



Data Management of Extended Attributes Process Manual

Issue 1, 7-Jun-2006

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1. Introduction

This document details current processes and practices for establishing and managing various types of attributes used for Global Data Synchronization (GDS) within the Global Data Synchronization Network (GDSN). It also formalizes the GS1 terminology which describes the different attributes used for GDS within the GDSN.

2. The GDS Landscape within GDSN

The GS1 GSMP 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 full standards, Global Data Dictionary Fast Track standard attributes, candidate standard attributes and non-standard attributes approved for use within the GDSN. The types of attributes used within GDSN impacts where they are housed in GS1 standards and what type of functionality they have. Because these different types of attributes now exist, there is a need for a stricter attribute management model applicable to all attribute categories. This will:

- Preserve the integrity of the Global Data Dictionary
- Ensure the orderly migration of other attribute types into standards
- Minimize attribute duplication and
- Enable transition planning

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
- 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

4. Standards Development

The Standards Development Community defines the standard processes and attributes for GSMP. The community's focus is to:

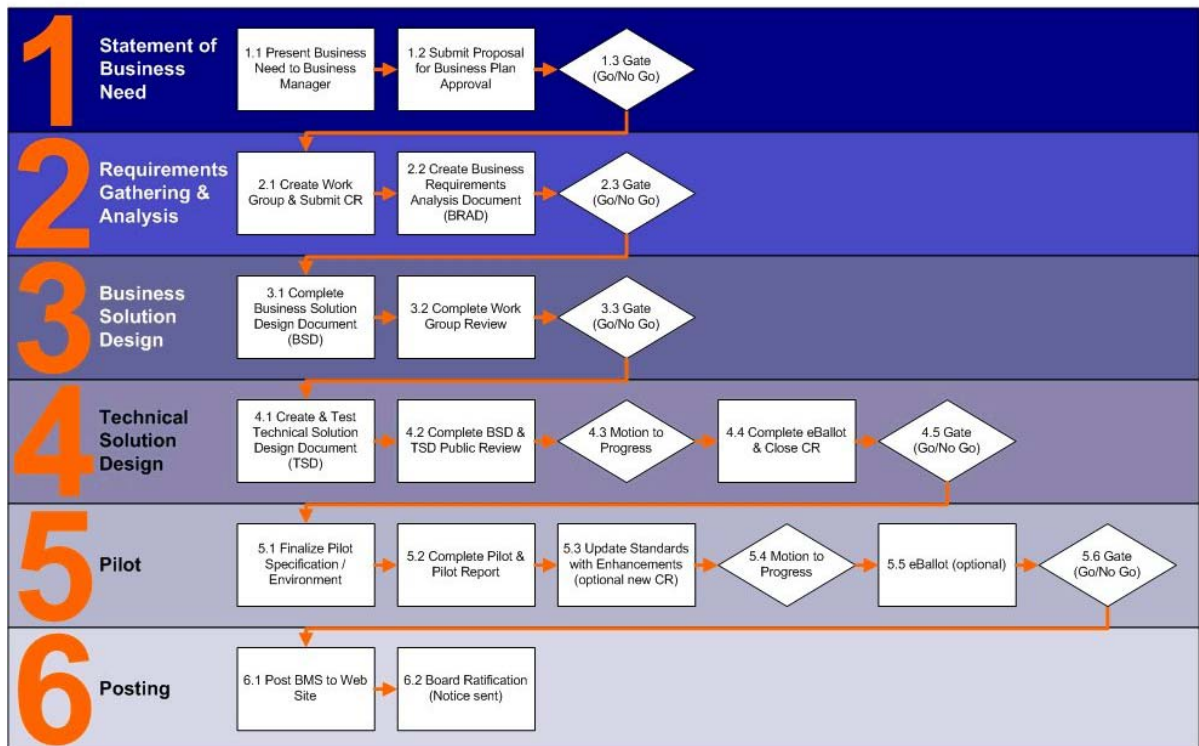
- Maintain the integrity of the global standard
- Allow for local business needs to be handled in the Network

- Allow implementers of GDSN the capability to exchange attributes faster to support their business processes
- Provide the capability to the user community to migrate to the standard over time
- Provide the GDSN implementers with the capability for implementation and for the user community to use non-standard attributes in-Network to fulfill current needs until the application and standard are ready to handle 100% of the business needs.

The Standards Development Community approves various methods to build out the in-Network attributes for use within the GDSN.

[Figure 4-1](#) displays the GSMP's well-defined process for developing global standards.

Figure 4-1 Six Step GSMP Process for Creating Standard Attributes



4.1. Level Setting the Terminology

GS1 GSMP offers 3 categories of attributes providing users with the flexibility to build out their GDSN implementation more quickly. [Table 4-1](#) explains these categories.


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

Table 4-1 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>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 uses 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. |

Historically, different terminology was used to describe the different types of attributes. Shown below are the terms that are no longer used either because the attribute solution is being phased out of GSMP or the term has been replaced by a newer, broader description.

Table 4-2 Retired Terms

| 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>Note: Some Candidate Attributes that were previously approved are still supported.</p> | Phased out of GDSN |

| Retired Term | Retired Term Definition | Current Equivalents to Retired Term |
|--|---|-------------------------------------|
| 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 |
| 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. Note: See the following link: http://gdd.gs1.org/GDD/public/rse.asp . | Extended Attributes |

4.2. Flexibility to Use Portals

Solution providers may continue to connect to Trading Partners' portals to provide Extended Attributes instead of transporting them through the GDSN - if this is the agreement between the respective trading partners. The provision of Extended Attributes is optional, so there is flexibility to use a variety of means. Options include:

- GDSN
- Trading Partner portals
- Manual spreadsheets

Partners will decide between themselves as to what solution best accommodates their needs.

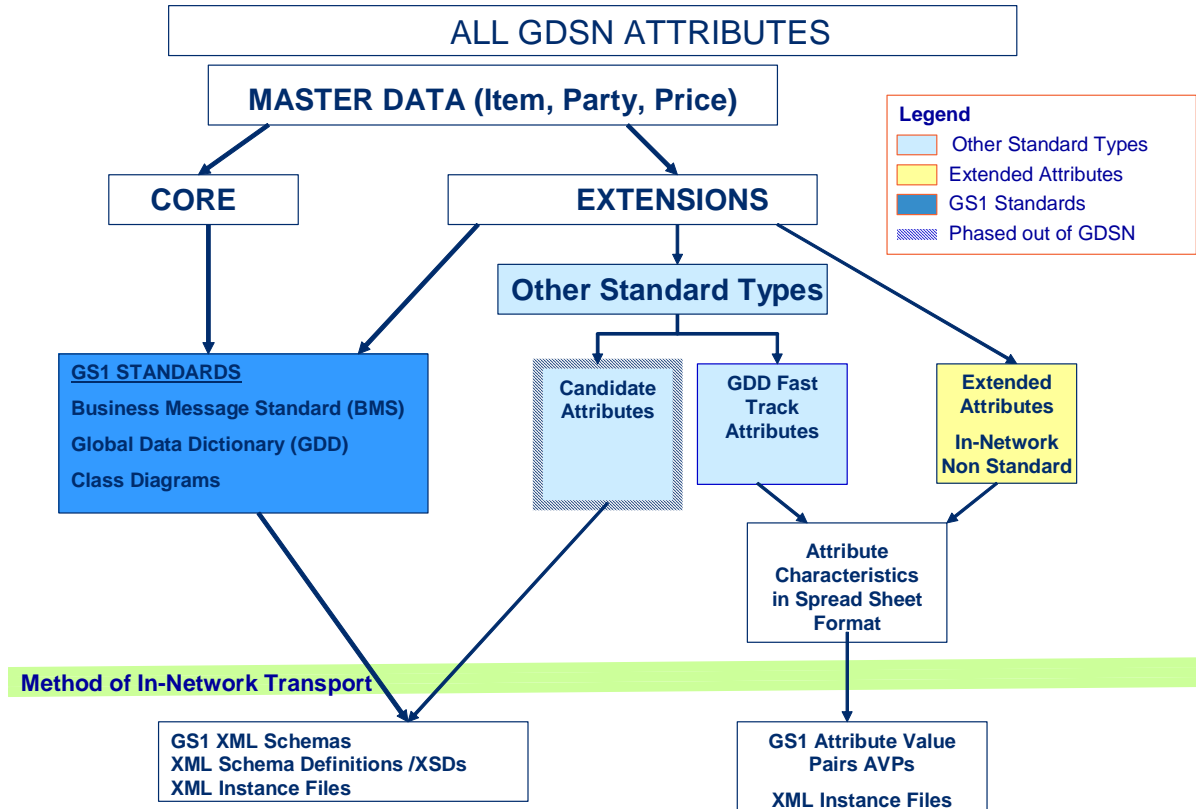
4.3. Language

In line with GS1 policy and practice, all definitions in the web tool will be maintained in the English language.

4.4. Overview of All GDSN

Figure 4-2 displays an overview of the attribute types.

Figure 4-2 All GDSN Attributes



Further detail concerning these different attribute types is provided here. [Table 4-3](#) is useful for showing the differences between each type and for understanding which type of attribute is best suited for attribute resolution.

Table 4-3 Master Data

| | CORE | | EXTENSIONS | | |
|---------------------------------|-------------------------|-------------------------------------|---------------------------|-----------------------------------|------------------------------------|
| | GS1 Standard Attributes | | Other Standard Types | | Non-Standard In-Network Attributes |
| | GS1 Core Standards | Industry, Target Market, Extensions | GDD Fast Track Attributes | Candidate Attributes (Phased Out) | Extended Attributes |
| Attribute Value Pairs Used | No | No | Yes | No | Yes |
| Business Message Standard (BMS) | Yes | Yes | No | No | No |
| Class Diagrams | Yes | Yes | No | Yes | No |

| | CORE | | EXTENSIONS | | |
|---|-------------------------|------|-------------------------|------|-------------------------------------|
| | GS1 Standard Attributes | | Other Standard Types | | Non-Standard In-Network Attributes |
| Code Lists | Yes | Yes | Recommended Code Lists* | Yes | Recommended Code Lists* |
| Content Owner (Responsible Party) | GSMP | GSMP | GSMP | GSMP | Trading Partner, MO, DP |
| CRs Initiate the Process | Yes | Yes | Yes | Yes | No |
| EAN.UCC XSD / Schema Validation | Yes | Yes | No | Yes | No |
| Extended Attributes Web Tool | No | No | No | No | Yes |
| Global Data Dictionary (GDD) Fast Track Spread Sheet | No | No | Yes | No | No |
| GDD Reports | Yes | Yes | GDD Fast Track Report | No | Extended Attributes Web Tool Report |
| GDD Repository | Yes | Yes | Yes | No | No |
| GDD Search Tool | Yes | Yes | Yes | No | No |
| GDSN Validation Rules | Yes | Yes | No | No | No |
| In-Network Today | Yes | Yes | Yes | Yes | Yes |
| Posted on GS1 Site | Yes | Yes | Yes | No | Yes |
| XML Instance Files | Yes | Yes | Yes | Yes | Yes |
| * Recommended Code Lists can be found at the (http://gdd.gs1.org). Fast Track site for the Fast Track Attributes. For the standard code lists, see the documentation within the GSMP web site for standards. | | | | | |

5. Business Scenarios / Use Cases

The following depict processes for creating, reviewing and removing Extended Attributes.

5.1. Process for Creation of Extended Attributes

A Recipient, Data Pool or MO (DP/MO) on behalf of their members needs a new attribute or a number of new attributes for data synchronization.

1. The Recipient communicates the request to their DP/MO and together they review it so that the request is well understood.

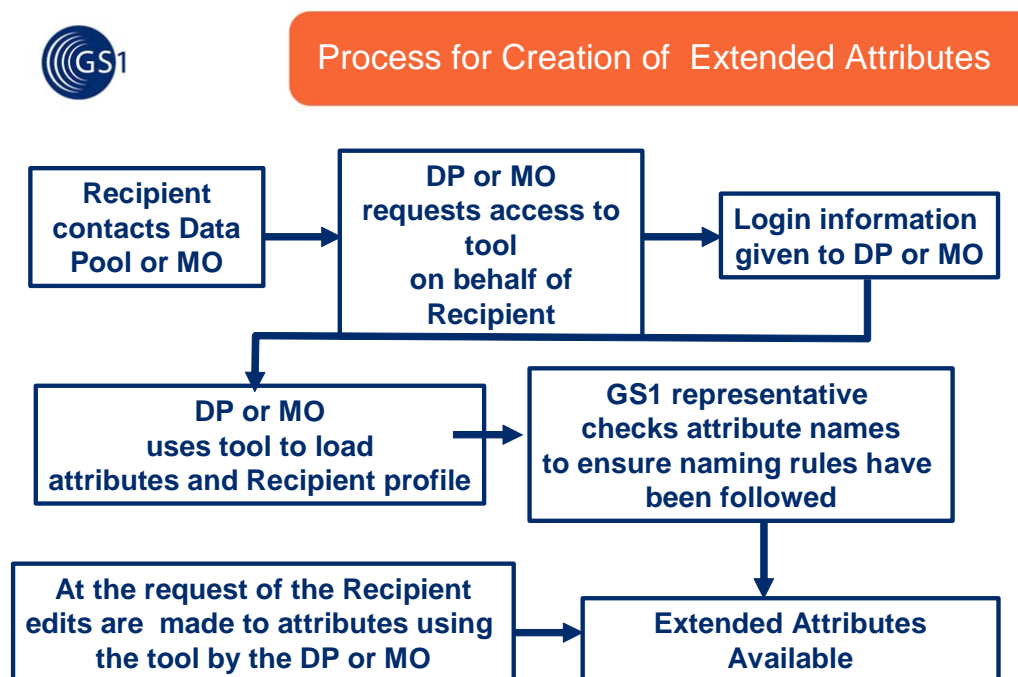
The DP/MO researches whether the attribute is available in GDSN, by reviewing the:

- GS1 Core Standards - Neutral Item (Data Definition) Model
- The GDD Standard Extensions – Local Item Model

- GDD FastTrack Accepted (and Rejected) including
 - NIF Attributes – approved for general use
 - Candidate Attributes
- ✔ **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.
2. 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 . By definition, only those data pools and GS1 MOs certified to operate within the GDSN landscape will be allowed access to the GS1 Extended Attribute tool and data base. Recipients will work with their Data Pool Providers to enter the Extended Attribute data. Direct access will only be provided to the Data Pools – not end users such as Senders and Recipients.
 3. GS1 responds by providing login access to the requesting Data Pool. This allows the Data Pool to enter the information on behalf of the Recipient .
 4. The DP/MO uses the tool to load attributes and a Recipient profile.
 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 attributes within and across Extended Attributes will be flagged with messages provided to the respective data pool.
 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 available for exchange in-Network when all the required information has been captured in the Extended Attributes Web Tool.

[Figure 5-1](#) describes a pictorial view of the process for creation of Extended Attributes.

Figure 5-1 Process for Creation of Extended Attributes



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 CR Submission Process.

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

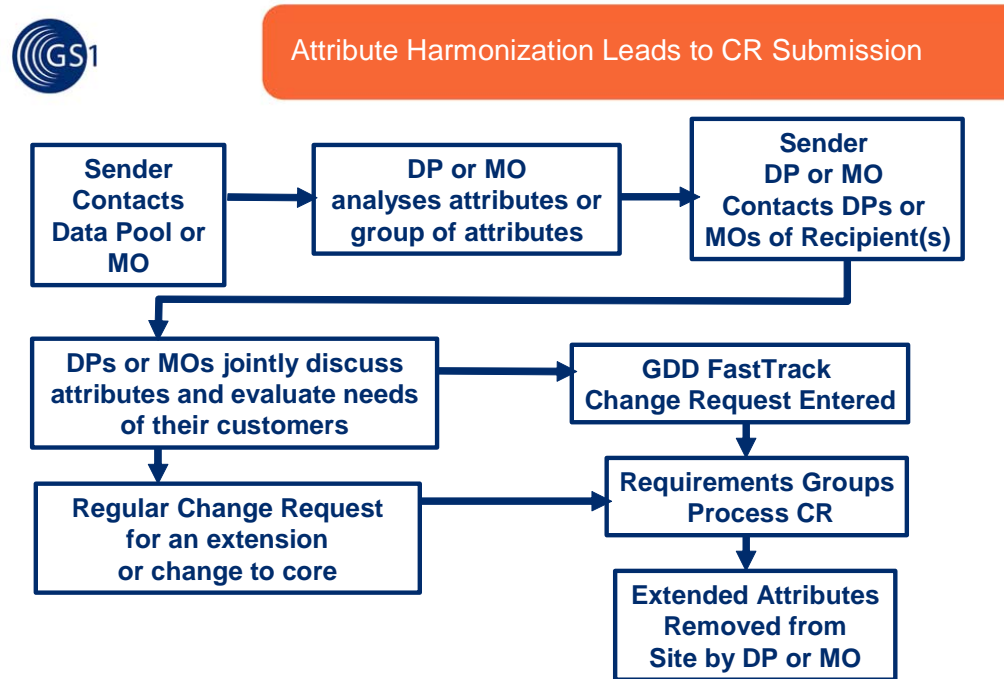
- A Sender or data pool recognizes they are sending the same attribute value to multiple Recipients using different GDSN Extended Attributes
- The user community determines that a formal GSMP Change Request or Fast Track submission contains attributes currently being communicated as Extended Attributes
- The user community recognizes that the same attribute requirement has been added to the GPC
- A Recipient indicates they no longer have a need for an attribute
- Others may be considered

In summary, an Extended Attribute may no longer be required because the Recipient may have migrated to the GDD Fast Track or Standard Attribute which replaced it. If the Extended Attribute is no longer required, it is removed. If however, the Recipient still has reason to use it as is, it will remain as an Extended Attribute. Any GDSN Participant may raise a request at any point throughout the process to harmonize Extended Attributes with attributes that already exist. Under current GSMP methodology, this may be executed via a GDD Fast Track CR or through the regular CR queue.

5.2.1. Attribute Harmonization Leads to CR Submission Process

Typically, this process is triggered by the Sender. It may also be initiated by a Certified Data Pool or MO. The Sender 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.

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.
5. There are 2 possibilities at this point:
 - a. The group decides to enter a GDD FT CR. In this case the GDD FT process is followed.
 - b. The group decides to enter a regular CR for an extension to the core. In this case the regular standards due process is followed.
6. The Align / Master Data Requirements Group processes the CR.
7. Once the GDD FT or regular 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.

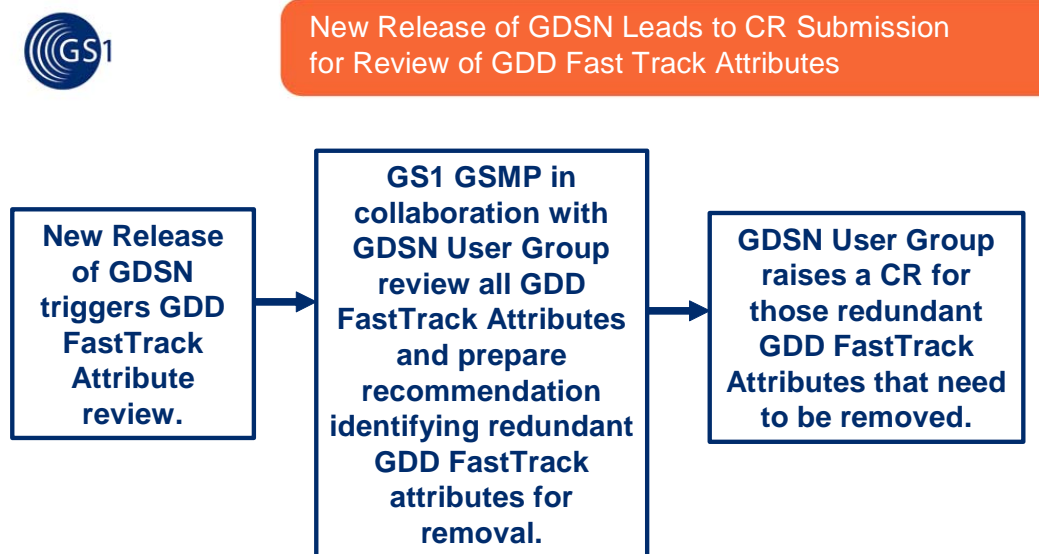
Figure 5-2 Attribute Harmonization Leads to Change Request Submission


5.2.2. New GDSN Release Leads to CR Submission Process

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

1. A new GDSN release triggers the GDD FT Attribute review.
2. GS1 GSMP with the GDSN User Group review all the GDD FT Attributes and identify the redundant GDD FT attributes for removal. They prepare a recommendation to the GDSN User Group.
3. The GDSN User Group raises a CR for those redundant GDD FT Attributes that need to be removed.

Figure 5-3 New Release of GDSN Leads to Change Request Submission for Review of GDD Fast Track Attributes



5.3. Exchanging A/VPs in the GDSN

A Trading Partner is ready to exchange A/VPs containing either GDD FT attributes or Extended Attributes with another Trading Partner using XML.

1. The Sender, Recipient, SDP, RDP, and MO reach agreement on the exchange of FT and Extended Attributes.
2. The Trading Partner includes the FT and / or Extended Attributes in the XML. No schema validation is done.
3. The Trading Partner sends the XML to the DP.
4. The SDP accepts the A/VP. Based upon agreement with the Sender:
 - a. The SDP performs added value validation on the A/VP or
 - b. The Data Pool forwards the attributes to the RDP and may perform value added service, such as storage, logging, validations and modifications.
5. The SDP processes the rest of the XML as usual and sends the XML to the RDP.
6. The RDP accepts the A/VP. Based upon agreement with the Recipient:
 - a. The RDP performs added value validation on the A/VP or
 - b. The RDP may perform value added service, such as storage, logging, validations and modifications.
7. The Recipient accepts the A/VP and processes as usual.

6. About the Extended Attribute Web Tool

GS1 has developed and deployed a web tool to make it easier for GDSN participants to create, communicate and publish Extended Attributes. This tool is available on the GS1 Global Data Dictionary (GDD) site – <http://gdd.gs1.org>. Please refer to this site for information on how to use the tool.

6.1. Future Enhancements

As an enhancement to the Web Tool, it is recommended that the "Business Rationale" field in the Extended Attribute Web Tool be used to highlight specific requirements or business usage differences. This is because attribute requirements may vary depending upon the industry sector of the Trade Item, GPC category, Target Market, or be specific to a particular GTIN. For example, a specific attribute may be required for pharmaceutical trade items but not others. This free form text field should be used to communicate this type of information.