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GS1 Global Meat and Poultry Traceability Guideline, Part 2. Beef Supply Chain

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1.0	Nov 2015	D.Buckley & Des Bowler	GS1 branding updated. EU examples removed, barcode examples replaced and text clarified.

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1 Introduction

There are different beef supply chain traceability models depending on the production method utilised along the supply chain.

For a glossary of terms used in the GS1 global meat and poultry traceability guideline, please click on this link:

[GS1 Global Meat and Poultry Traceability Guideline, Glossary](#)

For additional information on the GS1 global meat and poultry traceability guideline, please click on this link:

[GS1 Made Easy – Global Meat and Poultry Traceability Guideline Companion Document](#)

1.1 Traceability along the beef supply chain

Trading partners can fulfil one or more roles in the beef supply chain. A comprehensive table of supply chain roles appears in the appendix.

The beef supply chain model below shows best practice models for the application of GS1 System for livestock traceability, while complying with common regulatory requirements.

Specific markets and/or customers may have additional traceability requirements that must be fulfilled. Refer to your local GS1 Member Organisation's Meat and Poultry Traceability Guideline for local market traceability requirements. A complete list of local GS1 Member Organisations is available on the GS1 global website at www.gs1.org

The key traceability elements include:

For livestock as trade items:

- Individual or mob animal identifier
- Cattle production information such as age (date of birth or month/year of birth), region or country of birth, fattening and finishing
- Feed (grain and supplements) batch/lot and quality identification through supply documentation for feed supplements
- Livestock mob movement declaration showing property consigning the livestock
- Animal treatment
- All of the above information can be sent as an electronic message using GS1 eCOM standards such as the EANCOM Despatch Advice Message. (Note: In the U.S. the ANSI X.12 message ASN (Advanced Shipping Notice) is used for these purposes).

For Carcases as trade items not scanned in general retail at point-of-sale:

- Where the carcass is considered a trade item it is uniquely identified using the of Application Identifier AI (01) GTIN (Global Trade Item Number) and AI (10) Batch or Lot Number or AI (21) Serial Number, linking the carcass to the individual animal ID
- Where the carcass is treated as a logistic unit it is uniquely identified using an SSCC (Serial Shipping Container Code) linking the carcass to the individual animal ID, or animal group
- Date, time, batch/lot, property or properties that supply the livestock, market eligibility as well as weight and quality attributes (e.g. carcass grade)
- Government or authority issued registration Number of slaughterhouse/de-boning facility
- Where de-boning occurs in a different location than the slaughter, information needs to be passed from the slaughter facility to de-boning facility. This information would generally require the use of a regulatory transfer document for the consignment
- All of the above information can be sent as an electronic message using GS1 eCOM standards such as the EANCOM Despatch Advice Message. (Note: In the U.S. the ANSI X.12 message ASN (Advanced Shipping Notice) is used for these purposes).

For Cartons/Cases as trade items not scanned in general retail at Point-of-sale:

- Carton/case product, identified with GTIN + batch/lot or a GTIN + Serial number, and should be linked to a carcass ticket for boning batch/lot, date and time or to the GTIN and Serial number of the Carcass ticket. For some markets individual animal identification may also be required
- Carton/case labels need to comply with country, region and market regulations as well as customer requirements. All of this information should appear in barcode format (GS1-128 barcode) and in human readable format
- Meat transfer certificates/health certificates or equivalent regulatory transfer documents are generally required for consignments
- All of the above information can be sent as an electronic message using GS1 eCOM standards such as the EANCOM Despatch Advice Message detailing all carton/case identification as well as product attributes. (Note: In the U.S. the ANSI X.12 message ASN (Advanced Shipping Notice) is used for these purposes).

For Variable Measure Trade Items scanned in general retail at Point-of-sale:

- Variable measure trade items that are scanned at Point-of-sale have two main GS1 applications that are available. In some instances due to trading partners (e.g. Retailer) requirements both options may be applied to the one variable measure fresh food trade item. **Before implementation of any GS1 applications for variable measure trade items that are scanned at Point-of-sale mutual agreement should be obtained between the trading partners.**
- The two main GS1 applications for variable measure fresh food trade items are:
 - Variable Measure Fresh Food Trade Items using a GTIN and additional attributes encoded with GS1 DataBar Expanded or Expanded Stacked.
 - Variable Measure Trade Items using a Restricted Circulation Number (RCN) encoded with the EAN/UPC symbology family.

Trade items can be summarised as shown in the table below:

Table 1-1 Trade Item package summary

Package Types	Definition	Product Examples
Chilled carcass or carcass portion	Whole or carcass piece that is supplied by a processor to an exporter, importer, value-adder, distributor, wholesaler, food service operator or retailer. Product is most often variable weight. Some product may be wrapped or have other outer covering method.	Fresh beef carcass. Fresh beef leg.
Frozen carcass or carcass portion	Whole or carcass piece that is supplied by a processor to an exporter, importer, value-adder, distributor, wholesaler, food service operator or retailer. Product is most often variable weight. Some product may be wrapped or have other outer covering method.	Whole beef quarters.
Catch/fixed weight carton/case fresh or frozen product	Variable weight carton/case product, where there is tight tolerance for minimum and maximum weight range. This may be packed as layer packed, vacuum packed, wrapped or other methods	22.7kg / 50lb frozen 80cl beef trim carton/case. Vacuum packed primal cuts. Processed meats.
Variable weight carton/case fresh or frozen product	Variable weight carton/case product, where there is large tolerance for minimum and maximum weight range. This may be packed as layer packed, vacuum packed, wrapped or other methods	13.6kg / 30lb chilled beef Tenderloin carton/case. Vacuum packed primal cuts. Processed meats.

Package Types	Definition	Product Examples
Fixed weight bulk fresh or frozen product	Fixed weight bulk pack, typically a poly lined sided and lidded pallet sized container holding 1000kg/2200lb of product.	1000kg / 2200lb frozen 80cl beef trim.

Most trade items have a trading partner (processor) allocated GTIN (Global Trade Item Number). Where the trading partner has multiple processing facilities the same GTIN is often used for the same product, irrespective of the processing facility. To ensure traceability is maintained to the specific processing facilities the trading partner utilises Application Identifiers with the GTIN to maintain traceability back to the respective processing facility.

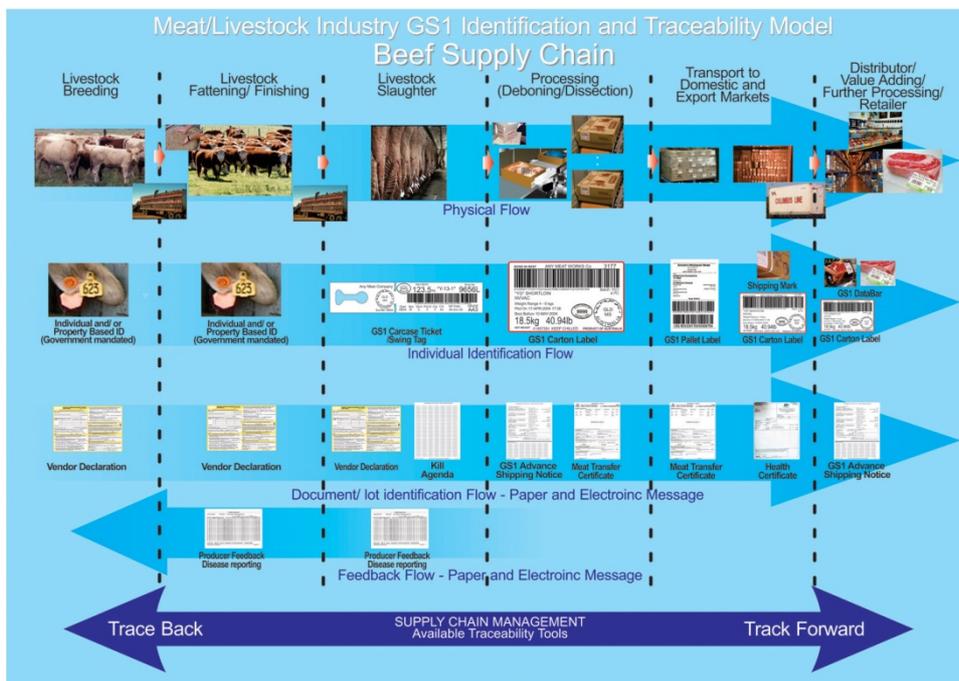
Where product is being packed for a specific third party such as a product brand owner, the product brand owner may allocate the GTIN to be used. This is likely to include utilising Application Identifiers with the GTIN to maintain traceability back to the respective processing facility. This is used to differentiate which processing facility the brand owner has used.

If a trading partner further processes and packages a product in the supply chain, such as the case with store-processed product, then that trading partner becomes the manufacturer and is responsible for assigning a GTIN or item reference and traceability attributes. This may be achieved by using a combination of human readable and scannable product information. This information should also be stored for future retrieval, if necessary.

It should be noted that governments and national trading partners may require additional business information to appear on the trade item labels and it is recommended that trading partners work closely with local regulatory authorities to ensure compliance.

1.1.1 Beef supply chain model

Figure 1-1 Beef supply chain traceability model, in one or more countries



1.2 How are companies in the beef supply chain identified uniquely?

The GLN makes possible the unique and unambiguous identification of physical locations and parties used in the supply chain. Identification in this manner is a prerequisite to efficient Electronic Commerce between trading partners (e.g., Electronic Data Interchange (EDI), electronic catalogues).

The GLN is a 13-digit number created by a GS1 Company Prefix, a Location Reference and a Check Digit.

Each company or organisation that is a member of a GS1 Member Organisation may use GLNs to identify locations under the terms of its membership.

For exported as well as domestic beef, there may be government and industry registries that list establishments that are permitted to process for local consumption, export or import beef. The use of GLN supplements but does not replace establishment numbers.

2 Carcass Ticketing

The barcode symbology used in the beef industry for Carcass ticket/label is GS1-128 barcode.

The barcode symbology can represent attribute information such as net weight, slaughter date and serial numbers in a standard format. This ensures that the attribute information encoded by one trading partner can also be scanned and interpreted by any other trading partner in the supply chain.

Figure 2-1 Beef carcass ticket/label example



NOTE: Example only - Review importing country regulations and contact market representatives for current labelling criteria.

Table 2-1 Minimum beef carcass barcode information required represented by application identifiers (AIs)

AI	Example Data & Format	Attribute Information
(01)	99312345678900	Global Trade Item Number (GTIN)
(310n)	001235	Net Weight – Kilograms
(7007) Historical (11) has been used.	150310	Harvest Date (YYMMDD) Referred to as the “kill” or “slaughter” date in the meat industry Historical the AI 11 has been used for “kill” or “slaughter” date.
(21)	1249656L	Serial Number

2.1.1 Variable Measure Trade Items Not Scanned in General Retail at Point-of-Sale (Carton/Case Labelling)

Trade items in the meat and poultry industry are often variable measure because the production process results in a wide range of weights for the same product or because the products are created to meet a special order that states a specific quantity or weight.

Domestic and importing country regulations, as well as specific market regulations, may specify certain human readable date and other information to be printed on labels. These requirements override any GS1 specified requirements detailed in this document.

The barcode symbology used in the meat industry for variable measure trade items not scanned at Point-of-sale carton/case labels is GS1-128. The GS1-128 barcode allows secondary attribute information over and above primary global trade item identification to be represented in the barcode.

The barcode symbology can also represent attribute information such as batch or lot numbers, serial numbers, expiry dates and weight in a standard format. This ensures that the attribute information

encoded by one trading partner can also be scanned and interpreted by any other trading partner in the supply chain.

Additional country, market or customer requirements may be applicable in certain circumstances. Contact the applicable representatives in those markets to determine the current requirements.

Refer to your local GS1 Member Organisation's Meat and Poultry Traceability Guideline for local country or market traceability requirements. A complete list of local GS1 Member Organisations is available on the GS1 global website at www.gs1.org

Figure 2-2 Trade item beef carton/Case label example

BONELESS BEEF PRODUCT OF AUSTRALIA *YG* RUMP CAP PUNTA DI SOTTOFESA GF-HQB IW/VAC (EU) ITALY	ANY MEAT WORKS Co LONG FLAT ROAD ANYTOWN NSW	32307
	ORIGIN: AUSTRALIA SLAUGHTERED IN AUSTRALIA: 9999 CUTTING IN AUSTRALIA: 9999	
(01) 9 939999012345 0 (3101) 000262 (13) 150310 (21) 41457354		
HIGH QUALITY BEEF MC:1B-3 FC: 0-3		
PKD ON 10-MAR-2015 17:26 USE BY: 21-APR-2015		
26.2kg NET WEIGHT	KEEP REFRIGERATED	Batch: 4487 S/N 41457354

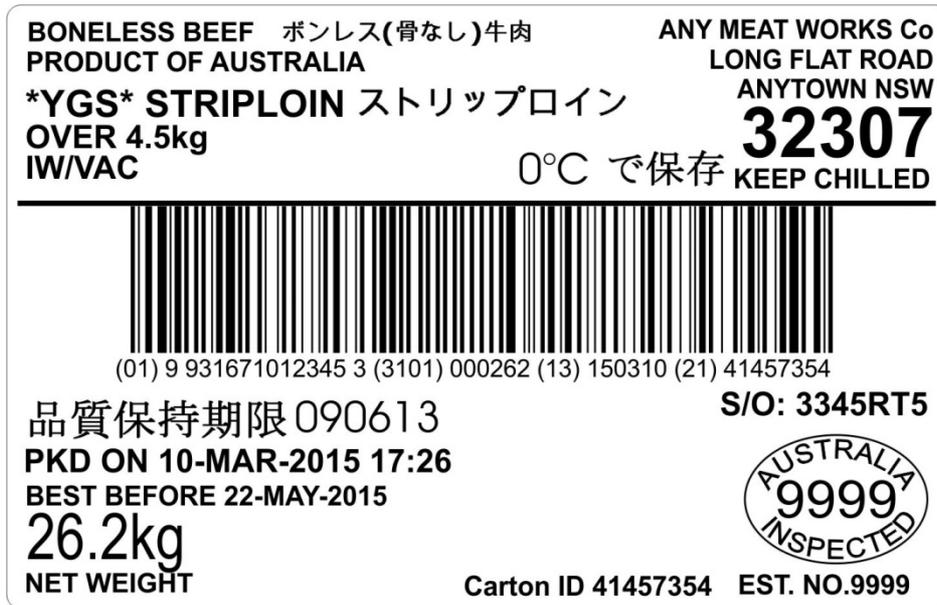
NOTE: Example only - Review importing country regulations and contact market representatives for current labelling criteria.

Figure 2-3 Trade item beef carton/Case label example

BONELESS BEEF ORGANIC PRODUCT OF AUSTRALIA *YP - TRI/TB* TOP SIRLOIN 100% GRASS FED IW/VAC NASAA 41339P NASAA Certified Organic 4139P NOP	ANY MEAT WORKS Co LONG FLAT ROAD ANYTOWN NSW	41060
	KEEP REFRIGERATED	3 PC
(01) 99333701110483(3102)001470(13)150310(21)001405		
PKD ON 10-MAR-2015 07:24 SLAUGHTERED ON 7-MAR-2015		
14.7kg 32.4lb NET WEIGHT Step 4: Pasture Centered www.globalanimalpartnership.org		

NOTE: Example only - Review importing country regulations and contact market representatives for current labelling criteria.

Figure 2-4 Trade item beef carton/case label example



NOTE: Example only - Review importing country regulations and contact market representatives for current labelling criteria.

Table 2-2 Figure 2 5 – Minimum beef carton/case barcode information required represented by application identifiers (AIs)

AI	Example Data & Format	Attribute Information
(01)	99316710123453	Global Trade Item Number (GTIN)
(310n)	000262	Net Weight – Kilograms
(13)	150310	Packaging Date (YYMMDD) Referred to as the date the beef is taken off the carcass or processed.
(21)	41457354	Serial Number

3 Variable Measure Trade Items Scanned in General Retail at POS

Variable measure trade items that are scanned at Point-of-sale have two main GS1 applications that are available. In some instances due to trading partners (e.g. Retailer) requirements both options may be applied to the one variable measure fresh food trade item. **Before implementation of any GS1 applications for variable measure trade items that are scanned at Point-of-sale mutual agreement should be obtained between the trading partners.**

The two main GS1 applications for variable measure fresh food trade items are:

- Variable Measure Fresh Food Trade Items using a GTIN and additional attributes encoded with GS1 DataBar Expanded or Expanded Stacked.
- Variable Measure Trade Items using a Restricted Circulation Number (RCN) encoded with the EAN/UPC symbology family.

Trading partners should ensure that retailer labelling requirements are known and understood when following this guideline. Where a retailer specified requirement contradicts this guideline the retailer requirement should be followed.



Refer to your local GS1 Member Organisation's Meat and Poultry Traceability Guideline for local market retail traceability requirements. A complete list of local GS1 Member Organisations is available on the GS1 global website at www.gs1.org

3.1 Where can I get additional help?

Users are encouraged to contact their local GS1 Member Organisation who can provide guidance on the use of GS1 keys and local data messaging practices. A complete list of GS1 Member Organisations is available on the GS1 global website at www.gs1.org

A APPENDIX – Roles in the Supply Chain

Roles in the Supply Chain

The table below provides a list of the primary and support roles found in the beef supply chain and, if covered, where traceability guidance is provided in this document for each role.

Role	Activities	Alias / Examples
Primary Roles		
Livestock producer – breeder	<ul style="list-style-type: none"> ■ Source feed ■ Breed and ship 	Suppliers of live cattle for raising/finishing
Livestock producer – grower/finisher	<ul style="list-style-type: none"> ■ Source feed ■ Source animals ■ Raise, harvest and ship 	Suppliers of live cattle for processing
Meat and poultry processors	<ul style="list-style-type: none"> ■ Slaughter ■ Process ■ Package ■ Label ■ Store ■ Sell ■ Ship carton/case, carcass and bulk product 	Processor/meatpacker, supplier
Exporter/importer/wholesaler/trader	<ul style="list-style-type: none"> ■ Buy and sell ■ Export and import carton/case and carcass product (May or may not physically handle the product) 	Traders, distributor, supplier
Retail store	<ul style="list-style-type: none"> ■ Receive ■ Store ■ Process ■ Package/Label ■ Display ■ Sell to Consumer 	Grocery store, supermarket, grocery chains, shop, butcher store.
Retail distributor or wholesaler	<ul style="list-style-type: none"> ■ Receive ■ Store ■ Sell ■ Ship 	Retail distribution centre, distribution centre, import/export warehouses, wholesaler warehouses
Support Roles		
Feed stuff supplier	<ul style="list-style-type: none"> ■ Produce and ship 	Suppliers of feed for animals destined for the meat industry Traceability records for feed supplements and other raw ingredients needs to be maintained
Medical supplier	<ul style="list-style-type: none"> ■ Produce and ship 	Suppliers of medicines, medical supplies and medical equipment for veterinarians and producers of livestock Traceability records for medicines needs to be maintained



Packing material supplier	<ul style="list-style-type: none">Produce and ship	Suppliers of packing material (cartons, cases, crates, bags, boxes, labels, bins, clamshells, etc.)
Ingredient supplier	<ul style="list-style-type: none">Produce and ship	Feed manufacturers Feed supplement manufactures
Third party logistics service provider	<ul style="list-style-type: none">TransportStore	Truck / rail / ship / air
Regulatory organisations	<ul style="list-style-type: none">Compliance oversight	Customs, inspection, and grading agencies