Connecting on-farm systems to improve herd management and genetic level of the herd

Frido Hamoen, manager global product management information products
• Cooperative of dairy and beef farmers
• 176 million euro turnover – 1300+ fte
CRV Activities
in the Netherlands and Flanders, financial year 14/15

• Herdbook (different dairy and beef breeds)
  – 25,000+ herds, 3,000,000+ alive cows in heredbook
• Milkrecording
  – 16,500+ herds, 1,500,000+ cows in milk recording, 12,727,000+ milksamples
• Type classification
  – 7,500+ herds, 200,000+ cows
• Information products
  – VeeManager used by 10,000+ herds
• Insemination services
  – 1,300,000+ inseminations, also ET/IVF
• Genetics
  – Different breeding programs for dairy and beef breeds
• International activities in many countries, like Brazil, New Zealand, USA, various European countries and others)
Why did we develop this solution?

Trends

- Big Data
- Internet of things
- Smart Farming / Precision Livestock Farming

- Further automatic exchange of cow data to
  1) support the farmer with relevant management information
  2) enhance genetic improvement of the herd of the farmer

- For the farmer: less administration, saves time, less mistakes, more efficient production, higher income
CRV Lely connection

CRV-Lely-Koppeling

- Dagelijks melkuit
- DHZ-KG-meldingen
- Uur-meldingen (gestations, activiteit en sterfte)
- Tochtdatum
- Activiteit
- Droogzetdata
- Vrouwbaarheid status aanwezig dieren (zwaarwegendierprogram, drachtstatus)
- Kalibreer vet-eiwitbePALING VIA MPR-UITSLAG
What data do we exchange?

- National animal registration system
  - Birth/calving, arrival, departure, dead.
- Change farm animal number, name of cow
- Fertility
  - Observed heat
  - Insemination data (AI and DIY)
  - Pregnancy check (palp, ultra, MR)
- Dry off date
- Daily milk yield
- Activity/Heat attentions
- Milk recording data (fat%, protein%, scc)
What does CRV do with the data?

• First: Calculate daily milk yield for milk recording (cost saving).
• Second: use all available data to provide farmer with relevant information (example fertility analysis).
• Third: use all available data to genetically improve the herd of the farmer (example milk robot suitability).
What does the milking system do with the data?

- Automatic upload of all cow data at start up of new milking system
- Automatic updates on all cow arrivals/departures and fertility status
  - New cows are automatically added in the milking system
  - Expected dry off date can be calculated and feeding and milk interval adjusted weeks before dry off.
- Calibration of sensors with fat% and protein% measurements on individual cows from milk laboratory
## Which systems do connect with?

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<th>Daily milk yield</th>
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- Introduced ☐ testing – not started
What did we experience? Problem? Challenges?

- Quality of the internet connection and the local network at the farm
- Many different standards (API, ISO, Taurus and some very outdated) to work with, or no standards at all
- Many different versions of milking system software in the field
- Updates at the milking system software
- Connection is in many cases not real-time, but once a day, or every several hours
- Complex instructions to the farmer what to input in which system and in what order
- Quality of the data (both sensor and farmer data)
- We want to add more data fields
- A lot of work to manage this all
How can we make our live easier?

- Stimulate standardization: Agroconnect and ICAR ADE workgroup

- Initiate SDF Datahub
  - Together with FrieslandCampina and Agrifirm, CRV has taken the initiative to set up the SDF Datahub.
  - This SDF datahub will solve some of the issues
Current road (simple example)

Every new application has to make all connections.

NB: Besides this all parties have to manage the administration of the farmer permissions to use the data.
Use SDF Datahub (example)

Every new application can connect to SDF Datahub.

Every source has its own standardized interface.
SDF Datahub

- Like telephone exchange
- No database, no storage
- Open for all parties
- Governed by a non profit foundation

Using the SDF Datahub all parties can focus on their own strength:

- Develop sensors
- Send and receive data
- Analyze data
- Develop algorithms
- Milk cows
- Feed cows
- Processing of milk
- …
Thank you for your attention