Analysis pilot project Data Exchange End2End

GS1 Austria + Germany + GCS Consulting

Alexander Peterlik + Andree Berg + Andreas Schneider

September, 2020

Structure of the analysis

Structure

- In addition to the summary (see document on this landing page) we have included our complete research in this presentation,
  - slides with blue Headline=Feedback Andreas Schneider,
  - slides with orange Headline= Feedback GS1.
- On this landing page we have compiled a glossary of all initiatives, data models or approaches mentioned in the analysis, which can be referred to if necessary.
- Andreas Schneider had the opportunity to explain his views on all points.

Addition Excel file

- In order to make the complex data requirements in the Supply Chain End2End representable and comprehensible for third parties, we have tried to illustrate this using the example of a T-shirt from the cultivation of cotton to recycling with all production and business processes.
- In the individual process steps, we then defined the structured data that should ideally be available for each stage in the supply chain.
- Andreas Schneider examined the example from his side on a meta-level in relation to our core statement Identify, Capture and Share.
- Since the file is very complex, we did not include it in the analysis and did not map it, but we will make it available on demand.

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2. Background - What is the challenge?

- The German Fashion Association has commissioned the consulting company GCS Consulting to develop and promote a technology approach for the exchange of electronic master data. This idea was successively developed into an "end-to-end" approach. On May 1st, 2019, the pilot project Data Exchange as a crowdfunding project was started with 6 founding members and could be extended to 37 companies from the areas of production materials (2 of 5 world market leaders Freudenberg/D and Chargeur Group/F), clothing and IT providers. GS1 Germany has also participated in the project, both commercially and in terms of content. According to experts, the approach developed so far is suitable as a regulatory framework for creating the necessary data basis for CSR, sustainability and recycling "end-to-end" from raw materials to the post consumer area.

- Currently, the crowdfunding project is facing the challenge that the project budget has been used up, but the project has not yet been finalized in terms of content. Against this background, GS1 Germany has been asked to support the project by providing the remaining financing. The formulated expectation of GS1 Germany is to provide the remaining financing for the Data Exchange pilot project, because two years of preparatory work have been done for the start of the Crowdfunding Pilot Project, which by definition is the reproach that GS1's range of tasks includes and GS1 generates revenues that should be used for standardization in the textile sector with a 90% Complete share. A new crowdfunding round for the remaining financing is seen critically, especially in the current corona situation.

- Although GS1 Germany as well as GS1 Austria had not received an official industry contract until this request, we take the expectations of the participating companies very seriously, meet the expressed expectation with a partial amount and make the decision of a further financial commitment dependent on this upstream GAP analysis in order to view the work results to date, compare them with similar GS1 internal developments and review them in detail.

2. Background - What is the challenge?

- In the course of the gap analysis, the decision was made by the crowdfunding project participants to complete the project properly and to establish a Global Textile Scheme Initiative as a framework for developing an implementation concept.
- The GCS consulting team will establish a new, separate legal entity in the second half of 2020, which will enable GCS to continue to offer consulting services neutrally as an IT consulting firm, while at the same time providing the necessary resources for the implementation of the project results. Therefore the issue of residual financing is no longer relevant.
- Nevertheless, we will finalize the GAP analysis with a focus on the achieved work results, which should be the basis for further possible GS1 decisions.

2. Participants of the analysis

Project Sponsor
- Dr. Bernd Büker, Lead Marketing + Engagement, GS1 Germany

Project Management
- Andree Berg, Senior Branchenmanager Apparel & General Merchandise, GS1 Germany
- Alexander Peterlik, Business und Development Manager, GS1 Austria

Project participants
- Maik Hoffmann, Manager Master Data + Data Exchange, GS1 Germany
  - Focus Classification
- Matthias Bug, Senior Manager Master Data + Data Exchange, GS1 Germany
  - Focus on connection to the Global Data Model
- Christian Przybilla, Lead Master Data + Data Exchange, GS1 Germany
  - Focus on the development of global GS1 standards
- Christopher Jungen, Manager Web + Analytics, GS1 Germany
  - Focus on illumination Development of IT structure for possible new services or participation in the new GTS service

External
- Andreas Schneider
  - Feedback on the pilot project on a fee basis

3. The Pilot Project

3a) Short description of the pilot project Feedback Andreas Schneider

The pilot project emerged from an expert survey in 2017 and an industry conference and a resolution of the executive committee of GermanFashion Modeverband - both in the 2nd half of 2018. The core of the project was abstract:

- More efficiency in data exchange along the value chain for more efficiency by reducing manual work,
- To increase speed in the textile fashion value chains,
- The development of a new technology which is beyond order processes (current focus of EDIFACT use in the industry), inexpensive, widely applicable and "as easy as writing an email".
- More concretely, 2 participants expressed it this way:
- Production Manager: "Why can I pick up my account statements online and for a EUR1 or a supplier declaration I have to call or email and
- CIO: Despite PIM and great ERP equipment, I need 2 full-time employees to develop the product descriptions for my webshop.

	Virtual Product Development	Collaborative planning & forecasting	Master Data Automation
Problem	When communicating colour: - Too many failed attempts at Lab Dips - High manual workload - High costs - Time consuming & inefficient (lead time)	Current Lead Times: - Way too long - Material delivery takes too long - Supply chains are too inflexible - Sole price focus towards suppliers - At the same time high mark downs	When creating product descriptions B2B / B2C: - Zero automation - High manual work load - High cost / time consuming / error prone - Structured data and basic technology is missing
Solution	Cloud application (DMIx): - Digital instead of analogue - Data instead of physical samples - Exact spectral value instead of reference to colour systems (e.g. Pantone) - Virtual Showrooms (supplier) - Virtual workspaces (customer)	Collaborative planning and forecast: - Collaboration as a new basis - Development of simple & inexpensive best practice recommendation with defined structures & rules based on GUSI (The Global Upstream Initiative) by Consumer Good Forum	Master Data & Technology: - Gathering + harmonization of all relevant master data as a basis for automation - Evaluation of new real-time technology
Goal	Reduction of manual processes: - Less lab dips due to better hit rate - About 30% less sample costs - 22% lead time improvement - Creating a technical basis for virtual product development	Reduction of lead time + costs: - Reduce discounted sales through more flexible supply chains - Faster material availability - Create basis for "Consumer driven value chains "	Reduction of manual processes: - Automation of data generation - Automated creation of product descriptions - Retrieval of certificates, such as bank statements

3b) Spectral Color Communication

Spectral Color Communication
Feedback Andreas Schneider

Color naturally plays a major role in fashion and corporate fashion. The development of new colors in international supply chains is traditionally very slow, characterized by a lot of trial and error and, in addition to considerable costs, by a lot of time lost.

During the last 24 months, the market has shifted from analog development processes to digital ones,

a. Because the technology has again developed significantly (DMIx Cloud from Color Digital - since the first half of 2020 months global technology partner of Pantone) and

b. Because purely virtual product development, in which a real prototype only becomes available at a very late stage, was massively driven by pioneers such as HUGO BOSS AG in the direction of exchanging digital material parameters with specific requirements (called "Digital Ready") - far beyond digital/spectral color.

Within the project, this important topic received considerably more attention on the market at a time of great half-knowledge and many doubts.

In addition, important detailed questions were clarified, such as which color measurement method should be used and when.

With virtual material parameters, a completely new world of data is currently being created, which has been included in the work of the Global Textile Scheme Initiative.

Project part spectral color communication Feedback GS1

- This is a very good development with a lot of optimization potential in the complete supply chain.
- In PRICAT the field color is filled in both coded and plain text.
- The developed D/A/CH Fashion data model contains 2 attributes as descriptive fields and one attribute with a code value table with 19 defined colors.
- Should digital color values become established on the market, this would be welcomed from a GS1 point of view.
- The attribute field is still COLOR.
- The GS1 application recommendation Product Images and Media Assets and Code Lists should then also be extended.
- If the fashion/shoes/sport and textile industry is interested and willing, we will gladly take on a possible work order from the community.

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3c) Collaborative Planning & Projection

Collaborative Planning & Projection
Feedback Andreas Schneider

A market survey within the framework of an SCM benchmark for "GermanFashion Modeverband" in 2018 clearly showed that for shorter lead times (time2market) a better, structured and above all collaborative exchange of information along the textile value chains is absolutely necessary. Since this challenge fitted well into the canon of goals of the project, a separate project part was set up for this purpose.

Methodologically and in the sequence of the content work, the working group oriented itself to the Global Upstream Initiative (GUSI) document of GS1 Germany/Consumer Goods Forum, a professional and helpful document from 2009, which is largely unknown even within GS1 Germany.

A first exchange of experiences showed that the topic really is a big open flank of the industry, offers huge potentials - but also shows high complexity.

Thus, in the first step, only the goals could be defined, the importance of the topic recognized and the GUSI document determined as a regulatory framework. With growing expertise and with a constant eye on the structures emerging in the area of "master data automation", essential data structures in the area of demand determination and extrapolation on the buyer side were identified, as well as a refinement of the influencing variables around the data required on the vendor side.

In a final step, a way was developed (at SKU level) to determine the demand development of a vendor per SKU according to a fixed schema in a data structure that is always the same for all buyers in such a way that the vendor side can retrieve this data as needed "at the push of a button", i.e. simultaneously from all customers who have demands at this one SKU - this completely new approach is of great interest to upstream suppliers.

Collaborative planning & projection
Feedback GS1-see: https://www.gs1.org/upstream

- As described, the basis for the project work is GUSI (Global Upstream Supply Initiative).

- GUSI is about improving processes by exchanging master data and transaction data (among others including EDI messages) in the precursor. The aim is to optimize the procurement and logistics processes along the value chain.

- The most important steps in collaborative planning are clean master data, clear processes and the necessary documents.

- The Inventory Report (INVRPT) in combination with the Sales Report (SLSRPT) is a potential source of "**a small part**" of planning-relevant data along the value chain.

- The goal is to avoid costly and time-consuming IT integration.

- If the fashion/shoes/sport and textile industry is interested and willing, we will gladly take on a possible work order from the community.

3d) Master data automation

Automated data exchange - the new approach

Automated data exchange with GTS

The project has shown that in addition to the product descriptive attributes shown on the last slide, other data, e.g. Demand Data or customer-specific data such as client specific prices should be exchanged electronically.

This is only possible with an integrated approach consisting of the following 3 components:

1. Standardized data that must be encoded in order to be pulled and to enable multilingualism.

2. A technical surface that does not exist today due to the very special requirements and

3. An end-to-end data model that regulates which data categories should be exchanged and that should be dynamically expandable.

Global Textile Scheme (GTS) – the integrated approach

Global Textile Scheme

Global Textile Language (GTL)

GTS-Cat

GTS Data Model

Standardized Textile Language   Technical infrastructure (called catalogue)   Data categories being exchanged

The integrated approach in combination with the acceptance of the market allows completely new approaches and processes.

* Source: Final Update Pilot Project Data Exchange from 23.07.2020

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Automated data exchange- planned further procedure

Next steps...

The pilot project data exchange has come a lot further in the one-year term than most of the participants had hoped.

So far, however, only concepts have been worked out, foundations laid, and potentials validated.
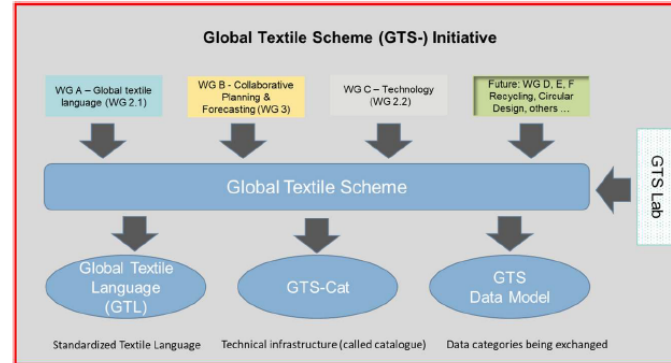
In order to harvest the fruits of the work, the following implementation structure was decided by the 44 participants in the last physical meeting:

- Foundation of a so-called Global Textile Scheme Initiative on August 1, 2020 by GCS Consulting GmbH and a separate organization. This initiative will offer interested companies a space to work with like-minded on cross-sectoral issues, of which there are many, and all of which are related to data, e.g. supply chain transparency and recycling.
- In 2020, Global Textile Scheme UG/GmbH will be founded as an operational implementation unit and system head of the Global Textile Scheme Initiative and GTS-Cat.
- Development / operation of the GTS-Cat infrastructure by Pranke GmbH (an experienced EDIFACT service provider with reputation and industry experience).

The new Global Textile Scheme Initiative

Global Textile Scheme (GTS-) Initiative

WG A – Global textile language (WG 2.1)

WG B - Collaborative Planning & Forecasting (WG 3)

WG C – Technology (WG 2.2)

Future: WG D, E, F Recycling, Circular Design, others …

GTS Lab

Global Textile Scheme

Global Textile Language (GTL)

GTS-Cat

GTS Data Model

Standardized Textile Language | Technical infrastructure (called catalogue) | Data categories being exchanged

As part of the new Global Textile Scheme Initiative, the GTL Attribute List is being developed, the technical GTS-Cat infrastructure will be developed, and international distribution alliances and the new operational implementation structures are set up.

* Source: Final Update Pilot Project Data Exchange from 23.07.2020

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Master data automation

We have asked ourselves the following questions:

- Is a consistent End2End data model including sustainability even necessary for the value chain, or is it not better to link different data models with each other?
- Does a new classification have to be developed for the upstream area, which should also be applied in the downstream area and include existing classifications such as the GPC or a BTE product classification, which is a particular challenge, especially with updates?
- Is the American approach of describing raw material in general and assigning flexible code values depending on the composition not the better way?
- How are the newly mentioned approaches like Data Port and True Code in electronic data exchange to be evaluated?
- Can the PLM and PIM systems even process what is written in GTS, GTL and the GS1 US Raw Material Guideline?
- How does the designer/product manager approach the topic of master data?
- What does the parts list from the PLM/PIM look like and what data does the purchasing department receive?

Master data automation/FAQ

We have asked ourselves the following questions:

- **Is a consistent End2End data model including sustainability even necessary for the value chain, or is it not better to link different data models with each other?**

The GAP analysis has shown that a consistent data model is not possible due to the complexity and missing data structures. The linking and connection of standardized data and processes along the value chain is very well possible.

Master data automation/FAQ

We have asked ourselves the following questions:

- **Does a new classification have to be developed for the upstream area, which should also be applied in the downstream area and include existing classifications such as the GPC or a BTE goods classification, which is a particular challenge especially with updates?**

Upstream they should be the same and that is the real challenge if they are to be globally aligned!

- **Can the GPC not be used for the upstream area instead of the GTS approach?**

Maybe this is one way. But at the moment we only know what was developed by GTS. If these classes are accepted on the market, they can be transmitted as well, as the classes in the upstream area do not have to be the same as the classes in the downstream area. In the downstream area, this has already happened with BTE, DTB and FEDAS.

There is an attribute set "additional classification" in the GDSN, which can map further classifications besides the GPC, which we will show in the next section. We have illustrated the reasons for this on the following slides and presented our solution approach using the Global Data Model.

I) Classification

Classification - Explanation

General

- Classification systems support the development of reliable assortment analyses or sales statistics and are a fundamental basis for a functioning category management.
- Possible application areas are master data management, PIM systems, electronic catalogs, electronic marketplaces, online stores, electronic procurement or even ERP systems.

Global Product Classification GPC

- The GPC is a worldwide valid classification, with which commercial goods can be classified internationally comprehensible and detailed.
- With GPC, business partners have the possibility to transmit classification information in a standardized way.
- It covers all important areas of the consumer goods industry and is continuously extended and improved by new user requirements.
- The GS1 NL approach is based on the GPC but does not correspond to the global approach, because it is individually oriented towards the NL community.

US raw material guideline approach

- Furthermore we have included the US Fashion raw material in the analysis

Basis for Global textile Language (GTL)

Automatized Data Exchange

What data are we talking about?

Imagine that you have an article with 25 Bill of Material (BOM) positions.

You will receive the product-describing attributes as PDFs for most of these 25 material components from the respective supplier - comparable to the button example shown on the right.

Your team manages a good part of these data or copies essential data into today's product master data parts of the ERP/PLM/PIM, as there is currently no way to transmit this data electronically.

We will change this in the implementation part of the project, which will start soon.

We're talking about these data

Source: Peter Büdel GmbH

*Source: Final Update Pilot Project Data Exchange from 23.07.2020

GTL is a multilingual list of harmonized and coded product descriptive attributes

Part of the GTL are currently 138 product classes in the sectors

- raw material:
- Production material
- Finished products (currently clothing and shoes, more will follow)

The structure of GTL allows very compact lists of product classes, which were compared to the current GPC catalog to find intersections and ideally integrate the GTL classes into the textile GPC catalog.

Unfortunately this was not possible, for reasons which will be explained on the following pages.

Automated data exchange with GTL

Element 1: the Global Textile Language (GTL).

As part of the project, a scheme was developed e.g. to catalogize and encode all the product descriptive attributes, e.g. the ones listed in the DTB recommendation into a standardized list of characteristics/attributes.

This means that in future each operator can describe the product in his/her own language. The real data exchange then takes place via the codes that are assigned to the features selected for the description.
Important: The executing staff has nothing to do with the codes.

How this GTL scheme can look like is shown again on the right using the example "Button" (in English and German).

The new industry language - Global Textile Language (GTL)

Production material class: TC0200000010 | Button

Code	Description	Type	Unit	Unit (imp.)	Value code - Description		Beschreibung
TF0000000001	Subclass Button	A			TV0000000001	Hole Button	Lochknopf
					TV0000000002	Shank Button	Ösenknopf
					TV0000000003	Snap Button	Druck Knopf
					TV0000000004	Jeans Button	Jeans Knopf
					TV0000000005	Tape Button	Bandknopf
					TV0000000006	Toggle	Knebel
					TV0000000007	Cufflink	Manschettenknopf
					TV0000000008	Other	Andere
TF0000000002	Number of hole button holes	N					
TF0000000003	Diameter of hole button holes	N	mm	inch			
TF0000000004	Snap button type				TV0000000009	S-Spring system	S-Feder System
					TV0000000010	Brass Ring spring	Messingring Feder
					TV0000000011	Nylon Ring spring	Nylon Ring Feder
					TV0000000012	Prong system	Prong system
					TV0000000013	Sew on snap button	Sew on snap button
					TV0000000014	Other	Other
TF0000000005	Snap button cap type	A			TV0000000015	Hidden snap	Verborgene Druckknopf Kappe
					TV0000000016	Visible snap	Sichtbare Druckknopf Kappe
					TV0000000017	Reversabel snap	Reversible Druckknopf Kappe
					TV0000000018	Other	Andere
TF0000000006	Jeans button type	A			TV0000000019	Fix jeans button	Fester Jeans Knopf
					TV0000000020	Movable Jeans button	Beweglicher Jeans Knopf
					TV0000000021	Other	Andere
TF0000000007	Shape	A			TV0000000022	Round	Rund
					TV0000000023	Square	Quadratisch
					TV0000000024	Oval	Oval
					TV0000000025	Rectangular	Rechteckig
					TV0000000026	Triangular	Dreieckig
					TV0000000027	Special shape	Spezielle Form
					TV0000000028	Other	Andere
TF0000000067	Colour	A			TV0000000029	Colourless	Ohne Farbe
					TV0000000030	Transparent	Transparent
					TV0000000031	White	Weiß
					TV0000000032	Beige	Beige
					TV0000000033	Yellow - orange	Gelb - Orange
					TV0000000034	Yellow	Gelb

*Source: Final Update Pilot Project Data Exchange from 23.07.2020

GPC Classification Feedback GS1

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- Already existing GPC bricks from the fashion/shoes sector partly already available today

- Can be used standardized worldwide independent of GDSN

- official standard that is constantly being developed

- Secured by a transparent development process and clear global governance (GPC SMG)

−

- Not end-to-end capable (complete coverage of the value chain from fiber to recycling)

- Only intended for downstream

- High effort to extend and complete the GPC classification for End2End

- Upstream use of the GPC raises a fundamental question for the GS1

- Rather slow in implementation for the dynamic fashion industry (2 releases p.a.)

-No guarantee that requirements are implemented 1:1, due to the right of other stakeholders to have a voice

- The syntax is different from the GTS

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Approach NL - Using the GPC for Fashion Base Feedback GS1

- Use of the already existing GPC bricks from the fashion/shoes sector

(How? They reflect the GPC, translate it into their own codes. A brickcode is not needed, ICECat assigns own codes for it)

- New requirements can be quickly adapted and incorporated

- GS1 Standard (GPC) is at least partially used

- Not capable of end-to-end

- Only intended for downstream

- Does not follow the structure required by Fashion like ETIM

- Does not reflect on GS1 Germany strategy to promote the use of GPC globally available GS1 standards

-**The result is maximum one proprietary standard (acceptance in the market?)**

-At present still a pilot project

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New classification
Feedback GS1

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- End-to-end oriented, suitable for upstream and downstream

- Structure of the ETIM structure meets the requirements of the fashion industry

- New requirements can be quickly adapted and incorporated (dynamically expandable), is therefore probably more predictable

-Individual development process can be developed and implemented to suit the time requirements of the industry
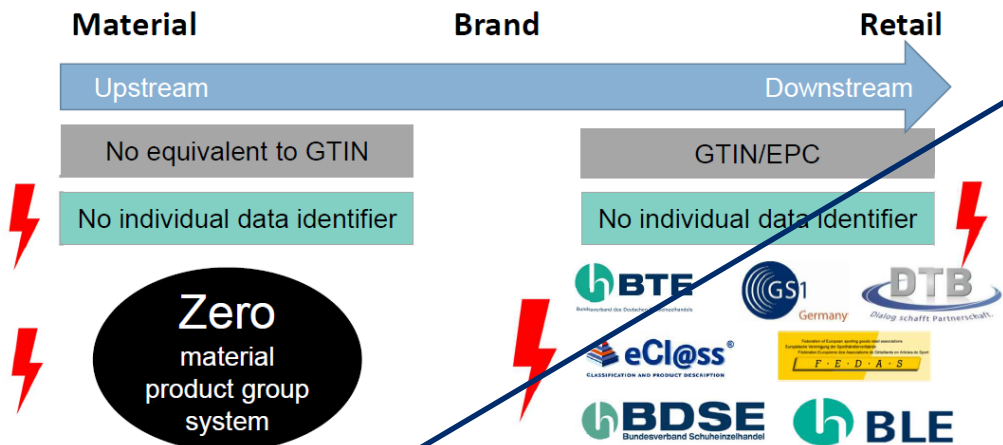
−

- Acceptance in the industry still open from a professional point of view

- No global standard, only a few companies involved so far

- It is not clear whether the majority in the fashion sector accept this classification

-**The result is maximum one proprietary standard (acceptance in the market?)**

- Not yet tested in practice

-technical infrastructure not yet available

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Our approach Global Data Model

Master Data Automation
Feedback Andreas Schneider

The big picture – we need a new **end to end** dynamic and generic information model

Material	Brand	Retail
Upstream		Downstream

No equivalent to GTIN | GTIN/EPC

No individual data identifier | No individual data identifier

Zero material product group system

BTE
GS1 Germany
DTB Dialog schafft Partnerschaft.
eCl@ss CLASSIFICATION AND PRODUCT DESCRIPTION
FEDAS
BDSE Bundesverband Schuheinzelhandel
BLE

No way to harmonize with reasonable efforts.

Goal:
- One unique "data identifying" system for Upstream and Downstream
- Inexpensive
- Scalable & easy to maintain

Starting point:
The new GTS approach is End2End oriented "from sheep to recycling" (upstream + downstream).

Our GS1 approach see next slide including the conclusion on slide 33

GS1 Germany

Global Data Model (GDM) and additionalTradeItemClassification…

BMS ID	Business name	Business definition	Example	Usage Statement	GDD Name	GDSN Technical Attribute	FMCG Food data model layer	FMCG Near Food data model layer	FMCG Pet Food data model layer	FMCG Alcoholic Beverages data model layer	FMCG Tobacco data model layer
		Attribute Definitions for Business (ADB) Release 1.2			Business Message Standard (BMS) Information (v3.1.10)						
171	Additional Product Classification Type Code	The code indicating the type of Additional Product Classification Value used.	Image of: • box of cereal and its United Nations Standard Products and Services Code (UNSPSC) and value. • the same box of cereal with its eCl@ss code and value. • box of syringes with its Global Medical Device Nomenclature (GMDN) Code and value.	Used to declare the type of the additional product classification that allows a buyer to know which classification system is used. Used in conjunction with Additional Product Classification Value.	additionalTradeItemClassificationSystemCode	NO	Local	Local	Local	Local	Local
173	Additional Product Classification Value	A value, other than the Global Product Category Code, which classifies the product, based on the Additional Product Classification Type Code.	Image of: • box of cereal and its United Nations Standard Products and Services Code (UNSPSC) and value. • the same box of cereal with its eCl@ss code and value. • box of syringes with its Global Medical Device Nomenclature (GMDN) Code and value.	Used for additional product classification that allows a buyer to classify a product by other classification systems. Used for multiple use cases such as data quality, category management, space management, workflow routing. Used in conjunction with Additional Product Classification Type Code.	additionalTradeItemClassificationCodeValue	NO	Local	Local	Local	Local	Local

> With the attributes you have a link to further classifications like ETIM, GTS......whose further values can be mapped analog to the GPC of data service providers

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Example: Linking a data model with the classification GPC using the example of a Web User Interface

Identifizierung

GTIN der Artikeleinheit	03057640222108
Gültig-ab Datum (-zeit)	06.07.2017 00:00
Zielmarkt: Ländercode	(276) - DEUTSCHLAND, BUNDESREPUBLIK
Datenverantwortlicher: GLN	4011114000555
Datenverantwortlicher: Name	MjR3 Test Supplier DIY
Artikelkurzbeschreibung	T-Shirt

Ident Artikel GTIN

Ident Unternehmen GLN

GPC Abbildung eines T-Shirt im GPC Browser		
Segment	67000000	Bekleidung
Klasse	67010800	Oberbekleidung
Brick	10001352	T-Shirt
Attribute	20003160	Passform
Value	30018901	Moderne Passform

https://www.gs1.org/services/gpc-browser

Klassifizierung

○ Produktklasse aus Liste wählen
○ Produktklasse aus Baumstruktur wählen

GPC zur GTIN

Segment	(67000000) - Bekleidung
Familie	(67010000) - Bekleidung
Klasse	(67010800) - Oberkörperbeklei

Nutzen Sie dieses Feld für die Eingabe des GPC Brick Codes oder um nach einer Produktklassifizierung zu suchen

GPC / Brick Code | (10001352) - Hemden / Blusen

Auswahl zurücksetzen ↺

Brick Attribut Typ

Passform der Kleidung	MODERNE PASSFORM
Altersgruppe der Verbraucher	ALLE ALTERSKLASSEN
Geschlecht	UNISEX
Falls Brusttasche	JA
Falls Shaping	NEIN
Falls Umstandsmode	NEIN
Falls bügelfrei	NEIN
Falls nahtlos	JA

https://de-pool-test.atrify.com/publishing/auth/index.do;jsessionid=FF255A946C305D73B870F6466D9253AC

GS1 Germany

Master data automation/FAQ

We have asked ourselves the following questions:

- **Is the American approach of describing raw material in general and assigning flexible code values depending on the composition not the better way?**

From a GS1 point of view, this cannot be evaluated yet as we do not know any users!

Remark Andreas Schneider
- The Raw Material Code is speaking and with 2 digits too short and only suitable for upstream.

Conclusion Classification and master data

- It is good to develop structures in the upstream area, where GS1 is happy to get involved and collaborate if necessary. But this only makes sense if this happens globally. One possibility would be for GS1 AT, DE + NL to coordinate and define and start a joint follow-up project, or we participate together in the US initiative.
- In our opinion, it does not make sense to harmonize the different existing classifications, because the different approaches will continue to exist or have their justification and will therefore be developed further step by step. Continuous updates to the new GTS data model would be a great challenge. Furthermore, release cycles are also different.
- Rather, it makes sense to have open standards such as the Global Basis Data Model (GDM), which offers the possibility to map different classifications and product group keys, since all existing systems will always remain and will be maintained.

- With this attribute set we have a link to further classifications, which can be integrated into the GDM, if the fashion data model is inserted as an additional category.

- Possible new values or code lists analogous to the GPC image (as they are available in the WebUI today) would have to be mapped. This can be done by the data sender on his own or by "Data Service Provider" as a service. It is not part of the standard or the standardization.

Master data automation/FAQ

We have asked ourselves the following questions:

- **How are the newly mentioned approaches like Data Port and True Code in electronic data exchange to be evaluated?**

Just like all new identities. They replace or supplement the GS1 data model!

In the following, Andreas Schneider's information and our conclusion are detailed.

Identification of DataContainers-DataPort-PaX Questions to Andreas Schneider

Identification

Entity	Main Identifier	Example
Company / Legal Entity	True-code {UUID} or GLN	abfba226-f62d-4aad-9c58-51717c03e15c
Brand	GBIN {Num10}	1232234931
Location	UUID or GLN	8711654000002
Trade Item	UUID or GTIN {Num 8,12,13,14}	897790812521
Dataport	DPID {UUID}	55c6e22a-4198-4f17-9741-993fc1197357

DataPorts is a new technical procedure in which individual data are packed into data containers and can be exchanged with all market participants who have DataPorts, i.e. "data ports" as a generic interface, using a central search function. There will be various API's for Data Ports, which are currently (mid 2020) being programmed and will be available free of charge after completion. For more details see:
https://www.theconsumergoodsforum.com/wp-content/uploads/202004-CGF-E2E-DataPorts-in-Action-Paper.pdf

If E2E data standard is the regulatory framework and 90% of the fashion industry uses GS1 standards, is UUID the right solution?

GS1 standards build on each other GLN, GTIN, SSCC, DESADV, is this also possible with UUID?

Is it not possible to use GS1 standards?

Feedback to DataPorts and PaX
Andreas Schneider

- DataPorts and PaX are apples and oranges.

- PaX is a system that emerged from the DMIx cloud solution.

- In DMIx, suppliers and customers can digitally exchange material parameters in protected rooms - initially with a focus on colors for specific materials - but increasingly, other parameters from the bundle of digital material parameters grouped together as "Digital Ready".

- As more and more material descriptive (production) material parameters were now available, PaX was born, as a quasi-digital marketplace. Soon, for example, "a cotton fabric with a fabric weight of 200 grams in twill weave" could be searched for there.

GS1
Germany

Identification of DataContainers
Feedback Andreas Schneider

If E2E data standard is the regulatory framework and 90% of the fashion industry uses GS1 standards, is UUID the right solution?

- The 90% of the fashion industry are already wrong, because if you look at the raw material and production material sector end-to-end, the percentage of users of GS1 standards drops dramatically.

- Why that is irrelevant. The fact is that the products of these potential users are not scanned at the supermarket checkout and therefore a significant GTIN advantage is lost.

- Furthermore, the GTIN is not structurally optimal for the fashion sector anyway, since the SKU marking consisting of form/article - color - size in the GTIN cannot represent the 3rd dimension and downstream today always has to fall back on corresponding translation tables in the affected IT systems anyway!

- Whether UUID is the right solution I cannot answer seriously at the moment. But it has advantages in terms of costs and brings the serialization of the product quasi automatically.

- On top of that, the market is moving in a direction where the cards are being reshuffled as a whole, specifically how data will be exchanged (sent and received) in the future.

- There one looks of course exactly and above all again what there is new.

Identification of DataContainers
Feedback Andreas Schneider

GS1 standards build on each other - GLN, GTIN, SSCC, DESADV, is this also possible with UUID?

- Without technical support certainly not as comfortable as with GLN, GTIN & SSCC. DESADV will still exist as a function/process from my point of view, but not as a rigid message format like today.
- But if I need a translation table in the fashion industry today to be able to mark finished textile products with a GTIN, then I can imagine that in the " beautiful new Data Port World" in connection with structured master and transaction data, there will also be simple mechanisms to map these dependencies with UUID, but with new mechanisms and differently than today.
- The discussions of the last years with GS1 were so difficult, because the direction of the new instruments and the desire of the markets had been there for a long time, but no concrete "approach" could be identified yet. Therefore all issues were always discussed with reference to the "old EDIFACT/GDSN worlds" - by the way until today and regarding this elaboration and the questions asked here!

Can't GS1 standards be used?

- The GS1 standards could be used. In view of the above, however, I currently see the only compelling reason for GTIN & Co. in simpler migration scenarios - but we should deepen this point! The downstream EDIFACT based data exchange for the 8 types of messages currently in use (at Fashion) will certainly not disappear overnight. End to end considered and with the new possibilities the supposed 90% will be less and less valuable and "compelling" as an argument in the next years.
- All markets are extremely price conscious and behind every issue is the question of "value proposition". Today's GS1 business model with a fee model that mainly delivers "Identify" in the fashion sector (and still suboptimal) is not attractive enough for Upstream and therefore GS1 standards are only one option.

GS1
Germany

Conclusion GS1

- Basically the communication standard for DataPort is XML + JSON. A GS1 XML standard exists, other communication standards such as BMEcat or JSON are also offered by GDSN data pools, depending on the format the customer requires.

- If the GTIN is not used upstream there must be a unique supplier/customer material number (like GTIN).

- The DESADV is from our point of view not rigid, but contains an extensive total attribute set, which can be used differently depending upon industries or community, so there are application recommendations on this basis, which use only a part of it, e.g. food/non food, DIY, beverages, media or press, see https://www.gs1-germany.de/no_cache/gs1-standards/umsetzung/fachpublikationen/#c285

- In these data models there are mandatory and optional attributes defined by the individual communities so that flexibility is given.

- It is always important for GS1 that the communities agree on a standard.

- If the fashion/shoes/sport and textile industry is interested and willing, we will gladly take on a possible work order from the community.

GS1
Germany

Master data automation/FAQ

- **Can the PLM and PIM systems even process what is written in GTS, GTL and the GS1 US Raw Material Guideline?**
  - Currently all relevant software companies are addressed!

- **How does the designer/product manager approach the topic of master data?**
  - In the design, the description and type is decisive. Not one item number!

- **What does the parts list from the PLM/PIM look like and what data does the purchasing department receive?**
  - From today's point of view, we do not know that for sure! But we think that from the moment the materials are ordered, there are clear identifiers such as customer or supplier article number. So there could also be a GTIN in use!

- **Those are from our view the past GS1 topics with those we concern ourselves so far and light up now the topics current from our view:**
  - Sustainability/CSR
  - Electronic data exchange

Sustainability/CSR

Extract from an original request of a customer with a total of 34 fields Feedback Andreas Schneider within GTS/GTL

	information on product level:		Are any of your products certified after the following standards or contain the following materials?						
	EAN CODE	**Secondary identifier**	**GOTS - with organic**	**GOTS - organic**	**certifiying agency**	**license number**	**OCS 100**	**OCS blended**	**certifiying agency**
	Primary identifier for ABOUT YOU	Vendor specific	certified by Global Organic Textile Standard (GOTS) with organic > 70% certified organic natural fibres	certified by Global Organic Textile Standard (GOTS) organic > 95% certified organic natural fibres	for GOTS	for GOTS	certified by Organic Content Standard (OCS) 100 > 95% certified organically grown material	certified by Organic Content Standard (OCS) Blended > 5% certified organically grown material	for OCS 100 or OCS Blended
Hersteller Art.Nr.	Required	Not required	Please insert "x" if applicable	Please insert "x" if applicable	Please insert name or ID	Please insert license number	Please insert "x" if applicable		Please insert name or ID
54-1707/34 PEP-S 58 385 20	4250975902175	(example)	x		CERES	008			

All requested information can be displayed as data in the new GTS structure. The information marked in orange can already be harmonized as data - as of today - in the new GTL Language and displayed in a machine-readable/automated form. The data to the right of the frame cannot yet be displayed as data - as of today - in the new GTL Language, because we are still working on the simplest technical implementation for composites (material mixtures).
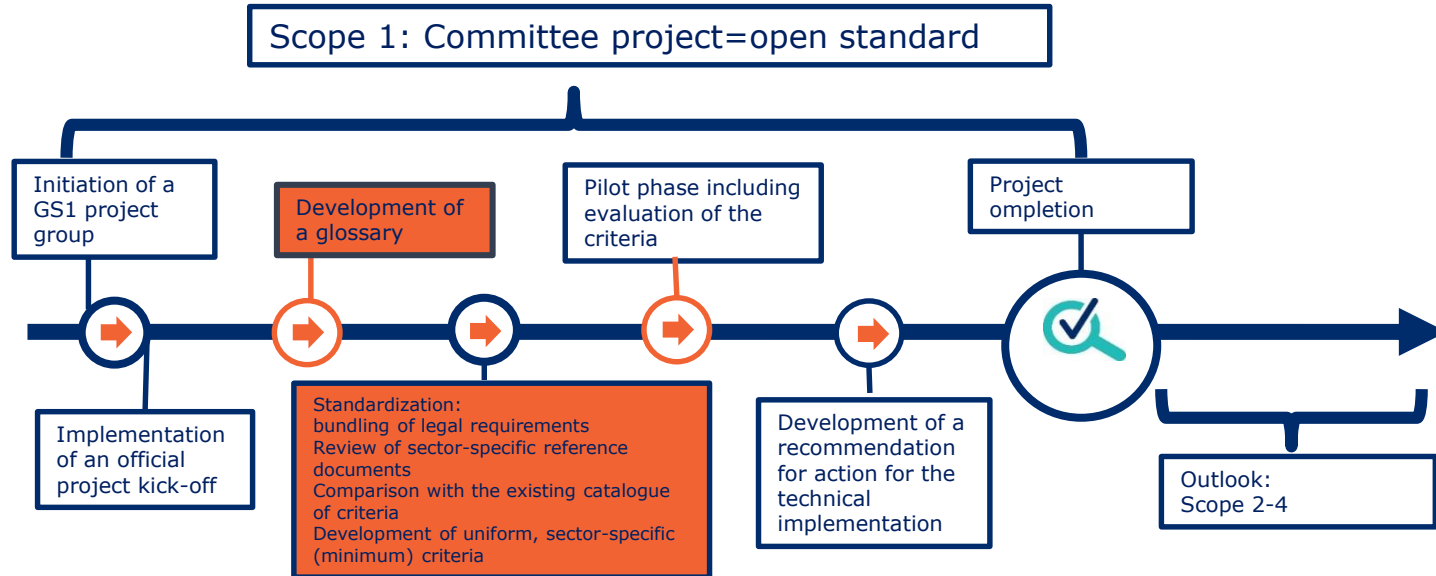
Sustainability /CSR from GS1 perspective

- Clear data on the material is important in order to be able to make a statement about the product and its sustainability. This happens on the side of the brand during design. So it must be clear to PIM and PLM in the design whether the finished product is made of sustainable materials or not. In addition, when selecting a producer, the company also looks at whether the producer complies with CSR guidelines, i.e. fair wages and working conditions. Once this has been clarified, procurement and master data maintenance begins. An organic wine is only organic if the vines are organic and the winemaker meets all requirements. So also here the decision is made long before the harvest!

- Within the scope of ECOtraxx activities, there will certainly be some movement on the subject of sustainability and traceability. The more data we get the merrier. We would check the data when we know what data we are getting from whom!

Sustainability/CSR from GS1 perspective

- In our opinion, sustainability is an independent project and the approach of GS1 Germany (see next slide) is a start, in which we want to work on the defined approach with the community and CSR experts:

  - Scope 1 Standardization of corporate data based on the FMCG ECOtraxx approach

  - Scope 2-3 Standardization at product level

    - **Here the GTS approach could be a possible basis, but the project group should decide**

  - Scope 4 - Electronic data exchange where the ECOtraxx cloud solution is one of many possibilities. In general, we follow a technologically independent approach, so the GDSN argument does not apply.

Roadmap:
Establishment of a fashion sustainability criteria catalogueau

Scope 1: Committee project=open standard

Initiation of a GS1 project group

Development of a glossary

Pilot phase including evaluation of the criteria

Project ompletion

Implementation of an official project kick-off

Standardization:
bundling of legal requirements
Review of sector-specific reference documents
Comparison with the existing catalogue of criteria
Development of uniform, sector-specific (minimum) criteria

Development of a recommendation for action for the technical implementation

Outlook:
Scope 2-4

Scope1	Company data
Scope 2-3	Product level
Scope 4	Electronic data exchange

=Already in progress

=in Planung

Electronic data exchange

Automated data exchange technical infrastructure

Feedback GS1
This is a new technical infrastructure, with the described core functions.

It is up to the market to decide whether it wants to use them.

Automated data exchange with GTS-Cat

Element 2: the technical infrastructure:

The project has shown that it makes sense to set up our own technical infrastructure in the upcoming implementation phase.

Since such approaches are always called "Cat" (e.g. ICECAT, BMEcat), we called ours the GTS-Cat approach developed in the project.

Despite all the hype surrounding the current "platform economy", no new platform should be created that would easily bring additional interface complexities to the market.

GTS-Cat is neutral and therefore intentionally open to other platforms and will enable the following core functions:

- Download the GTL attribute list;
- Upload of product descriptive attributes, based on the GTL attribute list;
- Upload and download of demand data and
- Exchange of additional, labor-intensive data.

GTS-Cat - the new technological infrastructure
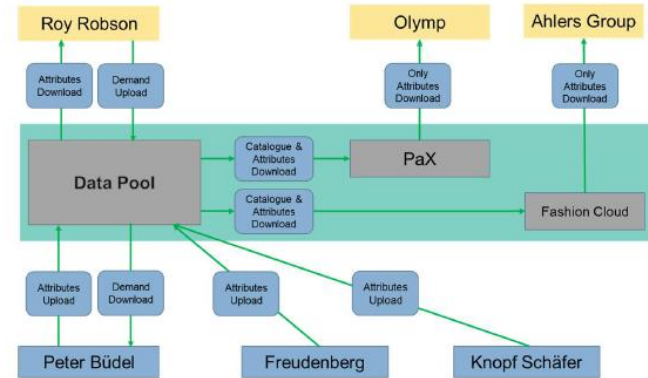
*Source: Final Update Pilot Project Data Exchange from 23.07.2020

Automated Data Exchange
GTS Data Model

Feedback GS1 - Master data

- As described, our recommendation in the fashion industry is to develop a basic master data model analogous to the Global Data Model (GDM) approach
  - Country Layer - e.g. Germany
  - Regional Layer - e.g. Europe
  - Global Layer - that is global
    - Analogous to Verified by GS1 with 7 attributes, i.e. small attribute sets could be the starting point, which can then be successively expanded.

- Master data, product descriptive attributes and different classifications are mapped in this data model, including documents, images, PDFs, etc., which is standard for all data service providers at different service levels today.

Feedback GS1 – transaction data

- For transaction data we refer to our feedback in the chapter Collaborative Planning & Extrapolation

- The market must decide whether sensitive trading conditions should be exchanged via a data pool in the future. Technically, GDSN data pools, for example, can already control this today, via a public and non-public area, or via a GLN.

Conclusion GS1

- We would like to continue and focus on the technologically independent approach of the Fashion Pilot and would like to pursue this in the upstream area as described, which we have documented in the github below.

- In this pilot data model the "addtional classification attribute set" is included, so that in the first step the link to different classifications and product group keys can be established.

- The goal should be similar to how the GPC is anchored in the GDSN data model so that further classifications can be mapped in a similar way.

- https://github.com/boernard/fashion-data-model

- The long-term vision is to develop connectors for these data models that can be used by the community.

5. Overall conclusion

Key success factors of the new approach Feedback Andreas Schneider

▪ **Scope of application:** From sheep to recycling - strictly "pull data" oriented.

We are firmly of the opinion that only if data is automated generated end-to-end, quasi as a by-product of IT-supported processes, then can today's data gaps be closed. If, for example, the water consumption in cotton production is not recorded automatically, the consumer cannot be informed at the POS about the total water consumption of his shirt - even with a lot of manual effort.

Pull data is important because consumer expectations of transparency can only be met with short response times. If a receiver of data from, say, 100 senders has to wait until the senders send the data, these consumer expectations cannot be met. Hence the strict focus on "pull data".

▪ **Automation:**

Replace manual processes for greater efficiency and speed. A lot of data is not captured today because manual generation is unaffordable. There is enormous potential here through automation of data generation and processing.

▪ **User-friendliness:**

High (through automation!) Only if the solutions are user-friendly and easy to operate will they find the necessary acceptance.

▪ **Migration:**

All major PDM / PLM / ERP providers could easily adapt the new standard: only if a standard can be easily integrated into existing system environments and the migration can be carried out by the users with reasonable effort will a new approach catch on.

Key success factors of the new approach
Feedback Andreas Schneider

- **Onboarding:** For the ready-to-use companies - simple and cost-effective. → see Migration
- **Management of the standard:** Development and maintenance can be simple and inexpensive (first approaches in building the necessary infrastructure are available). The new solution must be structurally simple, otherwise errors will occur, which will affect acceptance and distribution. The costs of the new solutions are decisive for the outcome of the war, since many players in the textile value-added chains are small or even very small companies that can only afford inexpensive and easy-to-implement solutions in the literal sense of the word.

  Therefore, this point is of great importance in the design of the new solution, including the careful consideration of strategic and operational partnerships, since in bad cases these may lead to pricing structures that prevent dissemination.
- **Technologie:** Currently 2 technologies (piloting), but open for further approaches. The approach using a dynamic data layer approach to retrieve people-intensive data across levels is completely new. This idea is so new that the technologies well suited for it are only just being developed. PaX with its marketplace approach tends to be a traditional data pool approach - but is available and will work according to the Global Textile Scheme in the near future. Data ports are a much more innovative approach and come much closer to the basic idea behind the project - but are still in development. In order to enable small companies with poor IT equipment to automate the processing of people-intensive data, the project community decided at the last moment to develop a neutral, open and own technical infrastructure called GTS-Cat - operated by Pranke GmbH in Karlsruhe.

Background of the application recommendation

The data exchange pilot project has been developed because innovative companies from all areas of the textile value supply chain have joined together with the common vision to look for new ways to exchange important data necessary for more efficiency in the future in an automated way and, after the project, to jointly build the necessary infrastructure including essential rules.

Everything that this group of innovators is currently preparing and building up only makes sense if many other companies - especially the many small companies - accept the idea, participate in a concrete way and share in the costs of the necessary structures.

Therefore, the document in progress is not so much a guideline or application recommendation, but rather a document that provides important insights into the background of the creation of these structures.

People do not like to move out of existing structures and habits - but that is exactly the point of the Global Textile Scheme.

Therefore, the document should clarify, make curious and give courage to get involved in new structures, which in the best understanding of agility are partly still in progress and not yet fully developed.

GS1 feedback after analysis and many discussions

- In the whole consideration of End2End we do not believe that one standard is the solution.
- There will be different data models and forms of data communication along the value chain, and they may be needed.
- In the process, i.e. from the time of an order, there is an Ident. This can be the customer, supplier or GTIN. It is clearly structured between the customer and the supplier
- The project and the current output of the activities around GTS is seamlessly integrated into the activities of GS1 US (Raw Material Guideline) and Pro Material. In all projects it is attempted to create and develop both the description of a material and a possible classification. We think this is good. However, we do not know whether it can be implemented so globally!
- The issues of sustainability, CSR, environment and recycling will not be solved through GTS. Much more movement is needed along the whole chain and legal requirements are needed!
- Our approach is described in the chapter Sustainability/CSR.

GS1 feedback after analysis and many discussions

- The big advantage of the GS1 numbering system is that it is unique in the whole supply chain, so that articles and companies can be assigned at every stage.
- The question should also be asked to what extent already existing structured data in the form of parts lists can be used, or whether it is absolutely necessary to establish a classification.
- In the downstream area both the GTIN and the most common EDI messages are still "state of the art" in the master data area both PRICAT and database models are used.

Further procedure:
- All the initiatives mentioned above are very good approaches but also only partial approaches. In general, structured data is very good, but the challenge with global standards is great and laborious.
- We want to use the GS1 network to find the best solutions and optimizations for the benefit of GS1 customers.
- Real partnership starts with open and equal communication; let us continue to work together on the digitalization of the supply chain.