



## Complete GDSN Support for Retailer Requirements

A GS1 GDSN Inc. White Paper

Retailers and suppliers are poised to synchronise virtually any trading partner attribute through the Global Data Synchronisation Network



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**With the introduction of the standardized New Item Form, Extended Attributes (Flexible Fields), and the release of Item Synchronisation Version 2.1, retailers and suppliers are poised to synchronise virtually any trading partner attribute through the Global Data Synchronisation Network.**

## Overview

The Global Data Synchronisation Network (GDSN) provides an efficient and effective method for ensuring that information vital to commercial transactions is identical among local and global trading partners, thereby increasing data accuracy and driving costs out of the supply chain. Built upon the GS1 System standards, the GDSN was designed to synchronize standardised GS1 data. However, beyond the standardised attributes, many retailers also require *additional* attributes related to sales, logistics and marketing to support their order-to-cash business processes. In order to facilitate the exchange of such non-standard data, many retailers have built their own data portals. Suppliers utilise these manual, web-based tools to provide their retailers with the additional information they require. Supporting several methods of exchanging item information is costly to both the retailers and suppliers, and marginalises their investments in the GDSN and standards-based solutions. Thus, the GDSN community sought a solution for this inefficiency.

The GDSN Extended Attributes Project Team, comprised of GDSN users, determined that the Attribute Value Pair (AVP) schema extension, which was already in use to transport existing Global Data Dictionary (GDD) attributes not available in the GDSN Catalogue Item Notification (CIN) or Industry and Target Market Extensions, could also be utilised to transport retailer specific attributes (*now known as Extended Attributes*). By enabling retailer-specific Extended Attributes to be transported via the GDSN, retailers and suppliers are now able to automate their business processes to exchange all required data via the GDSN. Moreover, the GDSN AVP Extended Attribute Program enables retailers to expedite implementation of the attribute in order to meet their time constraints, as well as to simultaneously submit any Extended Attributes with broader use in the community to the GSMP for standardisation. The GDSN Extended Attributes Program was launched in December, 2005.

Today, the GDSN support retailers' requirements for standard and non-standard attributes, supporting all of the data attributes required for order-to-cash business processes in a standardised format.

**NOTE:** This paper provides a high level discussion. However, a comprehensive analysis with additional details can be found in the GDSN White Paper entitled *Automating New Item Forms through GDSN*.

## GS1 Data & Message Standards

The GS1 System provides standardised identifiers, standardised data definitions and standardised messages to facilitate efficient commercial transactions between trading partners. Each supplier defines and maintains their own GS1 identifiers for their products and then defines various data elements (*also known as "attributes"*) required for that identifier. Finally, each supplier stores its identifiers with their corresponding attributes in a product catalogue and/or Data Pool to be used for commercial transactions.

GS1 System standards specify the list of attributes required for each GS1 identifier, as well as the acceptable values and formats for each attribute (*known as "attribute values"*). What makes data "standard data" is its incorporation into a standardised message used to complete a commercial transaction. Thus, "standardised data" is derived from the standardised GS1 messages developed to support efficient and accurate commercial transactions.



Core item attributes are the cornerstone for standards-based collaboration between trading partners. For example, for the FMCG sector, there are 150 GS1 item attributes defined in unambiguous terms, including size, brand information, logistical information and other essential information. Because such information provides the basis for commercial transactions, the quality and accuracy of this information is vitally important to collaborative trading.

## The GDSN

The Global Data Synchronisation Network (GDSN) responds to the business need for reliable information among trading partners to support business processes related to collaborative trading. The GDSN accomplishes that by connecting data pools (i.e., regional sources of supplier and retailer data) using the GS1 Global Registry, a global “yellow pages” for data pools operated by GS1 GDSN, Inc. The GS1 Global Registry enables companies to locate source/supplier or recipient/retailer data pools to exchanged standardised data with trading partners on a real-time basis.

The GDSN Catalogue Item Notification (CIN) is the standard electronic business message used to transmit new or updated trade item information from a source to a recipient data pool (and the data recipient) within the GDSN. Built upon the GS1 System standards, the GDSN in general, and the CIN in particular, were originally designed to synchronize only GS1 standardised data.

More information on the GDSN can be found at [www.gs1.org/gdsn/](http://www.gs1.org/gdsn/).

## Additional Attributes Required by Retailers

However, beyond the standardised data exchanged via the GDSN CIN message, many retailers are also requiring *additional* attributes for their *specific* order-to-cash business processes. Because such information is particular to the retailer and is not standard, it is not covered in the current CIN message or extensions. Three noteworthy examples of non-standard information being sought by retailers are *New Item Introduction*, *Consumer Product Information*, and *Proprietary Product Information*.

### New Item Introduction

Retailers seek additional information to assist them in making purchasing decisions and/or completing the set up of new products in their systems. For example, information regarding sales, logistics and marketing are regarded as essential to the new item introduction process and later updates by retailers.

### Consumer Product Information

Retailers seek detailed product information for consumer-facing marketing activities, including websites, advertisements, consumer catalogues, weekly circulars, etc. Detailed product information, like technical specifications, is often necessary for both the retail buyer and the consumer to make buying decisions.

### Proprietary Product Information

Retailers and suppliers need to communicate data related to specific promotions that are unique to their trading relationship. One such example is off-invoice types of promotions, such as rebates based on sales volume or advertising allowances.

*Thus, in addition to exchanging standardised data via the GDSN, many retail trading partners are also exchanging non-standard, retailer specific data outside of the GDSN.*

## Data Exchange Mechanisms for Non-Standard Retailer Data

Because the GDSN is based on standardised data and standardised messaging, the current GDSN CIN message does not synchronise such retailer specific information. In order to facilitate the exchange of such non-standard data, many retailers have built their own data portals to satisfy these additional information needs. They also use other methods of capturing these types of attributes, such as spreadsheets, manual



entry to item set up forms, and Electronic Data Interchange (EDI). They may also require information to be submitted manually to a data pool. The end result is *multiple* methods of exchanging item information that require retailers to receive (and suppliers to submit) a portion of their item data via the GDSN, and another portion through portals.

## The Retailer Portals

Today, many retailers use data portals to obtain the additional non-standard data they require to support their business processes. Suppliers utilise these web-based tools to provide their retailers with the additional information they require. Portals benefit retailers by providing an automated mechanism for receiving the non-standard proprietary information they require. Suppliers benefit from the elimination of paper-based forms for submitting such information. Moreover, because many small suppliers do not yet participate in the GDSN, portals provide small suppliers with web-based data exchange mechanisms that enable them to trade with large retailers.

However, because portals exist outside of the GDSN, they invite the risk of data entry error and are not cost effective for either retailers or suppliers. Portals require suppliers to manually enter data. Consequently, portals increase the risk of data inaccuracy as compared to machine-to-machine environments. Moreover, portals insert additional administration costs into both sides of the supply chain. Because each retailer portal is specific to the individual retailer, supplier administration costs are increased due to the need to access each individual retailer's system in order to complete the required data input. On the other side, retailers incur additional administration costs associated with operating and maintaining their portals, as well as the additional costs associated with merging multiple data streams. This time and money spent on administrative tasks would be better spent on category and promotional planning activities for both retailers and suppliers.

## The Challenge

The goal of the GS1 System is to facilitate efficient and effective commercial transactions by optimising standardised data and standardised messages. The continuing goal is to submit new, common attributes into the standards process for inclusion in the Global Data Dictionary (GDD).

Nonetheless, the GDSN community is mindful that there will always be a certain number of retailer-specific attributes not in the standard. Retailers have some data attributes that are unique to their organisations, and therefore may never be accepted as part of any global standard. Moreover, for some business cases, especially those of early adopters, retailers seek expedited options for implementing a standard that meets their needs while they await the full due process of the Global Standards Management Process (GSMP).

Retailer portals do have a role and purpose. They convey corporate identity, maintain and foster collaborative relationships with trading partners, enhance communications, and gather a small number of attributes/item data from trading partners. However, supporting several methods of exchanging item information is costly to both the retailers and their suppliers, and marginalises their investments in the GDSN and standards-based solutions. Thus, the GDSN community sought to refine the balance between standards-based information and retailer specific needs in order to reduce supply chain costs and improve the efficiency and effectiveness of their supply chain.

## The Solution: GDSN Support of Extended Attributes

The GDSN Board of Directors recognised that in order for retailers and suppliers to fully reap the benefits of the GDSN, they need the ability to exchange certain non-standard attributes specific to their business needs. They also recognised that retailers often need these attributes supported in a very quick timeframe. In evaluating options to respond to these needs, the GDSN Board of Directors decided that the most effective solution would be to allow non-standard, retailer-specific attributes, now known as *Extended Attributes*, to be exchanged via the GDSN in a standard message format.

With this directive, the GDSN Extended Attributes Project Team, comprised of GDSN users, was launched to



explore the best method for implementing this type of solution. The Project Team determined that the Attribute Value Pair (AVP) schema extension, which was already in use to transport existing Global Data Dictionary (GDD) attributes not available in the GDSN Catalogue Item Notification (CIN) or Industry and Target Market Extensions, could also be utilised to transport the Extended Attributes. By utilizing this existing format, no new development work was required. This approach was adopted and, as of December 2005, the GDSN now supports retailer-specific attributes sent as an extension to the GDSN CIN message.

By enabling retailer-specific Extended Attributes to be transported via the GDSN, suppliers are now able to automate their processes to provide all required data to retailers via the GDSN. This enables both retailers and suppliers to reduce the time associated with administrative tasks, and invest it in managing and growing their businesses.

## Implementation Process for Extended Attributes

Retailers are permitted to list the Extended Attributes they want to use with their trading partners on the GDD web site and to synchronise them within the GDSN. The GS1 process for implementing retailer specific Extended Attributes is as follows:

- Step 1.** Retailers work with their certified GDSN data pool to review their attribute needs, identify any non-standard attributes they may need, and ensure that those attributes are not redundant with any attributes currently supported in the GDD.
- Step 2.** During the analysis with their data pool, the retailer completes a spreadsheet that provides a definition and business use of any Extended Attribute they request, along with other pertinent information.
- Step 3.** The retailer's data pool forwards the information to the GSMP team. (In the near future, the GSMP will be providing the data pools with a web-based tool to support this process.)
- Step 4.** GS1 reviews the submission(s) and optimises standardised definitions and attribute values wherever possible. Then, GS1 publishes the Extended Attributes on the GDD website and provides the retailer with a link to the information. (Retailer Specific attributes are listed on the GDD web site *grouped by retailer* as a resource for their trading partners.)
- Step 5.** The retailer then communicates to their suppliers that they are ready to begin receiving these attributes via the GDSN, and gives them the link to their Extended Attributes on the GDD.

Thus, retailers now have the ability to post their specific attributes to a site within the GSMP GDD, and to synchronize those *non-standard* attributes along with their *standard* attributes within the GDSN.

### Adding Extended Attributes to the Core CIN

If a retailer believes that some of their required attributes belong in the standard, they can also initiate a GSMP Change Request at the same time they submit their Extended Attributes. Then, they can implement the AVP Extension *while the GSMP review process proceeds* in order to meet their time constraints. Suppliers can also identify common attributes that they are requested to share with multiple retailers and submit them to the GSMP for standardisation. Adding Extended Attributes that have wider industry use to the core CIN optimises standards based solutions by enabling the creation of dependencies between attributes and the introduction of GDSN validations. Moreover, once the attributes are added to the core CIN, the retailer can move to the standards based solution and away from the custom implementation via their portal.

It is expected that the list of retailers and Extended Attributes will change as attributes are brought into the standard, as attribute requirements change and as new trading partners enter the GDSN. In addition, it is

expected that the number of item data attributes gathered via retailer portals will decrease over time, and the item data synchronised via the GDSN will increase.

### Considerations for Retailers

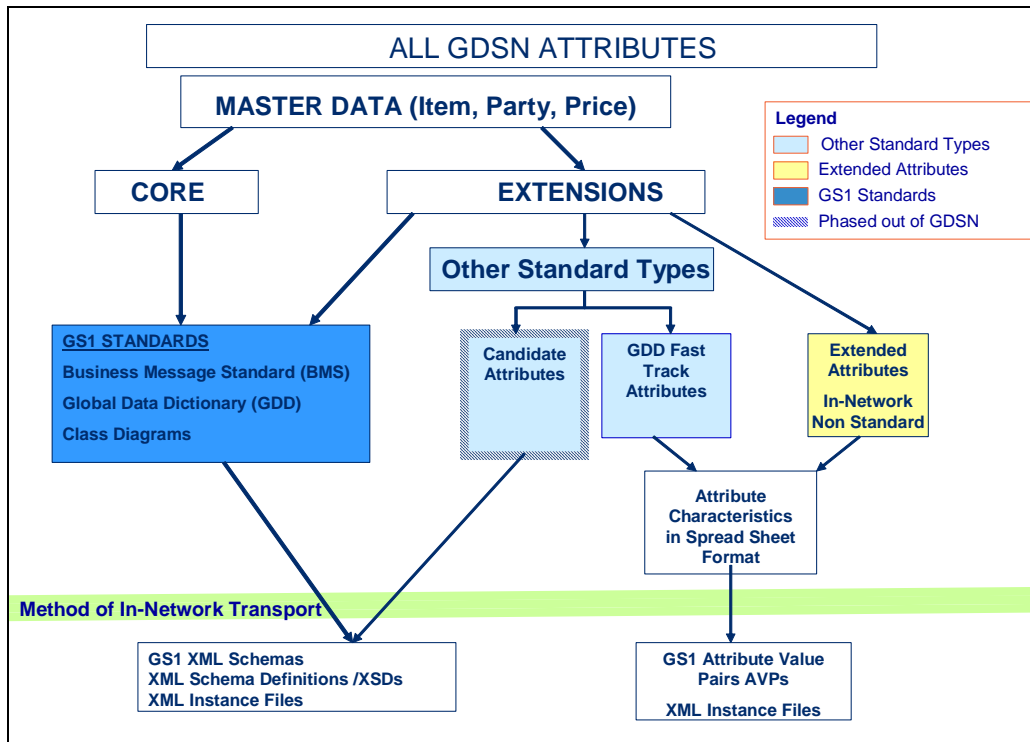
In order to implement Extended Attributes, retailers and their certified GDSN data pools will need to be able to support the AVP Extension in their internal systems. Retailers will need to parse the Extensible Markup Language (XML) message and process the attributes that they require, while ignoring other attributes that are not relevant to their businesses. They will also need to validate the data they receive via the AVP extension for completeness.

### Considerations for Suppliers

Once suppliers are requested to use the AVP extension in the GDSN, they download the retailer-specific requirements from the GDD website and make the necessary system changes to map the data from their backend systems. The supplier must also ensure their Solution Provider and GDSN-Certified Data Pool support the AVP extension.

### Conclusion

Today, the GDSN supports the transport and synchronisation of virtually all required attributes, standard and non-standard.



Today, the GDSN supports retailers' requirements for standard and non-standard attributes, supporting all of the data attributes required for order-to-cash business processes in a standardised format. By enabling retailer-specific Extended Attributes to be transported via the GDSN, retailers and suppliers are now able to automate their processes to exchange all required data via the GDSN. Moreover, the GDSN Extended Attribute program enables retailers to expedite implementation of the attribute in order to meet their time constraints, as well as to submit any Extended Attributes with broader use in the community to the GSMP for standardisation. The GDSN community believes that this program supports industry's momentum toward and investment in data synchronisation as our future.

Contact a GDSN-certified data pool or GDSN, Inc. for more information.



## Glossary

Current Term	Current Term Definition
1. Standards	Attributes that have been approved through the GSMP due process and are entered into the Global Data Dictionary (GDD).
2. GDD FastTrack (FT)	<p>FT attributes are standard attributes that have gone through the GDD FT process triggered by the GDD FT Change Request (CR). The Align / Master Data Team and GSMP modelers review the submitted FT attributes and assess if they should be allowed in-Network. In order for the attribute to become part of a GS1 Standard, a regular CR is needed to trigger the standard process (i.e. a non-GDD FT CR).</p> <p>GDD FT use the Attribute / Value Pairs (A/VP) as the transport mechanism. A/VPs use one generic schema template that does not change with the introduction of new attributes, thus expediting their introduction into the network. The disadvantage of this method is that attributes are not validated by the schema parser nor can relationships be established between the independent attributes.</p> <p>The FT is the GS1 GSMP attribute approval process and the A/VP is the method of transport.</p>
3. Extended Attributes	Extended Attributes are non-standard attributes that are not found in the GDD or in the GDD Fast Track and are not part of the message standard. They are however transported in a standard manner using A/VP transport mechanism that is also used for GDD FT Attributes.

Retired Term	Retired Term Definition	Current Equivalents to Retired Term
1. Candidate Attributes	<p>Were established in GDSN to allow for in-Network transport of potential attributes in the process of becoming standard. A few Candidate Attributes were developed. However, after experience with these, the GDSN Task Group discontinued the method because it did not accelerate the process of getting GDSN Attributes into GS1 Standards. Although this is a legacy method, a few Candidate Attributes are still in use. Note that new Candidate Attributes are no longer being developed.</p> <p>Candidate Attributes were replaced by A/VPs. The primary difference between these methods is that A/VPs use one generic schema template. This method does not change with the introduction of new attributes into the network.</p> <p>However, previously Candidate Attributes required the build out of a schema for each attribute.</p> <p><b>Note:</b> Some Candidate Attributes that were previously approved are still supported.</p>	Phased out of GDSN
2. Flex Fields	Formerly, another term for Extended Attributes	Extended Attributes
3. New Item Form Attributes (common)	The term for 68 commonly used attributes on Retailer new item forms. These attributes were approved under the GDD FT process. Although the term is no longer used, it can still be found on the GS1 website. Once this document is approved, the web site will be modified.	GDD Fast Track



Retired Term	Retired Term Definition	Current Equivalents to Retired Term
4. New Item Form Attributes (uncommon)	The term for the remainder of the Retailer new item form attributes.	Extended Attributes
5. Retailer Specific Attributes	The term formerly used to designate retailers' new item form attributes. <b>Note:</b> See the following link: <a href="http://gdd.gs1.org/GDD/public/rse.asp">http://gdd.gs1.org/GDD/public/rse.asp</a> .	Extended Attributes



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