



Canadian Food Traceability Data Standard Version 2.0



Agriculture and Agri-Food Canada Agriculture et Agroalimentaire Canada

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Canadian Food Traceability Data Standard Version 2.0

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Introduction

Message from the Chairs, Can-Trace Standard Working Group

On behalf of Can-Trace, we are pleased to present Version 2.0 of the Canadian Food Traceability Data Standard, or CFTDS. Based on a one up/one down model of sharing traceability information, version 1.0 of the CFTDS was published in December 2004. This latest edition contains enhancements and modifications based on stakeholder change requests submitted over the past year.

This document contains background information to help you understand the context in which this standard was created. It also includes an easy-to-read quick reference guide on the data attributes needed by each role in the supply chain and commodity group.

As a community of stakeholders which brings together a wide variety of national organizations representing large and small companies, and representing all components of the supply chain, Can-Trace is proud of the efforts of several working groups to ensure that this latest version of the Standard represents a more balanced reflection of the entire supply chain's traceability information requirements. Over the period since the publication of Version 1.0, we undertook a study of companies in the multi-ingredient product environment. The overwhelming conclusion of that study is that the CFTDS is sufficient for tracking and tracing of both single and multi-ingredient foods.

The reader should remember that this is a voluntary standard, but it is a standard. The decision to implement a traceability system, however complex or technology-intensive in nature, is a business decision. Can-Trace has attempted to provide users with a tool, which will provide guidance in terms of what information, or data elements need to be exchanged between trading partners in the food supply chain. The document is not fixed in stone, and will continue to evolve in response to change requests and comments from stakeholders with the passage of time. For more information on how to submit change requests or for further clarity about this document, we encourage you to contact the Can-Trace Secretariat at info@can-trace.org.

Finally, we would like to thank all those who participated over the past several months – working group members, participating organizations, and staff – to bring us to this point today.

Yours truly,

Doug Grant Vice President and CIO The Oppenheimer Group Justin Sherwood Vice President CCGD

1. About Can-Trace

1.1 Background

In July 2003, the Canadian food Industry got together and developed a program to identify industry requirements for a national all-product, whole-chain food traceability (tracking and tracing) standard. The goal of this initiative was to develop and verify an information (data) standard necessary to establish traceability based on international standards. Its implementation would be voluntary. The initiative was given the name of Can-Trace, which today has participation from over 25 national trade associations and government organizations.

The objective of Can-Trace is to define and develop minimum information requirements for national whole-chain all-product traceability standard based on the globally recognized EAN.UCC System¹. Specifically, this voluntary standard will establish the minimum data elements required to be collected, kept and shared between trading partners. The issue of how this standard will be implemented in a business setting or in a particular food sector falls outside the current mandate of Can-Trace².

The decision to focus on beef, pork, produce and seafood as a first priority was the result of input received from industry and governments during public consultations held across Canada in late 2003. The basic traceability data elements common to these four commodities (beef, pork, produce and seafood), referred to as "Mandatory" data elements, likely apply to all foods. What may be added in the future as a result of food industry experience with implementing this standard are "optional" elements that are specific to a particular food.

In the intervening months since Version 1.0 of this standard was published, Can-Trace has undertaken a number of initiatives aimed at furthering the understanding of how the Can-Trace standards can assist organizations looking to implement or enhance traceability systems. More information on these initiatives is available from the Can-Trace web site.

An industry-driven initiative, Can-Trace is directed by a Steering Committee composed of national industry association representatives and government observers. GS1 Canada (formerly the Electronic Commerce Council of Canada (ECCC)) is the Secretariat to this initiative.

1.2 The Drivers

Traceability has come to the forefront of public discussion in the agri-food sector in recent months for a number of reasons:

- international market pressures from trading partners
- regulatory programs in Canada in the beef sector at both the federal level and in the province of Quebec
- the Agricultural Policy Framework (APF) in Canada, an initiative of the federal, provincial and territorial governments to establish food traceability targets
- legislation and regulations in the U.S.A. and Europe concerning both animal health, security and food safety

As a result of these and other factors, more companies and organizations have begun to develop traceability systems for their particular sector or supply chain requirements. However, without the benefit of a national or

²See the Can-Trace website for updates on a companion document being developed that will provide guidance to users as to how the various data elements should be used in documents and physical markings.



¹The EAN.UCC (European Article Number. Universal Code Council) System which is used worldwide, standardizes bar codes, EDI transactions sets, XML schemas, and other supply chain solutions for more efficient business. GS1 is the custodian of these standards.



international standard for food traceability, such efforts are proprietary and do not necessarily cover the depth and breadth of the entire supply chain.

The food industry has realized that significant benefits could be derived from a single national traceability data standard - such as minimizing the cost of a food recall for all components of a supply chain, support for food quality programs and supply chain improvement. Until the Can-Trace initiative got underway, no such standard existed. In an increasingly competitive economy, the industry was not willing to continue supporting multiple systems or standards for traceability.

1.3 Role of the Standards Working Group

This standard was developed by a dedicated team of volunteers who are part of the Can-Trace Standards Working Group. Their mandate was to develop the minimum information (or data) requirements that need to be "collected, kept and shared" at each "hand off" point in the supply chain in order to establish traceability. The Standards Working Group not only directed the development of the first version of this standard, but also reviewed the various change requests from stakeholders that has resulted in Version 2.0. A listing of the members of this Working Group appears in Appendix A.

The most current version and additional information can be found at the Can-Trace website www.can-trace.org

2. The Canadian Food Traceability Data Standard Version 2.0

2.1 Purpose

This standard defines the minimum data that is needed to support a one-up/one-down traceability model.

2.2 Definition

Under a one up/one down system, each participant within the food supply chain is responsible for maintaining records about the products they receive, their use (i.e. the link between inputs and outputs) and where they were shipped to, or sold. The Figure 2.2 provides a basic illustration of a one-up/one-down system.



Figure 2.2: Illustration of a one-up/one-down system.

2.3 Scope

The CFTDS addresses information flowing from the primary producer end of the supply chain up to delivery to the back door of the retail or foodservice operation. The store shelf or end consumer is therefore beyond the scope of this standard.

2.4 Principles

The Canadian Food Traceability Data Standard was developed based on the following principles:

- 1. The standard is voluntary.
- 2. The standard is "whole chain" in its applicability.
- 3. The standard references data requirements, not technology or systems specifications.
- 4. The data standard is based on global standards (GS1 and ISO).
- 5. The standard is not meant to replace existing systems but to complement them.

It is important to note that traceability requirements from primary producer to their raw materials provider have not been included within the scope of this standard at this time. For example, a primary producer may receive inputs such as fertilizer, herbicides, feed, biologicals that contribute to the growing/raising of a commodity. These traceability requirements are in the process of being covered by on-farm food safety and quality programs. No assumption should be made that the exclusion of raw materials providers from this release reflects a lack of recognition of their importance within the supply chain.





2.4.1 Important Considerations

- These traceability data requirements were validated through pilots conducted in the summer of 2004 that focused on "single ingredient" products in the beef, pork and produce sectors. The applicability of these data requirements to multi ingredient and/or bulk products were subject of further study by Can-Trace.
- Through the work of the Multi Ingredient Working Group (see the Multi Ingredient Final Report) it was determined that the data requirements identified by Can-Trace for "single ingredient" products is applicable to multi ingredient products. The complexity lies in the data management of the traceability information for each ingredient. The Multi Ingredient Report can be found on the Can-Trace website.
- The Canadian Food Traceability Data Standard is not a technology standard. This is a standard which sets out the minimum information or data elements needed to effectively track and trace food products for a variety of food safety, quality and supply chain improvement applications. Currently there is another initiative within Can-Trace that will address how to use the data elements on both the documentation and on the physical markings and the technologies used to exchange those data elements among supply chain partners.
- The Can-Trace Standard applies to both domestic and imported products.
- To be most effective, a traceability program for an organization should be integrated into existing business systems, logistical processes, quality programs, and food safety programs such as HACCP (Hazardous Analysis and Critical Control Points). This standard provides the basis upon which to build the traceability component.
- As goods move through the food supply chain, there is basic information that needs to be collected from certain participants, kept, and shared with other relevant participants in the supply chain. As an example, for a single transaction, the primary producer must collect the Receiver identifier from the processor, whereas the processor must collect the Sender identifier from the primary producer.
- Effective tracking and tracing requires the linking of information and product flow. This linkage is necessary in order that product may be tracked from point of origin to the back door of the retail store or foodservice operator. Conversely, this linkage also ensures that product can be traced back through the supply chain.
- In a one up/one down model, no single supply chain partner holds all the information. Each partner keeps information regarding production inputs and needs to keep and share information regarding production outputs. Figure 2.3.1 below illustrates the flow of goods and information through a supply chain.



Figure 2.4.1: Associating the flow of information with the physical flow of products.

2.5 Important Definitions

2.5.1 Traceability

Can-Trace uses the International Organization for Standardization (ISO) definition of traceability (that appears in ISO 9000/2000):

"Traceability is the ability to trace the history, application or location of that which is under consideration".

For additional clarity, Can-Trace further defines traceability as being composed of two components: tracking and tracing.

2.5.2 Tracking

Tracking is the ability to follow the path of a specified unit and/or lot of trade items downstream through the supply chain as it moves between trading partners. Trade items are tracked routinely for availability, inventory management and logistical purposes. In the context of this standard, the focus is on tracking items from the point of origin to the point of use.

2.5.3 Tracing

Tracing is the ability to identify the origin of a particular unit located within the supply chain by reference to records held upstream in the supply chain. Units are traced for purposes such as recall and complaints.

2.5.4 Lot Number

A number or code assigned to uniquely represent a batch or group* of inputs, products, animals, and/or outputs. The company or individual creating the goods generally assigns the number.

* A lot is defined as a set of units of a product, which have been produced and/or processed or packaged under similar circumstances. Note 1: The lot is determined by parameters established beforehand by the organization. Note 2: A set of units may be reduced to a single unit of product.





2.5.5 Supply Chain

A set of approaches utilized to efficiently integrate suppliers and clients (comprised of stores, retailers, wholesalers, warehouses, and manufacturers) so food products are produced and distributed in the right quantities, to the right locations, and at the right time, in order to minimize system wide costs while satisfying service level requirements.

2.5.6 Supply Chain Roles

By the time that a product has moved from the grower to the retail store level, that product may have gone through a number of transformations. Each transformation will have involved a number of different role players. Every role player has a responsibility to collect, keep and share information in order to enable one up/one down traceability.

Reference is made to five primary participants in this document. That is not to suggest that there are not intermediary players such as secondary processors, etc. Moreover, it should also be noted that a participant in the supply chain may by the vary nature of their business fulfill more than one role. Therefore it should be noted that the role (and the requirements of that role) are determined by the particular transaction/event between trading partners in question.

2.5.6.1 Primary Producer

The Primary Producer may be the farmer, fisherman or grower.

2.5.6.2 Processor

The processor typically receives input from a primary producer and transforms that product. Examples of processors include an abattoir or a packer that consolidates produce from a number of growers. A food supply chain may comprise more than one processor.

2.5.6.3 Carrier/ Third Party Transporter

The carrier or third party transporter would be responsible for the handling or delivery of product.

2.5.6.4 Wholesaler/Distributor

The wholesaler or distributor provides raw or finished product such as fresh fish or meat to the retailer. The retailer then distributes to each individual store.

2.5.6.5 Retail/Store/Foodservice Operator

The store and foodservice operator have the final relationship with the consumer. The foodservice operator may be an individual restaurant, an extended care facility, healthcare provider or hospitality service such as a hotel chain.

Each of the above roles in the supply chain needs to keep or share the mandatory elements and, depending on requirements of their sector, may need to keep and share some of the optional elements.

2.5.7 Mandatory Data Elements

The data that must be exchanged between trading partners to accomplish traceability. It should be noted that while the Canadian Food Traceability Data Standard is a voluntary standard, compliance with the standard mandates the use of twelve data elements -- hence the term "mandatory data elements" -- which are the minimum required to establish traceability.

2.5.8 Optional Data Elements

The data that may be used in addition to the mandatory data. These data elements can support other business objectives such as food quality or marketing programs, but they are not essential to establishing traceability.

2.5.9 My Production Inputs & My Production Outputs

Production Inputs

The products/trade units that are received by a trading partner in the food supply chain. As the scope of Can-Trace does not include agricultural inputs, e.g., fertilizers, feeds, etc., production inputs at the level of primary production, are limited to the animals, plants or their products that are produced at that level. *It is critical for traceability that the link between input and output be recorded and kept.

Production Outputs The products/trade units that have been

The products/trade units that have been produced and/or shipped from a trading partner in the food supply chain and may include animals (including fish) plants, and their products as well as foods produced from these products/trade units. *It is critical for traceability that the link between input and output be recorded and kept.

**There are other types of information requirements for market access, regulations or other business uses, that production inputs or outputs may include information on the product/trade unit, however they are not essential to facilitate traceability.

2.6 Basic Elements of Traceability

2.6.1 Product, Party and Location Identification

In order to track and trace a product through the whole supply chain, every raw material harvested from farm or sea and every food product moving from one level to another in the chain must be uniquely identified. Each role in the life of the product must also be uniquely identified.

Unique identifiers must therefore be assigned to each product and each location. As products move or are transformed by different chain participants at different locations, new product, party and location identifiers may be assigned.

There are many ways to assign identifiers.

When using lot numbers, lot composition is a critical point in the traceability process. It determines the precision of any traceability system. The more homogeneous the lot, the more precise the traceability system will be in isolating the suspected goods.

The CFTDS encourages the use of EAN.UCC international standards for product, party and location identification (see the Can-Trace website).

It is recognized that there are existing investments in individual animal, group, herd or flock identification systems such as the Canadian Cattle Identification Agency. These animal identifiers can be linked to the EAN.UCC identifiers further down the supply chain.

2.6.2 Linking of Information

To ensure the continuity of the flow of traceability information, each trading partner must pass on information about the identified lot or product group to the next partner in the production chain. The information necessary for traceability is classified as Collect Data, Keep Data and Share Data (data storage and data exchange can be a direct function of trading partners or may be managed indirectly through a third party).





Collect Data: The data that the participants in the supply chain are required to obtain from the relevant member of the supply chain.

It is imperative that the links between the received and the processed products and between the processed and the shipped products (resulting from a product transformation) are recorded. Within a company, the control of all these links and accurate record keeping make it possible to connect what (information and products) has been received (production inputs) and what (information and products) has been produced and/or shipped (production outputs).

If one of the stakeholders in the chain fails to manage these links, the result is a loss of traceability.

2.6.3 Recording of Information

Effective traceability requires each role to record and archive data at each step of the supply chain.

Keep Data: The information that each participant in the supply chain is required to record and maintain in their business records.

The Can-Trace Standard defines the data requirements; it does not define how this standard should be implemented.

2.6.4 Sharing of Information

To ensure the continuity of the flow of traceability information, each stakeholder must pass on information about the identified product, party or location to the relevant member in the supply chain.

Share Data: The information that each participant in the supply chain is required to provide to the relevant member of the supply chain.

2.7 Components of the Can-Trace Standard

2.7.1 Data Types:

There are two types of data required for traceability: Master and Transactional data.

Master data is information that seldom changes. Master data applies to product, party and location information. Examples include product description, Receiver identifier, location etc.

Transactional data is data that is unique to each individual transaction. Examples include lot number, shipment identifier and shipment date.

2.7.2 Data Usage:

As the name implies, mandatory data refers to the information that all supply chain partners are obliged to collect, keep, or share.

Optional data are additional pieces of information that are useful (for other objectives such as product quality, animal health etc.) but not essential to establish traceability.

2.8 Can-Trace Generic Data Requirements

The uses of mandatory (Figures 2.8.1.1A-D) and optional data (listed) are shown on the following pages. The figures illustrate the generic mandatory data requirements that each participant must carry, irrespective of commodity:

2.8.1 Generic Mandatory Data Requirements

Important Note: There is no need to duplicate existing records for traceability. For example, a shipment identifier serves as a reference to other data elements such as Ship From Location Identifier, Ship To Location Identifier, Receipt Date, and Ship Date etc.



Can-Trace

Generic Can-Trace Mandatory Data Requirements **Primary Producer** (ie Grower, Farmer, Fisherman) Primary Producers who are the FIRST participants of the supply chain (NO previous Trading Partners) will have NO data to collect from or share with the previous trading partner (see My Production Inputs). My Production INPUTS (previous) Data to Collect Data to Keep Data to Share * Input Lot Number Product Identifier 1 Product Description Receipt Date Receiver Identifier Ship From Location Identifier Ship To Location Identifier Shipment Identifier Sender Identifier 1 Quantity Unit of Measure My Production OUTPUTS (next) Next Trading Output Lot Number Partner (eg * Product Identifier Processor) Product Description Receiver Identifier Ship From Location Identifier Ship To Location Identifier Shipment Identifier Sender Identifier Ship Date Quantity Unit of Measure

NOTE:

* See Data Dictionary in Appendix B and Glossary in Appendix D for definitions.

* It is CRITICAL for traceability that the link between input and output is recorded and kept.

Figure 2.8.8.1A: Primary Producer generic mandatory data requirements.

	Generic Can-Trace Mandatory Data Requirements				
	eg (Packer, Re	Processor packer, Processo	r, Manufacture	er)	
My Production INPUTS (previous) * Input Lot Number * Product Identifier * Product Description * Receipt Date * Receiver Identifier * Ship From Location Identifier * Ship To Location Identifier * Shipment Identifier * Sender Identifier * Quantity * Unit of Measure		Data to Collect	Data to Keep	Data to Share	
My Production OUTPUTS (next) * Output Lot Number * Product Identifier * Product Description * Receiver Identifier * Ship From Location Identifier * Ship To Location Identifier * Shipment Identifier * Sender Identifier * Ship Date * Quantity * Unit of Measure		1 1 1	1111111111	111 1 11 11	Next Trading Partner (eg Wholesaler/ Distributor)

NOTE: * See Data Dictionary in Appendix B and Glossary in Appendix D for definitions. * It is CRITICAL for traceability that the link between input and output is recorded and kept.

Figure 2.8.1.1B: Processor generic mandatory data requirements.





Generic Can-Trace Mandatory Data Requirements

Wholesaler, Distributor eg (Wholesaler, Distributor, Broker)

My Production INPLITS (provious)	Data ta Callast	Data ta Kasa	Data ta Chara]
* Input Lot Number			Data to Share	
* Product Identifier	4	4		
* Product Description				
* Receipt Date				
* Receiver Identifier		, I		
* Ship From Location Identifier	1	5	· ·	
* Ship To Location Identifier	'	J	1	
* Shipment Identifier	1	1	· ·	
* Sender Identifier	1	1		
* Quantity	1	1		
* Unit of Measure	1	1		
My Production OUTPUTS (next)				Next Trading
* Output Lot Number		1	1	Partner (eg Retail/
* Product Identifier		1	1	Store/Foodservice)
* Product Description		1	1	
* Receiver Identifier	1	1		
* Ship From Location Identifier		1	1	
* Ship To Location Identifier	1	1		
* Shipment Identifier		1	1	
* Sender Identifier		1	1	
* Ship Date	1	1		
* Quantity		1	1	
* Unit of Measure		1	- 1	

NOTE:

* See Data Dictionary in Appendix B and Glossary in Appendix D for definitions.
 * It is CRITICAL for traceability that the link between input and output is recorded and kept.

Figure 2.8.1.1C: Wholesaler, Distributor generic mandatory data requirements.

Generic Can-Trace Mandatory Data Requirements

Retail/Store Foodservice Operator Level eg (Store, Foodservice Operator)

My Production INPUTS (previous)	Data to Collect	Data to Keep	Data to Share
* Input Lot Number	1	4	
* Product Identifier	1	1	
* Product Description	1	1	
* Receipt Date	1	1	
* Receiver Identifier		1	1
* Ship From Location Identifier	1	1	
* Ship To Location Identifier		1	1
* Shipment Identifier	1	1	
* Sender Identifier	1	1	
* Quantity	1	1	
* Unit of Measure	1	1	
My Production OUTPUTS (next)			
* Output Lot Number		1	
* Product Identifier		1	
* Product Description		4	
* Receiver Identifier		1	
* Ship From Location Identifier		1	
* Ship To Location Identifier		1	
* Shipment Identifier		1	
* Sender Identifier		1	
* Ship Date		1	
* Quantity		1	
* Unit of Measure		4	

NOTE:

* See Data Dictionary in Appendix B and Glossary in Appendix D for definitions. * It is CRITICAL for traceability that the link between input and output is recorded and kept.

Figure 2.8.1.1D: Retail/Store Operator Level generic mandatory data requirements.





2.8.1 Generic Optional Data Elements

Depending on the commodity, these are the generic optional data elements.

NOTE: This list provides some examples of optional data elements and is not an exhaustive list, certain sectors and/or programs may have additional requirements that are not listed here.

OPTIONAL Data Elements

- o Animal Age (Beef)
- o Best Before Date
- o Receiver Name
- o Contact Information
- o Country or Origin, Province or State
- o Date of Pack/Harvest/Catch/Retirement
- o Logistics Provider Identifier
- o Shipping Container Serial Number
- o Supplier License Number (Seafood this is mandatory at the primary producer level)
- o Vehicle Identifier
- o Sender Name

Appendix A: Can-Trace Standards Working Group

Name	Company
André Beaudoin	Aliments Carrière Inc.
Barb Neuman	Lean-on-Me Small Business Support
Barbara Munro	Kraft Canada Inc.
Chris Primbs	quiTech Inc
Christine Jean	Council of Food Processing and Consumer Products (CTAC)
Doug Grant	The Oppenheimer Group
Duane Phillippi	Farmer Direct Co-operative Ltd.
Eric Aubin	Canadian Food Inspection Agency (CFIA)
Frank Hennigar	Food Systems Group
Glenn Cherry	Holstein Canada
Jacynthe D'Amours	Ministère d.Agriculture, Pêcheries et Alimentation du Québec (MAPAQ)
Jane Proctor	Canadian Produce Marketing Association (CPMA)
Joe Cartaginese	Loblaw Companies Limited
Justin Sherwood	Canadian Council of Grocery Distributors (CCGD)
Kim Anderson	Sobeys
Kevin Tufts	Neptune Food Service
Larry Griffin	Loblaw Companies Limited
Lorraine Saunders	Ministry of Agriculture, Food & Fisheries
Mac Cole	Better Beef
Marco Lagimoniere	Agriculture and Agri-Food Canada (AAFC)
Michael Conlon	Viewtrak Technologies Inc.
Michael Reidy	Agricorp
Michel Bonenfant	Metro Inc.
Mike Sanderson	B.C. Gulf Trollers Association
Ole Andersen	London Drugs
Orest Serwylo	The Traceability Innovations Group
Randy Gaus	Loblaw Companies Limited
Sophie Jacquement	Fonds de développement de la transformation alimentaire (FDTA)
Dr. Tom Feltmate	Canadian Food Inspection Agency (CFIA)





Appendix B: Can-Trace Data Dictionary

This Can-Trace Data Dictionary contains a list of all attributes and definitions used within the Can-Trace Standard. These definitions are consistent with those found in the Global Data Dictionary, where applicable.

The Global Data Dictionary or GDD was developed by EAN International (currently GS1) and the Uniform Code Council (currently GS1 US) as an online repository to support the definitions and references associated with all data components and entities of GS1 Standards.

The GDD can be accessed on-line at: http://www.ean-ucc.org/global_smp/global_data_dictionary.htm

The data dictionary also contains suggested Best Practices. Best practices are those behaviours, policies or business rules which yield the best results in given situations. Best practices may also exceed the minimum level of performance necessary to accomplish a particular task or achieve a particular objective.

CAN-TRACE DATA DICTIONARY

Acronyms

- ATQ = Agri-Traçabilité Québec
- **CLIA** = Canadian Livestock Identification Agency
- **CCIA** = Canadian Cattle Identification Agency
- **GLN** = GS1 Global Location Number
- **GTIN** = GS1 Global Trade Item Number
- **ISO** = International Standard Organization
- SCAC = Standard Carrier Alpha Code
- **SSCC** = GS1 Serial Shipping Container Code



Mandatory	Business Rules/Notes		
	Business Practice		
	Business Examples	Lot Number Group Number Batch Number Production Number Best Before Date Pack Date Catch Date	3lb bag Carrots 6 oz Salmon steak 12 - 6oz cans of Canada Fancy Corn
	Data Attribute Definition	A number or code assigned to uniquely represent a batch or group of inputs, products, animals, and/or outputs. The company or individual creating the goods generally assigns the number.	A description of the product without any pre-defined format.
	Sector	AII	AII
	Data Attribute Name	Lot Number	Product Description
			2

Mandatory	ttribute Sector Data Attribute Definition Business Examples Business Practice Business Notes Rules/Notes	t Identifier All A number, code or unique For primary product: Livestock producers: Note: Traceability descriptor that uniquely CCIA/CLIA animal Refer to the Canadian represents a commercial Identifier or group Cattle Identification or bulk product may number proprietary Agency animal the consumer unit	For primary product: the product: the product identifier uniquely distinguishes individual units of production (ie animal, bin, catch, flock). For post-farm product code product code product identifier product code product identifier	For processed or finished goods: the product identifier represents a seller's retail trade item (or product); or non-retail trade item (such as the case or master carton).	y All Count/number of, net weight, or net volume of product (trade item) identified. 10, 20 Note: Quantity and Unit Of Measure must be used together
	Data Attribute Name	Product Identifier			Quantity
		м			4





	Business Rules/Notes				ISO Codes
	Business Practice	ccyymmdd may include time, when time is required to differentiate	GS1 GLN		ccyymmdd may include time, when time is required to differentiate
Idatory	Business Examples	Sept 24 2004 expressed as 20040924	GS1 GLN Internal Customer Number Dun & Bradstreet Number	GS1 GLN Internal Supplier code Dun & Bradstreet Number	Sept 24 2004 expressed as 20040924
Мап	Data Attribute Definition	Date that the shipment is received at its destination.	A number, code or unique descriptor that uniquely represents the party purchasing the product.	A number, code or unique descriptor that uniquely represents the party selling the product.	The date that goods were shipped.
	Sector	All	F	AII	R
	Data Attribute Name	Receipt Date	Receiver Identifier	Sender Identifier	Ship Date
		ы	9		ω

		_		
Mandatory	Business Rules/Notes	Primary Producers will use, where available, location identifiers assigned for their sector.	Primary Producers will use where available sector specific location solutions.	
	Business Practice	Livestock producers: use CCIA, CLIA Premise ID or ATQ all the rest: use GS1 GLN	Livestock producers: use CCIA, CLIA Premise ID or ATQ all the rest: use GS1 GLN	
	Business Examples	CCIA, CLIA Premise ID ATQ Premise ID GS1 GLN Dun & Bradstreet Number + Proprietary Number	CCIA, CLIA Premise ID ATQ Premise ID EAN.UCC GLN Dun & Bradstreet Number + Proprietary Number	Bill of Lading Number Invoice Number (unique) Purchase Order Number Bill of Lading
	Data Attribute Definition	A number, code or unique descriptor that uniquely identifies origin of the shipment. This location may be a premises, or a specific company location such as a manufacturing plant.	A number, code or unique descriptor that represents the destination of a shipment, which may be a premises or a specific company location	A number, code or unique descriptor that uniquely distinguishes a shipment of product.
	Sector	AI	AI	AII
	Data Attribute Name	Ship From Location Identifier	Ship To Location Identifier	Shipment Identifier
		σ	10	11





Mandatory	Business Rules/Notes	Note: Quantity and Unit Of Measure - must be used together
	Business Practice	
	Business Examples	kilogram, pound, litres, case, bin
	Data Attribute Definition	Description of the units in which a quantity is being expressed. Note: Where this measure is used to describe weight, volume or count, a "net" value is applied. The term Net is taken to mean the product exclusive of its container or packaging. (For a list of some common unit of measure codes, see the Can-Trace website)
	Sector	AI
	Data Attribute Name	Unit of Measure
		12

	Business Rules/Notes	⁻ ormat ccyymmdd	Format ccyymmdd cc refers to the century, yy to the fear, 2005 cc=20, ry=05) OR Drug Regulation: ry (abbreviated nonth in English ind French) dd	
Optional	Business Practice	ccyymmdd	ccyymmdd may include time, when time is required to differentiate	
	Business Examples	Sept 24 2004 expressed as 20040924	Sept 24 2004 expressed as 20040924	ABC Company Phone number Fax Number Email Address
	Data Attribute Definition	The birth date of the animal.	Date until which the unopened product will keep.	The company contact information
	Sector	AII	AI	AII
	Data Attribute Name	Animal Age	Best Before Date	Contact Information
		13	14	15





	Business Rules/Notes		Format ccyymmdd	
	Business Practice	ISO Codes	ccyymmdd may include time, when time is required to differentiate	GS1 GLN
	Business Examples	ISO Codes: Country of Origin = Canada, Expressed as "CA" Country / Province of Origin = Alberta, Canada, Expressed as "CA-AB"	Date of Pack Date of Catch Date of Retirement Sept 24 2004 expressed as 20040924	GS1 GLN Dun & Bradstreet Number, Internal code SCAC
do	Data Attribute Definition	The country in which the goods have been packed, processed, or manufactured. Where required includes Province or State. Please refer to the Can-Trace website for a list Canadian ISO codes.	The date that the product was harvested/packed, in the case of fish the date caught, or in the case of livestock with an identification tag, the retirement date of the tag (slaughter).	A number, code or unique descriptor that uniquely represents a transporter, carrier, or other 3rd party logistics provider.
	Sector	AII	AI	All
	Data Attribute Name	Country of Origin, Province or State	Date of Pack/Harvest Catch// Retirement	Logistics Provider Identifier
		16	17	18

Optional	Business Rules/Notes					
	Business Practice			GS1 SSCC		
	Business Examples	Customer Business Name	Supplier business name	GS1 SSCC Proprietary Pallet Number	Commercial License Number	Truck Number, Trailer Number, Container Number, Vessel Number
	Data Attribute Definition	The name of the party purchasing the product	The name of the party selling the goods.	A seller-assigned number that uniquely represents a logistic unit (ie case or pallet).	Commercial License issued to a fishing boat or vessel. * this is mandatory at the primary producer level	A number, code or unique descriptor that uniquely represents a vehicle or a vessel transporting goods.
	Sector	AII	AII	AII	Seafood (only)	AII
	Data Attribute Name	Receiver Name	Sender Name	Shipping Container Serial Number	Supplier License Number*	Vehicle Identifier
		19	20	21	22	23



Appendix C: Data Requirements by Sector and Supply Chain Role

What follows are the mandatory and optional requirements based on role and commodity. To effectively use this standard the following steps will be helpful along with the diagrams in the following pages:

- **Step 1:** Select the commodity.
 - Select from Beef (1) Produce

Produce (2) Pork (3) Seafood (4) Other (use Generic)

Step 2:Select Role.Are you a Primary Producer (A)?Are you a Processor (B)?Are you a Wholesaler, Distributor or Retailer (C)?Are you Store/Foodservice Operator (D)?Are you a 3rd Party Logistics Provider (E)?

Step 3: Refer to the following models for the mandatory data requirements (which are identified by role) that must be collected, kept and shared.

The data elements should be assessed from three perspectives:

- 1. What is required to be collected?
- 2. What is required to be kept in your records?
- 3. What is required to be shared?
- **Step 4:** Conduct a gap analysis of your current business practices. It may be that you already capture most of this information.
- **Step 5:** Develop a plan to collect, keep and share appropriate data elements and modify accordingly.

To ensure consistency in definitions of roles and elements consult the Data Dictionary in Appendix B.





Can-Trace Beef Primary Producer MANDATORY Data Requirements

Primary Producers who are the **FIRST** participants of the supply chain (**NO** previous Trading Partners) will have **NO** data to collect from or share with the previous trading partner and NO Receipt Date.



Legend

Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 1A: Beef Primary Producer data requirement.



Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 1B: Beef Processor data requirement.







Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 1C: Beef Wholesale, Distributor, Retailer data requirement.



Legend

Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 1D: Beef Store Operator Level data requirement.







Can-Trace Produce Primary Producer MANDATORY Data Requirements

Primary Producers who are the **FIRST** participants of the supply chain (**NO** previous Trading Partners) will have **NO** data to collect from or share with the previous trading partner and NO Receipt Date.



Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 2A: Produce Primary Producer data requirement.



Legend

Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 2B: Produce Processor data requirement.







Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own Italics font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 2C: Produce Wholesale, Distributor, Retailer data requirement.



Can-Trace Produce Retail/Store, Foodservice Operator Data Requirement



Legend

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Figure 2D: Produce Store Operator Level data requirement.







Legend

Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 3A: Pork Primary Producer data requirement.



Legend

Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 3B: Pork Processor data requirement.







Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 3C: Pork Wholesale, Distributor, Retailer data requirement.



Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 3D: Pork Store Operator Level data requirement.







Can-Trace Seafood Fisherman MANDATORY Data Requirements

Primary Producers (Fisherman) who are the **FIRST** participants of the supply chain (**NO** previous Trading Partners) will have **NO** data to collect from or share with the previous trading partner and NO Receipt Date.



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<u>Legend</u>

Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 4A: Seafood Primary Producer data requirement.



Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 4B: Seafood Processor data requirement.









Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 4C: Seafood Wholesale, Distributor, Retailer data requirement.





Legend

Bold font Text: Previous Trading Partner Normal font Text: Both Trading Partners & Your Own *Italics* font Text: Next Trading Partner Dashed line: Supply Chain Flow

Figure 4D: Seafood Store Operator Level data requirement.





Figure E: 3rd Party Transporter data requirement.

Can-Trace

Appendix D: Resources

D.1 Traceability

D.1.1 EAN.UCC Beef Traceability Guidelines

Developed to assist companies to meet the requirements of European Community Regulation (EC) No. 1760/2000 for beef traceability, these Guidelines provide help, information and recommendations needed to understand and use the EAN.UCC System for traded units (packaged items) in the beef supply chain between the slaughterhouse and the retail Point-of-Sale. For more information see http://www.can-trace.org under reference documents.

D.1.2 EAN.UCC Produce Traceability Guidelines

The Fresh Produce Traceability guidelines specifically address EAN.UCC numbering and bar coding for the purpose of tracking and tracing fresh produce. They provide recommendations and guidance needed to understand and implement the EAN.UCC system of numbering and bar coding of trade units (e.g. cartons, boxes or bins) and logistics units (e.g. pallets). The guidelines do not address the numbering and bar coding of consumer units (e.g. loose or pre-packed produce), messages, which will be covered in a separate document. For more information see http://www.can-trace.org under reference documents.

D.1.3 EAN.UCC Fish Traceability Guidelines

The Traceability of Fish Guidelines specifically address EAN.UCC numbering and bar coding for the purpose of traceability. They provide recommendations and guidance needed to understand and implement the EAN.UCC System for the numbering and bar coding of trade units (e.g. cases, boxes or bins) and logistics units (e.g. pallets). For more information see http://www.can-trace.org under reference documents.

D.1.4 CPMA/PMA Produce Traceability: A Guide to Implementation

The Guide is the output of industry experts in Canada and the U.S. and focuses on traceability implementation regardless of data carrier (i.e. paper, bar code or RFID/EPC). The document includes outcomes of industry pilots, best practices for the produce sector, the data standard (Can-Trace produce data standard). The guide is available for download in PDF format to industry members on both the CPMA Web site, http://www.cpma.ca and the PMA Web site at http://www.pma.com/traceabilitypilot.

D.2 Bar Coding

GS1 General Specifications

The GS1 General Specifications provide detailed specifications on all bar code symbologies and data carriers. For more information see http://www.gs1ca.org





D.3 EDI (Electronic Data Interchange)

Canadian EDI Implementation Guidelines

These Guidelines were developed by the Canadian grocery retail, foodservice and pharmaceutical retail industries to facilitate the implementation of EDI. These Guidelines include the Ship Notice Manifest (856) that is applicable to traceability. For more information see http://www.gs1ca.org

D.4 EANCOM Guidelines

The EANCOM Guidelines include all the global EDI messages based on UN/EDIFACT. The DESADV is the EANCOM version of the Ship Notice Manifest. For more information see http://www.gs1ca.org

Appendix E: Glossary of Terms

Attribute	A piece of information reflecting a characteristic related to an identification number (e.g., Global Trade Item Number ^{TM} (GTIN ^{TM}), SSCC).
Carrier	The party that provides freight transportation services. A physical or electronic mechanism that carries data.
Collect Data	The data that the participants in the supply chain are required to obtain from the relevant member of the supply chain.
Company Number	A component of the GS1 Company Prefix. GS1 and GS1 Member Organizations assign GS1 Company Prefixes to entities that administer the allocation of EAN.UCC System identification numbers. These entities may be, for example, commercial companies, not for profit organizations, governmental agencies, and business units within organizations. Criteria to qualify for the assignment of a GS1 Company Prefix are set by the GS1 and GS1 Member Organizations.
Customer	The party that receives, buys, or consumes an item or service.
Data Standard	The entirety of all EAN.UCC System data standardized in meaning and structure.
Data structure	The GS1 data structures defined in the various lengths required for the different identification purposes, which all share a hierarchical composition. Their composition blends the needs of international control with the needs of the user.
DUN-14 (Despatch Unit Number)	See GTIN-14 Identification Number.
EAN	Abbreviation of EAN International.
EAN.UCC System	The specifications, standards, and guidelines co-administered by GS1.
EANCOM®	The international Electronic Data Interchange (EDI) standard provided by EAN International, conforming to the UN/EDIFACT standard.
ECCnet	The ECCnet registry is Canada's online, standardized product registry for synchronized data exchange.
EDI	Abbreviation for Electronic Data Interchange.
Electronic Commerce	The conduct of business communications and management through electronic methods, such as Electronic Data Interchange (EDI) and automated data collection systems.





Electronic Message	A composition of Element Strings from scanned data and transaction information assembled for data validation and unambiguous processing in a user application.
EPC	Electronic Product Code
EPCglobal Canada	EPCglobal Canada is an affiliate of EPCglobal Inc., serving subscribers in Canada to help foster the adoption of the EPC Network and related technology. Use this site to get involved today and learn more about how the EPC Network is revolutionizing the way organizations manage their supply chains.
Extension digit	A digit, allocated by the user, used to increase the capacity of the Serial Reference within the SSCC (Serial Shipping Container Code).
GLN	Global Location Number.
Global Location Number	A number that uses the EAN.UCC 13 Data Structure to identify physical, functional, or legal entities.
Global Trade Item Number™	A Global Trade Item Number [™] may use the GTIN-8, GTIN-12, GTIN-13, or GTIN-14 Data Structure.
GS1	The entire GS1 Organization consisting of GS1 Head Office and the worldwide network of GS1 Member Organizations. GS1 is a voluntary standards organization charged by the GS1 board with the management of the EAN.UCC System and the Global Standard Management Process (GSMP). The EAN.UCC System standardizes bar codes, EDI transactions sets, XML schemas, and other supply chain solutions for more efficient business. By administering the assignment of company prefixes and coordinating the accompanying standards, GS1 maintains the most robust item identification system in the world.
GS1 Canada	GS1 Canada (formerly the Electronic Commerce Council of Canada (ECCC)) is the not-for-profit, industry led organization that promotes and maintains global standard for the identification of goods, locations and related e-commerce communication such as bar code issuance and maintenance. As a GS1 Member Organization, GS1 Canada represents Canada in the continuing development of the global language of business.
GS1 Check Digit Calculation	An EAN.UCC System algorithm for the calculation of a Check Digit to verify accuracy of data decoded from a bar code symbol.
GS1 Company Prefix	Part of the international EAN.UCC System data structures consisting of an GS1 Prefix and a Company Number, both of which are allocated by either the GS1 or a GS1 Member Organization.
GTIN-8 Identification Number	Formerly the EAN.UCC-8, the EAN.UCC System identification number comprising eight digits used to identify trade items and special applications.

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GTIN-12 Identification Number	Formerly the UCC-12, the EAN.UCC System identification number comprising 12 digits; used to identify trade items, locations, and special applications (e.g., coupons).
GTIN-13 Data Structure	The 13-digit EAN.UCC System data structure composed of a GS1 Company Prefix and Check Digit as well as an Item Reference, Location Reference, or Asset Type.
GTIN-13 Identification Number	Formerly the EAN.UCC-13, the EAN.UCC System identification number comprising 13 digits; used to identify trade items, locations, and special applications (e.g., coupons).
GTIN-14 Data Structure	The 14-digit EAN.UCC System data structure composed of an Indicator, GS1 Company Prefix, Item Reference, and a Check Digit.
GTIN-14 Identification Number	Formerly the EAN.UCC-14, the EAN.UCC System identification number comprising 14 digits; used to identify trade items.
GTIN™	Abbreviation for the Global Trade Item Number™.
GTIN™ Format	The format in which Global Trade Item Numbers [™] (GTINs [™]) must be represented in a 14-digit reference field (key) in computer files to ensure uniqueness of the identification numbers.
ISO	Abbreviation for International Standardization Organization
Item Reference	The part of the data structure allocated by the user to identify a trade item for a given GS1 Company Prefix.
Keep Data	The information that each participant in the supply chain is required to record and maintain in their business records.
Lot	A set of units of a product, which have been produced and/or processed or packaged under similar circumstances. Note 1: The lot is determined by parameters established beforehand by the organization. Note 2: A set of units may be reduced to a single unit of product.
Lot Number	A number or code assigned to uniquely represent a batch or group of inputs, products, animals, and/or outputs. The company or individual creating the goods generally assigns the number.
Mandatory Requirements	The data that must be exchanged between trading partners to accomplish traceability.
One-up/One-down Traceability	Under a one-up/one-down system each participant within the food continuum is responsible for maintaining records about the products they receive and where they were shipped to, or sold
Optional requirements	The data that may be used in addition to the mandatory data.





Point-of-Sale (POS)	Refers to the retail type checkout where bar code symbols are normally scanned.
Production Input	The products/trade units that are received by a trading partner in the food supply chain. As the scope of Can-Trace does not include agricultural inputs, e.g., fertilizers, feeds, etc., production inputs at the level of primary production, are limited to the animals, plants or their products that are produced at that level. *It is critical for traceability that the link between input and output be recorded and kept.
Production Output	The products/trade units that have been produced and/or shipped from a trading partner in the food supply chain and may include animals (including fish) plants, and their products as well as foods produced from these products/trade units. *It is critical for traceability that the link between input and output be recorded and kept.
Serial Shipping Container Code	See SSCC.
Share Data	The information that each participant in the supply chain is required to provide to the relevant member of the supply chain.
Single Ingredient	Products that as they travel through the supply chain are not incorporated into/with other items (food products) generating a completely new product.
SSCC	Term used for the Serial Shipping Container Code. The unique identification of a logistic unit using an 18-digit data structure.
Supplier	The party that produces, provides, or furnishes an item or service.
Supply Chain	A series of linked stages that provide goods or services; the layers of processes involved in the manufacture of goods or provision of services.
Traceability	The ability to track and/or trace product flows in a production and distribution chain.
Tracing	The ability to reconstruct the historical flow of a product from records.
Tracking	The ability to follow products through the supply chain.
Trade item	Any item (product or service) upon which there is a need to retrieve pre- defined information and that may be priced, or ordered, or invoiced at any point in any supply chain.
UCC Company Prefix	Part of the UCC-12 Data Structure consisting of a UCC Prefix and a Company Number allocated by the Uniform Code Council (UCC [™]).
Whole-chain	(in reference to the supply chain) the scope of traceability spans the supply chain from beginning to end.

