Part Array level.	
type	AlternativePart-ArrayType , AlternativePartType , JEP30-D10:PartsSelectionType , AlternativePartNumberSeriesType , JEP30-D10:OptionalResponseType

The [AlternativePartID](#) references the [AlternativePart/ID](#) under the [SupplyChainSection/SupplyChain-Array](#). This is enforced by the key named as [AlternativePartKey](#) that is assigned to the [AlternativePart/ID](#) element, which is referenced by the [AlternativePartID](#) which has a KeyRef that refers to the [JEP30-E101: AlternativePartKey](#).

4.4 SupplyChain Family-Array

path	PartModel/SupplyChainSection.
diagram	
type	SupplyChainSectionType , SupplyChain-ArrayType, ManufacturerSupplyChainType, DistributorSupplyChainType, ProductChangeNoticeType, ProductDiscontinuanceType, AlternativePart-ArrayType.

The *SupplyChainSection* consists of 5 sections as shown above in the diagram. Each of these sections are described in further detail in the sub-sections below.

4.4.1 Manufacturer Supply Chain

path	PartModelType/SupplyChainSection/SupplyChain-Array/ManufacturerSupplyChain.
diagram	
type	ManufacturerSupplyChainType , ManufacturerPartStatusType , ManufacturerPartClassificationType , PackingType , ds:SignatureType

The association from the [PartsSelection-Array](#) and [Association-Array](#) to the [ManufacturerSupplyChain/ID](#) can represent a single part or a family of parts. This group of parts can now inherit the manufacturer supply chain data as shown above in the diagram. When a single part is represented by the [PartsSelectionID](#), then the list of [ManufacturerAlternativePartNumber](#) becomes a direct replacement for that part. This is typically a low-risk alternative since the manufacturer is the same manufacturer of both the original and replacement parts, and the source of this alternative part information is directly from the manufacturer.

When multiple parts are represented by the [PartsSelectionID](#), then the [ManufacturerAlternativePartNumber](#) becomes a statement that can inform the customer with sufficient information regarding how to identify which original parts are mapped to their alternative parts.

4.4.1.1 Manufacturer Part Status

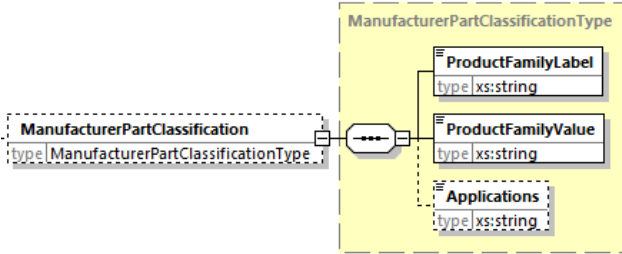
path	PartModelType/SupplyChainSection/SupplyChain-Array/ManufacturerSupplyChain/ManufacturerPartStatus.
diagram	
type	ManufacturerPartStatusType , EmptyType .

Manufacturer Part status is one of the most critical elements of a part supply status prior to selecting that part as a component of any product design. Too often this is overlooked by the designer leading to supply acquisitions problems when the product is ready for manufacturing. Obsolescence is a major reason why product miss market launch dates, and many times can significantly delay release to market as new substitutions are not directly compatible with the obsolete part, forcing a new cycle in the design phase.

The most desired status is [Active](#) since the market supply for that component is in its matured state. The earlier [Introduction](#) state may mean smaller volumes and higher unit price. [NotRecommended-for-NewDesigns](#) (sometimes referred to as NRND) indicate that this part or parts will soon be entering a phase-out approach. Manufacturers who issue [LastTimeBuy](#) status on their parts are informing the market that they are planning to do a last round of manufacturing and are requesting that their customers provide sufficient purchase of the part to satisfy their product life cycle requirements. [Transferred](#) is a status when the original manufacturer is transferring or licensing the product to another manufacturer to manufacture. This transfer status is becoming more common as manufacturers become capacity constraint and need to dedicate existing in-house capabilities to higher priority parts.

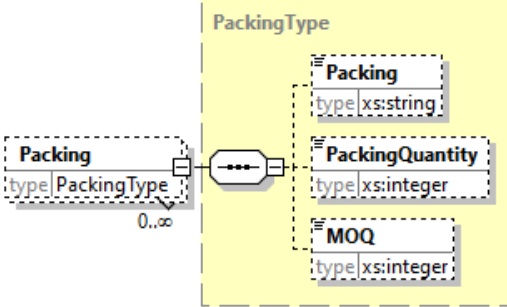
For other status not covered in the above list in the diagram, the [Other](#) status can be used where a new manufacturer status term can be specified.

4.4.1.2 Manufacturer Part Classification

path	PartModelType/SupplyChainSection/SupplyChain-Array/ManufacturerSupplyChain/ManufacturerPartClassification.
diagram	 <p>The diagram shows a dashed box labeled 'ManufacturerPartClassification' with 'type ManufacturerPartClassificationType'. This box is connected to a larger dashed box labeled 'ManufacturerPartClassificationType'. Inside this larger box are three sub-elements: 'ProductFamilyLabel' (type xs:string), 'ProductFamilyValue' (type xs:string), and 'Applications' (type xs:string).</p>
type	ManufacturerPartClassificationType.

A manufacturer can assign their own internal [ProductFamilyLabel](#) with a specific [ProductFamilyValue](#) to a part or group of parts as defined by the [PartNumberSeriesID](#) or the [OrderablePartNumberID](#). The manufacturer can also specify the end use [Applications](#) market, for which this part was intended to support.

4.4.1.3 Packing

path	<ol style="list-style-type: none"> PartModelType/SupplyChainSection/SupplyChain-Array/ManufacturerSupplyChain/Packing. PartModelType/SupplyChainSection/SupplyChain-Array/DistributorSupplyChain/Distributor-Array/DistributorPartNumber-Array/DistributorPartNumber/Packing
diagram	 <p>The diagram shows a dashed box labeled 'Packing' with 'type PackingType' and a cardinality of '0..∞'. This box is connected to a larger dashed box labeled 'PackingType'. Inside this larger box are three sub-elements: 'Packing' (type xs:string), 'PackingQuantity' (type xs:integer), and 'MOQ' (type xs:integer).</p>
type	PackingType.

Packing is the material used to pack and protect goods in a container for transport to their customer. While this structure is available in under the [ManufacturerSupplyChain](#), it also exists in under the [DistributorSupplyChain](#), however the data in each can be different as distributors will typically re-pack the material to suit the volumes of their small and medium size customers.

In many situations, the Manufacturers will add a character into the existing manufacturer's part number string to identify the combination of the part and the packing – e.g., Part A in a 7" plastic reel (i.e., Part # A1) versus the same Part A in a 10" paper reel (i.e., Part # A2). When supply is short for these parts, companies would like to automatically identify these equivalent parts in all other respects, other than the packing material in which it was shipped in. That process is not so easy today when the character to denote the packing is not separated out from the characters that denote the technology of the part. The structure contained within this PartModel enables this to be automated by the identification of the specific characters within the full manufacturers part numbers that are used to define the packing material.

4.4.2 Distributor Supply Chain

path	PartModelType/SupplyChainSection/SupplyChain-Array/DistributorSupplyChain.
diagram	
type	DistributorSupplyChainType, Distributor-ArrayType, DistributorType, DistributorPartNumber-ArrayType, ds:SignatureType

A distributor is an entity that buys products from a manufacturer and sells them for a profit to other businesses. Most distributors also provide a range of services such as technical support, or service such as re-packing, component preparation for assembly, programming, or even recommend reference designs in which their parts are included. Distributors are essential in helping reach markets manufacturers could not otherwise target. A distributor is a key component of the supply chain model used by Manufacturers because it allows a company to specialize or focus operations on its primary strengths while leveraging distributors to market their products.

4.4.2.1 Distributor

path	PartModelType/SupplyChainSection/SupplyChain-Array/DistributorSupplyChain/Distributor-Array/Distributor.
diagram	
type	DistributorType, CompanyType, ContactType.

The identity of a *Distributor* follows the same concepts as the identity of the manufacturer as defined in the JEP30 PartModel parent structure.

4.4.2.2 Distributor Part Number - Array

path	PartModelType/SupplyChainSection/SupplyChain-Array/DistributorSupplyChain/Distributor-Array/Distributor PartNumber-Array.	
diagram	<p>The diagram illustrates the XSD structure for the DistributorPartNumber-Array. It shows a sequence of DistributorPartNumber elements. Each DistributorPartNumber element contains the following fields:</p> <ul style="list-style-type: none"> ID (type xs:string) DistributorID (type xs:string) DistributorPartNumber (type xs:string) DistributorPartDescription (type xs:string) DistributorPartStatus (type SupplierPartStatusType) DevicePackageCode (type xs:string) DistributorPartClassification (type SupplierPartClassificationType) Packing (type PackingType) AlternativePartID (type xs:string) ProductChangeNoticeID (type xs:string) ProductDiscontinuanceID (type xs:string) 	
type	DistributorPartNumber-ArrayType, DistributorPartNumberType, DistributorPartClassificationType, PackingType.	

Most distributors will acquire their material parts from their respective manufacturers in large volumes, where they will re-pack into smaller quantity lots. While Manufacturer Part Numbers are a static Identifier of a product which is universal to all distributors, wholesalers, resellers, Distributors introduce SKU's (Stock Kitting Units) for their own in-house identification as well as used for Inventory and for sales. Each distributor has their own unique SKU's that they assign to a product, thus developing their own catalog of items. These SKUs are presented to the market under various terms, such as

1. <Distributor name> Part Number
2. <Supplier Part Number>
3. Stock Kitting Number

4.4.2.2 Distributor Part Number - Array (cont'd)

with Manufacturing Part Numbers, each of the above distributor identifiers are only unique in the context of that distributor, as part numbers in themselves can and are copied by competitors to identify their own parts. Consequently, it is the combination of the Distributor and the Distributor Part Number that makes the unique identity of a part in the distribution chain. Mapping from one distributor to another is however only done through the static identifier of the part as identified by the Manufacturer and the Manufacturer PartNumber pair.

The distributor can provide their own description of the part via the [DistributorPartDescription](#) to help them market that part more competitively.

4.4.2.2.1 Distributor Part Status

path	PartModelType/SupplyChainSection/SupplyChain-Array/DistributorSupplyChain/Supplier-Array/SupplierPartNumber-Array/SupplierPartNumber/SupplierPartStatus.
diagram	<p>The diagram illustrates the structure of the SupplierPartStatusType. It is represented as a dashed box containing several elements, each with a label and a type: Introduction (type JEP30-D10:EmptyType), Active (type JEP30-D10:EmptyType), ContactDistributor (type JEP30-D10:EmptyType), LastTimeBuy (type JEP30-D10:EmptyType), Discontinued-at-Distributor (type JEP30-D10:EmptyType), and Other (type xs:string). A dashed box labeled DistributorPartStatus (type SupplierPartStatusType) is connected to the main structure via a dashed line.</p>
type	DistributorPartStatusType , JEP30-D10:EmptyType.

Distributor Part status is different to the Manufacturer part status since distributors are not the manufacturers of the part. While some of the status have the same wording, if the status is being driven by the manufacturer of the part, then that status should be captured in the [ManufacturerSupplyChain/ManufacturerPartStatus](#) as opposed to the [DistributorSupplyChain/Distributor-Array/DistributorPartNumber-Array/DistributorPartNumber/DistributorPartStatus](#).

Under the [DistributorPartStatus](#) branch, the status reflects that from the distributor's perspective. The [Introduction](#) state may mean the distributor is introducing that part into their inventory of SKUs for the purpose of supply to their market. The [Active](#) status indicates that the distributor has a mature market supply for that component. When the distributor assigns a [LastTimeBuy](#) status on their SKU, they are informing the market that they are planning to discontinue their supply of that SKU to the market and are requesting that their customers provide sufficient purchase of the part to satisfy their product life cycle requirements. The [Discontinued-at-Distributor](#) is a status when the distributor has ceased to further market that part.

4.4.2.2.1 Distributor Part Status (cont'd)

For other status not covered in the above list in the diagram, the *Other* status can be used where a new manufacturer status term can be specified.

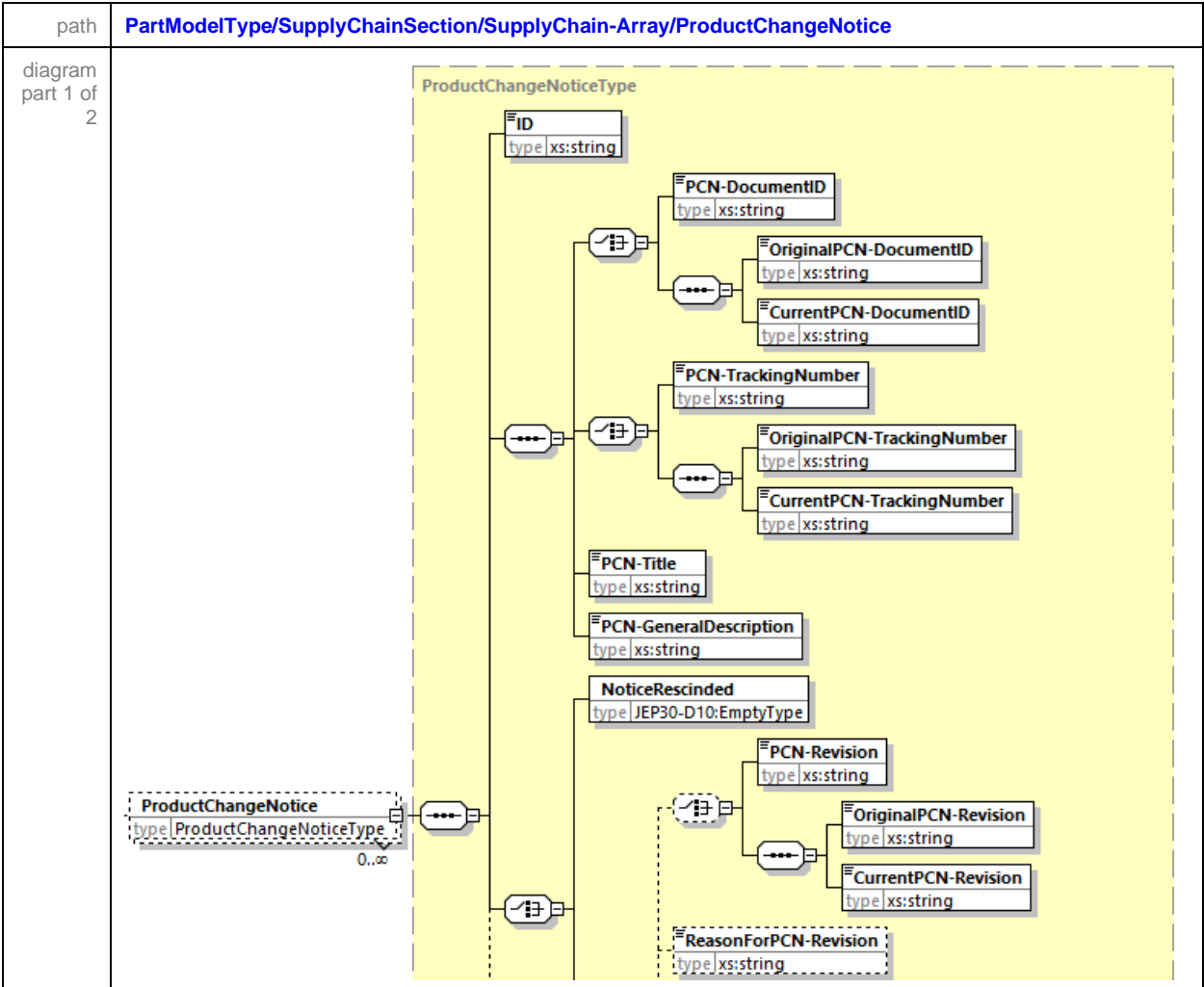
DistributorPartStatus is specific to the *Distributor* and should not be assumed to be the same status across all distributors.

4.4.2.2.2 Distributor Part Classification

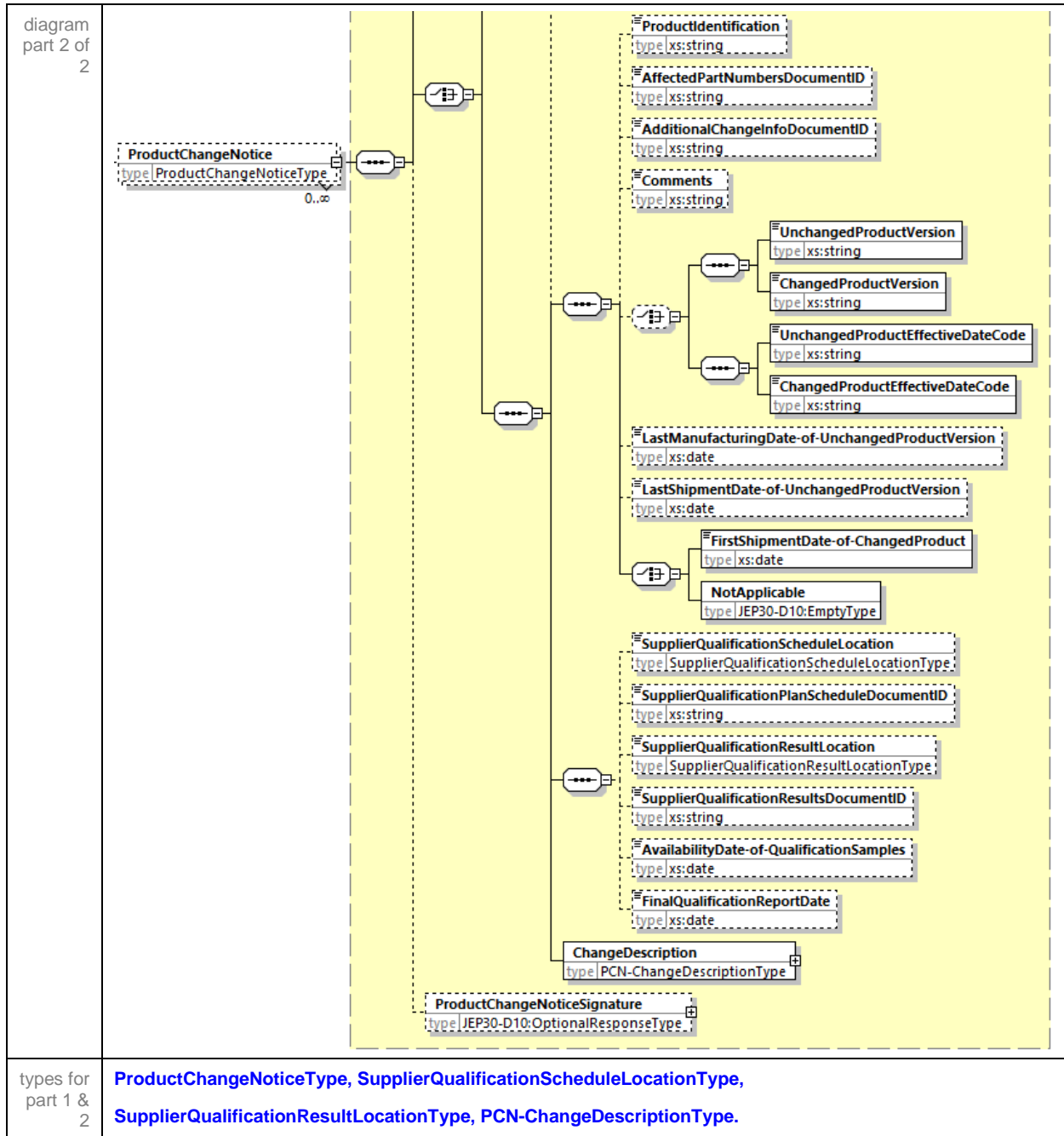
path	PartModelType/SupplyChainSection/SupplyChain-Array/DistributorSupplyChain/Supplier-Array/SupplierPartNumber-Array/SupplierPartNumber/SupplierPartClassification
diagram	
type	DistributorPartClassificationType .

A distributor acquires parts from many different manufacturers. Each manufacturer tends to have their own taxonomy for the parts that they manufacture. Across manufacturers, different manufacturers taxonomies for the same competitive parts requires that Distributors map these parts to a *DistributorPartClassification*. This is necessary because customers require simple classification in which they can search for parts from multiple manufacturers. The more complex this search mechanism the more inefficient for the user to find the part, which can impact the business of the distributor. While the JEP30-E100 Electrical section of the PartModel has a JEDEC *PartClassification* structure, to which Distributors are encouraged to adopt, each *Distributor* can assign their own internal *ProductFamilyLabel* with a specific *ProductFamilyValue* applied to a part or group of parts as defined by the *PartNumberSeriesID* or the *OrderablePartNumberID*.

4.4.3 Product Change Notice



4.4.3 Product Change Notice (cont'd)



The structure defined here maps to the requirements as defined in the J-Std-046 Customer Notification Standard for Product/Process Changes by Electronic Product Suppliers standard. Each PCN that is issued should have its own tracking number which should be recorded in the [PCN-TrackingNumber](#) field. Typically, there is just one publication of a PCN document therefore the revision of the PCN document is optional. However, if a PCN document is revised, then it is advisable that the revision of the PCN document is recorded in the [PCN-Revision](#) element along with the reason for the change in the revision of the PCN document is recorded in the [ReasonForPCN-Revision](#) element.

4.4.3 Product Change Notice (cont'd)

Some suppliers will provide additional information to assist the customers to identify the affected parts, in addition to specifying the parts via the [PartsSelection-Array](#). This can be supported via the [ProductIdentification](#) element, or by reference to a document in the [ReferenceDocuments-Array](#) via the [AffectedPartNumbersDocumentID](#). Suppliers may even provide additional change information in other documents via the [AdditionalChangeInfoDocumentID](#) element.

A PCN can be an indication that the product or process itself has changed. It is therefore mandatory that both the [UnchangedProductVersion](#) and the [ChangedProductVersion](#) are specified. Notification timing of the [LastManufacturingDate-of-UnchangedProductVersion](#) is optional but notification timing of the [LastShipmentDate-of-UnchangedProductVersion](#) is mandatory. In addition, the date that the changed product could first be shipped to customers is captured via the [FirstShipmentDate-of-ChangedProduct](#) field.

Some customers have agreements with their suppliers in which part changes that are impacted by an PCN notification go through a qualification process. In these situations, the supplier may provide qualification details via a set of documents, that can be referenced in the [ReferenceDocuments-Array](#) via the [SupplierQualificationPlanScheduleDocumentID](#), [SupplierQualificationResultsDocumentID](#). Alternatively, the supplier may provide this information within the PCN document. The location of the qualification plan schedule or the qualification results can be recorded in the [SupplierQualificationScheduleLocation](#) and [SupplierQualificationResultLocation](#) respectively by separating the enumerated value to either

1. Separate Attachment, or
2. In PCN Document

Additional notification timing requirements when applicable are [AvailabilityDate-of-QualificationSamples](#) and [FinalQualificationReportDate](#).

4.4.3.1 Change Description

path	PartModel/SupplyChainSection/SupplyChain-Array/ProductChangeNotice/ChangeDescription
diagram	
type	PCN-ChangeDescriptionType, DetailedDescription-of-Change-ArrayType, DetailedDescription-of-ChangeType, AnticipatedImpactType, ChangeType, MaterialDeclarationChangeType.

A change description should be accompanied with the Description of the change, the *Method-of-IdentifyingChangedProduct* and the *ReasonForChange*.

To conform to regulatory requirements for various markets, any change to the product that impacts the carbon footprint for the product, should be specified in the field *ManufacturingCarbonFootprintChange*. If impacted, this flag will trigger product customers to update their product carbon footprint based on changes to the product components carbon footprint.

4.4.3.1.1 Detailed Description-of-Change-Array

path	PartModel/SupplyChainSection/SupplyChain-Array/ProductChangeNotice/ChangeDescription/DetailedDescription-of-Change-Array.
diagram	
type	DetailedDescription-of-Change-ArrayType , DetailedDescription-of-ChangeType , MajorChangeType , MajorChangeNoticeTypeType , DesignChangeType , ManufacturingTestChangeType , PackingShippingChangeType , ProductSpecificationChangeType , MinorChangeType , MinorChangeNoticeTypeType

The following definitions are defined in the J-Std-046 standard and take precedence over the definitions below.

An alteration to the product or process, which may be a major change or a minor change. A major change is a change that may affect the form, fit, or function of the product or adversely affect the quality or reliability of the product. A minor change is a change that does not affect the form, fit, function, quality, or reliability of the product.

Customers must be notified of major changes, whereas notification of minor changes may or may not occur depending on supplier and customer/authorized distributor written agreed requirements.

Major change notifications must be identified via the [MajorChange/NoticeType](#) to either

1. Advanced Notice,
2. Initial Notice,
3. Intermediate Notice,
4. Revision Notice,
5. Final Notice, or
6. Notice Rescinded

4.4.3.1.1 Detailed Description-of-Change-Array (cont'd)

Minor change notifications may also be referred to as an “Informational Notice”, “Supplier Communication”, or similar title. If such a notice is sent out, it must clearly state its purpose, so as not to be confused with a PCN for a major change, via the *MinorChange/NoticeType* to either

1. Minor-Information Notice, or
2. Notice Rescinded

4.4.3.1.1.1 Design

path	PartModel/SupplyChainSection/SupplyChain-Array/ProductChangeNotice/ChangeDescription/ChangeType/MajorChange/Design
diagram	<pre> classDiagram class DesignChangeType { ExternalDimension type xs:boolean CriticalMaterial type xs:boolean ProductMarkingTechnology type xs:boolean ProcessTechnology type xs:boolean Other type xs:string } class Design { type DesignChangeType } DesignChangeType "1" *-- "1" Design </pre>
type	DesignChangeType.

The following definitions are defined in the J-Std-046 standard and take precedence over the definitions below.

ExternalDimension: A change to the external dimensions of the part can impact form or fit of the part into its intended product design thus adversely affecting quality or reliability.

CriticalMaterial: A change in critical material or any critical component that adversely affecting quality or reliability, should be indicated here.

ProductMarkingTechnology: A change of product marking technology is considered a major change as opposed to the content of the product marking. For example a product marking technology change may impact the ability for automatic detection of such marking.

ProcessTechnology: A combination of people, procedures, methods, machines, materials, measurement equipment, and/or environment for specific work activities to produce a given product or service.

4.4.3.1.1.2 Manufacturing Test

path	PartModel/SupplyChainSection/SupplyChain-Array/ProductChangeNotice/ChangeDescription/ChangeType/MajorChange/ManufacturingTest
diagram	
type	ManufacturingTestChangeType.

The following definitions are defined in the J-Std-046 standard and take precedence over the definitions below.

Manufacturing/Test Location: A site transfer to a site not previously qualified (fabrication, assembly, or test site of the finished product) is considered a major change and should be identified as a *Non-PreQualifiedLocation* change.

4.4.3.1.1.3 Packing Shipping

path	PartModel/SupplyChainSection/SupplyChain-Array/ProductChangeNotice/ChangeDescription/ChangeType/MajorChange/PackingShipping
diagram	
type	PackingShippingChangeType.

The following definitions are defined in the J-Std-046 standard and take precedence over the definitions below and are considered a major change.

CarrierChange: A change in carrier type (tube, reel, tray, etc.) or dimensions.

ProductOrientation: A change of product orientation within shipping media.

Labelling: A significant change of labelling.

DryPackRequirements: A change in dry pack requirements

EnvironmentalStorageRequirements: A reduction in environmental storage conditions.

4.4.3.1.1.4 Product Specification

path	PartModel/SupplyChainSection/SupplyChain-Array/ProductChangeNotice/ChangeDescription/ChangeType/MajorChange/ProductSpecification
diagram	<pre> classDiagram class ProductSpecificationChangeType { Datasheet xs:boolean DigitalSpecificationFiles xs:boolean Elimination-of-finalElectricalMeasurement-or-Burn-in xs:boolean Other xs:string } class ProductSpecification { type ProductSpecificationChangeType } ProductSpecification --> ProductSpecificationChangeType </pre>
type	ProductSpecificationChangeType .

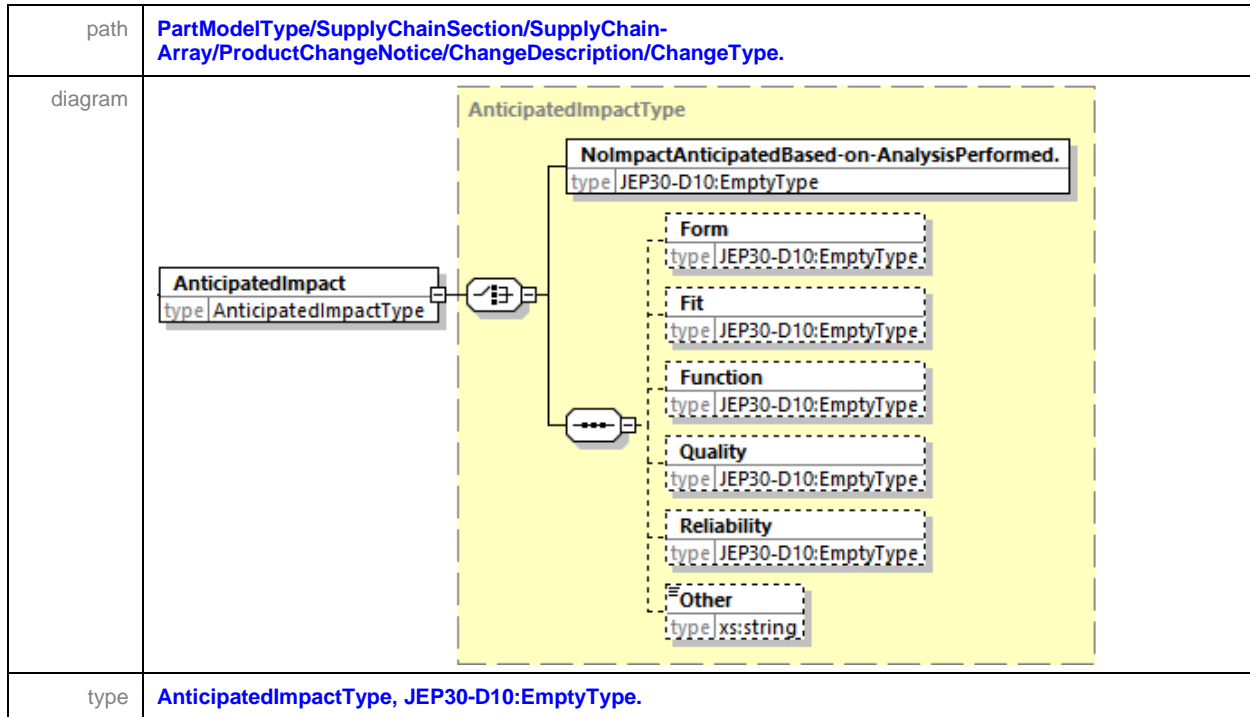
The following definitions are defined in the J-Std-046 standard and take precedence over the definitions below and are considered a major change, unless otherwise noted.

Datasheet: A change of datasheet parameters, such as those defined in electrical specification, assembly process classifications, or thermal specification. The elimination of final electrical measurement or burn-in (if specifically stated in the datasheet as being performed) is considered a major change.

DigitalSpecificationFiles: A change of digital specification files such as the JEP30 PartModel, electrical or thermal simulation models, physical models, that impact any of the criteria previously defined as a major change. Digital files that are modified, solely for the purpose of adding more information, but where such information was not changed by the supplier of the part, are considered minor change. However, if digital files are modified to correct previously entered data that falls under the major change classification, then such corrections to the digital files are considered equivalent to a datasheet change and classified as a major change.

Elimination-of-finalElectricalMeasurement-or-Burn-in: The elimination of final electrical measurement or burn-in (if specifically stated in the datasheet as being performed), is considered a major change.

4.4.3.1.2 Anticipated Impact



The following definitions are defined in the J-Std-046 standard and take precedence over the definitions below.

Form: The visual appearance including shape, color, marking, and surface finish of the product, as specified by the supplier and/or customer.

Fit: The external dimensions and associated tolerances of the product, as specified by the supplier and/or customer.

Function: The electrical, mechanical, thermal, and performance characteristics of the product, as specified by the supplier and/or customer. This includes change of critical material/component for the device.

Quality: Conformance of a product to requirements, or perceived fitness for its intended use(s).

Reliability: The ability of a product to perform a required function at or below a stated failure rate for a given period of time. This includes changes in process technology affecting critical process steps that could impact the reliability of the part.

Other: A change of product marking technology is considered a major change that could fall in under the other design category.

4.4.3.1.3 Material Declaration Change

path	PartModelType/SupplyChainSection/SupplyChain-Array/ProductChangeNotice/ChangeDescription/ChangeType/MaterialDeclarationChange.
diagram	<p>The diagram illustrates the structure of the MaterialDeclarationChangeType. It is a choice type, indicated by a dashed box labeled MaterialDeclarationChangeType on the left. The choice type has four possible values, each in its own box:</p> <ul style="list-style-type: none"> IsAvailable: type JEP30-D10:EmptyType Will-be-Done: type xs:date NoMaterialChange: type JEP30-D10:EmptyType NotApplicable: type JEP30-D10:EmptyType <p>A dashed box on the left shows the element MaterialDeclarationChange with type MaterialDeclarationChangeType.</p>
type	MaterialDeclarationChangeType.

[ChangeDescription](#) should also identify if the device material declaration will be updated due to material change as defined in the diagram. If the material declaration change is impacted, then the updated material declaration can be provided via the [EnvironmentalSection](#) as defined in the JEP30 PartModel guideline.

4.4.4 Product Discontinuance

path	PartModel/SupplyChainSection/SupplyChain-Array/ProductDiscontinuance
diagram	
type	ProductDiscontinuanceType, JEP30-D10:EmptyType

4.4.4 Product Discontinuance (cont'd)

The structure defined here maps to the requirements as defined in the J-Std-048 Notification Standard for Product Discontinuance standard. The goal of this notification standard is to better enable customers to manage and mitigate the disruption caused by the discontinuation of a product and ensure continuity of supply. Each PDN that is issued should have its own tracking number which should be recorded in the [PDN-TrackingNumber](#) field. Typically, there is just one publication of a PDN document therefore the revision of the PDN document is optional. However, if a PDN document is revised, then it is advisable that the revision of the PDN document is recorded in the [PDN-Revision](#) element along with the reason for the change in the revision of the PDN document is recorded in the [ReasonForPDN-Revision](#) element.

This standard establishes the requirements for timely customer notification of planned product discontinuance, which will assist customers in managing end-of-life supply, or to transition ongoing requirements to alternate products. Notification timing of the [LastOrderDate](#) and [LastShipmentDate](#) are mandatory. The supplier should also provide a [ReasonForDiscontinuance](#) and identify the revision level of notice via the [Version](#) field.

Some suppliers will provide additional information to assist the customers to identify the affected parts, in addition to specifying the parts via the [PartsSelection-Array](#). This can be supported via documentation that can be referenced via the [ReferenceDocuments-Array](#) through the [AffectedPartNumbersDocumentID](#).

The supplier should also suggest replacement products which can be recorded in the following section [AlternativePart-Array](#) structure. The supplier shall assist customers by providing information, recommendations, and technical data to help locate an alternate source or select a replacement product. Under certain conditions this may not be applicable (e.g., custom or semi-custom products for which follow up products are not planned or viable).

4.4.5 Alternative Part - Array

path	PartModel/SupplyChainSection/SupplyChain-Array/AlternativePart-Array
diagram	<p>The diagram illustrates the XSD structure for the AlternativePart-Array. It is composed of the following elements and types:</p> <ul style="list-style-type: none"> AlternativePart-Array (type <i>AlternativePart-ArrayType</i>): The root element, containing one or more AlternativePart elements. AlternativePart (type <i>AlternativePartType</i>): A complex element containing: <ul style="list-style-type: none"> ID (type <i>xs:string</i>): A required attribute. AlternativePartsSelection (type <i>AlternativePartsSelectionType</i>): A required element. AlternativeManufacturerID (type <i>xs:string</i>): A required element. AlternativeManufacturerPartNumberSeries (type <i>JEP30-D10:PartNumberSeriesType</i>): A required element. FamilySelection-Array (type <i>JEP30-D10:FamilySelection-ArrayType</i>): A required element. AlternativeManufacturerPartNumber (type <i>JEP30-D10:OrderablePartNumberType</i>): A required element. ReferenceDocumentID (type <i>xs:string</i>): An optional element. AlternativePartSignature (type <i>JEP30-D10:OptionalResponseType</i>): An optional element.
type	AlternativePart-ArrayType , AlternativePartType , JEP30-D10:PartsSelectionType , AlternativePartNumberSeriesType , JEP30-D10:OptionalResponseType

The [AlternativePart-Array](#) structure provides a method for suppliers to provide alternative parts in the event of the issuance of [ProductDiscontinuance](#) of another part or series of parts. The [AlternativePartsSelection](#) follows the same concept outlined in the JEP30 parent schema by leveraging the type [JEP30-D10:PartsSelectionType](#). When suggesting that an entire part number series can be substituted by another part number series from the same manufacturer, the customer should take care in aligning the correct part numbers in the original series with the replacement parts in the replacement series.

4.4.5.1 Alternative Part Selection

path	PartModel/SupplyChainSection/SupplyChain-Array/AlternativePart-Array/AlternativePart/AlternativePartsSelection
diagram	<p>The diagram illustrates the structure of the AlternativePartsSelectionType. It is a complex type containing several elements. The attributes element is optional (indicated by a dashed border). The ID element is optional and of type <code>xs:string</code>. The PartNumberSeriesID element is optional and of type <code>xs:string</code>, with a cardinality of 1..∞. The FamilySelection-Array element is optional and of type <code>JEP30-D10:FamilySelection-ArrayType</code>. The OrderablePartNumberID element is optional and of type <code>xs:string</code>, with a cardinality of 0..∞. The BasePartNumber element is optional and of type <code>xs:string</code>, with a cardinality of 1..∞. The FunctionalPartNumber element is optional and of type <code>xs:string</code>, with a cardinality of 1..∞. The PartialPartNumber element is optional and of type <code>xs:string</code>, with a cardinality of 1..∞. The PartNumber element is optional and of type <code>xs:string</code>, with a cardinality of 1..∞. The PartIdentifiers element is optional and of type <code>JEP30-D10:PartIdentifiersType</code>, with a cardinality of 1..∞. The Version element is optional and of type <code>xs:string</code>. The EffectiveDateCode element is optional and of type <code>xs:date</code>. The ManufacturerPartNumbersIdentity element is optional and of type <code>JEP30-D10:ManufacturerPartNumbersIdentityType</code>. The ds:Signature element is optional and of type <code>ds:SignatureType</code>.</p>
type	AlternativePartsSelectionType , JEP30-D10:FamilySelection-ArrayType , JEP30-D10:PartIdentifiersType , JEP30-D10:ManufacturerPartNumbersIdentityType , ds:SignatureType

If the same manufacturer is not providing a replacement part, the Supplier should assist the customer on finding replacement parts from an alternative manufacturer. The [AlternativePartNumberSeries](#) follows the same concept outlined in the JEP30 parent schema and leverages several types that are explained in the JEP30 standard.

Annex A (informative) Differences between JEP30-S100 and its predecessors

This table briefly describes most of the changes made to entries that appear in this standard, JEP30-S100, compared to its predecessor; Punctuation changes may or may not be included.

Initial Issue:	Date: March 2023	Item Number: 839
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Change Record History

Issue: A	Date: August 2024	Item Number: 11.2-1059
Description of Change		
Section 4.1, and section 4.2: Update sections to align with modifications performed at the JEP30 parent structure		
Section 4.4.1.3 Packing: Updated image with correct spelling		

Issue: A.02	Date: February 2025	Item Number: 11.2-1073
Description of Change		
Sections 1, 4.1, and 4.2: Update sections to align with modifications performed at the JEP30 parent structure.		

Issue: B	Date: September 2025	Item Number: 11.2-1083
Description of Change		
Section 4.3: Update all Sub-sections with new graphics (same data) to comply with IEC documentation format		
Section 4.3.3: Update Product Change Notice Type to comply with new changes below		
Section 4.3.4: Update Product Discontinuance Notice Type to comply with new changes below		
Section 4.3.5: Update Alternative Part-Array Type to comply with new changes below		
Section 4.4.1 Manufacturer Supply Chain: Updated image to make Approvals, PCN ID and PDN ID unbounded.		
Section 4.4.2.2 Distributor Part Number - Array: Updated image to make Alternative Part ID, PCN ID and PDN ID unbounded.		
Section 4.4.3 Product Change Notice:		
1. Added choice for Original & Current for PCN Document ID, PCN Tracking Number, and PCN Revision.		
2. Add PCN Title.		
3. Add change between Notice Rescinded and rest of PCN Data.		
4. Add Product Effective Date Code as alternative to Product Version.		
5. Make "LastManufacturingDate-of-UnchangedProductVersion" optional.		
6. Change xs: dateTime to xs:date.		
7. Make a choice of "First Shipment Date of Changed Produce" versus "Not Applicable"		

Annex A (cont'd)

Section 4.4.3.1 Change Description: <ol style="list-style-type: none">1. Changed “Description” to “Detailed Description of Changes”.2. Added new structure to explicitly specify each change description via “Detailed Description-of-Change-ArrayType,”3. Rename element called “Change Type” to “PCN-Change Type”.
Section 4.4.3.1.1 Detailed Description-of-Change-Array: Updated Description to add choice for Old and New Description.
Section 4.4.3.1.2 Anticipated Impact: Updated Anticipated Impact to add choice for “No Impact Anticipated Based on Analysis Performed
Section 4.4.4 Product Discontinuance: <ol style="list-style-type: none">1. Added choice for Original & Current for PDN Document ID, PDN Tracking Number, and PDN Revision.2. Add PDN Title.3. Add change between Notice Rescinded and rest of PDN Data.4. Update Last Order Date to alternatively capture Original / Previous and Current Last Order Date5. Update Last Shipment Date to alternatively capture Original / Previous and Current Last Shipment Date6. Make Previous Last Order Date and Previous Last Shipment Date unbounded.7. Change xs: dateTime to xs:date.8. Make a choice of “First Shipment Date of Changed Produce” versus “Not Applicable”
Section 4.4.5 Alternative Part – Array: <ol style="list-style-type: none">1. Added “Family Selection – Array” in sequence with “Alternative Manufacturer Part Number Series” to fully map parts of an existing Part Number Series with an Alternative Part Number Series2. Update the Alternative Manufacturer Part Number structures to align with the main Part number structures
Section 4.4.5.1 Alternative Part Selection: Add Base Part Number, Functional Part Number and Part Identifiers to align with main MPN structure in the JEP30-10 parent schema.



Standard Improvement Form**JEDEC Standard No. JEP30-S100B**

The purpose of this form is to provide the Technical Committees of JEDEC with input from the industry regarding usage of the subject standard. Individuals or companies are invited to submit comments to JEDEC. All comments will be collected and dispersed to the appropriate committee(s).

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The referenced clause number has proven to be:

☐ Unclear ☐ Too Rigid ☐ In Error

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