THE USE OF UNECE MEAT AND POULTRY STANDARDS IN GLOBAL ELECTRONIC COMMERCE

EXECUTIVE SUMMARY AND RECOMMENDATIONS

GS1 (former names EAN International and the Uniform Code Council (UCC) are developing a global electronic commerce system known as the GS1 Global Data Synchronization Network (GDSN) with the support of major retailers and suppliers world-wide. Under development since the late 1990s, this system and its underlying standards are now maturing. Meat and poultry supply chain companies are now reviewing the system's data models and messages to validate that all perishable meat and poultry products can be properly traded using this system.

Since UNECE standards are the only known system that provides a single, globally endorsed, descriptive identification system for a broad range of meat and poultry products, these standards have a unique opportunity to support the trading of meat and poultry products in global electronic commerce systems such as the GDSN.

Electronic commerce occurs in the GDSN through a series of repeated phases. The business value of integrating UNECE standards into each of these phases is expected to be as follows:

SYNCHRONIZATION PHASE – HIGH VALUE: Use the UNECE SPECIES and PRODUCT/CUT/PART definitions and other selected UNECE attributes as part of a product classification system that resides in the GDSN Global Registry. This use of UNECE standards provides high value to the global supply chain because the classification information becomes permanently and globally associated with the Global Trade Item Number (GTIN), the default GDSN global trade item reference, and the information is available to all potential trading partners who synchronize trade item data in the GDSN. This paper focuses on the two best opportunities for integrating UNECE standards into global electronic classification systems: the UNSPSC and the GPC.

ORDER PHASE – LOW VALUE: Use the UNECE Purchaser Specified Option code as part of the electronic purchase order when ordering product. This use provides lower value to the global supply chain than the Synchronization Phase because the information is not globally associated with the GTIN and the information is exchanged only between specific trading partners for specific transactions. The use of the UNECE AI may still have high value to specific trading partners that elect to use it consistently.

SHIP PHASE – LOW VALUE: Use the GS1 APPLICATION IDENTIFIER (AI) and UNECE Purchaser Specified Option code represented as a Bar Code on the label of the trade item shipping case when product is shipped and received. This use provides lower value to the global supply chain because the information is not globally associated with the GTIN and the information may not be consistently present unless all suppliers agree to encode the UNECE AI

on the case end label. The UNECE AI may have high value to specific trading partners that elect to use it consistently.

The two best opportunities for integrating the UNECE standards for meat and poultry into global electronic classification systems are:

1. Modify the United Nations Standard Product and Service Code (UNSPSC) using the UNECE SPECIES and PRODUCT attributes;

2. Modify the GS1 Global Product Classification (GPC) Brick, Brick Attributes and Brick Attribute Values with UNECE attributes and code values;

Specific actions that UNECE can take to support electronic commerce are as follows:

Actions UNECE Can Take to Support Global E-Commerce

SHORT-TERM ACTIONS

1. Issue a broad set of official standards as quickly as possible that provide consistent treatment of meat and poultry product attributes. Each standard should be similar in appearance and be readily available to industry without charge over the Internet.

2. Work with UNSPSC to develop revised UNSPSC classifications that can be used as product code numbers in UNECE standards. Integrate this UNSPSC code numbering for all species as UNECE standards are revised, starting with the Porcine standard.

3. Contact industry trade organizations and leading companies in their states to raise awareness of the UNECE standards and consider including Internet links to the UNECE standards on their government or regional trade organization web sites.

4. Coordinate the expansion of UNSPSC numbering across all commodities defined by UNECE such as fruits and vegetables, dairy, eggs, and dried fruit.

LONG-TERM ACTIONS

5. Ensure that published standards provide a single, comprehensive, exhaustive set of PRODUCT/CUT/PART descriptions for all commercially available wholesale, retail, and variety trade items.

6. Agree that the identification of a product in the standard does not in any way limit a State's ability to restrict the trade of that product.

7. Define a process that would allow prompt, authoritative action to be taken on simple change requests regarding UNECE product codes should the UNECE standards be adopted by GPC. Since UNECE would remain custodian over the attribute and its code values, UNECE must be

prepared to take prompt action on non-controversial change requests referred to UNECE by the GS1 Global Standards Management Process (GSMP).

8. Focus efforts on industry-specific attributes such as meat cuts that can best be defined by the subject matter experts working on the UNECE standards. Review generic industry attributes and values established by GS1 GPC and suggest any additional industry-specific values not found and reuse the generic GPC Brick Attributes and Brick Attribute Values when these or similar attributes are used in the UNECE product codes.

I. ELECTRONIC COMMERCE AND GLOBAL STANDARDS

Emerging global electronic commerce systems are being developed to remove cost from the trading process and to assist the supply chain suppliers and retailers in analyzing spending trends and sources of similar products.

Trend analysis, i.e., understanding the spend and purchasing patterns in the supply chain, and product sourcing, i.e., identifying products by their functional or economic characteristics, are key functionalities expected in electronic commerce systems. These functions are accomplished through a structured, objective, and complete classification system for all products in the electronic commerce system.

Because of the board range of industry sectors affected and the need for industry-specific involvement in defining useful product classification system, most product classification systems are immature and need direct industry review and revision. Both GS1 and the meat and poultry industry members agree that the meat and poultry product classification attributes and values proposed for the GDSN need to be validated by industry members.

The meat and poultry industry is interested in a comprehensive, objective system for classifying all wholesale and retail trade items in the global supply chain.

The UNECE has been working at the international level to actively develop descriptive meat and poultry product standards that allow global trading partners to precisely describe all product and packaging requirements as part of each purchase agreement. UNECE is interested in leveraging this work to support emerging electronic commerce systems such as the GDSN.

II. GLOBAL COMMERCE OPPORTUNITY WITH UNSPSC

Background on the UNSPSC

The United Nations Standard Product and Service Code (UNSPSC) started in 1998 as a merger between the United Nations Common Coding System and the Dun and Bradstreet's Standard Product and Services Code system.

The code is the intellectual property of the United Nations Development Programme (UNDP). In 2003, UNDP contracted with the GS1 US to be the code manager of the UNSPSC.

UNSPSC is based on a four-tier hierarchy of product groupings defined as: Segment, Family, Class, and Commodity.

UNSPSC is available free to the public for use and printing with no copyright restrictions.

The UNSPSC provides multi-language support for a number of languages, including English, French, German, Spanish, Italian, Portuguese, Chinese (Simplified), Chinese (Traditional), Korean, and Japanese. Additional language support is in progress.

The UNSPSC provides a high-level categorization of a broad range of products and services from a broad range of diverse industries. The code is intended to provide a standard means of supporting information-system-based spend and purchasing analysis.

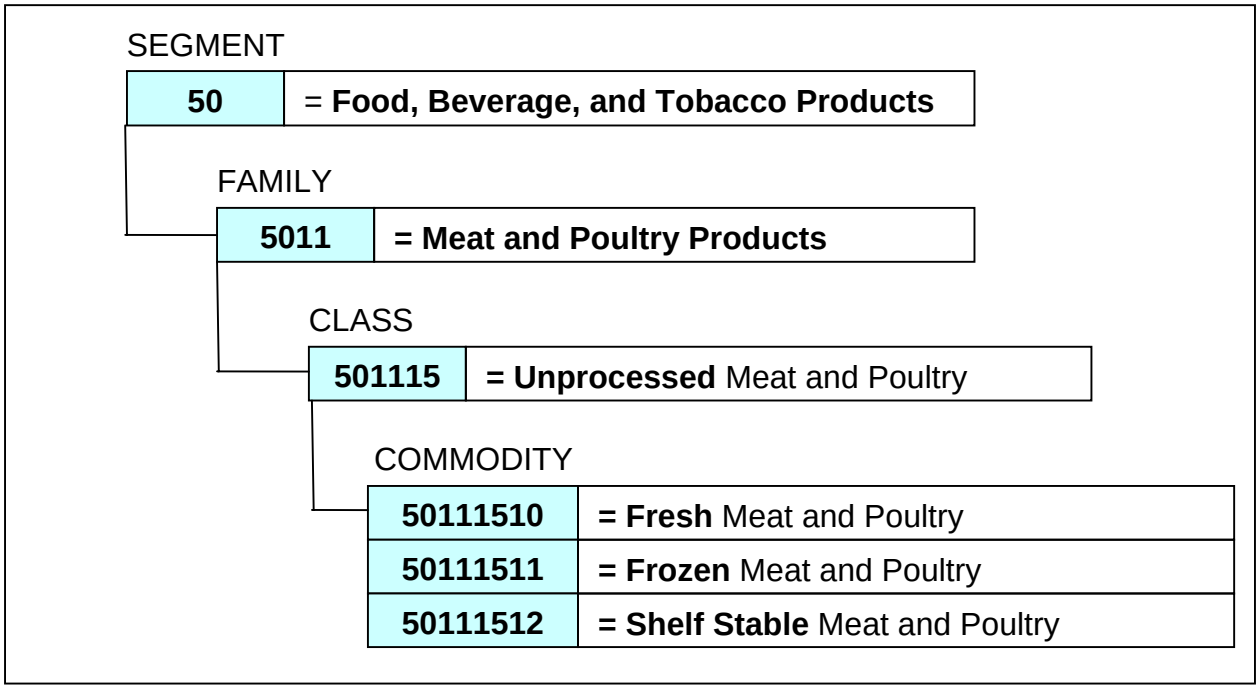
UNSPSC Opportunity

Although the UNSPSC has been used by internal company information systems to assess company-spending patterns, it has not yet been used as a classification component of a global electronic trading system. However, this process is now underway.

GS1 is interested in aligning the UNSPSC code with the high-level GPC classification codes at the Brick level and above. This would leverage the established product classes of the UNSPSC for the benefit of the GDSN. GS1 is interested in industry expressions of support if industries believe this integration would be beneficial.

The current UNSPSC code for unprocessed meat and poultry products is as follows:

TABLE 3: EXISTING UNSPSC PRODUCT HIERARCHY FOR UNPROCESSED MEAT AND POULTRY PRODUCTS



The UNSPSC code has not been recently reviewed by the meat and poultry supply chain, and UNSPSC welcomes such a review and is prepared to respond to change requests. mpXML, a non-profit meat and poultry industry data standards body in North America, is planning on evaluating the product classification code systems in 2005.

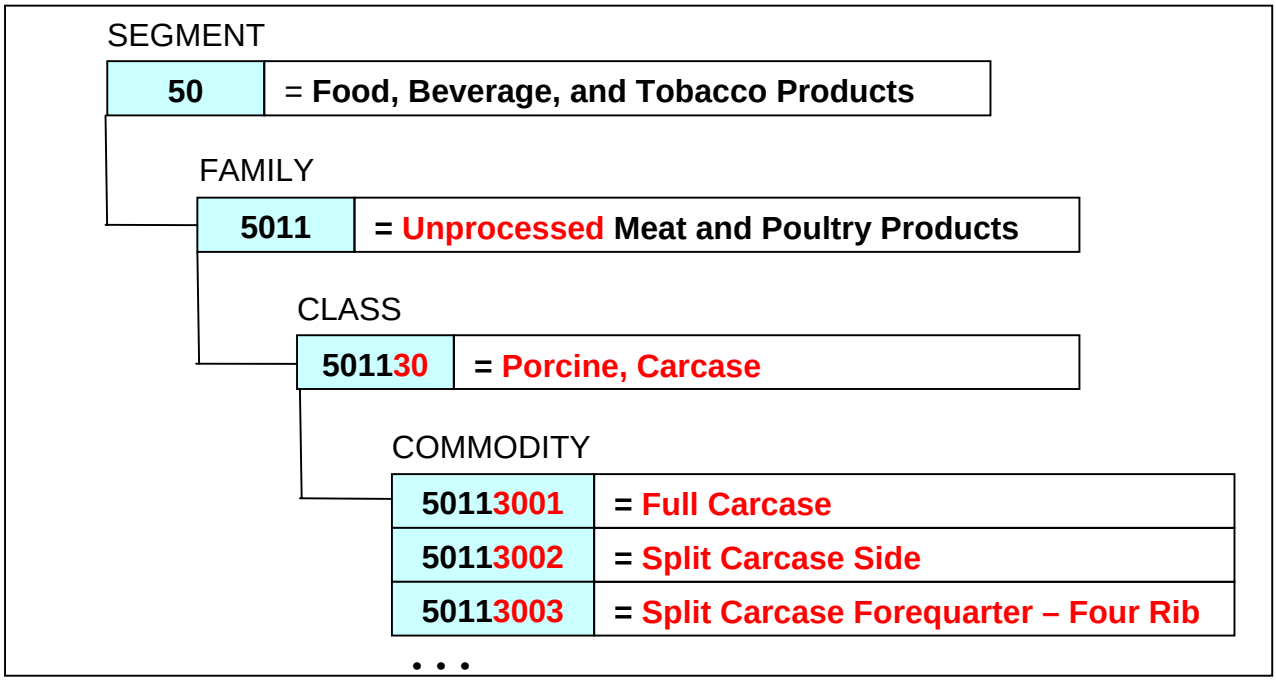
UNECE attributes and values that are useful at the highest levels of classification could be used to update existing code at the Class and Commodity levels.

The primary opportunity for reuse of UNECE standards in the UNSPSC would likely be the following:

OPPORTUNITY	USE OF UNECE	REMARK
UNSPSC Class and Commodity codes do not use species or meat cut information to group products	UNECE SPECIES codes could be integrated with the Processed/ Unprocessed differentiator of the existing UNSPSC Class codes so that products below this level are classified by both level of processing and by species. UNECE PRODUCT/CUT/ PART codes could be used in place of the existing UNSPSC Commodity codes so that products are grouped by CUT differences rather than by refrigeration.	Industry needs to determine whether their needs to be a high level grouping that includes all species of processed or unprocessed meat and poultry. If needed, the proposed integration of SPECIES with the existing Processed/ Unprocessed Class values would not be workable. Industry needs to determine whether product groupings by CUT are more important than Frozen versus fresh product differences.

If implemented, the revised UNSPSC code would appear as follows, with changes noted in red text:

TABLE 4: UNSPSC PRODUCT HIERARCHY CONCEPT FOR UNPROCESSED MEAT AND POULTRY USING UNECE ATTRIBUTES



UNECE Actions for integrating with UNSPSC

1. If the UNECE standards are to be used in global electronic trading systems, UNECE must provide a single, comprehensive set of product cut and part descriptions for all commercial trade items. This set of descriptions must include all wholesale, retail, and variety meats regardless of that product's acceptability for trade in any given Member State.

2. UNECE Member States need to agree that the identification of a product does not limit a State's ability to restrict the trade of that product, but rather it enhances a State's ability to limit or prohibit trade of that product by providing a clear description and unique reference to the product to be restricted. Any gap in UNECE coding for commercially traded products will reduce the utility of the UNECE PRODUCT code in a global classification system.

3. Should the UNECE Standards be adopted into the UNSPSC, UNECE will need to consider the establishment of a committee of experts that can act with the UNECE's authority to approve simple additions, modifications, and deletions to the attribute values between full meetings of the UNECE. Changes approved by this committee could be subject to final review and approval by the full UNECE body. Complex change requests that could not be acted upon promptly by this committee would be researched and introduced by the committee at the next full UNECE meeting. This would allow the UNECE to act as promptly as possible on industry change requests referred by UNSPSC. The ability of UNECE to act promptly on simple, non-controversial changes will be a key enabler to the use of its standards in real-time electronic trading systems.

III. GLOBAL COMMERCE OPPORTUNITY WITH GPC

Background on the GPC

Global Product Classification (GPC) was designed as a separate GS1 initiative to support product classification in the Global Data Synchronization Network (GDSN) and in category management, as well as in buying and selling support. The GS1 user community owns the GPC Schema.

Development of the GPC began in 2003, and high-level classification codes, called "Bricks," and associated Brick Attributes and Brick Attribute Values have not yet been defined for all industries, however by end 2005 almost all the items sold in a typical hypermarket or a shopping mall will have classified with GPC.

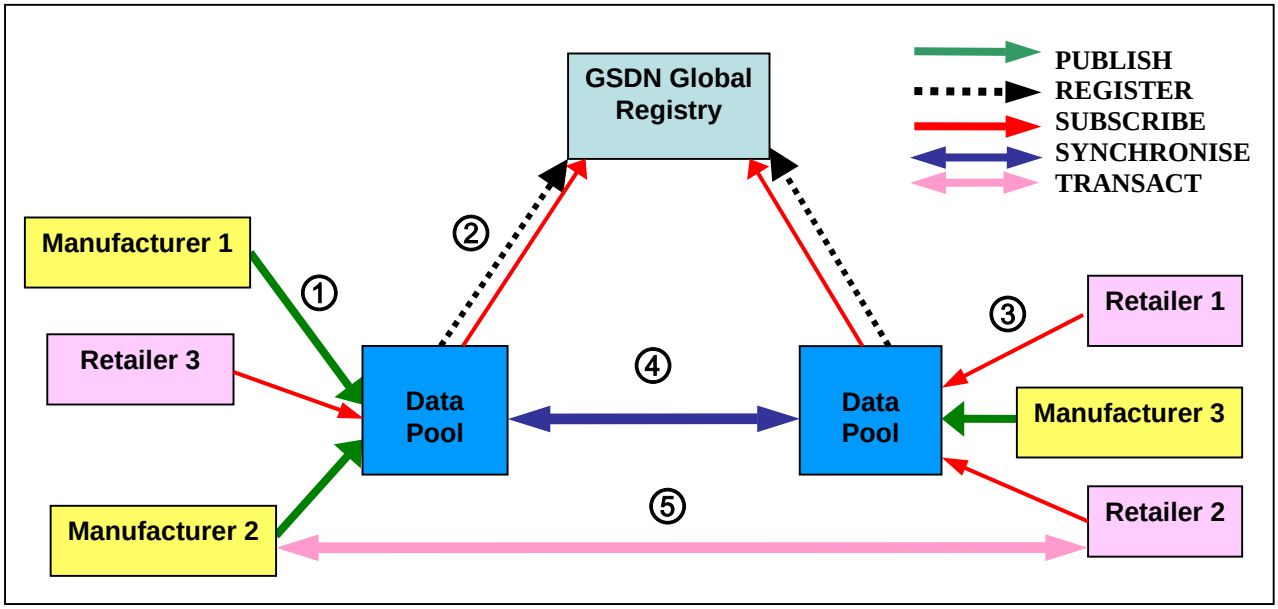
In the case of meat and poultry, Bricks, Brick Attributes, and Brick Attribute Values have been approved as the classification standard for GDSN, however the GPC is continuously soliciting broader industry review of the codes and names which be refined based on further industry input.

To understand the GPC opportunity, a cursory understanding of the GDSN structure and data synchronization is necessary.

Overview of the GDSN

The Global Data Synchronization Network (GDSN) is a network based on GS1 standards that allows party and product information in internal supplier and retailer company information systems to be consistent on a global level. Consistent use and agreement on party and trade item information is a critical first step towards global electronic commerce. The GDSN process for synchronizing information about party and trade items works as follows:

TABLE 5: OVERVIEW OF GDSN STRUCTURE AND INFORMATION FLOWS



STEP 1. Suppliers publish their available trade items to a data pool service provider such as Transora, ITrade Network, UCCNet, or Global Exchange Services.

STEP 2. The data pool registers the published trade items with the GDSN Global Registry with selected identification and classification keys about the trade item.

STEP 3. Retailers subscribe to the trade items that they are interested in. They can subscribe by Global Trade Item Number (GTIN), Global Location Number (GLN), Target Market and GPC Brick code or any combination of those 4 fields except GTIN and GPC Brick Code together which are mutually exclusive.

STEP 4. The GDSN Global Registry notifies the supplier's data pool of the retailer's subscription interest and the supplier data pool then synchronizes the retailer's data pool every time a change is made by the supplier to that trade item and the retailer data pool notifies the retailer to update their local information systems with the revised information.

STEP 5. Retailers and suppliers directly exchange purchase orders, shipping information, invoices, and payments for each trading transaction.

Companies gain access to the GS1 GDSN system through membership fees based on company turnover. Because of the evolving nature of the GDSN, current GDSN member companies are typically large- and mid-size retailers and suppliers that can afford to invest staff time in testing and developing the operational capabilities of the GDSN.

Overview of GPC

The GDSN data model for the trade item includes a subset of attributes known collectively as Global Data Dictionary (GDD). Those attributes are the communication templates in transactions for describing the propertries of the individual items, like Brand Name, Manufacturer, Weight, Price, Best Before Date etc.

The classification system used in GDSN is the Global Product Classification (GPC).

GPC is built on a foundation of rules, balanced with reality (what is required by the industry).

GPC is four-tier system (Segment, Family, Class and Brick). Brick is described further with Brick Attributes and Brick Attribute Values to support the granularity requirements of the trade. GPC Brick Attributes are not part of the trade item model. There is no overlap between GPC and GDD they are maintained in two different databases separately.

Classification with GPC is the act of saying: This product (identified by a GTIN) assigned to a particular Brick, this Brick has hierarchy components (Segment, Family and Class), and this Brick can be described with a Brick Attribute set and the associated Brick Attribute Values.

A GPC Brick is a group of like products that share the same Brick Attribute set.
A list of rules has been used across industry sectors. They should be used where they are relevant.
The current GPC Brick Rules fare as follows:

- Broad area of differentiation,
- Broad area of application
- Products serve a common purpose and use
- Processed to similar methods
- Products are used and applied in a similar manner
- Products are of a similar form and material
- Split between powered vs. manual
- Replacement parts will be classified in on Brick per Class
- Products stored and preserved in a similar way
- Application and function

Different Bricks can use different Brick Attributes, although a Brick Attribute can be used by more than one Brick. Each Brick can have only one Brick Attribute Value for each Brick Attribute that is selected from the set of all available Brick Attribute Values. Typically there are 4-7 Brick Attributes associated with one Brick.

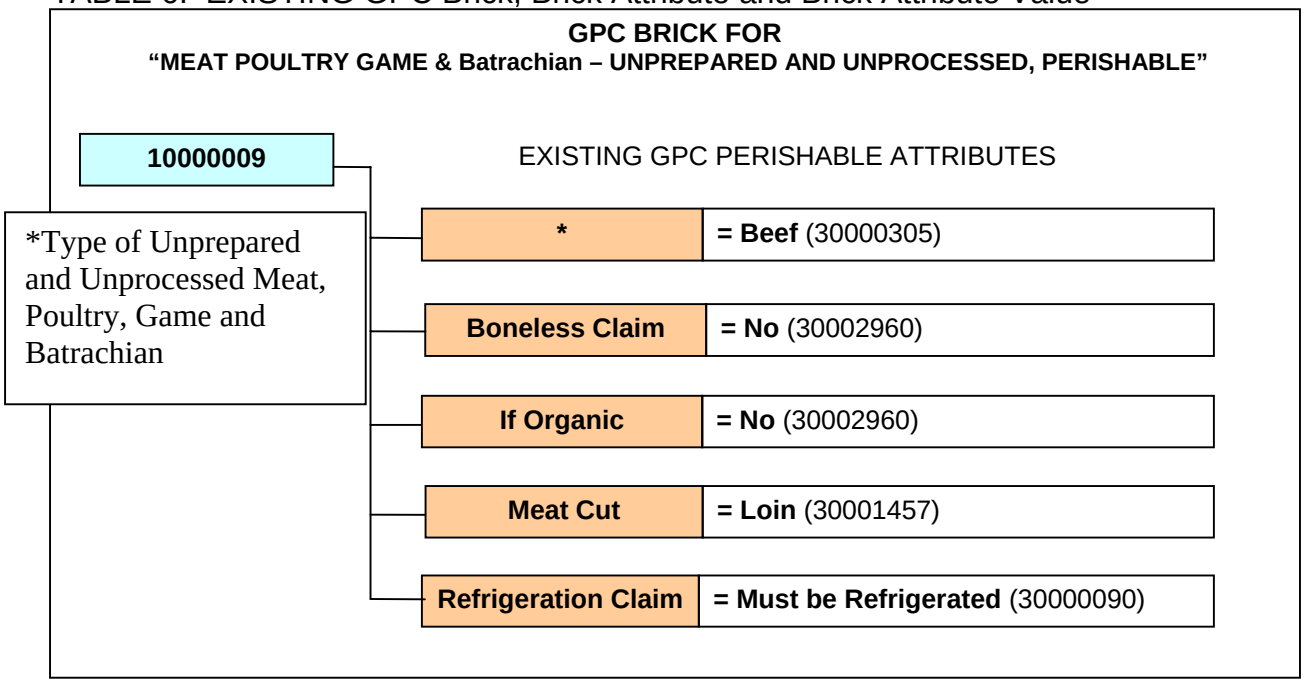
Industry can recommend product groupings at the Brick level and above. Industry can propose new Brick Attributes for Bricks and new Brick Attribute Values for Brick Attributes. , however the GPC Rules will be applied for all the elements of the GPC. All the GPC codes are 8-digit non-negative integers
As currently defined, all GPC Brick Attribute Values defined are available for selection when a supplier selects one value for each GPC Brick Attribute within a Brick. As industry-specific

attribute values are added, the set of attributes will grow increasingly, however the consistent application of the relevant rules will avoid the unwield.proliferation. The use of specific Brick Attribute Values is restricted to specific Brick Attributes

GPC Brick Attributes will be stored in the Data Pools and probably in the GS1 Global Registry, making them readily available for product classification, category analysis, and product sourcing. The GPC will translate all of its attributes and values into all languages commonly used in global commerce.

The current GPC Brick, Brick Attribute and Brick Attribute Value lists for frozen and perishable meat and poultry are attached as Appendix A.

TABLE 6: EXISTING GPC Brick, Brick Attribute and Brick Attribute Value



GPC Segment: 50000000 Food Beverage and Tobacco
GPC Family: 50110000 Meat, Poultry, Game and Batrachian
GPC Class: 50111500 Meat, Poultry, Game and Batrachian-Unprepared and Unprocessed.

Presently, some of the GPC Brick Attributes are used across meat and poultry Bricks. Brick Attribute sets vary to accommodate differences between unprocessed and processed product groups.

GPC Opportunity

There is an interest of GS1 and industry in aligning the UNSPSC codes with the Bricks of the GPC. The UNSPSC codes as proposed here would include the UNECE SPECIES and MEAT CUT descriptions. With the use of the UNECE SPECIES and MEAT CUT attributes in place for the GPC Brick Attributes could be linked to each Brick.

UNECE content can be integrated into the GPC Brick Attributes in two ways:

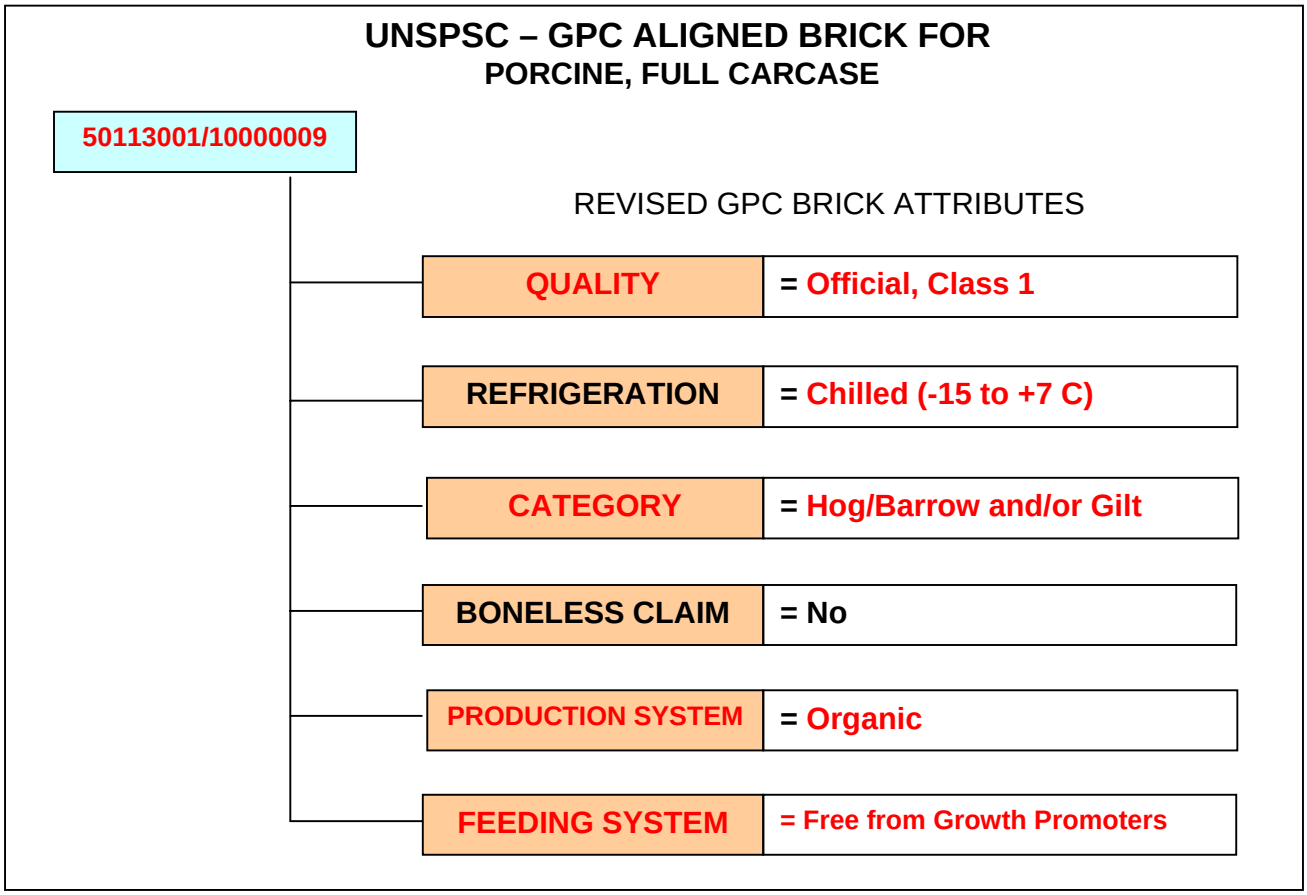
1) through the creation of new GPC Brick Attributes based on content used in the UNECE product code; or
2) as new values for existing GPC Brick Attributes. The following table suggests how UNECE content might be integrated into GPC Attributes:

UNECE ATTRIBUTE	USE IN GPC	REMARK
QUALITY	New attribute	Allows products to be distinguished by quality grade such as "Prime" and "Choice" beef in the United States
REFRIGERATION	Revise GPC values for REFRIGERATION	Adds precisely defined values for Chilled, Frozen, Deep Frozen, and Individually Quick Frozen
CATEGORY	New attribute	Allows products to be distinguished by age or sex of animal
BONE[#]	Replace BONELESS	Adds value for "Partially Boneless"
SKIN[#]	New attribute	Allows poultry products with skin-on and skin-off variations to be defined
PRODUCTION SYSTEM	Replaces IF ORGANIC	Allows products to be grouped precisely by claim such as "Organic" or "Free Range"
FEEDING SYSTEM	New attribute	Allows products to be distinguished as free from fish meal, growth promoters, and genetically modified organisms
SLAUGHTER SYSTEM	New attribute	Allows products to be distinguished as Kosher and Halal.

[#] *NOTE: Optionally BONE and SKIN could be appended to the PRODUCT code. This would distinguish products that can be both boneless and bone-in at the product level, but if not a discrete attribute the ability to classify and sort products as boneless or bone-in would be limited.*

Using selected UNECE attributes, the revised GPC code would appear as follows, with changes noted in red text:

TABLE 8: GPC BRICK CONCEPT USING UNECE ATTRIBUTES



GDSN Trade Item Document Opportunity

The GPC schema is available in different formats (PDF, excel and XML) and maintained by GS1 that defines all the GPC components including the hierarchy, the Brick, Brick Attributes and Brick Atribute Values.
The Trade Item Document as an XML schema is a diverse set of other individual trade item attributes to support a broad array of products from all industry sectors, however Trade Item document defines only the placeholders for GPC but not the GPC schema itself.

The Trade Item Document is still undergoing active revision, but it is being used as a key data model in the GDSN.

Industry and standards groups like UNECE should be familiar with the generic commerce attributes available through the GSDN data pools and focus their efforts first on the definition of industry-specific product attributes and values. Any references in UNECE standards to generic industry attributes should take advantage of existing GS1 definitions and reuse these whenever possible.

UNECE Actions for integrating with GPC:

1. UNECE should compare the attributes and values used in the UNECE standards for packaging and any other generic industry attributes with those defined for similar Brick Attributes and Brick Attribute Values in the GPC. If the GPC components meet industry requirements, UNECE should adopt the GDSN Trade Item values for individual product description and attributes in lieu of UNECE values as well as the GPC components. If minor revisions are necessary to the GPC values to meet industry needs, UNECE should submit change requests to the GS1 that detail the required changes.

2. Ensure that attribute code values are as consistent as possible for all species (e.g., QUALITY for Bovine refers to the source of quality standards while QUALITY for Chicken refers to the designation of the quality level (Class 1, Class 2, etc.) for that product.