PIES Data Definition Documentation
(Product Information Exchange Standard)

Version 6.5

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DEVELOPED BY AAIA

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Revision History

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3.0	03/24/2013	J.Marshall	Corrections to version from Industry Feedback
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6.0	08/16/2013	J. Marshall	Corrections to all documentation, XSD, Technical Specifications, Updated example for A86; Comments for F10 and F11; Labelling of H22 as an attribute. Added XSD Specifications to Technical Document. XSD Audit performed by J. Register and D. Winsby.

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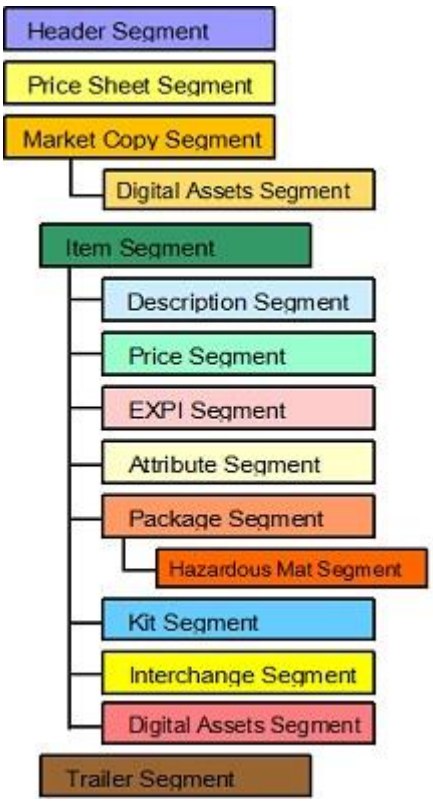
1. Introduction to PIES

The Product Information Exchange Standard (PIES) is a product of the Automotive Aftermarket Industry Association's (AAIA) Technology Standards Committee. The purpose of this effort was 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 was provided by members of the AAIA Heavy Duty Segment (Heavy Duty Distribution Association), Paint and Body Equipment Supply segment and the Automotive Warehouse Distributors Association (AWDA).



PIES was born 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 to feed systems that do everything from cubing out warehouse space to configuring plan-o-grams on retail sales floors.

The standard was designed to provide a facility to exchange data regarding products that is more comprehensive 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 has been designed in a flexible format which allows each of the record segments to be "looped" 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.

For more information on the technical specifications of the PIES XML Schema, please visit the Aftermarket.org website and download the latest PIES XML Schema document.

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 that can lead to industry-wide synchronization of product information. Unless and until trading partners can agree on all basic product data, fully automating transactions is virtually impossible. If the buyer's machine and the seller's machine don't have precisely the same data in exactly the same format, they will cry out for human intervention. Without standards, the exchange of transactional and planning documents, such as purchase orders, invoices, ship notices, inventory status, sales forecasts, etc. will be semi-manual at best.

Like any responsible standard, PIES is a living document and future revisions will reflect input from all segments of the aftermarket. 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 pies@aftermarket.org with any suggestions. *Please be aware that Internet Hyperlinks used in this document may change without the knowledge of the AAIA PIES Subcommittee*.

2. Documentation Format and Considerations

Field Definitions

Each PIES field in the following section will be 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 Excel Specifications Document for PIES. This is a more technical field reference which contains a field numbering scheme referred to as a **"Ref Num"** in this 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.

"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".** The "Comments" section will indicate which PIES Field / XML Element this field is an attribute for.

If the PIES field derives its value from an Industry Defined data source, this source will be indicated in the **"Code Table"** cell. A list of all PIES code tables and their values can be found in Appendix A – Code Table Values.

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 and ISO Code reference. When possible, this **"External Ref"** will be shown as an Internet Hyperlink.

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

Format Codes

The following Codes are used to indicate the Field Data Type for each PIES Element. In the Segment Definitions below, the "Format" label will identify the Format Code used for the defined field.

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 C 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

Element/Field Requirement Codes

Each PIES field is defined with a Requirement Code. This code indicates if the field is a Key, Mandatory, Optional, etc.

PIES Field Requirement Coding Schema

Code	Description
KM	Mandatory Key field. Required if segment is present. May not be null.
KO	Optional Key field. May be null.
KE	"Either" Key Field. Either of two fields marked KE is required.
M	Mandatory Data field. Must be present if segment is present. May not be null. Will fail XML validation if null.
R	Recommended Data field. Strongly recommended by industry experts to be present if segment is present, but null will not fail XML validation.
O	Optional Data field. Optional - may be null.
C	Conditional Data field. 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 Field. Either of two fields marked E is required.

3. File Delivery

Net-Change File Delivery

Once you and your trading partner(s) have been able to synchronize your product information, it is highly recommended that you then send Net-Change files from that point on. What is a Net-Change file? In short, a Net-Change file contains information for only those items which have had changes since that last file sent. These changes could include updated or change data which has already been sent, new Items or deleted Items.

When a Net Change file is being sent, it must be identified as such in the Header. The following are the codes for identifying what type of file you are sending:

PIES Header Coding Schema - A03 Submission Type

Code	Description
FULL	The file being sent is a full Refresh File
UPDATE	The file being sent is an update file with changes, additions, deletions

When sending a Net-Change file in PIES, the standard procedure is to send an entire Item record regardless of what data has 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. This attribute may be set to…

PIES Maintenance Type Codes

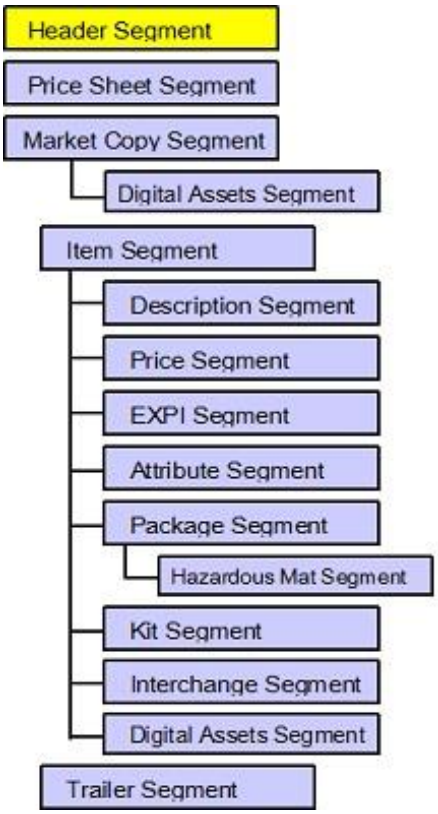
Code	Description
A	Add - This is a new record
C	Change - This is a change to an existing record - replace existing record
D	Delete - This record is to be removed
N	No Changes - Ignore Submission

Using this attribute allows the sender to indicate to the receiver of the file which segments have been modified, deleted or not changed at all. Please note that any change to an item record will result in a MaintenanceType of "C" at the <Item> level. Receivers of data should note this to check for any data changes in the Item Segment. The following XML example shows how a single Item record (for an existing Part Number) may look when one price changes, one 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>
```


4. Segment Definitions

This section is used to define 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 thus should look similar to…

```
<?xml version="1.0" encoding="UTF-8"?>
<PIES xmlns:xs=http://www.w3.org/2001/XMLSchema-instance
xmlns="http://www.aftermarket.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 6.5 XML Schema document available for download from the Aftermarket.org website.

Test File (TEST)

The <TestFile> element is used to relay "Testing" or "Production" information about the file being exchanged between trading partners.

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

Test File – Not listed in spreadsheet

Ref Num	NONE	***XML Element***	TestFile
Format	Boolean		
Requirement	O	***Code Table***	"true" "false"
Example	true, false		
External Ref			
Comments	Used to indicate if this file should be treated as a Test or not. If this element is not present, then the file is treated as Production Data Exchange.		

A01-Header Segment (HEAD)

The "Header" Segment is used to define 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.aftermarket.org">
        <TestFile> …</TestFile>
  <Header>
          <PIESVersion>6.5</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>
          <BrandOwnerAAIAID>BRST</BrandOwnerAAIAID>
          <BuyerDuns>8888888880001</BuyerDuns>
          <CurrencyCode>USD</CurrencyCode>
          <LanguageCode>EN</LanguageCode>
          <TechnicalContact>John Smith</TechnicalContact>
          <ContactEmail>john@smith.com</ContactEmail>
  </Header>

</PIES>
```

A02-PIES Version Number

Ref Num	A02	***XML Element***	PIESVersion
Format	ID3/5		
Requirement	M	***Code Table***	
Example	6.5		
External Ref			
Comments			

A03-Submission Type

Ref Num	A03	***XML Element***	SubmissionType
Format	ID4/6		
Requirement	M	***Code Table***	
Example	FULL, UPDATE		
External Ref			
Comments	FULL means a full REFRESH file, UPDATE means a Change File		

A05-Blanket Effective Date

Ref Num	A05	***XML Element***	BlanketEffectiveDate
Format	D		
Requirement	O	***Code Table***	
Example	2011-01-03		
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***	
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***	
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***	
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***	
Example	BBCD		
External Ref	www.aftermarket.org/Technology/PIES.aspx		
Comments	Parent Company ID found in the AAIA maintained Parent / Brand Owner / Brand Code Registry Table. 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***	
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***	
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***	
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.		

A23-Brand Owner AAIAID

Ref Num	A23	***XML Element***	BrandOwnerAAIAID
Format	ID4		
Requirement	E	***Code Table***	
Example	BRST		
External Ref	www.aftermarket.org/Technology/PIES.aspx		
Comments	Brand Owner ID found in the AAIA maintained Parent / Brand Owner / Brand Code Registry Table. This field is the recommended value to populate when identifying Brand Owner of data supplied in a PIES file.		

A30-Buyer DUNS or DUNS+4

Ref Num	A30	***XML Element***	BuyerDuns
Format	ID9/13		
Requirement	O	***Code Table***	
Example	9191919190001		
External Ref			
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***	
Example	USD		
External Ref	www.iso.org		
Comments	ISO Table 4217. 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***	
Example	EN		
External Ref	www.iso.org		
Comments	ISO Table 639-1 Values. This is the default value for the entire PIES file. This value may be overridden within many of the underlying Segments.		

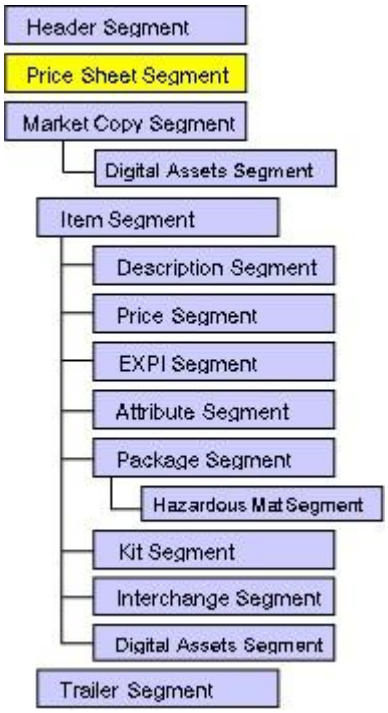
A40-Technical Contact Name

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.		

A50-Price Sheet Header Segment (PRCS)



The Price Sheet Header segment is used to define zero to many "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, it is recommended that at least one Price Sheet Header is defined. 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 1-many 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.aftermarket.org">
        <TestFile>…</TestFile>
    <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***	
Example	A		
External Ref			
Comments	Attribute of <PriceSheet>. <PriceSheet> is the root XML element for a single instance describing price sheet information. A-Add / C-Change / D-Delete / N-No Change. This attribute should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

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***	
Example	USD		
External Ref	www.iso.org		
Comments	ISO Table 4217. 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.		

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

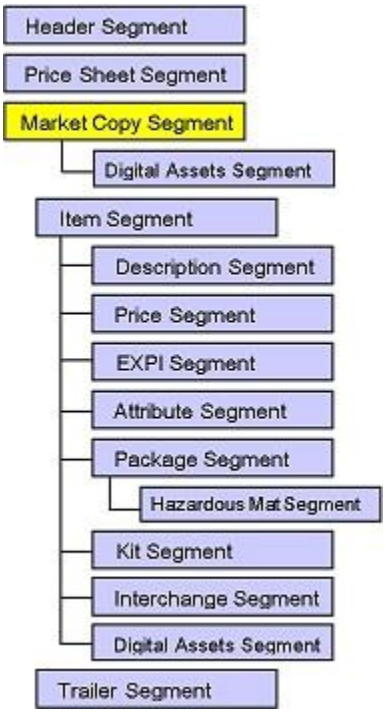
Ref Num	A70	***XML Element***	EffectiveDate
Format	D		
Requirement	O	***Code Table***	
Example	2011-01-01		
External Ref			
Comments	Date this PIES file price sheet goes into effect. May be overridden by PRCE Segment field D25 – Price Sheet Level Effective Date		

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 the segment 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 has changed, and will NOT be backward compatible with previous 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>
        <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>
            <AdditionalInformation>Photo from brochure</AdditionalInformation>
            <Details>High resolution image from brochure</Details>
            <FilePath>\Mfg\xyz.jpg</FilePath>
            <URI>http://www.mfg.com/Images/xyz.jpg</URI>
            <FileDateModified>2013-01-31</FileDateModified>
            <EffectiveDate>2013-01-31</EffectiveDate>
            <ExpirationDate>2013-12-31</ExpirationDate>
            <Country>US</Country>
            </DigitalFileInformation>
        </DigitalAssets>
    </MarketCopy>
</MarketingCopy>
```


A81-Maintenance Type

Ref Num	A81	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	
Example	A		
External Ref			
Comments	(A-Add, C-Change, D-Delete, N-No Change)		

A82-Market Copy Code

Ref Num	A82	**XML Element**	
Format	ID3	**XML Attribute**	MarketCopyCode
Requirement	KM	**Code Table**	See 6.5 Market Copy Codes
Example	BRD		
External Ref			
Comments	See Market Copy Code Table for values. **The ELEMENT NUMBER HAS CHANGED FROM PREVIOUS VERSIONS OF PIES**		

A83-Market Copy Code Reference

Ref Num	A83	**XML Element**	
Format	AN1/240	**XML Attribute**	MarketCopyReference
Requirement	KM	**Code Table**	See 6.5 Market Copy Refs.
Example	ZZZN		
External Ref			
Comments	See Market Copy Code table for Reference instructions. **The ELEMENT NUMBER HAS CHANGED FROM PREVIOUS VERSIONS OF PIES**		

A84-Market Copy Sub Code

Ref Num	A84	**XML Element**	
Format	ID3	**XML Attribute**	MarketCopySubCode
Requirement	KO	**Code Table**	See 6.5 Market Copy Codes
Example	BRD		
External Ref			
Comments	See Market Copy Code Table for values. **The ELEMENT NUMBER HAS CHANGED FROM PREVIOUS VERSIONS OF PIES**		

A85-Market Copy Sub Code Reference

Ref Num	A85	**XML Element**	
Format	AN1/240	**XML Attribute**	MarketCopySubCodeReference
Requirement	KO	**Code Table**	See 6.5 Market Copy Refs.
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**	See 6.5 Market Copy Type Codes
Example	FAB		
External Ref			
Comments	This describes the type of Content being sent. Choices are General Copy (GCC), Features and Benefits (FAB) See Market Copy Code Table for values.		

A87-Market Copy Content

Ref Num	A87	***XML Element***	MarketCopyContent
Format	AN1/2000		
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	See the Appendix for a description of the use case for Market Copy		

A88-Record Sequence

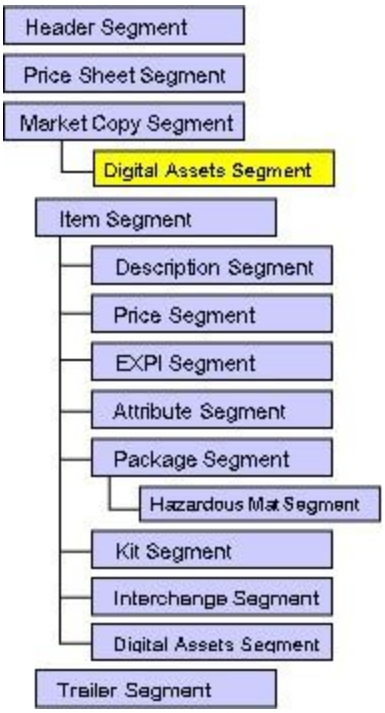
Ref Num	A88	***XML Element***	
Format	N1/3	***XML Attribute***	RecordSequence
Requirement	KO	***Code Table***	
Example	1		
External Ref			
Comments	The record sequence identifies the order in which a record should appear if multiple Content records are being sent for a Market Copy Code or Sub Code		

A89-Language Code

Ref Num	A89	***XML Element***	
Format	ID2	***XML Attribute***	LanguageCode
Requirement	KO	***Code Table***	ISO Table 639-1
Example	EN		
External Ref			
Comments	Defaults to HEAD record if not populated. This also enables multiple languages to be sent for a Market Copy Record.		

M01-Digital Asset Sub-Segment of Market Copy

The Digital Asset Sub-Segment of the Market Copy Segment is used to relay information about any media types which support the related Market Copy Segment reference Codes. For further information on Digital Assets, please refer to section P01-Digital Assets Segment.



M02-Maintenance Type

Ref Num	M02	***XML Element***	
Format	ID1	***XML Attribute***	MaintenanceType
Requirement	M	***Code Table***	
Example	A		
External Ref			
Comments	A-Add, C-Change, D-Delete, N-No Change		

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***	
Example	LGO		
External Ref			
Comments	See PIES Asset Code Type Table		

M15-File Type

Ref Num	M15	***XML Element***	FileType
Format	ID2/4		
Requirement	R	***Code Table***	
Example	JPG		
External Ref			
Comments	PIES ASST Codes File Type table		

M20-Representation

Ref Num	M20	***XML Element***	Representation
Format	ID1		
Requirement	R	***Code Table***	
Example	A		
External Ref			
Comments	PIES ASST Codes Representation Table		

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***	
Example	72		
External Ref			
Comments	PIES ASST Codes Resolution Table		

M35-Color Mode

Ref Num	M35	***XML Element***	ColorMode
Format	ID3		
Requirement	O	***Code Table***	
Example	RGB		
External Ref			
Comments	PIES ASST Codes Color Mode Table		

M40-Background

Ref Num	M40	***XML Element***	Background
Format	ID3		
Requirement	R	***Code Table***	
Example	WHI		
External Ref			
Comments	PIES ASST Codes Background Table		

M45-Orientation View

Ref Num	M45	***XML Element***	OrientationView
Format	ID3		
Requirement	KO	***Code Table***	
Example	TOP		
External Ref			
Comments	PIES ASST Codes Orientation View table		

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. See Asset Dimension UOM for Units of Measure		

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. See Asset Dimension UOM for Units of Measure		

M60-Asset Dimension UOM

Ref Num	M60	***XML Element***	
Format	ID2	***XML Attribute***	UOM
Requirement	C	***Code Table***	
Example	PX		
External Ref			
Comments	Identifies pixels, inches or other units of measure for Assets Types		

M65-Additional Info

Ref Num	M65	***XML Element***	AdditionalInformation
Format	AN1/48		
Requirement	O	***Code Table***	
Example	30 Degrees		
External Ref			
Comments	User Free Form information about Digital Asset		

M70-Details/Descriptions

Ref Num	M70	***XML Element***	Details
Format	AN1/80		
Requirement	O	***Code Table***	
Example			
External Ref			
Comments	General Description for the Use of the Digital Asset		

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		

M90-File Date Modified

Ref Num	M90	***XML Element***	FileDateModified
Format	D		
Requirement	O	***Code Table***	
Example	2010-12-31		
External Ref			
Comments	Last Date of Addition or change		

M91-Effective Data

Ref Num	M91	***XML Element***	EffectiveDate
Format	D		
Requirement	O	***Code Table***	
Example	2011-01-01		
External Ref			
Comments	A Date the Digital Asset is Valid From		

M92-Expiration Date

Ref Num	M92	***XML Element***	ExpirationDate
Format	D		
Requirement	O	***Code Table***	
Example	2011-12-31		
External Ref			
Comments	A Date the Digital Asset is no longer Valid		

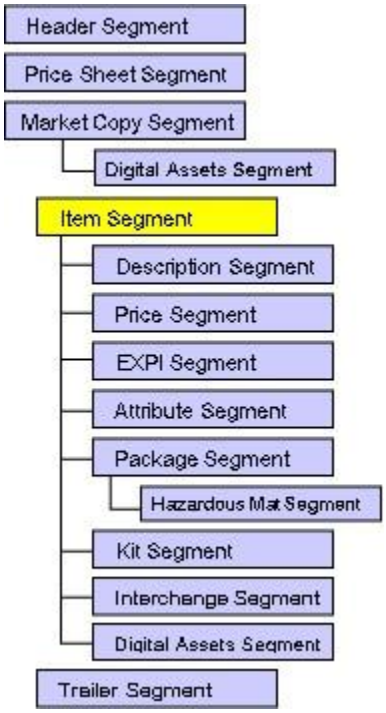
M98-Country Code

Ref Num	M98	***XML Element***	Country
Format	ID2	***XML Attribute***	
Requirement	KO	***Code Table***	
Example	CA		
External Ref	ISO Table 3166		
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.		

M99-Language Code

Ref Num	M99	***XML Element***	
Format	ID2	***XML Attribute***	Language Code
Requirement	KO	***Code Table***	
Example	EN		
External Ref	ISO table 639-1		
Comments	Defaults to Head Record, 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 on from the end of this code sample.

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.aftermarket.org">
        <TestFile>…</TestFile>
        <Header>…</Header>
        <PriceSheets>…</PriceSheets>
        <Items>
            <Item MaintenanceType="A">

                <HazardousMaterialCode>Y</HazardousMaterialCode>
                <BaseItemID>AB123YG</BaseItemID>
                <ItemLevelGTIN GTINQualifier="UP">00123456789101</ItemLevelGTIN>
                <PartNumber>AB12389</PartNumber>
                <BrandAAIAID>BBBB</BrandAAIAID>
                <BrandLabel>Wonderhose</BrandLabel>
                <QuantityPerApplication >2</QuantityPerApplication>
                <UOM>EA</UOM>
                <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>
```

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, including PIES. The following section is included 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.

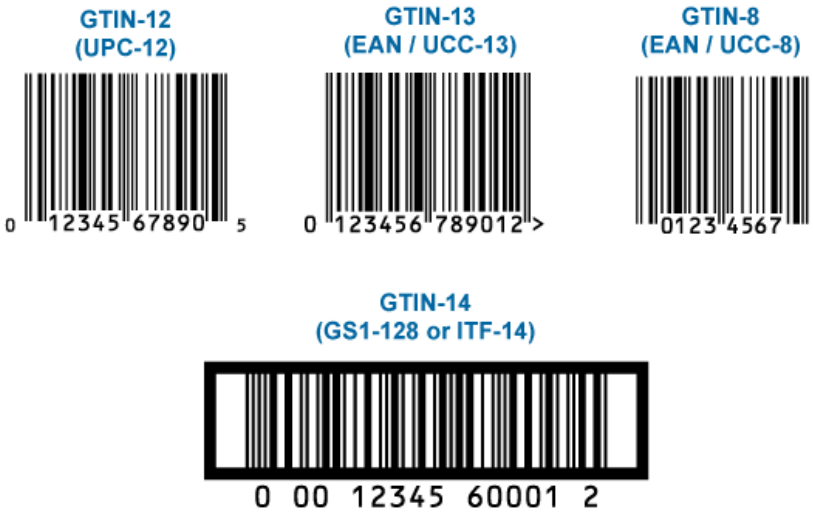
What is GTIN?

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



Today, 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

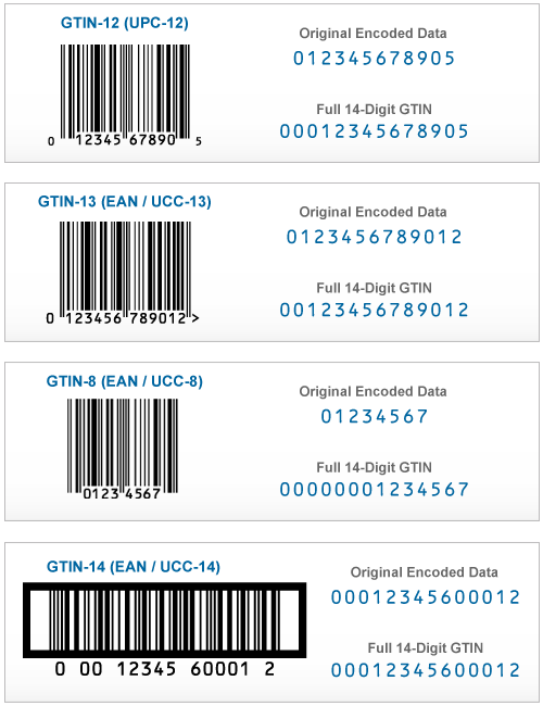
Since the inception of bar codes with the UPC more than 29 years ago, hundreds of thousands of possible number combinations have been issued as manufacturer or company prefixes. GS1 has continually changed the standards of the issuing numbers, but the fact remains that at a point in the very near future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

Data Structure / Data Storage Examples



Summary

From a data perspective, we treat a GTIN data format as always 14 digits, regardless of whether a GTIN is a GTIN-13,-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 3 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 GTIN-14, 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)

B02-Maintenance Type

Ref Num	B02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	
Example	A		
External Ref			
Comments	Required Attribute of <Item>. <Item> is the parent XML element for an individual Part Number. A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed for the upper level Item Record.		

B03-Hazardous Material Code (Y/N)

Ref Num	B03	**XML Element**	HazardousMaterialCode
Format	ID1		
Requirement	R	**Code Table**	
Example	Y		
External Ref			
Comments	Y/N – Flag indicating if Item contains Hazardous Material. Appropriate HAZMAT codes should be indicated in the PACKAGING Segment.		

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**	
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 GTIN", for further clarification.		

B11-Item-Level GTIN Qualifier

Ref Num	B11	**XML Element**	
Format	ID2	**XML Attribute**	GTINQualifier
Requirement	C	**Code Table**	Appendix A - GTIN Qualifiers
Example	UP		
External Ref	www.x12.org/x12org/index.cfm		
Comments	Attribute of "ItemLevelGTIN". UP and EN are only valid values If "Item-Level GTIN" is populated, then this attribute is required. Subset of ANSI X.12 Element 235 Code List		

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***	
Example	BZZZ		
External Ref	www.aftermarket.org/Technology/PIES.aspx		
Comments	Brand ID found in the AAIA maintained Parent/Supplier/Brand Code Registry Table. ** Please note that AAIA modified the Brand Code Table to support only 4 character code values in June of 2007.*		

B25-Brand Label

Ref Num	B25	***XML Element***	BrandLabel
Format	AN1/60		
Requirement	O	***Code Table***	
Example	Wonderhose		
External Ref	www.aftermarket.org/Technology/PIES.aspx		
Comments	Verbose Brand Name as found in AAIA Parent/Supplier/Brand Code Table for indicated Brand ID		

B27-SubBrand AAIAID

Ref Num	B27	***XML Element***	SubBrandAAIAID
Format	ID4		
Requirement	O	***Code Table***	
Example	DCBA		
External Ref	www.aftermarket.org/Technology/PIES.aspx		
Comments	SubBrand ID found in the AAIA maintained Parent/Supplier/Brand Code Registry Table. ** Please note that AAIA modified the Brand Code Table to support only 4 character code values in June of 2007.*		

B28-SubBrand Label

Ref Num	B28	***XML Element***	SubBrandLabel
Format	AN1/60		
Requirement	O	***Code Table***	
Example	Super Series		
External Ref	www.aftermarket.org/Technology/PIES.aspx		
Comments	Verbose SubBrand Label found in the AAIA maintained Parent/Supplier/Brand Code Registry Table.		

B30-ACES Applications

Ref Num	B30	XML Element	ACESApplications
Format	ID1		
Requirement	O	Code Table	
Example	Y		
External Ref			
Comments	Y/N flag indicating if the Item has any associated ACES records in that can be found in an ACES file.		

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	
Example	OZ		
External Ref	ANSI x.12 355 table		
Comments	See Recommended Values tab		

B34-Container Type

Ref Num	B34	XML Element	ContainerType
Format	ID2		
Requirement	O	Code Table	
Example	BO (Bottle)		
External Ref	ANSI X.12 355 table		
Comments	See Recommended Values tab		

B35-Quantity per Application Qualifier

Ref Num	B35	XML Element	
Format	ID3	XML Attribute	Qualifier
Requirement	O	Code Table	Vehicle Quantity Qualifier Code
Example	NOR		
External Ref			
Comments	Attribute of "Quantity per Application". This is an optional attribute. Differences in application quantities		

B40-Quantity per Application

Ref Num	B40	XML Element	QuantityPerApplication
Format	N1/8		
Requirement	O	Code Table	
Example	12		
External Ref			
Comments	Typical Quantity used on a single vehicle or application		

B41-Quantity per Application UOM

Ref Num	B41	**XML Element**	
Format	ID2	**XML Attribute**	UOM
Requirement	C	**Code Table**	
Example	EA		
External Ref	www.x12.org/x12org/index.cfm		
Comments	Attribute for "Quantity per Application". This is a required attribute if "Quantity per Application" is provided. Conditional on use of "Quantity per Application". ANSI X.12 Element 355		

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**	
Example	EA		
External Ref	www.x12.org/x12org/index.cfm		
Comments	Attribute of "Minimum Order Quantity". This attribute is required if "Minimum Order Quantity" is provided. Conditional on "Minimum Order Quantity". ANSI X.12 Element 355		

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. <ManufacturerProductCodes> is used for organizational purposes to group "Product Group Code" and "Product Sub-Group Code". "Product Group Code" is required while "Product Sub-Group 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***	
Example	330102		
External Ref			
Comments	AAIA Category Management Hierarchy. Category/Sub-Cat/Segment for Sales Reporting. http://www.aftermarket.org/Committees/CategoryManagement/Hierarchies		

B63-UNSPSC Code

Ref Num	B63	***XML Element***	UNSPSC
Format	ID8/10		
Requirement	O	***Code Table***	
Example	11223344		
External Ref	www.unspsc.org		
Comments	Universal Standard Product & Service Classification. The Universal Standard Products and Services Classification (UNSPSC) is an open, non-proprietary 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.		

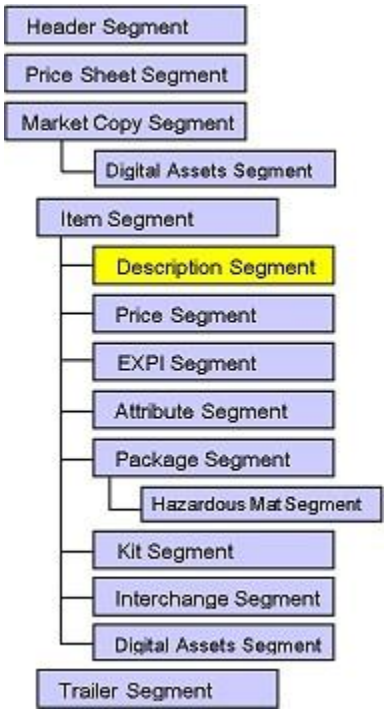
B64-Part Terminology ID

Ref Num	B64	***XML Element***	PartTerminologyID
Format	ID4/5		
Requirement	O	***Code Table***	
Example	55555		
External Ref	www.aftermarket.org/Technology/PIES.aspx		
Comments	PCDB Part Type Code from AAIA Parts Classification Database		

B65-VMRS Code (Heavy Duty)

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

C01-Description Segment (DESC)



There are more than a dozen 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 Appendix A - Description Codes. The Description segment allows you to send as few as zero and as many as you would like 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 that you want to convey about an individual Item part number, you simply loop (repeat) the <Description> element changing the "DescriptionCode" Attribute 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...

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-
instance" xmlns="http://www.aftermarket.org">
    <TestFile>…</TestFile>
    <Header>…</Header>
    <PriceSheets>…</PriceSheets>
    <Items>
        <Item>
            …
            <Descriptions>
                <Description LanguageCode="text"
                MaintenanceType="A"    DescriptionCode="ABR">String</Description>
                <Description LanguageCode="text" MaintenanceType="A"
                DescriptionCode="DES">String</Description>
            </Descriptions>
```

C02-Maintenance Type

Ref Num	C02	***XML Element***	
Format	ID1	***XML Attribute***	MaintenanceType
Requirement	M	***Code Table***	
Example	A		
External Ref			
Comments	Required Attribute of "Description". A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

C05-Description Code

Ref Num	C05	***XML Element***	
Format	ID3	***XML Attribute***	DescriptionCode
Requirement	KM	***Code Table***	Appendix A - Description Code
Example	DES		
External Ref			
Comments	Required Attribute of "Description". Enumerated values contained in Code Table specified. Coded value that identifies the type of Description passed in field "Description"		

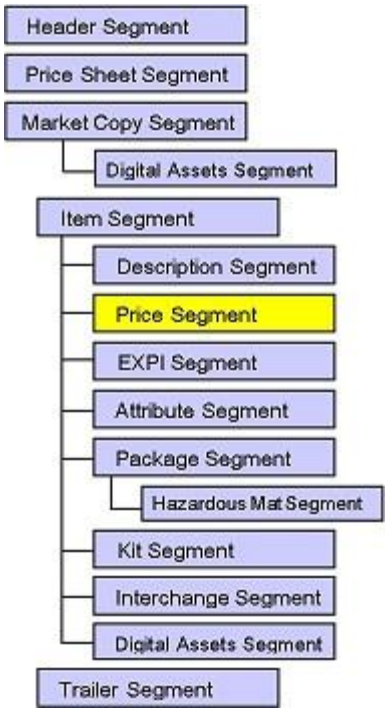
C10-Description

Ref Num	C10	***XML Element***	Description
Format	Variable Per "Description Code" Attribute. See Appendix A - Description Code		
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***	
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of "Description" ISO Table 639-1 Values. Override value for individual Segment Loop.		

D01-Pricing Segment (PRCE)



Like the Description Segment, the Pricing Segment is another grouping segment for an individual instance of an <Item> record. The Pricing Segment allows the data sender to express multiple pricing types for an individual Item Part Number. PIES defines multiple price types found throughout the aftermarket and these have been documented in Appendix A - Price Type Codes.

The Pricing Segment is defined by the parent XML element <Prices>. Within this element group, there may be multiple instances of <Pricing> which defines a single pricing instance. This element takes a "Price Type" as an attribute indicating what type of price the following child elements are relaying data in relation to.

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.

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.aftermarket.org">
        <TestFile>…</TestFile>
        <Header>…</Header>
        <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***	
Example	A		
External Ref			
Comments	Required Attribute of <Pricing> XML Element. <Pricing> is the Parent Element for a single "Price" instance. A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

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***	
Example	USD		
External Ref	www.iso.org		
Comments	ISO Table 4217. 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 on override of the PRCE 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***	Appendix A – Price Type
Example	JBR		
External Ref			
Comments	Required Attribute of <Pricing> XML Element. <Pricing> is the Parent Element for a single "Price" instance. Enumerated values contained in Code Table specified. Code value identifying the type of price conveyed in "Price" (D40). See Price Type Code Table for complete list of types.		

D40-Price

Ref Num	D40	***XML Element***	Price
Format	N4-5/10		
Requirement	M	***Code Table***	
Example	12.5000		
External Ref			
Comments	Price value for type defined in "Price Type" (D35) 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***	
Example	PE		
External Ref	http://www.x12.org/x12org/index.cfm		
Comments	Required Attribute of "Price". Indicates the unit of measure for the price defined in "Price". See ANSI X.12 639 Table for Unit Price Code List. PE is the most widely used value for this field. "EA" is a commonly misused value for this field, but use of the values in Table 639 is required by ANSI standards for invoices.		

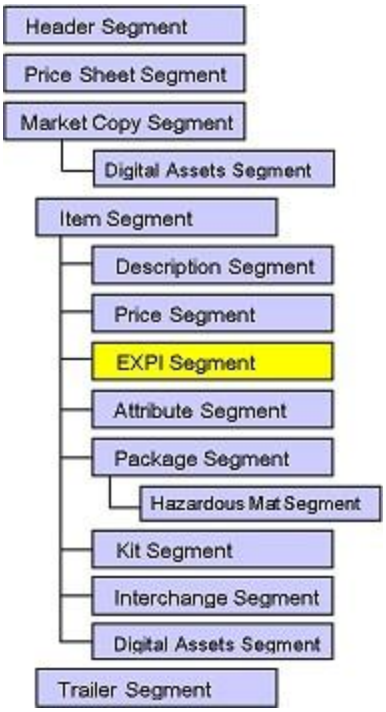
D45-Price Break Quantity

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***	
Example	EA		
External Ref	http://www.x12.org/x12org/index.cfm		
Comments	Required Attribute of "Price Break Quantity". Required field if "Price Break Quantity" value is specified. See ANSI X.12 355 Table for Unit or Basis for Measurement Code List.		

E01-Extended Product Information Segment (EXPI)



The Extended Product Information (EXPI) Segment is designed to relay information about an Item Part Number which did not fit logically into any other segments. The EXPI Segment contains information ranging from "Country of Origin" to "Warranty Terms".

The EXPI Segment functions much like the Description Segment. The attribute "EXPICode" is used within the <ExtendedProductInformation> element to indicate what type of data the user is defining. For a complete list of EXPI Codes, see Appendix A - EXPI Codes.

The format of the data expressed in the "EXPI Data" field (<ExtendedProductInformation>) is dependent on the "EXPI Code" selected. Appendix A – EXPI Codes contains information about valid data value formats for the corresponding 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.aftermarket.org">
    <TestFile>…</TestFile>
    <Header>…</Header>
    <PriceSheets>…</PriceSheets>
    <Items>
        <Item>
            …
            <Descriptions>…</Descriptions>
            <Prices>…</Prices>
            <ExtendedInformation>
                <ExtendedProductInformation MaintenanceType="A" LanguageCode="US"
                EXPICode="CTO">US</ExtendedProductInformation>
                <ExtendedProductInformation MaintenanceType="A" LanguageCode="US"
                EXPICode="LIF">3</ExtendedProductInformation>
            </ExtendedInformation>
```

E02-Maintenance Type

Ref Num	E02	***XML Element***	
Format	ID1	***XML Attribute***	MaintenanceType
Requirement	M	***Code Table***	
Example	A		
External Ref			
Comments	Required Attribute of "EXPI Data" A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

E05-EXPI Code

Ref Num	E05	***XML Element***	
Format	ID3	***XML Attribute***	EXPICode
Requirement	KM	***Code Table***	Appendix A – EXPI Codes
Example	CTO		
External Ref			
Comments	Required Attribute of "EXPI Data". Enumerated values in Code Table specified. Code value identifying type of Item information specified in "EXPI Data" field.		

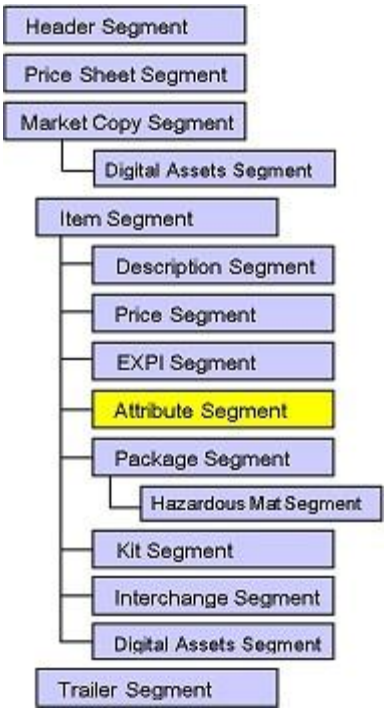
E10-EXPI Data

Ref Num	E10	***XML Element***	ExtendedProductInformation
Format	Variable per "EXPI Code" Attribute value. See Appendix A – EXPI Codes		
Requirement	KM	***Code Table***	Appendix A – EXPI Codes
Example			
External Ref			
Comments	Please note that some "EXPI Codes" require the "EXPI Data" to contain valid Code values as well. See Appendix A – Life Cycle Status Codes See Appendix A – POP Codes See Appendix A – Warranty Special Codes Other values may reference external code tables such as ISO 3166 Country Codes.		

E15-Language Code

Ref Num	E15	***XML Element***	
Format	ID2	***XML Attribute***	LanguageCode
Requirement	KO	***Code Table***	
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of "EXPI Data" ISO Table 639-1 Values. Override value for individual Segment Loop.		

F01-Product Attribute Segment (ATRB)



The Product Attribute Segment is perhaps the least understood segment of the PIES Standard. 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, that is, attributes of the product that 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. This means, 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. The PADB is a new set of tables maintained for the industry by the Automotive Aftermarket Industry Association, and ensures consistency in the conveyance of product physical and performance characteristics. .

The PADB also controls 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 it (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).

In essence, 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.

Visit aftermarket.org for more information on the use and subscription to the Product Attribute Database (PADB) and for review of the "Product Attribute Database (PADB)" documentation.

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 generally rare, a particular case of use 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.

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

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

2 a) 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>
```


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

2 b) 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>
```


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

2 c) 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>
…
```


F02-Maintenance Type

Ref Num	F02	***XML Element***	
Format	ID1	***XML Attribute***	MaintenanceType
Requirement	M	***Code Table***	
Example	A		
External Ref			
Comments	Required Attribute of "Attribute Data" A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

F05-Attribute ID (Type)

Ref Num	F05	***XML Element***	
Format	AN1/80	***XML Attribute***	AttributeID
Requirement	KM	***Code Table***	PADB
Example	1141; Friction Material Thickness Inner Pad		
External Ref			
Comments	Required Attribute of "Attribute Data". ***SPECIAL NOTE: When Element F07 (PADB Attribute) is set to 'Y' for YES, the information conveyed in this attribute should be the PAID (Product Attribute ID Number) from the PADB (Product Attribute Database). 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***	
Example	Y		
External Ref			
Comments	This is a mandatory flag indicating whether the attribute being sent is User-Defined ("N") or whether the attribute being sent is drawn from the Product Attribute Database (PADB) ("Y")		

F08-Attribute UOM

Ref Num	F08	***XML Element***	
Format	AN1/20	***XML Attribute***	AttributeUOM
Requirement	O	***Code Table***	PADB
Example	mm		
External Ref			
Comments	**Unit of Measure (UOM) associated with Product Attribute - When F07 is 'Y' this field uses the METAUOMCODES table in the PADB, NOT the UOM Label.**		

F10-Attribute Data

Ref Num	F10	XML Element	ProductAttribute
Format	AN1/2000		
Requirement	M	Code Table	PADB
Example	Stainless Steel		
External Ref			
Comments	Required if "Attribute ID (Type)" specified. Supplier assigned value corresponding to "Attribute ID" or drawn from Valid Values field in the PADB. Each ProductAttribute record can have only a single value. Multi-valued attributes are handled by creating multiple ProductAttribute records with the same ID and different MultiValueSequence.		

F11-PADB Style ID

Ref Num	F11	***XML Element***	
Format	N1/5	***XML Attribute***	StyleID
Requirement	O	***Code Table***	PADB
Example			
External Ref			
Comments	**Optional when F07 is 'Y'. The Style ID represents the the Style of the part to which the attribute applies.**		

F15-Record Sequence

Ref Num	F15	***XML Element***	
Format	N1/3	***XML Attribute***	RecordNumber
Requirement	O	***Code Table***	
Example	1		
External Ref			
Comments	Optional Attribute of "Attribute Data" 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 "Attribute Data" Permits the supplier of data to convey how many multiple values for the attribute data are to be included as a total record.		

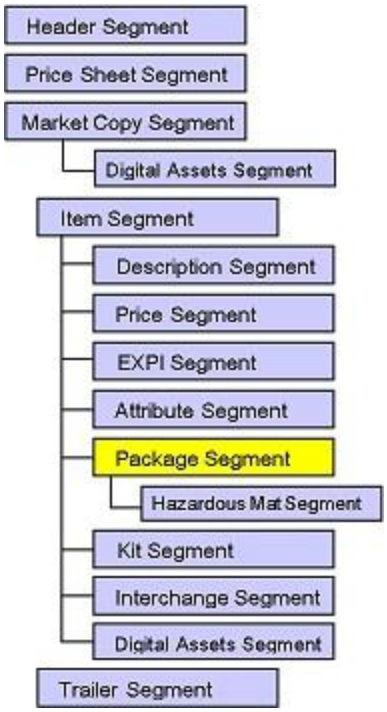
F18-Multi Value Sequence

Ref Num	F18	***XML Element***	
Format	N1/3	***XML Attribute***	MultiValueSequence
Requirement	O	***Code Table***	
Example	1		
External Ref			
Comments	Optional Attribute of "Attribute Data" 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***	
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of "Attribute Data" ISO Table 639-1 Values. 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 contain data for. To see a complete list of "Package UOM" values, refer to Appendix A - Package UOM Codes.

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 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.aftermarket.org">
    <TestFile>…</TestFile>
    <Header>…</Header>
    <PriceSheets>…</PriceSheets>
    <Items>
        <Item>
            …
            <Descriptions>…</Descriptions>
            <Prices>…</Prices>
            <ExtendedInformation>…</ExtendedInformation>
            <ProductAttributes>…</ProductAttributes>
            <Packages>
                <Package MaintenanceType="A">
                    <PackageLevelGTIN>50055555000001</PackageLevelGTIN>
                    <ElectronicProductCode> </ElectronicProductCode>

                    <PackageBarCodeCharacters>00555550000P10</PackageBarCodeCharact
                ers>
                    <PackageUOM>EA</PackageUOM>
                    <QuantityofEaches>1</QuantityofEaches>
                    <Dimensions UOM="IN">
                        <Height>3.9999</Height>
                        <Width>3.9999</Width>
                        <Length>3.9999</Length>
                    </Dimensions>
                    <Weights UOM="String">
                        <Weight>8.9999</Weight>
                        <DimensionalWeight>String</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***	
Example	A		
External Ref			
Comments	Required Attribute of <Packaging> XML Element. <Packaging> is the parent element for a single instance of a package level record. A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

H05-Package Level GTIN

Ref Num	H05	***XML Element***	PackageLevelGTIN
Format	N14		
Requirement	O	***Code Table***	
Example	30123456789013		
External Ref	www.gs1.org		
Comments	GTIN-14 format (Pack Level | Vendor | Item Num | Check Digit). 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 GTIN", for further clarification. See Appendix A – Package UOM Code Table for list of GTIN Pack Level Indicators.		

H07-Electronic Product Code

Ref Num	H07	***XML Element***	ElectronicProductCode
Format	AN27		
Requirement	O	***Code Table***	
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***	
Format	ID2	***XML Attribute***	PackageUOM
Requirement	KM	***Code Table***	Appendix A – Package UOM
Example	CA		
External Ref			
Comments	Identifies package level type. See code table for values. 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***	
Example	EA		
External Ref	ANSI X.12 355 table		
Comments	See Recommended Values tab		

H24-Orderable Package

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

H25-Height

Ref Num	H25	***XML Element***	Height
Format	N4-5/8		
Requirement	C	***Code Table***	
Example	2.3333		
External Ref			
Comments	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-Width

Ref Num	H30	***XML Element***	Width
Format	N4-5/8		
Requirement	C	***Code Table***	
Example	5.5555		
External Ref			
Comments	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 dimension information, Height, Width, Length are all required.		

H35-Length

Ref Num	H35	***XML Element***	Length
Format	N4-5/8		
Requirement	C	***Code Table***	
Example	19.6666		
External Ref			
Comments	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 dimension information, Height, Width, Length are all required.		

H40-UOM for Dimensions

Ref Num	H40	***XML Element***	
Format	ID2	***XML Attribute***	UOM
Requirement	C	***Code Table***	
Example	IN		
External Ref	www.x12.org/x12org/index.cfm		
Comments	Required Attribute of <Dimensions>. <Dimensions> is the grouping XML Element for Height, Width and Length and is a child of <Package>. Required if "Height", "Width", "Length" specified. See ANSI X.12 355 Table for code values. • IN = Inches • CM = Centimeters		

H45-Weight

Ref Num	H45	***XML Element***	Weight
Format	N4-5/9		
Requirement	C	***Code Table***	
Example	10.335		
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***	
Example	PG		
External Ref	www.x12.org/x12org/index.cfm		
Comments	Required Attribute of <Weights>. <Weights> is the grouping XML Element for "Weight" and "Dimensional Weight". Required if "Weight" specified. See ANSI X.12 355 Table for Code Values. Examples… PG = Gross Pounds GT = Gross Kilograms		

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.		

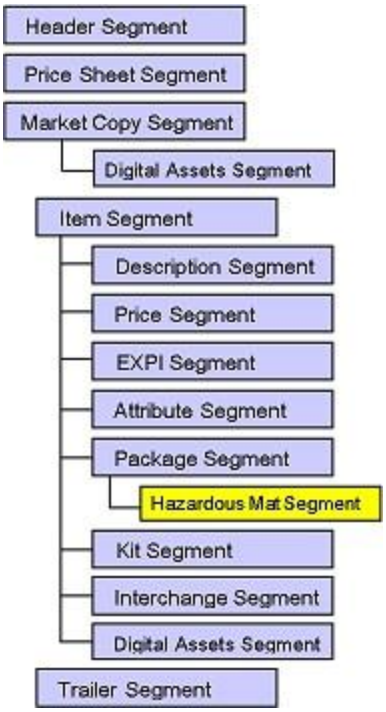
H50-Dimensional Weight

Ref Num	H50	***XML Element***	DimensionalWeight
Format	R1/9		
Requirement	O	***Code Table***	
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. Domestic ground and air shipping formula for Dimensional Weight is (Height x Width x Length) / 194. See External Ref 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)



Unlike all of the other defined so far after the Item Segment, the Hazardous Material Package Segment does not repeat as a loop of <Item>. Rather, this segment is a looping structure within the <Packaging> segment.

Hazmat information is relayed in this fashion 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 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.aftermarket.org">
    <TestFile>…</TestFile>
    <Header>…</Header>
    <PriceSheets>…</PriceSheets>
    <Items>
        <Item>
            …
            <Descriptions>…</Descriptions>
            <Prices>…</Prices>
            <ExtendedInformation>…</ExtendedInformation>
            <ProductAttributes>…</ProductAttributes>
            <Packages>
                <Package>
                  …
                  <HazardousMaterial MaintenanceType="A" LanguageCode="aa">
                    <ShippingScope>aaa</ShippingScope>
                    <Bulk>a</Bulk>
                    <RegulatingCountry>aa</RegulatingCountry>
                    <TransportMethod>a</TransportMethod>
                    <Regulated>a</Regulated>
                    <Description>a</Description>
                    <HazardousClass>a</HazardousClass>
                    <HazardousMaterialCodeQualifier></HazardousMaterialCodeQualifier>
                    <HazardousMaterialClassCode>a</HazardousMaterialClassCode>
                    <HazardousMaterialDescription></HazardousMaterialDescription>
                    <ShippingName>a</ShippingName>
                    <UNNAIDCode>aaaaaa</UNNAIDCode>
                    <HazardousPlacardNotation>a</HazardousPlacardNotation>
                    <WHMISCode>a</WHMISCode>
                    <WHMISFreeText>a</WHMISFreeText>
                    <PackingGroupCode>a</PackingGroupCode>
                    <RegulationsExemptionCode>a</RegulationsExemptionCode>
                    <TextMessage>String</TextMessage>
                    <OuterPackageLabel>a</OuterPackageLabel>
                  </HazardousMaterial>
                </Package>
            </Packages>
```


J02-Maintenance Type

Ref Num	J02	***XML Element***	
Format	ID1	***XML Attribute***	MaintenanceType
Requirement	M	***Code Table***	
Example	A		
External Ref			
Comments	Required Attribute of <HazardousMaterial> XML Element. <HazardousMaterial> is the parent element for a package level instance of HazMat information. A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

J04-Shipping Scope

Ref Num	J04	***XML Element***	ShippingScope
Format	ID3		
Requirement	KM	***Code Table***	
Example	DOM		
External Ref			
Comments	This indicates whether you (the source location) are shipping Domestically (DOM) or internationally (INT) DOM = Domestic INT = International		

J05-Bulk

Ref Num	J05	***XML Element***	Bulk
Format	ID1		
Requirement	KM	***Code Table***	
Example	N		
External Ref			
Comments	Indicates whether the goods shipped are being shipped in bulk (B) or non-bulk (N). B = Bulk N = Non-Bulk		

J10-Regulating Country of Origin

Ref Num	J10	***XML Element***	RegulatingCountry
Format	ID2		
Requirement	M	***Code Table***	
Example	US		
External Ref	www.iso.org		
Comments	Identify, using the ISO Country Codes, the Country from which the goods are initially shipped. ***NOTE: 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)*** See ISO Table 3166		

J15-Transport Method

Ref Num	J15	***XML Element***	TransportMethod
Format	ID1		
Requirement	KM	***Code Table***	
Example	A		
External Ref			
Comments	Indicates the Principal shipping MODE – you may have to fill out additional forms if intermodal or trans-shipped, however the Principal shipping Mode is the long-haul method of shipping used. (From Country of Origin of Shipping is US; A=Air, R=Rail, T=Truck, V=Vessel; From Country of Origin of Shipping is Canada, A=Air, R=Rail, Truck=ROAD, Vessel=MARINE). NOTE: This is different from the documentation you may require if shipping intermodal. A = Air R = Rail T = Truck (Canada: "Road") V = Vessel (Canada: "Marine")		

J20-Regulated

Ref Num	J20	***XML Element***	Regulated
Format	ID1		
Requirement	M	***Code Table***	
Example	Y		
External Ref			
Comments	This is a conditional field. If the Goods are Regulated, use a "Y" and fill in J25, J30, J35, J40, and J65). If the Goods are not Regulated, use an "N" and ignore the J25, J30, J35, J40, and J65 fields.		

J25-Description

Ref Num	J25	***XML Element***	Description
Format	AN1/200		
Requirement	C	***Code Table***	
Example			
External Ref			
Comments	Required if "Regulated" is Yes. Provide a text description of the goods, up to 200 characters		

J30-Hazardous Class

Ref Num	J30	***XML Element***	HazardousClass
Format	ID1/10		
Requirement	C	***Code Table***	
Example	2.2		
External Ref			
Comments	Required if "Regulated" is Yes. Please use the appropriate referable Hazardous Class. May be multiple classes such as 2.3,3.2 or ORM-AIR		

J31-Hazardous Material Code Qualifier

Ref Num	J31	***XML Element***	HazardousMaterialCodeQualifier
Format	ID1		
Requirement	O	***Code Table***	
Example	D		
External Ref			
Comments	– Generally, this should be "D" for Department of Transport Hazardous Material Code List, as most shipments are ROAD related. Use ANSI X.12 Element 208 Hazardous Material Code Qualifier List to identify appropriate alternate code qualifiers		

J32-Hazardous Material Class Code

Ref Num	J32	***XML Element***	HazardousMaterialClassCode
Format	ID1/4		
Requirement	O	***Code Table***	
Example			
External Ref	www.myregs.com/dotrspa/		
Comments	Shipping from the US, use the applicable code from Department of Transportation CFR49 Section 173 Hazardous Materials Class Code List		

J33-Hazardous Material Description

Ref Num	J33	***XML Element***	HazardousMaterialDescription
Format	AN1/80		
Requirement	O	***Code Table***	
Example			
External Ref			
Comments	Provide an Item-level description of the Hazardous Material, up to 80 characters		

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. Required if "Regulated" is Yes.		

J40-UN/NA ID Code

Ref Num	J40	***XML Element***	UNNAIDCode
Format	ID6		
Requirement	C	***Code Table***	
Example	ID8000		
External Ref	www.myregs.com/dotrspa/		
Comments	Required if "Regulated" is Yes. United Nations / North America Title 49 Code. From the US, provide Department of Transportation CFR49 Section 172.101 Table of Hazardous Materials Identification Number		

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***	
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***	
Example			
External Ref	www.x12.org/x12org/index.cfm		
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. Group I: great danger, and most protective packaging required. Some combinations of different classes of dangerous goods on the same vehicle or in the same container are forbidden if one of the goods is Group I.[10] Group II: medium danger Group III: least danger among regulated goods, and least protective packaging within the transportation requirementSee ANSI Table 254		

J55-Regulations Exemption Code

Ref Num	J55	***XML Element***	RegulationsExemptionCode
Format	ID1/4		
Requirement	O	***Code Table***	
Example			
External Ref	www.x12.org/x12org/index.cfm		
Comments	ANSI X.12 Element 1577 Regulations Exemption Code List		

J60-Text Message

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

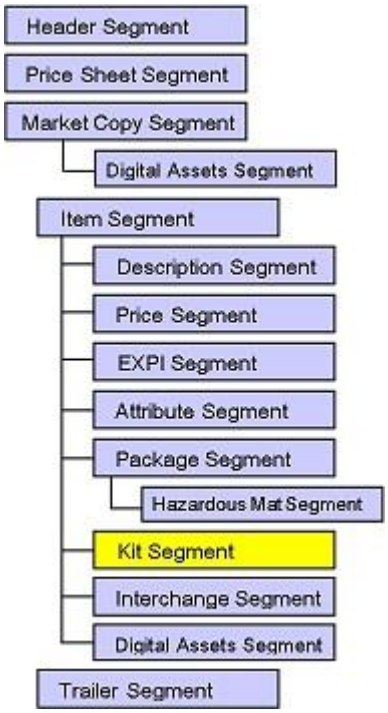
J65-Outer Package Label

Ref Num	J65	***XML Element***	OuterPackageLabel
Format	AN1/20		
Requirement	C	***Code Table***	
Example	ORM-AIR		
External Ref			
Comments	Required if "Regulated" is Yes. 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***	
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of <HazardousMaterial> XML Element. <HazardousMaterial> is the parent element for a package level instance of HazMat information. ISO Table 639-1 Values. Override value for individual Segment Loop.		

K01-Kits Segment (KITS)



The Kit Segment of PIES has been traditionally used to simply convey the marketable part numbers contained in a kit Bill of Materials (BOM). In the world of electronic commerce, and Rich Content, the Kit Segment has been significantly enhanced to show the true and full contents of an item which can be defined as a Kit (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).

To simplify definitions, a Kit could be an assembly of parts such as needed to repair/rebuild a carburetor or an engine; and a Set could be a selection of a range of tools, such as a Drill Bit Set, or a Tool Assortment, or even something more generic as a Battery Booster Cable Set, a Bungee Cord Set, or a Set of Model Cars.

In many cases, however, the Items contained within a Kit or a Set may not have a Marketable Part Number, but some other reference number. In recognition of this, the Kit Segment has been enhanced to enable the conveyance of Numbers 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. As in all circumstances within the PIES standard, this segment has also been enhanced to convey multilingual information.

NOTE: The elements within the KIT Segment have been re-sequenced and are not backward-compatible with previous versions of PIES

General Description of Use:

If the Item Part Number being defined is a Kit, then the Kits Segment allows the data sender to express what components are part if this particular kit. To express multiple components within a Kit, the elements within the Kit Segment is repeated as many times as necessary to identify all components.

The Kits Segment is defined by the <Kits> parent element which contains the child element <Kit>. This element contains child elements that define the component parts and supporting data.
The XML sample below shows two iterations of <Kit> which defines two component parts for the Item Part Number (a Kit)…

```
<PIES xmlns:xs="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.aftermarket.org">
    <TestFile>…</TestFile>
    <Header>…</Header>
    <PriceSheets>…</PriceSheets>
    <Items>
        <Item>
            …
            <Descriptions>…</Descriptions>
            <Prices>…</Prices>
            <ExtendedInformation>…</ExtendedInformation>
            <ProductAttributes>…</ProductAttributes>
            <Packages>
                …
                <HazardousMaterial>…</HazardousMaterial>
            </Packages>
            <Kits>
                <Kit MaintenanceType="A">
                    <ComponentPartNumber IDQualifier="VC">HOS001</ComponentPartNumber>
                    <ComponentBrand>BFJK</ComponentBrand>
                    <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>
                </Kit>
            </Kits>
```

K02-Maintenance Type

Ref Num	K02	**XML Element**	
Format	ID1	**XML Attribute**	MaintenanceType
Requirement	M	**Code Table**	
Example	A		
External Ref			
Comments	Required Attribute of <Kit>. <Kit> is a child element of <Kits>. <Kit> is the XML element for the "Component Part Number", "Quantity in Kit" and "Position Code" Attributes. A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

K03-Component Part Number

Ref Num	K05	**XML Element**	ComponentPartNumber
Format	AN1/48		
Requirement	KM	**Code Table**	
Example	HOS001-1		
External Ref			
Comments	Component Part Number or Supply Item within the Kit.		

K05-Component Brand AAIAID

Ref Num	K05	**XML Element**	ComponentBrand
Format	ID4	**XML Attribute**	
Requirement	M	**Code Table**	AAIA Parent Brand Table
Example	BFJK		
External Ref			
Comments	Brand of Component within the Kit		

K06-Component ID Qualifier

Ref Num	K06	**XML Element**	
Format	ID2	**XML Attribute**	IDQualifier
Requirement	M	**Code Table**	
Example	VC		
External Ref	www.x12.org/x12org/index.cfm		
Comments	Required Attribute of "Component Part Number". ANSI X.12 Element 235 Code List – Acceptable values are contained in the PIES Recommended Code Table Values		

K09-Description Code

Ref Num	K09	**XML Element**	
Format	ID3	**XML Attribute**	DescriptionCode
Requirement	KM	**Code Table**	Description Code Table
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**	Description Code Table
Example	6pt-1/4" Drill Bit		
External Ref			
Comments			

K12-Language Code

Ref Num	K12	***XML Element***	
Format	ID2	***XML Attribute***	LanguageCode
Requirement	KO	***Code Table***	
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of "Description" ISO Table 639-1 Values. 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		

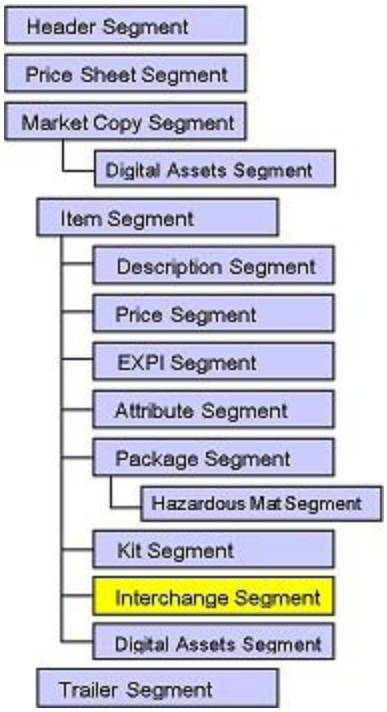
K20-Quantity UOM

Ref Num	K20	***XML Element***	
Format	ID2	***XML Attribute***	UOM
Requirement	M	***Code Table***	
Example	EA		
External Ref	www.x12.org/x12org/index.cfm		
Comments	Required Attribute of "Quantity in Kit". ANSI X.12 Element 355 Unit or Basis for Measurement Code List		

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.		

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 Owner Part Numbers. The segment is defined by the <PartInterchangeInfo> grouping element. Within <PartInterchangeInfo> is the <PartInterchange> element which contains the child elements to define a single interchange instance for the Item Part Number.

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 Code 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.

Like previous segments, to express multiple interchanges for an Item Part Number, the Interchange Segment is repeated.

The following XML sample shows the relation of the Interchange Segment to the preceding PIES elements…

```
<PIES
xmlns:xs="http://www.w3.org/2001/XMLSchema-
instance" xmlns="http://www.aftermarket.org">
    <TestFile>…</TestFile>
    <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="aa">
                        <TypeCode>O</TypeCode>
                        <BrandAAIAID>BZZN</BrandAAIAID>
                        <BrandLabel>Widgets</BrandLabel>
                        <PartNumber>1234</PartNumber>
                        <QualityGradeLevel>P</QualityGradeLevel>
                        <InterchangeNotes>aaaaaaa</InterchangeNotes>
                        <InternalNotes>aaaaaaa</InternalNotes>
                </PartInterchange>
            </PartInterchangeInfo>
```

N02-Maintenance Type

Ref Num	N02	***XML Element***	
Format	ID1	***XML Attribute***	MaintenanceType
Requirement	M	***Code Table***	
Example	A		
External Ref			
Comments	Required Attribute of <PartInterchange>. <PartInterchange> is the parent XML element for the elements listed below. A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

N05-Interchange Type Code

Ref Num	N05	***XML Element***	TypeCode
Format	ID1		
Requirement	KM	***Code Table***	Appendix A – Interchange Type Code
Example	O		
External Ref			
Comments	O = OE – Supplier part number interchanges with OE part number S = Substitute – Interchange with other aftermarket supplier's product U = User Specified - Type code used when other's do not apply		

N10-Brand AAIAID

Ref Num	N10	***XML Element***	BrandAAIAID
Format	ID4		
Requirement	KM	***Code Table***	
Example	BDCD		
External Ref			
Comments	Assigned by AAIA in Parent/Supplier/Brand Registry		

N15-Brand Label

Ref Num	N15	***XML Element***	BrandLabel
Format	AN1/60		
Requirement	O	***Code Table***	
Example	Acme Parts		
External Ref			
Comments	Brand Name as identified by "Brand AAIAID"		

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		

N25-Quality Grade Level

Ref Num	N25	***XML Element***	QualityGradeLevel
Format	ID1		
Requirement	O	***Code Table***	Appendix A – Quality Grade Level
Example	P		
External Ref			
Comments	P = Premium O = OEM S = Standard		

N30-Interchange Notes

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

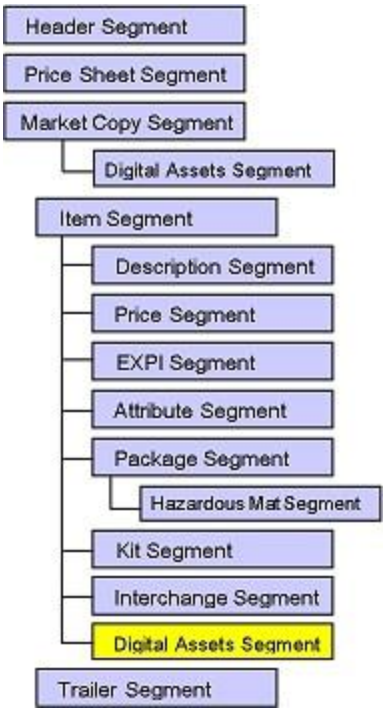
N35-Internal Notes

Ref Num	N35	***XML Element***	InternalNotes
Format	AN1/240		
Requirement	O	***Code Table***	
Example	Private Brand		
External Ref			
Comments	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***	
Example	EN		
External Ref	www.iso.org		
Comments	Optional Attribute of <PartInterchange>. <PartInterchange> is the parent XML element for the elements listed above. ISO Table 639-1 Values. 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 Appendix A - Asset Type Code table. There have been a significant number of updates to the Asset Type Code table to reflect a wider variety of digital assets which can be conveyed today.

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 aftermarket has published a 2012 update to the Imaging Best Practices document, which can be found on the Aftermarket.org website. This document contains imaging recommendations covering both print usage as well as Internet based imaging and new media. This is a living document which is added as various media types are 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) are 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.

In the realm of new digital asset types, 360-degree images are now receiving attention in the marketplace. There are a number of specialized vendors of 360-degree imaging software, and the Aftermarket industry has not yet recommended or adopted a 'standard' for 360-degree imaging. However, 360 degree images can be transmitted in the PIES standard.

You may wish to explore the industry list of vendors who are members of the Automotive Aftermarket Industry Association, and have declared competencies in Image creation and management, for guideline documents in this area.

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.aftermarket.org">
        <TestFile>…</TestFile>
        <Header>…</Header>
        <PriceSheets>…</PriceSheets>
        <Items>
            <Item>
                …
                <Descriptions>…</Descriptions>
                <Prices>…</Prices>
                <ExtendedInformation>…</ExtendedInformation>
                <ProductAttributes>…</ProductAttributes>
                <Packages>
                    …
                    <HazardousMaterial>…</HazardousMaterial>
                </Packages>
                <Kits>… </Kits>
                <PartInterchangeInfo>…</PartInterchangeInfo>
                <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>
                        <AdditionalInformation>Photo from brochure</AdditionalInformation>
                        <Details>High resolution image from brochure</Details>
                        <FilePath>\Mfg\xyz.jpg</FilePath>
                        <URI>http://www.mfg.com/Images/xyz.jpg</URI>
                        <FileDateModified>2013-01-31</FileDateModified>
                        <EffectiveDate>2013-01-31</EffectiveDate>
                        <ExpirationDate>2013-12-31</ExpirationDate>
                        <Country>US</Country>
                    </DigitalFileInformation>
                </DigitalAssets>
```


P02-Maintenance Type

Ref Num	P02	***XML Element***	
Format	ID1	***XML Attribute***	MaintenanceType
Requirement	M	***Code Table***	
Example	A		
External Ref			
Comments	Required Attribute of <DigitalFileInformation>. <DigitalFileInformation> is the parent XML element for all elements listed in this segment. A- Add / C-Change / D-Delete / N-No Change. This field should be used when sending Net-Change files. Indicates to the Receiver what information has changed.		

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>. <DigitalFileInformation> is the parent XML element for all elements listed in this segment. 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***	Appendix A – Asset Type Codes
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***	Appendix A – File Type
Example	JPG		
External Ref			
Comments	TIF / JPG / EPS / GIF / BMP / PNG / PDF / DOC / EPS / XLS File extension type of the Digital Asset		

P20-Representation

Ref Num	P20	***XML Element***	Representation
Format	ID1		
Requirement	R	***Code Table***	Appendix A – Representation
Example	A		
External Ref			
Comments	Two possible values for this field are… A = Actual Product R = Representative of product		

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***	Appendix A – Resolution
Example	72		
External Ref			
Comments	DPI of Digital Asset – 72 / 96 / 300 / 600 / 800 / 1200		

P35-Color Mode

Ref Num	P35	***XML Element***	ColorMode
Format	ID3		
Requirement	O	***Code Table***	Appendix A – Color Mode Codes
Example	RGB		
External Ref			
Comments	See Code table for values		

P40-Background

Ref Num	P40	***XML Element***	Background
Format	ID3		
Requirement	R	***Code Table***	Appendix A – Background Code
Example	WHI		
External Ref			
Comments	Indicates background color/type for Digital Assets. See Code table for valid values.		

P45-Orientation View

Ref Num	P45	***XML Element***	OrientationView
Format	ID3		
Requirement	KO	***Code Table***	Appendix A – Orientation View
Example	TOP		
External Ref			
Comments	Product Orientation as shown in Image Digital Assets. See Code Table for valid values.		

P50-Asset Height

Ref Num	P50	***XML Element***	AssetHeight
Format	R1/6		
Requirement	R	***Code Table***	
Example	500		
External Ref			
Comments	Chile XML element of <AssetDimensions>. Vertical measurement of Digital Asset file. See "Asset Dimension UOM" for unit of measure.		

P55-Asset Width

Ref Num	P55	***XML Element***	AssetWidth
Format	R1/6		
Requirement	R	***Code Table***	
Example	400		
External Ref			
Comments	Child XML element of <AssetDimensions>. Horizontal measurement of Digital Asset file. See "Asset Dimension UOM" for unit of measure.		

P60-Asset Dimension UOM

Ref Num	P60	***XML Element***	
Format	ID2	***XML Attribute***	UOM
Requirement	C	***Code Table***	Appendix A – Dimension UOM
Example	PX		
External Ref			
Comments	Required Attribute of <AssetDimensions>. <AssetDimensions> is the parent XML element for "Asset Width" and "Asset Height". Identifies Pixels, Inches or other measurement units for use with various Asset Types. See Code table for valid values.		

P65-Additional Info

Ref Num	P65	***XML Element***	AdditionalInformation
Format	AN1/48		
Requirement	O	***Code Table***	
Example	30 Degree Angle		
External Ref			
Comments	User Free-Form information about Digital Asset		

P70-Details/Description

Ref Num	P70	***XML Element***	Details
Format	AN1/80		
Requirement	O	***Code Table***	
Example	POP Sales Brochure		
External Ref			
Comments	General Description of Use for the Digital Asset.		

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**		

P90-File Date Modified

Ref Num	P90	***XML Element***	FileDateModified
Format	D		
Requirement	O	***Code Table***	
Example	2010-12-31		
External Ref			
Comments	Last date of modification to defined Digital Asset file.		

P91-Effective Date

Ref Num	P91	***XML Element***	EffectiveDate
Format	D		
Requirement	O	***Code Table***	
Example	2011-01-01		
External Ref			
Comments	Date indicated by Supplier that this Digital Asset becomes usable by the Receiver. This field applies primarily to Digital Assets for use in Advertising, POP Displays, and Warranties.		

P92-Expiration Date

Ref Num	P92	***XML Element***	ExpirationDate
Format	D		
Requirement	O	***Code Table***	
Example	2011-12-31		
External Ref			
Comments	Date indicated by Supplier that this Digital Asset should expire and no longer be used by the Receiver. This field applies primarily to Digital Assets for use in Advertising, POP Displays, and Warranties.		

P98-Country Code

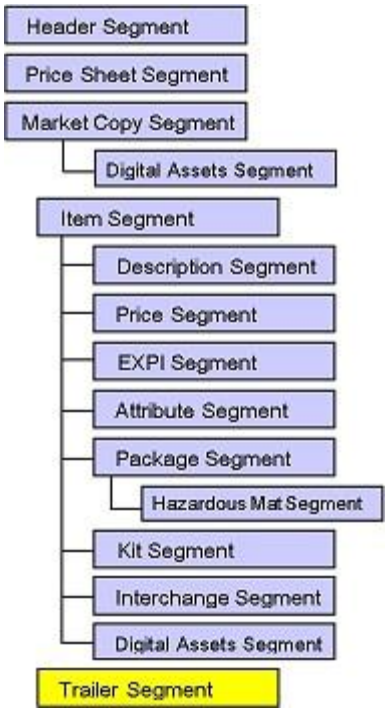
Ref Num	P98	***XML Element***	Country
Format	ID2	***XML Attribute***	
Requirement	KO	***Code Table***	
Example	CA		
External Ref	ISO Table 3166		
Comments	The Country Code is used to identify the destination Country of use for the digital asset. The case of use for this attribute is when, for example, 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***	
Example	EN		
External Ref	ISO table 639-1		
Comments	Defaults to Head Record, when not used.		

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 with Item and Record counts 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.aftermarket.org">
    <TestFile>…</TestFile>
    <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>
        <RecordCount>352</RecordCount>
    </Trailer>
</PIES>
```

Z10-Item Count

Ref Num	Z10	***XML Element***	ItemCount
Format	N1/6		
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 – Code Value Tables

Market Copy Segment Codes

Market Copy Code/Sub-Code – Market Copy Type Codes

Name **Market Copy Code/Sub-Code**
Field(s) **A82, A84**
Source PIES

Code	Code Description	Market Copy Reference Requirements
BRD	AAIA Brand	AAIA Brand ID Code (4 Char)
BOW	AAIA Brand Owner	AAIA Brand Owner Code (4 Char)
BPR	AAIA Brand Parent	AAIA Brand Parent Code (4 Char)
SBR	AAIA SubBrand	AAIA SubBrand ID Code (4 Char)
PTI	AAIA Part Terminology	AAIA PCDB Part Terminology ID
PGC	Product Group	Manufacturer-assigned Major Product Category as assigned in <Group> (B60)
PSG	Product SubGroup	Manufacturer-assigned Minor Product Category as assigned in <SubGroup> (B61)
PCC	AAIA Product Category Code	Category Management Product Category Code

Market Copy Type Codes

Name **Market Copy Type**
Field(s) **A86**
Source **PIES**

Code	Code Description	Market Copy Content Requirements
FAB	**Features and Benefits**	**Only 1 Record in Market Copy Content - do not use delimeters - send multiple elements**
GCC	**General Copy**	**Use to send general information in large paragraphs. Send only 1 paragraph per element.**

USE CASE
The addition of the Market Copy SubCode and Market Copy SubCode Reference is done 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

http://www.jcwhitney.com/pureone-premium-oil-filters/p2019350.jcwx
http://www.jcwhitney.com/pureone-premium-engine-air-filters/p2019351.jcwx

Description Segment Codes

Description Codes

Name Description Code
Field(s) C05
Source PIES

Code	MAX	PIES Field Name
ABR	12	Product Description - Abbreviated - 12
SHO	20	Product Description – Short - 20
INV	40	Product Description - Invoice - 40
DEF	80	AAIA Part Type Description
ASC	2000	Associated Comments - 2000
KEY	2000	Key Search Words - 2000
LAB	80	Label Description - 80
DES	80	Product Description – Long - 80
SHP	2000	Shipping Restrictions - 2000
SLA	2000	Slang Description - 2000
UNS	80	UN/SPSC Description - 80
VMR	80	VMRS Description
ASM	2000	Application Summary - 2000
EXT	240	Product Description - Extended 240
MKT	2000	Marketing Description - 2000

Item Segment Codes

GTIN Qualifiers

Name GTIN Qualifiers
Field(s) B11,E05-GTQ
Source Subset of ANSI X.12 Element 235 Code List

Code	Length	Description
EN	14	European Article Number (EAN) (2-5-5-1)
UP	14	U.P.C./EAN Consumer Package Code (1-5-5-1)

Vehicle Quantity Qualifier Codes

Name Vehicle Quantity Qualifier Codes
Field(s) B35
Source PIES

Code	Definition
MAX	Maximum Used in any Vehicle
MIN	Minimum Quantity Used in a Vehicle
NOR	Normal Quantity Used in a Vehicle
NOT	Not Applicable to Vehicles
REQ	As Required
VAR	Variable - See ACES Application Field V91
ZZ1	User Defined
ZZ2	User Defined
ZZ3	User Defined
ZZ4	User Defined
ZZ5	User Defined
ZZ6	User Defined
ZZ7	User Defined
ZZ8	User Defined
ZZ9	User Defined

EXPI Segment Codes

EXPI Codes

Name EXPI Code
Field(s) E05
Source PIES

Group	Code	Description	Format	Application
CORE	CCL	Core Class	AN1/8	Manufacturers Class for Core Returns
CORE	CGR	Core Group	AN1/8	Manufacturers Group for Core Returns
CORE	CPN	Core Part Number	AN1/48	Manufacturers Item-Specific Number for Core
CORE	CXP	Core Return Days to Expiry	N1/3	Days within which core can be returned without penalty
HAZR	EMS	Emission Code	ID1	"1"-Legal US, "2"-Not in CA, "3"-Off Road
HAZR	MSD	MSDS Sheet Number	AN1/35	Supplier's Document Number
HAZR	MSR	MSDS Required Flag	ID1	Y/N
PART	OEM	Original Equipment Manufacturer	AN1/35	Original Equipment Mfgr. Name
PART	OEP	OEM's Part Number	AN1/48	Original Equipment Mfgr. Item ID
PART	OSN	Original Supplier	AN1/35	Original or OEM Supplier's Name
PART	OSP	Original Supplier Part Number	AN1/48	Original Supplier Item Identification
PART	PTN	Part Number – Old	AN1/48	Replaced Part Number
PART	PTS	Part Number Superseded To	AN1/48	Replacement Part Number
PART	REF	Refurbished Part	ID1	Y/N
PART	REM	Remanufactured Part	ID1	Y/N
RETN	RET	Return Code	AN1/3	Return Code by the Manufacturer
RETN	WD1	Warranty Distance	N1/7	"50,000"
RETN	WD2	Warranty Distance UOM	ID2	"MI" – Miles
RETN	WS1	Warranty Special	AN1/256	"Lifetime" or "See Rep" or Text
RETN	WS2	Warranty Special UOM	ID2	"LF", "SR", "TX"
RETN	WT1	Warranty Time	N1/4	"36"
RETN	WT2	Warranty Time UOM	ID2	"MO" – Months
REGULATE	RST	Regulating State	ID2	Indicates Item regulated in State (2 char abbrev)
REGULATE	RPC	Regulating Postal Code	AN5/10	Indicates Item regulated in Postal Code
REGULATE	RCS	Regulating County, State	AN1/50	Indicates Item regulated in County, St (use 2 char for state)
REGULATE	RCT	Regulating City, State	AN1/50	Indicates Item regulated in City, St (use 2 char for state)
SHIP	CTO	Country of Origin (Primary)	ID2	ISO 3166 Country Codes
SHIP	CTP	Country of Origin 2	ID2	ISO 3166 Country Codes
SHIP	CTQ	Country of Origin 3	ID2	ISO 3166 Country Codes
SHIP	CTR	Country of Origin 4	ID2	ISO 3166 Country Codes
SHIP	CTS	Country of Origin 5	ID2	ISO 3166 Country Codes
SHIP	HAC	Canadian Harmonizing Tariff Code	AN48	Canadian Harmonization Code
SHIP	HSB	Harmonized Tariff Code (Schedule B)	ID10	
SHIP	HTS	Harmonized Tariff Code (HTS)	ID10	
SHIP	NAF	NAFTA Preference Criterion Code	ID1	
SHIP	LIF	Life Cycle Status Code	ID1	PIES Standard Life Cycle Status Code
SHIP	LIS	Life Cycle Status Description	AN1/80	PIES Standard Life Cycle Status Description
SHIP	TAX	Taxable	ID1	Y/N
STOK	HZ1	Item (SKU) Level Special Handling Code	ID2/3	ANSI X.12 Element 152 Special Handling Code List
STOK	NPC	National Popularity Code	ID1	PIES Standard National Popularity (Velocity) Codes
STOK	NPD	National Popularity Description	AN1/80	Supplier Method of Calculation for Standard Codes
STOK	TMC	Trading Partner Movement Code	AN2	Proprietary Trading Partner Movement Code
STOK	PLC	Maximum Cases per Pallet Layer	N1/3	Maximum allowable cases per pallet layer for this item
STOK	PLM	Pallet Layer Maximum	N1/3	Maximum allowable layers per pallet for this item
STOK	STA	Stock Status	ID1	S=Shelf-Stock,N=Non-Stock (Made to Order),Q=Quick-Ship

Life Cycle Status Codes

Name Life Cycle Status Code & Description
Field(s) EXPI E05-LIF, E05-LIS
Source PIES

Code	Description	Comments
0	Proposed	(Internal Use) - Part is in the process of being released. Required fields are not completed to release it for initial orders.
1	Released	(Internal Use) - New part notification is sent to inventory control and research. All required information has been completed.
2	Available to Order	Part is released to customers for ordering.
3	Electronically Announced	Part has been announced to customers via electronic data files. Part is active but needs paper announcement.
4	Announced	Part has been announced to customers on a paper "New Number Announcement". Part is active.
5	Temporarily	Part is suspended from shipment due to lack of availability or a hold on production.
6	Renumbered	Existing inventory of this part should be renumbered to the surviving part number.
7	Superseded	Part is being replaced by the surviving part number.
8	Discontinued	Part is being removed from the product line.
9	Obsolete	Obsolescence protection has expired on this part. It will no longer appear in catalogs, price lists.
A	Available Only While Supplies Last	
B-Z	Future Use	

POP Codes

Name PIES Standard National Popularity (Velocity) Codes
Field(s) EXPI E05-NPC, E05-NPD
Source PIES

Code	Description
A	Top 60% of Product Group Sales Value (Units x $, Hits, etc.)
B	Next 20% of Product Group Sales Value
C	Next 15% of Product Group Sales Value
D	Last 5% of Product Group Sales Value
N	New Item 3 Months, 6 Months, etc.
W	Non-Stock Item

Warranty Special Codes

Name Warranty Special Codes
Field(s) EXPI E05-WS1, E05-WS2
Source PIES

Code	Description
LF	Lifetime
SR	See Rep
TX	Text Warranty message

Price Segment Codes

Price Type Codes

Name Price Type
Field(s) D35
Source PIES

Code	Description	Notes
AC1	Special Additional Cost 1	Addl costs including handling, freight charges, and other charges specific to the part.
AC2	Special Additional Cost 2	Addl costs including handling, freight charges, and other charges specific to the part.
CR1	Core 1	
CR2	Core 2	
CR3	Core 3	
CR4	Core 4	
CRG	Good Core	
CRJ	Jobber Core	
CRW	WD Core	
DLN	Non-Stock Dealer	
DLR	Dealer	
DLV	Volume Dealer	
FLT	Fleet	
INM	Master Installer	
INN	NS Installer	
INP	Installer Preferred	
INS	Stocking Installer	
JBC	Conf-Jobber	
JBN	NS Jobber	
JBR	Jobber	
LST	List	
MEC	Mechanic	
PKP	Pickup	Price when product is picked up by customer, free of freight burden
PRO	Special Promo	
QOT	Quote	
RAC	Racer	
RET	Retail	
RMP	Retail MAP	Retail Minimum Advertised Price
TRD	Trade	
UNL	Unilateral Price	
USR	User	
WD1	Distributor	
WLS	Wholesaler	
WMP	Wholesale MAP	Wholesale Minimum Advertised Price
ZZ1	User Defined	
ZZ2	User Defined	
ZZ3	User Defined	
ZZ4	User Defined	
ZZ5	User Defined	
ZZ6	User Defined	
ZZ7	User Defined	
ZZ8	User Defined	
ZZ9	User Defined	

Package Segment Codes

Package UOM Codes

Name Package UOM
Field(s) H15
Source Subset of ANSI X.12 Element 355 Code List

Package UOM Code	Description	GTIN Pack Level Indicator
EA	Smallest Pack (Consumer Level)	0
PK	Inner Pack (shippable)	3
BX	Inner Pack (non-shippable)	1
CA	Case	5
PL	Pallet	7

Digital Asset Segment Codes

Asset Type Codes

Name Asset Type
Field(s) P10
Source PIES

Code	Description
360	**360 Degree Image Set**
APG	**Application Guide**
AUD	**Audio File**
BRO	Brochure - **A general brochure describing a brand, company, product line. If brochure in question is for a specific product, use code PDB.**
BUL	Technical Bulletin
BUY	**Buyers Guide**
CAS	**Case Study**
CAT	**Catalog**
CER	Certificate of Origin
DAS	**Datasheet**
DRW	Technical Drawing
EBK	**Ebook**
FAB	**Features and Benefits**
FED	Full Engineering Drawing
HMS	**Hazardous Materials Info Sheet**
INS	Installation Instructions
ISG	**Illustration Guide**
LIN	Line Art
LGO	Logo Image
MSD	Material Safety Data Sheet
OWN	**Owner's Manual**
P01	Photo – out of package
P02	Photo – in package
P03	Photo – lifestyle view
P04	Photo - Primary
P05	Photo - Close Up
P06	Photo - Mounted
P07	Photo - Unmounted
PAG	Link To Manufacturer Page
PAL	Pallet Configuration Drawing
PDB	**Product Brochure - a specific brochure describing a Product**
PC1	Planogram Consumer Pack 1
PC2	Planogram Consumer Pack 2
PC3	Planogram Consumer Pack 3
PI1	**Planogram Inner Pack 1**
PI2	Planogram Inner Pack 2
PI3	Planogram Inner Pack 3
PP1	Planogram Case Pack 1
PP2	Planogram Case Pack 2
PP3	Planogram Case Pack 3
PSS	**Product Specifications Sheet**
PST	**Price Sheet**
RES	**Research Bulletin**
SPE	Specification Sheet Filename
THU	Thumbnail
TON	Tone Art
WAR	Warranty
WHP	**Whitepaper**
ZZ1	User 1
ZZ2	User 2
ZZ3	User 3
ZZ4	User 4
ZZ5	User 5
ZZ6	User 6
ZZ7	User 7
ZZ8	User 8
ZZ9	User 9

Orientation View Codes

Name Orientation View
Field(s) P45

Source PIES

Code	Description
ANG	Angle
BAC	Back
BOT	Bottom
CON	Connector
FRO	Front
KIT	Kit
LEF	Left
LIF	Lifestyle
NUL	Not Applicable
RIT	Right
SID	Side
TOP	Top
ZZ1	User 1
ZZ2	User 2
ZZ3	User 3
ZZ4	User 4
ZZ5	User 5
ZZ6	User 6
ZZ7	User 7
ZZ8	User 8
ZZ9	User 9

Background Codes

Name Background
Field(s) P40
Source PIES

Code	Description
WHI	White
CLI	White w/clipping path
TRA	Transparent
OTH	Other
NUL	N/A

Color Mode Codes

Name Color Mode
Field(s) P35
Source PIES

Code	Description
RGB	RGB
CMY	CMYK
GRA	Gray Scale
OTH	Other
WEB	Vector B/W
VEC	Vector Color
BIT	Bitmap

File Type Codes

Name File Type
Field(s) P15
Source PIES

Code	Description
TIF	**.tif Tagged Image File**
JPG	**.jpg Joint Photographic Experts Grou**
EPS	**.eps Encapsulated PostScript**
TXT	**.txt TEXT FILE**
FLV	**.flv VIDEO FILE**
F4V	**.f4v VIDEO FILE**
AVI	**.avi VIDEO FILE**
WEBM	**.webm VIDEO FILE**
OGV	**.ogv VIDEO VILE**
MP4	**.mp4 VIDEO FILE**
MKV	**.mkv VIDEO FILE**
AIF	**.aif AUDIO FILE**
WAV	**.wav AUDIO FILE**
WMA	**.wma AUDIO FILE**
OGG	**.ogg AUDIO FILE**
PCM	**.pcm AUDIO FILE**
AC3	**.ac3 AUDIO FILE**
MIDI	**.mid AUDIO FILE**
MP3	**.mp3 AUDIO FILE**
AAC	**.aac AUDIO FILE**
GIF	**.gif Graphics Interchange Format**
BMP	**.bmp Bitmap Image**
PNG	**.png Portable Network Graphics**
PDF	PDF File
DOC	Word Doc
XLS	Excel File

Resolution Codes

Name Resolution
Field(s) P30
Source PIES

Code	Description
72	
96	
300	
600	
800	
1200	

Representation Codes

Name Representation
Field(s) P20
Source PIES

Code	Description
A	Actual
R	Representative

Dimension UOM Codes

Name	Dimension UOM
Field(s)	P60
Source	PIES

Code	Description
PX	Pixels
IN	Inches
CM	Centimeters

Background Codes

Interchange Segment Codes

Interchange Type Codes

Name Interchange Type Code
Field(s) N05
Source PIES

Code	Description
O	OE - Supplier part number interchanges with OE part number
S	Substitute Part - Supplier part number interchanges with another aftermarket supplier's product
U	User Defined - Interchange type used when other types do not apply to interchange

Quality Grade Level Codes

Name Quality Grade Level
Field(s) N25
Source PIES

Code	Description
P	Premium
O	OEM
S	Standard

Appendix B – External Code Value Tables

The following table contains commonly used values for many of the external code tables referenced in the PIES Standard. **Note that this is not a complete list, only a list of the most commonly used codes**.

ANSI X.12 Table 235 – Component ID Qualifiers

ANSI X.12 Element 235 - Component ID Qualifiers	
VC	Vendor's (Seller's) Catalog Number
VN	Vendor's (Seller's) Item Number
VP	Vendor's (Seller's) Part Number
VS	Vendor's (Seller's) Supplemental Item Number

ANSI X.12 Table 254 – Dangerous Goods Coding

ANSI X.12 Element 254	
I	Great Danger
II	Medium Danger
III	Low Danger

ANSI X.12 Element 355 – Unit or Basis for Measurement Codes

ANSI X.12 Element 355 (Unit or Basis for Measurement Codes)	
AS	Assortment
BG	Bag
BK	Book
BO	Bottle
BX	Box
BC	Bucket
BD	Bundle
CN	Can
CG	Card
CT	Carton
CQ	Cartridge
CA	Case
CX	Coil
CH	Container
CP	Crate
DZ	Dozen
DR	Drum
EA	Each
EV	Envelope
FT	Foot
GA	Gallon
HU	Hundred
HC	Hundred count
JR	Jar
KE	Keg
KG	Kilogram
KT	Kit
LT	Liter
MR	Meter
PH	Pack (PAK)
PK	Package
PA	Pail
PR	Pair
PF	Pallet
PL	Pallet Unit Load
PC	Piece
PT	Pint
LB	Pound
QT	Quart
RE	Reel
RD	Rod
RL	Roll
ST	Set
SH	Sheet
SL	Sleeve
SO	Spool
15	Stick
TH	Thousand
TY	Tray
TB	Tube
OP	Two pack

ANSI X.12 Element 639 – Basis of Unit Pricing Codes

ANSI X.12 Element 639 (Basis of Unit Price Codes)	
HF	Per 100 Feet
HP	Price per 100
PD	Price per Dozen
PE	Price per Each
PF	Price per Foot
PK	Pirce per Kilogram
PL	Price per Liter
PO	Price per Ounce
PP	Price per Pound
PY	Price per Yard

** PE is the most widely used value for this field. "EA" is a commonly misused value for this field, but use of the values in Table 639 is required by ANSI standards for invoices.

DOT Hazardous Material Codes

DOT Hazardous Material Code	
1	Explosives
2	Gases
3	Flammable Combustion
4	Flammable Solids
5	Ozidizing Substance
6	Toxic Substances
7	Radioactive Material
8	Corrosives
9	Misc. Haz Material

DOT Hazardous Class Codes

Hazardous Class	
1.1	Explosives
1.2	Explosives Projected
1.3	Explosives Fire
1.4	Explosives No Blast
1.5	Very Insensitive Explos
1.6	Extremely Insensitive
2.1	Flammable Gas
2.2	Non-flammable gas
2.3	Poisonous gas
3	Flammable Liquid
4.1	Flammable solid
4.2	Combustible Material
4.3	Dangerous when wet
5.1	Oxidizer
5.2	Organic peroxide
6.1	Poisonous materials
6.2	Infectious substance
7	Radioactive
8	Corrosive material
9	Misc. Haz Material

ISO Table 4217 – Currency Codes

ISO 4217 (Currency Codes)	
CAD	Canadian Dollar
CNY	China Yuan Renminbi
EUR	European EURO
GBP	United Kingdom Pound Sterling
HKD	Hong Kong Dollar
MXN	Mexican Pecos
USD	U.S. Dollar
XBA	European Composite Unit
XBB	European Monetary Unit

NAFTA Preference Criterion Codes

NAFTA Preference Criterion Codes	
A	Criteria A
B	Criteria B
C	Criteria C

WHIMS Workplace Hazardous Material Code List

WHMIS Code List	
A	Compressed Gas
B.1	Flammable Gas
B.2	Flammable Liquid
B.3	Combustible Liquid
B.4	Flammable Solid
B.5	Flammable Aerosol
B.6	Reactive Flammable
C	Oxidizing Material
D.1.A	Immediate Toxic Effects
D.1.B	Immediate Toxic Effects
D.2.A	Other Toxic Effects
D.2.B	Toxic Material
D.3.B	Biohazard Material
E	Corrosive Material
F	Dangerous Reactive

Appendix C – 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)				

Legend:	
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 D – Alphabetical Listing of PIES 6.5 Fields

The following is a list of all PIES Fields sorted by the Segment to which they belong. Note that "XML Element" column lists either the XML Element Name or Attribute name that corresponds to the data field. All Attribute names are italicized for recognition. Element names contain < and > brackets.

Field Name	Req	Format	Sgmt	Ref Num	XML Element
Additional Info	O	AN1/48	ASST	M65/P65	<AdditionalInformation>
Asset Dimension Grouping Element			ASST		<AssetDimensions>
Asset Dimension UOM	C	ID2	ASST	M60/P60	*UOM*
Asset Height	R	R1/6	ASST	M50/P50	<AssetHeight>
Asset ID	O	ID34	ASST	M06/P06	*AssetID*
Asset Type	KM	ID3	ASST	M10/P10	<AssetType>
Asset Width	R	R1/6	ASST	M55/P55	<AssetWidth>
Background	R	ID3	ASST	M40/P40	<Background>
Color Mode	O	ID3	ASST	M35/P35	<ColorMode>
Country	K0	ID2	ASST	M98/P98	<Country>
Details/Description	O	AN1/80	ASST	M70/P70	<Details>
Digital Asset Grouping Element			ASST		<DigitalFileInformation>
Digital Assets Segment			ASST		<DigitalAssets>
Effective Date	O	D	ASST	M91/P91	<EffectiveDate>
Expiration Date	O	D	ASST	M92/P92	<ExpirationDate>
File Date Modified	O	D	ASST	M90/P90	<FileDateModified>
File Name	KM	AN1/80	ASST	M05/P05	<FileName>
File Path	O	AN1/80	ASST	M75/P75	<FilePath>
File Size	O	N1/10	ASST	M25/P25	<FileSize>
File Type	R	ID2/4	ASST	M15/P15	<FileType>
Language Code	KO	ID2	ASST	M99/P99	*LanguageCode*
Maintenance Type	M	ID1	ASST	M02/P02	*MaintenanceType*
Orientation View	KO	ID3	ASST	M45/P45	<OrientationView>
Representation	R	ID1	ASST	M20/P20	<Representation>
Resolution	KO	ID2/4	ASST	M/30P30	<Resolution>
URI	O	AN1/2000	ASST	M80/P80	<URI>
Attribute Data	KM	AN1/2000	ATRB	F10	<ProductAttribute>
Attribute ID (Type)	KM	AN1/20	ATRB	F05	*AttributeID*
Attribute UOM	O	AN1/20	ATRB	F08	*AttributeUOM*
Language Code	O	ID2	ATRB	F20	*LanguageCode*
Maintenance Type	M	ID1	ATRB	F02	*MaintenanceType*
Multi Value Quantity	O	N1/3	ATRB	F17	*MultiValueQuantity*
Multi Value Sequence	KO	N1/3	ATRB	F18	*MultiValueSequence*
PADB Attribute	M	ID1	ATRB	F07	*PADBAttribute*
PADB Style ID	O	N1/5	ATRB	F11	StyleID
Product Attributes Segment			ATRB		<ProductAttributes>
Record Sequence	O	N1/3	ATRB	F15	RecordNumber
Description	M	per table	DESC	C10	<Description>
Description Code	KM	ID3	DESC	C05	*DescriptionCode*
Description Segment			DESC		<Descriptions>
Language Code	O	ID2	DESC	C15	*LanguageCode*
Maintenance Type	M	ID1	DESC	C02	*MaintenanceType*
EXPI Code	KM	ID3	EXPI	E05	*EXPICode*
EXPI Data	KM	per table	EXPI	E10	<ExtendedProductInformation>
EXPI Segment			EXPI		<ExtendedInformation>
Language Code	O	ID2	EXPI	E15	*LanguageCode*
Maintenance Type	M	ID1	EXPI	E02	*MaintenanceType*
Bulk	KM	ID1	HAZM	J05	<Bulk>
Description	C	AN1/200	HAZM	J25	<Description>
Hazardous Class	C	ID1/10	HAZM	J30	<HazardousClass>

Field Name	Req	Format	Sgmt	Ref Num	XML Element
Hazardous Material Class Code	O	ID1/4	HAZM	J32	<HazardousMaterialClassCode>
Hazardous Material Code Qualifier	O	ID1	HAZM	J31	<HazardousMaterialCodeQualifier>
Hazardous Material Description	O	AN1/80	HAZM	J33	<HazardousMaterialDescription>
Hazardous Material Segment			HAZM		<HazardousMaterial>
Hazardous Placard Notation	O	AN1/40	HAZM	J45	<HazardousPlacardNotation>
Language Code	O	ID2	HAZM	J70	*LanguageCode*
Maintenance Type	M	ID1	HAZM	J02	*MaintenanceType*
Outer Package Label	C	AN1/20	HAZM	J65	<OuterPackageLabel>
Packing Group Code	O	ID1/3	HAZM	J50	<PackingGroupCode>
Regulated	M	ID1	HAZM	J20	<Regulated>
Regulating Country of Origin	M	ID2	HAZM	J10	<RegulatingCountry>
Regulations Exception Code	O	ID1/4	HAZM	J55	<RegulationsExemptionCode>
Shipping Name	C	AN1/260	HAZM	J35	<ShippingName>
Shipping Scope	KM	ID3	HAZM	J04	<ShippingScope>
Text Message	O	AN1/2000	HAZM	J60	<TextMessage>
Transport Method	KM	ID1	HAZM	J15	<TransportMethod>
UN/NA ID Code	C	ID6	HAZM	J40	<UNNAIDCode>
WHMIS Code	O	ID1/4	HAZM	J46	<WHMISCode>
WHMIS Free Text	O	AN1/80	HAZM	J47	<WHMISFreeText>
Blanket Effective Date	O	D	HEAD	A05	<BlanketEffectiveDate>
Brand Owner AAIAID	O	ID4	HEAD	A23	<BrandOwnerAAIAID>
Brand Owner DUNS or DUNS+4	O	ID9/13	HEAD	A20	<BrandOwnerDUNS>
Brand Owner Global Location Number	O	ID13	HEAD	A21	<BrandOwnerGLN>
Brand Owner VMRS ID	O	ID5	HEAD	A22	<BrandOwnerVMRSID>
Buyer DUNS or DUNS+4	O	ID9/13	HEAD	A30	<BuyerDuns>
Changes Since Date	C	D	HEAD	A06	<ChangesSinceDate>
Contact Email	O	AN1/254	HEAD	A41	<ContactEmail>
Currency Code	O	ID3	HEAD	A35	<CurrencyCode>
Header Segment			HEAD		<Header>
Language Code	O	ID2	HEAD	A37	<LanguageCode>
Parent AAIAID	O	ID4	HEAD	A13	<ParentAAIAID>
Parent DUNS or DUNS+4	O	ID9/13	HEAD	A10	<ParentDUNSNumber>
Parent Global Location Number	O	ID13	HEAD	A11	<ParentGLN>
Parent VMRS ID	O	ID5	HEAD	A12	<ParentVMRSID>
PIES Version Number	M	ID3/4	HEAD	A02	<PIESVersion>
Submission Type	M	ID4/6	HEAD	A03	<SubmissionType>
Technical Contact Name	O	AN1/60	HEAD	A40	<TechnicalContact>
Brand AAIAID	KM	ID4	INTE	N10	<BrandAAIAID>
Brand Owner Name	O	AN1/60	INTE	N15	<BrandLabel>
InterChange Grouping Element			INTE		<PartInterchange>
Interchange Notes	O	AN1/240	INTE	N30	<InterchangeNotes>
Interchange Part Number	KM	AN1/48	INTE	N20	<PartNumber>
InterChange Segment			INTE		<PartInterchangeInfo>
Interchange Type Code	KM	ID1	INTE	N05	<TypeCode>
Internal Notes	O	AN1/240	INTE	N35	<InternalNotes>
Language Code	O	ID2	INTE	N40	*LanguageCode*
Maintenance Type	M	ID1	INTE	N02	*MaintenanceType*
Quality Grade Level	O	ID1	INTE	N25	<QualityGradeLevel>
ACES Applications	O	ID1	ITEM	B30	*ACESApplications*
Auto Part Type (Light Vehicle)	O	ID4/5	ITEM	B64	<PartTerminologyID>
Available Date	O	D	ITEM	B50	<AvailableDate>
Base Item Number	O	AN1/48	ITEM	B05	<BaseItemID>
Brand AAIAID	M	ID4	ITEM	B20	<BrandAAIAID>
Brand Label	O	AN1/48	ITEM	B25	<BrandLabel>
Container Type	O	ID2	ITEM	B34	<ContainerType>
Hazardous Material Code (Y/N)	R	ID1	ITEM	B03	<HazardousMaterialCode>
Item Grouping Element			ITEM		<Item>

Field Name	Req	Format	Sgmt	Ref Num	XML Element
Item-Level Effective Date	O	D	ITEM	B45	<ItemEffectiveDate>
Item-Level GTIN	O	N14	ITEM	B10	<ItemLevelGTIN>
Item-Level GTIN Qualifier	C	ID2	ITEM	B11	*GTINQualifier*
Items Segment			ITEM		<Items>
Item Quantity Size	O	R1/8	ITEM	B32	*<ItemQuantitySize>*
Item Quantity Size UOM	O	ID2	ITEM	B33	*UOM*
Maintenance Type	M	ID1	ITEM	B02	*MaintenanceType*
Manufacturer Product Codes			ITEM		<ManufacturerProductCodes>
Minimum Order Quantity	O	N1/8	ITEM	B55	<MinimumOrderQuantity>
Minimum Order Quantity UOM	C	ID2	ITEM	B56	*UOM*
Part Number	KM	AN1/48	ITEM	B15	<PartNumber>
Product Category Code	O	ID6	ITEM	B62	<AAIAProductCategoryCode>
Product Group Code	O	AN1/10	ITEM	B60	<Group>
Product Sub-Group Code	O	AN1/10	ITEM	B61	<SubGroup>
Quantity per Application	O	N1/8	ITEM	B40	<QuantityPerApplication>
Quantity per Application Qualifier	O	ID3	ITEM	B35	*Qualifier*
Quantity per Application UOM	C	ID2	ITEM	B41	*UOM*
SubBrand AAIAID	O	ID4	ITEM	B27	<SubBrandAAIAID>
SubBrand Label	O	AN1/60	ITEM	B28	<SubBrandLabel>
UN/SPSC Code	O	ID8/10	ITEM	B63	<UNSPSC>
VMRS Code (Heavy Duty)	O	ID9	ITEM	B65	<VMRSCode>
Component Brand AAIAID	M	ID4	KITS	K05	*<ComponentBrand>*
Component ID Qualifier	M	ID2	KITS	K06	*IDQualifier*
Component Part Number	KM	AN1/48	KITS	K03	<ComponentPartNumber>
Description	M	Per table	KITS	K10	<Description>
Description Code	KM	ID3	KITS	K09	Description Code
Kit Grouping Element			KITS		<Kit>
Kits Segment			KITS		<Kits>
Language Code	KO	ID2	KITS	K12	*LanguageCode*
Maintenance Type	M	ID1	KITS	K02	*MaintenanceType*
Quantity in Kit	M	N1/8	KITS	K10	<QuantityInKit>
Quantity UOM	M	ID2	KITS	K15	*UOM*
Sequence Code	O	N1/3	KITS	K20	<SequenceCode>
Language Code	KO	ID2	MKTC	A89	*LanguageCode*
Market Copy Grouping Element			MKTC		<MarketCopy>
Market Copy Segment			MKTC		<MarketingCopy>
Maintenance Type	M	ID1	MKTC	A81	*MaintenanceType*
Market Copy Code	KM	ID3	MKTC	A82	*MarketCopyCode*
Market Copy Code Reference	KM	AN1/240	MKTC	A83	MarketCopyReference
Market Copy Content	M	AN1/2000	MKTC	A87	<MarketCopyContent>
Market Copy Sub Code	K0	ID3	MKTC	A84	MarketCopySubCode
Market Copy Sub Code Reference	K0	AN1/240	MKTC	A85	MarketCopySubCodeReference
Market Copy Type	M	ID3	MKTC	A86	MarketCopyType
Record Sequence	K0	N1/3	MKTC	A88	RecordSequence
Dimension Grouping Element			PACK		<Dimensions>
Dimensional Weight	O	R1/9	PACK	H50	<DimensionalWeight>
Electronic Product Code	O	AN27	PACK	H07	<ElectronicProductCode>
Height	O	N4-5/8	PACK	H25	<Height>
Inner Quantity	C	R1/8	PACK	H21	<InnerQuantity>
Inner Quantity UOM	C	ID2	PACK	H22	<InnerQuantityUOM>
Length	O	N4-5/8	PACK	H35	<Length>
Maintenance Type	M	ID1	PACK	H02	*MaintenanceType*
Orderable Package	O	ID1	PACK	H24	<Orderable>
Package Bar Code Characters	O	AN1/48	PACK	H10	<PackageBarCodeCharacters>
Package Grouping Element			PACK		<Package>
Package Level GTIN	O	N14	PACK	H05	<PackageLevelGTIN>
Package UOM	KM	ID2	PACK	H15	<PackageUOM>

Field Name	Req	Format	Sgmt	Ref Num	XML Element
Packaging Segment			PACK		<Packages>
Quantity of Eaches in Package	KM	N1/8	PACK	H20	<QuantityofEaches>
Stacking Factor	O	N1/3	PACK	H55	*<StackingFactor>*
UOM for Dimensions	C	ID2	PACK	H40	*UOM*
UOM for Weight	C	ID2	PACK	H46	*UOM*
Weight	O	N4-5/9	PACK	H45	<Weight>
Weight Variance (%)	O	R1/8	PACK	H47	<WeightVariance>
Weights Grouping Element			PACK		<Weights>
Width	O	R1/8	PACK	H30	<Width>
Currency Code	KO	ID3	PRCE	D15	<CurrencyCode>
Expiration Date	O	D	PRCE	D30	<ExpirationDate>
Maintenance Type	M	ID1	PRCE	D02	*MaintenanceType*
Price	M	N4-5/10	PRCE	D40	<Price>
Price Break Quantity	KO	N1/8	PRCE	D45	<PriceBreak>
Price Break Quantity UOM	C	ID2	PRCE	D46	*UOM*
Price Sheet Level Effective Date	O	D	PRCE	D25	<EffectiveDate>
Price Sheet Number	KM	AN1/15	PRCE	D05	<PriceSheetNumber>
Price Type	KM	ID3	PRCE	D35	*PriceType*
Price UOM	M	ID2	PRCE	D41	*UOM*
Pricing Grouping Element			PRCE		<Pricing>
Pricing Segment			PRCE		<Prices>
Currency Code	O	ID3	PRCS	A60	<CurrencyCode>
Maintenance Type	M	ID1	PRCS	A51	*MaintenanceType*
Price Sheet Level Effective Date	O	D	PRCS	A70	<EffectiveDate>
Price Sheet Level Expiration Date	O	D	PRCS	A75	<ExpirationDate>
Price Sheet Name	O	AN1/30	PRCS	A53	<PriceSheetName>
Price Sheet Number	KM	AN1/15	PRCS	A52	<PriceSheetNumber>
Price Zone	O	A 1/10	PRCS	A65	<PriceZone>
PriceSheet Grouping Element			PRCS		<PriceSheet>
PriceSheets Segment			PRCS		<PriceSheets>
Superseded Price Sheet Number	O	AN1/15	PRCS	A55	<SupersededPriceSheetNumber>
Item Count	O	N1/6	STOP	Z10	<ItemCount>
Trailer Record Segment			STOP		<Trailer>
Transaction Date	O	D	STOP	Z15	<TransactionDate>
Test File	O	Boolean	TEST		<TestFile>

Appendix E – Summary of PIES 6.5 Changes

General Changes

PIES 6.5 is a minor version update of the PIES standard. While there are several new elements and/or structures introduced in this version of PIES, there is also significant re-sequencing and renumbering of PIES elements throughout the Market Copy Segment, the Attribute Segment, and the Kit Segment, and while the PIES elements from previous versions continue to exist, care and caution must be taken to ensure that elements are properly mapped between versions.

Several enhancements and changes have been made to both this Field Definition Document, and to the accompanying XSD to simplify both and maintain better synchronization of technical and reference documentation. The XSD should be reviewed thoroughly prior to implementation.

PIES 6.5 Documentation Changes

The Field Definition Document has been restructured for greater ease of use. Previous PIES Version changes have been segregated into Appendices, with the order of changes reverted to most recent to older versions, classified as 'Historical'.

Further improvements have been made to the documentation in the following areas:

Header Element – Clarification to the actual valid values for the TESTFILE element.

URI – Cleanup and clarification of the use of URI.

Interchange Element – N35 Internal Notes – Clarification that the sending of internal notes is NOT a standard practice between Trading Partners

Section 3 – Improved description of the use of the Net Changes component for File Delivery, including the changes to the Header Segment to identify an UPDATE file.

Section 5 – correction of the erroneous 'namespace' reference in the XML.

Market Copy Segment – improved the introductory verbiage of this section to make reference generally to the changes to the segment.

Item Segment – improved verbiage on Comments on Item-Level GTIN to describe proper use. Introduced new section on Global Trade Identification Numbers, and how they are conveyed as data, to help clarify use.

Product Attribute Segment – rewrote entire section to explain the use of the Product Attribute Database (PADB) and the different use cases for User-Defined Attributes and PADB attributes. Provided XML example use cases.

Kit Segment – rewrote entire introductory section of Kit Segment to better introduce the enhancements to the segment, and the use of extended coding to represent parts in a Set or Kit which did not have identifiable SKUs.

Digital Assets Segment – rewrote introductory section of Digital Assets Segment to introduce the update to the Digital Assets Best Practice Document, new media types and file types contained in the Asset Tables, and reference to 360 Degree Images. Also provided explanatory notes for use of new 'Country' element.

Appendix A – restructured the Appendix to make it more useful and searchable for updated code tables. Re-introduced Code tables as images, taken directly from the PIES 6.5 Technical Specifications, to ensure no errors and omissions and synchronization between documentation.

Appendix B - restructured the Appendix to make it more useful and searchable for updated External Code Table values. Re-introduced Code tables as images, taken directly from the PIES 6.5 Technical Specifications, to ensure no errors and omissions and synchronization between documentation.

Appendix D – Added new PIES elements to list, and edited those which required re-sequencing or relabeling.

Appendices E-J – new appendices holding Version Change notes for previous PIES versions, and any specific Use Case documentation.

PIES 6.5 XSD Changes

A number of structural changes were introduced to the PIES 6.5 XSD, in order to simplify its use and unbind certain constraints. The XSD was authored by Prescient Technologies, who were retained by the AAIA to perform this task. The XSD should be thoroughly reviewed.

The XSD was corrected to properly refer it to the PIES 6.5 version. This was an error that had shown up in previous versions of the XSD. Further, the XSD was synchronized and harmonized with the general and technical PIES documentation to ensure there were no further erroneous 'namespace references'. The XSD was also corrected to permit ASSET ID Character Lengths to 34 characters. The XSD was also written to validate the use of the new Header Element, Submission Type.

Specific references to PIES Field Definition Document Chapters were removed from the XSD, in favor of naming the PIES Element. This ensures that the XSD will survive major restructuring of the PIES Field Definition Document in the future.

PIES 6.5 Structural Changes

Header Segment

- Introduction of new XML Element A03, SubmissionType, to define whether a file that is being sent is a FULL (refresh) file, or an UPDATE file.
- Introduction of new XML Element A06, ChangesSinceDate, as a control date to indicate when the last PIES file was sent by the Sender.

Market Copy Segment

- Re-sequencing of the element numbering in this segment, to properly accommodate adjustments.
- A82- Market Copy Code – renumbered from previous versions (A83)
- A83- Market Copy Code Reference – renumbered from previous versions (A85)
- A84 – Market Copy Sub Code – New Attribute to enable differentiation of Market Copy within a Product or Brand Hierarchy
- A85 – Market Copy Sub Code Reference – New attribute to identify the Sub Code within the Type specified in A84.
- A86 – Market Copy Type – New Attribute to identify the Type of Content being sent. Definitions of Types are maintained in the Market Copy Code Table. Introduced new code, FAB, to convey Features and Benefits content.
- A88- Record Sequence – New Attribute to identify the order in which the Market Copy content sent should be published.

Market Copy Digital Asset Sub-Segment

M98 – Country Code – New Element to identify the destination country of use for the digital asset being conveyed.

Item Segment

B10 – Item-Level GTIN – Changed format of XML Element to force a 14 Character entry of GTIN data, regardless of the Item Level GTIN Qualifier used in Attribute B11. Extended Comments notes to provide explanation of use.

Product Attribute Segment

- F05 – AttributeID – Use of Attribute ID has been modified to send Product Attribute ID from PADB, when F07, PADB Attribute, is set to 'Yes'. Expanded Comments notes to provide an explanation of use.
- F07 – PADB Attribute – Renamed Attribute from "PCDBAttribute" to "PADBAttribute", and changed Requirement from Optional to Mandatory. Expanded Comments notes to explain case of use.
- F08 – Attribute UOM – Changed case of use for this attribute to refer to METAUOMCODES from the PADB when sending PADB attributes as opposed to custom (User-defined) attributes.

- F10 – Attribute Data – Expanded the length of this element to Alphanumeric 1-2000 characters, from 80 characters. Expanded Comments to explain case of use.
- F11 – PADB Style ID – New Attribute to identify Style ID for the Attribute/Part Type if a Style Code exists in the PADB Tables.
- F15 – Record Sequence – the name of the Attribute has been relabeled from 'Record Number' to provide consistency and clarity. The XML Attribute has not been renamed, and remains 'RecordNumber'.
- F17 – Multi Value Quantity – new attribute to convey the number of multiple values which are being sent as attribute data. Expanded Comments notes to describe case of use.
- F18 – Multi Value Sequence – new attribute to provide the receiving parties with instructions on the order of publication of the range of values being sent as multiple values.

Kits Segment

- K05 – Component Brand AAIAID – new XML element to identify the 'Brand' of the part contained within the Kit or Set.
- K06 – Component ID Qualifier – expanded the Table of Values to enable the conveyance of Parts within a kit or a set which do not have SKUs, but have another form of part number or identifier.
- K09 – Description Code – new attribute within the Kit Segment to define the type of description of the part being sent. Uses the Description Code table from the Description Segment.
- K10 – Description – new XML element to convey the description of the part being sent within the Kit or Set.
- K12 – Language Code – Incorporated new XML attribute within the Kits Segment to permit the sending of alternate language descriptions.
- K15 – Quantity in Kit – renumbered from previous PIES versions (K10)
- K20 – Quantity UOM – renumbered from previous PIES versions (K15)
- K20 – Sequence Code – renamed former "Position Code" element, K20, and defined case of use for clarity.

Digital Assets Segment

- P10 – Asset Type – expanded on the Table of Asset Type Codes to reflect wider range of digital assets being conveyed in the market. Refer to Appendix A, Asset Type Codes.
- P15 – File Type – expanded on the Table of Asset File Type Codes to reflect wider range of digital asset file formats being conveyed in the market. Refer to Appendix A, Asset File Type.
- P80 – URI – clarified documentation and XSD to properly reflect the use of URI, versus URL.
- P98 – Country Code – New XML Element to reflect the definition of a specific country of use for the digital asset being sent. Expanded Comments notes describe a case for use.
- P99 – Language Code – properly documented throughout documents and XSD.

Appendix A – Code Table Values

- **Market Copy Type Codes** – new table of values to identify the type of Market Copy being sent. Two codes introduced – FAB (Features and Benefits), GCC (General Copy). Used in conjunction with Field A86.
- **Item Segment Codes –** GTIN Qualifiers- Modified the length of all GTIN Qualifiers to 14 for clarity of use.
- **Digital Asset Segment Codes –** Asset Type – New Codes introduced – 360, APG, AUD, BUY, CAS, CAT, DAS, EBK, FAB, HMS, ISG, OWN, PDB, PI1,PSS,PST,RES,WHP as per Imaging Best Practice Update Document.
- **Digital Asset Segment Codes** – File Type – New Codes introduced – TXT, FLV, F4V, AVI, WEBM, OGB, MP4, MKV, AIF, WAV, WMA, OGG, PCM, AC3, MIDI, MP3, AAC, as per Imaging Best Practice Update Document.

Appendix B – External Code Value Tables

ANSI X.12 Table 235 – Introduced expanded codes to support Kit Segment – VS, VN.

Appendix F – Historical Documents - PIES 6.4

General Changes

PIES 6.4 is a minor version update of the PIES standard. While there are several new elements and/or structures introduced in this version of PIES, PIES 6.4 maintains a strong backwards compatible structure with PIES 6.3. Therefore, this is a minor versioning increment rather than a major version number change.

Removed reference to obsolete file name, M72.

Digital Asset Sub-Segment of Market Copy Segment

Removed element M85 (<OldFileName>)

Item Segment (ITEM)

Documentation was updated to reflect the PIES 6.3 change deprecating 'X' as a valid code.

Products Attribute Segment (ATRB)

The following PIES 6.3 Change was withdrawn by committee vote during Spring 2011 San Antonio Meeting.

~~In order to allow (from a Technical Specification level) multiple iterations of the same Product Attribute, the documentation has been changed to reflect a Dual-Key for …~~

- ~~Attribute ID~~
- ~~Attribute Data~~

~~This does not necessitate a change to the PIES XSD. This is a Technical Spec and Documentation change only.~~

Digital Assets Segment

Removed element P85 (<OldFileName>)

Market Copy Segment Codes

'User Defined Code' is no longer a valid value in this Segment and the following fields were removed:
ZZ1
ZZ2
ZZ3
ZZ4
ZZ5
ZZ6
ZZ7
ZZ8
ZZ9

Description Codes

Updated max characters to 2000 for

- Application Summary (ASM)
- Shipping Restrictions (SHP)
- Key Search Words (KEY)
- Associated Comments (ASC)
- Slang Description (SLA)

GTIN Qualifiers

Valid GTIN qualifier codes are EN and UP.
The following were removed and are no longer valid:

- UE
- UI
- UK
- UB

EXPI Codes

Added EXPI Code 'REF' – Refurbished Part. Appendix E contains descriptions of Refurbished and Remanufactured.

Appendix D – Alphabetical Listing of PIES Fields

REMOVED

Field Name	Req	Format	Sgmt	Ref Num	XML Element
File Name – Old	O	AN1/80	ASST	M85/P85	<OldFileName>

EXPI Segment – Code Definitions

REF	Refurbished Part	ID1	Y/N

(NEW) Refurbished Part - Refurbishing (aka reconditioning) is the process of restoring components to a functional and/or satisfactory state, either aesthetically or mechanically, to the original specification, using methods such as resurfacing or repainting.

Refurbished parts products cannot be sold as new products in the US, which is why they are relabeled as refurbished units, even if they are good-as-new. Refurbished products could be the products which are returned by the customer within the return policy of the company which sold the product, without any defect with the product.

Refurbished products are generally bench tested and certified by the authorized service centers of the company and then re-packaged, labeled as a Refurbished Product.

REM	Remanufactured Part	ID1	Y/N

(EXISTING) Remanufacturing ("Reman") – This is the process of disassembly and recovery at the module level and, eventually, at the component level. It requires the repair or replacement of worn out or obsolete components and modules. Parts subject to degradation affecting the performance or the expected life of the whole are replaced.

Remanufacturing is a form of a product recovery process which differs from refurbishing in its completeness; a remanufactured part should match the same customer expectation as new machines.

Appendix G – Historical Documents – PIES 6.3

General Change Information

PIES 6.3 is a minor version update of the PIES standard. While there are several new elements and/or structures introduced in this version of PIES, PIES 6.3 maintains a strong backwards compatible structure with PIES 6.2. Therefore, this is a minor versioning increment rather than a major version number change.

New Segments

Market Copy Segment (MKTC)

This segment is a looping segment of the PIES root element. The purpose of this new segment is to allow a data sender to provide marketing copy (2000 character) for non-item specific elements such as a Brand, SubBrand or Class of products. For Use Case examples, please see the published PIES 6.3 User Documentation file _Appendix E

Digital Asset Sub-Segment of Marketing Copy

The Digital Asset Sub-Segment of Marketing Copy is used to convey information about any media types which support the related Marketing Copy Segment Reference Codes. For Use Case examples, please see the published PIES 6.3 User Documentation file _Appendix E.

Item Segment

The Item segment includes 4 changes:

1. The added restriction of Item GTIN to just UP and EN qualifier types. These represent the standard 12-digit US and 13-digit European GTIN formats. This change is presented to eliminate some confusion of which GTIN formats to use for Item level identification.

2. Addition of the optional "SubBrand Label". PIES 6.2 introduced the SubBrandAAIAID, however, the label was omitted. This change brings SubBrand in line with Brand level elements in PIES.

3 & 4. Three new elements are added for this segment..."Item Quantity Size", "Item Quantity Size UOM" and "Container Type". The first 2 new elements are to be used to clarify Item level sizing issues. For example, if an Item is a can of spray paint, the Size may be "16" and the UOM may be "OZ". Another example could indicate that an Item is a "500" "FT" roll of hose. Together these new elements provide context for the Item as well as the for the Package & Price Segment information. "Container Type" is used to describe the packaging for the Item.

Price Segment

The change indicated in the Price Segment is documentation only. The Format change for "Price" brings the documentation in line with the PIES XSD to indicate a 10-digit fixed decimal with 4 decimal places.

Package Segment

Four changes in the Package Segment (Height, Width, Length and Weight) reflect documentation changes similar to "Price". These are to bring the documentation in line with the PIES XSD.

The Package Segment also introduces 4 new elements.
* Inner Quantity
* Inner Quantity UOM
* Orderable Package

The "Inner Quantity" and "UOM" can be used to provide more detailed information when defining upper level package types (Inner Pack, Case, Pallet). For example, rather than just indicating how many Eaches are contained in a Case, you will be able to indicate how many Inner Packs are contained in the Case.

"Orderable Package" is included to allow a data sender to indicate if a certain package level is shippable/orderable or not.

In addition, the Dimensional Weight element has been updated (notes) to reflect current UPS/FedEx calculation values for US Domestic Air Freight values. This is the default formula to use for PIES data.

EXPI Segment

Based on feedback, the following changes are proposed for the EXPI Code table…

* RPC (Regulating Postal Code) format is from ID to AN to allow use of a dash in US zip+4

* 4 codes are recommend for removal based on confusion of use and redundancy with other PIES segments/elements.
- PFP (Pallet Footprint Size)
- PFU (Pallet Footprint Size UOM)
- PLC (Maximum Cases per Pallet Layer)
- PLM (Pallet Layer Maximum)

Product Attributes Segment

In order to allow (from a Technical Specification level) multiple iterations of the same Product Attribute, the documentation will be changed to reflect a Dual-Key for …

* Attribute ID
* Attribute Data

This does not necessitate a change to the PIES XSD. This is a Technical Spec and Documentation change only.

PIES Version 6.3 Use Case Documentation

Market Copy Segment

Definition and Use:

The Market Copy Segment is a new Optional segment of the PIES Standard, intended for use to convey up to 2000 characters of freeform Marketing Copy and/or collateral digital assets, which relate to a company, division of a company, a brand, a sub-brand, a Part Terminology, a Product Category, a Manufacturer-defined Product Group or Sub-Group, or other user-defined categories.

The Market Copy Segment is NOT intended to be used to convey specifics about an item. Item-level marketing content is intended to be conveyed in the Description Segment (C01) of the PIES Standard. The Description Segment has provisions for Long Descriptions (Code EXT is 240 characters) and specific Market Copy (Code MKT is 2000 characters in length). Collateral material in respect to an Item is intended to be conveyed in the Digital Assets Segment (P01-P99).

Example of Use:

The Market Copy Segment has been designed to loop at the root of the PIES structure, to enable the inclusion of multiple content elements in a single PIES file. For example, a manufacturer could include both marketing copy about the Company, and marketing copy about a Brand (using Segment Code A83 and the value “BPR” (Brand Parent) to identify the following record pertains to the Company) Segment Code A85 would be populated with the 4-character AAIA Parent Brand Code assigned to that Company. The subsequent loop would populate A83 with “BRD” to indicate the following record was a Brand Statement, and Segment Code A85 would be populated with the 4-character AAIA Brand Code assigned to that Brand.

The same treatment would apply for different Designators and Code combinations. Based upon the A83 and A85 Designator and Code, a receiver will link the Market Copy contained in A87 to the relevant parts, as additional reference information.

Technical Description

The Market Copy Segment defines the Market Copy Content field (A87), of up-to 2000 characters, at several category levels above the Part Number. The Market Copy Code in field #A83 (see Market Copy Code Table below) defines the level at which the supplier wishes to provide a marketing statement. The Market Copy Reference field contains the supplier-provided code (e.g. the AAIA Brand ID) that is used by the receiver to link all of that supplier’s Part Numbers to the related Market Copy Content field (A87). The segment “loops” on Market Copy Code, Market Copy Reference and Language Code.

Market Copy Segment Code	Code Description
A81	Maintenance Type
A83	Market Copy Code
A85	Market Copy Reference
A87	Market Copy Content
A89	Language Code

The Market Copy Code Table for field A83 contains the following designators:

Market Copy Code Table (A83)

Code	Code Description	Field # - Market Copy Reference Requirements
BRD	AAIA Brand	B20 - AAIA Brand ID Code (4 Char)
BOW	AAIA Brand Owner	A23 - AAIA Brand Owner Code (4 Char)
BPR	AAIA Brand Parent	A13 - AAIA Brand Parent Code (4 Char)
SBR	AAIA Sub-Brand	B27 - AAIA Sub-Brand ID Code (4 Char)
PTI	AAIA Part Terminology	B64 - Part Terminology ID (4-5 Char)
PGC	Product Group	B60 - Supplier-assigned Major Product Category (10 Char)
PSG	Product Sub-Group	B61- Supplier-assigned Minor Product Category (10 Char)
PCC	AAIA Product Category	B62 – Product Category Code (6 Char)

Digital Asset Sub-Segment of Marketing Copy

The Digital Asset Sub-Segment of Marketing Copy is used to relay information about any media types which support the related Marketing Copy Segment Reference Codes. The available Reference Codes include AAIA Brand or Sub-Brand, Brand Owner, Parent Company, AAIA Part Terminology, Suppliers Product Group or Sub-Group, AAIA Product Category (NPD) or several User-Defined codes. The Asset Type Table (P10) is used to identify what type of digital asset is being defined. Some of the Asset Type references that could be provided are listed below. The Brochure could introduce a new product group or category, and a Photo-Primary could represent a product sub-group. The example below indicates the Asset Codes which are MOST LIKELY to be used in the Market Code Segment. For a full list of reference codes, please refer to PIES Technical Documentation. “ASST Codes.”

Asset Type Table (P10) Example

Asset Type Table (Partial List) Codes	Description
BRO	Brochure
BUL	Technical Bulletin
LGO	Logo Image
MSD	Material Safety Data Sheet
P03	Photo – lifestyle view
P04	Photo - Primary

M01-M99 Digital Asset Loop (Market Copy Segment)

The Digital Asset Loop of the Market Copy Segment (M01-M99) is an exact replica of the main Digital Asset Loop of the Item Segment. Please refer to Use of the Digital Asset Segment (P01-P99) for details, in conjunction with the **Imaging Best Practices** document, available at www.aftermarket.org.
Item Quantity Fields (B32-B34)

Definition and Use:

The Item Quantity Fields are new additions to the ITEM Segment, and are intended to provide specific measurements related to the saleable item, that is, the item the Consumer would buy. The general descriptions of use are defined in the table, below.

Three new related elements are proposed for this segment, Item Quantity Size (B32), Item Quantity Size UOM (B33) and Container Type (B34). The first 2 new elements are used to identify the contents of the consumer package (“EA”) level.

New Item Segment Fields Code	Code Description
B32	Item Quantity Size
B33	Item Quantity Size UOM
B34	Container Type

Example of Use

Example 1: 16oz. Bottle of Tire Cleaner

In this case of use, B32 would be populated with “16”, B33 would be populated with the proper value from the ANSI x.12 355 Table (“OZ”), as well as B34, “Bottle”. For convenience, a shortlist of the most common ANSI X.12 355 Table Values is published in the PIES Technical documentation, “PIES RECOMMENDED CODE TABLE VALUES”.

Example 2: 500 foot Roll of Hose

In this case of use, B32 would be populated with “500”, B33 would be populated with the proper value from the ANSI x.12 355 Table, “FT”, as well as B34, “ROLL”. For convenience, a shortlist of the most common ANSI X.12 355 Table Values is published in the PIES Technical documentation, “PIES RECOMMENDED CODE TABLE VALUES”.

SPECIAL NOTE – Example 2

In the case where an item, such as a 500 foot roll of hose, can be sold by the foot, there are a number of elections:

The first election, is at the option of the Receiver, who can elect to create a SKU for the unit of measure in which they elect to sell, and thus maintain their own SKU and selling information for that unit.

The second election, is at the option of the Supplier, who can elect to create a Non-Orderable package level for the product, using fields H21-H24 of the Package Segment (Inner Quantity), to address the Inner Quantity of a roll of hose. In this example, the “Inner Quantity” (H21) would be populated with “500”, the Inner Quantity UOM (H22) would be populated with “FT”, and the Orderable Package field (H23) would be populated with “N”.

The third election, is at the option of the Supplier, who can create a Price Break Quantity for the “Roll” of 500 Feet, and a Unit Price for 1 Foot Price, using the ITEM Pricing Segment loop. In this case, the Inner Quantity Package information would indicate an Orderable Item with an Inner Quantity of “1” and the Inner Quantity UOM of “ROLL”.

In each case, this should be discussed between Supplier and Receiver as to the practice they wish to adopt.

Packaging Fields

The "Inner Quantity" and "UOM" are used for defining the content of upper level package types (Inner Pack, Case and Pallet). Example: In addition to indicating how many “Eaches” (consumer packs) are contained in a Case you will be able to also indicate how many Inner Packs are contained in the Case, and/or how many Cases are contained in a Pallet.

"Orderable Package" allows a supplier to indicate if a certain package level of the Part Number is

shippable (orderable) by the receiver, or not. On some products, the Bottle may be shippable, on others only the Case and Pallet, and on some products just the Pallet level (e.g. Motor Oil or Crate Engine).

New Package Segment Fields Code	Code Description
H20	Quantity of Eaches in Package
H21	Inner Quantity (new)
H22	Inner Quantity UOM (new)
H24	Orderable Package (new)

A Case package may contain 12 bottles, in which example H21 would be “12” and H22 would be “BO”. These fields always relate to the Item Segment, linking the “net content” of the bottles to the “16”, “OZ” and “Bottle” fields (B32-B34). If there was a Pallet of 20 Cases, these links would provide the receiver a complete packaging string: “Pallet of 20 Cases of 12 Bottles of 16 Ounces”.

Pricing Segment Considerations

Recommended pricing in the Aftermarket is always at the consumer package (“EA”) level; in the example above, the Bottle. If the Cost (“WD1”) of this bottle is $1.60 and the Retail Price (“RET”) is $3.20, the Case cost would be $38.40 and the Pallet cost $768.00. The retail shelf tag would show a price of $3.20, and could now systemically provide a Unit Comparison Price of “$0.20 per OZ”, where required by law.

PLEASE ALSO REFER TO “SPECIAL NOTE – Example 2” in B.1., for Pricing Examples for a sellable unit of measure.

Stacking Factor

This field (H55) in Packaging indicates the number of layers a product may be stacked. On the “EA” (consumer package) level it guides the plan-o-gram information for the retail shelf. On the “CA” or “PL” package levels it provides shipping and warehouse stocking limits for safe storage.

Appendix H – Historical Documents – PIES 6.2

General Change Information

Header Segment

Changed all "Brand Owner" elements to OPTIONAL
BrandOwner DUNS or DUNS+ 4 (A20)
BrandOwner GLN (A21)
BrandOwner VMRS ID (A22)
BrandOwner AAIAID (A23)
Changed <ContactEmail> (A41) to max 254 characters

Item Segment

Changed "Brand AAIAID" (B20) to Required/Mandatory element
Added <SubBrandAAIAID> element (B27)
Added <ACESApplications> element (B30)
Removed "X" enumeration from <HazardousMaterialsCode> element

EXPI Segment

- Changed <ExtendedProductInformation> to a KM (Key Mandatory) element
- Added the following E05 EXPI Codes
  - RST Regulating State
  - RPC Regulating Postal Code
  - RCS Regulating County, State
  - RCT Regulating City, State

Product Attribute Segment

- Added "PCDBAttribute" attribute to <ProductAttribute> element
- Added "AttributeUOM" attribute to <ProductAttribute> element
- Increased "AttributeType" attribute to 80 characters (alphanumeric)

Trailer Segment

Removed <RecordCount> element (Z05) - No longer supported or in use

Appendix I – Historical Documents – PIES 6.1

General Change Information

Header Segment

- Removed “Country Code” (A36) Field
- Added “Contact Email” (A41) Field
- Removed ‘fixed’ enumerations on fields “Language” and “Currency Code” in XML Schema

Price Sheet Segment

Corrected spelling of Superseded in field “Superseded Price Sheet Number” (A55). Spelling correction applies to XML Element name in Schema as well

Description Segment

Added new code “MKT” (Marketing Description – 2000) to Description Code Table

PRICE Segment

Price Type (D35) Codes added to code table("QOT” Quote)

Package Segment

Changed field requirement for Height (H25), Width (H30), Length (H35) to Conditional
All three fields required if submitting Dimension information

EXPI Segment

- Added EO5 EXPI Code TMC (Trading Partner Movement Code)
- Corrected spelling of Superseded for E05 Code “Part Number Superseded To”

Interchange Segment

- Added “Interchange Type Code” enumerations back into XML Schema
- Added “Quality Grade Level” enumerations back into XML Schema

Digital Assets Segment

- Added “File Type” enumerations back into XML Schema
- Added “Representation” enumerations back into XML Schema
- Added “Resolution” enumerations back into XML Schema
- Changed XML Element name for “Asset Height” (P50) to <AssetHeight>
- Changed XML Element name for “Asset Width” (P55) to <AssetWidth>

Miscellaneous XML Schema Changes

The following changes have been implemented in the XML Schema (.xsd file). Several of the changes listed reference technical XML Schema terms which are defined as follows.

Explanation of Decimal Facets	
minExcl=0	The value used must be greater than zero
totalDig	Total number of digits allowed, including fractional (right of decimal)
fracDig	Number of fractional digits allowed (right of decimal)

Global simpleType Elements

- **Resolution**
  Changed xs:string data type from unrestricted to minLen=2 and maxLen=4

- **QuantityPerApplication**
  Created global simpleType as xs:positiveInteger max=9999999
- **QuantityPerApplication/Qualifier**
  Removed the default value of “NOR”
- **MinimumOrderQuantity**
  Created global simpleType as xs:positiveInteger max=99999999
- **Description**
  Created global simpleType as xs:string maxLen=2000
- **Price**
  Created global simpleType as xs:decimal minExcl=0 totalDig=10 fracDig=4
- **PriceBreak**
  Created global simpleType as xs:positiveInteger maxIncl=99999999
- **ComponentPartNumber**
  Created global simpleType as xs:string minLen=1 maxLen=48
- **QuantityInKit**
  Created global simpleType as xs:positiveInteger maxIncl=99999999

Modified Item Child Elements

Item Segment

- **QuantityPerApplication**
  Changed data type from xs:positiveInteger to QuantityPerApplication
- **MinimumOrderQuantity**
  Changed data type from xs:positiveInteger to MinimumOrderQuantity

Description Segment

- **Description**
  Changed data type from xs:string to Description

Price Segment

- **Price**
  Changed data type from xs:decimal to Price

Package Segment

- **Height**
  Changed type from xs:float to xs:decimal minExcl=0 totalDig=8 fracDig=4
- **Width**
  Changed type from xs:float to xs:decimal minExcl=0 totalDig=8 fracDig=4
- **Length**
  Changed type from xs:float to xs:decimal minExcl=0 totalDig=8 fracDig=4
- **Weight**
  Changed type from xs:float to xs:decimal minExcl=0 totalDig=9 fracDig=4
- **DimensionalWeight**
  Changed type from xs:float to xs:decimal minExcl=0 totalDig=9 fracDig=4
- **WeightVariance**
  Changed type from xs:float to xs:decimal minExcl=0 totalDig=8 fracDig=4

HAZM Segment

- **TextMessage**
  Added restrictions to xs:string of minLen=1 maxLen=2000

Kits Segment

- **ComponentPartNumber**
  Changed type from xs:string to ComponentPartNumber
- **QuantityInKit**
  Change docs to reflect new element name
  Changed type from xs:positiveInteger to QuantityInKit

Digital Assets Segment

- **FileSize**
  Added totalDig=10

- **AssetHeight**
  Changed type from xs:float to xs:decimal minExcl=0 totalDig=6 fracDig=4
- **AssetWidth**
  Changed type from xs:float to xs:decimal minExcl=0 totalDig=6 fracDig=4
- **URI**
  Restricted data type xs:anyURI to maxLen=2000

PIES 6.1 (Build 1) Changes

XML Schema Changes

Removed duplicate <xs:pattern value=""/> from <PIESVersion>.

Removed *mixed="true"* from <xs:element name="Pricing"> complexType declaration.

Added minOccurs="0" to <xs:element name="PriceBreak">

Added elementFormDefault="qualified" to the Schema header

Some XML Parsers have been found to have difficulty validating the PIES Schema without this entry. While some parsers work fine, and W3.org validates PIES 6.1 Schema as valid, it was felt that this should be added to accommodate parsers with problems.

PIES 6.1 (Build 2) Changes

XML Schema Changes

Changed regular expression pattern for <PIESVersion> to "(\d\.\d\.\d)" to accommodate build numbering. Also expanded max length to 5.

Fixed limited looping for <HazardousMaterial> by changing maxOccurs to "unbounded".

Changed regular expression pattern for <PriceZone> to "[\p{L}]+".

Expanded <WHMISCode> to length 10.

Changed default namespace to reflect generic AAIA namespace reference.

Removed obsolete Format Coding type “ID9/AN4”.

Appendix J – Historical Documents – PIES 6.0

General Change Information

XML Schema Changes

In PIES 6.0, a significantly new XML Schema for the PIES Standard is introduced. While the standards still retains the same general looping and group structure for its segments, the schema now incorporates some PIES fields as "Attributes" for their corresponding PIES fields (defined as XML Elements). This new design allows for stronger field constraints which follow the defined PIES Standard.

These stronger constraints also include strict data typing and field lengths. For instance, it is important to note that all "DATE" fields are formatted as YYYY-MM-DD (the simple date type as defined by the W3C). In previous versions of PIES, the XML Schema used this simple date type, however the associated documentation indicated a date format without dashes (YYYYMMDD). By retaining the use of the standardized date type, system may recognize this field as a date data type automatically without the need for data conversions.

For more information, please see the individual segment definitions in this document or refer to the PIES XML Schema Document available from the AAIA website.

Removed Segments

The following segments were removed from the PIES 6.0 Standard due to lack of support and ambiguity.

The CONT (P01-Contact), LOCA (R01-Location) and SHIP (S01-Ship-From) Segments have been removed and are no longer supported.

The USED (G01-Product Category) Segment has been removed. See changes in ITEM Segment for more information

Removed IMAG (M01-Image Segment) and LINK (L01-Link Segment). See "NEW SEGMENTS" Changes for more information

New Segments

In conjunction with the work of the Digital Assets Subcommittee, a new segment was created in PIES 6.0 which consolidated the IMAG and LINK segments from previous versions of the PIES Standard.

Replace IMAG (M01) and LINK (L01) Segments with new ASST (P01) Digital Asset Segment.

- This segment combines the functionality of the previous segments
- File Encoding (M96 & M96) is removed from the new ASST Segment

Item Segment

- Added previous USED Segment fields to the ITEM Segment (B60-B65)
  - B60 Product Group Code
  - B61 Product Sub-Group Code
  - B62 Product Category Code
  - B63 UN/SPSC Code
  - B64 Auto Part Type (Light Vehicle)
  - B65 VMRS Code (Heavy Duty)
- Changed "Brand AAIA ID" (B20) to 4 character field
- Removed 'Business Contact Name' (old B60)
- Removed 'Technical Contact Name' (old B65)

Price Segment

- Price Type (D35) Codes added to code table
  - RMP Retail MAP
  - UNL Unilateral Price
  - WMP Wholesale MAP

Package Segment

Removed Dimensional Weight UOM (H51)

This value is now referenced using UOM for Weights (H46)

HAZM Segment

PIES 6.0 consolidated EXPI Codes to the Hazardous Materials Segment for consistency.

- Moved Hazmat EXPI Codes (E05) to HAZM Segment
  - J31 Hazardous Material Code Qualifier
  - J32 Hazardous Material Class Code
  - J33 Hazardous Material Description
  - J46 WHMIS Code
  - J47 WHMIS Free Text

EXPI Segment

In PIES 6.0, there are many changes to the field/code values supported in the Extended Products Segment (EXPI). The EXPI Codes that have been removed were done so because of lack of support and ambiguity. In other cases, EXPI Codes were moved to other more pertinent segments of the standard (see HAZM Segment for example).

- Split E05 EXPI Code HAR (Harmonizing Code) into 2 separate codes
  - HSB Harmonized Tariff Code (Schedule B)
  - HTS Harmonized Tariff Code (HTS)

- Added E05 EXPI Code NAF (NAFTA Preference Criterion Code)

- Removed the following E05 EXPI Codes
  - APN Alternate Part Number
  - ASF Always Ship Freight
  - BMN User-Assigned Manufacturer Number
  - BPN User Part Number
  - BPO User Part Number – Old
  - BPS User Part Number Superseded To
  - GRL Group Location Code
  - GT2 Secondary GTIN
  - GTQ Secondary GTIN Qualifier
  - LTM Estimated Lead Time
  - OVS Oversize Item
  - SHP Shipping Class Code
  - SHR Shipping Restrictions
  - SPC Special Codes
  - STN Stock Number
  - STO Stock Number – Old
  - STS Stock Number Superseded To

