TECHNICAL DOCUMENTATION

PRODUCT INFORMATION EXCHANGE STANDARD (PIES)

VERSION: 7.2

REVISION 7 | REVISED 3/7/2024

Table of Contents

Revision History

Revision Number	Revision Date	Author	Notes
1	05/4/2020	T. Schiavo	Initial Release of PIES Version 7.2
2	9/24/2020	T. Schiavo	Updated Resource Link for B62 Product Category Code
3	1/18/2021	T. Schiavo	Updated the exampled used P01-Digital Asset File Information Segment (ASST) by removing the examples of Element P65 Additional Information and P70 Details / Description, which were removed in PIES 7.0.
4	3/2/2022	T. Schiavo	Updated XML examples in Segments M01 and P01, removing elements that were removed in PIES 6.7. This includes, M65 – Additional Information, M70 – Details/Description, M90 – File Date Modified, M91 – Effective Date, and M92 – Expiration Date
5	10/12/2022	T.Schiavo	Fixed technical documentation errors. Removed Coded Table indicator for P73. Updated K06 Ref Num from K05 to K06. Updated K07 Ref Num from K05 to K07.
6	5/4/2023	T.Schiavo	Updated the format of A87 to “Variable per Market Copy Type Attribute”. The format of each code is now governed in the PIES™ Coded Values Table to align with other areas of the data standard. This provide the ability to set formats per code, instead of a blanket format for all codes. Approved by workgroup.
7	3/7/2024	T.Schiavo	Updated requirement of F11 - PAdb Style ID, from ‘O’ to ‘KO’.

What's New in PIES Version 7.2

Introduction

Welcome to version 7.2 of the Product Information Exchange Standard (PIES). This version of the Data Delivery Specification and XML Schema is designed and tested to meet the aftermarket industry's evolving requirements for the exchange of product information data. All changes have been reviewed in workgroup as well as reviewed and approved by the Technology Standards Committee (TSC).

Technical Documentation Updates

HEADER – Header Segment

- **A42- PCdb Version Date** – Has been changed from "O" Optional to "M" Mandatory to ensure data receivers know what PCdb database was used to create the PIES file in order to utilize the correct PIES coded values. This change is a result of TSC Approved **Workgroup Case #880**.
- **A03-Submission Type –** The way to communicate if the PIES file is a "Test" file has changed from being its own element outside of the Header Segment with a "true" or "false" value, to being a part of the Header Segment under **A03-Submission Type**. A new PIES Coded value of "TEST" has been added to **Submission Type** in the PIES coded value tables, which are located in the Product Classification database (PCdb). This aligns how Submission Types are communicated between the ACES and PIES Standards. This change is a result of TSC Approved **Workgroup Case #883.**
- **A23-Brand Owner AAIAID –** This element has been removed from the Header Segment. This was removed as a result of the BrandOwner and Parent being the same value in over 91% of cases as well as because the industry indicated that they were not using BrandOwner in their data. This change is a result of TSC Approved **Workgroup Case #848.**

DESC – Description Segment

- Updated Description Segment overview details in the PIES technical documentation as it relates to looping. This change is a result of TSC Approved **Workgroup Case #881.**
- Updated the XML example in the PIES Technical Documentation, showing the use of multiple description codes as well as sequencing. This change is a result of TSC Approved Workgroup Case #881.

Technical Specifications Updates

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XSD Schema Updates

HEADER – Header Segment

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PIES Coded Value Updates

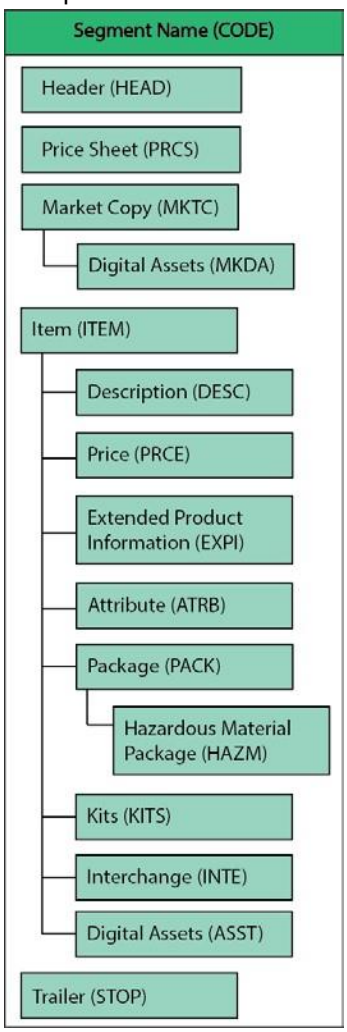
HEADER – Header Segment

- **A03-Submission Type –** The way to communicate if the PIES file is a “Test” file has changed from being its own element outside of the Header Segment with a “true” or “false” value, to being a part of the Header Segment under **A03-Submission Type**. A new PIES Coded value of “TEST” has been added to **Submission Type** in the PIES coded value tables, which are located in the Product Classification database (PCdb). This aligns how Submission Types are communicated between the ACES and PIES Standards. This change is a result of TSC Approved **Workgroup Case #883.**

Introduction to PIES

The **Product Information Exchange Standard (PIES)** is a product of the Auto Care Association's Technology Standards Committee. The purpose of this product is to develop a standard for exchanging product information between all members of the supply chain from the manufacturer to the retailer/wholesaler and to the service retailer. Representatives responsible for developing this standard included manufacturers, retailers, wholesalers and electronic catalog providers. Additional input is provided by members of the Auto Care Association Heavy Duty Segment (Heavy Duty Distribution Association), Paint and Body Equipment Supply segment and the Automotive Warehouse Distributors Association (AWDA).

PIES was born out of the need to feed increasingly sophisticated business systems with full, rich product information. As these new systems propagated, no longer was a part number and price sufficient to meet the needs of retailers, wholesalers and program groups. Data demands expanded to include searchable descriptions, weight, physical dimensions, and scores of other attributes needed for everything from cubing out warehouse space to configuring plan-o-grams on retail sales floors.



This standard was designed to provide a facility to exchange more comprehensive product data than just price sheet data. In addition to price and price sheet information, the standard provides the facility to exchange information regarding such diverse elements as:

- packaging including dimensions, weights, etc.,
- barcodes / product identification
- product descriptions
- extended product information
- kit component information
- warranty information
- shipping information
- information and links to product data sheets and safety information
- information and links to product images

- and much more…

To accomplish this goal, PIES standardizes not only the field definitions and requirements, but also the delivery mechanism used to transfer these files. The standard is designed in a flexible format which allows each record segment to loop as many times as needed in order to meet data delivery requirements. For example, a part with multiple price levels would simply have multiple price detail segments, one for each price level. Also, only those segments, which are needed to provide specific information, need be sent. To accomplish this flexibility, the PIES delivery standard is designed using XML and XML Schema's (XSD).

For more information on the technical specifications of the PIES XSD, please visit the autocare.org website and download the latest PIES documentation.

PIES creates a standardized form and format for the presentation of all critical product attribute data. However, beyond a data structure, PIES creates a methodology for industry-wide synchronization of product information.

This Data Definitions Document may be updated as additional information is made available. If you would like to suggest added content or corrections, please send an email to technology@autocare.org

Documentation Format and Considerations

Field Definitions

Each PIES field in the following section is defined using the following table structure:

Ref Num		**XML Element**	
Format		**XML Attribute**	
Requirement		**Code Table**	
Example			
External Ref			
Comments			

The **Ref Num** is a reference to the Technical Specifications document for PIES. This excel document is a more technical field reference which contains a field numbering scheme referred to as a **Ref Nu**m in this Data Definition document.

Format is explained in more detail in subsection Format Codes.

Requirement is explained in more detail in subsection Element/Field Requirement Codes.

XML Element lists the XML name for this field per the PIES XML Schema. When used with a PIES file this will include an opening and closing tag, Example would be <item></item>. Note that the second tag includes "/" which comes before the name, this denotes that this is the closing element.

XML Attribute lists the XML attribute name for this field per the PIES XML Schema. Only those fields defined as an attribute in the schema will have an **XML Attribute**.

If the PIES field derives its value from an Industry Defined data source, this source is indicated in the **Code Table** cell. All PIES code values are included in the monthly published PCDB in the PIES Code Tables and have been denoted in the code table as Coded Values. If a value is from an external source, the Code Table will state External Code Sources.

The **Example** cell will show data value samples from most fields.

If a PIES Field relies on an external data source for its valid value, this **external** source is identified in External

Ref. An example may be an ISO Code reference. When possible, this **External Ref** will be shown as a hyperlink.

Comments will contain general descriptive information about each field as well as some additional definition information not relayed in the other table cells.

Coding Explained

Looping Element Looping is talked about within the documentation. This means the element within this section of the PIES file can include the element multiple times.

Ellipses (…) An ellipses within the code samples denotes more data above, below or within the code sample has been omitted to abbreviate the code sample. This is used to indicate more code is needed to create a full PIES file, however it is not necessary to explain the concept in the code sample.

Parent/Child Relationship Within this documentation, element relationships are described as a Parent/Child relationships, where one element contains another element. Item is the parent element and PartNumber is the child element in this example:

```
…
<Item>
        <PartNumber>…</PartNumber>
</Item>
…
```

Format Codes

The following Codes are used to indicate the Field Data Type for each PIES Element.

Please note that the Date Type format includes dashes. Previous PIES documentation showed the Data Type format without dashes.

PIES Format Coding Schema	
Code	Description
A4	Alpha only - 4 characters required
AN1/15	Alphanumeric - from N min to N max characters or digits in length (including special char as indicated in Appendix A of Doc)
D	Date - YYYY-MM-DD format
ID2/3	Coded Identifier - from N min to N max characters or digits in length
N1/48	Numeric with no decimals - N min up to N max length
N4-5/10	Numeric with a fixed number of decimal places (4) - 5 min up to 10 max length
R1/10	Numeric with floating decimal place - N min up to N max digits in length
per table	Defined By Coded Value

Element/ Field Requirement Codes

Each PIES field is defined with a Requirement Code.

PIES Field Requirement Coding Schema		
Code	Field Name	Description
KM	Mandatory Key	Required if segment is present. May not be null.
KO	Optional Key	May be null.
KE	“Either” Key	Either of two fields marked KE is required.
M	Mandatory Data	Must be present if segment is present. May not be null. Will fail XML validation if null.
R	Recommended Data	Strongly recommended by industry experts to be present if segment is present, but null will not fail XML validation.
O	Optional Data	Optional - may be null.
C	Conditional Data	Required if related field is present; for example, if Quantity field is present, then Quantity UOM field must be present as well.
E	“Either” Data	Either of two fields marked E is required.

PIES Coded Values

All PIES Coded Values can be found in the **Product Classification database (PCdb)**, which is updated and published monthly on AutoCareVIP.com.

File Delivery

Net-Change File Delivery

Once you and your trading partner(s) synchronize your product information, it is highly recommended that you reduce your workload and file exchange size by sending Net-Change files from that point on.

A Net-Change file contains information for only those items that have incurred changes since the previous file sent. Net changes include updates or changes to previously sent data, new Items or deleted Items.

When a Net-Change file is being sent, it must be identified as such in the Header Segment under the A03 Submission Type Element, utilizing the proper **PIES coded value** from the PIES coded value tables, which are **located in the Product Classification database (PCdb).**

When sending a Net-Change file in PIES, the standard procedure is to send an entire item record regardless of the specific data item changed for the Part Number. Even if a single price (among many) for a Part Number changed, you would still send all prices including the changed price, along with the rest of the data for that particular item (all other segments for the item). To accomplish this, each PIES Segment contains a “MaintenanceType” attribute. These “MaintenanceType” attributes for each segment are found in the **PIES coded value** tables, which are located in the **Product Classification database (PCdb).**

Using this attribute allows the sender to indicate to the receiver of the file which segments have been added, changed, deleted, or not changed at all. Please note any change to an Item record will result in a MaintenanceType of C at the <Item> level. Receivers of data should check for any data changes in the Item Segment. The following XML example shows a single Item record (for an existing Part Number) as a price change, a price remains the same, and a new price is added.

```
…
<Item MaintenanceType=”C”>
        <PartNumber>1234-4321</PartNumber>
        <BrandAAIAID>BZZN</BrandAAIAID>
        <Pricing PriceType=”JBR” MaintenanceType=”C”>
                <PriceSheetNumber>2007</PriceSheetNumber>
                <Price UOM=”PE”>29.9999</Price>
        </Pricing>
        <Pricing PriceType=”LST” MaintenanceType=”N”>
                <PriceSheetNumber>2007</PriceSheetNumber>
                <Price UOM=”PE”>49.9999</Price>
        </Pricing>
        <Pricing PriceType=”WLS” MaintenanceType=”A”>
                <PriceSheetNumber>2007</PriceSheetNumber>
                <Price UOM=”PE”>24.9999</Price>
        </Pricing>
</Item>
…
```

Segment Definitions

This section defines all of the various data fields defined within PIES as well as layout the corresponding XML associated with the segments and fields.

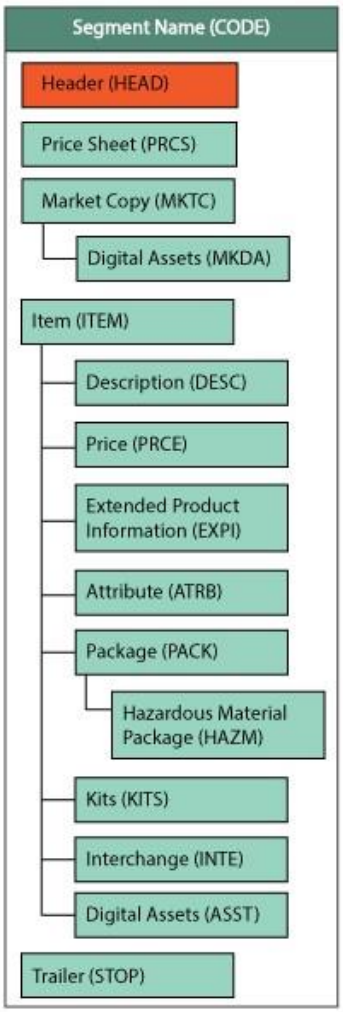
A **Segment** is a term used to represent a logical grouping of PIES data fields. Some segments contain many fields of data while others may contain a few or only one.

A PIES XML document starts with a root element called <PIES>. This is the parent element for all other child elements (data fields) defined below. The first couple lines of XML Code should look similar to this:

```
<?xml version="1.0" encoding="UTF-8"?>
<PIES xmlns:xs=http://www.w3.org/2001/XMLSchema-instance
xmlns="http://www.autocare.org">
```

Each sub-section below contains sample XML Code (some may contain XML elements only without sample data values) to relay its relation to the <PIES> root element. For more detailed information about the XML Schema, please refer to the PIES XML Schema document (XSD) contained within the PIES documentation zip file located on the autocare.org website.

A01-Header Segment (HEAD)



The Header Segment defines trading partner information as well as global value characteristics. There is only one (and exactly one) instance of this segment within a PIES file. The segment is defined by the opening <Header> and closing </Header> elements.

```
<PIES xmlns:xs=http://www.w3.org/2001/XMLSchema-instance
xmlns="http://www.autocare.org">
        <Header>
                <PIESVersion>7.2</PIESVersion>
                <SubmissionType>FULL</SubmissionType>
                <BlanketEffectiveDate>2013-01-31</BlanketEffectiveDate>
                <ChangesSinceDate>….</ChangesSinceDate>
                <ParentDUNSNumber>9999999990001</ParentDUNSNumber>
                <ParentGLN>7777777555551</ParentGLN>
                <ParentVMRSID>GIANT</ParentVMRSID>
                <ParentAAIAID>BBCD</ParentAAIAID>
                <BrandOwnerDUNS>8888888880001</BrandOwnerDUNS>
                <BrandOwnerGLN>7777777123459</BrandOwnerGLN>
                <BrandOwnerVMRSID>WONDR</BrandOwnerVMRSID>
                <BuyerDuns>8888888880001</BuyerDuns>
                <CurrencyCode>USD</CurrencyCode>
                <LanguageCode>EN</LanguageCode>
                <TechnicalContact>John Smith</TechnicalContact>
                <ContactEmail>john@smith.com</ContactEmail>
                <PCdbVersionDate>2020-01-31</PCdbVersionDate>
                <PAdbVersionDate>2020-01-31</PAdbVersionDate>
        </Header>
        …
</PIES>
```

A02-PIES Version Number

Ref Num	A02	**XML Element**	PIESVersion
Format	ID3/5		
Requirement	M	**Code Table**	
Example	7.0		
External Ref			
Comments			

A03-Submission Type

Ref Num	A03	**XML Element**	SubmissionType
Format	ID4/6		
Requirement	M	**Code Table**	Coded Values
Example	FULL		
External Ref			
Comments			

A05-Blanket Effective Date

Ref Num	A05	**XML Element**	BlanketEffectiveDate
Format	D		
Requirement	O	**Code Table**	
Example	2013-01-03		
External Ref			
Comments	"Blanket Effective Date" acts as the global default value for a particular PIES file. "Blanket Effective Date" may be overridden at Price Sheet Header, Item or Price Segment Levels.		

A06-Changes Since Date

Ref Num	A06	**XML Element**	ChangesSinceDate
Format	D		
Requirement	C	**Code Table**	
Example	2012-06-30		
External Ref			
Comments	"Changes Since Date" is a control date indicating the date the last PIES file was generated. This field is MANDATORY if A03, Submission Type, has been filled with the value "UPDATE"		

A10-Parent DUNS or DUNS+4

Ref Num	A10	XML Element	ParentDUNSNumber
Format	ID9/13		
Requirement	O	Code Table	External Code Sources
Example	9999999990001		
External Ref	www.dnb.com		
Comments	Unique 9 digit Dun & Bradstreet ID. May also use +4 format with 13 digits. The D&B D-U-N-S Number is a unique nine-digit identification sequence, which provides unique identifiers of single business entities, while linking corporate family structures together		

A11-Parent Global Location Number

Ref Num	A11	**XML Element**	ParentGLN
Format	ID13		
Requirement	O	**Code Table**	External Code Sources
Example	777777555551		
External Ref	www.gs1.org		
Comments	GS1 Company ID + Location ID + Check Digit. The GLN is a standard means of identifying global trading partner locations. Through the process of Product Synchronization, the seller and buyer identify each other's names, addresses and other information, so that all subsequent electronic documents can be identified, routed and processed using only these codes. This is essential for the smooth, automated, error-free processing of electronic documents.		

A12-Parent VMRS ID

Ref Num	A12	**XML Element**	ParentVMRSID
Format	ID5		
Requirement	O	**Code Table**	External Code Sources
Example	GIANT		
External Ref			
Comments	The Maintenance Council (TMC) of the American Trucking Assn. (ATA) assigned VMRS Manufacturer ID. It is a unique Company identifier for all participating Heavy Duty parts manufacturers. NOTE: Required by the major fleets.		

A13-Parent AAIAID

Ref Num	A13	**XML Element**	ParentAAIAID
Format	ID4		
Requirement	O	**Code Table**	External Code Sources
Example	BBCD		
External Ref	Brand Table		

Comments	This field is the recommended value to use when identifying Parent Company Ownership.

A20-Brand Owner DUNS or DUNS+4

Ref Num	A20	**XML Element**	BrandOwnerDUNS
Format	ID9/13		
Requirement	E	**Code Table**	External Code Sources
Example	9999999990002		
External Ref	www.dnb.com		
Comments	Unique 9 digit Dun & Bradstreet ID. May also use +4 format with 13 digits. The D&B D-U-N-S Number is a unique nine-digit identification sequence, which provides unique identifiers of single business entities, while linking corporate family structures together		

A21-Brand Owner Global Location Number

Ref Num	A21	**XML Element**	BrandOwnerGLN
Format	ID13		
Requirement	E	**Code Table**	External Code Sources
Example	7777777666662		
External Ref	www.gs1us.org		
Comments	GS1 Company ID + Location ID + Check Digit. The GLN is a standard means of identifying global trading partner locations. Through the process of Product Synchronization, the seller and buyer identify each other's names, addresses and other information, so that all subsequent electronic documents can be identified, routed and processed using only these codes. This is essential for the smooth, automated, error-free processing of electronic documents.		

A22-Brand Owner VMRS ID

Ref Num	A22	**XML Element**	BrandOwnerVMRSID
Format	ID5		
Requirement	O	**Code Table**	External Code Sources
Example	WONDR		
External Ref			
Comments	The Maintenance Council (TMC) of the American Trucking Assn. (ATA) assigned VMRS Manufacturer ID. It is a unique Company identifier for all participating Heavy Duty parts manufacturers. NOTE: Required by the major fleets.		

A30-Buyer DUNS or DUNS+4

Ref Num	A30	**XML Element**	BuyerDuns
Format	ID9/13		
Requirement	O	**Code Table**	External Code Sources
Example	9191919190001		
External Ref	www.dnb.com		
Comments	D&B D-U-N-S Number for PIES Trading Partner. The D&B D-U-N-S Number is a unique nine-digit identification sequence, which provides unique identifiers of single business entities, while linking corporate family structures together		

A35-Currency Code

Ref Num	A35	**XML Element**	CurrencyCode
Format	ID3		
Requirement	O	**Code Table**	Coded Values
Example	USD		
External Ref	www.iso.org		
Comments	This is the Default value for the entire PIES file. This value may be overridden at the PRCS (Price Sheet Segment) or PRCE (Pricing Segment) levels.		

A37-Language Code

Ref Num	A37	**XML Element**	LanguageCode
Format	ID2		
Requirement	O	**Code Table**	Coded Values
Example	EN		
External Ref	www.iso.org		
Comments	This is the default value for the entire PIES file. This value may be overridden within many of the underlying Segments.		

A40-Technical Contact Name

Ref Num	A40	**XML Element**	TechnicalContact
Format	AN1/60		
Requirement	O	**Code Table**	
Example	John Smith		
External Ref			
Comments	Name of Contact for resolving technical issues with PIES file.		

A41-Contact Email

Ref Num	A41	**XML Element**	ContactEmail
Format	AN1/254		
Requirement	O	**Code Table**	
Example	john@smith.com		
External Ref			
Comments	Contact Email address at data Supplier/Sender company for resolving issues with PIES file or receiving file processing reports.		

A42-PCdb Version Date

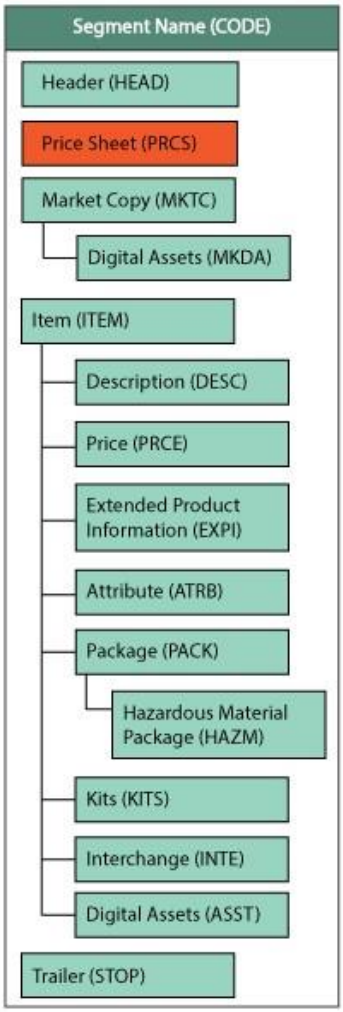
Ref Num	A42	**XML Element**	PCdbVersionDate
Format	D		
Requirement	M	**Code Table**	External Code Sources
Example	2020-01-31		
External Ref	AutocareVIP.com		
Comments	Version date of the PCdb used to create the file. The date can be found in the "Version" table of the PCdb.		

A43-PAdb Version Date

Ref Num	A43	**XML Element**	PAdbVersionDate
Format	D		
Requirement	O	**Code Table**	External Code Sources
Example	2020-01-31		
External Ref	AutoCareVIP.com		
Comments	Version date of the PAdb used to create the file. The date can be found in the "Version" table of the PAdb.		

A50-Price Sheet Header Segment (PRCS)

The Price Sheet Header Segment is used to define zero to any number of price sheets. This segment may correspond to printed paper price sheets, or define digital only price sheets. When exchanging any pricing data with a trading partner, we recommended defining at least one Price Sheet Header. The <PriceSheetNumber> defined in this segment may be referenced within the Price Segment for an individual Item record.



The Price Sheet Header Segment is defined by the opening <PriceSheets> and closing </PriceSheets> elements. It is an optional looping segment within the specification, meaning that there may be zero instances of this segment in a PIES file. If this segment is used, there must be one or more instances of a child <PriceSheet> </PriceSheet> loop. Multiple loops of a <PriceSheet> </PriceSheet> section may be used to define multiple Price Sheets.

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.autocare.org">

<Header>…</Header>

<PriceSheets>

        <PriceSheet MaintenanceType="A">


        <PriceSheetNumber>2007WD</PriceSheetNumber>

                <PriceSheetName>2007 WD
Price</PriceSheetName>

                <SupersededPriceSheetNumber>2006WD</SupersededPriceSheetNumber>

                        <CurrencyCode>USD</CurrencyCode>

                        <PriceZone>Western</PriceZone>

                        <EffectiveDate>2007-08-13</EffectiveDate>

                        <ExpirationDate>2008-08-13</ExpirationDate>

        </PriceSheet>

</PriceSheets>

…
```

A51-Maintenance Type

Ref Num	A51	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

A52-Price Sheet Number

Ref Num	A52	**XML Element**	PriceSheetNumber
Format	AN1/15		
Requirement	KM	**Code Table**	
Example	2011WD		
External Ref			
Comments	Electronic or Paper Price Sheet Number		

A53-Price Sheet Name

Ref Num	A53	**XML Element**	PriceSheetName
Format	AN1/30		
Requirement	O	**Code Table**	
Example	January 2011		
External Ref			
Comments			

A55-Superseded Price Sheet Number

Ref Num	A55	**XML Element**	SupersededPriceSheetNumber
Format	AN1/15		
Requirement	O	**Code Table**	
Example	2010WD		
External Ref			
Comments	Price Sheet replaced by this PIES file		

A60-Currency Code

Ref Num	A60	**XML Element**	CurrencyCode
Format	ID3		
Requirement	O	**Code Table**	Coded Values
Example	USD		
External Ref	www.iso.org		
Comments	This is the Default value for the Price Sheet Segment. This value may be overridden at the PRCE (Pricing Segment) levels.		

A65-Price Zone

Ref Num	A65	XML Element	PriceZone
Format	A1/10		
Requirement	O	Code Table	
Example	Western		
External Ref			
Comments	Only one Price Zone is allowed per PIES file		

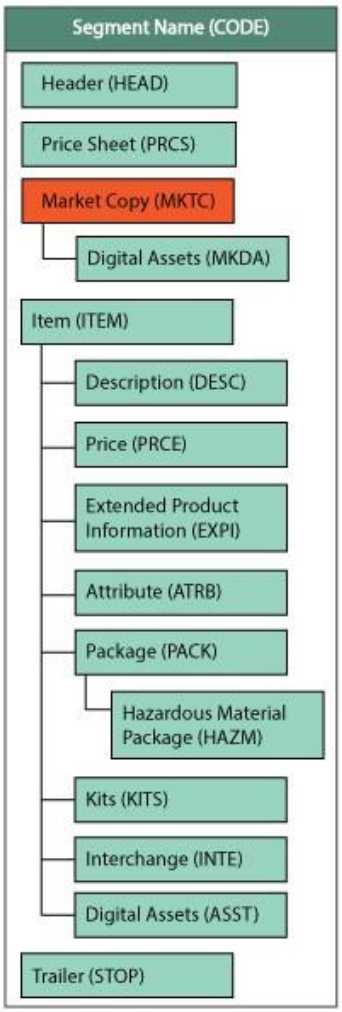
A70-Price Sheet Level Effective Date

Ref Num	A70	XML Element	EffectiveDate
Format	D		
Requirement	O	Code Table	
Example	2011-01-01		
External Ref			
Comments	Date this PIES file price sheet goes into effect. May be overridden by PRCE Segment field D25 – Price Sheet Level Effective Date		

A75-Price Sheet Level Expiration Date

Ref Num	A75	**XML Element**	ExpirationDate
Format	D		
Requirement	O	**Code Table**	
Example	2011-12-31		
External Ref			
Comments	Date this PIES file price sheet expires. May be overridden by PRCE Segment field D30 – Expiration Date		

A80-Market Copy Segment (MKTC)



The Market Copy Segment is intended for expressing marketing and descriptive copy that applies to many items, such as a product line or series, or a Brand or Sub-Brand of product, or an entire company. Digital Assets that relate to the Market Copy reference may be nested within the Market Copy Segment. This segment has been enhanced to include additional 'Rich Content' in the form of Features and Benefits Bullets, and further enhanced to enable the conveyance of different market copy within a Brand or Sub-Brand, to deal with specific Part Terminologies which may have different features. Additionally, a Record Sequence element has been added to the Segment to enable a sender of data to convey the order in which a sequence of content should be published.

NOTE: The element sequencing and numbering in this segment was changed in 6.5, and will NOT be backward compatible with 6.4 or earlier versions of PIES.

…

```
<MarketingCopy>
    <MarketCopy>
        <MarketCopyContent MaintenanceType="A"
        MarketCopyCode="PTI"
        MarketCopyReference="5562"
        MarketCopySubCode="PSG" MarketCopySubCodeReference="1234"
        RecordSequence="1" MarketCopyType="GCC" LanguageCode="EN">
            This is my market copy text for PT 5562
        </MarketCopyContent>
        <DigitalAssets>
        …
        </DigitalAssets>
        </MarketCopy>
</MarketingCopy>
…
```

A81-Maintenance Type

Ref Num	A81	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

A82-Market Copy Code

Ref Num	A82	**XML Element**	
Format	ID3	**XML Attribute**	MarketCopyCode
Requirement	KM	**Code Table**	Coded Values
Example	BRD		
External Ref			
Comments			

A83-Market Copy Code Reference

Ref Num	A83	**XML Element**	
Format	AN1/240	**XML Attribute**	MarketCopyReference
Requirement	KM	**Code Table**	
Example	ZZZN		
External Ref			
Comments			

A84-Market Copy Sub Code

Ref Num	A84	**XML Element**	
Format	ID3	**XML Attribute**	MarketCopySubCode
Requirement	KO	**Code Table**	Coded Values
Example	BRD		
External Ref			
Comments			

A85-Market Copy Sub Code Reference

Ref Num	A85	**XML Element**	
Format	AN1/240	**XML Attribute**	MarketCopySubCodeReference
Requirement	KO	**Code Table**	
Example	ZZZN		
External Ref			
Comments	See Market Copy Code table for reference instructions. Using the Market Copy Sub Code enables the segmentation of Market Copy within a Brand or other Product Hierarchy. An example of use would be for products of different part terminologies which share the same brand reference, which may require different market copy (i.e., Air Filter and Oil Filter with same Brand ID, may have common brand characteristics, but the market copy for each product line would likely vary)		

A86-Market Copy Type

Ref Num	A86	**XML Element**	
Format	ID3	**XML Attribute**	MarketCopyType
Requirement	M	**Code Table**	Coded Values
Example	FAB		
External Ref			
Comments	This describes the type of content being sent.		

A87-Market Copy Content

Ref Num	A87	**XML Element**	MarketCopyContent
Format	Variable Per “Market Copy Type” Attribute		
Requirement	M	**Code Table**	
Example	The products of our company are made with the finest materials and engineered to exceed original equipment standards.		
External Ref			
Comments	Market Copy content per “Market Copy Type” indicated.		

A88-Record Sequence

Ref Num	A88	**XML Element**	
Format	N1/5	**XML Attribute**	RecordSequence
Requirement	KO	**Code Table**	
Example	1		
External Ref			
Comments	The record sequence identifies the order in which a record should appear if multiple Content records are being sent for a Market Copy Code or Sub Code		

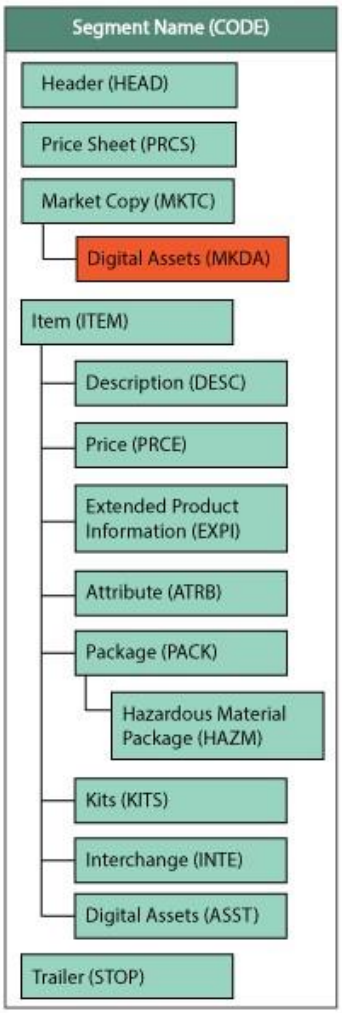
A89-Language Code

Ref Num	A89	**XML Element**	
Format	ID2	**XML Attribute**	LanguageCode
Requirement	KO	**Code Table**	Coded Values
Example	EN		
External Ref			
Comments	Defaults to HEAD Head Segment Language Code if not populated. This also enables multiple languages to be sent for a Market Copy Record.		

M01-Digital Asset Sub-Segment of Market Copy (MKDA)

The Digital Asset Sub-Segment of the Market Copy Segment is used to relay information about any media types that support the related Market Copy Segment reference codes.

For further information on Digital Assets, please refer to section P01-Digital Assets Segment.




```
…
<MarketingCopy>
        <MarketCopy>
        <MarketCopyContent>...</MarketCopyContent>
        <DigitalAssets>
                <DigitalFileInformation MaintenanceType="A"
                AssetID="xyz_BRO" LanguageCode="EN">
                        <FileName>xyz</FileName>
                        <AssetType>BRO</AssetType>
                        <FileType>JPG</FileType>
                        <Representation>A</Representation>
                        <FileSize>1234567</FileSize>
                        <Resolution>72</Resolution>
                        <ColorMode>RGB</ColorMode>
                        <Background>WHI</Background>
                        <OrientationView>ANG</OrientationView>
                        <AssetDimensions UOM="PX">
                                <AssetHeight>50</AssetHeight>
                                <AssetWidth>50</AssetWidth>
                        </AssetDimensions>
                        <FilePath>\Mfg\xyz.jpg</FilePath>
                        <URI>http://www.mfg.com/Images/xyz.jpg</URI>
                        <Country>US</Country>
        </DigitalFileInformation>
</DigitalAssets>
</MarketCopy>
</MarketingCopy>
```

...

M02-Maintenance Type

Ref Num	M02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

M05-File Name

Ref Num	M05	**XML Element**	FileName
Format	AN1/80		
Requirement	KM	**Code Table**	
Example	Zzzn_logo.jpg		
External Ref			
Comments			

M06-Asset ID

Ref Num	M06	**XML Element**	
Format	ID1/34	**XML Attribute**	AssetID
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Unique ID reference for the Digital Asset		

M10-Asset Type

Ref Num	M10	**XML Element**	AssetType
Format	ID3		
Requirement	KM	**Code Table**	Coded Values
Example	LGO		
External Ref			

Comments	

M15-File Type

Ref Num	M15	**XML Element**	FileType
Format	ID2/4		
Requirement	R	**Code Table**	Coded Values
Example	JPG		
External Ref			
Comments			

M20-Representation

Ref Num	M20	**XML Element**	Representation
Format	ID1		
Requirement	R	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

M25-File Size

Ref Num	M25	**XML Element**	FileSize
Format	N1/10		
Requirement	O	**Code Table**	
Example	600		
External Ref			
Comments	Measured in Kilobytes (Kb)		

M30-Resolution

Ref Num	M30	**XML Element**	Resolution
Format	ID2/4		
Requirement	KO	**Code Table**	Coded Values
Example	72		
External Ref			

Comments	

M35-Color Mode

Ref Num	M35	**XML Element**	ColorMode
Format	ID3		
Requirement	O	**Code Table**	Coded Values
Example	RGB		
External Ref			
Comments			

M40-Background

Ref Num	M40	**XML Element**	Background
Format	ID3		
Requirement	R	**Code Table**	Coded Values
Example	WHI		
External Ref			
Comments			

M45-Orientation View

Ref Num	M45	**XML Element**	OrientationView
Format	ID3		
Requirement	KO	**Code Table**	Coded Values
Example	TOP		
External Ref			
Comments			

M50-Asset Height

Ref Num	M50	**XML Element**	AssetHeight
Format	R1/6		
Requirement	R	**Code Table**	
Example	500		
External Ref			

Comments	Vertical measurement of Digital Asset file.

M55-Asset Width

Ref Num	M55	**XML Element**	AssetWidth
Format	R1/6		
Requirement	R	**Code Table**	
Example	400		
External Ref			
Comments	Horizontal measurement of Digital Asset file.		

M60-Asset Dimension UOM

Ref Num	M60	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	C	**Code Table**	Coded Values
Example	PX		
External Ref			
Comments			

M64-Asset Descriptions

Ref Num	M64	XML Element	AssetDescriptions
Format			
Requirement	O	Code Table	
Example			
External Ref			
Comments			

M71 - Asset Maintenance Type

Ref Num	M71	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

M72- Asset Description Code

Ref Num	M72	**XML Element**	
Format	ID3	**XML Attribute**	DescriptionCode
Requirement	KM	**Code Table**	Coded Values
Example	DES		
External Ref			
Comments	Required Attribute of "Description"		

M73-Asset Description

Ref Num	M73	**XML Element**	Description
Format	Variable Per "Description Code" Attribute.		
Requirement	M	**Code Table**	
Example	Intake Manifold		
External Ref			
Comments	Verbose description per “Description Type” indicated.		

M74-Asset Description Language Code

Ref Num	M74	**XML Element**	
Format	ID2	**XML Attribute**	LanguageCode
Requirement	KO	**Code Table**	Coded Values
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of “<Description> XML Element. Override value for individual Segment Loop.		

M75-File Path

Ref Num	M75	**XML Element**	FilePath
Format	AN1/80		
Requirement	O	**Code Table**	
Example	\mfr\xyz.jpg		
External Ref			
Comments	Location of the file in the collection provided by the supplier		

M80-URI

Ref Num	M80	**XML Element**	URI
Format	AN1/2000		
Requirement	O	**Code Table**	
Example	www.w3.org		
External Ref			
Comments	Uniform Resource Indicator defines a location which can also be a URL location of the Digital Asset. This can refer to a specific Digital asset item, or a page of content.		

M81-Duration

Ref Num	M81	**XML Element**	Duration
Format	N1/3		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	The duration of the playing time should be entered into this field in the format hours, minutes, and seconds.		

M82-Duration UOM

Ref Num	M82	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	C	**Code Table**	Coded Values
Example			
External Ref			
Comments			

M83-Frame

Ref Num	M83	**XML Element**	Frame
Format	N1/3		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Enter the number of the image frame		

M84-TotalFrames

Ref Num	M84	**XML Element**	TotalFrames
Format	N1/3		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Total Number of frames within a plane		

M85-Plane

Ref Num	M85	**XML Element**	Plane
Format	N1/3		
Requirement	O	**Code Table**	
Example			

External Ref	
Comments	Enter the number of planes that are in the 3D image set

M86-Hemisphere

Ref Num	M86	**XML Element**	Hemisphere
Format	ID1		
Requirement	O	**Code Table**	Coded Values
Example			
External Ref			
Comments	Either Northern (N) or Southern (S)		

M87-Plunge

Ref Num	M87	**XML Element**	Plunge
Format	R1/6		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Plunge angle when photographed		

M88-TotalPlanes

Ref Num	M88	**XML Element**	TotalPlanes
Format	N1/3		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Number of planes for 360 image		

M93-Asset Dates

Ref Num	M93	**XML Element**	AssetDates
Format			
Requirement	O	**Code Table**	
Example			

External Ref	
Comments	Element Container for Asset Dates

M94-Asset Date

Ref Num	M94	**XML Element**	AssetDate
Format	D		
Requirement	O	**Code Table**	
Example	2016-04-01		
External Ref			
Comments	Date for asset		

M95-Asset Date Type

Ref Num	P95	**XML Element**	
Format	ID3	**XML Attribute**	assetDateType
Requirement	R	**Code Table**	Coded Values
Example	MOD		
External Ref			
Comments			

M98-Country Code

Ref Num	M98	XML Element	Country
Format	ID2	XML Attribute	
Requirement	KO	Code Table	Coded Values
Example	CA		
External Ref			
Comments	The Country Code is used to identify the destination Country of use for the digital asset. Use case: a logo for a product might be different in one country versus another.		

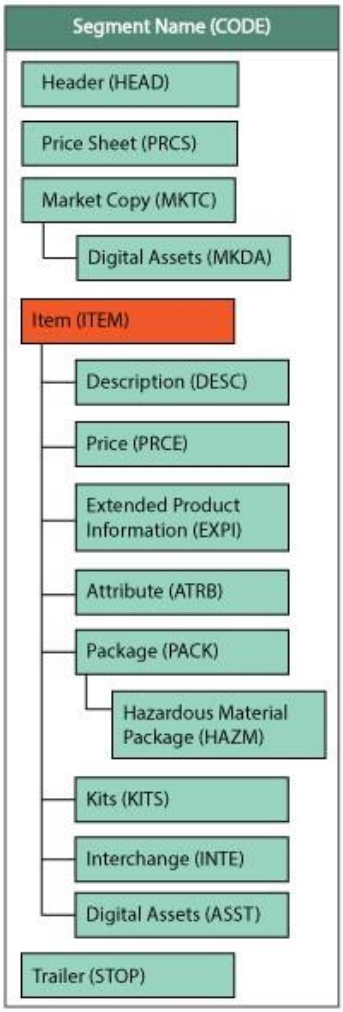
M99-Language Code

Ref Num	M99	**XML Element**	
Format	ID2	**XML Attribute**	Language Code
Requirement	KO	**Code Table**	Coded Values
Example	EN		
External Ref			
Comments	Defaults to Head Segment Language Code, when not used.		

B01-Item Segment (ITEM)

The Item Segment is the core looping (or repeating) segment within the PIES standard. Each instance of this segment is responsible for defining individual Item Part Numbers.

All <Item> instances are encapsulated within the parent <Items> element. For each Item Part Number that is to be defined, a new instance of <Item> and its child elements are initiated. Many of the child elements under <Item> are themselves segments of PIES which are defined later in this document.



The following XML sample code shows the upper level <Items> element and the beginning of a single instance of <Item>. The child elements are part of the logical grouping known as the Item Segment. Further segments continue from the end of this code sample.

```
…
<Items>
        <Item MaintenanceType="A">
        <HazardousMaterialCode>Y</HazardousMaterialCode>
        <BaseItemID>AB123YG</BaseItemID>
        <ItemLevelGTIN
        GTINQualifier="UP">00123456789101</ItemLevelGTIN>
        <PartNumber>AB12389</PartNumber>
        <BrandAAIAID>BBBB</BrandAAIAID>
        <BrandLabel>Wonderhose</BrandLabel>
        <VMRSBrandID>FELPR</ VMRSBrandID>
        <QuantityPerApplication UOM="EA">2</QuantityPerApplication>
        <ItemEffectiveDate>2006-08-13</ItemEffectiveDate>
        <AvailableDate>2006-09-13</AvailableDate>
        <MinimumOrderQuantity UOM="EA">2</MinimumOrderQuantity>
        <ManufacturerProductCodes>
```

```
            <Group>W12</Group>
            <SubGroup>W123</SubGroup>
        </ManufacturerProductCodes>
        <AAIAProductCategoryCode>330102</AAIAProductCategoryCode>
        <UNSPSC>11223344</UNSPSC>
        <PartTerminologyID>55555</PartTerminologyID>
        <VMRSCode>010456789</VMRSCode>
```

B02-Maintenance Type

Ref Num	B02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

B03-Hazardous Material Code

Ref Num	B03	**XML Element**	HazardousMaterialCode
Format	ID1		
Requirement	R	**Code Table**	Coded Values
Example	Y		
External Ref			
Comments	Flag indicating if Item contains Hazardous Material.		

B05-Base Item Number

Ref Num	B05	**XML Element**	BaseItemID
Format	AN1/48		
Requirement	O	**Code Table**	
Example	HOS100		
External Ref			
Comments	A value that identifies an identical physical product irrespective of the Part # or GTIN assigned to different Brands or packaging configurations. Used when the same physical part is used in multiple part numbers or UPC's		

B10-Item-Level GTIN

Ref Num	B10	**XML Element**	ItemLevelGTIN
Format	N14		
Requirement	O	**Code Table**	External Code Sources
Example	00123456789012		
External Ref	www.gs1.org		
Comments	Global Trade Identification Number (GTIN) This field is coded as a Numeric (N) value, as all characters in the GTIN should be numeric. WARNING: Programs such as Microsoft Excel will drop leading zeros if the field is not formatted as text. To avoid confusion using this field, the range has been omitted and the field is now fixed at 14 characters, INCLUDING leading zeros where necessary. Please refer to the section, "About Global Trade Identifier Number (GTIN)", for further clarification.		

B11-Item-Level GTIN Qualifier

Ref Num	B11	**XML Element**	
Format	ID2	**XML Attribute**	GTINQualifier
Requirement	C	**Code Table**	Coded Values
Example	UP		
External Ref	www.x12.org		

Comments	If “Item-Level GTIN” is populated, then this attribute is required.

B15-Part Number

Ref Num	B15	**XML Element**	PartNumber
Format	AN1/48		
Requirement	KM	**Code Table**	
Example	HOS101		
External Ref			
Comments	Typically the Part Number common to all Pack Levels. The consumer sellable part number. This is a required field value.		

B20-Brand AAIA ID

Ref Num	B20	**XML Element**	BrandAAIAID
Format	ID4		
Requirement	M	**Code Table**	External Code Sources
Example	BZZZ		
External Ref	Brand Table		
Comments	Brand ID as found in the Brand table.		

B25-Brand Label

Ref Num	B25	**XML Element**	BrandLabel
Format	AN1/60		
Requirement	O	**Code Table**	External Code Sources
Example	Wonderhose		
External Ref	Brand Table		
Comments	Verbose Brand Name as found in the Brand table.		

B27-SubBrand AAIAID

Ref Num	B27	**XML Element**	SubBrandAAIAID
Format	ID4		
Requirement	O	**Code Table**	External Code Sources
Example	DCBA		
External Ref	Brand Table		
Comments	SubBrand ID found in the Brand table.		

B28-SubBrand Label

Ref Num	B28	**XML Element**	SubBrandLabel
Format	AN1/60		
Requirement	O	**Code Table**	External Code Sources
Example	Super Series		
External Ref	Brand Table		
Comments	Verbose SubBrand Label found in the Brand table.		

B29-VMRS Brand ID

Ref Num	B29	**XML Element**	VMRSBrandID
Format	ID5		
Requirement	O	**Code Table**	External Code Sources
Example	FELPR		
External Ref			
Comments	Required by the major fleets. The Maintenance Council (TMC) of the American Trucking Assn. (ATA) -assigned VMRS Brand ID. It is a unique Brand identifier for all participating Heavy Duty parts manufacturer brands.		

B30-ACES Applications

Ref Num	B30	**XML Element**	ACESApplications
Format	ID1		
Requirement	O	**Code Table**	Coded Values
Example	Y		
External Ref			
Comments	Flag indicating if the Item has any associated with Aftermarket Catalog Exchange Standard (ACES) records.		

B32-Item Quantity Size

Ref Num	B32	**XML Element**	ItemQuantitySize
Format	R1/8		
Requirement	O	**Code Table**	
Example	16.0		
External Ref			
Comments	Example shows this item is 16.0 ounces in size. Allows reference point for Pack and Price Segments		

B33-Item Quantity Size UOM

Ref Num	B33	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	O	**Code Table**	Coded Values
Example	OZ		
External Ref			
Comments			

B34-Container Type

Ref Num	B34	**XML Element**	ContainerType
Format	ID2		
Requirement	O	**Code Table**	Coded Values

Example	BO
External Ref	
Comments	

B35-Quantity per Application Qualifier

Ref Num	B35	**XML Element**	
Format	ID3	**XML Attribute**	Qualifier
Requirement	O	**Code Table**	Coded Values
Example	NOR		
External Ref			
Comments	Attribute of “Quantity per Application”. Differences in application quantities		

B40-Quantity per Application

Ref Num	B40	**XML Element**	QuantityPerApplication
Format	AN0/8		
Requirement	O	**Code Table**	
Example	12		
External Ref			
Comments	Typical Quantity used on a single vehicle or application. Quantity used on a single vehicle or application. Value can also be zero or null		

B41-Quantity per Application UOM

Ref Num	B41	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	C	**Code Table**	Coded Values
Example	EA		
External Ref	www.x12.org		
Comments	Attribute for “Quantity per Application”.		

B45-Item-Level Effective Date

Ref Num	B45	**XML Element**	ItemEffectiveDate
Format	D		
Requirement	O	**Code Table**	
Example	2010-12-31		
External Ref			
Comments	Date the Item is available for purchase at the current price levels		

B50-Available Date

Ref Num	B50	**XML Element**	AvailableDate
Format	D		
Requirement	O	**Code Table**	
Example	2011-01-01		
External Ref			
Comments	Date the Item is available for Sale		

B55-Minimum Order Quantity

Ref Num	B55	**XML Element**	MinimumOrderQuantity
Format	N1/8		
Requirement	O	**Code Table**	
Example	10		
External Ref			
Comments	Minimum (incremental) supplier shipment quantity of the item		

B56-Minimum Order Quantity UOM

Ref Num	B56	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	C	**Code Table**	Coded Values
Example	EA		

External Ref	www.x12.org
Comments	Attribute of “Minimum Order Quantity”.

B59-Manufacturer Product Codes

Ref Num	B59	**XML Element**	ManufacturerProductCodes
Format			
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Used for organizational purposes to group “Product Group Code” and “Product Sub-Group Code”.		

B60-Product Group Code

Ref Num	B60	**XML Element**	Group
Format	AN1/10		
Requirement	O	**Code Table**	
Example	W12		
External Ref			
Comments	Supplier Assigned Major Product Category. This XML Element is a required child of the <ManufacturerProductCodes> parent element “Product Group Code” is required while “Product SubGroup Code” is optional if providing <ManufactureProductCodes> values.		

B61-Product Sub-Group Code

Ref Num	B61	**XML Element**	SubGroup
Format	AN1/10		
Requirement	O	**Code Table**	
Example	W123		
External Ref			

Comments	Supplier Assigned Minor Product Category. This XML Element is a required child of the <ManufacturerProductCodes> parent element. Group is required while Sub-Group is optional if providing <ManufactureProductCodes> values.

B62-Product Category Code

Ref Num	B62	**XML Element**	AAIAProductCategoryCode
Format	ID6		
Requirement	O	**Code Table**	External Code Sources
Example	330102		
External Ref			
Comments	Category Management Hierarchy. Category/Sub-Cat/Segment for Sales Reporting. https://digital.autocare.org/pies-category-management-hierarchy/		

B63-UNSPSC Code

Ref Num	B63	**XML Element**	UNSPSC
Format	ID8/10		
Requirement	O	**Code Table**	External Code Sources
Example	11223344		
External Ref	www.unspsc.org		
Comments	Universal Standard Product & Service Classification. The Universal Standard Products and Services Classification (UNSPSC) is an open, nonproprietary system of codes and standardized descriptions for classifying goods and services. The United Nations, Dun & Bradstreet and their partners through the UNSPSC Advisory Board maintain the coding structure.		

B64-Part Terminology ID

Ref Num	B64	**XML Element**	PartTerminologyID
Format	ID4/5		

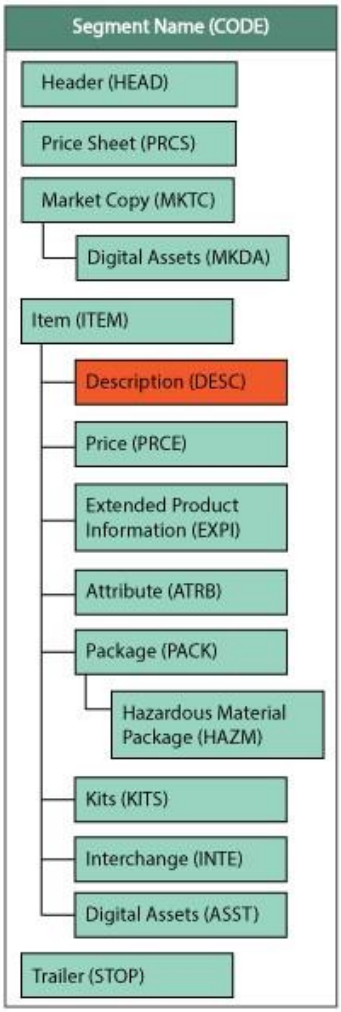
Requirement	O	**Code Table**	External Code Sources
Example	55555		
External Ref	http://www.autocare.org/Technology/pcdb		
Comments	Part Terminology ID from the Parts Classification Database (PCdb)		

B65-VMRS Code (Heavy Duty)

Ref Num	B65	**XML Element**	VMRSCode
Format	ID9		
Requirement	O	**Code Table**	External Code Sources
Example	010456789		
External Ref	www.trucking.org		
Comments	System, Assy., Comp. Codes for Heavy Duty Trucks – TMC (ATA)		

C01-Description Segment (DESC)

There are different types of part descriptions that can be transmitted as part of a PIES file. To view a list of the Industry defined description types, see Technical Specification, Coded Values tables, Filter on the Reference Number C05. The Description segment allows you to send zero or as many descriptions about an Item record part number. This is possible because of the looping structure of XML. The Description segment (<Descriptions>…</Descriptions>) is an element group construct under <Item>. For each different description you want to convey about an individual Item part number, you simply loop (repeat) the <Description> element as well as the string value for the Description.



The following XML, shown with multiple Description instances (loops), shows where the Description segment falls in the nested hierarchy of a PIES file...

…

<Items>

<Item>

…

<Descriptions>

<Description LanguageCode="EN" MaintenanceType="A" DescriptionCode="**ABR**" Sequence="**1**">String</Description>

<Description LanguageCode="EN" MaintenanceType="A" DescriptionCode="**DES**" Sequence ="**2**">String</Description>

<Description LanguageCode="EN" MaintenanceType="A" DescriptionCode="**DES**" Sequence ="**3**">String</Description>

<Description LanguageCode="EN" MaintenanceType="A" DescriptionCode="**FAB**" Sequence ="4">String</Description>

<Description LanguageCode="EN" MaintenanceType="A" DescriptionCode="**FAB**" Sequence ="5">String</Description>

</Descriptions>

…

C02-Maintenance Type

Ref Num	C02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

C05-Description Code

Ref Num	C05	**XML Element**	
Format	ID3	**XML Attribute**	DescriptionCode
Requirement	KM	**Code Table**	Coded Values
Example	DES		
External Ref			
Comments	Required Attribute of "Description"		

C10-Description

Ref Num	C10	**XML Element**	Description
Format	Variable Per "Description Code" Attribute.		
Requirement	M	**Code Table**	
Example	Intake Manifold		
External Ref			
Comments	Verbose description per “Description Type” indicated.		

C15-Language Code

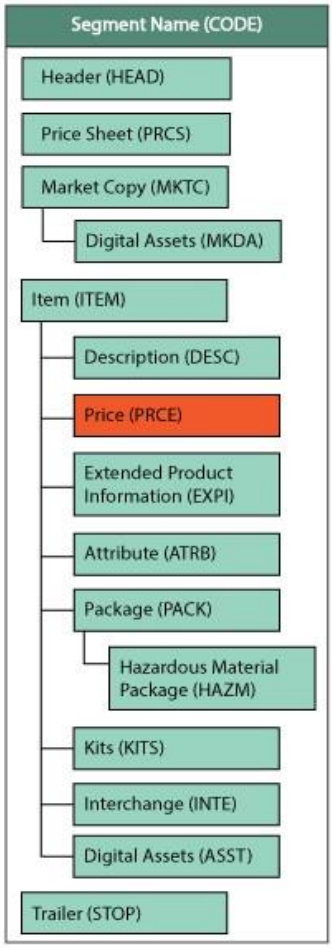
Ref Num	C15	**XML Element**	
Format	ID2	**XML Attribute**	LanguageCode
Requirement	KO	**Code Table**	Coded Values
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of “<Description> XML Element. Override value for individual Segment Loop.		

C16-Description Sequence

Ref Num	C16	**XML Element**	
Format	AN1/20	**XML Attribute**	Sequence
Requirement	KO	**Code Table**	
Example	1		
External Ref			
Comments	Optional Attribute of "Description"		

D01-Pricing Segment (PRCE)

The Pricing Segment defined by PIES XML parent element <Prices>. Within this element group, there may be multiple instances of <Pricing> that define a single pricing instance. This element takes a “Price Type” as an attribute indicating what type of price the following child elements data relationship.



To supply multiple prices (price types) for an Item Part Number, you simply repeat the <Pricing> XML structure and redefine the new loop with the “Price Type” attribute.

The following XML code (abbreviate sample) shows the relationship of <Pricing> to the <Item> parent element.

```
…
<PriceSheets>…</PriceSheets>
        <Items>
        <Item>
                …
        <Descriptions>…</Descriptions>
        <Prices>
                <Pricing MaintenanceType="A"
PriceType="AC1">
                        <PriceSheetNumber>2007WD</PriceSheetNumber>
                        <CurrencyCode>USD</CurrencyCode>
                        <EffectiveDate>2007-08-13</EffectiveDate>
                        <ExpirationDate>2008-08-13</ExpirationDate>
                        <Price UOM="EA">3.1415</Price>
                        <PriceBreak UOM="EA">String</PriceBreak>
                </Pricing>
        </Prices>
        …
```

D02-Maintenance Type

Ref Num	D02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

D05-Price Sheet Number

Ref Num	D05	**XML Element**	PriceSheetNumber
Format	AN1/15		
Requirement	KM	**Code Table**	
Example	2011WD		
External Ref			
Comments	Supplier assigned Price Sheet Number. The Price Sheet number should reference a Price Sheet Number previously identified in the PRCS Segment “Price Sheet Number” (A52) field.		

D15-Currency Code

Ref Num	D15	**XML Element**	CurrencyCode
Format	ID3		
Requirement	KO	**Code Table**	Coded Values
Example	USD		
External Ref	www.iso.org		
Comments	This is an override value from the HEAD Segment “Currency Code” (A35) field.		

D25-Price Sheet Level Effective Date

Ref Num	D25	XML Element	EffectiveDate
Format	D		
Requirement	O	Code Table	
Example	2011-01-03		
External Ref			
Comments	First date item can be ordered at this price. This is an override value for the PRCS Segment “Price Sheet Level Effective Date” (A70) field.		

D30-Expiration Date

Ref Num	D30	**XML Element**	ExpirationDate
Format	D		
Requirement	O	**Code Table**	
Example	2011-12-31		
External Ref			
Comments	Last date item can be ordered at this price. This is an override of the PRCS Segment “Price Sheet Level Expiration Date” (A75) field.		

D35-Price Type

Ref Num	D35	**XML Element**	
Format	ID3	**XML Attribute**	PriceType
Requirement	KM	**Code Table**	Coded Values
Example	JBR		
External Ref			
Comments	Required Attribute of <Pricing> XML Element. Code value identifying the type of price conveyed in “Price” (D40). See Price Type Code Table for complete list of types.		

D36-Price Type Description

Ref Num	D36	**XML Element**	PriceTypeDescription
Format	AN1/80		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	General description of Use for the ZZ User Defined Pricing Fields		

D40-Price

Ref Num	D40	**XML Element**	Price
Format	N4-5/10		
Requirement	M	**Code Table**	
Example	12.5000		
External Ref			
Comments	This is a numeric field with fixed 4 digits to the right of the decimal. The optimal field format is ######.####. This value should be expressed without use of comma separators.		

D41-Price UOM

Ref Num	D41	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	M	**Code Table**	Coded Values
Example	PE		
External Ref	www.x12.org		
Comments	PE is the most widely used value for this field. "EA" is a commonly misused value for this field		

D42-Price Multiplier

Ref Num	D42	**XML Element**	PriceMultiplier
Format	N4-5/10		
Requirement	O	**Code Table**	
Example	0.6000		
External Ref			
Comments	Factor of List Price used to derive declared price type		

D45-Price Break Quantity

Ref Num	D45	**XML Element**	PriceBreak
Format	N1/8		
Requirement	KO	**Code Table**	
Example	100		
External Ref			
Comments	Incremental quantity of item order to receive price break		

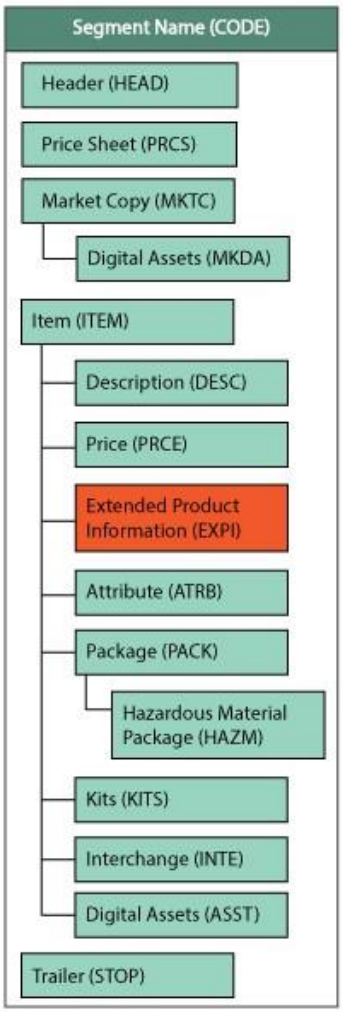
D46-Price Break Quantity UOM

Ref Num	D46	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	C	**Code Table**	Coded Values
Example	EA		
External Ref	www.x12.org		
Comments	Required field if “Price Break Quantity” value is specified.		

E01-Extended Product Information Segment (EXPI)

The Extended Product Information (EXPI) Segment is designed to relay information about an Item Part. The EXPI Segment contains information ranging from “Country of Origin” to “Warranty Terms”.

The format of the data expressed in the “EXPI Data” field (<ExtendedProductInformation>) is dependent on the “EXPI Code” selected. The Technical Specifications, Coded Values tables contains information about valid data value formats for the corresponding codes, Filter on E05 for the “EXPI Codes” or E10 for Values for “EXPI Codes”.



To express information covering multiple (or one) “EXPI Codes”, the <ExtendedProductInformation> element is looped once for each code. Any and all instances of <ExtendedProductInformation> are grouped under the <ExtendedInformation> Element. The following XML sample (abbreviated) shows two loops of EXPI Data to relay information on Primary Country of Origin and Life Cycle Code…

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.autocare.org">
<Header>…</Header>
<PriceSheets>…</PriceSheets>
        <Items>
                <Item>
                …
                <Descriptions>…</Descriptions>
                <Prices>…</Prices>
                <ExtendedInformation>
                        <ExtendedProductInformation MaintenanceType="A" LanguageCode=”EN”
                        EXPICode="CTO">US</ExtendedProductInformation>
                        <ExtendedProductInformation MaintenanceType="A" LanguageCode="EN"
                        EXPICode="LIF">3</ExtendedProductInformation>
                </ExtendedInformation>
                …
```

E02-Maintenance Type

Ref Num	E02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

E05-EXPI Code

Ref Num	E05	**XML Element**	
Format	ID3	**XML Attribute**	EXPICode
Requirement	KM	**Code Table**	Coded Values
Example	CTO		
External Ref			
Comments	Code value identifying type of Item information specified in “EXPI Data” field.		

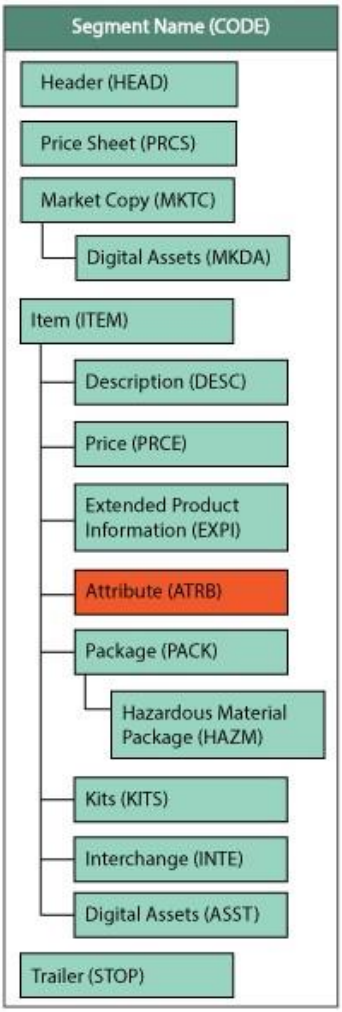
E10-EXPI Data

Ref Num	E10	**XML Element**	ExtendedProductInformation
Format	Variable per “EXPI Code” Attribute value.		
Requirement	KM	**Code Table**	Coded Values / See Comments
Example			
External Ref			
Comments	Values are variable, Values are either coded values or field defined. See Coded values for E05 for further details.		

E15-Language Code

Ref Num	E15	XML Element	
Format	ID2	XML Attribute	LanguageCode
Requirement	KO	Code Table	Coded Values
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of <ExtendedProductInformation> XML Element Override value for individual Segment Loop.		

F01-Product Attribute Segment (ATRB)



This segment allows the sender of a PIES file to express either industry-defined attributes from the Product Attribute Database (PAdb), or user-defined attributes about an Item Part Number. User-defined attributes have not been standardized within the PAdb, PIES or the aftermarket. The most common use of the segment is to express physical or operational attributes about the Item Part Number.

The “AttributeID” attribute of “Attribute Data” (<ProductAttribute>) is either a user-defined attribute label, or uses the Part Attribute ID (PAID) coded-value contained within the PAdb for the relevant Part Terminology. When the PAdb is not being used to convey attributes, the sender of the data defines the attribute label, and uses an Alphanumeric field of 2000 characters to send the attribute value.

The benefit of using the PAdb is that it defines the Label for the Attribute, and the metadata types used for storing the attribute (Numeric, Alphanumeric, Text, number of decimals, and the Unit of Measure), and is consistent for ALL senders and receivers of data ensuring consistency in the conveyance of product physical and performance characteristics.

The PAdb contains various ‘Styles’ for a Part Terminology. By definition, a ‘Style’ can represent a variation in the construction of a Part. Which may have different attributes to properly describe a Part Terminology (for example, a means to express the different characteristics of a Racing Slick versus a Passenger Tire), or different performance characteristics for a Part Type which is sold for different uses (such as the difference between uses for Automotive, Lawn and Garden, Heavy Duty, and Aerospace). The ‘Style’ represents a ‘qualifier’ to the PCdb Part Terminology, and is stored in the PAdb tables for differentiating the group of attributes required to describe a particular product.

The Product Attribute Segment has been further enhanced to enable senders of data to send multiple values for a particular attribute, and to give an order to their sequence for publishing. While the use of this is rare, a particular use case would be to convey a ‘range’ of values for a particular attribute. One example might be the conveyance of all the Resolutions available on a PC Monitor or a Video Camera, or, closer to home, the range of diameters that a Hole Saw or a Step Drill Bit could cut.

The abbreviated code sample shows user defined attributes, for further XML examples of the attribute segment refer to Appendix D.

```
...
<Items>
    <Item MaintenanceType="A">
    …
    <PartNumber>1234</PartNumber>
    …
    <ProductAttributes>
        <ProductAttribute MaintenanceType="A" AttributeID="Length"
        PADBAttribute="N"  AttributeUOM="IN"
        RecordNumber="1">12.5</ProductAttribute>
        <ProductAttribute MaintenanceType="A" AttributeID="Width" PADBAttribute="N"
        AttributeUOM="IN" RecordNumber="2">4.25</ProductAttribute>
        <ProductAttribute MaintenanceType="A" AttributeID="Height" PADBAttribute="N"
        AttributeUOM="IN" RecordNumber="3">3.5</ProductAttribute>
        </ProductAttributes>
        ...
```

F02-Maintenance Type

Ref Num	F02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

F05-Attribute ID (Type)

Ref Num	F05	**XML Element**	
Format	AN1/80	**XML Attribute**	AttributeID
Requirement	KM	**Code Table**	External Code Sources
Example	1141; Friction Material Thickness Inner Pad		
External Ref	http://www.autocare.org/What-We-Do/Technology/Product-Areas/padb/		
Comments	Required Attribute of “Attribute Data”. When Element F07 PAdb Attribute is set to ‘Y’ for YES, the information conveyed in this attribute should be the Product Attribute ID Number (PAID) from the PAdb. When Element F07 is set to ‘N’, the user will send a unique Attribute Label defined by themselves in Alphanumeric Format of up to 80 Characters.		

F07-PAdb Attribute

Ref Num	F07	**XML Element**	
Format	ID1	**XML Attribute**	PADBAttribute
Requirement	M	**Code Table**	Coded Values
Example	Y		
External Ref			
Comments	Flag indicating whether the attribute being sent is User-Defined or whether the attribute being sent is drawn from the PAdb		

F08-Attribute UOM

Ref Num	F08	XML Element	
Format	AN1/20	XML Attribute	AttributeUOM
Requirement	O	Code Table	External Code Sources
Example	MM		
External Ref	http://www.autocare.org/What-We-Do/Technology/Product-Areas/padb/		
Comments	Unit of Measure (UOM) associated with Product Attribute - When F07 is 'Y' this field uses the METAUOMCODES table in the PAdb.		

F10-Attribute Data

Ref Num	F10	**XML Element**	ProductAttribute
Format	AN1/2000		
Requirement	M	**Code Table**	External Code Sources
Example	Stainless Steel		
External Ref	http://www.autocare.org/What-We-Do/Technology/Product-Areas/padb/		
Comments	Required if “Attribute ID (Type)” specified. Supplier assigned value corresponding to “Attribute ID” or drawn from Valid Values field in the PAdb.		

F11-PAdb Style ID

Ref Num	F11	**XML Element**	
Format	N1/5	**XML Attribute**	StyleID
Requirement	KO	**Code Table**	External Code Sources
Example			
External Ref			
Comments	Optional Attribute of <Product Attribute> XML Element, when F07 is ‘Y’. This attribute identifies the StyleID of the PartTerminologyID to which the PAID (PAdb Attribute) is associated to. This relationship is found in the PAdb. This attribute is required if the PartTerminologyID and PAID (PAdb Attribute) being communicated is associated to a StyleID in the PAdb.		

F15-Record Number (Sequence)

Ref Num	F15	**XML Element**	
Format	N1/3	**XML Attribute**	RecordNumber
Requirement	KO	**Code Table**	
Example	1		
External Ref			
Comments	Optional Attribute of <Product Attribute> XML Element Logical sequence of attribute if multiple attributes identified. Allows Supplier to identify priority sequence of attribute information.		

F17-Multi Value Quantity

Ref Num	F17	**XML Element**	
Format	N1/3	**XML Attribute**	MultiValueQuantity
Requirement	O	**Code Table**	
Example	4		
External Ref			
Comments	Optional Attribute of <Product Attribute> XML Element Permits the supplier of data to convey how many multiple values for the attribute data are to be included as a total record.		

F18-Multi Value Sequence

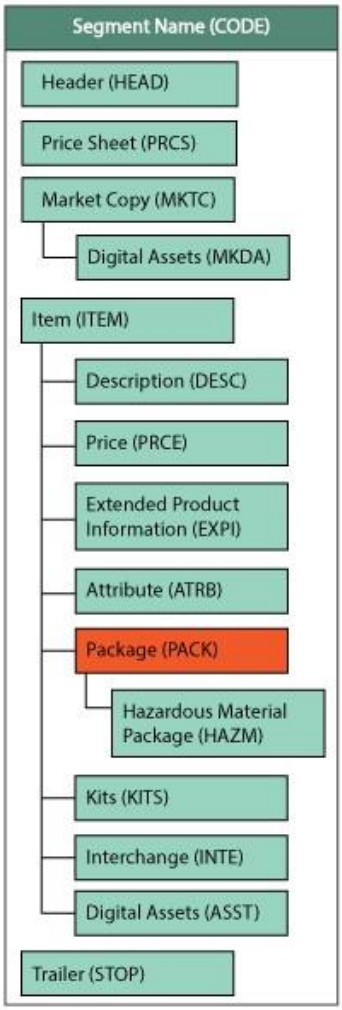
Ref Num	F18	**XML Element**	
Format	N1/3	**XML Attribute**	MultiValueSequence
Requirement	KO	**Code Table**	
Example	1		
External Ref			
Comments	Optional Attribute of <Product Attribute> XML Element Logical sequence of the multiple values being conveyed. This differs from F15 in that F15 identifies the order of the attributes to be published, and F18 identifies the order of the attribute values to be published, if an attribute has multiple values.		

F20-Language Code

Ref Num	F20	**XML Element**	
Format	ID2	**XML Attribute**	LanguageCode
Requirement	KO	**Code Table**	Coded Values
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of <Product Attribute> XML Element Override value for individual Segment Loop.		

H01-Packaging Segment (PACK)

The Packaging Segment is used to express various volumetric details for different packaging levels of an Item Part Number. Package information is grouped within the <Packages> child element of <Item>. Each instance of the <Package> element (looped beneath <Packages>) and its child elements corresponds to a distinct “Package UOM”. This UOM identifies the type of packaging that the data elements contains. To see all of “UOM” values, refer to Technical Specifications, Coded Values Tables and Filter Segment to PACK to see all the available values.



The consumer level package (UOM type “EA”) should always be defined if available. The consumer level pack can be defined as the Item Part in the packaging used for in-store display and stocking. This is the package level that an individual consumer may purchase.

The sample XML code below shows the Packaging Segment in relation to the other segments defined to this point…

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.autocare.org">
        <Header>…</Header>
        <PriceSheets>…</PriceSheets>
        <Items>
            <Item>
                …
                <Descriptions>…</Descriptions>
                <Prices>…</Prices>
            <ExtendedInformation>…</ExtendedInformation>
            <ProductAttributes>…</ProductAttributes>
            <Packages>
            <Package MaintenanceType="A">
            <PackageLevelGTIN>50055555000001</PackageLevelGTIN>
            <PackageBarCodeCharacters>00555550000P10</PackageBarCodeCharacters>
                <PackageUOM>EA</PackageUOM>
```

```
                <QuantityofEaches>1</QuantityofEaches>
                <Dimensions UOM="IN">
                        <MerchandisingHeight>3.9999</MerchandisingHeight>
                        <MerchandisingWidth>3.9999</MerchandisingWidth>
                        <MerchandisingLength>3.9999</MerchandisingLength>
                        <ShippingHeight>10</ShippingHeight>
                        <ShippingWidth>7</ShippingWidth>
                        <ShippingLength>5.25</ShippingLength>
                </Dimensions>
                <Weights UOM=" PG">
                        <Weight>8.9999</Weight>
                <DimensionalWeight>.33</DimensionalWeight>
                </Weights>
                <WeightVariance>2.5</WeightVariance>
        </Package>
</Packages>
…
```

H02-Maintenance Type

Ref Num	H02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

H05-Package Level GTIN

Ref Num	H05	XML Element	PackageLevelGTIN
Format	N14		
Requirement	O	Code Table	External Code Sources
Example	30123456789013		
External Ref	www.gs1.org		
Comments	GTIN-14 format (Pack Level | Vendor | Item Num | Check Digit). Global Trade Identification Number (GTIN) WARNING: Programs such as Microsoft Excel will drop leading zeros if the field is not formatted as text. To avoid confusion using this field, the range has been omitted and the field is now fixed at 14 characters, INCLUDING leading zeros where necessary. Please refer to the section, “About Global Trade Identifier Number (GTIN)”, for further clarification.		

H07-Electronic Product Code

Ref Num	H07	**XML Element**	ElectronicProductCode
Format	AN27		
Requirement	O	**Code Table**	External Code Sources
Example	4A.356E414.B351C7.AD331A465		
External Ref	www.epcglobalinc.org/standards		
Comments	Written form of RFID Code (Electronic Barcode).		

H10-Package Bar Code Characters

Ref Num	H10	**XML Element**	PackageBarCodeCharacters
Format	AN1/48		
Requirement	O	**Code Table**	
Example	123456789012		
External Ref			
Comments	Use if Package Bar Code characters are different from GTIN.		

H15-Package UOM

Ref Num	H15	XML Element	PackageUOM
Format	ID2	XML Attribute	
Requirement	KM	Code Table	Coded Values
Example	CA		
External Ref			
Comments	Identifies package level type. GTIN Pack Level must match “Package UOM” type.		

H20-Quantity of Eaches in Package

Ref Num	H20	**XML Element**	QuantityofEaches
Format	N1/8		
Requirement	KM	**Code Table**	
Example	10		
External Ref			
Comments	Total Item quantity in container identified in “Package UOM”		

H21-Inner Quantity

Ref Num	H21	**XML Element**	InnerQuantity
Format	R1/8		
Requirement	C	**Code Table**	
Example	1		
External Ref			
Comments			

H22-Inner Quantity UOM

Ref Num	H22	**XML Element**	
Format	ID2	**XML Attribute**	InnerQuantityUOM
Requirement	C	**Code Table**	Coded Values
Example	EA		
External Ref			
Comments			

H24-Orderable Package

Ref Num	H24	**XML Element**	Orderable
Format	ID1		
Requirement	O	**Code Table**	Coded Values
Example	Y		
External Ref			
Comments	Flag for Pack level Orderable (shippable) from the Supplier		

H25-Merchandising Height

Ref Num	H25	**XML Element**	MerchandisingHeight
Format	N4-5/8		
Requirement	C	**Code Table**	
Example	2.3333		
External Ref			
Comments	Merchandising Height is the Vertical dimension (of Pack, Layer, Pallet, etc.). Put the product on its natural base, with the graphics reading from left to right from the front. Note: This relates to how the product is merchandised, and it is possible it is packed for distribution in a different orientation. · Height = base to top This XML Element is a required child element of the <Dimensions> grouping element which is a child of <Package>. When submitting dimension information, Height, Width, Length are all required.		

H30-Merchandising Width

Ref Num	H30	**XML Element**	MerchandisingWidth
Format	N4-5/8		
Requirement	C	**Code Table**	
Example	5.5555		
External Ref			
Comments	Merchandising Width is the left-to-right Horizontal dimension (of Pack, Layer, Pallet, etc.). Put the product on its natural base, with the graphics reading from left to right from the front. Note: This relates to how the product is merchandised, and it is possible it is packed for distribution in a different orientation. · Width = left to right This XML Element is a required child element of the <Dimensions> grouping element which is a child of <Package>. When submitting Merchandizing dimension information, Height, Width, Length are all required.		

H35-Merchandising Length

Ref Num	H35	**XML Element**	MerchandisingLength
Format	N4-5/8		
Requirement	C	**Code Table**	
Example	19.6666		
External Ref			
Comments	Merchandising Length is the front-to-back Horizontal dimension (of Pack, Layer, Pallet, etc.). Put the product on its natural base, with the graphics reading from left to right from the front. Note: This relates to how the product is merchandised, and it is possible it is packed for distribution in a different orientation. ·Length (Depth) = front to back This XML Element is a required child element of the <Dimensions> grouping element which is a child of <Package>. When submitting Merchandizing dimension information, Height, Width, Length are all required.		

H36-Shipping Height

Ref Num	H36	**XML Element**	ShippingHeight
Format	N4-5/8		
Requirement	C	**Code Table**	
Example	10		
External Ref			
Comments	Shipping Height is the Vertical dimension (of Pack, Layer, Pallet, etc.). Put the product on its natural base. Note: This relates to how the product is packed for distribution. · Shipping Height = base to top This XML Element is a required child element of the <Dimensions> grouping element which is a child of <Package>. When submitting dimension information, Shipping Height, Shipping Width and Shipping Length are all required.		

H37-Shipping Width

Ref Num	H30	**XML Element**	ShippingWidth
Format	N4-5/8		
Requirement	C	**Code Table**	
Example	7		
External Ref			
Comments	Shipping Width is the shorter of the left-to-right Horizontal dimensions (of Pack, Layer, Pallet, etc.). Put the product on its natural base. Note: This relates to how the product is packed for distribution. · Shipping Width = shorter of the left to right dimensions This XML Element is a required child element of the <Dimensions> grouping element which is a child of <Package>. When submitting dimension information, Shipping Height, Shipping Width and Shipping Length are all required.		

H38-Shipping Length

Ref Num	H38	**XML Element**	ShippingLength
Format	N4-5/8		
Requirement	C	**Code Table**	
Example	5.25		
External Ref			
Comments	Shipping Length is the longer of the left-to-right Horizontal dimensions (of Pack, Layer, Pallet, etc.). Put the product on its natural base. Note: This relates to how the product is packed for distribution. · Shipping Length = longer of the left to right dimensions This XML Element is a required child element of the <Dimensions> grouping element which is a child of <Package>. When submitting dimension information, Shipping Height, Shipping Width and Shipping Length are all required.		

H39-Dimensions

Ref Num	H39	XML Element	Dimensions
Format			
Requirement	O	Code Table	
Example			
External Ref			
Comments	This XML Element <Dimensions> groups the dimensional elements Height, Width, Length. The Dimensions element is a child element of <Package> element.		

H40-UOM for Dimensions

Ref Num	H40	XML Element	
Format	ID2	XML Attribute	UOM
Requirement	C	Code Table	Coded Values
Example	IN		
External Ref	www.x12.org		
Comments			

H44-Weights

Ref Num	H44	**XML Element**	Weights
Format			
Requirement	C	**Code Table**	
Example			
External Ref			
Comments	This XML Element <Weights> groups the weight elements Weight and Weight Variance. The Weights element is a child element of <Package> element.		

H45-Weight

Ref Num	H45	**XML Element**	Weight
Format	N4-5/9		
Requirement	O	**Code Table**	
Example	10.3350		
External Ref			
Comments	Gross weight per pack. HDX PCFS uses a 5.3 configuration This XML Element is a required child element of the <Weights> grouping element which is a child of the <Package> element.		

H46-UOM for Weight

Ref Num	H46	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	C	**Code Table**	Coded Values
Example	PG		
External Ref	www.x12.org		
Comments	Required Attribute of <Weights>.		

H47-Weight Variance (%)

Ref Num	H47	**XML Element**	WeightVariance
Format	R1/8		
Requirement	O	**Code Table**	
Example	3.2550		
External Ref			
Comments	Potential variance in package weight expressed as a percentage.		

H50-Dimensional Weight

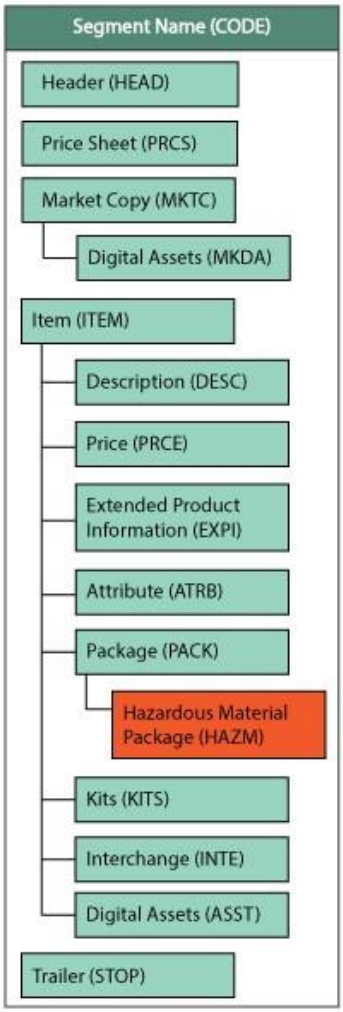
Ref Num	H50	**XML Element**	DimensionalWeight
Format	R1/9		
Requirement	O	**Code Table**	External Code Sources
Example	35.2		
External Ref	www.ups.com/content/cb/en/resources/ship/packaging/dim_weight.html		
Comments	This XML Element is an optional child element of the <Weights> grouping element which is a child of <Package>. Cubed weight for calculating shipping and freight billable rates. See External Ref for dimensional weight shipping formula and for additional information. Dimensional weight is a standard formula used throughout the air-freight industry that considers density when determining charges. Dimensional weight is determined by using the International Air Transportation Association volumetric standard. The calculations are then used to consider the amount of space your package will take up on an aircraft in relation to the actual weight of your package.		

H55-Stacking Factor

Ref Num	H55	XML Element	StackingFactor
Format	N1/3		
Requirement	O	Code Table	
Example	5		
External Ref			
Comments	Indicated the number of pack levels the product may be safely stacked		

J01-Hazardous Material Package Segment (HAZM)

Hazmat information is relayed due to different Hazmat rules and regulations which may depend on the type of package that a product is using. For instance, a product may have one set of regulations (or none) at the Consumer Pack level, but a completely different set of government regulations may apply if the package is a Case or Pallet of product. Regulations may change as well depending on transportation method used when shipping a product.



The Hazardous Material Package Segment does not repeat as a loop of <Item>. Rather, this segment is a looping structure within the <Packaging> segment.

The sample XML code below shows how a single instance of the Hazardous Material Package Segment, defined by the <HazardousMaterial> parent element, falls within the Packaging Segment (<Package>)…

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.autocare.org">
        <Header>…</Header>
            <PriceSheets>…</PriceSheets>
            <Items>
                <Item>
                …
                <Descriptions>…</Descriptions>
                <Prices>…</Prices>
                <ExtendedInformation>…</ExtendedInformation>
                <ProductAttributes>…</ProductAttributes>
                <Packages>

                    <Package>
                    …
                    <HazardousMaterial MaintenanceType="A" LanguageCode="EN">
```

```
<ShippingScope>DOM</ShippingScope>
<Bulk>N</Bulk>
<RegulatingCountry>US</RegulatingCountry>
<TransportMethod>A</TransportMethod>
<Regulated>Y</Regulated>
<Description>This is a description</Description>
<HazardousMaterialCodeQualifier>D</HazardousMaterialCode
Qualifier>
<TextMessage>This is a text message</TextMessage>
<OuterPackageLabel>ORM-AIR</OuterPackageLabel>
</HazardousMaterial>
</Package>
</Packages>
…
```

J02-Maintenance Type

Ref Num	J02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

J04-Shipping Scope

Ref Num	J04	**XML Element**	ShippingScope
Format	ID3		
Requirement	KM	**Code Table**	Coded Values
Example	DOM		
External Ref			
Comments	This indicates whether you are shipping Domestically or internationally		

J05-Bulk

Ref Num	J05	**XML Element**	Bulk
Format	ID1		
Requirement	KM	**Code Table**	Coded Values
Example	N		
External Ref			
Comments	Flag indicates whether the goods shipped are being shipped in bulk or non-bulk.		

J10-Regulating Country of Origin

Ref Num	J10	**XML Element**	RegulatingCountry
Format	ID2		
Requirement	M	**Code Table**	Coded Values
Example	US		
External Ref	www.iso.org		
Comments	The Country from which the goods are initially shipped. This is different from the documentation you may require if shipping across several countries (IE – Country of Origin – US; Trans-ship to France via UK)		

J15-Transport Method

Ref Num	J15	**XML Element**	TransportMethod
Format	ID1		
Requirement	KM	**Code Table**	Coded Values
Example	A		
External Ref			
Comments	Indicates the Principal shipping MODE –additional forms may be required if intermodal or trans-shipped, however the Principal shipping Mode is the long-haul method of shipping used.		

J20-Regulated

Ref Num	J20	**XML Element**	Regulated
Format	ID1		
Requirement	M	**Code Table**	Coded Values
Example	Y		
External Ref			
Comments	If the Goods are Regulated, use a “Y” and fill in J25, J35, J40, and J65). If the Goods are not Regulated, use an “N” and ignore the J25, J35, J40, and J65 fields.		

J25-Description

Ref Num	J25	**XML Element**	Description
Format	AN1/200		
Requirement	C	**Code Table**	
Example			
External Ref			
Comments			

J31-Hazardous Material Code Qualifier

Ref Num	J31	**XML Element**	HazardousMaterialCodeQualifier
Format	ID1		
Requirement	O	**Code Table**	Coded Values
Example	D		
External Ref	http://www.phmsa.dot.gov/hazmat		
Comments	Use ANSI X.12 Element 208 Hazardous Material Code Qualifier List to identify appropriate alternate code qualifiers		

J33-Hazardous Material Description

Ref Num	J33	**XML Element**	HazardousMaterialDescription
Format	AN1/80		
Requirement	O	**Code Table**	
Example			
External Ref	http://phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687cf7b00b0f22e4c6962d9c8789/?vgnextoid=d84ddf479bd7d110VgnVCM1000009ed07898RCRD&vgnextchannel=4f347fd9b896b110VgnVCM1000009ed07898RCRD&vgnextfmt=print		
Comments			

J34-Hazardous Material Label Code

Ref Num	J34	**XML Element**	HazardousMaterialLabelCode
Format	ID1/4		
Requirement	O	**Code Table**	Coded Values
Example	1.6		
External Ref	http://www.ecfr.gov/cgibin/retrieveECFR?gp=&SID=aa9e902bd8b22eb0e98451d5959ab2d5&n=49y2.1.1.3.9&r=PART&ty=HTML#49:2.1.1.3.9.2		
Comments			

J35-Shipping Name

Ref Num	J35	**XML Element**	ShippingName
Format	AN1/260		
Requirement	C	**Code Table**	
Example			
External Ref			
Comments	Name of Hazardous Commodity. Can include shipping instructions.		

J40-UN/NA ID Code

Ref Num	J40	**XML Element**	UNNAIDCode
Format	ID6		
Requirement	C	**Code Table**	External Code Sources
Example	ID8000		
External Ref	http://www.phmsa.dot.gov/hazmat		
Comments			

J45-Hazardous Placard Notation

Ref Num	J45	**XML Element**	HazardousPlacardNotation
Format	AN1/40		
Requirement	O	**Code Table**	
Example	3		
External Ref			
Comments	Notation corresponding to the Hazardous Class. (Canada: “Dangerous Goods Placard Notation”, indicating on shipping docs which placards are to be on the truck, no longer required in “clear language” regulations.) Insert the Text and Code that is described on the appropriate Hazardous Placard for your shipment.		

J46-WHMIS Code

Ref Num	J46	**XML Element**	WHMISCode
Format	ID1/10		
Requirement	O	**Code Table**	Coded Values
Example			
External Ref			
Comments	Workplace Hazardous Materials Info Rating System (Canada) Insert the appropriate Workplace Hazardous Material code for your commodity.		

J47-WHMIS Free Text

Ref Num	J47	**XML Element**	WHMISFreeText
Format	AN1/80		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Insert the Workplace Hazardous Material Description for your commodity		

J50-Packing Group Code

Ref Num	J50	**XML Element**	PackingGroupCode
Format	ID1/3		
Requirement	O	**Code Table**	Coded Values
Example			
External Ref	www.x12.org		
Comments	Use the appropriate Packing Group Code for the risk assessed to the packaging of the hazardous material – Packing groups are used for the purpose of determining the degree of protective packaging required for Dangerous Goods during transportation.		

J55-Regulations Exemption Code

Ref Num	J55	**XML Element**	RegulationsExemptionCode
Format	ID1/4		
Requirement	O	**Code Table**	External Code Sources
Example			
External Ref	www.x12.org		
Comments	Canada: “Regulations Exemption Section”, format 9.99 in 4 chars		

J60-Text Message

Ref Num	J60	**XML Element**	TextMessage
Format	AN1/2000		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments			

J65-Outer Package Label

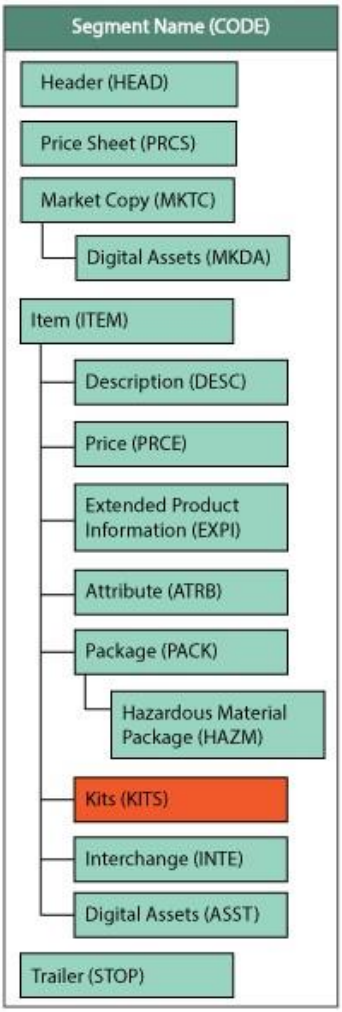
Ref Num	J65	**XML Element**	OuterPackageLabel
Format	AN1/20		
Requirement	C	**Code Table**	
Example	ORM-AIR		
External Ref			
Comments	This is required if this is a REGULATED good – the Outer Package Label should indicate the relevant Hazardous Material Class indicated in J30		

J70-Language Code

Ref Num	J70	**XML Element**	
Format	ID2	**XML Attribute**	LanguageCode
Requirement	KO	**Code Table**	Coded Values
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of <HazardousMaterial> XML Element Override value for individual Segment Loop.		

K01-Kits Segment (KITS)

The Kits Segment is defined by the <Kits> parent element which contains the child element <KitComponent>. This element contains child elements that define the component parts and supporting data.



If the item is a kit or set, the Kit Segment of PIES conveys the part numbers contained in a kit or set Bill of Materials (BOM). Kits are defined as an assemblage of parts or equipment with the specific purpose of performing a full maintenance procedure or function) or a Set (a group or collection of things that belong together or resemble one another or are usually found together).

Kit Examples:

- assembly of parts needed to repair a carburetor
- assembly of parts needed to rebuild an engine

Set Examples:

- Range of tools, such as a Drill Bit Set, or a Tool Assortment
- Battery Booster Cable Set
- Bungee Cord Set
- Set of Model Cars

Items contained within a Kit or a Set may not have a Marketable Part Number, however use some other reference number. The Kit Segment enables delivery of number references other than a Marketable Part Number; and as well, an alternate ‘Brand’ for the component; and finally, a text description of the component, for clarity.

The Kits Segment allows the data sender to express what components are in this particular kit. To express multiple components within a Kit, the elements within the Kit Segment repeat as many times as necessary to identify all components.

NOTE: The element sequencing and numbering in this segment was changed in 6.5, and will NOT be backward compatible with 6.4 or earlier versions of PIES.

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.autocare.org">
<Header>…</Header>…
        <Items>
            <Item>
                … <Kits>
                <KitComponent MaintenanceType="A">
                    <ComponentPartNumber
                    IDQualifier="VC">HOS001</ComponentPartNumber>
                    <ComponentBrand>BFJK</ComponentBrand>
                    <ComponentBrandLabel>Acme Parts</ComponentBrandLabel>
                    <ComponentSubBrand>BFJS</ComponentSubBrand>
                    <ComponentSubBrandLabel>Acme
                    Extra</ComponentSubBrandLabel>
                    <Description DescriptionCode="DES"
                    LanguageCode="EN">This is an example description for a
                    Component within a Kit.</Description>
                    <QuantityInKit UOM="EA">1</QuantityInKit>
                    <SequenceCode>1</SequenceCode>
                     <SoldSeparately>Y</SoldSeparately>
                </KitComponent>
                <KitComponent MaintenanceType="A">
                    <ComponentPartNumber
                    IDQualifier="VC">HOS002</ComponentPartNumber>
                    <ComponentBrand>BFJK</ComponentBrand>
                    <ComponentBrandLabel>Acme Parts</ComponentBrandLabel>
                    <ComponentSubBrand>BFJS</ComponentSubBrand>
                    <ComponentSubBrandLabel>Acme
                    Extra</ComponentSubBrandLabel>
                    <Description DescriptionCode="DES"
                    LanguageCode="EN">This is an example description for a
                    second Component within a Kit.</Description>
                    <QuantityInKit UOM="EA">1</QuantityInKit>
                    <SequenceCode>2</SequenceCode>
```

```
                    <SoldSeparately>Y</SoldSeparately>
                </KitComponent>
                <KitComponent MaintenanceType="A">
                    <Description DescriptionCode="DES"
                    LanguageCode="EN">This is an example description for a third
                    Component within a Kit that is not sold separately and does not
                    have a part number or branding</Description>
                    <QuantityInKit UOM="EA">1</QuantityInKit>
                    <SequenceCode>3</SequenceCode>
                    <SoldSeparately>N</SoldSeparately>
                </KitComponent>
            </Kits>…
```

K02-Maintenance Type

Ref Num	K02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

K03-Component Part Number

Ref Num	K03	**XML Element**	ComponentPartNumber
Format	AN1/48		
Requirement	KO	**Code Table**	
Example	HOS001-1		
External Ref			
Comments	Component Part Number or Supply Item within the Kit.		

K04-Component Brand AAIAID

Ref Num	K04	**XML Element**	ComponentBrand
Format	ID4	**XML Attribute**	
Requirement	KO	**Code Table**	External Code Values
Example	BFJK		
External Ref	Brand Table		
Comments	Brand of Component within the Kit		

K05-Component Brand Label

Ref Num	K05	**XML Element**	ComponentBrandLabel
Format	AN1/60	**XML Attribute**	
Requirement	O	**Code Table**	External Code Values
Example	Acme		
External Ref	Brand Table		
Comments	Brand Label of Component within the Kit		

K06-Component SubBrand AAIAID

Ref Num	K06	**XML Element**	ComponentSubBrand
Format	ID4	**XML Attribute**	
Requirement	O	**Code Table**	External Code Values
Example	BFJS		
External Ref	Brand Table		
Comments	SubBrand of Component within the Kit		

K07-Component SubBrand Label

Ref Num	K07	**XML Element**	ComponentSubBrandLabel
Format	AN1/60	**XML Attribute**	
Requirement	O	**Code Table**	External Code Values
Example	Acme Extra		

External Ref	Brand Table
Comments	SubBrand Label of Component within the Kit

K08-Component ID Qualifier

Ref Num	K08	**XML Element**	
Format	ID2	**XML Attribute**	IDQualifier
Requirement	M	**Code Table**	Coded Values
Example	VC		
External Ref	www.x12.org		
Comments			

K09-Description Code

Ref Num	K09	**XML Element**	
Format	ID3	**XML Attribute**	DescriptionCode
Requirement	KM	**Code Table**	Coded Values
Example	DES		
External Ref			
Comments	Identifies the type of description being used for the component		

K10-Description

Ref Num	K10	**XML Element**	Description
Format	Defined by Description Code see table	**XML Attribute**	
Requirement	M	**Code Table**	
Example	6pt-1/4" Drill Bit		
External Ref			
Comments			

K11-Component Part Terminology ID

Ref Num	K11	**XML Element**	ComponentPartTerminologyID
Format	ID4/8		
Requirement	O	**Code Table**	External Code Sources
Example	55555		
External Ref	http://www.autocare.org/Technology/pcdb		
Comments	Component Part Terminology ID from the Parts Classification Database (PCdb)		

K12-Language Code

Ref Num	K12	**XML Element**	
Format	ID2	**XML Attribute**	LanguageCode
Requirement	KO	**Code Table**	Coded Values
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of <Description> XML Element Override value for individual Segment Loop.		

K15-Quantity in Kit

Ref Num	K15	**XML Element**	QuantityInKit
Format	N1/8		
Requirement	M	**Code Table**	
Example	2		
External Ref			
Comments	Quantity of units (eaches) in kit for this part number		

K20-Quantity UOM

Ref Num	K20	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	M	**Code Table**	Coded Values
Example	EA		
External Ref	www.x12.org		

Comments	

K30-Sequence Code

Ref Num	K30	**XML Element**	SequenceCode
Format	N1/3		
Requirement	O	**Code Table**	
Example	1		
External Ref			
Comments	Logical position (sequence) of component part in Kit display or pack.		

K31-Sold Separately

Ref Num	K31	**XML Element**	SoldSeparately
Format	ID1		
Requirement	M	**Code Table**	Coded Values
Example	Y		
External Ref			
Comments	If the Sold Separately element is set to Y this means the component has a separate PIES item record for this part. If the Sold Separately is set to N this means the component is only sold within a kit.		

K35-Kit Component

Ref Num	K35	**XML Element**	KitComponent
Format			
Requirement	R	**Code Table**	
Example			
External Ref			
Comments	Container element for each component within the Kits segment		

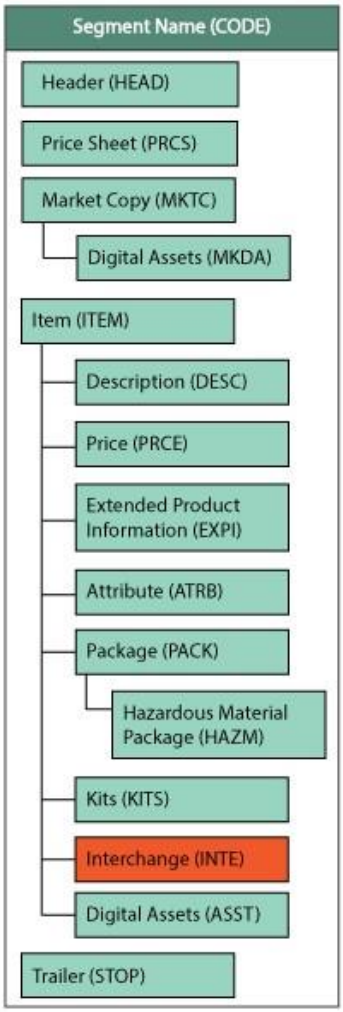
N01-Interchange Segment (INTE)

The Interchange Segment in PIES is used to relay interchange data for the Item Part Number in relation to alternative Brand Part Numbers. The segment is defined by the <PartInterchangeInfo> grouping element. Within <PartInterchangeInfo> is the <PartInterchange> element which contains the child elements to define an interchange. <PartNumber> element instance is repeated as many times as necessary to identify all components.

All interchange part numbers are defined by both the interchange part number and a “Brand AAIAID”. The “Brand AAIAID” value for the interchange supplier can be found in the industry supported Brand table. If a brand code value is not present in the Industry Brand Code table, the use of “ZZZN” is permitted until such time as a “Brand AAIAID” is created for the Brand in question. In such an instance, the “Brand Label” value should be populated for clarity. Using “ZZZN” and a “Brand label” should be used as a last resort not as standard practice as the Brand table is updated frequently.

Like previous segments, to express multiple interchanges for an Item Part Number, the <PartInterchange> element is repeated as many times necessary to identify all interchanges.

The abbreviated code sample shows user defined attributes. For further XML examples of the interchange segment, refer to Appendix E.



NOTE: The element sequencing and numbering in this segment was changed in 6.6, and will NOT be backward compatible with 6.5 or earlier versions of PIES.

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.autocare.org">
        <Header>…</Header>
        <PriceSheets>…</PriceSheets>
        <Items>
        <Item>
        …
        <Descriptions>…</Descriptions>
        <Prices>…</Prices>
        <ExtendedInformation>…</ExtendedInformation>
        <ProductAttributes>…</ProductAttributes>
        <Packages>
        …
                <HazardousMaterial>…</HazardousMaterial>
        <Packages>
        <Kits>…</Kits>
         <PartInterchangeInfo>
                <PartInterchange MaintenanceType="A" LanguageCode="EN" BrandAAIAID="CCCC"
                BrandLabel ="Acme Parts" SubBrandAAIAID="CCCD " SubBrandLabel = "Acme Extra"
                QualityGradeLevel="P" ItemEquivalentUOM = "EA" InternalNotes ="Internal Note">
                        <PartNumber InterchangeQuantity ="1" UOM="EA" InterchangeNotes ="Part
                        Note" >CC2000</PartNumber>
                </PartInterchange>
                <PartInterchange MaintenanceType="A" LanguageCode="EN" VMRSBrandID = “FELPR”
                QualityGradeLevel="P" ItemEquivalentUOM = "EA" InternalNotes ="Internal Note">
                        <PartNumber InterchangeQuantity ="1" UOM="EA" InterchangeNotes ="Part
                        Note" >FEL100</PartNumber>
                </PartInterchange>

         </PartInterchangeInfo>
…
```

N02-Maintenance Type

Ref Num	N02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

N10-Brand AAIAID

Ref Num	N10	**XML Element**	
Format	ID4	**XML Attribute**	BrandAAIAID
Requirement	KO	**Code Table**	External Code Sources
Example	BDCD		
External Ref	Brand Table		
Comments	Attribute of <PartInterchange> XML Element, Brand of the Interchange		

N11-Brand Label

Ref Num	N11	**XML Element**	
Format	AN1/60	**XML Attribute**	BrandLabel
Requirement	O	**Code Table**	External Code Sources
Example	Acme Parts		
External Ref	Brand Table		
Comments	Attribute of the <PartInterchange> XML Element, Verbose Brand Name Description as found in the Brand table.		

N12-SubBrand AAIAID

Ref Num	N12	**XML Element**	
Format	ID4	**XML Attribute**	SubBrandAAIAID
Requirement	KO	**Code Table**	External Code Sources
Example	BDCD		
External Ref	Brand Table		
Comments	Attribute of <PartInterchange> XML Element, SubBrand of the Interchange		

N13-SubBrand Label

Ref Num	N13	**XML Element**	
Format	AN1/60	**XML Attribute**	SubBrandLabel
Requirement	O	**Code Table**	External Code Sources
Example	Acme Extra		
External Ref	Brand Table		
Comments	Attribute of the <PartInterchange> XML Element, Verbose SubBrand Name Description as found in the Brand table.		

N14-VMRS Brand ID

Ref Num	N14	**XML Element**	
Format	ID5	**XML Attribute**	VMRSBrandID
Requirement	KO	**Code Table**	External Code Sources
Example	FELPR		
External Ref			
Comments	Required by the major fleets. The Maintenance Council (TMC) of the American Trucking Assn. (ATA) -assigned VMRS Brand ID. It is a unique Brand identifier for all participating Heavy Duty parts manufacturer brands.		

N16-Item Equivalent UOM

Ref Num	N16	**XML Element**	
Format	ID2	**XML Attribute**	ItemEquivalentUOM
Requirement	O	**Code Table**	Coded Values
Example	EA		
External Ref			
Comments	Optional Attribute of <PartInterchange> XML Element, An Item can have multiple package UOM this allows the interchange to state which is Equivalent		

N20-Interchange Part Number

Ref Num	N20	**XML Element**	PartNumber
Format	AN1/48		
Requirement	KM	**Code Table**	
Example	B-123		
External Ref			
Comments	Manufacturer's Part Number for Interchange Item		

N21-Reference Item

Ref Num	N21	**XML Element**	
Format	AN1/48	**XML Attribute**	ReferenceItem
Requirement	KO	**Code Table**	
Example	B-123		
External Ref			
Comments	This is used with a many supplier parts to one interchange part number to reference all of the components to make up the interchange. This can also be used for a many supplier parts to many interchange part numbers to reference all of the components		

N25-Quality Grade Level

Ref Num	N25	**XML Element**	
Format	ID1	**XML Attribute**	QualityGradeLevel
Requirement	O	**Code Table**	Coded Values
Example	P		
External Ref			
Comments	Optional Attribute of <PartInterchange>, Quality Grade of the interchange in comparison to the item		

N26-Interchange Quantity

Ref Num	N26	**XML Element**	
Format	R1/8	**XML Attribute**	InterchangeQuantity
Requirement	O	**Code Table**	
Example	12		
External Ref			
Comments	Optional Attribute of <PartNumber>, Interchange Quantity		

N27-Interchange Quantity UOM

Ref Num	N27	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	O	**Code Table**	Coded Values
Example	EA		
External Ref	www.x12.org		
Comments	Optional Attribute of <PartNumber> XML Element		

N30-Interchange Notes

Ref Num	N30	**XML Element**	
Format	AN1/240	**XML Attribute**	InterchangeNotes
Requirement	O	**Code Table**	
Example	Sold as Kit		
External Ref			
Comments	Optional Attribute of <PartNumber> XML Element, Comments which assist the receiver in the interchange decision, such as differences in quality or components		

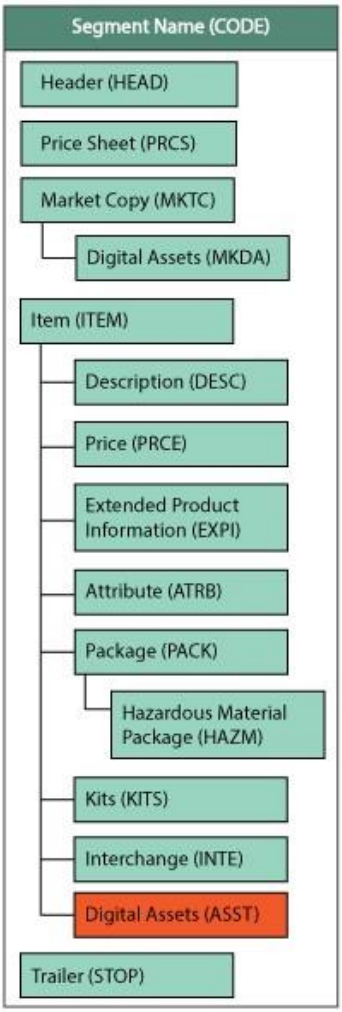
N35-Internal Notes

Ref Num	N35	**XML Element**	
Format	AN1/240	**XML Attribute**	InternalNotes
Requirement	O	**Code Table**	
Example	Private Brand		
External Ref			
Comments	Optional Attribute of <PartInterchange> XML Element, Comments about the interchanged part. Note: While this field has been made available for use, it is not customary practice to send 'Internal Notes' to trading partners. The use of this field has been designed to permit the sending of notes, but the typical use would be for the internal conveyance of a note to an internal business division or supply side trading partner.		

N40-Language Code

Ref Num	N40	**XML Element**	
Format	ID2	**XML Attribute**	LanguageCode
Requirement	KO	**Code Table**	Coded Values
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of <PartInterchange> XML Element, Override value for individual Segment Loop.		

P01-Digital Asset File Information Segment (ASST)



The Digital Asset File Information Segment is used to relay information about many different media types which support the Item Part Number. The "Asset Type" field is used to identify what type of digital asset is being defined. Valid values for "Asset Type" are shown in the Technical Specifications – Coded Values Tables, Filter Reference Number P10.

Along with file and media specific characteristics, the Digital Asset File Information Segment also contains fields used to relay physical locality of the digital asset, whether the asset is located on the Internet (using an URI) or within a directory structure on a CD.

The Auto Care Association has published an Imaging Best Practices document, which can be found on the autocare.org - Best Practices - Digital Assets website. This document contains imaging recommendations covering both print usage as well as Internet based imaging and new media. This is a living document, various media types are regularly reviewed and defined for use within the aftermarket. **One of the major changes to the document is the dropping of the alternative 'legacy' File Delivery Format, which was an interim transitional flat file format for delivering Digital Asset information. Industry concentration and effort will now focus on the PIES delivery format for digital assets**.

This segment is defined by the <DigitalAssets> grouping element. Below this element is the <DigitalFileInformation> element which contains corresponding child elements (fields) used to express the defined values for a digital asset. Like other segments, to supply information for multiple digital assets for an Item Part Number, the <DigitalFileInformation> element and its child elements are repeated for each digital asset.

As in the Market Copy Digital Assets sub-segment, a new element, Country, has been added to enable the sender of data to direct a specific Digital Asset to be used in a different country.

The following XML sample code shows the relationship of this segment to the preceding elements…

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.autocare.org">
    <Header>…</Header>
    <PriceSheets>…</PriceSheets>
    <Items>
        <Item>
            …
            <DigitalAssets>
                <DigitalFileInformation MaintenanceType="A" AssetID="xyz_BRO"
                LanguageCode="EN">
                    <FileName>xyz.jpg</FileName>
                    <AssetType>BRO</AssetType>
                    <FileType>JPG</FileType>
                    <Representation>A</Representation>
                    <FileSize>123456</FileSize>
                    <Resolution>72</Resolution>
                    <ColorMode>RGB</ColorMode>
                    <Background>WHI</Background>
                    <OrientationView>ANG</OrientationView>
                    <AssetDimensions UOM="PX">
                        <AssetHeight>250</AssetHeight>
                        <AssetWidth>250</AssetWidth>
                    </AssetDimensions>
                    <FilePath>\Mfg\xyz.jpg</FilePath>
                    <URI>http://www.mfg.com/Images/xyz.jpg</URI>
                    <AssetDates>
                        <AssetDate assetDateType="MOD">2016-07-
                        15</AssetDate>
                    </AssetDates>
                    <Country>US</Country>
```

```
</DigitalFileInformation>


<DigitalFileInformation MaintenanceType="A" AssetID="360_ACME"
LanguageCode="EN">
        <FileName>360_ACME_PART.zip</FileName>
        <AssetType>360</AssetType>
        <FileType>ZIP</FileType>
        <Representation>A</Representation>
        <FilePath>360\360_acme_part.zip</FilePath>
        <URI>360\360_acme_part.zip</URI>
        <Frame>1</Frame>
        <TotalFrames>2</TotalFrames>
        <Plane>1</Plane>
        <Hemisphere>N</Hemisphere>
        <Plunge>0</Plunge>
        <TotalPlanes>2</TotalPlanes>
        <AssetDescriptions>
            <Description MaintenanceType="C"
            DescriptionCode="DES" LanguageCode="EN">Brake
            Pad</Description>
            <Description MaintenanceType="C”
            DescriptionCode="KEY"
            LanguageCode="EN">acme,360</Description>
        </AssetDescriptions>
        <AssetDates>
            <AssetDate assetDateType="MOD">2016-01-
            15</AssetDate>
        </AssetDates>
        <Country>US</Country>
    </DigitalFileInformation>
</DigitalAssets>
…
```

P02-Maintenance Type

Ref Num	P02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

P05-File Name

Ref Num	P05	**XML Element**	FileName
Format	AN1/80		
Requirement	KM	**Code Table**	
Example	1234.jpg		
External Ref			
Comments	File name (including file extension) of Digital Asset.		

P06-Asset ID

Ref Num	P06	**XML Element**	
Format	ID1/34	**XML Attribute**	AssetID
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Optional Attribute of <DigitalFileInformation>. Unique ID reference for Digital Asset. This is for future use in ACES Application Specific Digital Assets.		

P10-Asset Type

Ref Num	P10	**XML Element**	AssetType
Format	ID3		
Requirement	KM	**Code Table**	Coded Values
Example	P05		
External Ref			
Comments	Code identifying the Type and purpose of the Digital Asset		

P15-File Type

Ref Num	P15	**XML Element**	FileType
Format	ID2/4		
Requirement	R	**Code Table**	Coded Values
Example	JPG		
External Ref			
Comments			

P20-Representation

Ref Num	P20	**XML Element**	Representation
Format	ID1		
Requirement	R	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

P25-File Size

Ref Num	P25	**XML Element**	FileSize
Format	N1/10		
Requirement	O	**Code Table**	
Example	600		
External Ref			
Comments	File size of Digital Asset as measured in Kilobytes (kb).		

P30-Resolution

Ref Num	P30	**XML Element**	Resolution
Format	ID2/4		
Requirement	KO	**Code Table**	Coded Values
Example	72		
External Ref			
Comments			

P35-Color Mode

Ref Num	P35	**XML Element**	ColorMode
Format	ID3		
Requirement	O	**Code Table**	Coded Values
Example	RGB		
External Ref			
Comments			

P40-Background

Ref Num	P40	**XML Element**	Background
Format	ID3		
Requirement	R	**Code Table**	Coded Values
Example	WHI		
External Ref			
Comments	Indicates background color/type for Digital Assets.		

P45-Orientation View

Ref Num	P45	**XML Element**	OrientationView
Format	ID3		
Requirement	KO	**Code Table**	Coded Values
Example	TOP		
External Ref			
Comments	Product Orientation as shown in Image Digital Assets.		

P50-Asset Height

Ref Num	P50	**XML Element**	AssetHeight
Format	R1/6		
Requirement	R	**Code Table**	
Example	500		
External Ref			
Comments	Vertical measurement of Digital Asset file.		

P55-Asset Width

Ref Num	P55	**XML Element**	AssetWidth
Format	R1/6		
Requirement	R	**Code Table**	
Example	400		
External Ref			
Comments	Horizontal measurement of Digital Asset file.		

P60-Asset Dimension UOM

Ref Num	P60	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	C	**Code Table**	Coded Values
Example	PX		
External Ref			
Comments	Required Attribute of <AssetDimensions>		

P64-Asset Descriptions

Ref Num	P64	**XML Element**	AssetDescriptions
Format			
Requirement	O	**Code Table**	
Example			
External Ref			
Comments			

P71- Asset Maintenance Type

Ref Num	P71	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	Coded Values
Example	A		
External Ref			
Comments			

P72- Asset Description Code

Ref Num	P72	**XML Element**	
Format	ID3	**XML Attribute**	DescriptionCode
Requirement	KM	**Code Table**	Coded Values
Example	DES		
External Ref			
Comments	Required Attribute of "Description"		

P73-Asset Description

Ref Num	P73	**XML Element**	Description
Format	Variable Per "Description Code" Attribute.		
Requirement	M	**Code Table**	
Example	Intake Manifold		
External Ref			
Comments	Verbose description per “Description Type” indicated.		

P74-Asset Description Language Code

Ref Num	P74	**XML Element**	
Format	ID2	**XML Attribute**	LanguageCode
Requirement	KO	**Code Table**	Coded Values
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of "<Description> XML Element. Override value for individual Segment Loop.		

P75-File Path

Ref Num	P75	**XML Element**	FilePath
Format	AN1/80		
Requirement	O	**Code Table**	
Example	\MFG\xyz.jpg		
External Ref			
Comments	Location of file in Digital Asset collection provided by Supplier. Path should be identified from the Root level (\ ). Generally, the collection refers to a CD/DVD/Archive File which contains multiple Digital Assets.		

P80-URI

Ref Num	P80	**XML Element**	URI
Format	AN1/2000		
Requirement	O	**Code Table**	
Example	www.w3.org		
External Ref			
Comments	Uniform Resource Indicator or URL location of the Digital Asset. This can refer to a specific Digital asset item, or a page of content		

P81-Duration

Ref Num	P81	**XML Element**	Duration
Format	N1/3		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	The duration of the playing time should be entered into this field in the format hours, minutes, and seconds.		

P82-Duration UOM

Ref Num	P82	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	C	**Code Table**	Coded Values
Example			
External Ref			
Comments			

P83-Frame

Ref Num	P83	**XML Element**	Frame
Format	N1/3		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Enter the number of the image frame		

P84-TotalFrames

Ref Num	P84	**XML Element**	TotalFrames
Format	N1/3		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Total Number of frames within a plane		

P85-Plane

Ref Num	P85	**XML Element**	Plane
Format	N1/3		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Enter the number of planes that are in the 3D image set		

P86-Hemisphere

Ref Num	P86	**XML Element**	Hemisphere
Format	N1/3		
Requirement	O	**Code Table**	Coded Values
Example			
External Ref			
Comments	Either Northern (N) or Southern (S)		

P87-Plunge

Ref Num	P87	**XML Element**	Plunge
Format	R1/6		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Plunge angle when photographed		

P88-TotalPlanes

Ref Num	P88	**XML Element**	TotalPlanes
Format	N1/3		
Requirement	O	**Code Table**	
Example			
External Ref			
Comments	Number of planes for 360 image		

P93-Asset Dates

Ref Num	P93	**XML Element**	AssetDates
Format			
Requirement		**Code Table**	
Example			
External Ref			
Comments	Element Container for Asset Dates		

P94-Asset Date

Ref Num	P94	**XML Element**	AssetDate
Format	D		
Requirement	C	**Code Table**	
Example	2016-04-01		
External Ref			
Comments	Date for asset		

P95-Asset Date Type

Ref Num	P95	**XML Element**	
Format	ID3	**XML Attribute**	assetDateType
Requirement	R	**Code Table**	Coded Values
Example	MOD		
External Ref			
Comments			

P98-Country Code

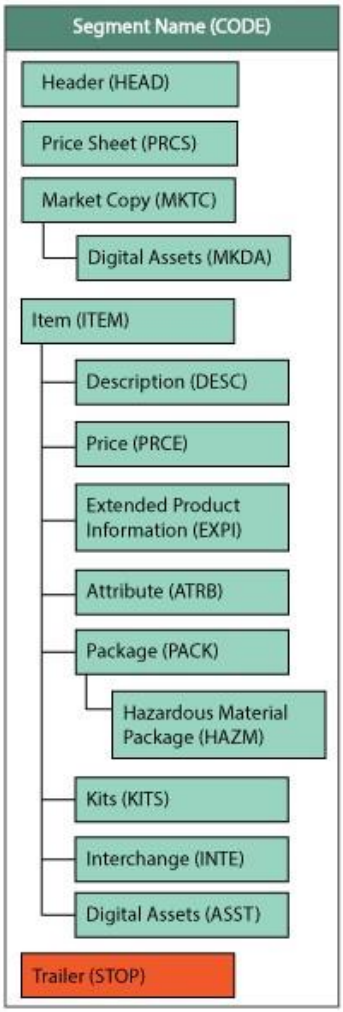
Ref Num	P98	**XML Element**	Country
Format	ID2	**XML Attribute**	
Requirement	KO	**Code Table**	Coded Values
Example	CA		
External Ref			
Comments	The Country Code is used to identify the destination Country of use for the digital asset. The case of use for this attribute is when, for example, a logo for a product might be different in one country than another.		

P99-Language Code

Ref Num	P99	XML Element	
Format	ID2	XML Attribute	Language Code
Requirement	KO	Code Table	Coded Values
Example	EN		
External Ref			
Comments	Defaults to HEAD Segment Language Code if not populated.		

Z01-Trailer Record Segment (STOP)

There is one instance of the Trailer Record Segment per PIES file. The Trailer Record is used to relay the Transaction Date for this PIES file along and with the Item count for validation by the receiver of the file. The Transaction Date reflects the date the PIES file was created. This date may be different than the “Blanket Effective Date” defined in the Header Segment.




```
<PIES xmlns:xs=”http://www.w3.org/2001/XMLSchema-instance”
xmlns=”http://www.autocare.org”>
        <Header>…</Header>
        <PriceSheets>…</PriceSheets>
        <Items>
        <Item>
                …
                <Descriptions>…</Descriptions>
                <Prices>…</Prices>
                <ExtendedInformation>…</ExtendedInformation>
                        <ProductAttributes>…</ProductAttributes>
                        <Packages>
                        …
                                <HazardousMaterial>…</HazardousMaterial>
                        </Packages>
                        <Kits>… </Kits>
                        <PartInterchangeInfo>…</PartInterchangeInfo>
                         <DigitalAssets>…/DigitalAssets>
                 </Item>
        </Items>
        <Trailer>
                <ItemCount>1824</ItemCount>
                <TransactionDate>2007-04-25</TransactionDate>
        </Trailer>
</PIES>
```

Z10-Item Count

Ref Num	Z10	**XML Element**	ItemCount
Format	N1/7		
Requirement	O	**Code Table**	
Example	352		
External Ref			
Comments	Number of ITEM records sent in batch		

Z15-Transaction Date

Ref Num	Z15	**XML Element**	TransactionDate
Format	D		
Requirement	KM	**Code Table**	
Example	2011-01-03		
External Ref			
Comments	Date PIES File Submitted by to Supplier to Receiver.		

Appendix A – Invalid Characters in Element Data

The following table illustrates the various ASCII characters that are invalid when used in certain PIES fields. Other than the characters identified below, please note that PIES data fields should contain standard ASCII characters only.

Character	Description	Part Number Fields	Description Fields	Price Sheet Number Fields	Bar Code Characters
;	Semi-colon	P		P	P
[	Left bracket	P	P	P	P
]	Right bracket	P	P	P	P
{	Left brace	P			P
}	Right brace	P			P
~	Tilde	P	P	P	P
|	Bar(Pipe)	P	P	P	P
,	Comma	P			P
""	2 Quotes	P	P	P	P
%	Percentage	P			P
!	Exclamation	P			P
$	Dollar sign	P			P
*****	Asterisk	P	P	P	P
^	Circumflex(Carot)	P	P	P	P
****	Back slash	P	P	P	P
?	Question mark	P			P
'	Apostrophe	P			P
"	Quote	P			P
	Space				P
/	Forward slash				
.	Period				
-	Dash (hyphen)				
P	Character is prohibited from use in that type of field. Example: Commas are not allowed in Part Number Fields.				

(blank)	Character is allowed in that type of field. Example: Spaces are allowed in Part Number Fields.

Appendix B - About Global Trade Identifier Numbers (GTIN)

There has been much discussion and confusion about Global Trade Identifiers (GTINS) and how to represent them in an electronic commerce data format such as PIES. The following section aims to assist in clarifying how a GTIN is conveyed, and how it relates to a UPC, or an EAN, which are Consumer level (Consumer Package Level) codes, versus other Package Level Codes, and how the DATA can differentiate from the actual scannable label.

What is GTIN?

GTIN describes a family of GS1 (EAN.UCC) global data structures that employ 14 digits and can be encoded into various types of data carriers. Currently, GTIN is used exclusively within bar codes, but it could also be used in other data carriers such as radio frequency identification (RFID). The GTIN is only a term and does not impact any existing standards, nor does it place any additional requirements on scanning hardware. For North American companies, the UPC is an existing form of the GTIN.

The family of data structures (not symbologies) comprising GTIN includes:

- GTIN-12 (UPC-A): this is a 12-digit number used primarily in North America
- GTIN-8 (EAN/UCC-8): this is an 8-digit number used predominately outside of North America
- GTIN-13 (EAN/UCC-13): this is a 13-digit number used predominately outside of North America
- GTIN-14 (EAN/UCC-14 or ITF-14): this is a 14-digit number used to identify trade items at various packaging levels

The GTIN Family of Data Structures

Five symbologies support this GTIN data structure: UPC; EAN; ITF-14; UCC/EAN Code 128; and GS1 Databar (formerly Reduced Space Symbology). Of these, ITF-14, GS1-128, and GS1 Databar employ 14-digit data structures of which the 14th character is a packaging level indicator (i.e., item or case). Both UPC and EAN have an implied packaging level of a single item. Therefore, these symbologies support the GTIN data structure without changing the number of encoded data characters. Table 1 further illustrates the relationship between GTIN, legacy terminology, symbologies and use at point of sale. In most cases, the legacy terminology and the symbology are called by the same name. GTIN changes this by separating the name of the data structure from the data carrier or, in this case, the symbology.

GTIN Data Structure	Legacy Terminology	Symbology	Use at POS
GTIN-12	UPC, UCC-12	UPC-A, UPC-E	Yes
GTIN-13	EAN, JAN, EAN-13	EAN-13	Yes
GTIN-8	EAN-8	EAN-8	Yes
GTIN-14	EAN / UCC-14	GS1 Databar Family	Not Yet
GTIN-14	ITF Symbol, SCC-14, DUN-14, UPC Case Code, UPC Shipping, Container Code, UCC Code 128, EAN Code 128	GS1 Databar Family	Not Yet

Table 1: Illustrates the relationship between GTIN, legacy terminology, symbologies and use at point-of-sale.

Retailers who wish to accommodate GTIN need to make an important change to current practices because the full 14-digit data string must be processed and stored.

Barcodes and the GTIN

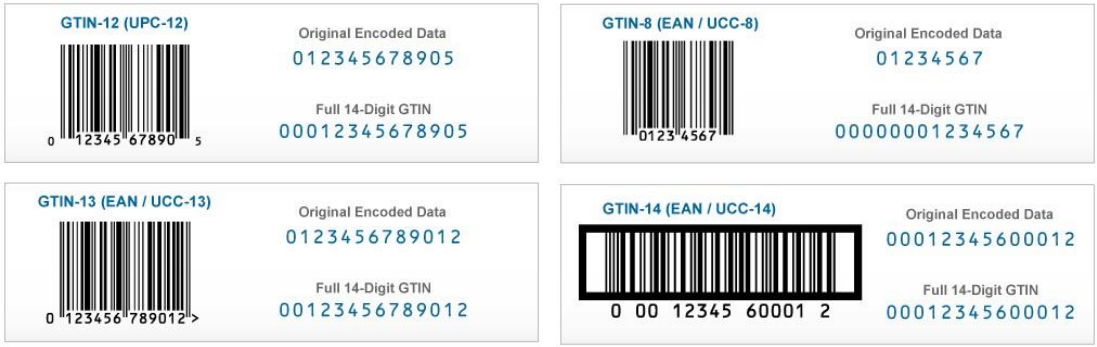
Since the inception of bar codes with the UPC more than 29 years ago, hundreds of thousands of possible number combinations have been issued as manufacturer or company prefixes. GS1 has continually changed the standards of the issuing numbers, but the fact remains that at a point in the very near future they will exhaust the available company prefixes.

The GTIN is a globally unique 14-digit number used to identify trade items, products, or services. GTIN is also an umbrella term that refers to the entire family of UCC.EAN data structures. The entire family of data structures within the GTIN is:

- GTIN-12 (UPC)
- GTIN-13 (EAN-13)
- GTIN-14 (EAN/UCC-128 or ITF-14)
- GTIN-8 (EAN-8)

The full 14-digit GTIN is achieved on a data carrier of shorter length by ‘padding’ the number with left-justified zeros out to 14 digits. See the examples below.

GTIN Data Structure / Data Storage Examples



GTIN Summary

From a data perspective, we treat a GTIN data format as always 14 digits, regardless of whether a GTIN is a GTIN13,-12, UPC or, GTIN 8 – the GTIN 'Block' of 14 characters is filled with leading zeros (Regardless of what we do with the Barcode). The Barcode itself is likely a GTIN-13 (EAN) or GTIN-12 (UPC). Small packaging can attract the GTIN 8 (likely such things as bubble gum, cigarettes, etc.) These three formats of barcodes are all read at the Point of Sale system.

There are other barcodes, however, which are read throughout the logistics chain. These are represented as GTIN14, and tell the warehouse and shipper different things:

GTIN-14 supports Pack-Levels. In the GTIN-14 data format, Package Levels are read from the leftmost number. Package Levels can be a number between 0 and 9; a '0' indicates the GTIN represents a single unit. A '9' represents a unit where the weight, measure, or volume sold can be variable. Package Levels 1 through 8 are defined by the company using them. There are no standard definitions to follow.

There are some practices that companies are adopting, for example:

- Pack Level '0' – Each (Consumer Selling Level)
- Pack Level '1' – Inner Pack (Non-Shippable)
- Pack Level '3' – Inner Pack (Shippable)
- Pack Level '5' – Case
- Pack Level '7' – Pallet

These would properly correspond with the AAIA Pack Level Tables used in the Package Segment.

From a DATA perspective, a GTIN will always be represented as a 14-digit number, regardless of its use.

With help from files sourced from the GS-1 Consortium (www.gtin.info)

Appendix C – Marketing Copy - Use Case

The addition of the Market Copy SubCode and Market Copy SubCode Reference provides to accommodate the ability to provide market copy that applies to a specific brand and part terminology combination. An example would be to provide different market copy for Purolator PureOne Air Filter and Purolator PureOne Oil Filter; as seen on webpages below:

https://www.jcwhitney.com/details/Purolator/Oil_Filter/PURPL14612.html#plpslot2
https://www.jcwhitney.com/details/Purolator/Air_Filter/PURA25463.html#plpslot1

Appendix D – Product Attributes Examples

Product Attribute XML Examples

The following pages of XML examples provide some useful cases of use for User Defined attributes, PAdb Attributes, multiple Attributes, and multiple Attribute Values.

Example 1 – Custom attributes sent in PIES

Sending three non-PAdb attributes for an Item (Part Number 1234 - Widget), using the following custom attributes:

Widget Length = 12.5 inches

Widget Width = 4.25 inches

Widget Height = 3.5 inches

Sample PIES XML

```
...
<Items>
        <Item MaintenanceType="A">
            …
            <PartNumber>1234</PartNumber>
            …
            <ProductAttributes>
                <ProductAttribute  MaintenanceType="A"  AttributeID="Length"
                PADBAttribute="N"  AttributeUOM="IN" RecordNumber="1">
                    12.5
                </ProductAttribute>
                <ProductAttribute MaintenanceType="A" AttributeID="Width"
                PADBAttribute="N" AttributeUOM="IN" RecordNumber="2">
                    4.25
                </ProductAttribute>
                <ProductAttribute MaintenanceType="A" AttributeID="Height"
                PADBAttribute="N" AttributeUOM="IN" RecordNumber="3">
```

```
                                        3.5
                                    </ProductAttribute>
                                </ProductAttributes>
                        … </Item>
</Items>
...
```

Example 2 – PAdb attributes sent in PIES

Example 2A

Sending multiple PAdb Attributes for an Item (Part Number 9876 – Brake Caliper), using the PAdb definitions for Brake Caliper attributes:

Example PADB Data

PAID	Attribute Name (PAName)	Description of Use (PA Descr)	Attribute Type (From MetaData Table)	Unit of Measure Code (From UoMList)	Value (Actual Value or from Valid Values Field)
54321	Mounting Hardware Included	Does this product include its mounting Hardware	Text	-	Yes|No are the Valid Values from the PAdb Table. <Yes> is the desired value
54322	Caliper Type	Describes how the Caliper is designed	Alphanumeric	-	These are the Valid Values from the PAdb Table. Anette Design | Fixed Monoblock | Fixed 2pc | Fixed 3pc | Slider | Slider w/ Mechanical Parking Brake | Slider w/ Electric Parking Brake | Mechanical Parking Brake Only <Slider> is the desired value
54323	Inlet Port Diameter		Numeric, length 6, 3 decimals	IN	0.750

54324	Piston Quantity		Numeric, length 2	-	1
54325	Piston Size 1	Piston Diameter	Numeric, length 6, 3 decimals	IN	1.375
54326	Bleeder Thread Size	Size of the thread on the bleeder port and diameter. Examples 7/16x20 - 3/8x24 - 10x1.0 - 10x1.5	Alphanumeric, length 10		3/8x24
54327	Caliper Casting Material	Defines the casting material	Text	-	These are the Valid Values from the PADB Table. Cast Iron | Aluminum | Magnesium | Composite <Aluminum> is the desired value

Example 2A - Sample PIES XML

…

```
<Items>
        <Item MaintenanceType="A">
            <PartNumber>9876</PartNumber>
            <ProductAttributes>
                <ProductAttribute MaintenanceType="A" AttributeID="54321"
                PADBAttribute="Y" RecordNumber="1">
                    Yes
                </ProductAttribute>
                <ProductAttribute MaintenanceType="A" AttributeID="54322"
                PADBAttribute="Y" RecordNumber="2">
                    Slider
```

```
                    </ProductAttribute>
                    <ProductAttribute MaintenanceType="A" AttributeID="54323"
                    PADBAttribute="Y" AttributeUOM="IN" RecordNumber="3">
                        0.750
                    </ProductAttribute>
                    <ProductAttribute MaintenanceType="A" AttributeID="54324"
                    PADBAttribute="Y" RecordNumber="4">
                        1
                    </ProductAttribute>
                    <ProductAttribute MaintenanceType="A" AttributeID="54325"
                    PADBAttribute="Y" AttributeUOM="IN" RecordNumber="5">
                        1.375
                    </ProductAttribute>
                    <ProductAttribute MaintenanceType="A" AttributeID="54326"
                    PADBAttribute="Y" RecordNumber="6">
                        3/8x24
                    </ProductAttribute>
                    <ProductAttribute MaintenanceType="A" AttributeID="54327”
                    PADBAttribute="Y" RecordNumber="7">
                        Aluminum
                    </ProductAttribute>
                </ProductAttributes>
                …
            </Item>
            …
</Items>
…
```

Example 2B

Sending PAdb Attributes for two Styles of Tire (Passenger Tire, Racing Slick) for Part Number 192837 – Passenger Tire, and 292837 – Racing Slick.

Example PADB Data

PAID	Attribute Name	Attribute Type	Style Name	Style ID	Unit of Measure Code	Value
12345	Tread Depth	Numeric, length 4, 3 decimals	Passenger Tire	20	IN	0.375
23456	Mud/Snow Rated	Text	Passenger Tire	20	-	Yes | No are the Valid Values from the PAdb Table. <Yes> is the desired value
34567	Revolutions Per Mile	Numeric, length 4, 0 decimals	Racing Slick	22	-	854
45678	Compound Type		Racing Slick	22	-	Rain | Qualifying | Hillclimb | Night Sprint | Endurance are the Valid Values from the PAdb Table. <Endurance> is the desired value
56789	Sidewall Type	Text	Passenger Tire, Racing Slick	20, 22	-	Blackwall | Whitewall | Raised Letters are the Valid Values from the PAdb Table. <Whitewall> is the desired value for the Passenger Tire,

						<Raised Letters> is the desired value for the Racing Slick.
67890	Rim Diameter	Numeric, length 2	Passenger Tire, Racing Slick	20, 22	IN	15 is the desired value for Racing Slick 14 is the desired value for Passenger Tire

Example 2B - Sample PIES XML

…

```
<Items>
        <Item MaintenanceType="A">
            <PartNumber>192837</PartNumber>
            <ProductAttributes>
                <ProductAttribute MaintenanceType="A" AttributeID="12345"
                PADBAttribute="Y" StyleID="20" AttributeUOM="IN"
                RecordNumber="1">
                    0.375
                </ProductAttribute>
                <ProductAttribute MaintenanceType="A" AttributeID="23456"
                PADBAttribute="Y" StyleID="20" RecordNumber="2">
                    0.375
                </ProductAttribute>
                <ProductAttribute MaintenanceType="A" AttributeID="56789"
                PADBAttribute="Y" StyleID="20" RecordNumber="3">
                    Whitewall
                </ProductAttribute>
                <ProductAttribute MaintenanceType="A" AttributeID="67890"
                PADBAttribute="Y" StyleID="20" AttributeUOM="IN"
                RecordNumber="4">
                    14
```

```
                    </ProductAttribute>
                </ProductAttributes>
                </Item>
            <Item MaintenanceType="A">
                <PartNumber>292837</PartNumber>
                <ProductAttributes>
                    <ProductAttribute MaintenanceType="A" AttributeID="34567"
                    PADBAttribute="Y" StyleID="22" RecordNumber="1">
                        854
                    </ProductAttribute>
                    <ProductAttribute MaintenanceType="A" AttributeID="45678"
                    PADBAttribute="Y" StyleID="22" RecordNumber="2">
                        Endurance
                    </ProductAttribute>
                    <ProductAttribute MaintenanceType="A" AttributeID="56789"
                    PADBAttribute="Y" StyleID="22" RecordNumber="3">
                        Raised Letters
                    </ProductAttribute>
                    <ProductAttribute MaintenanceType="A" AttributeID="67890"
                    PADBAttribute="Y" StyleID="22" AttributeUOM="IN"
                    RecordNumber="4">
                        15
                    </ProductAttribute>
                </ProductAttributes>
            </Item>
            …
</Items>
…
```

Example 2C

Sending PAdb Attributes for a Drill Bit which has a drilling diameter range of .125 to .75 inches, in increments of .125 inches for Part Number 5463782 – Drill Bit

Example PAdb Data

PAID	Attribute Name	Attribute Type	Unit of Measure Code	Value
12345	Shank Diameter	Numeric, Length 5,3 decimal places	IN	0.3125
12346	Bit Length	Numeric, Length 5, 3 decimal places	IN	3.375
12347	Bit Material	Alphanumeric, 25 characters	-	Cobalt
12348	Cut Diameter	Numeric, Length 5, 3 decimal places	IN	0.125,0.250,0.375,0.500,0.625,0.750

Example 2C - Sample PIES XML

```
<Items>
    <Item MaintenanceType="A">
        …
        <PartNumber>5463782 </PartNumber>
        …
        <ProductAttributes>
            <ProductAttribute MaintenanceType="A" AttributeID="12345" PADBAttribute="Y
            "AttributeUOM="IN" RecordNumber="1">
                0.3125
            </ProductAttribute>
            <ProductAttribute MaintenanceType="A" AttributeID="12346"
            PADBAttribute="Y" AttributeUOM="IN" RecordNumber="2">
                3.375
```

```
        </ProductAttribute>
        <ProductAttribute MaintenanceType="A" AttributeID="12347"
        PADBAttribute="Y" RecordNumber="3">
            Cobalt
        </ProductAttribute>
        <ProductAttribute MaintenanceType="A" AttributeID="12348"
       PADBAttribute="Y" AttributeUOM="IN" RecordNumber="4"
       MultiValueQuantity="6" MultiValueSequence="1">
            0.125
        </ProductAttribute>
        <ProductAttribute MaintenanceType="A" AttributeID="12348"
       PADBAttribute="Y" AttributeUOM="IN" RecordNumber="4"
       MultiValueQuantity="6" MultiValueSequence="2">
            0.250
        </ProductAttribute>
        <ProductAttribute MaintenanceType="A" AttributeID="12348"
       PADBAttribute="Y" AttributeUOM="IN" RecordNumber="4"
       MultiValueQuantity="6" MultiValueSequence="3">
            0.375
        </ProductAttribute>
        <ProductAttribute MaintenanceType="A" AttributeID="12348"
        PADBAttribute="Y" AttributeUOM="IN" RecordNumber="4"
        MultiValueQuantity="6" MultiValueSequence="4">
            0.500
        </ProductAttribute>
        <ProductAttribute MaintenanceType="A" AttributeID="12348"
       PADBAttribute="Y" AttributeUOM="IN" RecordNumber="4"
       MultiValueQuantity="6" MultiValueSequence="5">
            0.625
        </ProductAttribute>
        <ProductAttribute MaintenanceType="A" AttributeID="12348"
       PADBAttribute="Y" AttributeUOM="IN" RecordNumber="4"
       MultiValueQuantity="6" MultiValueSequence="6">
            0.750
        </ProductAttribute>
    </ProductAttributes>
```

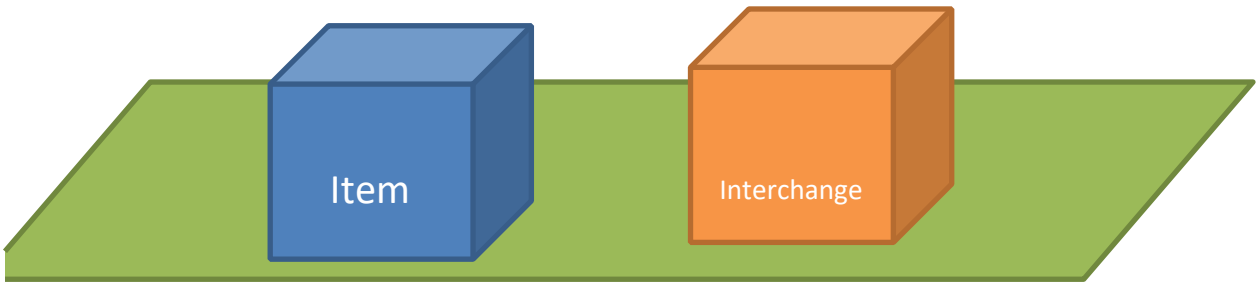
…

</Item>

</Items> …

Appendix E: Interchange Examples

1 to 1 interchange relationship



- Supplier to Competitor
- Supplier to OE

XML Elements have change to XML attributes of elements to simplify the interchange story.

Note: ItemEquivalentUOM denotes an Item may have more than one Packaging UOM, this XML attribute allows a user

…

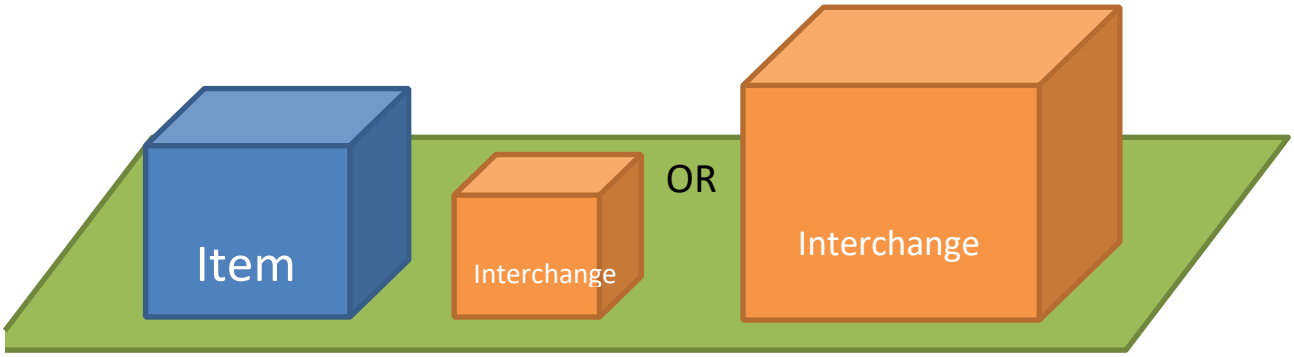
<PartInterchange MaintenanceType="A" LanguageCode="EN" BrandAAIAID="CCCC" SubBrandAAIAID ="CCCD" SubBrandLabel="Brand D Extra" ItemEquivalentUOM = "EA">

<PartNumber >CC2000</PartNumber>

</PartInterchange>

…

Packaging difference – smaller or larger



Example 1: Packaging Difference – Smaller

…

```
<PartInterchange MaintenanceType="A" LanguageCode="EN" BrandAAIAID="CCCC"
QualityGradeLevel="O" ItemEquivalentUOM = "EA">

        <PartNumber InterchangeQuantity=".5" UOM="EA" >CC2000</PartNumber>

</PartInterchange>
```

…

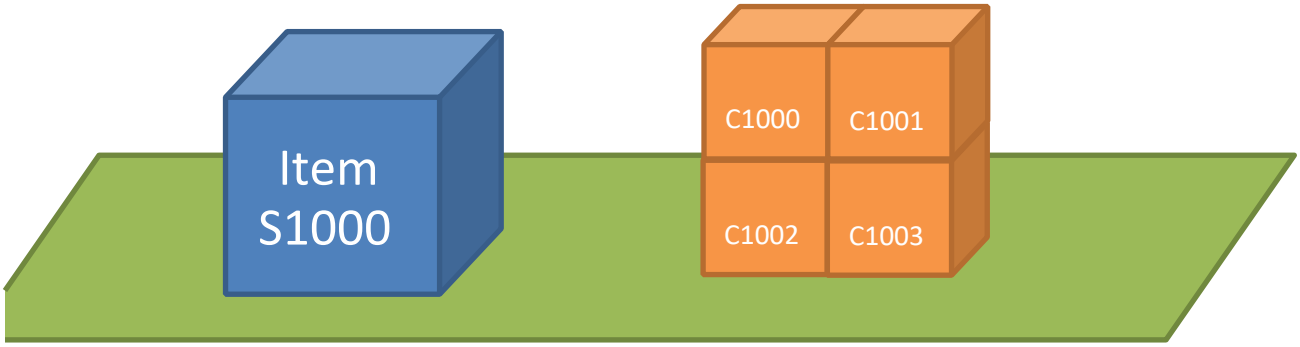
Example 2: Packaging Difference – Larger

…

```
<PartInterchange MaintenanceType="A" LanguageCode="EN" BrandAAIAID="CCCC"
QualityGradeLevel="O" ItemEquivalentUOM = "EA">

        <PartNumber InterchangeQuantity="2.0" UOM="EA">CC2000</PartNumber>

</PartInterchange>
```

…

1 to many interchange



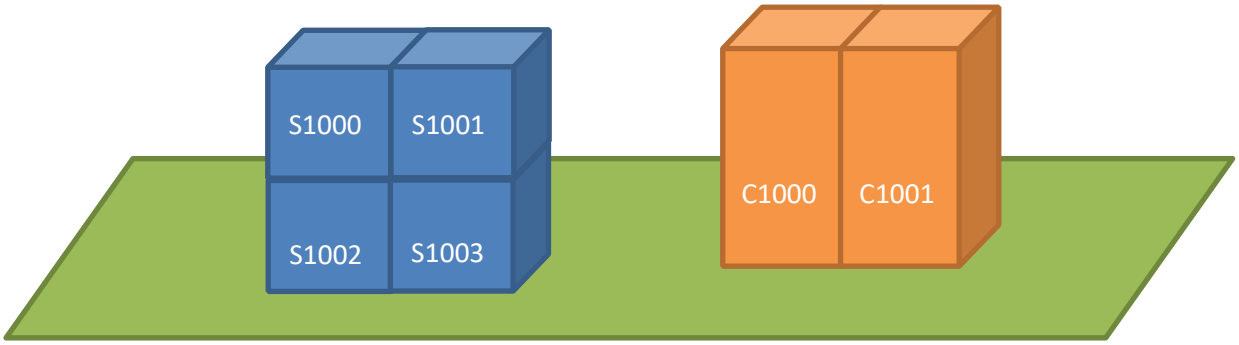
Type Code “A” denotes a one to many relationship, stating ITEM segment part number S1000 is equivalent to the combination of interchange part numbers C1000, C1001, C1002 and C1003 included one interchange record.

…

```
<PartInterchange MaintenanceType="A" LanguageCode="EN" TypeCode="A" BrandAAIAID="CCCC">
        <PartNumber InterchangeQuantity ="1" UOM="EA" >C1000</PartNumber>
        <PartNumber InterchangeQuantity ="1" UOM="EA" >C1001</PartNumber>
        <PartNumber InterchangeQuantity ="1" UOM="EA" >C1002</PartNumber>
        <PartNumber InterchangeQuantity ="1" UOM="EA" >C1003</PartNumber>
</PartInterchange>
```

…

"Many to" Example 2



Many to many relationship stating S1000, S1001 is equivalent to the interchange part number C1000.

S1002 and S1003 is equivalent to C1001.

…

<PartInterchange MaintenanceType="A" LanguageCode="EN" BrandAAIAID="CCCC"
BrandLabel="Brand C">

<PartNumber ReferenceItem="S1000" InterchangeQuantity ="1"
UOM="EA">C1000</PartNumber>

<PartNumber ReferenceItem="S1001" InterchangeQuantity ="1"
UOM="EA>C1000</PartNumber>

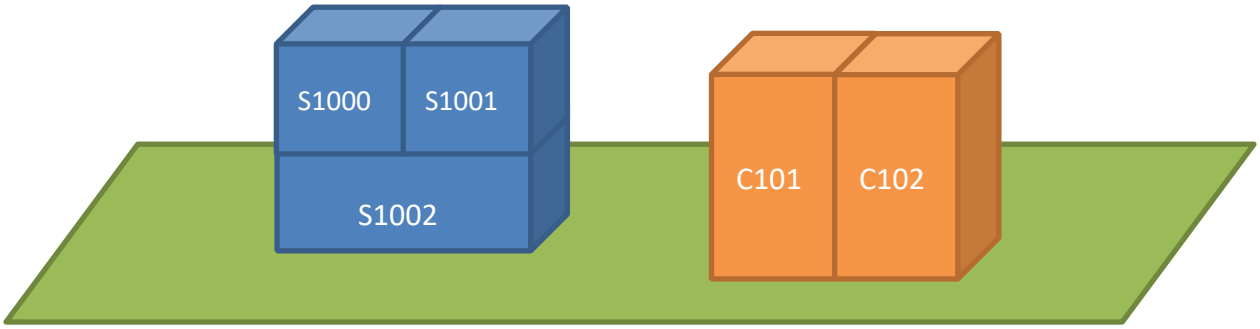
<PartNumber ReferenceItem="S1002" InterchangeQuantity ="1"
UOM="EA">C1001</PartNumber>

<PartNumber ReferenceItem="S1003" InterchangeQuantity ="1"
UOM="EA">C1001</PartNumber>

</PartInterchange>

…

"Many to" Example 3

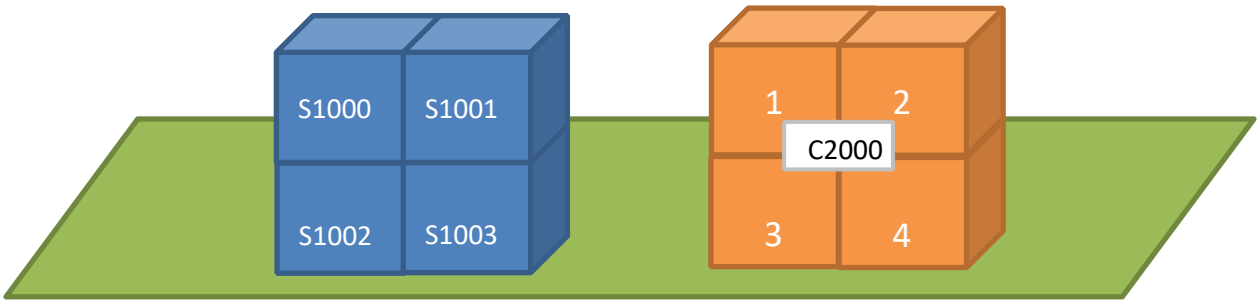


…

```
<PartInterchange MaintenanceType="A" LanguageCode="EN" BrandAAIAID="CCCC"
BrandLabel="Brand C">

        <PartNumber ReferenceItem="S1000" InterchangeQuantity ="1" UOM="EA"
        >C101</PartNumber>

        <PartNumber ReferenceItem="S1001" InterchangeQuantity ="1" UOM="EA"
        >C102</PartNumber>

        <PartNumber ReferenceItem="S1002" InterchangeQuantity =".5" UOM="EA"
        >C101</PartNumber>

        <PartNumber ReferenceItem="S1002" InterchangeQuantity =".5" UOM="EA"
        >C102</PartNumber>

</PartInterchange>
```

…

Partial Interchanges

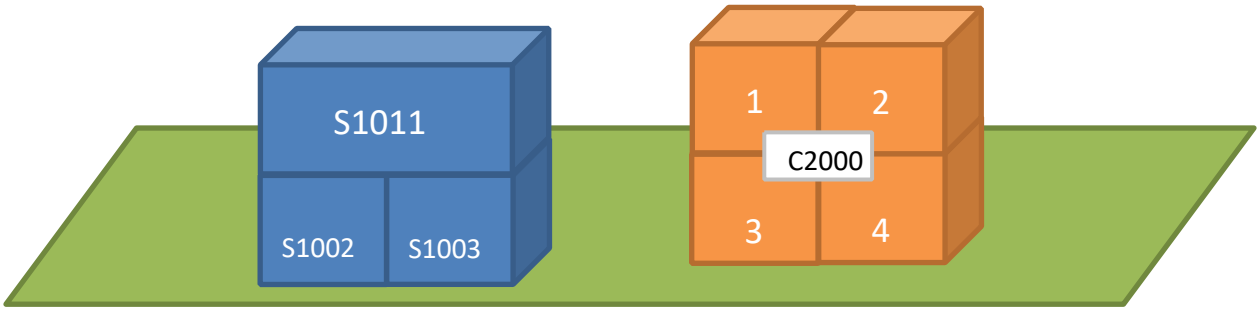


Example 1: Item S1000

…

```
<PartInterchange MaintenanceType="A" LanguageCode="EN" BrandAAIAID="CCCC">
        <PartNumber InterchangeQuantity ="1" UOM="EA" InterchangeNote="This is block
        1">C2000</PartNumber>
</PartInterchange>
```

…



Example 2: Item S1011

…

```
<PartInterchange MaintenanceType="A" LanguageCode="EN" BrandAAIAID="CCCC" >
        <PartNumber InterchangeQuantity ="2" UOM="EA" InterchangeNote="This is for block 1 and
        2">C2000</PartNumber>
</PartInterchange>
```

…