Position Statement
Preparing GDSN for future expansion

Executive Summary

What is Modular item? A project created to assess opportunities to improve the flexibility of the infrastructure of the GS1 Global Data Synchronisation Network (GDSN) and develop means to facilitate future expansion of the network.

Will it impact my company? The project is anticipated to have a high impact on the GDSN, GSMP, and data pools. While developing the solution (which is foreseen in the next 6 months), every possible measure will be taken to limit the impact on the current installed base. It is also intended that data pools will have the ability to "buffer" trading partners from significant impact.

Why are GDSN and GSMP working on Modular Item? A more flexible trade item data model would provide the opportunity to more efficiently support GDSN expansion, in particular:

- to easily enter into new sectors or adjacent sectors, increasing the adoption of GDSN, particularly by new industry sectors and geographies
- to reduce the time required to introduce new attributes or code values into the network
- to minimise the re-mapping effort required to implement new versions of the standard

How and when will we implement Modular Item? GS1 GDSN, Inc. and GSMP are following the normal process, including user group prioritisation, Business Case Document (BCD) and GDSN Board approval. In May 2008, the Modular Item work group finalised the Business Requirements Analysis Document (BRAD), which was approved by the user group. GSMP is currently defining how these business requirements will be met with a solution design for Modular Item. Once the final design is agreed and approved, all stakeholders will then agree on a reasonable implementation plan, which will likely be a multi-year implementation through 2012.

GS1 GDSN, Inc. and GSMP are committed to work closely with the community to facilitate the development and a smooth implementation of a new and much needed trade item data model.

Why is expansion critical to GDSN?

To the Consumer Packaged Goods (CPG) sector, expansion of the data content in the GDSN is the only way to eliminate other data exchange methods, including New Item Forms, Portals, file exchanges, etc. Without consolidating these other data sharing means, the ultimate ROI for those who have already invested will not be realized. GDSN must therefore expand its capability to meet these data needs such as:

- The need to support regulatory compliance requirements (e.g., allergen information, material safety information), which many times have unique requirements or different implementations across countries.
- Product marketing information which includes "B2C" information for retail.
- Information to support additional business applications such as product recall, hazardous materials or sustainability.

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As GDSN implementations expand globally, new extensions are also required to satisfy local or regional FMCG business practices. This requires GSMP to maintain them as new requirements are received. Data pools have had to create special non-standard or out of network routines to satisfy or work around some issues. GDSN must therefore expand its capability to meet all data needs and provide the flexibility for trading partners to gain the full benefit of GDSN.

New sectors, including Books, Hardlines and Healthcare, also want to leverage the GDSN to ensure reliability of their supply chain information. Each sector has different practices and business rules than the current FMCG based model, and thus require sector-specific extensions (a set of data attributes that are specific or unique to a process or a business scenario). This brings new pressures on the GDSN to be able to identify and organise the data requirements between any two trading partners.

Expansion of GDSN in new sectors will:

1. **Leverage the infrastructure to a broader community and thereby lower costs.**
2. **Allow for active participants who "play" in more than one sector to expand their investment**
3. **Allow the retail users to expand GDSN within their organizations to areas such areas as Books, Hardlines and Healthcare.**

The Modular Item project is intended to increase flexibility, efficiency and adoption

The current design of the Item Data Model was based on a synchronisation concept dating back more than 8 years which focused on the FMCG sector. As such it contains, in some cases, hard-coded rules based on how the FMCG sector works. Adding a single attribute to the core message means a whole new version of the Item message in the network. The same is true for basic code values. Given the current principle of certification of data pools, this means a new certification event before these simple changes can be "live" in the GDSN. The result: time from request to operational support can take 2 years.

All of these opportunities and challenges contribute to an increasingly complex model that will continue to impact the speed and ease in which user requirements can be accommodated. The proposed Modular Item design end state is intended to:

- remove these barriers and allow more flexibility
- provide the mechanism to more easily adapt the GDSN to different sectors and geographies
- allow data pools over time to decrease or remove the special work-around and out-of-network routines in place today
- reduce the time needed to add new attributes to the network and reduce the need for costly all or nothing releases
- allow new trading partners to gradually adopt GDSN by synchronising a small set of attributes in a small core and adding extensions as business needs arise and ROI is proven
- minimise the re-mapping effort required to implement new versions of the standard

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- enable easier forward and backward compatibility, with less disruption to current implementations when new versions are released

Once implemented, the proposed Modular Item design is anticipated to reduce costs throughout the network by primarily reducing the cost of change and the time between defining the business need and having an operational solution.

Structure of the current trade item data model

The current data model is one-size-fits-all. Trade item data information is communicated within the GDSN via a Catalogue Item Notification (CIN) XML message using the "Core Trade Item Data Model" and associated "Trade Item Extensions". This model contains more than 250 attributes in the core and neutral attribute classes and 220 attributes in the item data extensions (approved, candidates, attributes value pairs).

While the current model contains more than enough transactional attributes to allow trading partners to conduct commerce within the supply chain (e.g. ordering), new requests for attributes are more related to consumer selling functions, features, technical specifications, drugs and medical device product description and specifications, etc. New item attribute requirements are constantly being added to the item data model, making it large and difficult to manage. These contextual variations have put a strain on the current core and extension methodology.

The current model is very heavy on metadata: maximum 5% of data being sent is user data, 95% is overhead.

Proposed future model

While the Modular Item solution is still in development, it is anticipated that the "Modular Item Data Model" will take a more context-sensitive approach to the modeling of attributes. This approach should reduce the size of the "core" item attributes to solely those applicable to any trade item or service independent of the sector, (very thin core, possibly less than 10), and reduce the number of neutral attribute classes. Attributes that are not used within all business scenarios (e.g. different product classifications or geopolitical regions) would be passed dynamically using attribute value pairs and associated rules to enforce optionality, dependencies, etc. Data and rules would be organised and distributed based on context allowing data sources and recipients to understand the specific data and rules required for the business scenario they are trading in. For example in Healthcare, route of administration (drugs or medical devices) and is the product a psychotropic substance and blood derivate.

While developing the Modular Item solution, the current installed base and all stakeholders will be considered:

- **taking into account the cost of data pools and users to implement**
- **avoiding disruption of current production**
- **assuring that the expectation of change does not slow nor deter GDSN expansion today**

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Current status and next steps

The Modular Item project was proposed, prioritised and approved by the GDSN User Group and ultimately the GDSN Board in 2007. As a result of this approval two project components were launched to allow focus on near term opportunities and desired end state, both of which are following the GSMP due process for development.

In May 2008, the Business Requirements Analysis Document (BRAD), step 2 of the GSMP process, was completed and approved. For more detailed information, please review the BRAD at: http://community.gs1.org/apps/org/workgroup/gsmp_g_gdsn_miwg/documents.php?folder_id=1745#folder_1745)

The desired future end-state framework for item data model will be defined during step 3 of the GSMP process: the Business and Technical Solution Design (BSD). It will be critical in this phase to address any and all implementation and migration concerns. This work is currently in progress and scheduled to be finalised in April of 2009. Careful planning will be necessary to understand "how and when" to introduce the chosen solution into the network with the least impact. This decision process will involve users, data pools, GSMP, GDSN, Inc (and Board), and the GS1 Architecture Team. GS1 GDSN, Inc. and GSMP are committed to working with the community (FMCG, healthcare, adjacent sectors and data pools) to agree on a reasonable implementation timeline.

While defining the future end-state framework, the project also addresses near term opportunities to streamline the current item data model. Many of these key requirements have already been gathered and simple change requests (CR's) have been submitted to the GSMP for removal of many restraints that cause issues with the current model. Some of these changes will be included in the planned MR3 deployment March 2009, while others will await the next major release.

GS1 GDSN, Inc. and GSMP want to ensure the health and wellbeing of the network, today and in the future. Given the GDSN focus is on growth and adoption, the network must ensure it is positioned to accommodate the additional growth and associated volume. It is therefore appropriate to define changes necessary to support this expansion.

About GS1, GS1 GDSN, Inc., and GSMP

GS1 is a neutral, not-for-profit organisation dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility in supply chains.

GS1 GDSN, Inc. is a subsidiary of GS1, managing the Global Data Synchronisation Network (GDSN). The GDSN is an internet-based, interconnected network of interoperable data pools and the GS1 Global Registry that enable companies around the globe to exchange standardised and synchronised supply chain data with their trading partners. For more information, please visit www.gs1.org/gdsn.

The Global Standards Management Process, or GSMP, is the worldwide collaborative forum where GS1 standards are built and maintained. For more information, please visit www.gs1.org/gsmp.

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