Track and Trace according to UN/CEFACT

AgGateway Europe

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Content

• Intro traceability - compliance
• Framework for traceability
• Uncefact track and trace standard
3 aspects related to traceability

• Transparancy
  • Privacy
  • Competion
  • Sensitive data
  • Open data / shared data

• Traceability
  • Tracking boxes (transport, logistics)
  • Recording events
  • Retrieving information
  • Product and process specifications / documentation

• Compliance
  • Industry / retail demands
  • Regulations
  • Certification
Agri food

- Food safety
- Animal and plant health (sanitary issues)
- Legal requirements
- Business requirements
- Private certification labels
Characteristics of agri food

- Complex supply chain
- Many small producers, traders and processors
- Bulk products.
- m:n relations between products and between parties
- The suppliers are unknown for the processor or trader

- Most T&T are private implementations
Traceability information entities

- Identification
  - Product
  - Party
  - Location
  - Transport
  - Process

- Events
  - what, when, why, where, who

- Registration

- Sharing data (ownership, access rights)
Business agreements and regulations

General Food Law:

- Requirements: Each producer reports in 24 h about his supplier en buyer.

- Little about How To report

- Business agreements are much more demanding then regulations.
Results in

• Each big retailer has his own solution for track and trace / product information / product quality

• No standard implementations

• No use of standards

• Poor interoperability

• Closed system no data sharing...
Regulation for food labeling (EU 1169)

• Online shops should provide all product information about ingredients.

• Enforced a big update of product identification and product information.

From retailer > supplier > packer / processor
Framework for sustainable trade
Only a section of the supply chain
Or covering the full supply chain?

What is the starting point and the end point?
Traceability models

- Product Segregation
  - Bulk Commodity
  - Identity Preservation
- Mass Balance
- Book and claim
Product segregation

• Bulk commodity
  • Mixing of certified material
  • From different producers
  • Fresh fruits and vegetables (mixed salad)

• Identity preservation
  • Segregation of certified and non-certified product throughout the supply chain
  • Traceability from grower to retailer
  • Fair trade bananas
Mass balance

• Policy claim disassociated from physically traced assets
• Refers to accumulated assets
• Individual assets cannot be traced
• Aggregated quantity can have well-defined state

• Cotton sugar, cacao, tea
Book and claim

• Free flow of certified and non-certified assets
• No segregation of assets
• Companies obtain certificates

• Green electricity, carbon emission, soy, palm oil
Traceability models

Advanced ICT
Including all farmers and SME
Used in high risk product and in delicate product, such as fresh food

Less advanced ICT required
Based on set of rules
Audits of stakeholders required
USAGE of the Sustainability map and network?
Access the global sustainability network and get connected with 871 companies

Connecting businesses along sustainable value chains
UN/CEFACT standards for electronic information exchange

Developed in close cooperation with other United Nations bodies, governments, business and non-governmental organizations.

Use of these standards make systems and applications worldwide interoperable.

Electronic information exchange using global standards is more reliable.

Paperless trade will reduce the cost and time required for trade formalities.
Results UN/CEFACT standardisation projects in agriculture

A generic model, structure and data formats

Definitions

All chain products

Implementation guides
The agri food domain
Track and Trace  
Live animal, Fish, Animal product, Plant and Plant product

• Event driven
  
  Event: modification of location, product, process, transport or party
  
• Recording of events
• Retrieving information about events.

• Based on
  
  - Who, What, Why, Where, When
  - generic level ISO / IEC 19987 (EPCIS)
  - detailed level for animal, plant and product details
Activity diagram

**Tracking and Tracing Party**

- **Start Request**
  - Send a search and request for the details about animal product, location, processing or transport event

**Search and Request for T&T Data**

- **Receive Search and Request**
- **Process the search and request for data**
- **Send the response**

**Response T&T Data**

- **Receive the T&T response data**

**Stop End of Level 0**

**The Tracking and Tracing Repository**

- **Receive search and request**
- **Process the search and request for data**
- **Send the response**

(from Level 0)
Track and Trace
Event recording and data retrieving

**What**  product ID and product type

**When**  read and recording date time

**Where**  read and business location

**Who**  party involved

**Why**  process / business step / disposition
Services: discovery / search / smartphone apps

- **FMS**
- **ERP**
- **at abattoir / at food processor**
- **slaughtering**
- **deboning**
- **cutting**
- **packaging**
- **Wholesale / Retail**

**Services**:
- tracking
- EPCIS Repository
- ERP
- EPCIS Repository
- EPCIS Repository
- EPCIS Repository

**Source** Angela Schillings-Schmitz GS1 Germany GmbH
Track and Trace Event
Key information entities

TT_Location

TT_Processing_step

TT_Transport_Movement

TT_Transport_Means

TT_Party

TT_Animal/Plant_Product

Time_stamp
Issues in traceability projects

- Sensitive data
- Business partners not known
- Different business conditions
- Product batches are put together, split up or used as inputs
- Present information exchange from node to node
UN/CEFACT T&T standard implementation

Stakeholders agree on:

• Who registers what information
• Who can access what information
• Who is/are repository parties
• How the network of repositories will function
• Software is developed accordingly
Present status

Standard published

- Tracking and Tracing of animals and fish (2016).

Implementation guides

• Handbook on electronic business standards for agricultural trade facilitation
  (Heiner Lehr, UNECE 2016)

• Guide for best practice in the set up of traceability projects in cross border trade
  (Andrew Baxter, UNNExT 2016)

• Electronic Product Code Information Services (EPCIS) implementation guideline GS1, 2015

• http://www.unece.org/cefact/brs/brs_index.html
• http://www.unece.org/cefact/xml_schemas/index
To be done

- Implementation guidelines
  - T&T textile supply chains?
  - E Quality certificate?

- Compatibility EPCIS – UN/CEFACT
Contact

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