Food Safety Traceability and EAN Numbering, Bar Coding and EDI for

Trace 3 Project – EAN / NLIS Integration

Electronic Livestock Identification (NLIS), Data Capture, Processing and Messaging.

Final Technical Report

A Partnership Project Between

Australian Country Choice and

Meat & Livestock Australia Ltd

Project No: PRMS.002C

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1 INTRODUCTION

The demonstration trial conducted with Australian Country Choice Cannon Hill slaughter facility and the Brisbane Valley Feedlot is based on testing three primary areas of electronic information collection and movement, these are:

- Capture / local processing of information on mob/ consignment and individual livestock by use of NLIS devices in the feedlot
- Electronic Messaging to the NLIS database of regulatory data
- Electronic Messaging between trial Feedlot and ACC head Office of commercial information

The trial involved a number of specific activities, these included:

- Testing and 3 month trial of NLIS Ear Tags on 500 head of cattle
- Testing and 3 month trial of close range fixed readers of the NLIS tags (at induction)
- Testing and 3 month trial of close range wand readers of the NLIS tags (at induction and at slaughter)
- Testing and 3 month trial of medium range race readers of the NLIS tags (at induction only)
- Testing of EAN Messaging between Feedlot and NLIS database for livestock movement
- Testing of EAN Messaging between ACC Slaughter and NLIS database for livestock slaughter
- Testing of EAN Messaging with NLIS database for query and response of live animal history
- Testing of EAN Messaging between Feedlot and ACC of commercial Data for livestock movement (eNVD system)
- Testing of EAN Messaging between ACC and Feedlot of commercial carcase feedback

Each of these activities had a number of specific tasks, technologies and sub-systems that had to be determined and adequately addressed through the trial.

Information captured at the feedlot was transferred to the feedlot computer by a batch method. The information once in the Computer was reviewed, processed, consolidated and sent electronically to the NLIS database for regulatory data and ACC head office for Commercial Data.

The objective of the trial was to demonstrate the operational efficiencies, cost benefit and traceability that can be achieved through adoption of suitable technology for individual livestock identification, information capture and electronic messaging.

A measure of success of the trial project was the successful demonstration of the linkage of carcase and carton product back to live animal history from the NLIS database and the movement up and down the supply chain of critical commercial information by use of EAN messaging.

To this end a validation audit was conducted by matching DNA samples collected from retail product, at the meat section, of a Coles Supermarket and matched back to hair samples collected at induction at the Brisbane Valley Feedlot. The linkage information needed to identify which DNA hair samples to be matched to the retail samples was determined by use of the consignment and individual information passed forward using the EANCOM messages from induction at the feedlot to distribution to retail.

The basis of use of the EAN.UCC system for this trial was founded on the previous project work with Traceability and the EAN.UCC system for the meat supply chain. The “Supply Chain Management Model, EAN.UCC and EDI, for the Meat Industry” is contained in an Appendix of this report.

1.1 Project Methodology

Australian Country Choice undertook the project at both their feedlot located in the Brisbane Valley and their processing facility in Brisbane Australia.

The project methodology was based on the following activities:

- Review, analyse and determine the best methods for adoption of EAN standards for livestock codification, numbering, e-Messaging and integration with the National Livestock Identification Scheme (NLIS);
- Develop specific generic applications of the EAN standards for livestock so as to integrate with existing processing facility systems. These generic applications must provide linkage from feedlot induction with lots and individual NLIS device numbers through to slaughter body numbers;
- Development of specific EANCOM e-Messages for query of the NLIS database and for response from the NLIS database.
- Consult with industry and standards bodies as part of the development process to ensure compliance with the various regulatory requirements;
- Consult with NLIS to determine the context and content of the information required in the e-messaging; and
- Model and demonstrate for a period of three months the use of the EAN system, DNA fingerprinting and e-Messaging, where suitable, for the traceability of livestock at feedlot induction through to retail shelf.

1.2 Project Outcomes

The project outcomes to be delivered as a result of the project include the following:

- A 3-month trial unitising EAN Numbering, NLIS devices and e-Messaging from feedlot through to slaughter.
- Stages of reports matching to each milestone.
- Video, poster and power point presentation prepared for dissemination to Industry on the results of the project.

2 DEMONSTRATION TRIAL DETAILS (MILESTONE 5)

The demonstration trial comprised various technical elements. These have been broken down into the following list:

- Information Flows and information Storage through the supply chain
- Information Flows at the Feedlot
- Information Flows at Slaughter (ACC)
- EAN Electronic Messages used for Trial

The trial required coordination between the operation at the feedlot, at the slaughter facility and with the NLIS.

The sequence of events was defined as follows:

- Tagging and reading individual cattle with NLIS devices of a number of lots during induction at the feedlot to a total of 500 cattle.
- Sending EAN electronic messages to ACC head office of the records of the induction.
- Sending EAN electronic messages to ACC head office of the records of consignment of the cattle to slaughter approximately 50 days after induction.
- Sending EAN electronic messages to the NLIS of the records of consignment of the cattle to slaughter approximately 50 days after induction.
- Reading of NLIS devices at time of slaughter.
- Sending EAN electronic messages to the NLIS of the records of the slaughter
- Sending EAN Query messages to the NLIS for the live history on slaughtered livestock
- Receiving EAN Response messages from NLIS on the live history of slaughtered livestock

There are a number of specific EAN electronic messages that were identified, developed and where possible, used for the demonstration trial these are as follows:

- EANCOM Despatch Advice (DESADV) for consignment information both for NLIS update and between trading partners
- EANCOM Quality Test Report (QALITY) for attribute information eg individual identification, Market Category, Meat Colour, Hip height as well as many other for use between the trading partners
- EANCOM Product Inquiry (PROINQ) for requesting a query on the NLIS database.
- EANCOM Product Data (PRODAT) for a response from the NLIS database.

The EANCOM Product Data (PRODAT) message can also be used to update the NLIS database with records of the date of Slaughter.

2.1 Livestock Supply Chain

The supply chain management objective of the trial was to demonstrate the regulatory and commercial flow of information up and down the supply. The diagram below shows the linkages that occur in the beef cattle supply chain.

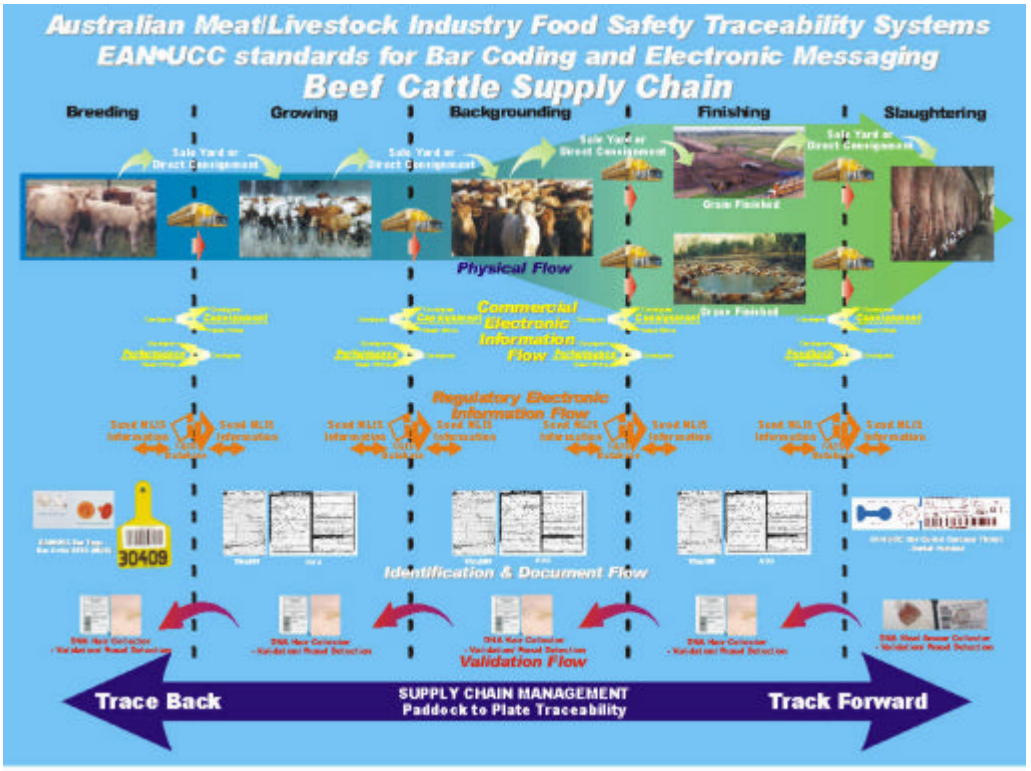


Figure 1 - Beef Cattle Supply Chain

This diagram shows the varied and many interrelationships that occur through the whole livestock supply chain. The use of electronic messaging between the trading partners is seen as necessary to facilitate rapid and accurate moving of traceability and commercial information. The diagram below shows the relationship between commercial and regulatory data.

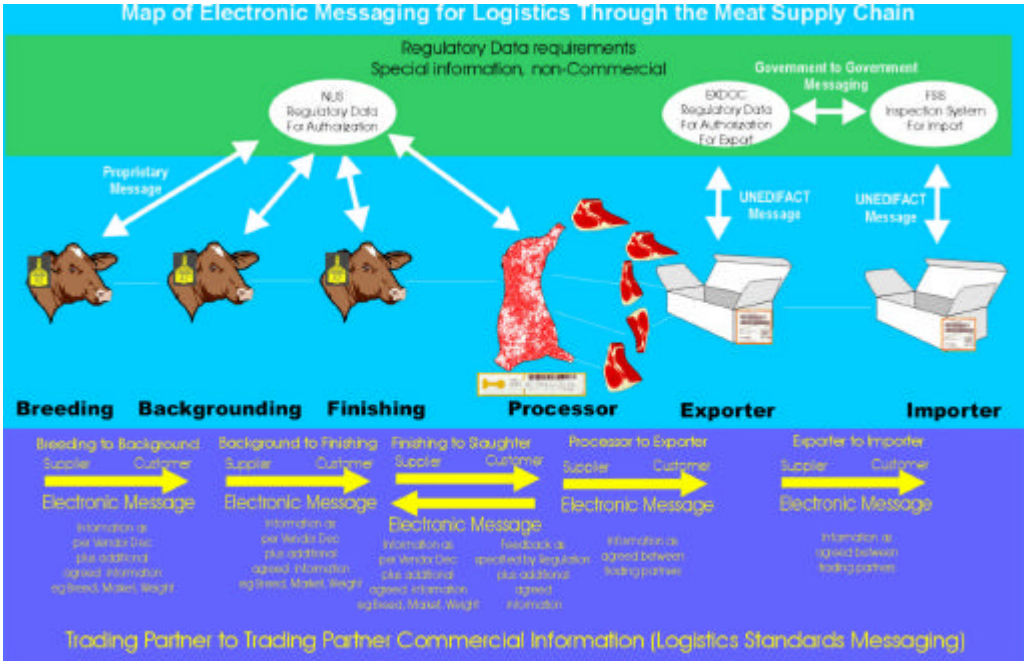


Figure 2 -Regulatory and Commercial Information Differences

2.2 Information Flows and Information Storage through the Supply Chain

One of the primary aspects of the demonstration trial was the flow of information through the supply chain. Information flow relates to the two components of EAN electronic messaging and Data storage. The three primary areas of data storage for the demonstration trial are the NLIS Database, the Feedlot Databases and the ACC head office (slaughter Facility) Databases.

The information flows are shown in the diagram below (refer to the Appendix for A4 size diagrams):

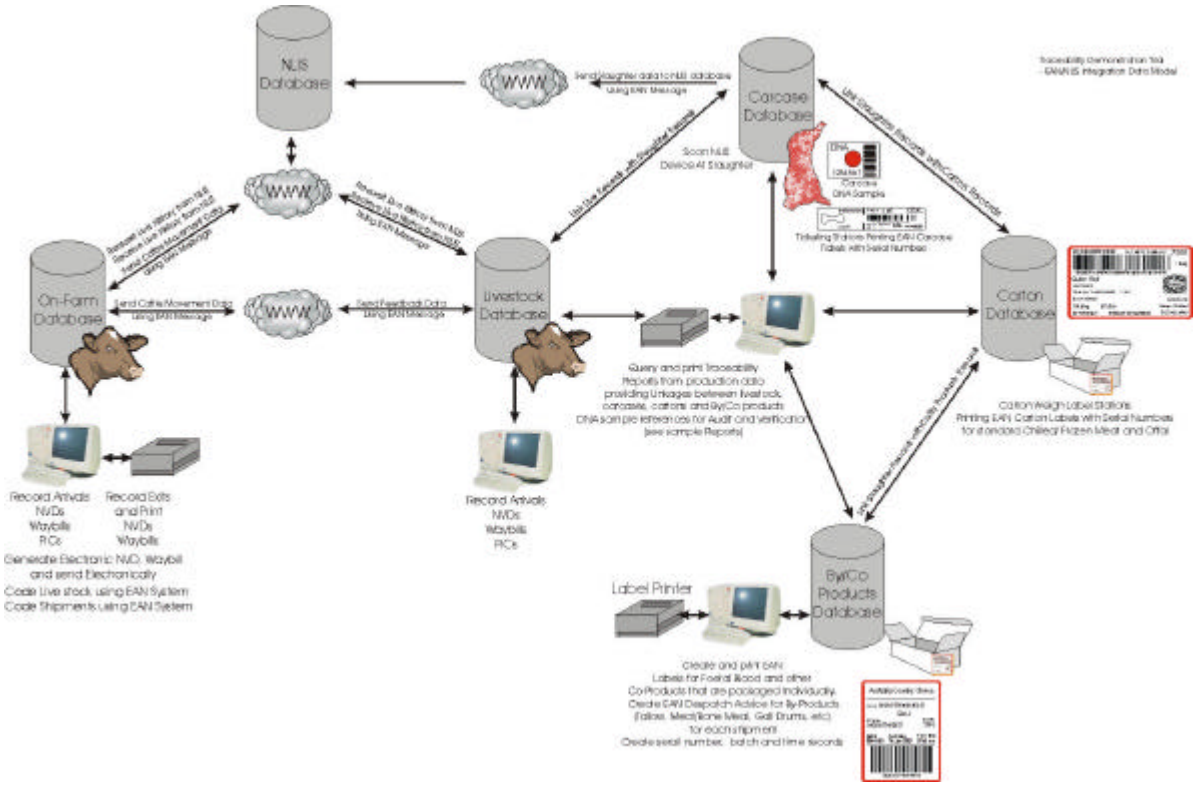


Figure 3 - Information Flows Demonstrated during the Trial

2.3 Information Flows - Feedlot

The information and process flow for the feedlot was defined as follows:

Step	Activities	Documents	Information Captured	Notes
1 - Receive Cattle	Truck arrives and way bill/ NVD checked. Lot number allocated and truck unloaded into pens	LBR Way Bill NVD Lot Sheet	LBR, Lot Number Truck, Date, Vendor, Number of Head, Sex, Pen number(s), Owner	
2 - Induct	Take from pens and induct. Add ear tag, weigh, get dentition, Treatment, Measure hip Height	Induction details, move sheet, induction summary	Ear Tag Number/ Color, weight, dent, dose, hip height, lot number, Breed, TT, PIC	
3 - Monitor Performance/ Sick	Monitor performance and process any sick cattle through hospital pen. Treat and record drug treatment, Record deaths and subsequent diagnosis		Ear Tag number, lot number, weight, treatment, dose, withholding period, Diagnosis, Temperature	
4 - Market requirements check/ Exit	Check weights and exit cattle that meet weight/ condition requirements	Way Bill NVD	Lot number, Ear Tag number, cross reference withholding periods	

2.3.1 Methods for Capture of Information at the Feedlot

The collection of information was conducted using two different methods. The first was a low cost hand held data capture unit (DCU) and virtual bar code interface units to ancillary equipment (Scale, NLIS device reader, etc). These virtual bar code interface units connect to Scales, NLIS device readers and other equipment to allow for scanning by the DCU.

The information was collected by batch and downloaded to PC on completion. A batch may be a number of different lots of cattle.

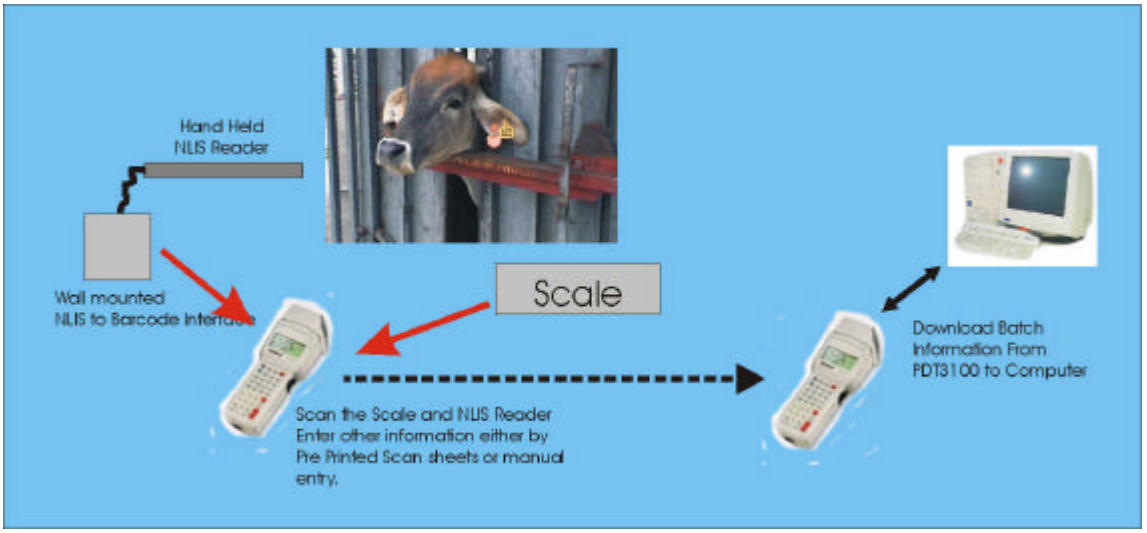


Figure 4 - Capture Methods used at the Feedlot during the Trial

The second method of capture was an industrial PC mount crush side and hard wired to Scales, NLIS device reader, etc. The industrial computer system operated a modified version of ABA software for the feedlot.

The two different methods showed different approaches tailored to both low volume/ low cost operations and high volume with higher cost operations.

Both methods operated successfully for the trial.

2.3.2 Hand Held Method of Collection

Figure 5 - Collection of Induction Data using Hand Held Equipment

The information at induction and other processing points was collected using a PDT6800 (DCU) for half the trial. The data was entered by automatic, manual entry or scan cards (laminated sheets with Barcode for scanning). On completion of a number of hours collection or one days collection the data was downloaded to a PC. The downloaded data is processed on that PC to check for errors and any reconciliation completed before generating output files (date/Feedlot/Lots).

2.3.3 Industrial PC Method of Collection

Figure 6 - Collection of Induction Data using Industrial PC

The information at induction and other processing points was collected using an industrial PC mounted crush side for half the trial. The data was entered by automatic, manual entry or with scan cards (laminated sheets with Barcode for scanning) by use of an attached Bar Code Wedge scanner. Information collected was transferred to the office PC for processing,

checked for errors and any reconciliation completed before generating output files (date/Feedlot/Lots).

2.3.4 Audit and Validation Methods by use of DNA Hair Samples

Hair sample for DNA validation were collected at induction using the Genetic Solutions DNA hair Sample Collectors. The DNA sample number bar code was scanned to record the sample number.

Figure 7 - Collection of Hair Samples for DNA validation

Each of the 500 head of cattle had DNA hair sample collected, reference numbers recorded and sent electronically to the ACC head office for audit and validation use for the trial.

2.3.5 Data Field Listings

Field References:

Induction Data

Entry Method	**Description**	**Header**	**Value Range**	Format	
A	Date	Data	Yyyymmdd	N	8
B	Weight	Weight	100.0 to 700.0kg	N	5.1
M,S	Hip Height	Hip	60 to 150	N	3
B	Dent	Dent	0,1,2,3,4,5,6	N	3
M,S	Breed code	Breed		A	4
B	NLIS	NLIS		N	20
M	Lot	Date	0 to 9999	N	4
M	EarTag (Management Ear Tag)	EarTag	1 to 9999	N	4
M,S	Sex	Sex	M, F	A	1
M,S	Tag Color	EarCol	GR, YL, BR, BL, BK	A	2
B	Treatment	Dose	TH1, TS2	A/N	10
M,S,B	PIC	TT	QAES0100	A/N	8
B	DNA Sample Barcode	DNA	0 to 9999999999	N	10

Treatments					
M	Date	Date	yyyymmdd	N	8

M	From Pen	From	PDK1, 28	N	5
B	Weight	Weight	100.0 to 700.0	A	5.1
B	EID	RFID	0 to 9999999999999999999	A/N	20
B	Temp	Temp	35.1 to 45.1	A	2.1
M,B	Diagnosis	Diag	RES1, ACID1	A/N	4
M,B	Treatment	T1	EXCEN	N	5
Calculated fn	Amount	T1cc	30	A	3
M,B	Treatment 2	T2	B2	N	5
Calculated fn	Amount 2	T2cc	20	A	3
M	To Pen	Dest	PDK1, 28	N	5

Cattle despatch					
M	Date	Date	yyyymmdd	N	8
M	From Pen	From	PDK1, 28	N	5

Feed out					
Auto	Date	Date	yyyymmdd	N	8
Auto	Time	Time	15:21	A	2.2
M,B	Ration	Rat	A/N	A/N	
M,B	Pen	Pen	PDK1, 28	N	5
Pre programmed	Allocation	Alloc			
M,B	Feed out	Feed	0 to 6200	A	4

Feed out Load up					
auto	Date	Date	yyyymmdd	N	8
Auto	Time	Time	15:21	A	2.2
M,B	Ration	Rat	5	A/N	1
M	Amount required	Amt Req	6200	A/N	4
Auto,M	Commodity	Comm	100	A/N	3
Auto,M	Commodity Required	Com Kg	6200	A/N	4
B	Commodity Loaded	Com tot	6200	A/N	4

The general idea will be to pre load prompts where possible such as ration breakdown etc.

Fields marked with “A” are automatic or enter once only.

Fields marked with "S" are Scan Sheet entry.

Fields marked with "B" are Barcode scanned for attached barcode.

Fields marked with "M" are manual data entry

2.3.6 Sending Consignment Information from the Feedlot

The consignment information was sent from the feedlot to the slaughter facility by use of the eNVD system. The eNVD system allowed for the entry of consignment information for the NVD and Waybill.

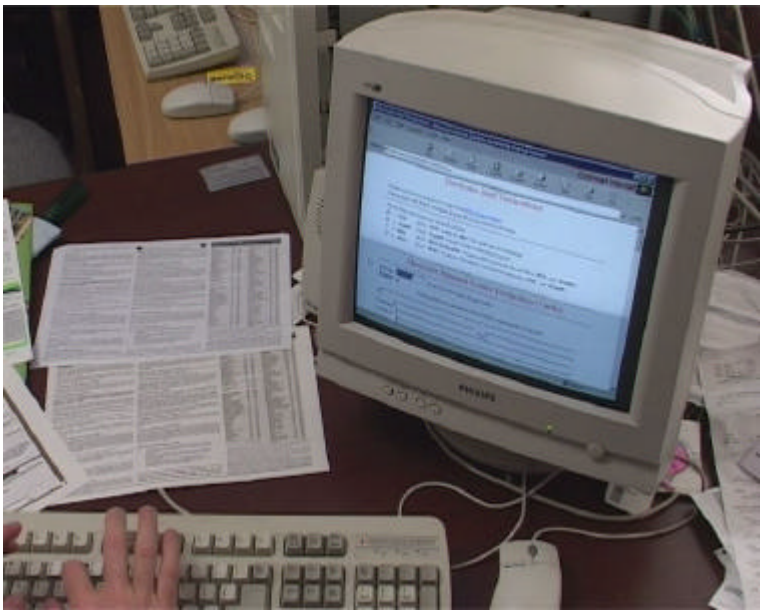


Figure 8 - Entering Consignment Information into the eNVD System at the Feedlot

Once the consignment information had been entered the eNVD system printed a NVD and Waybill for the consignment.

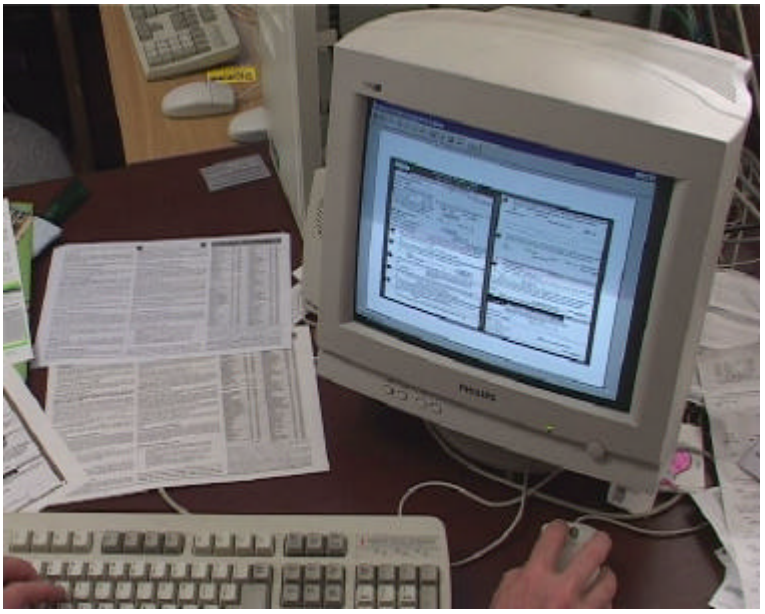


Figure 9 - Printing an NVD with the eNVD System at the Feedlot

Hardcopy NVDs and Queensland Waybills were sent with each consignment. Refer to the Appendix for samples of the electronically created and printed NVD and Waybill.

2.4 Information Flows - Slaughter

The livestock were feed in the Brisbane Valley Feedlot (BVF) for a period of at least 60 days, after that time the livestock was sent to Cannon Hill for slaughter. The 500head of livestock for the trial were sent as a number of consignments over a 4-week period. The consignment information was sent via Email as an EANCOM e-Message from the feedlot to the ACC Cannon Hill Slaughter facility.

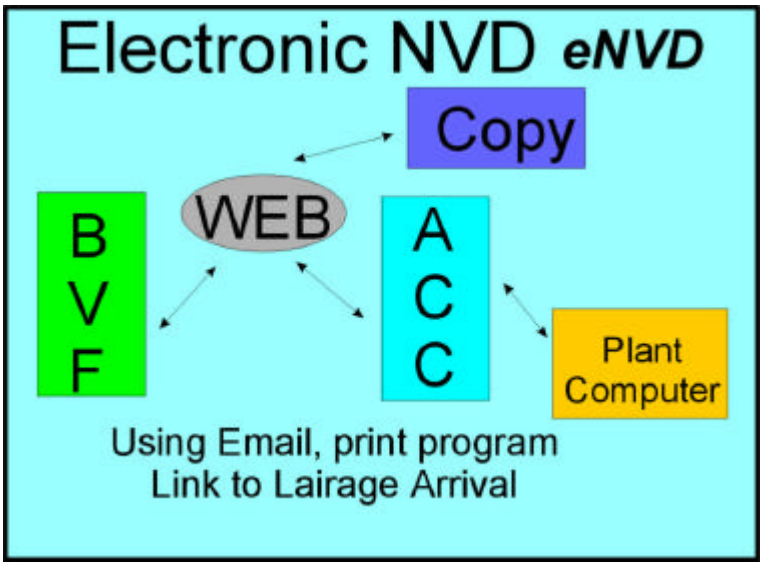


Figure 10 - Information Flows for Feedlot to Slaughter

The 2 critical points of data processing for slaughter were:

- Despatch Advice and Quality Test report messages sent from the Feedlot (refer to the electronic vendor declaration trial system for details) for each consignment, and;
- Capture of lot and individual ID at Slaughter (first terminal)

The trial used the prototype eNVD system to capture, print, send and process consignment information for all NVD and Queensland Waybill information. The prototype eNVD system did not generate EANCOM compliant Despatch Advice and Quality Test Report Messages, as this was outside of the scope for the prototype eNVD system. Refer to the Appendix of the eVD system for detailed specifications.

It was recommended that the consignment information be sent by use of the Despatch Advice and Quality Test Report when consignments are shipped from the feedlot to ACC Cannon Hill. The information contained in these messages will be used to match the physical consignment when it arrives. Eg number of animals, breed, truck travel time, etc. The specific details of the Message Implementation Guidelines (MIGs) for Feedlot to Slaughter Despatch Advice Message and the Quality Test Report Message have been prepared and have had limited testing.

2.4.1 Importing the Electronic Consignment Information at Lairage before Slaughter

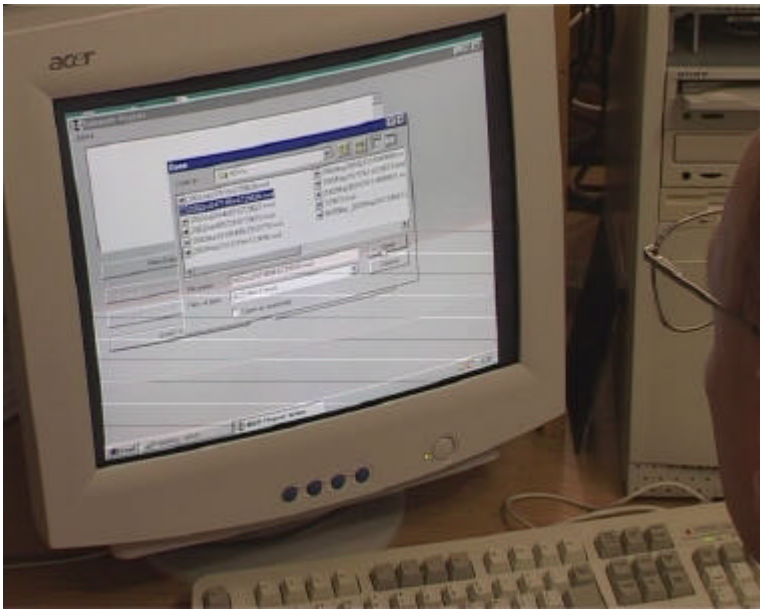


Figure 11 - Importing Consignment Information at Lairage

When an eNVD electronic message containing the consignment information is received by the ACC slaughter facility at Cannon Hill the message is selected and automatically transferred to the computerised Lairage system. The information from the message includes all the relevant consignment details. On the arrival of livestock, the livestock consignment details are checked against the electronic record on the Lairage system. Any differences are checked and errors identified and corrected. This approach ensures that human errors are detected at time of receiving livestock and long before slaughter.

The Lairage system operates on a lot basis not an individual animal basis.

2.4.2 Methods for Capture of Information at the Knocking Box

The current slaughter floor system operating at the ACC Cannon Hill facility is the Thorsys system. This system supports lot and individual IDs for livestock. The integration of the ID readers for capture was implemented at the knocking box where the live IDs were still attached to the carcase and a body number had been issued by the system.

Figure 12 - Scanning NLIS devices at Knocking

Each of the 500 individual NLIS devices were scanned at the knocking box to record the individual animal ID and linked to the slaughter lot numbers.

Figure 13 - Entering into computer system at the Knocking Box

After processing of slaughter information in the Thorsys System the information was consolidated into the other ACC computer systems. This included information that links the producer, NDV, individual animal identification and slaughter data.

2.4.3 Data Field for Knocking Box Listings

The Knocking Box Slaughter data set elements that relate to traceability are defined in the following table:

Slaughter Data

Entry Method	Description	Header	Value Range	2.4.3.1	Format
A	Date	Data	yyyymmdd	N	8
B or other	NLIS	NLIS		N	20
A	Lot	Date	0 to 9999	N	4
M,S	EarTag (Management Ear Tag)	EarTag	1 to 9999	N	4
A	Body Number	BodyNo	0 to 99999	N	5
A	Source PIC (tail tag)	Tailtag	AAAA1234	A	7

After slaughter and grading a consolidated quantity of data (currently represented by the ACC feedback sheets) was intended to be sent via a Quality Test Report message back to the feedlot. The MIG for the Quality Test report for feedback has been defined and partially tested.

2.5 Information Flows - NLIS Database

The Regulatory requirements for information have various messaging needs. The message needs can be defined as follows:

- Message to update regulatory database with tag manufacture/ issue to producer information.

- Message to update regulatory database with producer transaction information (movement from one property to anther property, tag replacement, etc).
- Message to update regulatory database with exit information (lost, dead, slaughtered, etc).
- Message to query regulatory database data for animal ID status.
- Response message from regulatory database in answer to a query message.

The EAN•UCC system accommodates messages within the EANCOM standards for meeting these messaging requirements.

For the purpose of the demonstration trial a number of EANCOM messages were adopted to communicate with the NLIS as well as using the existing NLIS communications methods.

2.5.1 Updating the NLIS Database with Movement and Slaughter records

When livestock consignments occurred for the 500 head of cattle for the demonstration trial, messages were sent to the NLIS database from the feedlot to ACC Cannon Hill Slaughter facility. When livestock were slaughtered the information was sent to the NLIS database.

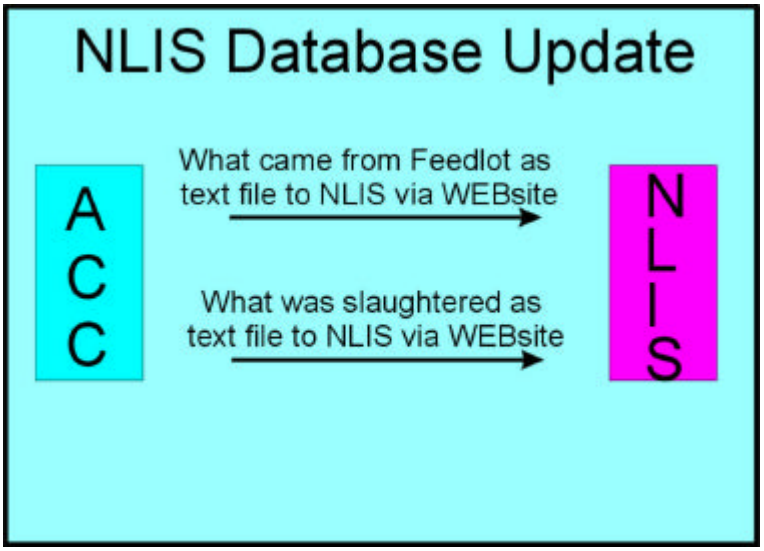


Figure 14 - NLIS Database Update with Movement and Slaughter Records

Within the context of the demonstration trial information on the consignments of livestock from the feedlot to ACC slaughter and the record of slaughter were sent to the NLIS database using the conventional NLIS information transfer methods.

2.5.2 Query of the NLIS Database for Livestock History and Response from NLIS

The message types for the query of the regulatory database and the response message have been defined by use of the EANCOM PROINQ and the EANCOM PRODAT Messages.

The EANCOM PROINQ message is used to place a query or inquiry on the regulatory database. The EANCOM PRODAT message is used for the response from the regulatory database. Refer to the appendix for the details of the Message Implementation Guidelines (MIGs) for the EANCOM PROINQ and the EANCOM PRODAT messages.

Figure 15 - Query of NLIS Database for Livestock History

There are various business rules that apply to the use of such messages. This business rules applied to the following:

- what organisations can use the various messages,
- what purpose the information is to be used,
- the authenticity for the parties to the messages, and
- the security of the messages.

These business rules need to be clearly defined for each party and message type for each regulatory database.

The diagram below shows the relationship of the EANCOM PROINQ and the EANCOM PRODAT messages with the regulatory databases.

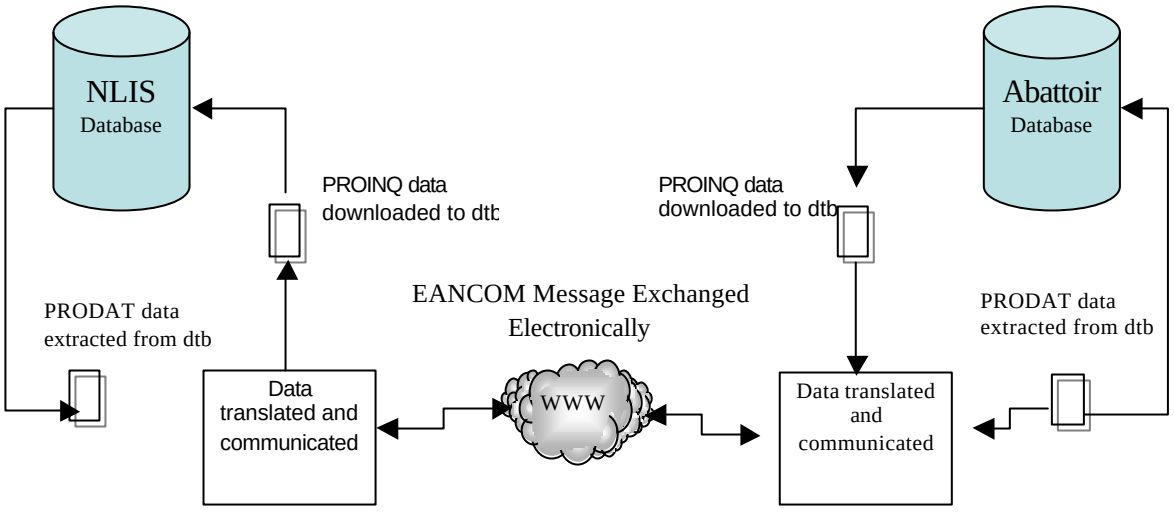
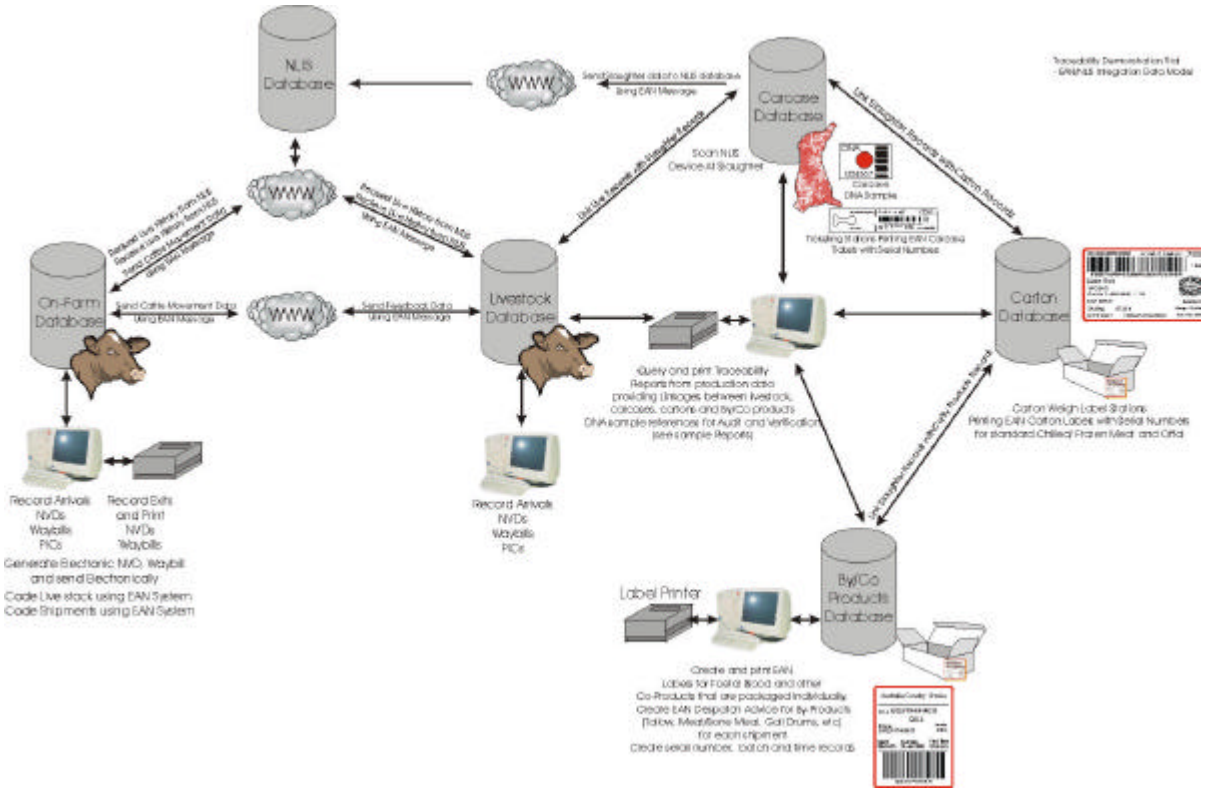


Figure 16 - Communicating with the NLIS for Inquiries and Response for the NLIS

During the demonstration trial various Inquiry Messages in the form of PROINQ messages were sent to the NLIS database and the responses in the form of PRODAT were received. The information from the PRODAT Messages were used for traceability for the demonstration.

3 ELECTRONIC LINKAGE BETWEEN LIVE ID (NLIS DEVICE) AND CARCASE/ CARTON PRODUCTS

As the livestock are slaughtered the live identification (NLIS) devices is recorded against the Carcase Body Number. Australian Country Choice has EAN systems in place for traceability from carcase to carton and by/ co-products. This means that cartons can be directly linked to a number of possible carcases and these carcases can be directly linked to the live animal identification.



The result of this approach is that the livestock movement history can be queried from the NLIS database and related to a number of cartons of meat products.

This report does not defined in detail the internal operational aspects for the EAN.UCC at Australian Country Choice. These details have been previous defined in other traceability project reports.

4 BUSINESS RULES OF USE OF THE NLIS DATABASE

As the NLIS database is a regulatory function there are a number of definitive business rules in operation to ensure security and information integrity. These business rules form part of the trial project and as such have impacted on the project.

Refer to the NLIS for details of the current business rules.

5 VALIDATION AND AUDIT METHODS BY USE OF DNA

Part of the demonstration trial involved the conducting of validation activities and mock audits to demonstrate and prove the traceability linkages.

Two separate types of validation testing were conducted, these are defined as follows:

- Type one validation – This involved matching retail samples back to the hair samples taken at induction at the feedlot. The purpose of the validation was to demonstrate that the linkage between feedlot induction (hair samples) and retail samples could be established by use of the EAN system for codification and electronic messaging and the use of the NLIS devices for individual animal identification.
- Type two validation – This involved matching 100 DNA meat smear samples collected at time of carcase grading to 100 DNA Hair samples collected at induction at the feedlot. The purpose for this testing was to determine the rate of human error involved in the collection of information at the feedlot through to slaughter.

5.1 DNA Validation Audit - Retail to Feedlot Induction

The process for conducting the retail to feedlot validation audit involved a number of steps, as follows:

- Identify all possible boning groups that relate to the 500 trial cattle.
- Select a type of product from the possible boning groups that was sent to retail
- Go to the retail supermarket and select product by type, date, batch and time window (record the carton number for the selected product)
- Take one or more DNA samples from the possible retail product. Samples were taken from 2 different Rumps.
- Link back from the cartons serial number to the possible carcases that went into the retail carton
- Identify the Carcase DNA sample numbers by linkage from boning groups to carton serial numbers. There were 25 possible carcases identified as relating to the two retail DNA sample collected
- Identify the feedlot DNA hair sample collector numbers that relate to the carcase DNA sample number. This was achieved by use of the NLIS device number recorded at induction and then linked at knocking.
- Conduct the DNA analysis matching the retail samples to the carcase DNA samples and the feedlot hair samples.

The retail samples came from rump steak taken at the Coles Supermarket located at Cannon Hill.

Figure 17 - Linkage to Retail Cut

The samples were taken at the time of preparation of the retail packs from the bulk carton. The carton serial number was recorded at the time of taking the samples.

Figure 18 - Linkage to Retail Carton

The DNA sample was collected using the Genetic Solutions meat smear DNA sample collector.

Figure 19 - DNA Sample Collection at Retail Supermarket

The result of the analysis of the retail samples back to the hair sample collected at induction showed the following results:

- The retail cut could be match back to an individual animal from the hair samples taken at induction
- The match provided a very high level of certainty that the cut came from the within the group identified by use of the EAN system.

5.2 DNA Validation Audit – Carcase to Feedlot

The process for conducting the carcase to feedlot validation audit involved a number of steps, as follows:

- Identify the Carcase DNA sample numbers by linkage of body numbers to NLIS device numbers for 100 carcases
- Identify the feedlot DNA hair sample collector numbers that relate to the carcase DNA sample numbers. This was by use of the NLIS device number recorded at induction and at knocking.

Conduct the DNA analysis matching the grading DNA meat smear samples to the feedlot DNA hair samples.

The results of the analysis of the 100 carcases showed the following results:

- Linkage between induction at the feedlot could be matched to individuals from DNA samples taken at time of carcase grading
- The EAN system allow traceability to be lot and individual based from feedlot induction to carcase.

6 QUERY OF COMPANY DATABASES TO IDENTIFY LIVESTOCK TO CARCASES

The demonstration trial developed methods within the Australian Country Choice corporate databases to be able to rapidly query carton/ carcase identification to link to livestock identification both at a lot and individual level. This also worked in reverse to be able to show carcases and possible cartons from one or a lot of livestock. The following report is an example of a query showing a number of carcases matched to the NVD, mob and individual identification for each animal. Refer to the Appendix for A4 size example.

Australian Country Choice
Production

Colmslie Road, Cannon Hill QLD 4170
P.O. Box 478, Morningside, QLD 4170

Traceability Report

Carcase to Livestock Supply and Arrival Report

Report Range:
Kill Date: from **7 Jan 02** to **7 Jan 02** and Kill Time: from **12:20** to **12:30**

Product	Description	DNA Carcase	Body No	Kill Date	Kill Time	Lot	NVD	Livestock ID	NLIS ID	Source PIC	Dest. PIC	Date Sent	Time Sent	Date Received	Time Received	Pm
9932711104561	Carcase	3432864	565L	7 Jan 02	12:20	445	8892467	2A5D335F		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104561	Carcase	3432864	565R	7 Jan 02	12:20	445	8892467	2A5D335F		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104351	Carcase	3432930	566L	7 Jan 02	12:21	445	8892467	442F5C1A		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104351	Carcase	3432930	566R	7 Jan 02	12:21	445	8892467	442F5C1A		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104265	Carcase	3432956	567L	7 Jan 02	12:22	445	8892467	7B41A5D3	000083699913	QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104265	Carcase	3432956	567R	7 Jan 02	12:22	445	8892467	7B41A5D3	000083699913	QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104561	Carcase	3432967	568L	7 Jan 02	12:23	445	8892467	187A11FF		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104561	Carcase	3432967	568R	7 Jan 02	12:23	445	8892467	187A11FF		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104265	Carcase	3433017	569L	7 Jan 02	12:24	445	8892467	792B85A8		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104265	Carcase	3433017	569R	7 Jan 02	12:24	445	8892467	792B85A8		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104265	Carcase	3433145	570L	7 Jan 02	12:24	445	8892467	AA874SD5		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104265	Carcase	3433145	570R	7 Jan 02	12:24	445	8892467	AA874SD5		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104351	Carcase	3433269	571L	7 Jan 02	12:25	445	8892467	47BA7E88	000004873295	QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104351	Carcase	3433269	571R	7 Jan 02	12:25	445	8892467	47BA7E88	000004873295	QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104561	Carcase	3433314	572L	7 Jan 02	12:26	445	8892467	33FF8D67		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104561	Carcase	3433314	572R	7 Jan 02	12:26	445	8892467	33FF8D67		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104265	Carcase	3433478	573L	7 Jan 02	12:27	445	8892467	148A7EE9		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104265	Carcase	3433478	573R	7 Jan 02	12:27	445	8892467	148A7EE9		QDB0357	CJHill	6 Jan 02	15:40	6 Jan 02	18:56	06
9932711104351	Carcase	3442950	574L	7 Jan 02	12:27	446	4487765	45A45E75		QAE9047I	CJHill	6 Jan 02	11:30	6 Jan 02	20:17	14
9932711104351	Carcase	3442950	574R	7 Jan 02	12:27	446	4487765	45A45E75		QAE9047I	CJHill	6 Jan 02	11:30	6 Jan 02	20:17	14
9932711104265	Carcase	3432753	575L	7 Jan 02	12:28	446	4487765	9548EA78		QAE9047I	CJHill	6 Jan 02	11:30	6 Jan 02	20:17	14
9932711104265	Carcase	3432753	575R	7 Jan 02	12:28	446	4487765	9548EA78		QAE9047I	CJHill	6 Jan 02	11:30	6 Jan 02	20:17	14
9932711104351	Carcase	3433297	576L	7 Jan 02	12:30	446	4487765	39475AA7		QAE9047I	CJHill	6 Jan 02	11:30	6 Jan 02	20:17	14
9932711104351	Carcase	3433297	576R	7 Jan 02	12:30	446	4487765	39475AA7		QAE9047I	CJHill	6 Jan 02	11:30	6 Jan 02	20:17	14
9932711104561	Carcase	3433302	577L	7 Jan 02	12:30	446	4487765	A8845689		QAE9047I	CJHill	6 Jan 02	11:30	6 Jan 02	20:17	14
9932711104561	Carcase	3433302	577R	7 Jan 02	12:30	446	4487765	A8845689		QAE9047I	CJHill	6 Jan 02	11:30	6 Jan 02	20:17	14

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Figure 20 - Carcase to Livestock Supply and Arrival Report

7 ISSUES IDENTIFIED DURING TRIAL AND RECOMMENDATIONS

1. NLIS Business Rules - these need to be clearly defined and communicated to ensure the objectives of commercial traceability can be implemented. This includes:

   a. Who has access to what information in what circumstances

   b. Ability to record in the NLIS database the authority for information to be given e.g. an alliance

   c. How is commercially driven needs different from Regulatory needs.

2. Complete EANCOM message development for each of the information transactions that occur with livestock movements, including.

   a. The use of eNVDs (including NVDs, State Waybills, MSA declaration, Nation Feedlot declaration) that capture information once and send the information in an EANCOM message to NLIS, State DPI, cattle receiver, etc

   b. The use of EANCOM messages for updating of NLIS database status such as defective/damaged/lost tags, new tag use, slaughter records, etc.

3. Enhancements to the NLIS system to be able to reference DNA samples for audit and validation. The project showed that there needs to be a biological identification system to underpin the NLIS system. This is to detect human errors in NLIS tag attachment, records keeping, electronic information transfer, database errors, lost/ damaged tags, etc. This would include:

a. The addition to the NLIS database of a DNA hair sample reference number.

4. Making changes to the PRODAT and PROINQ message implementation guides to reflect the results of the trial, including:

   a. Add additional attributes for authorising information eg within an alliance

   b. Means in the messages to provide some historic information of movements.

5. NLIS did not directly support EAN numbering and coding methods. The linkage was made by use of the NLIS device number and other information matched between the NLIS database and the plant EAN systems. The project identified that the clear link between the post slaughter EAN system to the livestock system required support of the EAN system for livestock, including:

   a. The use of EAN methods for livestock coding to facilitate accurate information transfer between trading partners.

   b. The use of EAN location Code for rapid location referencing down to loading docks eg at Slaughter.

6. The project identified that for good data management each consignment off a property and each consignment onto a property should be recorded. This allows for reconciliation of the information and the detection of errors, both human and technology generated.

The project was limited to 500 cattle fitted with NLIS devices. This small sample identified a number of issues as stated above. To achieve a much better demonstration of the linkage from cattle to slaughter to carton for traceability with the EAN system required a much larger and longer-term commercial trial.

8 ELECTRONIC MESSAGING TRANSLATION OPTIONS

There are various options that needed to be considered for the EAN electronic messaging translation software used for the trial.

8.1 Simple Explanation of EANCOM/EDIFACT messaging

The EANCOM (EDIFACT) messages can be considered as text files that contain information in a specific format. The format and segment codes have very important meaning. Below is an example of a simple EANCOM Message:

UNH+ME000001+PROINQ:D:96A:EN:EAN002'
BGM+10E::9+214+9'
DTM+137:20020615:102'
NAD+BY+5412345123453::9'
NAD+GX+9377778000015::9'
LIN+1'
IRQ+2E::9'
PIA+5+NG220268XBW0178:SN::60'
LIN+2'
IRQ+2E::9'
PIA+5+ AB110268XYZ0170:SN::60'
LIN+3'
IRQ+2E::9'
PIA+5+ NG220368XBW0000:SN::60'
LIN+4'
IRQ+2E::9'
PIA+5+ CB120268XBW0123:SN::60+999 085678582547:MF::90'
UNT+18+ME000001'

The above message looks very complicated. However if explanation information is placed beside each line, the meaning of the message becomes clearer.

UNH+ME000001+PROINQ:D:96A:EN:EAN002'	Message Header stating Message type, version and Dictionary Version
BGM+10E::9+214+9'	The Product Inquiry message number is 214
DTM+137:20020615:102'	Message is dated 15th June 2002
NAD+BY+5412345123453::9'	Organisation's GLN making the inquiry is 5412345123453
NAD+GX+9377778000015::9'	Central database organisation's (e.g. NLIS) GLN is 9377778000015
LIN+1'	Trigger segment. 1st iteration
IRQ+2E::9'	Code 2E is specifying that only product data is required
PIA+5+NG220268XBW0178:SN::60'	NLIS device number being inquired on is NG220268XBW0178
LIN+2'	Trigger segment. 2nd iteration
IRQ+2E::9'	Code 2E is specifying that only product data is required
PIA+5+ AB110268XYZ0170:SN::60'	NLIS device number being inquired on is AB110268XYZ0170
LIN+3'	Trigger segment 3rd iteration
IRQ+2E::9'	Code 2E is specifying that only product data is required
PIA+5+ NG220368XBW0000:SN::60'	NLIS device number being inquired on is NG220368XBW0000
LIN+4'	Trigger segment 4th iteration
IRQ+2E::9'	Code 2E is specifying that only product data is required
PIA+5+ CB120268XBW0123:SN::60+999 085678582547:MF::90'	NLIS device number being inquired on is CB120268XBW0123 with specific reference to the RFID number
UNT+18+ME000001'	Message Trailer, indicating 18 segments used in ME000001

It is evident from the message header that the message is a PROINQ message using the D:96A EDIFACT Dictionary. The message authority is EAN and it is version 2. The message then goes on with the message number, date information and the party who sent the message and the intended recipient for the message. All of this information is enough for Message Translation software to be able to determine the following points:

1. What Message Type to use (in this case it is a PROINQ or Product Inquiry message)
2. The EDIFACT Dictionary to be used.

3. What authority reference is to be used for the Message (in this case EAN and the version is 002)
4. What party sent the message (in this case Global Location Number [GLN] 5412345123453 which is an EAN issued number of a specific company location. E.g. Australian Country Choice at Cannon Hill).
5. What party the message was directed towards (in this case Global Location Number [GLN] 9377778000015 which is an EAN issued number of a specific company location. E.g. NLIS database in Sydney).

Once all this information is known then the Message Translation software can determine which message type to use, what dictionary and what Message Implementation Guides (MIG) to use as the party who sent the message is known. Different parties may be using different Message Implementation Guides. This happens in circumstances such as dispatch information between a feedlot and a slaughter plant for livestock, and dispatch information from a boning room to an overseas importer. Both would have dispatch information being sent via an EANCOM DESADV message but different Message Implementation Guides would be used.

Because of this high level of flexibility generic EANCOM (EDIFACT) messaging software is very completed and often costly. To be able to handle all the many different types of messages (there are over 40 messages for EANCOM) and message implementation guides (MIGs) (there can be thousands of different MIGs in use) takes very powerful software. This is the approach that big Enterprise Resource Planning (ERP) systems such as SAP follow. This approach is necessary as generic software may be used in many different applications and industries.

8.2 Messages identified for the Demonstration Trial and for the Meat Industry

Most businesses do not need the high level of flexibility that the generic software provides. Most businesses only need a few messages and only a few different Message Implementation Guides. Within the meat industry the messages that have been identified as most likely to be used are:

1. Despatch Advice (DESADV) for consignment information.
2. Quality Test Report (QALITY) for attribute information eg Market Category, Meat Color, Hip height as well as many other.
3. Product Inquiry (PROINQ) for requesting a query on the NLIS database.
4. Product Data (RPODAT) for a response from the NLIS database.

Other messages that may start to be used in the near future may include such messages as:

1. Invoice
2. Quotation
3. Remittance Advice
4. Transport Status
5. Purchase Order

Each of the messages need Message Implementation Guides (MIGs). These guides act as a set of agreed usage of the various terms and message segments contained within the message. Message Implementation Guides are often industry or trading partner based to ensure that specific definitions are used consistently. An example is the term Hot Standard Carcase Weight (HSCW) which is a meat industry term that has meaning and definition within the industry. The Message Implementation Guide for the despatch advice message for carcase product would have a specific reference to how HSCW is used.

8.3 Identified Message Implementation Guides

There have been a number of Message Implementation Guides identified for the selected messages, these are listed as follows:

- Despatch Advice (DESADV)
  - Livestock property to property movement
  - Livestock to Slaughter movement
  - Carton/ carcase domestic distribution
  - Carton/ carcase export distribution
  - Retail ready product distribution
- Quality Test Report (QALITY)
  - Livestock property to property movement live animal attribute information (eg weight, status, market, etc)
  - Livestock to Slaughter movement live animal attribute information (eg weight, status, market, etc)
  - Producer Feedback from property to property movement
  - Producer Feedback from slaughter feedback
  - Export distribution product quality information
  - Electronic Vendor Declaration
- Product Inquiry (PROINQ)
  - NLIS database Inquiry
- Product Data (PRODAT)
  - NLIS Database Inquiry Response

As the meat industry is likely to use a very limited number of message and message implementation guides it is likely that a second more simplistic approach is needed compared to the generic method of creation and decoding of messages. The second approach is to make specific creation and decoding software for each message type and message implementation guide. Following section has a diagram that shows both options for genetic and proprietary EANCOM (EDIFACT) translation software.

8.4 Number of Messages Verses Costs and Complexity

A review of the need for the number of different message types and Message Implementation Guides will determine the level of complexity necessary and thus the cost.

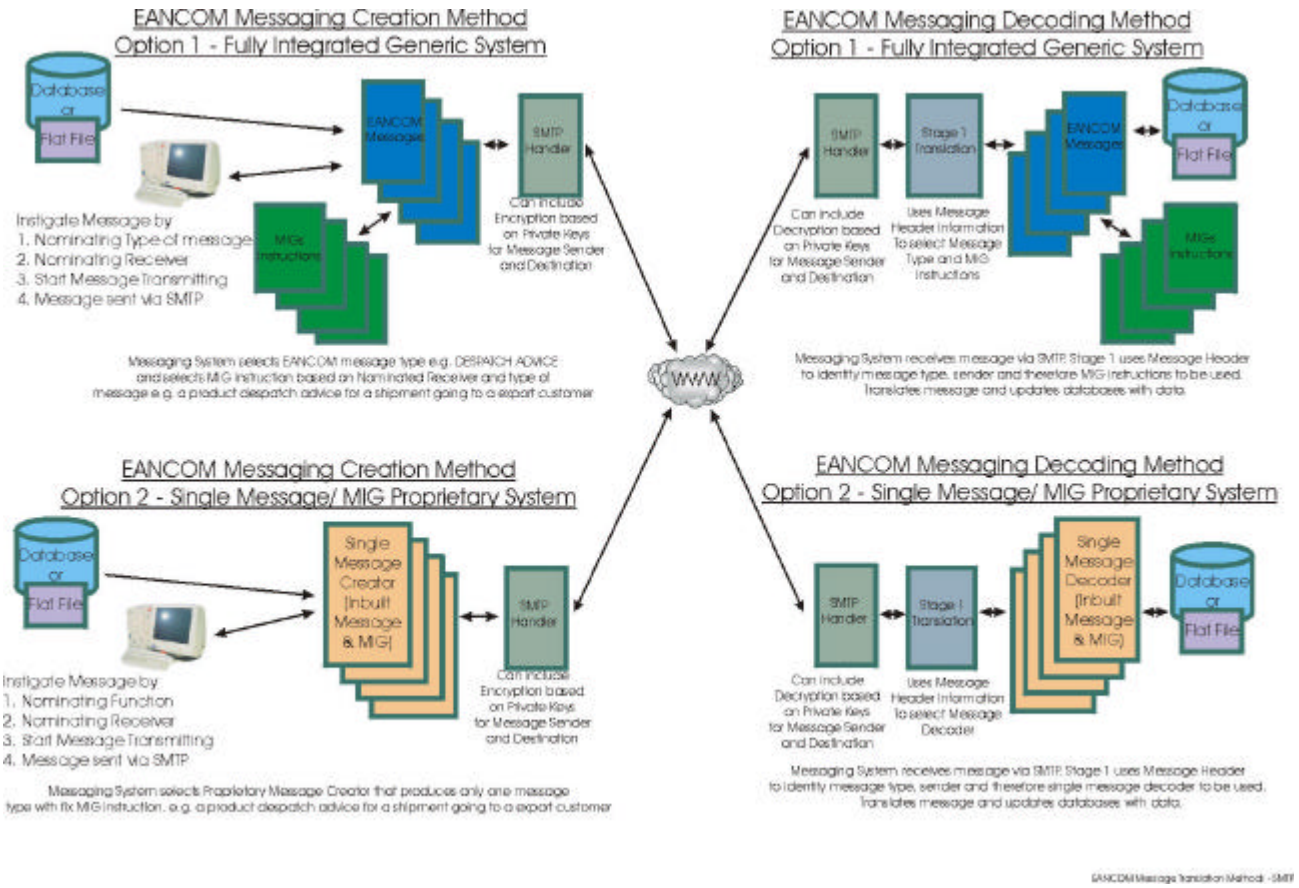

Figure 21 – Message Translation Approach

This diagram shows both the generic message translation approach and the proprietary message translation approach.

The table below shows a comparison of the two different approaches:

Issues	Generic Message Translation	Proprietary Message Translation
Initial Set up cost	Very high for all message types	Low to moderate cost for initial message type
On going additional Message types	Low cost as already included	Low to moderate cost for each message type
On going MIG preparation	Very low cost as tools available to configure for each MIG as and when needed	Low to moderate cost for each MIG (same as for each message type)
Change to MIGs	Very low cost as configuration can be changed	Low to moderate cost for each and every change (same as for creation of message types and MIGs)
On going licence fee	Low to moderate	Nil if in house developed
Speed to deploy	Quick to install and configure, Can be up and running within hours	Takes time to develop each Message type and MIG
Scalability	Can be readily scaled up or down to suit database or file methods	Is likely to require redevelopment to meet scalable requirement
Cost to deploy multiple locations	Low to moderate cost per site licence	Nil cost if in house developed
Translation Software Maintenance	Nil to low depending on licence/ maintenance agreement	Nil to moderate depending on errors or system problem identified

The above table indicates that if only a couple of message types are needed and the translation software is to be used on multiple sites, then it is likely to be a lower cost to make individual message translation programs. If there is a need for flexibility for many message types and MIGs on very few sites then the generic approach is best.

The two different approaches work in different ways.

The generic translation approach has completed Data Dictionary information and syntax rules for each of the different EANCOM messages. The translation software then has tools to allow for users to create their own Message Implementation Guides, which can be linked to specific EANCOM Messages and individual message recipients. This allows for different Message Implementation Guides for different trading partners. When messages are received using generic message translation software the software check the header and first few lines of the message to determine which EANCOM message to use and what Message Implementation Guide to use. The generic translation approach is the most flexible solution.

The propriety translation approach creates individual "hard coded" message creation tools and message decoding tools. For each message there needs to be individual translation tools developed. There also need to be a pre-translation tools that looks at the beginning of the message and determines which decoding tool to be used for a specific message. If a suitable tool does not existing an error needs to be generated. The advantage of the propriety approach is the relatively low cost to make a single message translator. Therefore the single message translator can be deployed at a very low cost to numerous locations if there is no license fee.

9 TRIAL PLAN/ STATUS (MILESTONE 6)

The trial plan/ Status is broken in to a number of stages:

Task No	Task Description	Commence Date	Completion Date	Issues
1	Obtain NLIS Ear tags	1/1/02	Completed	
2	Obtain close range NLIS Readers for the Feedlot. Install readers where required at the feedlot.	1/1/02	Completed	
3	Preparation of DCU Templates for each capture requirement	1/3/02	Completed	
4	Obtain PDT6900 (DCU) for Feedlot	1/3/02	Completed	
5	Implement Upload and consolidation Program of Feedlot PC	20/3/02	Completed	
6	Implement standard Messaging to NLIS database from ACC	1/1/02	Completed	
7	Implement standard Messaging from NLIS database to ACC	1/1/02	Completed	
8	Train Feedlot Personnel in the use of the technology	26/3/02	Completed	
9	Attached NLIS RFID Ear Tag at induction and capture data. On going capture through feedlot until exit.	26/3/02	Completed	
10	Upload Data to Feedlot PC and consolidate.	26/3/02	Completed	
11	Send through existing NLIS system the Cattle information to the NLIS database on Exit from the Feedlot.	5/6/02	Completed	
12	Send by the eNVD system the NVD, Waybill and commercial information on the consignment.	5/6/02	On Shipping until all cattle in trial sent	
13	Obtain Close Range NLIS Reader for abattoir and install	1/5/02	Completed	
14	Test and train Slaughter Floor personnel in use of Close Range Reader	3/6/02	Completed	
15	Implementation ACC reconciliation between eNVD and cattle consignment arrival	4/6/02	For duration of trial	
16	Scan NLIS device at Slaughter and upload to ACC Slaughter Floor System	4/6/02	For duration of trial	
17	Consolidate Slaughter Floor NLIS to Body number, eNVD records and generate feedback data by QULTYTEST Message with NLIS device numbers.	18/6/02	For duration of trial	
18	Send slaughter records to NLIS database using existing methods	28/6/02	Completed	
19	Query NLIS Database using PROINQ messages and process PRODAT response	6/6/02	Completed	

The primary tasks that were involved in the demonstration trial are summarised into 4 sub tasks:

- NLIS/EAN Query using PROINQ and PRODAT Messaging.
- eNVD system to electronically move NVDs and Waybills. This is via the www.meatprojects.com/nvd.asp web site, automated email and the NVD/Waybill printer program.
- Producer Feedback using EANCOM Quality Test Report Message. This will be by email of slaughter data via an EANCOM message. A Feedback printer program will be supplied.

- Notification to the NLIS database of cattle movement from Feedlot to Slaughter and record of Slaughter. This will be by the current NLIS web site method using flat text files in the NLIS nominated format.

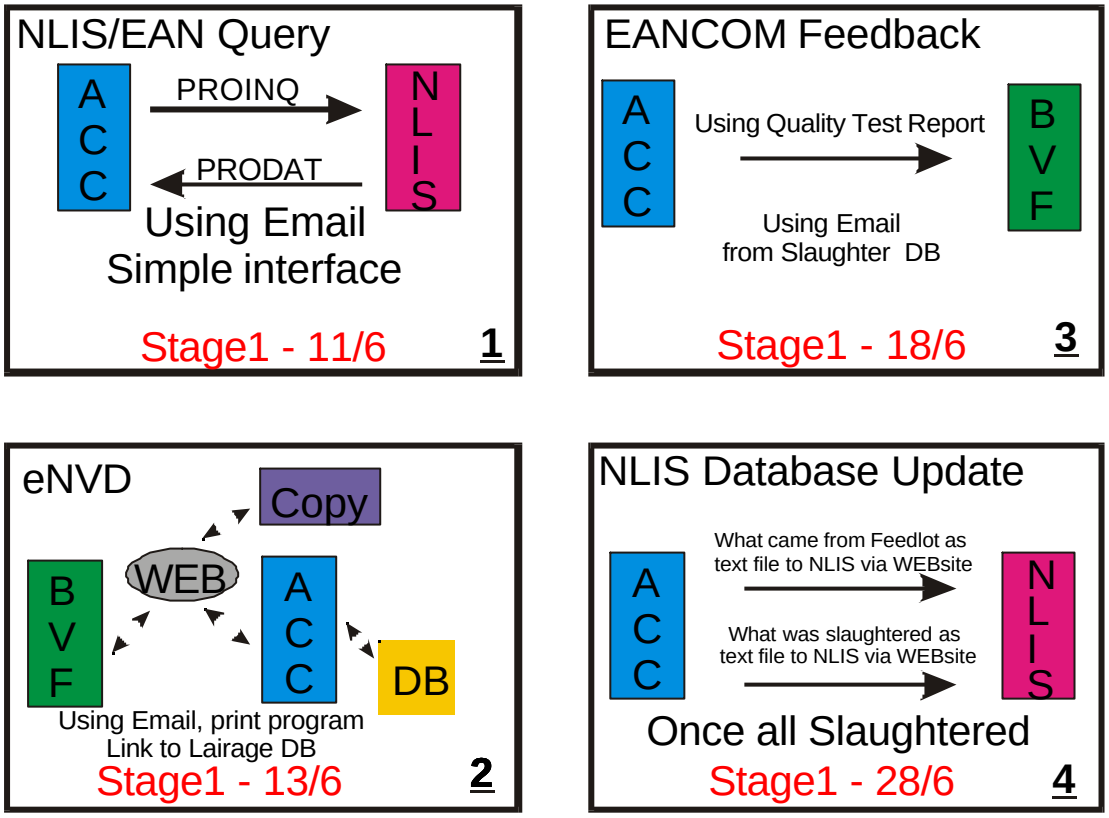

Figure 22 – Diagrams of Trial Messaging

10 APPENDIX A (MILESTONE 5)

10.1 Sample Quality Test Report EANCOM Message

UNH+QALITY1+QALITY:D:96A:UN:EAN001'
BGM+4:::FOOD AND SAFETY QUALITY TEST REPORT+1234567890+9'
DTM+137:20011207:102'
RFF+AAM:WAYBILL REFERENCE NUMBER'
DTM+171:20011101:102'
RFF+ABE:DECLARANTS REFERENCE NUMBER'
DTM+171:20011201:102'
NAD+BY+9377778000001::9'
RFF+API:PROPERTY IDENTIFICATION CODE '
RFF+AMT:ABN NUMBER FOR BUYER'
NAD+SU+9377778123456::9'
RFF+API:PROPERTY IDENTIFICATION CODE'
RFF+AMT:ABN NUMBER FOR SUPPLIER'
LIN+1++NUMBER1:EN'
PIA+1+AUST-MEAT CODE NUMBER:GD::9+ITEM NUMBER ASSIGNED BY SUPPLIER:GU::9'
IMD+F+DSC+:::2 YEAR OLD STEER:CHAR CROSS SANTA'
MEA+CT++AMT:750'
MEA+AAI+AAB;3+KGM:1200'
DTM+94:20011206:102'
QTY+40E:300:AMT'
RFF+AAT:QJEE009298014274'
CCI+PCM++HSCW::60:251'
CCI+PCM++BODY NUMBER::91:00234'
CCI+PCM++LOT NUMBER::91:123'
CCI+PCM++KILL DATE::91:200111023:14?:50'
CCI+PCM++DENT::60:0'
CCI+PCM++SEX::60:MALE'
CCI+PCM++P8 FAT::60:10'
CCI+PCM++MEAT COLOUR::60:3'
CCI+PCM++MEAT TEXTURE::91:2'
CCI+PCM++BRUISING::91:$3.10'
LIN+2++NUMBER2:EN'
PIA+1+AUST-MEAT CODE NUMBER:GD::9+ITEM NUMBER ASSIGNED BY SUPPLIER:GU::9'
IMD+F+DSC+:::2 YEAR OLD STEER:OTHER NAME'
MEA+CT++AMT:750'
MEA+AAI+AAB;3+KGM:1200'
DTM+94:20011206:102'
QTY+40E:300:AMT'
RFF+AAT:QJEE00929899999'
CCI+PCM++HSCW::60:251'
CCI+PCM++BODY NUMBER::91:00234'
CCI+PCM++LOT NUMBER::91:123'
CCI+PCM++KILL DATE::91:200111023:14?:50'
CCI+PCM++DENT::60:0'
CCI+PCM++SEX::60:MALE'
CCI+PCM++P8 FAT::60:10'
CCI+PCM++MEAT COLOUR::60:3'
CCI+PCM++MEAT TEXTURE::91:2'
CCI+PCM++BRUISING::91:$3.10'
UNT+50+QALITY1'

10.2 Sample Livestock Despatch Advice Information

Example Livestock consignment information:
LoT Information

Description	Information	Ref	Element
Unique Message Number	334565764576	EANCOM	
Consignor	AA Company Pty Ltd Goonoo Feedlot Comet QLD 4702		
Consignor Property Identification code (state based PIC)	QJEE0092		
Place of Loading	Goonoo Feedlot Comet QLD 4702		
Shipment Date/ time	10th October 2001 7:30am		
Consignee	Nolans Meats Gympie Abattoir Gympie QLD		
Consignee Property Identification Code (state based PIC)			
Place of discharge	Gympie Abattoir Gympie QLD		
Estimated Arrival Time	10th October 2001 3:00pm		
Shipment SSCC	00931234500001234567	EANCOM	
Truck Registration	FRW534		
Description EAN GTIN code for Sex/ Breed/ Age (producer or buyer allocated code)	99312345000134	Male EANCOM	Repeated for each sex/breed, etc
Secondary Description	Male Char x Santa		
Quantity EAN GTIN code for Sex/ Breed/ Age (producer or buyer allocated code)	23		
Description EAN GTIN sex/ Breed/ Age (producer or buyer allocated code)	99312345000157	Female EANCOM	Repeated for each sex/breed, etc
Secondary Description	Female Char x Santa		
Quantity EAN GTIN Sex/ Breed/ Age (producer or buyer allocated code)	78		
NVD (National Vendor Declaration) Number (regulatory requirements)	6479607		
Waybill Number (DPI regulatory requirements) Reference	A3689031		
Purchase Order (optional)			
Net Weight			
Reference	SAN1028	Company Reference	

Livestock individual consignment Information:

Description	Information	Ref	Element
EAN GTIN code for Sex/ Breed/ Age (producer or buyer allocated code)	99312345000134	EANCOM	2 year old Steer Char x Santa
Secondary Description	2 year old Steer Char x Santa		
Reference	Purple tag/ yellow button		
Weight (optional)	450kgs		
Serial Number (property allocated Serial number eg RFID or other) (optional)	23456757		
Regulatory Serial Number (NLIS Tag Number) if fitted	QJEE009298012345		
EAN GTIN code for Sex/ Breed/ Age (producer or buyer allocated code)	99312345000134	EANCOM	2 year old Steer Char x Santa

Secondary Description	2 year old Steer Char x Santa		
Reference	Purple tag/ yellow button		
Weight (optional)	464kgs		
Serial Number (property allocated Serial number eg RFID or other) (optional)	23456778		
Regulatory Serial Number (NLIS Tag Number) if fitted	QJEE009298014274		
EAN GTIN code for Sex/ Breed/ Age (producer or buyer allocated code)	99312345000134	EANCOM	2 year old Steer Char x Santa
Secondary Description	2 year old Steer Char x Santa		
Reference	Purple tag/ yellow button		
Weight (optional)	435kgs		
Serial Number (property allocated Serial number eg RFID or other) (optional)	23456563		
Regulatory Serial Number (NLIS Tag Number) if fitted	QJEE009298012418		

Livestock Mob or Lot quality and food safety Quality Test Report

Description	Information	Ref	Element
Livestock Mob or Lot consignment Despatch Advice Message Number	33456574576	EANCOM	
Livestock Mob or Lot quality and food safety Quality Test Report Unique Number	33465768332	EANCOM	
Document Name/Type Coded	Consignment Mob	Coded	C002
Code List Responsible Agency	Internal		
Date/ Time	10th October 2001 7:30am		
Property Identification Code (PIC)	QJEE0092		
Waybill Number (DPI regulatory requirements)	A3689031		
NVD (National Vendor Declaration) Number (regulatory requirements)	6479607		
Item Code	99312345000134	2 year old steers EANCOM	
Quantity	23		
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	NVD HGP Status		Product Characteristic C240
Code Agency	MLA		3055
Characteristic (yes/no, value, etc)	No		7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	NVD QA Program Status		Product Characteristic C240
Code Agency	AUS-MEAT Cattle Care		
Characteristic (yes/no, value, etc)	Yes		7036
Additional Characteristic	657		7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	NVD Bred on PIC		Product Characteristic C240
Code Agency	MLA		3055
Characteristic (yes/no, value, etc)	No		7036
Additional Characteristic	3 months		7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	NVD By-product feed Status		Product Characteristic C240

Code Agency	MLA		3055
Characteristic (yes/no, value, etc)	No		7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	NVD AQIS TTL Status		Product Characteristic C240
Code Agency	MLA		3055
Characteristic (yes/no, value, etc)	No		7036
Additional Characteristic			7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	NVD Withholding Status		Product Characteristic C240
Code Agency	MLA		3055
Characteristic (yes/no, value, etc)	No		7036
Additional Characteristic			7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	NVD Agri Spray Status		Product Characteristic C240
Code Agency	MLA		3055
Characteristic (yes/no, value, etc)	No		7036
Additional Characteristic			7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	NVD Endos Status		Product Characteristic C240
Code Agency	MLA		3055
Characteristic (yes/no, value, etc)	No		7036
Additional Characteristic			7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	MSA Status		Product Characteristic C240
Code Agency	MSA		3055
Characteristic (yes/no, value, etc)	Yes		7036
Additional Characteristic	MSA VD 0160905		7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	MSA Lic Status		Product Characteristic C240
Code Agency	MSA		3055
Characteristic (yes/no, value, etc)	Yes		7036
Additional Characteristic	200010		7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	MSA BI Status		Product Characteristic C240
Code Agency	MSA		3055
Characteristic (yes/no, value, etc)	Less than 20%		7036
Additional Characteristic	Tag 43751 highest BI%		7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	AUSMEAT NFAC Status		Product Characteristic C240
Code Agency	AUSMEAT		3055
Characteristic (yes/no, value, etc)	Yes		7036
Additional Characteristic	A 172140		7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status,	AUSMEAT NFAS Lic		Product Characteristic C240

etc)			
Code Agency	AUSMEAT		3055
Characteristic (yes/no, value, etc)	Yes		7036
Additional Characteristic	2750		7036
Characteristic identifier (HGP status, QA Property, Confined to PIC, Bred on PIC, Breed, AQIS Targeted Testing List Status, etc)	Company Market Code		Product Characteristic C240
Code Agency	Internal		3055
Characteristic (yes/no, value, etc)	T70		7036
Additional Characteristic			7036

10.3 Message Implementation Guide (MIG) for Product Inquiry (PROINQ) (NLIS database Enquiry)

10.4 Message Implementation Guide (MIG) for Product Data (RPODAT) (NLIS database Response)

11 APPENDIX B (MILESTONE 6)

11.1 Technical Model for eVD system

11.2 Instructions for Downloading, set up and using eNVD Program and WEB site

11.3 Example Raw Data for eNVD System

12 APPENDIX C SUPPORT DOCUMENT FOR PROJECT

12.1 Spread Sheet Print Out of DNA numbers for Carcase matched to DNA number for Feedlot

12.2 A4 sized Diagrams

12.3 Supply Chain Management – Model – EAN.UCC and EDI for the Meat Industry