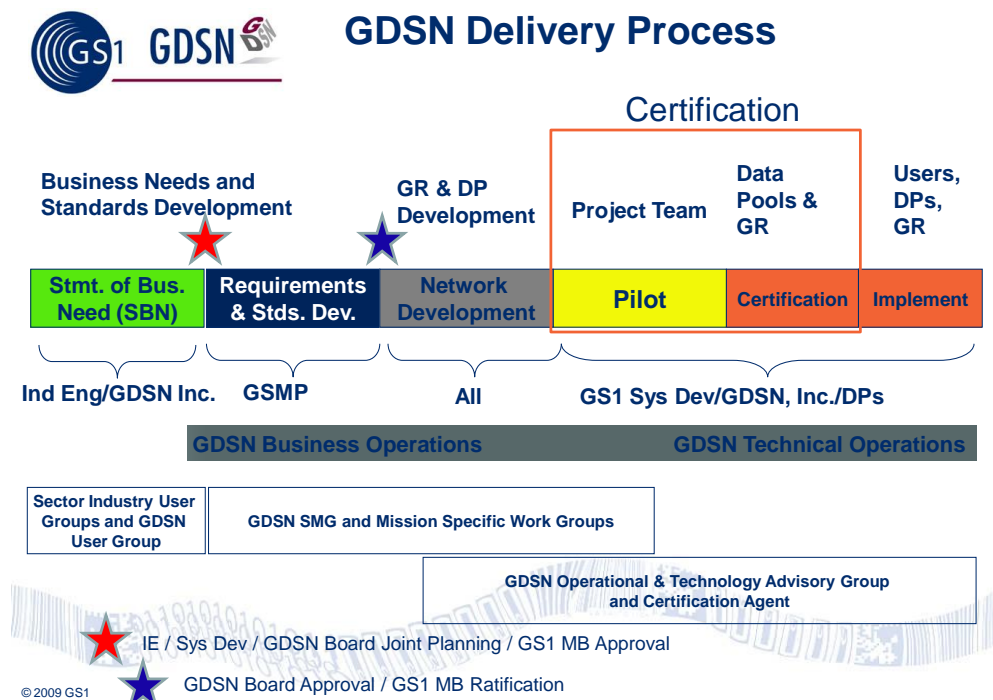


GDSN, Inc. in conjunction with key stakeholders follows a straightforward process which encompasses the GS1 GSMP Process (Industry Engagement and Standards Development) governed by the Board Committee for Standards(BCS) for the submission and development of requests for changes and enhancements to the network. This deliberate process contains milestones throughout to ensure the needs of the global community are met while maintaining the minimal support levels needed to implement.

This document is designed to give a high level overview of the process with supporting documentation and references to provide further detail if needed. It should also be noted that 'deployment' refers to the standard which is ready for implementation into the network.

The overall process centers around two key areas:



1. Work Request Submission and GSMP Process. In following GS1 due process, all requests are entered as a Work Request (WR) and reviewed by GSMP Central Operations (COPS). Once the work request gets approved to move into GSMP it becomes a Work Order (WO). Depending on the work effort required the WO will be classified either Maintenance or Development.
 - Maintenance Request (Formerly Simple CR) – Processed through the established GDS SMG (Standards Maintenance Groups), formerly GDSN BRG. A Maintenance Request relates mainly to the maintenance of an existing standard or guideline, it is typically assigned to a Standards Maintenance Group which is responsible for both requirements analysis and developing the change to the standard or guideline.
 - Development Request (Formerly Complex CR) – Requires the formation of a GSMP Workgroup for that specific WR for which GS1 Global Office Leadership Team (GS1 GO LT)/Industry Engagement Advisory Committee (IEAC) (with GDSN Board recommendation)

approval is required. A Development Request relates to development of new capabilities as opposed to maintenance or extremely small enhancement, a new Mission-Specific-Working Group (MSWG) is formed to carry out the work.

2. GDSN Network Implementations. GDSN Board approval is required for ALL network implementations as part of the GDSN annual roadmap. There are two types of network implementations for which GDSN engages the GDSN Operational Technology Advisory Group(OTAG), formerly the GDSN Architecture Group and GDSN Certification Agent, if applicable, in Implementation and Release planning. Only after a release has been approved by the GDSN Board does GDSN engage the OTAG (and Certification Agent if applicable) to determine and communicate key milestone dates (Beta and Production).
 - Maintenance Releases – Composed primarily of Maintenance Requests and Development Requests with no impacts to backwards compatibility of the network. Maintenance Releases can include but are not limited to: Adding a term to a Code list, Adding new Optional Attributes, Errata, etc. At times non-backward compatible functionality may be included if GDSN OTAG supports. The GDSN Maintenance Release (MR) Work Group defines the scope of the maintenance release; builds Business Message Standards (BMS) for approved business requirements from the GDSN Standards Maintenance Group(SMG) (formerly BRG), and delivers the solution to the various MR's that update the GDSN with enhancements. Membership is comprised of GDSN users, GS1 Member Organisations (MO's), and GDSN-certified Data Pools. Cutoff dates for submissions of WO's and the eballoting of the BRAD/requirement are established by the Maintenance Release Mission Specific Work Group (MRMSWG).
 - Mandatory Network Event (may require Certification) - Composed of Development Requests that have a major impact to end user implementation and are usually non backwards compatible to the existing version in the network. Also includes Maintenance Work Orders which require non-backward compatible changes. A certification event release can include but is not limited to: Deleting an attribute from schemas, Marking internal code lists external, Changing attribute cardinality from optional to mandatory, Adding a mandatory attribute.

In the process above, GDSN leverages the GS1 Industry Engagement process and GSMP standards development process to fulfill the standards development work. Key stakeholders and governance groups ensure a WR from the inception to the implementation in the network follow due process.

Stakeholders include:

- GDSN Inc, GSMP, OTAG, GDSN IE User Group, GDS SMG, GDSN Inc Board sub committees, Data Pools, Trading Partners, GDSN MSWG

Governance groups include:

- GDSN Network:
 - GDSN Inc Board
 - GS1 Management Board
- Standards development:
 - Industry Engagement Advisory Committee (IEAC),
 - Board Committee for Standards (BCS) (Advisory groups below)

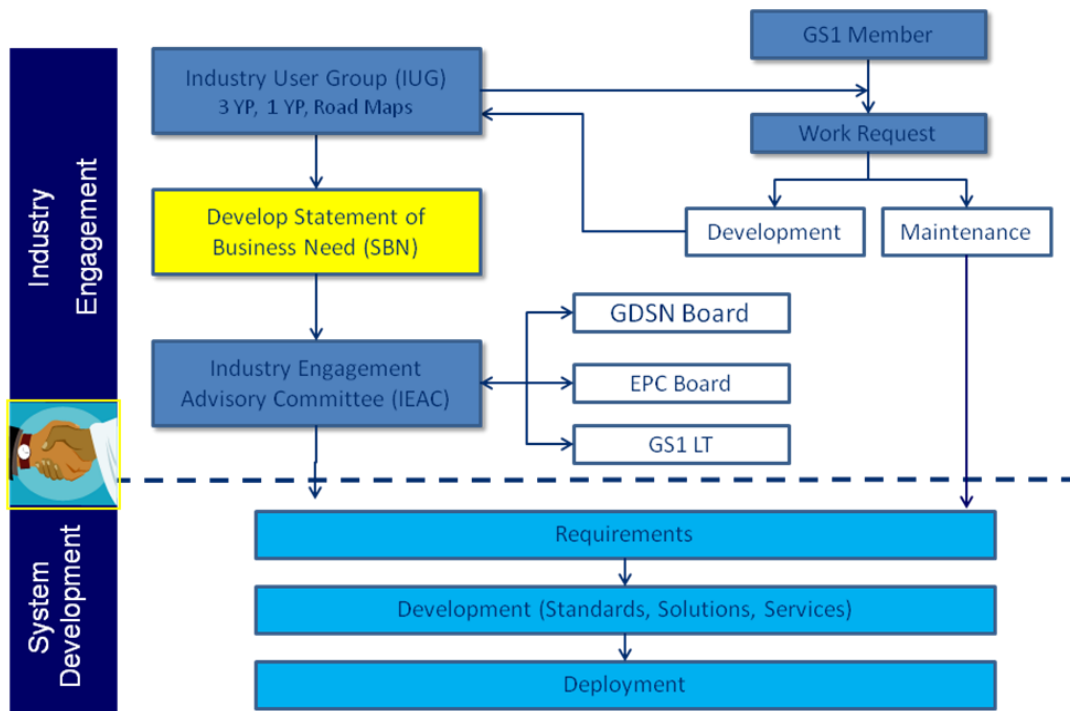
- Central Operations (COPS),
- GS1 Architecture Group,
- Process Oversight Committee (POC)

For Development Work Orders, approval and prioritisation is secured through the GS1 Global Office Leadership Team/Industry Engagement Advisory Council (GS1 GO LT/IEAC), which includes input from the GDSN Board, only then is standards development process is initiated with the formation of a GSMP Workgroup. Throughout the standards development process, for Maintenance and Development Work Requests, there are voting stages to ensure that due process and minimum thresholds are maintained through the progression of each Work Requests and that due process is followed.

The following pages highlight in more detail the overall process from start to finish and the groups involved in each step. More details can be found in the GS1 Industry Engagement Guide and the New GSMP Manual ([Click Here](#)).

All Work Requests are processed through the established GS1 IE / GSMP/ GDSN processes with the focus of implementing into the network once the established minimum thresholds, key milestones and approvals have been secured. Feedback mechanisms are employed throughout the entire lifecycle of a WR to ensure that minimum community participation levels are being met prior to proceeding. At any point, should a WO not satisfy minimal participation requirements, it can be closed if work order rules do not meet minimum thresholds as defined in the GSMP process.

The next diagram is a high level view of how GS1 Industry Engagement (IE) and System Development work together to deliver standards for implementation:



*Image above can be found in the IE Manual [\(link\)](#).

Industry Engagement manages the relationship between GS1 and a specific industry sector or industry group of sectors. An example of an industry sector is apparel within the retail industry. Retail itself is a group of industry sectors. Pharmaceuticals are a sector within healthcare, but healthcare as an industry group also includes medical devices and patient care.

This takes the form of engagement with industry thought leaders and major players. For each industry, specific members are elected who can take the lead as co-chairs of the Industry User Group for that industry.

System Development proceeds with development activities as set out in the Industry Engagement work plan and the GS1 1 Year Plan and balance that with system related work requests. In cases where this is not possible due to constraints of resource from GS1 or MO/user side and/or skills availability then System Development will advise the IEAC and GS1 LT accordingly and offer an alternative work plan based upon availability.

To date the majority of network requirements have been implemented successfully through Maintenance Releases, leaving a small number of Non Backwards compatible Work Orders requiring certification.

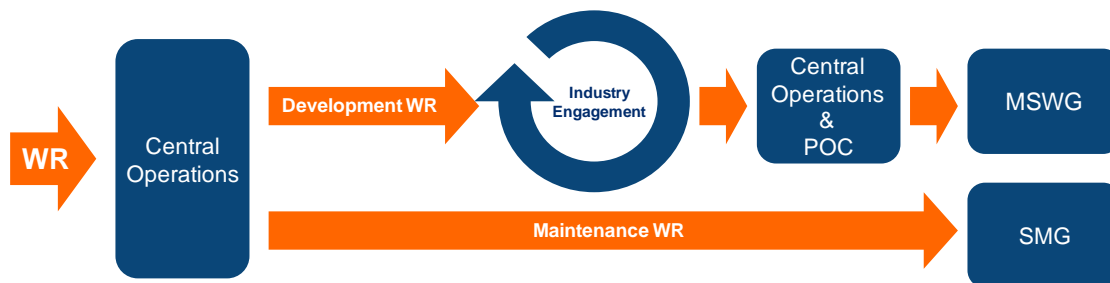
The GDSN Board approves the annual roadmap, the timing and frequency of releases is managed by GDSN Inc and the GDSN OTAG.

Following is further explanation of the key milestones and minimum thresholds mentioned above.

1. Upon submission, each WR is reviewed internally by GSMP Central Operations (COPS) and GDSN to determine if the WR is considered Maintenance or Development.



2. If deemed Development, a second external assessment is engaged with end users and data pools leveraging existing external assessment groups as appropriate (GDSN Industry Engagement, GDSN Operations and Technology Advisory Group (OTAG), Maintenance Release Mission Specific Work Group, GDSN SMG, GS1 Architecture, etc.). Once the WR is confirmed as Development, it awaits the next GDSN Board review to be considered for inclusion/approval in the next GDSN Roadmap.



3. Once a Work Request has received the appropriate approval to proceed, several defined processes begin to drive the WR implementation into the network. The overall GDSN delivery process, which encompasses the GSMP Standards Development process, is intended to support GDSN users, Data Pools, GDSN Inc. and GSMP teams working collaboratively to integrate business needs and technical implementations into the network.

The following diagram and table outlines the GSMP stages of standards development for a GDSN Work Request.

GSMP 4-Step Process



GSMP Process

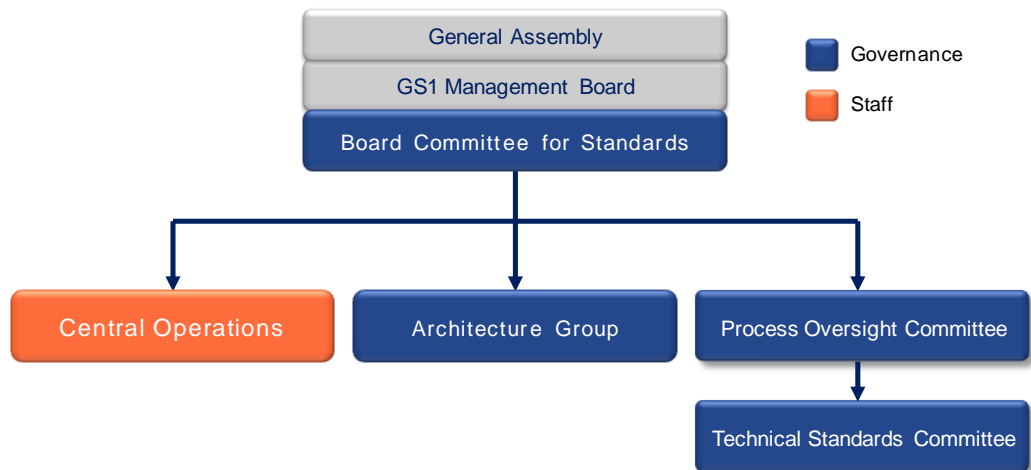
#	Step	What Happens	Outputs
1a	Statement of Need	A Work Request has entered the system from Industry Engagement or some other source Industry Engagement considers the Work Request and develops a Statement of Business Need	Work Request (WR) Statement of Business Need (SBN)
1b	Process Initiation	Industry Engagement and the Process Oversight Committee, with assistance from Central Operations, consider pending Work Requests and determine which will move forward as a Work Order The Process Oversight Committee develops a Charter for the Work Order. If a Mission-Specific working group is to be formed, a call to action is issued and the working group formed The working group reviews the SBN to ensure it is understood, working with IE to revise if necessary	Work Order New community room if a Mission-Specific working group is formed Revised Statement of Business Need (if revisions were made)

#	Step	What Happens	Outputs
2	Requirements Analysis	<p>Working Group analyses and documents business requirements for meeting the stated business need</p> <p>Working Group may submit questions on requirements to the Local Community Network (LCN) Global Agenda for validation with local communities</p> <p>GSMP and LCN communities review the documented requirements</p>	<p>Business Requirements Analysis Document (BRAD) or other documented requirements</p>
3	System Development	<p>Working Group develops a GS1 Standard or GS1 Guideline to meet the requirements</p> <p>Working Group may submit questions on requirements to the LCN Global Agenda for validation with local communities</p> <p>GSMP and LCN communities review the draft GS1 Standard or GS1 Guideline</p> <p>Working Group does prototype testing to find and revise any errors in the draft standard (if prototype testing is called for in Work Order)</p>	<p>Unratified GS1 Standard or GS1 Guideline, or unratified revision to existing GS1 Standard or GS1 Guideline</p> <p>Requirements mapping document, showing how each business requirement is met</p> <p>Impact Analysis, defining the impact on user companies and solution providers of implementing the GS1 Standard or GS1 Guideline</p> <p>A Conformance Requirements document, if a certification program is called for</p>
4	Deployment	<p>Working Group confirms the list of deployment support materials to be developed</p> <p>Working Group develops deployment support materials</p> <p>Working Group may submit questions on deployment support materials to the LCN Global Agenda for validation with local communities</p> <p>GSMP and LCN communities review the draft deployment support materials</p> <p>GS1 Management Board ratifies the GS1 Standard or GS1 Guideline, upon recommendation of the Process Oversight Committee and the Board Committee for Standards</p> <p>The Process Oversight Committee reviews the deployment support materials</p> <p>The Working Group makes any changes to deployment support materials that are needed post-ratification</p> <p>For standards having a certification test program, the certification test suite is developed by the certification test organisation and approved by the Working Group</p>	<p>Ratified GS1 Standard or GS1 Guideline, or Ratified revision to existing GS1 Standard or GS1 Guideline</p> <p>Deployment support materials</p>

***Note the above is from the GSMP Manual ([link](#))**

GSMP GOVERNANCE

Governance groups are responsible for ensuring that the GSMP process flow is correctly executed, for prioritisation of work efforts, for resolving conflicts, and for providing advice to Working Groups.



The Board Committee for Standards (BCS) is the governing body of GSMP. The GSMP organisation structure includes BCS advisory groups to aid in the leadership and operation of GSMP. Collectively these are simply referred to as “governance groups.” Governance Groups are accountable to, and work under the authority of, the BCS.

The Process Oversight Committee (POC) is an advisory body whose primary role is to assist the BCS in the oversight of the GSMP and ensure that the process is being followed and that critical standards are delivered with world class efficiency and world class quality. The POC assists the BCS to ensure that the work efforts within the GSMP are correctly designed to match the needs of the global community, and ensures that committed trading partners are identified and engaged. The POC also ensures that the principles set out in the GSMP Charter are observed and that due process is followed in all aspects.

The GS1 Architecture Group is an advisory body to the BCS whose primary responsibility is to develop and document the GS1 System Architecture and, by reference to the architecture, assures the technical integrity, consistency and efficient interoperation of the GS1 System.

Central Operations (COPS) is a governance support entity which represents the staff function. The mission of COPS is to ensure effective functioning of the GSMP process by managing its day-to-day operations. It advises the BCS in areas of resourcing and feasibility, typically via the POC. It is accountable to the BCS for its role in the GSMP process.

The governance groups mentioned above ensure that due process and technical considerations are reviewed for each WR that enters GSMP. These groups help to validate the GDSN delivery process and act as a check and balance to ensure that all WR’s have community and technical review.

When developing a standard each WR must meet minimum voting requirements before proceeding to the next stage. The purpose for the voting procedure is to ensure commitment, scope consistency, and communications throughout the life of the project. A minimum participation threshold of community members

is required during motions at gates 1 (SBN [Statement of Business Need] & Charter), 2 Requirements Analysis (BRAD), and 3 System Development (BSD). If a vote to proceed to the next step cannot be made because the required minimums were not reached, a subsequent motion may be called. If failure to meet the minimums on the second occurs, the WR will be withdrawn and notification sent to the community that the workgroup will not continue.

NOTE: Once approved the only way a Work Order can be eliminated is at any voting stage of the steps above. This could be due to minimum levels of participation not being achieved or insufficient votes to support.

GSMP rules regarding voting and approval as defined in the GSMP Manual:

- On-line Electronic voting is used (i.e. eBallots)
- No 'quorum' rule due to two-week virtual vote and minimum participation requirements
- eBallots are open for at least 14 calendar days
- Voting options are to Approve or Disapprove with comments
- 1 Vote per organization
- Approval requires:
 - Minimum 12 affirmative votes. Of the 12, a minimum threshold of two parties from either side of the trading partner relationship along with two MOs is necessary
 - Two thirds (2/3) of the total votes must be affirmative to ensure a simple majority

Once a Work Order successfully moves through all stages of the standards development process and an approved BMS is available, GDSN engages the Operations and Technology Group to fully assess development and implementation requirements for all key stakeholders (GR, KATO, DPs, TPs), and define deployment plans.. If a certification event is required, the GDSN Certification agent is engaged to assist GDSN Inc in the overall Certification event planning and timeline including test cases.

While GDSN and the Operations and Technology Group follow each Work Order closely and may have preliminary discussions regarding development and implementation effort, it is only when the final solution is available that an accurate assessment can be made. In some cases there may be options regarding how a standard is implemented. In these cases GSMP will engage GDSN and the Operations and Technology Group to discuss and provide a recommendation. One example would be a Work Order whose implementation could require a greater burden to Data Pools while buffering impact to Trading Partners, or, less burden to Data Pools and more to the Trading Partners.

RELEASE MANAGEMENT

Over the years GDSN has evolved the deployment and implementation of standards from major releases which may be several years apart, to annual maintenance releases. GDSN recognized the need to implement simple changes and enhancements more frequently into the network outside of a major release. Working with the Global Standards Management Process (GSMP), a process was developed to ensure that simple change requests could be deployed on an annual basis and not have to wait until a major release.

Business requirements are submitted as Work Requests (WRs) and routed to the GSMP GDSN Standards Management Group (SMG). The business requirement is added to a list of eligible changes to go into the next maintenance release. The requirement is defined including dependencies with other requirements and solution design, and given a level of impact on implementers. Only backwards compatible changes that affect mandatory functionality will be considered for a maintenance release. Requirements that affect optional functionality would be considered on a case by case basis.

Once the annual cutoff date has been reached, a Work Order will be entered for the formation of a Maintenance Release Mission Specific Work Group (MRMSWG). GSMP will send out a call to action to all GSMP members. This work group is tasked to build the solution for that release.

Once the standard is complete, the GDSN Operations and Technology Team (OTAG) propose the deployment dates (Beta and Production). This team serves as an advisory body to the GDSN User Group, GDSN Inc. and GSMP on technical design and implementation, timelines and operations associated with business requirements submitted by the GDSN User Group and operations of the existing network. Membership is primarily comprised of GS1 MO's and GDSN-certified Data Pools. The GDSN MR Work Group and the OTAG are open to all GDSN users.

GDSN engages the Operations and Technology Group for assessment and planning of all network deployments from simple Code List implementations, Maintenance Releases, GPC deployments and Certification events. Depending on the complexity of the release, these planning activities can range from a regularly scheduled Operations and Technology Group call discussion to a multi month planning process including mandatory all hands meetings.

CONCLUSION

Throughout the process, feedback mechanisms are in place to ensure the community is represented through to implementation itself. While individual Work Requests readiness to implement into the network is dictated by the above mentioned process, planning and scheduling is ultimately driven by the GDSN development roadmap which is driven by balancing the GDSN and Operations and Technology Group recommendation and the approved GDSN development budget and resources.

In conclusion, the GDSN deployment process is a well thought through and deliberate process which encompasses a significant amount of resources from all key stakeholders. The focus is ensuring GDSN meets the needs of the global community while allowing sufficient time for planning and preparing.

GDSN Inc. – Key Stakeholders Roles and Responsibilities

Manage Process & Network

- Process Oversight Committee (POC): advisory body whose role is to assist the BCS in an oversight of GSMP due process and that standards are delivered with adequate community participation
- GS1 Global Office: Management of the GS1 system(GDSN, Inc., EPCglobal, DQF, GPC, eCom) and GSMP
- GDSN, Inc.:
 - Global Data Synchronisation Network
 - GS1 Global Registry™ and KATO Test Bed platform
 - GDSN Delivery Process (functionality, certification)
 - Community management (data pools)
 - Business operations related to the GDSN
- GDSN Operations & Technology Advisory Committee (GDSN OTAG): Provide recommendations and guidance to GDSN industry Engagement User Group, GDSN Inc. and GSMP on technical design and implementation, timelines and operations associated with Business requirements submitted by the GDSN User Community AND operations of the existing network.
- GDS MSWG: Processes Work Requests for the GDSN standards.
- Central Operations Group (COPS): BCS governance support entity which ensures effective day to day operations of the GSMP. (resourcing, feasibility, scheduling).

Governance

- GS1 Management Board: Ratifies GS1 Standards or GS1 Guidelines, upon recommendation of the Board Committee for Standards
- Board Committee of Standards (BCS): Governing body of GSMP and is comprised of the following advisory groups; POC, COPS, GS1 Architecture
- GS1 Architecture Group: Advisory body of the GS1 GO and BCS that promotes and protects the technical integrity of the GS1 System.
- GDSN Board (sub-committees: Finance, Certification, Data Pool, Nominating, GRTRT, Strategy):
 - Sets strategic direction for the GDSN and the GS1 Global Registry™ (GR)
 - Approval and oversight of annual budget (includes allocations for projects in flight, network releases, certifications, new projects, software development of GR and KATO and operational expenses of GDSN)
- GS1 GO LT/IEAC: Approves and prioritises work undertaken for industries and to assess the viability and impact to the GS1 system of expanding into new industries

Implementation

- **Member Companies:** GDSN Trading partners responsible for implementation. Helps to define needs by participating in IUGs. Helps to define standards requirements
- **MOs and Data Pools:** Customer implementation and CRM. Supports Local community engagement and management
- **Solution Providers:** Companies and other organisations that offer products and services to user companies that help end users implement components of the GS1 System (especially GS1 Standards).

Industry Needs

- **GDSN Sector Industry User Groups (RVC, HC, T&L):** Within GS1 Industry Engagement sector specific groups focused on, Adoption, Growth and Expansion (GDSN HC Global Deployment and Country Expansion), Identification, discussion and delivery of the Statement of Business Need (SBN)
- **GDSN User Advisory Group:** Cross Sector, Industry Engagement group, Reviews GDSN and Industry Engagement User Group team proposals, Assists in formation of Industry Engagement User Group project teams, Provides guidance and direction on industry adoption and needs
- **Associations:** Organisations that promote and support GS1 and GDSN initiatives directly or via member companies. Provide insight into industry needs. The Consumer Goods Forum (TCGF), Efficient Consumer Response (ECR), etc...