



# Better Training for Safer Food *Initiative*

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# BTSEF

Better Training for Safer Food is an initiative of the European Commission aimed at organising an EU training strategy in the areas of food law, feed law, animal health and animal welfare rules, as well as plant health rules.

**2nd Quarter 2017**



European  
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# Implementation of legal provisions in the field - tools and devices -

## Module 2.3

Introduction on legal provisions and  
overview on different identifier

Specificities of electronic identification and  
comparison of different electronic ID  
devices/methods for different species  
(bovine, porcine, ovine and caprine)

Food safety



## Legal provisions for bovine Regulation (EC) 911/2004

- Double tag
- For both tags:
  - Animal number + CA code
  - Plastic, flexible, tamper proof, easy to read
  - Attached without being harmful
  - Not re-usable
- First ear tag:
  - Male + female part
  - Minimum size 45 mm x 55 mm
- Second ear tag depends on country decision

# New legal provision for bovine Regulation (EC) 1760/2000

## Two steps:

### July 2019:

- Should provide an official electronic identifier
- May make compulsory the use of an electronic identifier

### July 2023:

- Commission Report to European Parliament and Council about the feasibility of a mandatory electronic identification

# Legal provisions for ovine & caprine Regulation (EC) 21/2004 + Decision 2006/968/EC

- One visible + one electronic
- Without being harmful
- Being easily removable from the food chain
- Transponders shall meet ISO 11 784 & 11 785 requirements
- Transponders may be carried by tags, boluses and injectable
- Goats: Mark on the pastern
- Minimum reading distance:
  - 12 cm for tags by portable reader
  - 20 cm for inserts and bolus by portable reader
  - 50 cm for all with stationary readers

# Opportunities for animal identification according to legal requirements

Species	Visual conventional tags		Visual electronic tags	Tattoo	Injectable	Mark on the pastern		Bolus
	Animal n°	Holding n°				Conventional	Electronic	
Bovine	Yes	No	No	No	No	No	No	No
Ovine & Caprine	Yes	Yes *	Yes	Yes *	Yes *	Yes	Yes *	Yes
Pig	No	Yes	No	Yes	No	No	No	No

\* Not for intra Union trade

## Tag concern / Retention

- Farming conditions
- Place to apply the tag should be known by farmers
- Applicator should be appropriate to the tags
- Applicator should be periodically changed
- Tag quality

## Tag / Visual reading

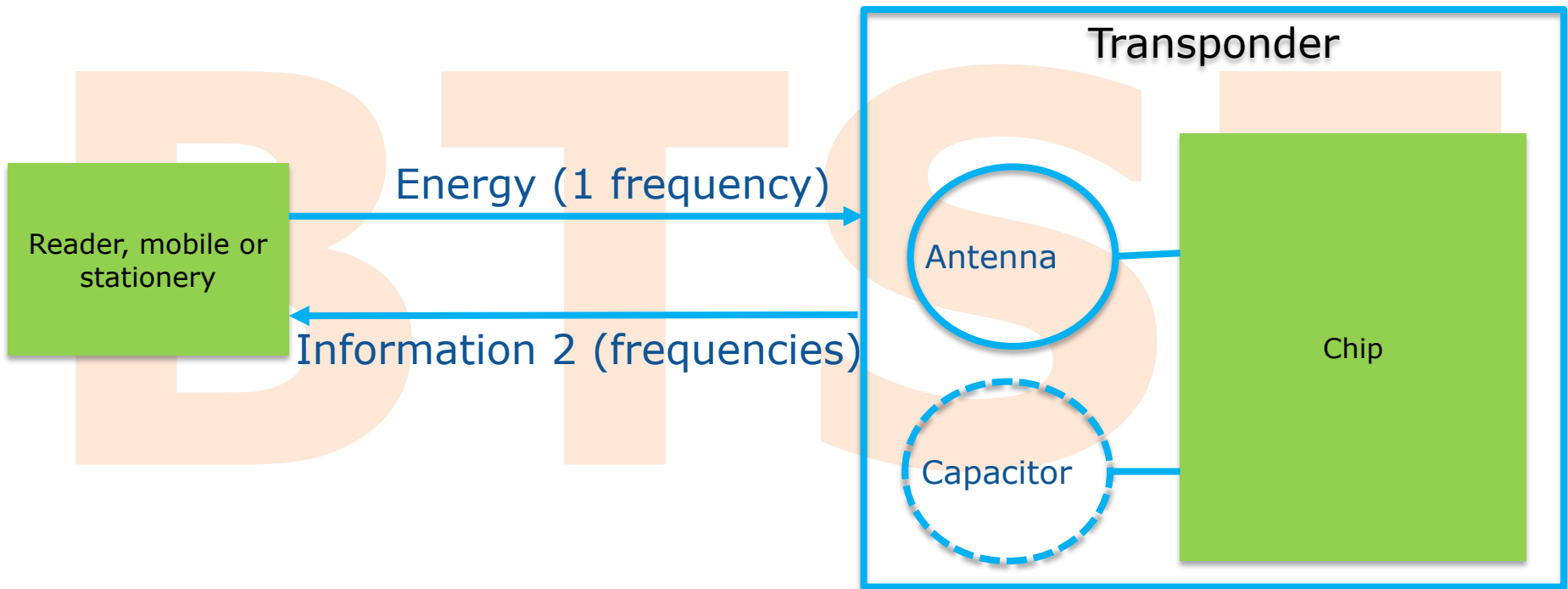
- Almost impossible to read more than some digits, the last digits should be bigger
- The number should be read by any side
- The number shall be clearly printed
- The number shall remain readable when the tag is aging
- Bar code is inexpensive and may be used to capture animal number:
  - Before applying the tag
  - On very young animals: lambs or young calves for veal production



## Electronic identification / Main features

- An old technology, more than 20 years
- Mainly used for herd management and / or by automatic devices (robot...)
- A global market with global players
- A unique ISO standard

# Electronic identification / Principles



## One standard but two communication protocols

- Two different protocols: HDX and FDX
- First implementations were based on HDX
- Some readers remains only HDX (farm equipment...)

## Electronic identification/Animal number

- A 15 digits world unique number for all the species.
- Two numbering schemes:
  - Manufacturer responsibility : 3 digits for manufacturer code + animal code.
  - Competent authority responsibility: 3 digits for country code + animal code
- Visual and electronic number differ more or less

## Electronic identification / Reading issues

- Transponder breakdown
- Data exchange between database and readers
- Stationary readers:
  - Setting and maintaining
  - One animal in the reading field
  - Enough time to read one transponder
  - Expensive operational solutions to read fast
  - No solution neither for long distance nor for groups

## Electronic identification / Transponder recovery

- Bolus: specific procedure to retrieve it from rumen
- Injectable: may move from its initial place

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## Electronic identification/Alternative technologies

- Mainly “Ultra High Frequency-UHF”
- Not only prototypes
- Some independent trials: UK, NZ, USA...
- Advantages:
  - Reading distance
  - Reading several animals simultaneously
  - Cost
- Main problems:
  - Lacking of an international standard
  - Reflectance with metal
  - Sensitivity to dust and water
  - Not appropriate for bolus or injectable
  - Standard for animal identifier to be defined

## International bodies

- International Standard Organisation (ISO):
  - Format of the code transmitted by the transponder
  - Communication protocol: HDX and FDX
  - Test protocol:
    - Conformance
    - Performance



## International bodies

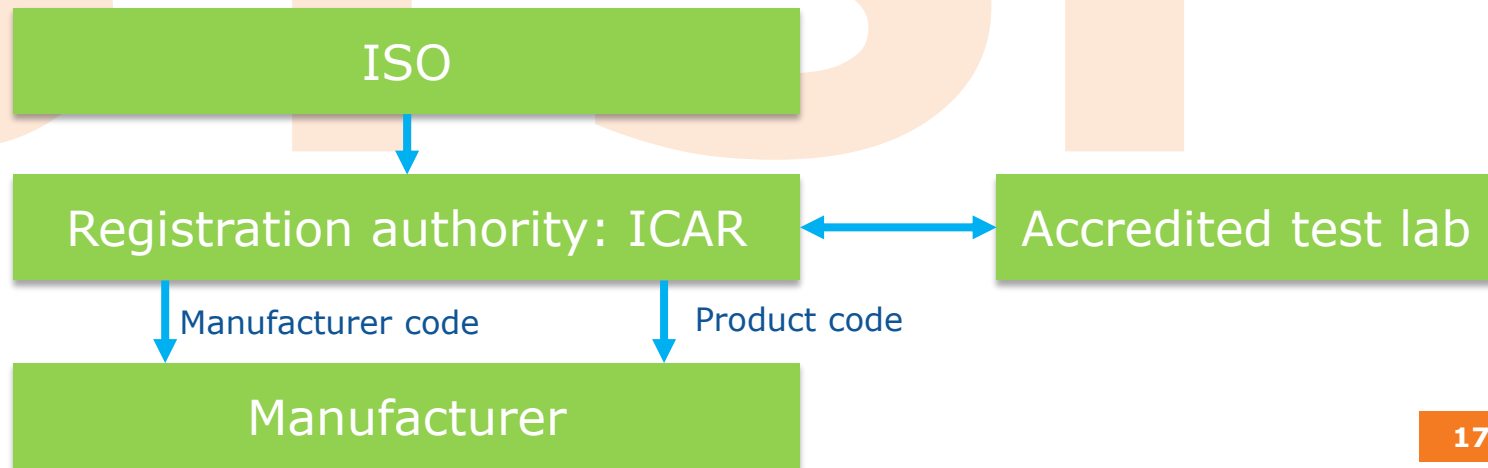
### ➤ International Committee for Animal Recording (ICAR)

<http://www.icar.org/>:

- As ISO registration authority for RFID devices:
  - Performs conformance test
  - Delivers manufacturer + product codes
- As non-Government Organisation:
  - Performs ISO performance test for RFID devices
  - Lay down environment test procedure for ear tags with or without RFID devices.
  - Delivers a 5 year certification for RFID and tags

## Electronic identification / registration process

- Only transponder, not reader
- Only conformance, not performance
- Conformance of protocol and exchanged data





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# Implementation of legal provisions in the field - tools and devices -

Module 2.3

How to select the appropriate  
means for animal identification?

Round Table Discussion



# How to select the appropriate means for animal identification? – Sharing of experiences

## International standards and organizational aspects on the procurement process

- What are relevant standards to refer to?
- What are minimum requirements for the procurement of devices?
- What is the organizational framework in the co-operation with one or more supplier?
  - number of suppliers
  - duration of contract
  - additional services (packaging, distribution and mailing, others)?
- What should be avoided?

# Implementation of legal provisions in the field - tools and devices -

Module 2.3

Description of different strategies  
for the data capture in the field

Presentation

Round Table Discussion



## Why a strategic issue?

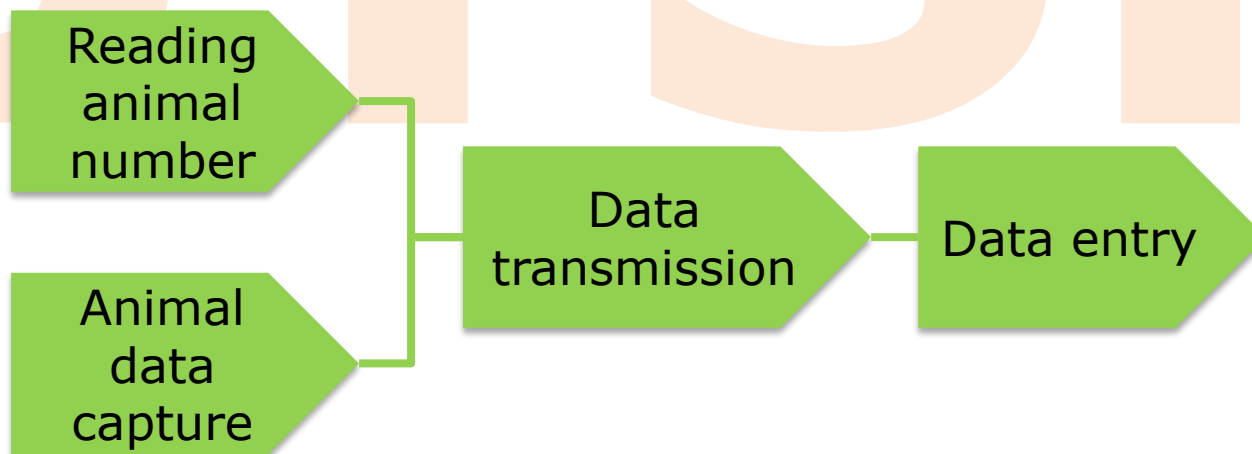
- Data quality:
  - Error in animal identifier
  - Error in animal data
  - Error in data entry
- Data availability
- Cost
  - RFID device or plastic tags.
  - On field tools for data entry: readers, e pad,
  - Specialised staff for data entry...
- Administrative burden and human resources

## Strategies for data capture

- Two types of strategy:
  - Digital
  - Paper
- Addressed issues:
  - Animal number capture
  - Animal data capture
  - Data transmission
  - Data validation
- Combination of both according stakeholder / task

## “Paper” strategy for data capture

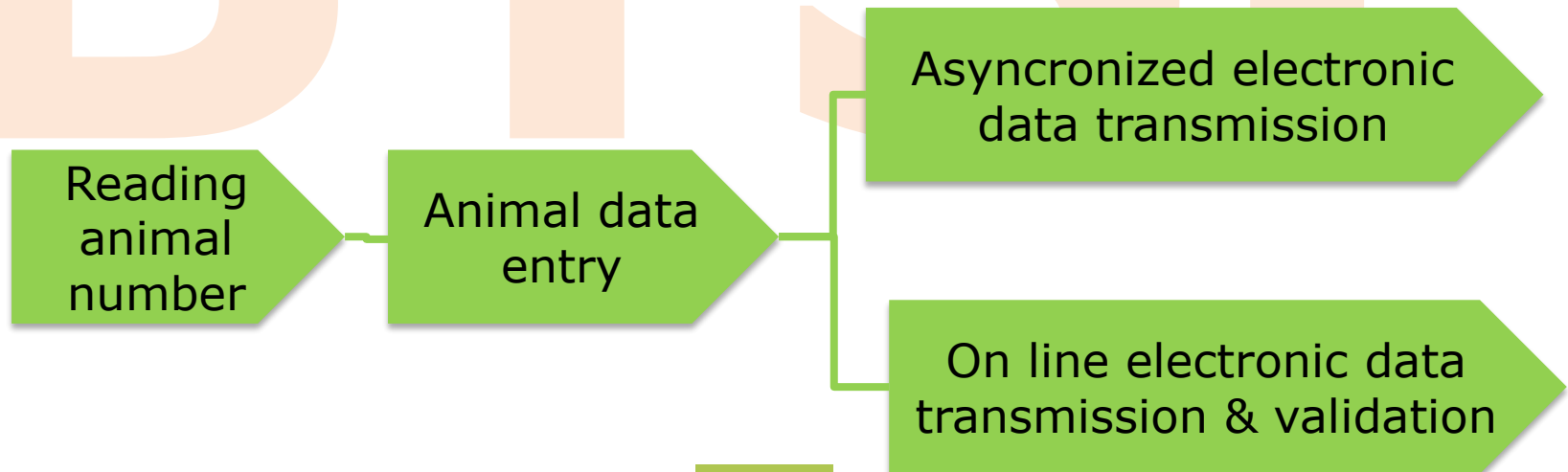
- Animal number is read visually
- Animal data is captured manually by paper form
- Data transmission by paper form
- **Data entry is performed by specialized staff**





## “Digital” strategy for data capture













- Animal number is read by barcode or RFID reader
- Animal data entry by miscellaneous devices: e pad, smartphones...
- Asynchronized data transmission or on line data transmission and validation



## Comparison

Criteria	Paper	Digital
Administrative burden	+ + +	+
Cost	+ + +	+ +
Data availability	+	+ + +
Benefit for stakeholders	+	+ + +
Data quality	+	+ + +
Delay	+ + +	+

## Maturity and trends of strategy for data capture

Stakeholders	Farmers		Collecting centers		Abattoirs	
	Current	Trend	Current	Trend	Current	Trend
Electronic capture of animal number	Low		High		High	
On field data captures	Low		High		High	
Off line electronic data exchange	Low		High		High	
On line validation and data exchange	Medium		Medium		Medium	

## Round Table

Exchange of experiences from member states and participating countries

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**Thank you  
for your attention!**



*Food safety*



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