

How to implement electronic chain traceability - The TraceFood Framework

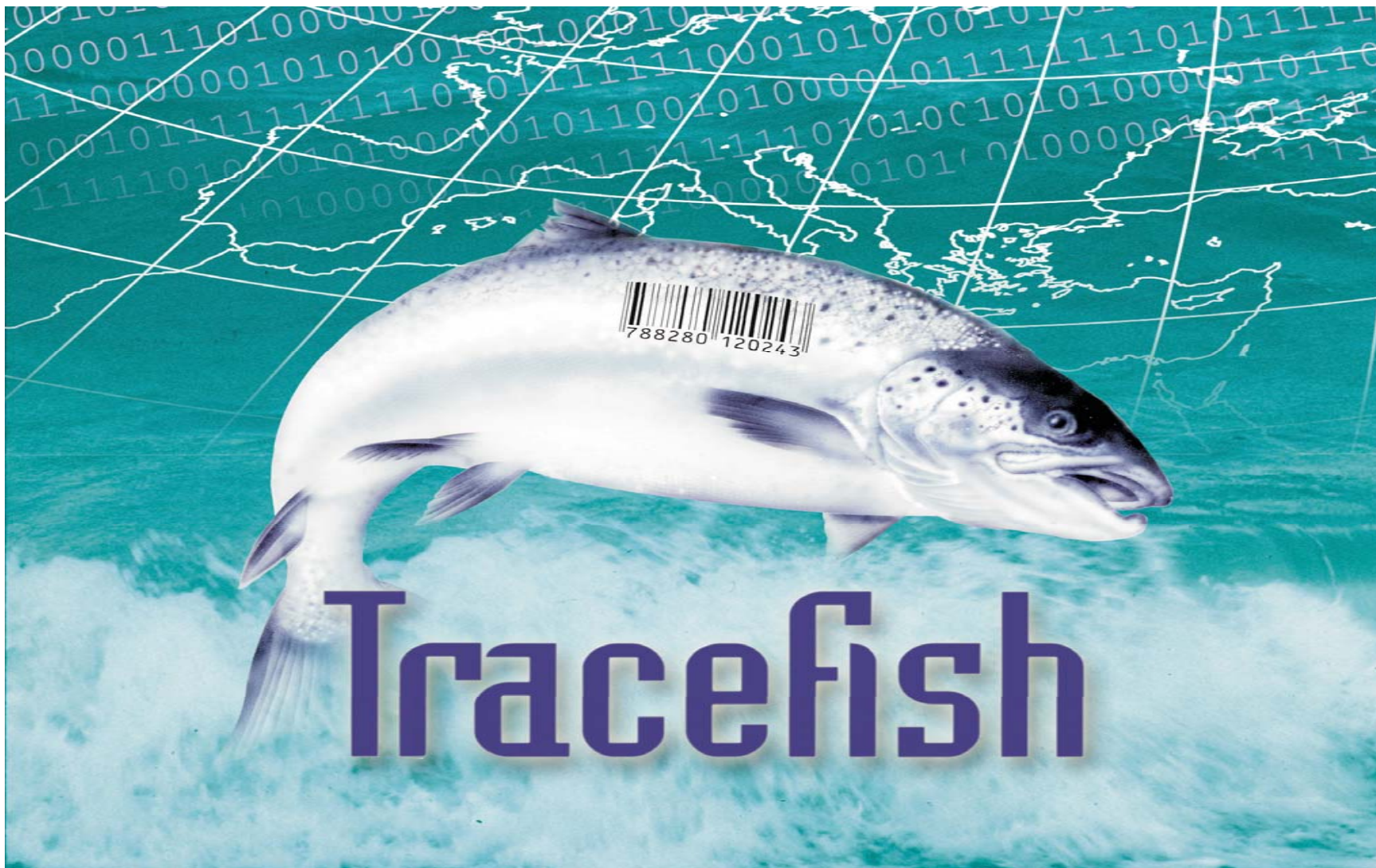
Research director Jostein Storøy,
SINTEF Fisheries and Aquaculture

Renaissance Savery Hotel, Des Moines, June
11, 2009

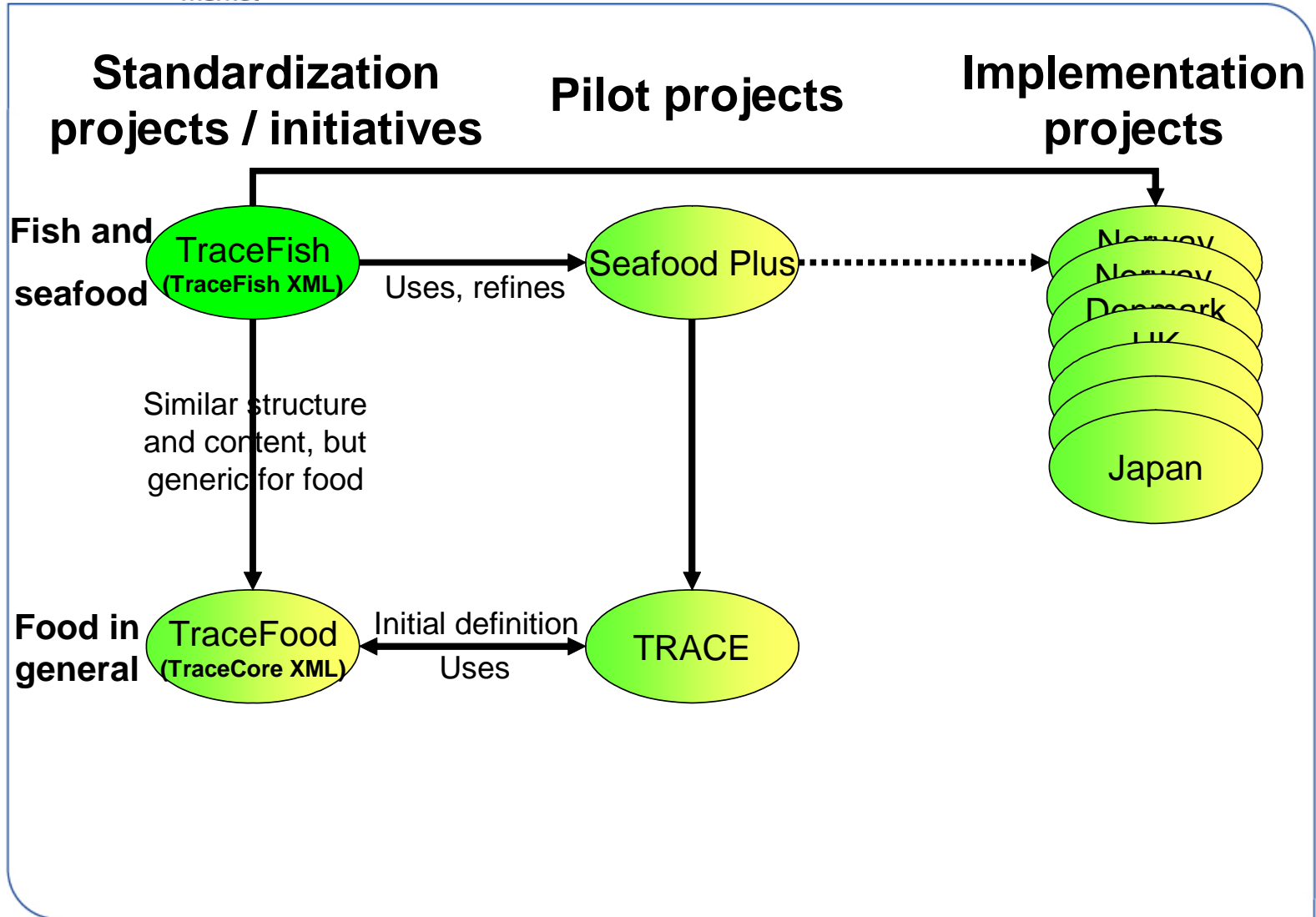
Contents

- Short project history
- Implementation steps
- Specific TraceFood Framework recommendations
- Tools

TraceFish logo



History of TraceFish and TraceFood



Petter Olsen 23/04/08 - © Nofima Market - May be copied if source is acknowledged

Tracing the origin of food:

TRACE



- EU Integrated Research Project (2005-2009)

- Overall objective:

Delivering integrated traceability systems that will enhance consumer confidence in the authenticity of food

- Focus on 5 types of food

- Mineral water
- Honey
- Chicken from China
- Seafood

- Objective for the SINTEF traceability activities in the project:

- To specify, develop and test a generic information infrastructure to ensure complete traceability along entire fork to farm food chains.
- To develop an information platform mapping verifiable data to analytical methods specifications and thresholds.
- To develop 'Good Traceability Practice' guides for the food industry

Contact: Jostein
Storøy

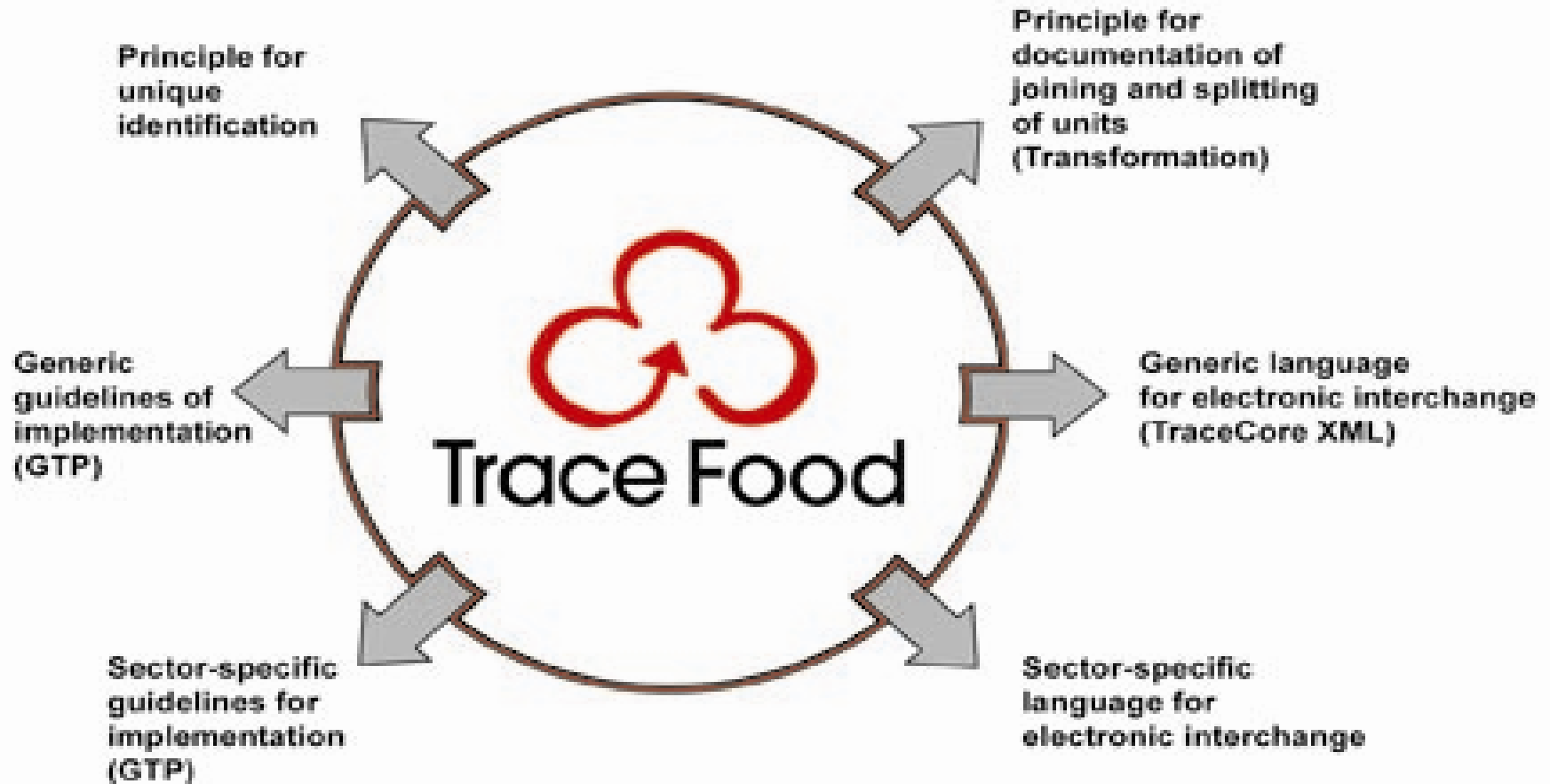
www.sintef.no/fish

www.trace.eu.org



TraceFood Framework

– toolbox with principles and guidelines



The TraceFood framework components

Premise for the rest of this presentation

- Dealing with chain traceability, where 2 or more companies in a cluster exchanges information
- Intention to re-use of data
 - Use of electronic systems (capture, recording and transmission)
- Need for standardization
 - Terminology
 - Identifiers

Implementation of chain traceability - industry level

- Industry analysis
 - Typical material flow
 - Typical information flow and information handling practice
- Industry terminology – recommendation of changes
 - Map existing terminology (trade, food safety, traceability)
 - Recommend new industry sector terminology
 - Recommend what data to be recorded in each link
- Industry material flow practice
 - Recommend changes (batch size, mixing, etc)
- Example: The TraceFish standards

Implementation steps

- enterprise level

1. Basis:
 - Industry terminology and data recording recommendations (TraceFish, TraceHoney, etc)
 - General GTP recommendations (see TraceFood wiki)
2. Kick off meeting in business cluster
 - Select product, level of ambition, etc – Think simple!
3. Process mapping of selected product
 - Material flow
 - Information flow, what is recorded today, chain demands
 - What is a typical traceable unit
 - Tool – TraceFood Process mapping method
 - Result 1: recommendations for changes in information handling practice
 - Result 2: recommendations for changes in material flow
 - Batch size, definition of traceable unit
 - Less/more mixing, etc

Implementation steps (cont.)

5. Identification of traceable unit

- Introduction of unique ID for selected product and corresponding input factors
- TraceFood: GTIN+
- Internal vs external application

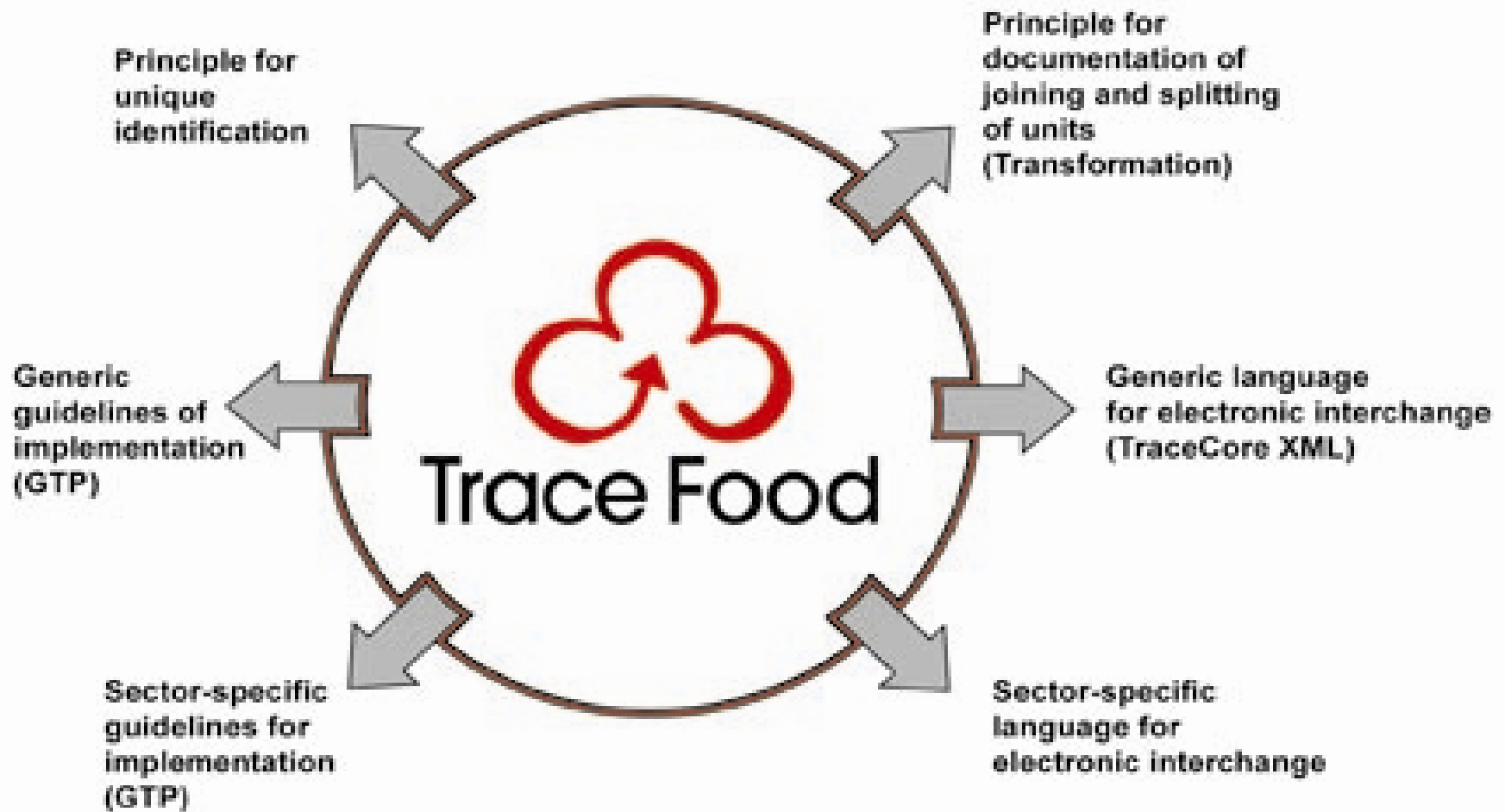
6. Data recording routines

- Types of data
- Stages for data recording
- Recording av ID of raw materials and input factors
- Recording of transformation
- Recording of product related data
 - Species, net weight/quantity, producer, receiver, temperature history
 - Others
- See TraceFood wiki

Implementation steps (cont.)

6. Mapping of information systems and data capture practice
 - Recommendations for changes in practice
7. Implement changes in software or new software for data recording and management of information
8. Electronic exchange of data
 - EPCIS XML (Trace Core), See TraceFood wiki

TraceFood Framework



The TraceFood framework components

1. TraceFood: Industry terminology and data recording recommendations

CEN WORKSHOP AGREEMENT **NSF-CWA 14659**

1. utgave mars 2003

ICS 65.150; 67.120.30

Sporbarhet av fiskeprodukter Spesifikasjon for informasjonsregistrering av oppdrettsfisk

Traceability of fishery products
Specification of the information to be recorded in farmed fish distribution chains

Engelsk versjon

Dokumentet er utgitt av Norges Standardiseringsforbund (NSF). Den kan bestilles fra Pronorm AS, som også gir opplysninger om andre norske og utenlandske standarder.

Pronorm AS, Postboks 432 Skøyen, 0213 OSLO
Telefon: 22 04 92 30 Telefaks: 22 04 92 12

Norsk Allmennstandardisering (NAS) er faglig ansvarlig for dokumentet og kan gi opplysninger om saksinnholdet.

Postboks 360 Skøyen, 0213 OSLO
Telefon: 22 04 92 20 Telefaks: 22 04 92 15

© Pronorm AS på vegne av NSF. Gjengivelse uten avtale er ikke tillatt

CEN WORKSHOP AGREEMENT **NSF-CWA 14660**

1. utgave mars 2003

ICS 65.150; 67.120.30

Sporbarhet av fiskeprodukter Spesifikasjon for informasjonsregistrering av villfanget fisk

Traceability of fishery products
Specification on the information to be recorded in captured fish distribution

Engelsk versjon

Dokumentet er utgitt av Norges Standardiseringsforbund (NSF). Den kan bestilles fra Pronorm AS, som også gir opplysninger om andre norske og utenlandske standarder.

Pronorm AS, Postboks 432 Skøyen, 0213 OSLO
Telefon: 22 04 92 30 Telefaks: 22 04 92 12

Norsk Allmennstandardisering (NAS) er faglig ansvarlig for dokumentet og kan gi opplysninger om saksinnholdet.

Postboks 360 Skøyen, 0213 OSLO
Telefon: 22 04 92 20 Telefaks: 22 04 92 15

© Pronorm AS på vegne av NSF. Gjengivelse uten avtale er ikke tillatt

1. TraceFood: The TraceFish standards - voluntary industry standards

CEN (WA) standards specifies:

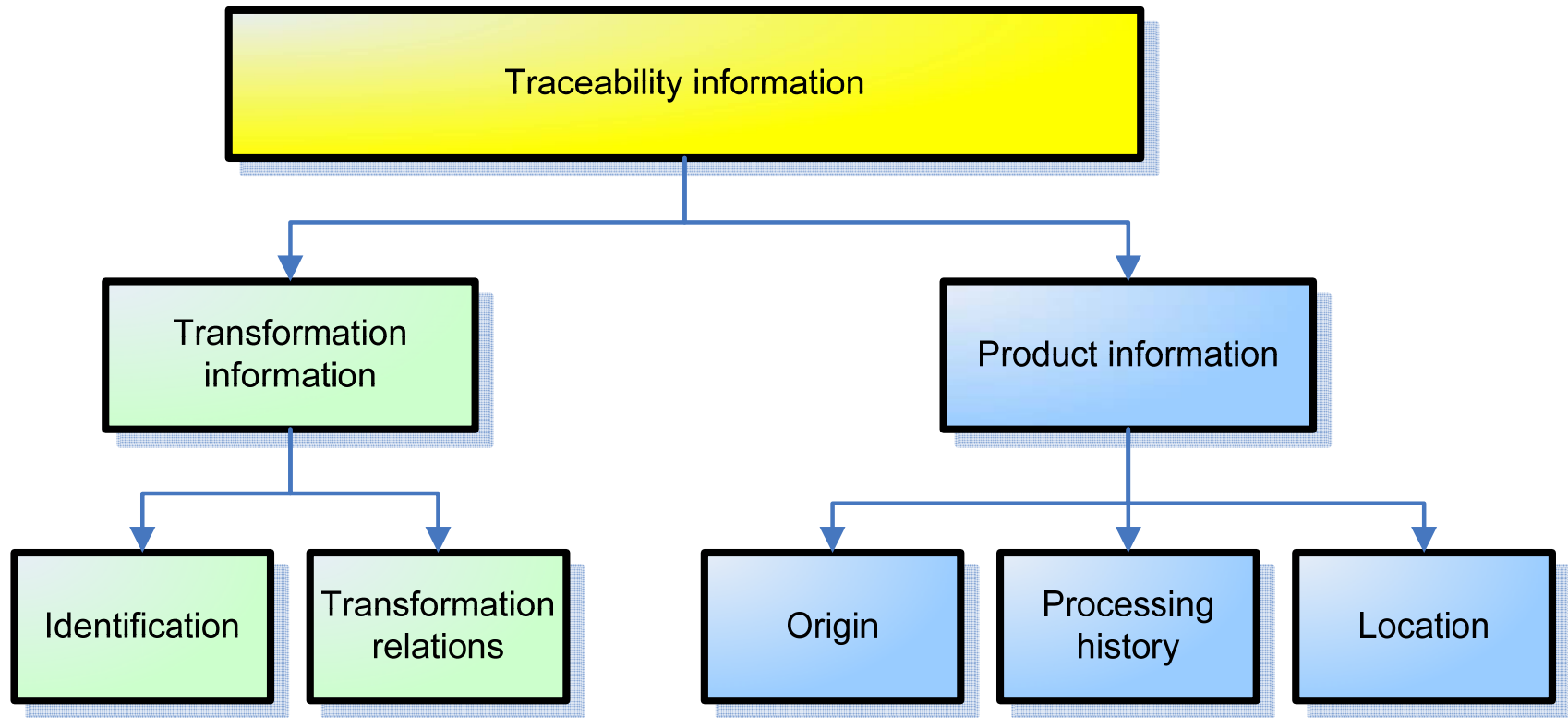
- Which data to be recorded in the captured fish chain
- Which data to be recorded in the farmed fish chain
- ISO standardization going on (ISO 12875 and ISO 12877)

5. TraceFood: Unique identification of traceable unit

- TraceFood require global unique ID of traceable unit: called Trade Unit: GTIN + (or GS1 SGTIN)
- GTIN + (unique ID on Trade Unit)
 - GTIN
 - Batch Number
 - Serial Number

Description	EAN identifications	EAN AI	Example
Trade unit	GTIN Batch number Serial number	AI (01) AI (10) AI (21)	(01)17030640000016 (10)1234567cc01dd4kk7890 (21)01234567891011121314

6.1 Types of information



6.2 TraceFish Data recording sheet

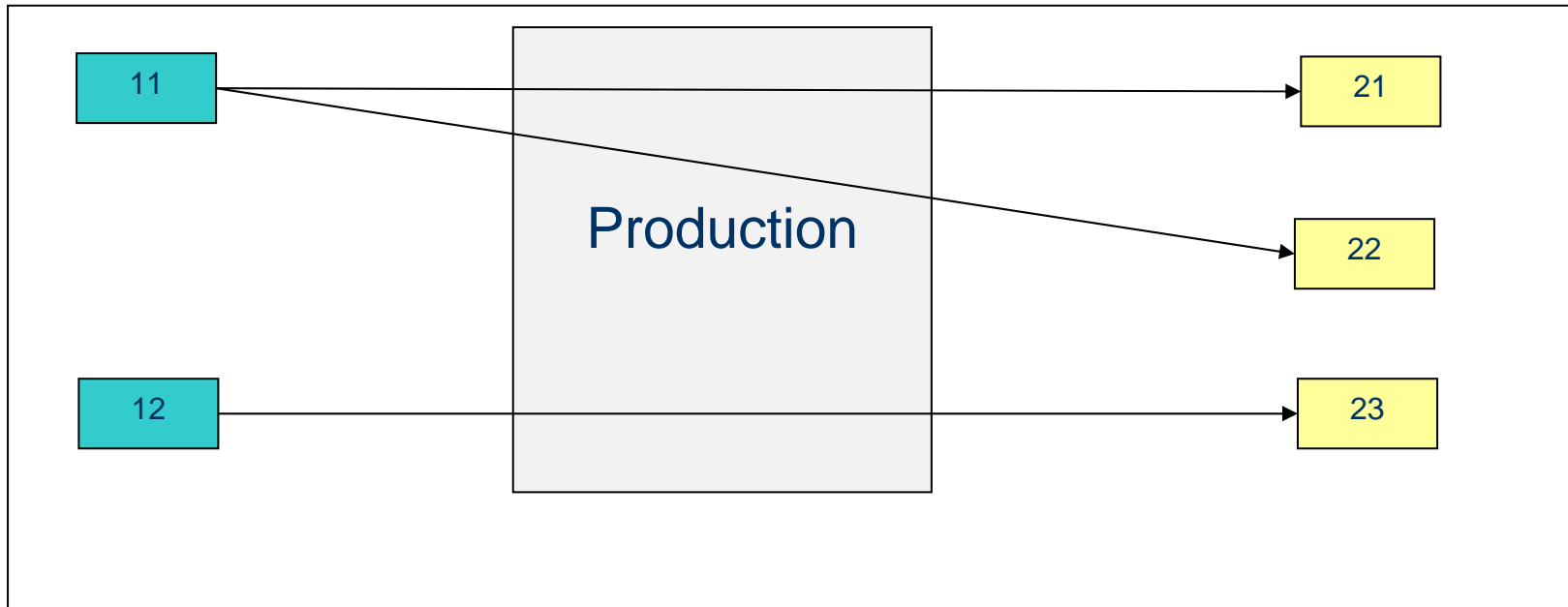
Table 3 — Detailed information requirements for fish farms

Data element		Description	Examples	Categorisation		
				Shall	Should	May
FISH FARMS						
FFF01	Food business ID	Name and address or GLN (n3+n13) of food business that operates fish farm establishment	Fjord Harvest Ltd 67345 Bergen Norway	x		
FFF02	Fish farm establishment ID	Name, address and registration number or GLN (n3+n13) of fish farm establishment	Fjord Harvest Ocean site 2 67345 Bergen Norway NTFS0003 NO	x		
FFF03	Fish farm GMP certification	Names of fish quality or food safety GMP schemes by which fish farm is certified	Debio			x
FOR EACH UNIT RECEIVED						
Identities						
FFF04	Unit ID	SSCC (n2+n18) (if received as a logistic unit) or GTIN+ (n2+n14+AI's) (if received as a separate trade unit)	GTIN+: (01) 07012345000001 (10) 0000000125	x		
FFF05	Trade unit IDs	If received as a logistic unit, the IDs of the trade units within the logistic unit. List of GTIN+ (n2+n14+AI's)	List of GTIN+	x		
Source						
FFF06	Previous Food Business ID	Name, address or GLN (n3+n13) of previous food business from whom the unit was received. (Hatchery or transporter, etc.).	Salmogen Breeding station 1 1234 Trondheim Norway	x		
FFF07	Date and time of reception		2002-09-28T12:00	x		
Control checks (either on logistic or separate trade units)						
FFF08	Temperature check	Temperature °C i.e. in received unit	4,0 °C		x	

6.3 Stages where information recorded and linked to unique ID

1. When raw materials and ingredients arrives at your food business
2. When raw materials and ingredients goes into your production
3. When produced units leaves your food business

6.4 TraceFish: Recording of transformations - premise for chain traceability



- A standard method for keeping track of splitting and merging of units, thus **input units are linked to created units** in a documented manner, which further more are linked to dispatched units (both ways; related **created units and related received units**). This means that internal traceability is taken care of.

6.4 Transformations - examples

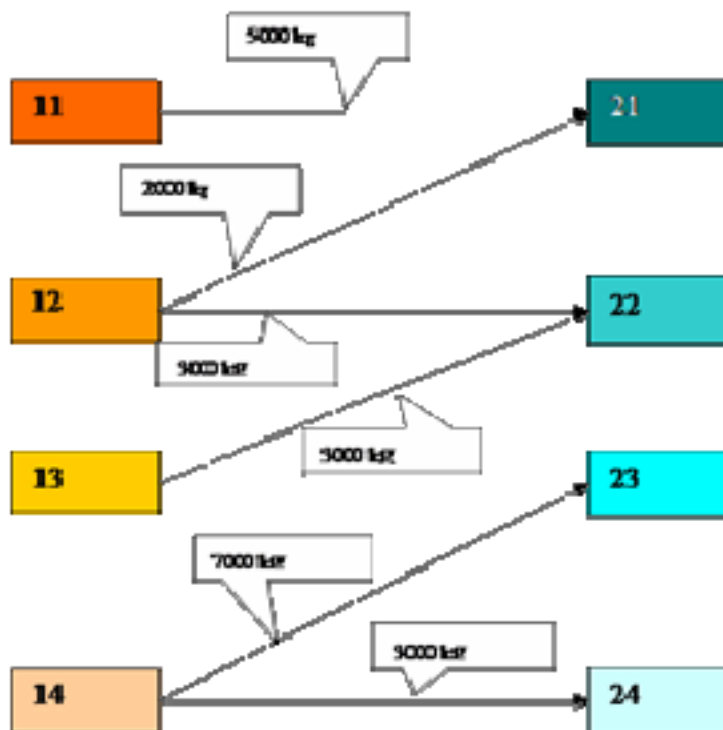
Transformasjonsinformasjon for mottatt enhet

Mottatt enhet ID 11		
Produserte enhets ID	%	kg
21	100	5000

Mottatt enhet ID 12		
Produserte enhets ID	%	kg
21	40	2000
22	60	3000

Mottatt enhet ID 13		
Produserte enhets ID	%	kg
22	100	3000

Mottatt enhet ID 14		
Produserte enhets ID	%	kg
23	70	7000
24	30	3000



Transformasjonsinformasjon for leveringsenhet

Leverst enhet ID 21		
Mottatte enhets ID	%	kg
11	71	5000
12	29	2000

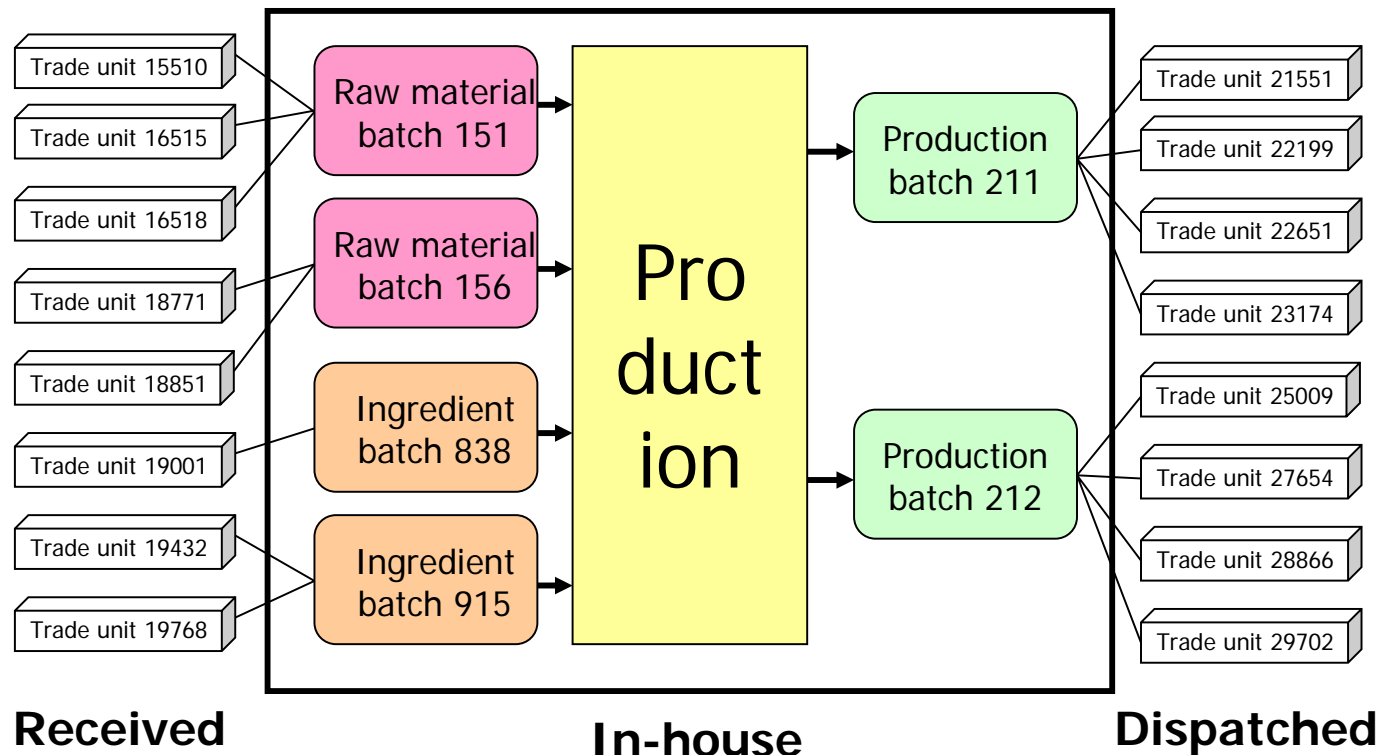
Leverst enhet ID 22		
Mottatte enhets ID	%	kg
12	50	3000
13	50	3000

Leverst enhet ID 23		
Mottatte enhets ID	%	kg
14	100	7000

Leverst enhet ID 24		
Mottatte enhets ID	%	kg
14	100	3000

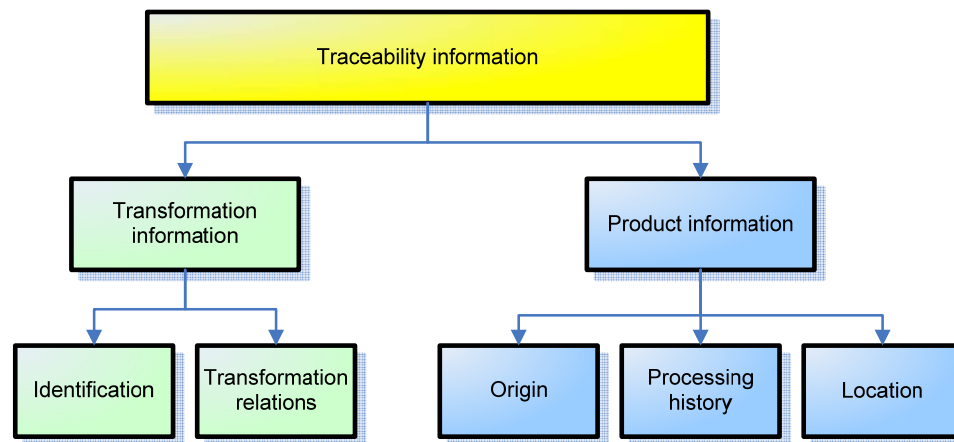
6.4 Documentation of internal and external transformations

Internal batch vs. external trade unit



6.5 Recording of property related information

- To be able to access product information, property related information must be recorded and linked to the traceable unit
- Product information
 - Origin
 - Process history
 - Locations/distribution route
- Importance of data elements categorized by shall, should and may



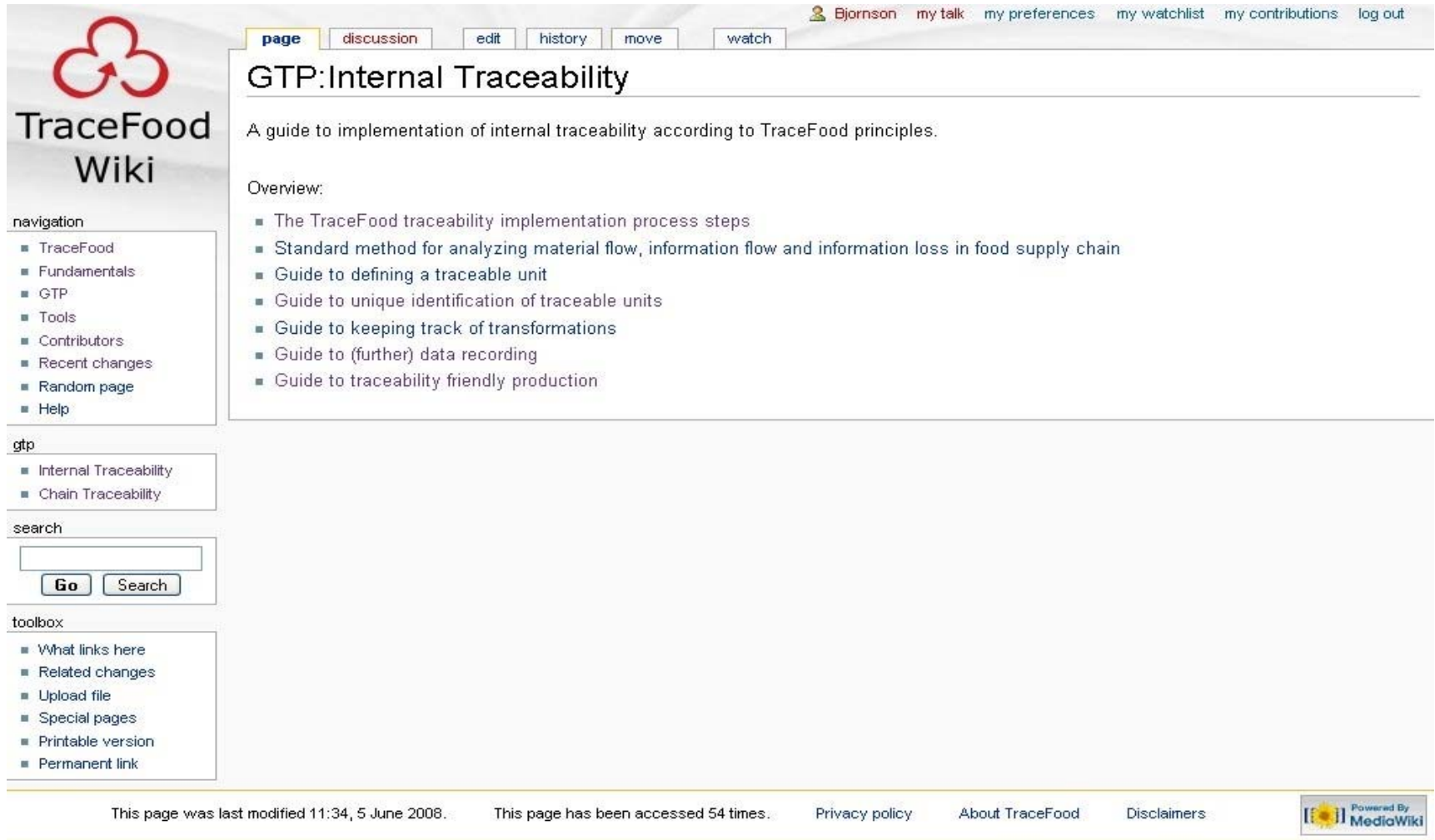
6.6 Shall, Should, May categories

- **”Shall”** includes information vital to make chain traceability possible
 - i.e. Food business ID, Trade Unit ID (fish, feed, etc), Date and time of reception, Net weight, Next food business ID, Date and time of Dispatch
- **”Should ”** includes information required by legislation, supermarkets, in Good Manufacturing Practice guidelines, etc
 - i.e. Location of Fish farm, Size distribution, Starving period, Disease record
- **”May”** includes other information which frequently is recorded and exchanged
 - Fat content, Colour, Average weight, Treatment record

TraceFood tools

- Method for food chain process mapping
- "Method" for development of industry terminology
 - Data recording forms
 - See; TraceFish, TraceHoney, etc
- "Method" for development of industry GTP`s
- Standard electronic data exchange format
 - TraceCoreXML (EPCIS XML format), See TraceFood

TraceFood Wiki based website - <http://www.tracefood.org>



The screenshot shows the TraceFood Wiki page for 'GTP:Internal Traceability'. The page features a navigation menu on the left with categories like 'navigation', 'gtp', 'search', and 'toolbox'. The main content area includes a title, a brief description, and an overview section with a bulleted list of implementation steps. The footer contains modification and access statistics, as well as links to privacy policy, about, and disclaimers.

TraceFood Wiki

GTP:Internal Traceability

A guide to implementation of internal traceability according to TraceFood principles.

Overview:

- The TraceFood traceability implementation process steps
- Standard method for analyzing material flow, information flow and information loss in food supply chain
- Guide to defining a traceable unit
- Guide to unique identification of traceable units
- Guide to keeping track of transformations
- Guide to (further) data recording
- Guide to traceability friendly production

This page was last modified 11:34, 5 June 2008. This page has been accessed 54 times. Privacy policy About TraceFood Disclaimers

Powered By MediaWiki

Conclusion

- TraceFood Framework and the wiki gives specific guidance and recommendations for those who want to implement food chain traceability