


GDSN (Release 2.X) Trade Item Implementation Guide

Section 15: Extended Attributes

15. Extended Attributes

The GS1 GSMP now offers a variety of attribute solutions for conducting global data synchronization within the GDSN. This provides users with the flexibility they need to build out their implementations using Standard Attributes, Global Data Dictionary Fast Track Attributes and Extended Attributes – non-standard attributes transported within the GDSN in a standard way. The types of attributes used within GDSN impacts where they are housed in GS1 standards and what type of functionality they have.


 **Important:** An Extended Attribute is not to be confused with an Extension. An Extension (e.g. the Hardlines Extension) is a part of the GS1 standards where attributes relevant for a specific sector or function have been grouped together.

Extended Attributes are non-standard attributes that are not found in the GS1 Global Data Dictionary (GDD) and are not part of the message standard but can be sent with the standard data over the GDS Network. For fuller definitions, see Section [15.6](#).

15.1. Pre-Requisites

- Trading partners wish to implement GDSN but not all data requirements are covered by existing GS1 GDSN standards.
- Trading partners reach agreement on exchanging non-standard information to supplement the standard information.
- Standard GDSN choreography is still used.


15.2. When Would I Use This?

 **Important:** Extended Attributes should be avoided whenever possible! Standard attributes should always be used if possible, and participants are recommended to refer to their Data Pool and their local GS1 Member Organisation for help in identifying the correct standard attributes.

However there are two occasions when it is not possible to use standard attributes:

- The data recipient has a new business requirement not yet covered by existing GS1 standards.
- During transition into GDSN, the data recipient or the data source is not able to receive or send some data using the normal standard attributes, perhaps because of temporary constraints in existing internal systems.

Until either (1) the business requirement is approved for inclusion in GS1 Standards, or (2) the temporary system constraints are overcome, it is possible to deploy Extended Attributes in the GDSN Network to communicate non-standard data.

 **Note:** Because they are extended attributes, you have a risk that your Trading partner might not be able to support these attributes since they are not standard.

15.3. Guiding Principles for Extended Attributes

The guiding principles underlying the data management process are:

- Non-Standard Extended Attributes can be transported in-Network
- Attribute characteristics are defined and published for all attribute types. The current process for defining attribute characteristics of full standards will be followed for Fast Track attributes and non-standard Extended Attributes
 - ✔ **Note:** Providing a full definition including data formats ensures that well-formed definitions are available for Data Sources and will minimise any misunderstanding or ambiguity.
- Once Extended Attributes have been fully defined, they can be used immediately in-Network. This is contingent on Data Pool capability to communicate Extended Attributes via GS1 Attribute/Value Pairs (A/VP)
- Extended Attributes must only be transported in-Network following the technical specifications of the GS1 A/VP schema
- Schema validation and validation rules are not supported for Fast Track and Extended Attributes

15.4. Features of Extended Attributes

- Extended Attributes are non-standard attributes which have gone through the Data Management harmonization process and are approved for transport in the network. (See Data Management of Global Data Dictionary Fast Track Attributes and Extended Attributes Process Manual for the details of that process.)
- Extended Attributes are exclusively transported as Attribute Value Pairs.
- There are no schema Code Lists for Extended Attributes; however code list values may be recommended on the Extended Attribute specific site of the GDD: <http://gdd.gs1.org>.
- A Web Tool is provided for easier management of Extended Attributes by the user community. (The Web Tool is accessible at <http://gdd.gs1.org/rse>. Data Management of Global Data Dictionary Fast Track Attributes and Extended Attributes Process Manual details who should use the tool and how to use the tool for creating Extended Attributes.)
- An Extended Attributes Web Tool Report is provided for the user community.
- Extended Attributes may be used in the network immediately.
- Extended Attributes used in the network are posted on the GS1 site.
- There are no schema validations of Extended Attributes.
- Extended Attributes use XML instance files generated by the user.

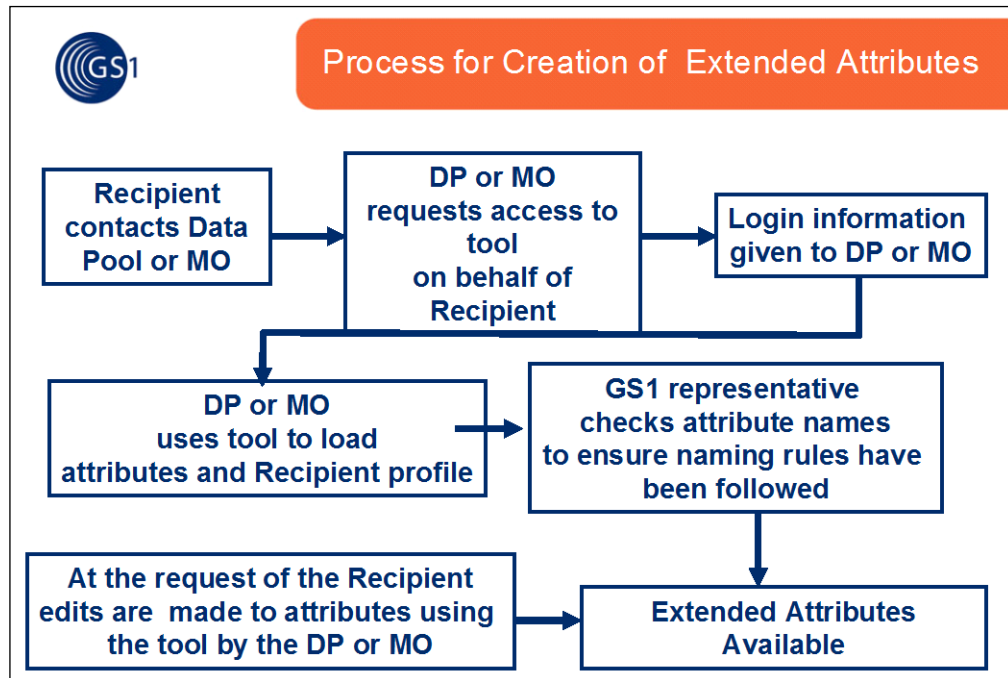
15.5. How to create or remove Extended Attributes

15.5.1. Process for Creation of Extended Attributes

The major steps are as follows:

1. The Data Recipient communicates the request for additional non-standard data to his Data Pool or local GS1 MO.

2. Together they research the GS1 Standards in case an existing attribute can be identified which will meet their needs.
 - ✓ **Note:** Given the nature of Extended Attributes, GS1 MOs will make every effort to harmonize Extended Attributes to uphold GS1 Standards. Commercial GDSN certified Data Pools are under no obligation to do so, but can offer this service as a value added service.
3. If the DP/MO determination is that an attribute is not available in published GS1 Standards, the DP/MO contacts GS1 to request access to the Extended Attribute tool on behalf of the Recipient.
4. The DP/MO uses the tool to load attributes and a Recipient profile.
 - ✓ **Note:** The tool prompts the DP/MO for the required information. If any of the required fields are missing, the spreadsheet will not be accepted by the tool. Additionally, duplicate attribute names are identified and eliminated.
5. A GS1 representative checks the attribute names to ensure naming rules have been followed and that all required information fields has been entered.
6. The Extended Attributes are immediately available for exchange in-Network when all the required information has been captured in the Extended Attributes Web Tool.



15.5.2. Processes for the Removal of Extended Attributes

Two processes have been established for the review and removal of Extended Attributes when they no longer serve their original purpose or when better alternatives are available. These processes are the following:

- Attribute Harmonization Leads to CR Submission Process
- New GDSN Release Leads to Migration from Extended Attributes.

It is recognized that there could be many triggers for harmonization with the GDD or removal from the Extended Attribute list, for example:


- A Sender or data pool recognizes they are sending the same attribute value to multiple Recipients using different GDSN Extended Attributes
- The user community determines that a formal GSMP Change Request contains attributes currently being communicated as Extended Attributes

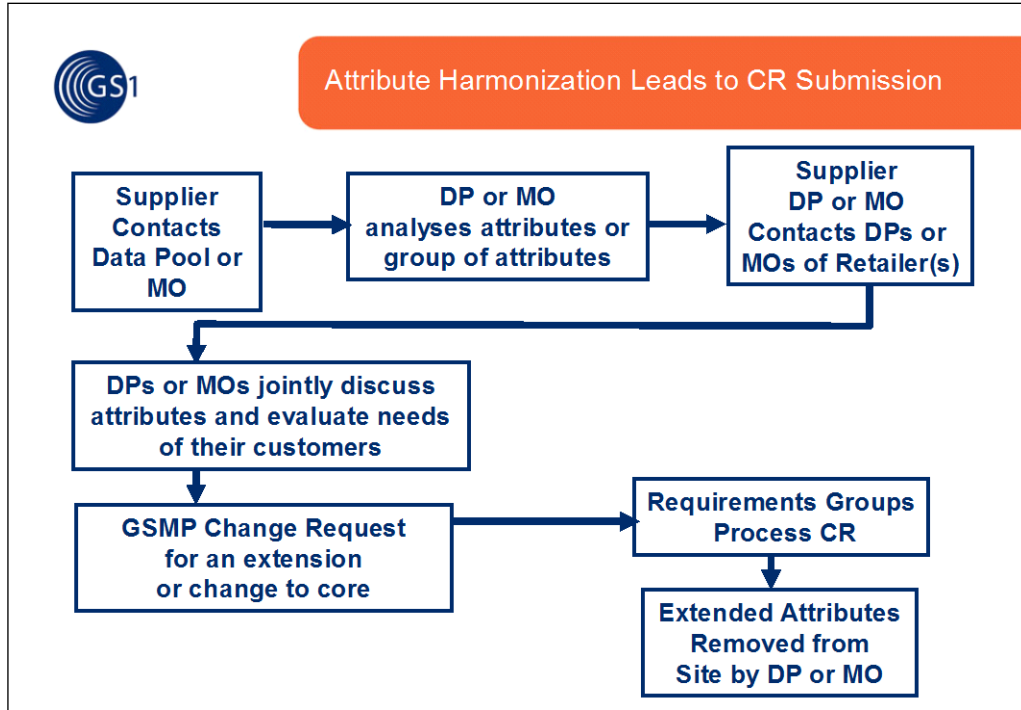
15.5.3. Attribute Harmonization Leads to CR Submission Process

Typically, this process is triggered by the Data Source. It may also be initiated by a Certified Data Pool or GS1 MO. The Data Source has been inputting Extended Attributes for several Recipients and has identified common attributes. These common attributes would better serve the industry if they were normalized into one attribute term with one definition and one set of characteristics.

The major steps are as follows:

1. The Sender contacts their DP/MO.
2. The DP/MO analyses the attributes or group of attributes and agrees that normalization is the proper course.
3. The Sender's DP/MO contacts other DP/MOs acting on behalf of the Recipients and Senders impacted by these attributes.
4. The DP/MOs jointly discuss the attributes and evaluate the needs of the trading partners. They decide to enter a GSMP Change Request for the business requirements which until were sent as Extended Attributes.
5. The GDSN BRG processes the CR according to GSMP due process.
6. Once the Standard Attributes are available, the Extended Attributes are removed from the GS1 site by the DP/MO using the web tool and observing whatever transition plan has been developed. This may be accelerated by using GDD Fast Track attributes, until the approved business requirement for the new attributes becomes a part of the GS1 Business Message Standard (normally at the next available network Maintenance Release).

-  **Note:** This process can also be triggered if a GDSN Participant raises a request to harmonize Extended Attributes with standard attributes that already exist.



15.5.4. New GDSN Release Leads to Redundant Extended Attributes

This process is triggered by the introduction of a new GDSN Release.

The major steps are as follows:

1. A new GDSN Release (when a new version of the Trade Item Business Message Standard is deployed into the production GDS Network) triggers a review of existing Extended Attributes.
2. Any GDSN Participant, or the GS1 GSMP GDSN BRG with the GDSN User Group, identifies the redundant Extended Attributes for removal. The attributes are redundant because they have since been replaced by standard attributes, now deployed into the Network in the new GDSN Release.
3. The Data Recipient (who had originally requested the Extended Attributes) announces the intention to migrate to using the standard attributes, and works with their (Recipient) Data Pool, the relevant Data Sources and their (Source) Data Pools to plan the transition and make the change.
4. The Extended Attributes are removed from the GS1 site by the DP/MO using the web tool.

15.6. Your Questions Answered

15.6.1. Are Extended Attributes the attributes in an Extension?

No, these are two different concepts.

Extended Attributes are non-standard additions to the standard messages, and facilitate implementation when a Data Recipient has some non-standard requirements which have (not yet) been submitted to and approved through GSMP.

A GDSN Extension is a full part of the GS1 GDSN standards. It is known as an “extension” to show that it is not a part of the “core” message. The “core” is always sent; extensions are sent as appropriate. For example, the Regulatory Extension is only sent when the Data Source needs to

communicate additional information about the regulations and regulatory approvals relevant to the Trade Item.

15.6.2. Are Extended Attributes part of the GS1 Standards?

No, Extended Attributes are not part of the GS1 Standards.

To aid visibility of specific non-standard requirements, GS1 has established a mechanism to publish Extended Attributes on the website of the GS1 Global Data Dictionary. But it does not include them within standards, nor does it endorse them in any way.

15.6.3. Are Extended Attributes the same as “AVP Attributes”?

No, these terms are not synonyms.

Extended Attributes refers to the definition of some non-standard data requirements.

AVP refers to a transport mechanism within GS1 XML Business Messages. It allows the data attribute Name and its Value to be sent together, without needing the data attribute Name to be defined in advance and “hard-coded” into the XML schema.

Some GS1 standard attributes and all extended Attributes use the AVP transport mechanism to send data via GDSN standard messages.

15.6.4. What if my customer demands some non-standard data? Can I send it to him through the GDS Network?

GS1 always encourages trading partners to use standard definitions whenever possible.

If the GS1 standards do not cover all the customer’s requirements, the customer may be able to use Extended Attributes to send the information. As a first step the customer should approach his GS1 Member Organisation or GDSN Data Pool.

If the customer really cannot find support for their business requirements within the GS1 standards, they may apply to have the non-standard requirements listed as Extended Attributes. Before they will be accepted as Extended Attributes, the customer’s local GS1 Member Organisation or the customer’s data pool must review the business requirements. They may be able to identify a way of using existing GS1 standards to meet the business requirements, or advise the customer to submit a GSMP Change Request to add the business requirements to the GS1 GDSN standards. Only if neither of these are possible will the request to list the requirements as Extended Attributes go forward to GS1.

15.6.5. What if my supplier cannot meet all my data needs through the GS1 GDSN Standards?

It depends on the reason why your supplier cannot meet your data needs.

Are all your requirements met by data attributes defined in the GS1 Standards? Normally the supplier can only send data for which GS1 GDSN Standards have been defined.

If you have requirements which are not supported by the GS1 Standards, discuss your requirements with your GS1 Member Organisation or GDSN Data Pool. They may be able to suggest how your requirements can be met within existing standards, or help you submit a Change Request to add your business requirements to the Standards. If, however, you urgently need non-standard data, your GS1 Member Organisation or GDSN Data Pool can assist you in requesting for your requirements to be listed as Extended Attributes.

Once the requirements are published as Extended Attributes, you can refer your supplier to the Extended Attribute definitions on the website of the GS1 Global Data Dictionary.

15.6.6. Can you explain the terminology? What “types” of attributes are supported?

GS1 GSMP offers 3 categories of attributes providing users with the flexibility to build out their GDSN implementation more quickly. [Table 15-1](#) explains these categories.


 **Note:** The ability to allow a user to migrate towards the standard and to use non-standard attributes in-Network was new to GSMP in 2006. Management of these capabilities will continue to evolve.

Table 15-1 Terms Currently Used to Describe GDSN Attribute Types

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 Fast Track (FT)	<p>When the business requirement for a new attribute is approved through the GSMP due process, the requester of the new attribute may request a quick interim implementation solution, known as a Fast Track (FT) solution. The GSMP modellers review the approved business requirements and assess if they should be allowed in-Network.</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 immediate 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>In any case, the approved business requirement for a new attribute will in due course become a part of the GS1 Business Message Standard (normally at the next available network Maintenance Release). When this permanent solution is implemented in-Network, any associated FT attributes will be removed from the A/VP communication (these will be sun-set over time)</p> <p>The FT is an interim solution of 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.

Historically, different terminology has been used, but these three terms are the only ones currently accepted.

15.7. Extended Attributes References

For more information on Extended Attributes and their role and management in GDSN, please refer to:

- **GSMP User Manual** (Sections on GDD FastTrack Attributes and Extended Attributes) http://www.gs1.org/gsmpprocess_manual
- Data Management of **GDD Fast Track Attributes** and **Extended Attributes** Process: <http://www.gs1.org/services/gsmpprocess/gdsn/index.html>
- BMS and BRAD for Use of Attribute Value Pairs to Transmit Non-Standard Attributes in GDSN <http://www.gs1.org/services/gsmpprocess/gdsn/index.html>