New trends in data capture and exchange solutions between farms and external partners

French situation

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Breeders fewer but more technical

France: Nb herds > 5 cows (x 1000)

France: Herds over 50 cows (%)

Source: Institut de l’Elevage from Identification National Database + SSP
Use of new technologies

- **Automatisation**
  - AMS, milk meters...
  - And tomorrow weighing for beef cattle

- **Sensors**
  - Animals / products
  - Buildings
  - Material

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**Dairy premises with at least one AMS**

- **Source:** Institut de l’Elevage, national database of farm electronic milk meters audit.
Main breeders’ partners

- Public authorities: Identification and Traceability data
- Professional bodies: Genetic and zootechnical data
- E-services suppliers and Internet portals
Internet portals for breeders

- Provided by regional associations of professional bodies to consolidate different technical data
- Data notification tools compliant with regulatory obligations and managing also technical data
- Valorization of all data collected on the farm regardless who collected it
Data exchange challenges for Genetic information system

- **ORI-Automate**: Maximize automation
  - Genetic Information System
  - Coherence warranty
  - National Software

- **RESWEL**: Optimized data exchange adapted to equipment evolution
  - No double records

- **EDEL**: No double records

- **Professional organization system**: Consolation of private and collective data
- **Data management standard**: Technicians’ on field equipment
- **Automated computing system**: Breeder’s herd management software
- **Technicians’ on field equipment**: RESWEL
- **Consolidation of private and collective data**: EDEL

**ICAR Berlin; Friday May 23th; New trends in data capture and exchange in France**
EDEL Service
Facilitating exchanges between collective database and breeder’s software

- A project managed collectively by genetic interprofession
- Open to cattle, goat and sheep (shortly) breeder’s

2 main components:

- National standard message for each species, elaborated in relation with software editors. Based on XML messages now evolving to Web Services
- National software ensuring exchanges to and from database.

EDEL users:
(06/05/2014)

3270
620
**RESWEL: Livestock Web Services Network**

**Web Service (WS) =** Normalized technique to make 2 computers cooperate

**Exemples of computers involved in livestock WS:**

- Breeder’s desk management computer
- Automat coupled computer (eg: milking robot)
- Smartphone or mobile tablet *(technician’s or breeder’s)*
- Enterprise server (eg: MRO)

*Business changed a lot…*  
*I’d say even more: it evolved!*
RESWEL: Livestock Web Services Network

A frame elaborated for WS implemented in all platforms constituting French livestock computers

Components:

- **National development quality plan** including SOAP format, Java language and common file naming’s rules,

- **Invocation mode, via WSDL** (Web Service Data Language) in standard format.

- **Directory service** supported on the unique unique URL, any IT center the Web service to access is hosted in.

(Context of a network of several data centers cooperating together)
2 examples of WS: Record of cattle entry or exit in central DB
Milk weight transmission from AMS to MRO DB
ORI-Automate: an interface in link with machines

- A strong demand for convergence of data exchange between herd management systems and MRO databases

- An import-export interface developed in relation with automats manufacturers
  - **From DB side:** XML standard format for import-export with MRO DBs
  - **From herd management side:** Interface accepts each existing format developed by manufacturers,
  - **Exchange in real time:** synchronization tools or gateway (FTP or WS) developed by all MRO platforms.

ORI-Automate users: (2014)

- Machines initialized once: 600
- Machines regularly updated: 150
Different milking parlor types

Different manufacturers:
- Fullwood
- Delaval
- Lely
- Boumatic
- GEA
Conclusion: Standardization and contracting

- Automation and data management at the center of breeders’ concerns
  - Contractual components in projects define precisely rights and duties of each stakeholders about recorded data

- International flows of animals and material
  - Data exchanges need to exceed single French context, and must be analyzed at international level.
    - Purpose of the ICAR working group "Animal Data Exchange" involved in exchange with AMS and milkmeters whom work is supported by French organizations who also participate to it
Thank you for your attention!

With my 2 coauthors, we stay at your disposal.

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