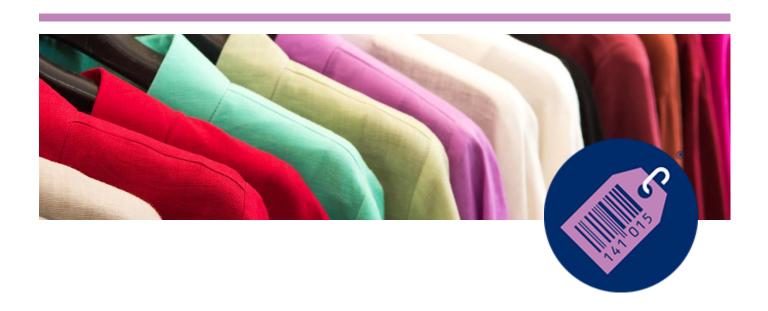


# Apparel and General Merchandise

Guideline - Order Consolidation Best Practices

Release 1.0, April 4, 2019





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# About the GS1 Apparel and General Merchandise Initiative

The GS1 US Apparel and General Merchandise Initiative serves as a strategic effort in which retailers, marketplaces, brand owners, suppliers, manufacturers, industry trade associations, solution providers and academia voluntarily join to assist in helping the retail industry drive the adoption and use of the GS1 Standards.

To learn more about the Initiative, visit:

www.gs1us.org/ApparelGM

# 1 Executive Summary

Historically, retailers and brands have set up their packing and receiving processes so that each carton contains a single purchase order (PO). This method works well for initial orders but less so for replenishment orders.

Replenishment purchase orders present an opportunity for consolidation. Consolidating multiple purchase orders for the same store/delivery/ship "from location" into a single carton offers retail industry trading partners the benefit of streamlining operational efficiency and optimizing last mile costs.

Today, there are a small number of U.S. retailers and brands, within the Apparel and General Merchandise categories, who can process multiple purchase orders into a single carton.

Replenishment purchase orders may be generated specifying one item for a single store location. Many retailers have minimum carton sizes/weights to ensure convey-ability. Shipping one unit to a single store can mean shipping "air," especially when the item is small (like an infant onesie). Some brands simply will not ship a single item, which means a lost sale for both the brand and the retailer and a disappointing experience for the consumer. In this scenario, order consolidation in a single carton could provide both parties a savings on carton costs, freight, and resources, plus improved order fill-rates, which ultimately results in a positive consumer experience.

Brands have had to implement different methods for achieving carton consolidation based on how each retailer has implemented the process. The Apparel and General Merchandise industries recognized a need to develop a single best practice industry guideline for accommodating multiple purchase orders in a carton.

This Guideline, developed by the GS1 US Apparel and General Merchandise Order Consolidation Best Practices Workgroup, delivers best practice guidance for implementing multiple purchase orders for the same store/delivery/ship "from location" in a carton.

The streamlined movement of products through the retail supply chain is crucial to an organization's success by providing consumers with the right merchandise, in the right place, at the right time. As retailers and brand owners seek to improve the process, they work together to find best practices that optimize the flow of goods and the cost associated with them.

Retailers and brand owners find situations where the consolidation of orders into fewer cartons are beneficial to all parties. These include:

- Several purchase orders for a small number of units exist for a location and all the items are located in close proximity to each other in the store
- Consolidating several items, each of a small number of units to a location, on a single purchase order will reduce corrugate



# 2 Introduction

#### 2.1 Overview

This Best Practice Guideline was prepared by the *GS1 US Apparel and General Merchandise Initiative Order Consolidation Best Practices Workgroup* to assist trading partners with the use of GS1 Standards to efficiently consolidate purchase order items. It provides guidance on how to create, manage, and share consolidated Advanced Ship Notices (ASN) or consolidated purchase orders across business operations. Implementation of this Guideline is voluntary. Trading partner relationships will determine the scope and timing of individual deployments.



**Note:** As with all GS1 Standards and solutions, this guidance is voluntary, not mandatory. It should be noted that use of the words "must" and "require" throughout this document relate exclusively to technical recommendations for the proper application of the standards to support the integrity of your implementation.

## 2.2 Who Developed This Guideline?

Shipping more individual cartons increases shipping and handling expenses. Therefore, to address the lack of standardized business processes for order consolidation among Apparel and General Merchandise trading partners, GS1 US worked with industry stakeholders and experts together to develop recommendations for consolidating purchase orders efficiently by either the retailer or the brand owner.

This Guideline was developed by the <u>GS1 US Order Consolidation Best Practices Workgroup</u>. The workgroup includes representatives from leading North American general merchandise and apparel vendors, retailers, and solution providers. This group of companies represents a broad spectrum of product categories within the retail industry, and includes companies large and small.

## 2.3 Objectives

#### **Consolidation of Purchase Orders by Brand Owner:**

To identify, develop, and document standardized methods of consolidating purchase orders by the brand owner. This involves the review of orders received from a retailer and determining where they can be consolidated to maximize supply chain efficiencies and then shared via Electronic Data Interchange (EDI) data.

#### **Consolidation of Purchase Orders by Retailer:**

To identify, develop, and document standardized methods of consolidating purchase orders by the retailer. This involves the review of orders that will be sent to a brand owner and determining where they can be consolidated to maximize supply chain efficiencies and then shared via Electronic Data Interchange (EDI) data.

## 2.4 Scope

The scope of this document is to use data standards to share information regarding the consolidation of EDI purchase orders (POs). This consolidation can occur on either the brand owner side or the retailer side.



#### 2.5 Audience

This document is designed to be used by both brand owners and retailers, as well as establishes a framework for third party providers that may service either trading partner. The guidance provided is applicable to all company trading products in the general merchandise and apparel sector. This includes, but is not limited to, cosmetics, jewelry, footwear, fashion accessories, apparel and sportswear, sporting goods, home fashion, DIY, small appliances, and other general merchandise categories. This document can be used by companies throughout North America. The primary audience is the business team responsible for determining which processes and systems are impacted by the consolidation of purchase orders or shipments.

## 2.6 Document Purpose

The purpose of the document is to:

- Provide an Advanced Ship Notice (ASN) document structure for brand owners who wish to consolidate multiple purchase orders from a single retailer.
- Provide a Purchase Order (PO) document structure for retailers that wish to consolidate products from different merchandise areas to single brand owner.



# 2.7 Potential Benefits of Order Consolidation

Purchase Order Carton Consolidation Can Lead To:					
Reduced	Carton Quantity	Leads to less GS1-128 carton labels and packing tape	Less carton labels translates to less printer ribbons and label stock, and reduced output of equipment		
Reduced	Carton Quantity	Leads to less carton touches	Carton touches occur throughout the supply chain: build the carton, fill the carton, move the carton through the supplier DC, load the carton on the trailer, unload the carton at destination DC, unpack carton in store, carton disposal		
Reduced	Carton Quantity	Translates to reduced shipping & handling expenses			
Reduced	Carton Touches	Impacts overall labor costs	Less time needed to process the same number of units because there are less cartons.		
Optimized	Carton Cube	Results from having more units per carton	More units per carton means shipping fewer and fuller cartons, which requires fewer packing materials (E.g., peanuts, bubble wrap).		
Optimized	Trailer Cube	Less trailers are needed to ship same amount of freight			
Improved	Sustainability	Less cartons and trailers, as well as optimized cubes, means results in an improved carbon footprint <sup>1</sup>	If you can reduce the amount of touching, movement, and transportation of goods, then by definition you are reducing your environmental impact.		

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<sup>&</sup>lt;sup>1</sup> Chain Analytics, April 2018. *Driver Shortage Concerns? Start with Bringing Packaging Efficiency to Your Shipments*. Retrieved on April 4, 2019 from: <a href="https://www.chainalytics.com/driver-shortage-concerns-start-with-bringing-packaging-efficiency-to-your-shipments/">https://www.chainalytics.com/driver-shortage-concerns-start-with-bringing-packaging-efficiency-to-your-shipments/</a>



# 2.8 Trading Partner Accountabilities

Implementing purchase order consolidation is a collaborative process. Listed below are recommended action steps and key best practices for business trading partners to consider.

Action Step	Key Best Practice Recommendations
Agree on Business Process	<ul> <li>Determine what departments or categories of business can be consolidated</li> <li>Agree on any type of product that should not be consolidated</li> </ul>
Review EDI Mapping for Order Consolidation Structure	<ul> <li>Review with business and technical areas</li> <li>Review how the structure is different from other order or shipment types</li> </ul>
Prepare for Implementation	<ul> <li>Choose test trading partner(s)</li> <li>Share mapping guides for trading partners</li> <li>Create test transactions</li> <li>Notify all impacted areas of the change</li> </ul>
Assess Readiness to Transact	<ul> <li>Determine if test transactions were successful; resolve issues</li> <li>Review process changes with cross functional team (store, DC, sales, merchants)</li> </ul>
Review Initial Shipments	Audit test shipments for compliance and accuracy
Full Implementation	<ul> <li>Go/No-Go Decision</li> <li>Notify trading partners that order consolidation is available</li> <li>Continue to assess benefits of process</li> </ul>



# 3 Considerations

As business partners discuss implementation of order consolidation, the following points should be considered.

#### **For the Brand Owner**

The brand owner and retailer should, as trading partners, agree that the combination of products that would normally be in separate cartons can be combined in a single / reduced number of carton(s), though it may contain different department/class numbers or purchase orders.

It is recommended that each brand owner and retailer, as a trading partner, should define a process on combining products to reduce the number of cartons.

#### For the Retailer

The retailer and brand owner should, as trading partners, agree that the combination of products that would normally be on separate purchase orders can be sent on a single PO, though it may contain different department or class numbers.

It is recommended that each retailer and brand owner, as a trading partner, should define a process on combining products to reduce the number of cartons.

Is the use of order consolidation intended only for replenishment purchase orders

Products are being shipped to, or marked for, the same store or retailer location

Adjacencies of the merchandise on the sales floor

In store merchandise receiving processes

Brand owner is shipping products on all the impacted purchase orders from the same distribution center

Payment terms are the same for all impacted purchase orders

Preference for same ship window on impacted purchase orders

Maximum POs allowed in a carton

Mixing of products with different VAS requirements- RFID, packaging, ticketing

GS1-128 Carton Label contents

Trading partners should review packing lists, carton content labels, and BOLs to ensure they meet the needs of both parties



# 4 Order Consolidation by the Brand Owner Use Case

There are several business scenarios where order consolidation can be used by the brand owner. The following is just one example.

A brand owner has received two or more purchase orders from a retailer. The products contained in those orders are in different department or class numbers in the retailer's system but are housed or displayed in close physical proximity to each other, in a store location or within the retailer's location. By combining these purchase orders on a single ASN and in a carton for shipment, the merchandise will arrive at the retailer's location using fewer cartons and will be shipped at less expense.

An example of this use case is a retailer sends several different purchase orders to a brand owner:

- PO # 1234567 for Dept 555 (Girl's 4-6x) for dresses (quantity of 2 items)
- PO # 2234567 for Dept 575 (Boy's Toddlers) for pants and T-Shirts (quantity of 3 items total)
- PO # 3234567 for Dept 532 (Infants) for onesies (quantity of 2 items)

All of these items are merchandised in the store in the Children's Department and could all fit easily into a single carton. They also have the same or similar PO ship windows, are shipped from the same brand owner distribution center (DC), and have the same payment terms. The brand owner creates an ASN that combines this merchandise from multiple purchase orders to reduce the amount of corrugate used (cartons) and to minimize the order shipping and handling costs.

### 4.1 Structure

The Shipment, Package, Order, Item SPOI structure, (pronounced 'SPOI') identifies the 856 Advance Ship Notice / Manifest or ASN structure in the BSN (Beginning Segment for Ship Notice) where BSN05 =0003 (Shipment, Packaging, Order, Item). There are a total of 83 codes delineated in the BSN (Beginning Segment for Ship Notice), they appear in the same order as they were developed prior to 1998 (v4010). The BSN05 suggests the hierarchy of the physical shipment which is described in the electronic version (856 Advance Ship Notice / Manifest) of the shipment in the order of appearance that being Shipment, Packaging, Order, and Item.

The use of this structure is recommended because it uses existing standards and known data structures.



# Figure 1<sup>2</sup>

1	ST*856*0001		
2	BSN*00*GlobalShpmentIdNo*21080819*2120*0003		
3	HL*1**S		
4	TD1**1****G*20.00*LB		
5	TD5**2*UPSN*U*UPS*CC		
6	REF*BM*BOLIdNo		
7	MAN*SM*ShpmentIdNo		
8	DTM*011*20181114*2120		
9	N1*BY*CompanyName*UL*GobalLocationNumber		
10	N2*AltName1*AltName2		
11	N3*Addess1*Address2		
12	N4*CityName*ST*C*C****Postal-Code		
13	N1*BY*CompanyName*UL*GobalLocationNumber		
14	N2*AltName1*AltName2		
15	N3*Addess1*Address2		
16	N4*CityName*ST*C*C****Postal-Code		
17	HL*2*1*P		
18	MAN*GM*00506141419999999999		
19	HL*3*2* <mark>0</mark>		
20	PRF*8195447387***20180814		
21	HL*4*3*I		
22	LIN**UP*614141025664*UK*00614141026664		
23	SN1**120*EA		
24	PID*F****Product or Item Description		
25	HL*5*2*0		
26	PRF*8195447288***20180814		
27	HL*6*5*I		
28	LIN**UP*614141025657*UK*00614141025657		
29	SN1**120*EA		
30	PID*F****Product or Item Description		
31	CTT*6		
32	SE*32*0001		

 $<sup>^{22}</sup>$  About the Sample ASN: There is only one ASN within the sample transaction containing one shipment which is done for illustrative purposes only and which is also indicated by the ST an SE segments (Lines 3 and 28).



The ASN structures as defined within the VICS publications<sup>3</sup> allows for several ASN structures or styles<sup>4</sup> to exist. The SPOI structure allows more than one full order to be packed into the same carton aligning well with the guidance which follows.

### The BSN segment (Line 2)

The BSN segment (Line 2) is used to transmit identifying numbers, dates, and other basic data relating to the transaction set, a segment which is used today and is often overlooked in terms of the information it can provide.

The BSN02 indicates a unique control number assigned by the original shipper to identify a specific shipment, illustrated here as a Global Shipment Identification Number, or GSIN, which is typically automatically generated by specialized translation software that can be encoded.

The BSN05 is the Hierarchical Structure Code indicating the hierarchical application structure of a transaction set that utilizes the HL segment to define the structure of the transaction set. Here with qualifier 0003 indicating Shipment, Packaging, Order, and Item.

### The HL segment (Line 3)

The HL03specifies the characteristic of a level in a hierarchical structure and uses a qualifier of 'S' indicating Shipment which identifies the data which follows the HL segment relates to the shipment.

### The next HL segment (Line 17) Package

This HL segment (Line 17) is a 'package' because it is indicated by the qualifier in the HL03 with the letter 'P.'

The HL segment (Line 17) is the second HL segment found within the transaction.

We can identify the position of this HL segment (Line 17) in the order of HL segments found within the transaction as it is indicated in HL01 by the digit 2.

We can also identify the parent of this HL segment (Line 17) as being Line 3 because it is indicated in the HL02, the HL02 in Line 17 = 1, the HL01 in Line 3 = 1.

#### The next HL segment (Line 19) Order

The next HL segment (Line 19) is the third HL segment found within the transaction, we can see that clearly as it is indicated in HL01 by the digit 3.

The parent of this HL (Line 19) indicated in the HL02 is the HL segment found in Line 17, we know this as the number of the HL in Line 17 = 2, the HL02 in Line 19 = 2.

We know the third HL segment found within the transaction is an 'Order' because it is indicated by the qualifier in the HL03 with the letter 'O.'

#### The next HL segment (Line 21)

The last HL segment in the stack is the HL segment found in Line 21 and this is the 'Item' HL segment.

The Item HL segment completes the SPOI format initially identified in the BSN05 (Line 2) which uses the 0003 qualifier indicating Shipment, Packaging, Order, and Item.

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<sup>&</sup>lt;sup>3</sup> VICS publications are available to all GS1 US Members and can be found in the GS1 US Members-Only Reference Library within the Solution Center located here: <a href="https://members.gs1us.org/Solutions-Center">https://members.gs1us.org/Solutions-Center</a>

<sup>&</sup>lt;sup>4</sup> The intent of the VICS EDI publications are to assist companies to implement the Retail Industry subset of the ASC X12 Electronic Data Interchange (EDI) Standards.



We can also see that this is next HL to follow by comparing the HL01 with the previous HL01, in this case (Line 21) where the HL01 = 3, 4 naturally follows and is indicated in this HL segment where this HL01 = 4.

The parent of this HL (Line 21) indicated in the HL02 is the HL segment found in Line 19, we know this as the number of the HL in Line 19 = 3 and the HL02 in Line 21 = 3.



# **5** Order Consolidation by the Retailer

### 5.1 Use Case

A retailer creates a purchase order that consolidates several products that would normally be transmitted on separate purchase orders. The resulting purchase order sent to the brand owner may contain products from different department numbers, class numbers, or other divisions within the retailer's and brand owner's systems.

The brand owner creates an ASN that communicates that the products outlined in the PO are shipping together.

### 5.2 Structure

Generally speaking, a consolidated purchase order created by the retailer would not require a format change. Prior to trading these EDI documents, both trading partners would need to agree to share data in this manner.

#### 5.2.1 Purchase Order

ST\*850\*0001

BEG\*00\*SA\*88888888888\*\*20180506

RFF\*IA\*9999999

REF\*19\*04

SAC\*N\*\*VI\*OHRO

ITD\*01\*2\*8\*\*60\*\*60

DTM\*037\*20180506

DTM\*038\*20180518

TD5\*\*\*\*SEE ROUTING GUIDE

N9\*AH\*SEE MSG FOR LEGAL NOTICE

N1\*ST\*92\*0021

PO1\*001001\*120\*EA\*100\*48\*SE\*UP\*9999999999991Z\*PL

PID\*F\*08\*\*\*LONG SLEEVE TOP

SDQ\*EA\*92\*0405\*1\*0407\*2\*0408\*3\*0409\*1

N9\*DP\*0140

PO1\*001001\*120\*EA\*100\*48\*SE\*UP\*99999999998\*IZ\*PM

PID\*F\*08\*\*\*LONG SLEEVE TOP

SDQ\*EA\*92\*0405\*1\*0407\*2\*0408\*1\*0409\*1

N9\*DP\*0140

PO1\*001001\*120\*EA\*100\*48\*SE\*UP\*99999999997\*IZ\*PL

PID\*F\*08\*\*\*SHORT SLEEVE TOP

SDQ\*EA\*92\*0405\*1\*0407\*1\*0408\*1\*0409\*1

N9\*DP\*0140

PO1\*001001\*120\*EA\*100\*48\*SE\*UP\*99999999996\*IZ\*1X

PID\*F\*08\*\*\*ROUNDELBOWTOP



SDQ\*EA\*92\*0405\*2\*0407\*2\*0408\*1\*0409\*1 N9\*DP\*0148 CTT\*6 SE\*57\*0001

## 5.2.2 Advance Ship Notice

ST\*856\*0001

BSN\*00\*GlobalShpmentIdNo\*21080819\*2120\*0001

HL\*1\*\*S

TD1\*\*1\*\*\*\*G\*20.00\*LB

TD5\*\*2\*UPSN\*U\*UPS\*CC

REF\*BM\*ShipmentIDNo

REF\*DP\*140

REF\*DP\*148

MAN\*GM\*GlobalShpmentIdNo

DTM\*011\*20181114\*2120

N1\*ST\*CompanyName\*UL\*GobalLocationNumber

N2\*AltName1\*AltName2

N3\*Addess1\*Address2

N4\*CityName\*ST\*C\*C\*\*\*\*Postal-Code

HL\*2\*1\*0

PRF\*8195447387\*\*\*20180814

HL\*3\*2\*P

HL\*4\*3\*I

LIN\*\*UP\*614141025664\*IZ\*PL\*CB\*8228450\*BO\*BLACK

SN1\*\*120\*EA

PID\*F\*\*\*\*LONG SLEEVE TOP

REF\*DP\*140

HL\*5\*3\*I

LIN\*\*UP\*614141025657\*IZ\*PM\*CB\*8228538\*BO\*BONE

SN1\*\*120\*EA

PID\*F\*\*\*\*SHORT SLEEVE TOP

CTT\*5

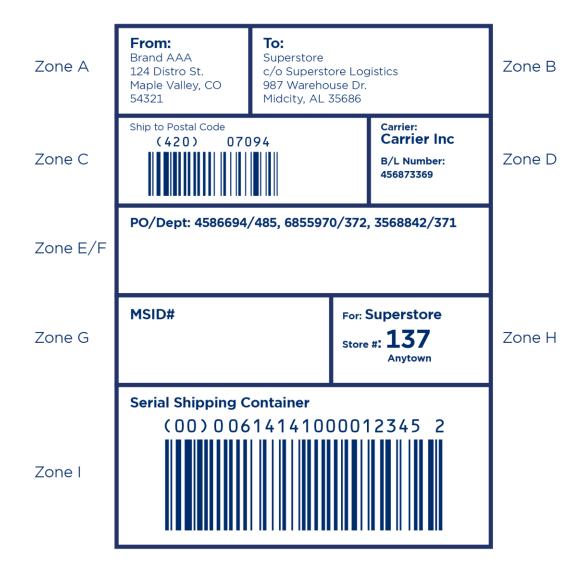
SE\*30\*0001



# 6 Carton Label

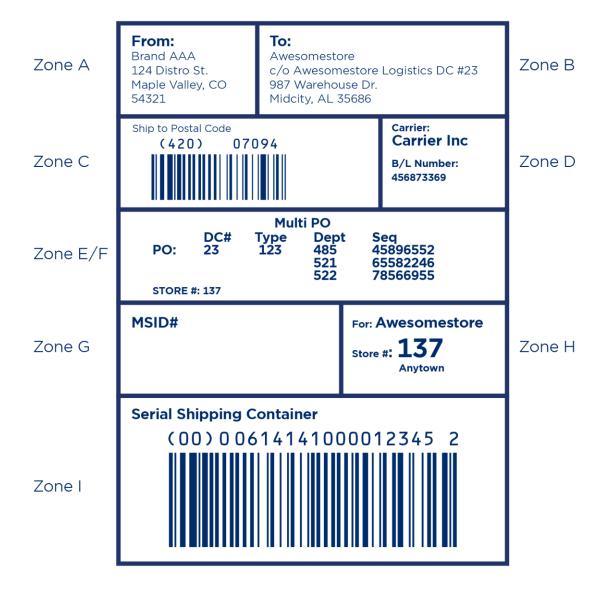
Provided below are sample formats of GS1-128 labels that may be used for communicating the consolidated shipment. Each company should define the format with its trading partners.

# 6.1 Example 1



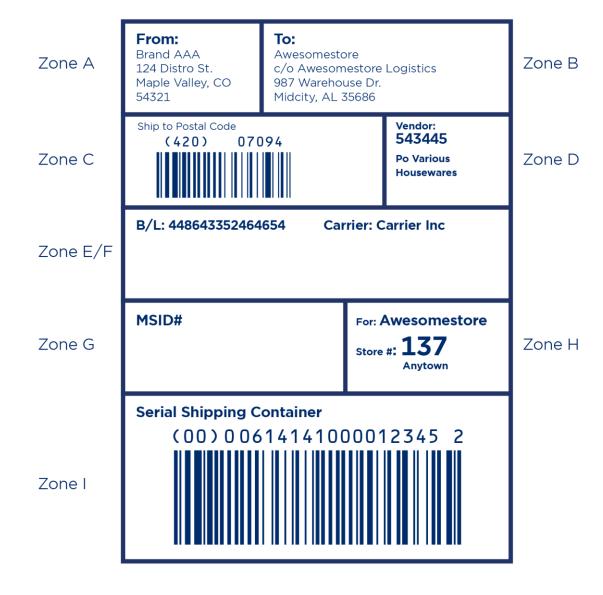


# 6.2 Example 2





# 6.3 Example 3





# **7** Glossary

Term	Definition
ASN	Advanced Ship Notice - an EDI document that allows the shipper (brand owner in this document) of an order to notify the receiver (the retailer in this document) of specifics about what is contained in a shipment.
Brand Owner	Business entity that sells merchandise with a specific label, logo, trademark, etc to another business entity, such as a retailer.
EDI	Electronic Data Interchange - a set of global electronic messaging standards for business documents.
РО	Purchase Order - a buyer-generated document that authorizes a purchase transaction.
Retailer	Business entity that sells merchandise to the end consumer or customer.
Trading Partner	A manufacturer, supplier, wholesaler, distributor, retailer or other members of global supply and demand chain which may share data electronically with other business entities.
VICS®	Voluntary Interindustry Council of Standards® The GS1 US Apparel and General Merchandise Initiative formed as a result of the GS1 US merger with Voluntary Interindustry Commerce Solutions (VICS) in 2012



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