GS1 Logger for Staff - Data Quality starts at home

Workshop

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15 October 2015
Agenda

- Opening
- Antitrust
- General introduction
- Statistics
- Latest technical developments and functions - Logger for Staff
  Premium
- Common process for GTIN Intelligence powered by Logger for Staff
- Possible services powered by Logger
- Open discussion
Anti-Trust Caution

- GS1 operates under the GS1 anti-trust caution. Strict compliance with anti-trust laws is and always has been the policy of GS1.
- The best way to avoid problems is to remember that the purpose of the group is to enhance the ability of all industry members to compete more efficiently.
- This means:
  - There shall be no discussion of prices, allocation of customers, or products, boycotts, refusals to deal, or market share
  - If any participant believes the group is drifting toward impermissible discussion, the topic shall be tabled until the opinion of counsel can be obtained.
- The full anti-trust caution is available via the link below, if you would like to read it in its entirety: http://www.gs1.org/gs1-anti-trust-caution
Statement & Reminder for Seeking Intellectual Property Information

• Relevant to the features of the specification that are being developed in this Work Group, if anyone has knowledge or information about intellectual property rights, such as, patents or patent applications; please promptly convey this information to the Work Group Facilitator.

• The intellectual property rights can either be in development or owned by persons, companies or third parties within this WG or outside this WG.

• We do this under the guidance of the IP Policy, so that GS1 can seek to avoid the uncertainty regarding intellectual property claims against the Specification.
General introduction
What is it?

System Integrity

Standard Compliance

Value-added Services
System Integrity

• The GS1 Logger for Staff solution is the ultimate tool providing an easy-to-use and fast solution for validation of all types of GS1 global identification numbers (e.g. GTIN, GLN, SSCC, etc.) all around the world.
• Reports are generated, stored and available for further use on the platform.
• The system also provides the possibility to share the results with other relevant GS1 Member Organisations in order to enable the efficient follow up of invalid GS1 ID numbers.
• GEPIR based
What is it?

System Integrity

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Value-added Services
Standard compliance

• The platform also provides a tool to verify the data content of bar codes (GS1-128, DataMatrix, GS1 QR codes, DataBar, etc.) and data strings whether they are in alignment with the rules defined by the GS1 General Specification.

• This function is supported by the Logger for Staff application (available on iOS, Android and Windows) thus ensuring a mobile solution for GS1 Member Organisations to check the data quality of bar codes from data content point of view on the spot.

• This function is powered by GS1 Lib®
GS1 Global Strategy – our strategic priorities

1. Mission/Vision
   - Purpose & Beliefs
   - Common Global Brand System

2. Execution Quality
   - Standards Implementation
   - Data Quality

3. Sector Focus
   - Adoption of GS1 standards in Core and Emerging Sectors
   - Global Classification of Sectors and Business Processes

4. Digital
   - GS1 Digital Strategy with emphasis on GS1 Strategy for Omni-channel
   - Key Projects
     - GS1 Source
     - GTIN on the Web

5. Innovation
   - Global Business Technology Innovation
   - Local entrepreneurship and MO-MO sharing

6. Organisation
   - Common KPIs
   - MO Clustering supported by GO Cluster Managers
   - Common Trademark Agreement
   - Review Advisory Council
   - GS1 Organisational Culture
The Logger community

- **GS1 Hungary**: development, support and assistance
- **GS1 GO**: from contribution towards taking over the lead
- **GS1 MOs**: the user community – using and defining next steps
- Two main F2F meetings – Global Forum and the Regional Forum
Statistics
Where are we with the implementation?

- Number of MOs registered: 77 (15 core users)
- Number of users (GS1 colleagues) using the application: more than 500
- Number of records: more than 11,000,000
- Number of invalid records: more than 1,000,000
- Number of faulted records: more than 500,000 (mainly due to GEPIR error)
- Number of external companies testing the platform: more than 70
- Available in 8 languages
### MOs registered so far...

| 1. | GS1 Albania            | 28. | GS1 Hungary           | 55. | GS1 Poland            |
| 2. | GS1 Algeria            | 29. | GS1 Iceland           | 56. | GS1 Portugal          |
| 3. | GS1 Armenia            | 30. | GS1 India             | 57. | GS1 Romania           |
| 4. | GS1 Australia          | 31. | GS1 Indonesia         | 58. | GS1 Russia            |
| 5. | GS1 Austria            | 32. | GS1 Iran              | 59. | GS1 Senegal           |
| 6. | GS1 Azerbaijan         | 33. | GS1 Ireland           | 60. | GS1 Serbia            |
| 7. | GS1 Belarus            | 34. | GS1 Italy             | 61. | GS1 Singapore         |
| 8. | GS1 Belgium            | 35. | GS1 Japan             | 62. | GS1 Slovakia          |
| 9. | GS1 Bosnia and Herzegovina | 36. | GS1 Jordan            | 63. | GS1 Slovenia          |
| 10. | GS1 Brazil             | 37. | GS1 Kazakhstan        | 64. | GS1 Spain             |
| 11. | GS1 Brunei             | 38. | GS1 Kenya             | 65. | GS1 Sweden            |
| 12. | GS1 Bulgaria           | 39. | GS1 Korea             | 66. | GS1 Switzerland       |
| 13. | GS1 Canada             | 40. | GS1 Latvia            | 67. | GS1 Syria             |
| 14. | GS1 China              | 41. | GS1 Lithuania         | 68. | GS1 Taiwan            |
| 15. | GS1 Colombia           | 42. | GS1 Macedonia         | 69. | GS1 Tanzania          |
| 16. | GS1 Croatia            | 43. | GS1 Malaysia          | 70. | GS1 Thailand          |
| 17. | GS1 Czech Republic     | 44. | GS1 Malta             | 71. | GS1 Tunisia           |
| 18. | GS1 Denmark            | 45. | GS1 Mauritius         | 72. | GS1 Turkey            |
| 19. | GS1 Egypt              | 46. | GS1 Mexico            | 73. | GS1 UK                |
| 20. | GS1 El Salvador        | 47. | GS1 Moldova           | 74. | GS1 Uzbekistan        |
| 21. | GS1 Finland            | 48. | GS1 Morocco           | 75. | GS1 USA               |
| 22. | GS1 France             | 49. | GS1 Netherlands       | 76. | GS1 Venezuela         |
| 23. | GS1 Georgia            | 50. | GS1 New Zealand       | 77. | GS1 Vietnam           |
| 24. | GS1 Germany            | 51. | GS1 Nigeria           |         |                      |
| 25. | GS1 Global Office      | 52. | GS1 Norway            |         |                      |
| 26. | GS1 Greece             | 53. | GS1 Pakistan          |         |                      |
| 27. | GS1 Hong Kong          | 54. | GS1 Panama            |         |                      |

*Core users: more than 100 000 records validated*
GS1 Logger for Staff Statistics

By 15 September 2015

Number of records (GTINS, GLNS, SSSCC, other GS1 ID keys) validated (batch query + mobile): 11 160 938

Valid: 9 331 340 (84%)
Invalid: 1 320 884 (12%)
Faulted: 508 714 (4%)

Duplications included. The same record could be valid but running the same query 3 months later could result an invalid report – e.g. Membership expired and was not extended!
GS1 Logger for Staff Statistics

By 15 Sept 2015 - Duplications filtered by users

Number of records (GTINS, GLNS, SSSCC, other GS1 ID keys) validated (batch query + mobile): 6 769 679

- **Valid**: 5 578 125 (82%)
- **Invalid**: 823 660 (12%)
- **Faulted**: 367 894 (6%)
GS1 Logger for Staff Statistics

By 15 Sept 2015

Number of unique records (GTINS, GLNS, SSSCC, other GS1 ID keys) validated (batch query + mobile): 6 434 701

- Valid: 5 286 012 (82%)
- Invalid: 788 428 (12%)
- Faulted: 360 261 (6%)

Duplications filtered by GS1 ID keys!

How many GCP are we talking about? It cannot be defined precisely as not all the GS1 MOs provide back the actual GCP through GEPIR. What we could see is that about 66% of the Mos provide back the GCP as an additional information in GEPIR. This means that we have GCP information regarding about 3.5 million individual GS1 ID keys validated in the system. Obviously when it is invalid there is no GCP information at all.
Distribution of number validated records among users (duplication excluded)

1. 4 448 975 Scanbuy Inc
2. 1 012 545 GS1 Hungary
3. 406 792 GS1 Poland
4. 294 716 GS1 Brazil
5. 181 588 GS1 Italy
6. 152 943 GS1 France
7. 144 431 GS1 Finland
8. 125 131 GS1 Croatia
9. 120 631 1WorldSync
10. 119 813 GS1 Russia
11. 106 141 GS1 Belarus
12. 103 719 GS1 Ireland
13. 97 239 GS1 Slovenia
14. 94 749 GS1 Global Office
15. 69 769 GS1 Colombia
16. 67 629 GS1 Denmark
17. 53 141 GS1 Bosnia & Herzegovina
18. 42 185 GS1 Czech Republic
19. 40 067 GS1 Germany
20. 32 047 GS1 UK
21. 21 807 GS1 Georgia
22. 11 500 GS1 Portugal
GS1 Logger for Staff Statistics

By 15 Sept 2015

Distribution of 1,320,884 invalid records among countries validating

Distribution of valid, invalid and faulted records
Invalid / 2011-01-01 --> 2015-09-15

- GS1 Hungary: 34.2%
- Scanbuy Inc: 40.7%
- GS1 Ireland: 2.1%
- GS1 Brazil: 3.7%
- GS1 Global Office: 2.6%
- GS1 Germany: 1.2%
- GS1 Russia: 2.5%
- GS1 Belarus: 1.4%
- GS1 Bosnia & Herzegovina: 2.6%
- GS1 Colombia: 2.2%
- GS1 Poland: 1.7%
- Other: 4.9%
Continuously checking GEPIR

- As Logger for Staff is based on the GEPIR network it is a simple but effective tool to check the performance of local GEPIR nodes and GEPIR in general.
- Logger for Staff provides real-time statistics about the responses received from the different nodes.

For more details see the excel file!

Distribution of GEPIR Return Codes

- No Error – RC 0: 60.2%
- Daily request limit exceeded – RC 14: 2.6%
- Company not a member of GS1 – RC 10: 4.6%
- Company information withheld – RC 9: 2.0%
- No catalogue exists – RC 8: 1.3%
- Unknown country code – RC 5: 2.8%
- No record – RC 2: 20.2%
- Missing or invalid parameters – RC 1: 0.2%
- Server error – RC 99: 6.0%
Continuous checking GEPIR

- Distribution of RC 99 (server error)

Distribution of GEPIR Return Codes

2012-01-01 --> 2015-09-15

- GS1 Global Office: 13.6%
- GS1 Austria: 0.1%
- GS1 Turkey: 0.1%
- GS1 Czech Republic: 0.2%
- GS1 Italy: 0.1%
- GS1 Brazil: 24.9%
- GS1 Colombia: 1.0%
- GS1 Switzerland: 0.4%
- GS1 Canada: 0.3%
- GS1 Sweden: 0.2%
- GS1 China: 0.1%
- GS1 Hungary: 6.9%
- GS1 Poland: 0.1%
- GS1 US, INC.: 6.8%
- GS1 France: 34.5%
- GS1 Germany: 4.8%
- GS1 Japan: 0.8%
- GS1 Russia: 0.2%
- GS1 China: 0.1%
- GS1 Estonia: 0.0%
- GS1 Latvia: 0.0%
- GS1 Uzbekistan: 0.3%
- GS1 Belarus: 0.0%
- GS1 Hong Kong: 0.5%
Infrastructure with more & more features to support MOs work

- Available in **8 languages** (English, Czech, German, Latvian, Russian, Portuguese, Slovenian and Hungarian)
- All history of users and scans are available
- Making complex statistical queries
- Reports and pictures are available to follow-up invalid GTINs
- Batch query function for supporting GTIN intelligence
- GS1 Logger for Staff Premium – GS1 Mos can offer the service for external companies
- GEPIR Premium services within the framework of Logger for Staff platform
- And much more...continuous developments based on users’ requirements

http://stafflogger.gs1hu.org
Resources are available

http://gs1logger.gs1hu.org/logger_for_staff/resources.html
What is it?

System Integrity

Standard Compliance

Value-added Services

© GS1 2015
Latest developments

Logger for Staff Premium – a value added service for GS1 users
Logger for Staff system architecture
Premium Service Framework

Launched in August 2015

- **Value added service for GS1 member companies**
  - Validation of ID Keys (GEPIR) and qualification of bar codes (GS1 Standards)
  - Batch query website (excel sheets)
  - Batch query web service (XML)

- **New registration and administration processes**
  - New user levels and registration process
  - Personalised admin website for MO supervisors
User management

User levels in the LFS system

- System Administrator
- GS1 MO Supervisor
- Company Supervisor
- Company User
- GS1 MO User
- GS1 MO Report Administrator
Company registration

Business Process: Company registration

1. Start registration
2. Filling in the Company registration form
3. Saving company registration information in the LFS database (with inactive status)
4. Sending notification e-mail about the registration to MO Supervisor
5. Activating company status on the Admin website
6. Sending notification e-mail to the Company Supervisor
7. Receiving e-mail about the completed registration

End of company registration
Batch Query

- **Website** available - **web service** coming soon

- **Validation** of GS1 ID Keys in **high volumes**

- **All types** of GS1 ID **Keys** are supported

- **Format** checking (supported by GS1Lib)

- **Reporting** the invalid numbers to the relevant MO

- **Export** the results into excel sheet (from the website)

- **Statistics**

  - **User guide:** [http://gs1logger.gs1hu.org/logger_for_staff/documentation.html](http://gs1logger.gs1hu.org/logger_for_staff/documentation.html)
  - **Demo video:** [https://www.youtube.com/watch?v=it-UceFOp00](https://www.youtube.com/watch?v=it-UceFOp00)
Batch Query website

How does it work?

1. Upload the list of ID Keys
2. Format checking
3. Run the query
4. See result on website
5. Send report

- Download result
- Download result
- View statistics

The Global Language of Business

© GS1 2015
Upcoming developments in the next phase
New Logger Architecture – LFS 3.0

Logger for Staff Server

- GEPIR
- Batch Query
- GDSN
- External DB
- ...

- Data Aggregator
- GS1Lib
- DataStore
- Logger service
- DataStore (User data)

- Batch Query Web service
- History
- Statistics
- Batch Query
- Record upload
- History
- Web User Interface
- Mobil app

The Global Language of Business
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Main developments in FY 2015/16

- Include “Survey function” into the platform thus enabling the users to create and generate surveys about the implementation of GS1 standards. (e.g. warehouses, production plants, logistics centers, etc.). This will have an impact on the server as well as on the mobile applications.
- Ensure compatibility with upcoming new release of GEPIR 4.0.
- New software architecture in order to increase and improve performance due to the increase extent of usage.
- Ensure the possibility to connect the platform with external data bases (e.g: GLN services, product data pools, etc.)
- Supporting SuperGepir (To be decided)
- New translation tool
Main developments in FY 2015/16

- Developing a dedicated functions in the online platform to support following up invalid GS1 GCPs in an even more effective way and based on the requirements defined by the active project members – ongoing task
- Updating the application for iOS, Android and Windows in alignment with the next major releases of the three platforms
- Agreements with barcode reader app providers (e.g. Scanbuy) to connect systems
- Create new design of the online platform and mobile applications (new user interface) in order to make more user friendly
- New GS1 Branding and positioning as a service from the Global Office
Branding – Currently is a chaos
New name, design and layout

- GS1 Validator instead of GS1 Logger for Staff
New design and layout
Branding – Currently is a chaos
New name, design and layout

- GS1 Validator instead of GS1 Logger for Staff
New design and layout
All your ideas, feedbacks are welcome to make the service better and better!

GS1 Logger for Staff
Premium
Common process for GTIN Intelligence powered by Logger for Staff
Not enough to identify! Follow up is required too!

- **In order to ensure the core value of the GS1 system MOs need to do their best to use the report sent by Logger for Staff app and follow up on the invalid numbers! (Decision of the Regional Board Dec 2014 – All European Mos need to do this!)**

- Common process to use GS1 Logger for Staff and to follow up on invalid/unauthorized GS1 GCPs

- **Process for:**
  - Mobile reports (We already have this process!)
  - Batch query reports – Proposal about the process was approved GS1inEu Board in May 2015!
Common process for using the batch query

1. GS1 MO 1 uploads retailer’s database to GS1 Logger for Staff Platform and executes the batch verification and sends notification to the other effected GS1 MOs.
2. GS1 MO 2 receives a mail with a list of illegal GTINs (or other GS1 ID keys).
3. GS1 MO 2 checks the list against its local CRM and divides prefixes to four groups:
   - **Group 1**: Never allocated prefixes
   - **Group 2**: Prefixes allocated to a company which does not exist anymore
   - **Group 3**: Prefixes allocated to company which stopped being a member
   - **Group 4**: Prefixes allocated to company which forgets to pay fees
4. GS1 MO 2 sends a request to GS1 MO 1 to check and identify the suppliers from Group 1-3.
5. GS1 MO 1 checks the identity of the suppliers with the retailer.
   - **Scenario 1**: Supplier is from the country of GS1 MO 1
   - **Scenario 2**: Supplier is from the country of another GS1 MO 2
   - **Scenario 3**: Supplier is from the country of another GS1 MO
6. GS1 MO 1 takes action and contacts the supplier (user).
7. GS1 MO 2 takes action and contacts the supplier.

The Global Language of Business © GS1 2015
Common process for using the batch query

• Pilot to test the process will be running Q4 2015
• *Ideally not only Europe but all other countries should be more active in this process and in GTIN intelligence generally.*
• GS1 Global Office should communicate directly about the platform and the importance of GTIN intelligence. Also urge MOs to actively use the platform and follow up invalid numbers!
Practical learnings from GS1 Hungary using the common process of batch query

• GS1 HU has been using Batch query (BQ) application with the approved common process since 2015.08.01.

• GS1 HU has received altogether 753,391 pieces of data lines from 2 retailers (including GTINs and GLNs)
  - Valid: 713,888 pieces (94,8%)
  - Invalid: 27,862 pieces (3,7%)
  - Faulted: 2,641 pieces (0,4%)
  - no data available: 8,070 pieces (1,1%)
  - format error: 552 pieces (0,1%)

• The database contains products from 61 countries that are registered members of LFS. Notifications have been sent to LFS registered countries in connection to 15,614 invalid GTINs.

• There are 14 countries which are not LFS members
Practical learnings from GS1 Hungary using the common process of batch query

- GS1 HU is in contact with 7 LFS member countries at the moment (Ireland, Norway, Germany, Japan, Portugal, El Salvador, Slovakia) in connection to the invalid process of cooperation according to the Methodology of ‘BQ practical usage and handling of process’.

- On the basis of the observations of GS1 HU, the Methodology set up 5 common cases as the cause of invalidity. According to this we had the following proportion of invalid GTINs:

  - Group 1. (GCP never been allocated/company does not exist): 12%
  - Group 2. (GCP is in use/company does not exist): 2%
  - Group 3. (GCP is in use/company is not a GS1 member): 61%
  - Group 4. (GCP is in use/company is conditionally a member): 19%
  - Group 5. (GCP misuse/company is a GS1 member): 6%
Practical learnings from GS1 Hungary using the common process of batch query

• Following the steps of the Methodology – with a special respect to handling procedures described in step 10. – communication has been started with companies belonging to group 3. As a result of this in the past three months GS1 HU received a total income of 8,700 EUR from this group.

• Based on the practical experience GS1 Hungary drafted a little bit more detailed process description which proved to be the actual way doing the collaboration between GS1 Mos – Open the excel file!
Possible services
Validation and qualification tool directly for our users

**Validation:**
- With the new functions released GS1 MOs now can grant access to their users and manage their accounts.
- Users having access to the platform are able to use the platform as a tool to validate list of GS1 ID keys directly.
- However, taking into account our experience in Hungary, we would rather propose to GS1 MOs to offer direct support and help when there is a need for bulk GS1 ID key validation. (Clean and prepare the list for validation, provide more information than ‘valid’ and ‘invalid’ etc.) – Retailers do appreciate this additional service and GS1 can establish relation with those contacts at retailers who are in charge of managing suppliers and GTINs.
Validation and qualification tool directly for our users

- Mobile tool for symbol qualification:

![Mobile tool images showing different types of barcodes and QR codes](image-url)
Validation and qualification tool directly for our users
Validation and qualification tool directly for our users
Validation and qualification tool directly for our users

<table>
<thead>
<tr>
<th>GS1 ID Key</th>
<th>Images</th>
<th>Description Link</th>
<th>GEPIR status</th>
<th>Logger (GenSpec) status</th>
<th>Data owner</th>
<th>Time and location of scan</th>
<th>Record status</th>
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