final report

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Using GS1 barcoding to resolve illegible and missing shipping marks in loads of meat in the US

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Executive Summary

A plant-initiated project was conducted to provide an alternative method to resolve illegible or missing shipping marks in loads of meat received in the US. The alternative method uses GS1 barcoding and eMessage to provide the required level of confidence for illegible or missing shipping marks to be replaced under FSIS supervision at the iHouse. The system was demonstrated both at point of export in Australia and at a US iHouse on import of a consignment. The USDA have agreed to the alternative method with Australia. The Australian and United States Departments of Agriculture are soon to release guidance material to exporters and importers, about using this alternative procedure. It is recommended that other companies consider this alternative method for potential regulator cost saving, noting the costs to implement the GS1 barcoding and eMessaging systems.

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1 Background

The most common reason for meat being rejected in the US is because of illegible or missing shipping marks. The US requires that a unique shipping mark be used to link the product in a load to the health certificate for that load. These marks are manually applied immediately prior to loading for export. Currently marks that are absent can only be reapplied and verified by an official of the exporting country. This process is very costly and time consuming with potential delays in delivery of the product. There are also limited official resources in the US to reapply and verify shipping marks as such small numbers of unmarked cartons are just disposed of.

An alternative method to resolve missing shipping marks is the GS1 barcoding and eMessaging system. This system is a global voluntary standard for the identification of products using standard identifiers and transferring the information about consignments with a standardised electronic message. Each carton/label has a code that is unique to that carton. These codes are routinely scanned for products being exported and a complete list of all cartons exported as part of a shipped lot, is available. The GS1 system can also assist in the event of any problem that requires product to be traced and/or withdrawn from the market place.

This project was a trial in implementing the GS1 barcoding and eMessaging system to resolve the missing shipping marks in loads of meat in the US. The project had support from the Australian Department of Agriculture and US officials.

The Australian meat industry has a near 100% capability in utilising the GS1 barcode to identify individual cartons and carcases and in using the eMessage when consigning product for export markets.

Project outcome

A trial occurred with product received on 7 September 2014 at Mullica Hill iHouse in Philadelphia with USDA-FSIS and Department of Agriculture officials present. The trial was successful with FSIS permitting the replacement of shipping marks on cartons from two lots of meat without direct Australian government oversight. This was allowed due to the confidence provided by the use of the GS1-128 barcoding system.

The demonstration of the GS1 barcoding system at the US iHouse and at Beenleigh abattoir has resulted in both the USDA-FSIS and Department of Agriculture accepting this alternative method as equivalent to the current costly system of Australian officials reapplying shipping marks.

2 Projective Objectives

1) Entry into the USA of multiple loads of meat with missing shipping marks using GS1 barcoding and eMessaging in lieu of official reapplication of shipping marks and verification.
2) To demonstrate to the US officials and the Australian Department of Agriculture that this alternative method meets the equivalent outcome and is more efficient for all.

3 Methodology

Preparation and implementation: A consignment of meat was identified for the trial. This consignment was made up of two lots, with a shipping mark missing from one carton in each lot. An eMessage was developed in the Meat Messaging portal (www.meatmessaging.com) by scanning the identified lots of meat during load out. The consignment was then shipped to Mullica Hill iHouse in Philadelphia, USA. (Appendix 1: Example of the despatch scan file)

www.meatmessaging.com is an online portal based on the GS1 barcoding standards and GS1 EANCOM electronic message standards that can be used for creating, sending, and receiving attestation statements and compliance declaration for meat products (carton, carcases, carcase portions, pallets, bulk packs and containers).[1]

Demonstration of the system in US:

The consignment was received at Mullica Hill iHouse in Philadelphia on 7 August 2014. Tom Maguire - General Manager, Corporate Services, Teys Australia and John Langbridge - Veterinary Counsel, AMIC were present along with US Industry representatives to demonstrate and explain the practicalities of the system to the USDA-FSIS officials (Mary Stanley - Director, International Relations and Strategic Planning Staff and Jane Doherty - International Coordination Executive) and Australian Department of Agriculture official (Greg Read – First Assistant Secretary, Exports). Each carton with a missing shipping mark was scanned and a unique file was created containing the carton barcode. Within the portal this file was then verified against the existing eMessage file provided to the portal by Teys Australia prior to shipping, using the "verified carton serial number report" (Appendix 2: Example of the verified carton serial number report). This demonstrated that the two cartons with missing shipping marks were part of the consignment loaded out from Australia, one carton from each lot, and were therefore covered by the associated health certificate. (Appendix 3: Photos of the demonstration at Mullica Hills iHouse, Philadelphia)

Demonstration of the system in Beenleigh, Australia:

USDA-FSIS official, Mary Stanley was visiting Australia during the project period and as such the project team took the opportunity to demonstrate the use of the GS1 barcoding and eMessaging system throughout the product integrity system in Australia. Teys Australia demonstrated carcase label scanning in the boning room, the labeling of cartons and the load out practices used for consignments. This included the scanning of GS1 barcodes to form the report uploaded onto the portal, the application of shipping marks and the Teys

[1] www.meatmessaging.com Meat Industry GS1 EANCOM Despatch Advice (eMTC and Export) 28 October 2014

quality controls on these procedures. (Appendix 4: Photos of the demonstration at Beenleigh abattoir, Queensland)

Appendix 5 is a flowchart demonstrating the use of GS1 barcoding and eMessaging in this alternative method.

4 Results

Demonstration of the system in US:
The use of the GS1 barcoding and eMessaging system provided the required level of confidence for the senior FSIS officials (Mary Stanley and Jane Dougherty) to instruct USDA inspectors at the iHouse to replace the missing shipping marks without direct supervision by the Australian government. The outcome of the demonstration was positive with the next step to be further questions of clarification from the USDA and a trial/pilot of the alternative method between Teys Australia and the Mullica Hill I-house, which could then be expanded to the whole industry.

Demonstration of the system in Beenleigh, Australia:
The demonstration at Beenleigh abattoir showed the integration of the GS1 barcoding and eMessaging system into the product integrity system within Australia.
This included explaining the link between the despatch scan file and the health certificate addressing one of the USDA's outstanding questions. The demonstration also provided assurance to the USDA that if the IT infrastructure is not available at an i-House the process can still occur manually, if necessary.

Subsequent inter-government negotiations have resulted in the USDA agreeing to this alternative method with Australia. The Australian and United States Departments of Agriculture are soon to release guidance material to exporters and importers, about using this alternative procedure including the criteria for it's use and government verification of the system.

5 Conclusions/Recommendations

Conclusion
The objectives of the project have been met and the project outcomes achieved.

A carton of meat missing a shipping mark was verified as being part of the load covered by the relevant Health Certificate (HC) using the GS1 barcoding and eMessaging system through the meat messaging portal www.meatmessaging.com

Confidence was gained in the GS1 barcoding and eMessaging system to allow Australian companies to use these systems with accommodating US iHouses to verify cartons of meat with illegible or missing shipping marks and reapply the marks without direct Australian government oversight.

Recommendations and considerations

This project has demonstrated that there are significant opportunities to use the GS1 messaging system to enhance regulator and customer confidence in the integrity of the supply chain. Further information and training material for the GS1 barcoding system (http://www.gs1au.org) and the use of it in the meat industry and of the Meat Messaging portal (www.meatmessaging.com) are available on their websites.

Individual companies should consider the cost benefit for the IT investment (either use of meat messaging portal or individual built portals), which will depend on the volume of illegible or missing shipping marks. Teys Australia believe that there may be additional commercial value in scanning all non conforming cartons in loads and providing the details and photos of the non-conformance back to the original packing plant for process improvement.

Advice provided by the USDA-FSIS during the project was that USA regulation 9 CFR 327.4 has recently changed requiring the carton and load to have a shipping mark or unique identified correlated with the health certificate[2]. The current use of shipping marks is an agreement between the USDA-FSIS and the Australian Department of Agriculture based on the agreed system for microbiological testing. This change means that under USDA regulations shipping marks could now be replaced with GS1 barcoding. Further support (equipment and/or training) may need to be provided in the US iHouses to facilitate this.

6 Appendix

Relevant appendices

1. Example of the despatch scan file
2. Example of the verified carton serial number report
3. Photos of the demonstration at Mullica Hills iHouse, Philadelphia
4. Photos of the demonstration at Beenleigh abattoir, Queensland
5. Flowchart demonstrating the use of GS1 barcoding and eMessaging in the alternative method.

Appendix 1: Example of the despatch scan file generated by the meat messaging system

[2] Federal Register Volume 79, Number 182 (Friday, September 19, 2014), Rules and Regulations, Pages 56220-56235 From the Federal Register Online via the Government Printing Office FR Doc No: 2014-22206

All Carton Serial Number Report

SSCC 99332218990000145

Exporter / Consignor

TEYS AUSTRALIA MEAT GROUP PTY LTD
BUILDING 3, FREEWAY OFFICE PARK, 2728 LOGAN ROAD
EIGHT MILE PLAINS
QLD 4113

Consignee

MULLICA HILL COLD STORAGE INC.
540 FRANKLINVILLE RD
MULLICA HILL
NJ 08062

Buyer

TEYS USA INC.
TEYS USA INC.
CHICAGO
CHICAGO 60642 US

Notify

TEYS USA INC.
TEYS USA INC.
CHICAGO
CHICAGO 60642

Shipping Line	HAMBURG SUD AUSTRALIA PTY LTD
Vessel/Aircraft	CAP CORAL/ 405
Voyage	
Date of Departure	20140707
Port of Loading	LAKES CREEK ROAD AU
Port of Discharge	540 FRANKLINVILLE RD US
Final Destination	

Carton Count	300
Message File Name	99332218990000145A
Message Date	20140707
Container Number	CAP CORAL/ 405
Gov. Seal No.	465388
Carrier Seal No.	
Consignor Seal No.	
Health Certificate	6951059
EXDOC No.	6727404
Goods Decl. (ECN)	ACHG6FAN7
Bill of Landing	SUDU34BNEAA1780X
Invoice No.	6429651
Order No. (purchase)	11392
Species	BOVINE
Country of Origin	AUSTRALIA
Establishment No.	7
Port Marks	CMT/3355A/P
Net Weight Total	6516.7 KGM

Shipment Reference	Description
	BOVINE BONELESS BEEF

Carton Bar Code Numbers

01993322180393553102002590131406242105305476002 0
01993322180393553102001790131406242105006865002 0
01993322180393553102002290131406242105006898002 0
01993322180393553102001940131406242105006927002 0
01993322180393553102002000131406242105006962002 0
01993322180393553102002230131406242105303546002 0
01993322180393553102002140131406242105303560002 0
01993322180393553102001910131406242105303687002 0
01993322180393553102002170131406242105303770002 0
01993322180393553102001800131406242105303873002 0
01993322180393553102002230131406242105304039002 0
01993322180393553102002060131406242105006776002 0
01993322180393553102002330131406242105305354002 0
01993322180393553102002510131406242105306118002 0
01993322180393553102002440131406242105305601002 0

Appendix 2: Example of the verified carton serial number report

Verified Carton Serial Number Report

SSCC 99332218990000145

Exporter / Consignor

TEYS AUSTRALIA MEAT GROUP PTY LTD
BUILDING 3, FREEWAY OFFICE PARK, 2728 LOGAN
ROAD EIGHT MILE PLAINS
QLD 4113

Consignee

MULLICA HILL COLD STORAGE INC.
540 FRANKLINVILLE RD
MULLICA HILL
NJ 08062

Buyer

TEYS USA INC.
TEYS USA INC.
CHICAGO
CHICAGO 60642 US

Notify

TEYS USA INC.
TEYS USA INC.
CHICAGO
CHICAGO 60642

Shipping Line	HAMBURG SUD AUSTRALIA PTY LTD
Vessel/Aircraft	CAP CORAL/ 405
Voyage	
Date of Departure	20140707
Port of Loading	LAKES CREEK ROAD AU
Port of Discharge	540 FRANKLINVILLE RD US
Final Destination	

Carton Count	300
Message File Name	99332218990000145A
Message Date	20140707
Container Number	CAP CORAL/ 405
Gov. Seal No.	465388
Carrier Seal No.	
Consignor Seal No.	
Health Certificate	6951059
EXDOC No.	6727404
Goods Decl. (ECN)	ACHG6FAN7
Bill of Landing	SUDU34BNEAA1780X
Invoice No.	6429651
Order No. (purchase)	11392
Species	BOVINE
Country of Origin	AUSTRALIA
Establishment No.	7
Port Marks	CMT/3355A/P
Net Weight Total	6516.7 KGM

Shipment Reference	Description
	BOVINE BONELESS BEEF

Scanned and Verified (Eligible Product)

Description: CMT/3355A/P
Scanned and Verified: 1
01993322180393553102002330131406262105306188002O

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Appendix 3: Photos of the demonstration at Mullica Hills iHouse, Philadelphia

USDA-FSIS inspection of shipment

Carton missing shipping mark

Demonstration of the GS1 barcoding and eMessaging system at work using Meat Messaging Portal

Appendix 4: Photos of the demonstration at Beenleigh abattoir, Queensland

Demonstrating the use of barcodes on carcase labels.

Demonstrating the use of barcodes at carton labelling

Demonstrating the load out process including the scanning of barcodes

Appendix 5: Flowchart demonstrating the use of GS1 barcoding and eMessaging in the alternative method

Shipping Mark verification Model using Meat Messaging

Issue date: 14th January 2015

Export Establishment

Stage Cartons

Shipping Mark Cartons

Scan all cartons

Linked data

EXDOC

Commence RFP

Collect all information and update RFP. Check Market and product eligibility.

Linked data

Export Meat Messaging Portal

Commence DESADV message with all carton scan

Complete RFP and request Health certificate

Create DESADV message containing every carton bar code (serial number), including Health Cert Number

Load and Seal container under supervision

Container exported

DESADV message sent to receiving inspection store, final destination/ customer and copy to DA.

Container received

Container unloaded inspected and scanned

Linked data

Linked data

DESADV message received by inspection store and cartons scanned and matched to Health Cert to create Verification report and RECADV Message.

Stamped after successfully inspection

RECADV Message sent to exporter as well as copy to DA.

If any errors are detected the RECADV Message sent to exporter as well as copy to DA.
Reported errors actioned by exporter.
Any requirements for remarking are through he use of the "Request for Remarking of Carton destined to the USA form".

Re-Stamp or destroy after any corrective action