

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

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# CRV

- 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 herdbook
- 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)



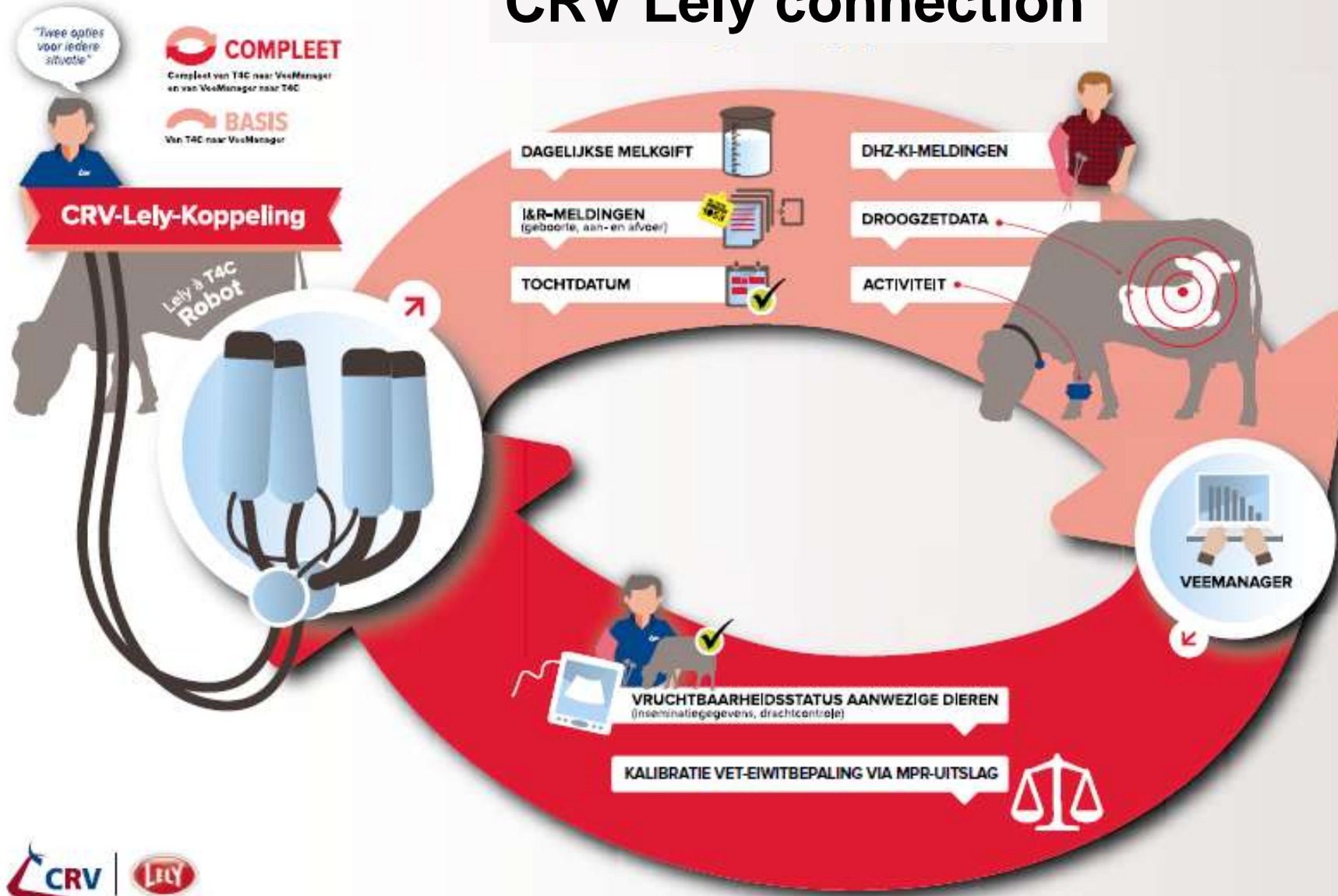
# Why did we develop this solution?

## 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



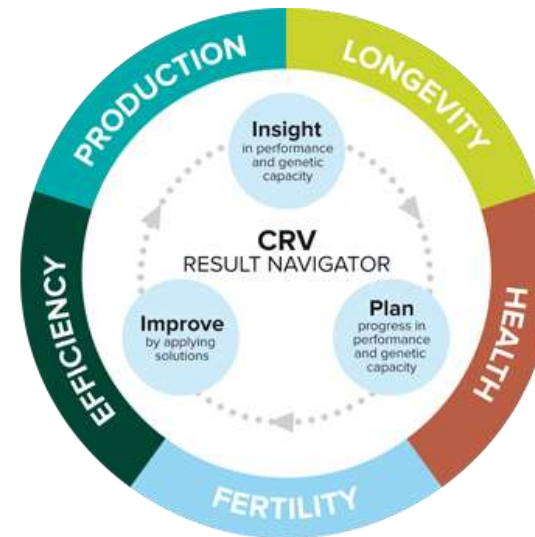
# What data do we exchange?

- 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)



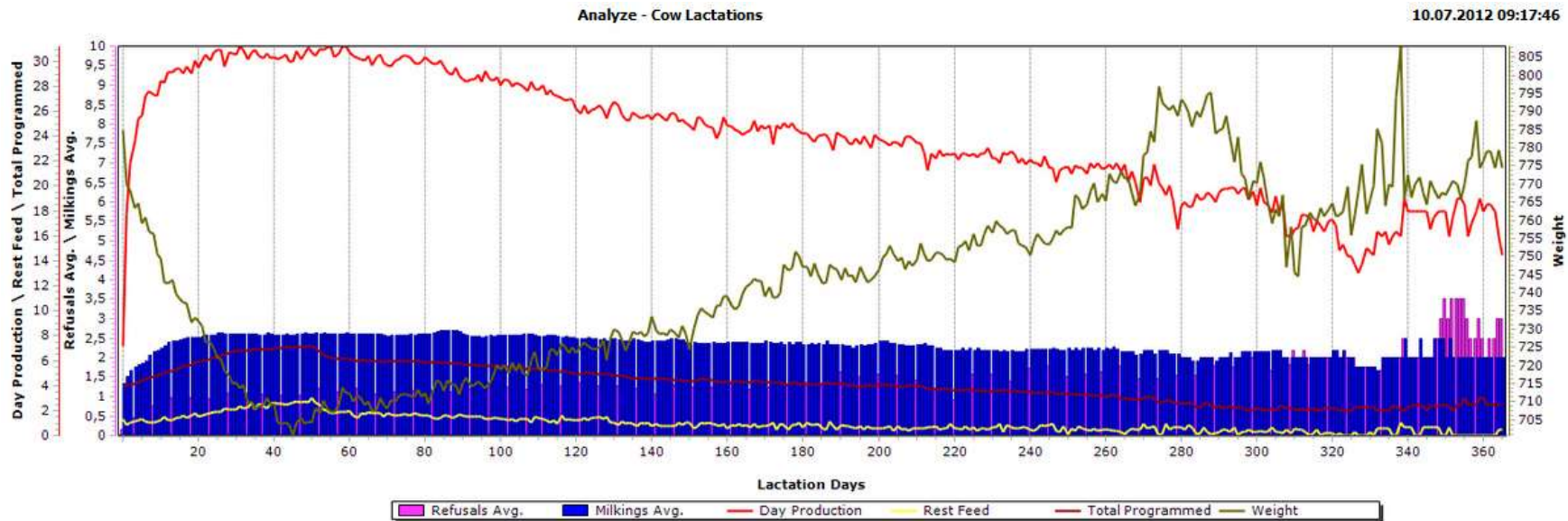
# What does CRV do with the data?

- 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?

	Daily milk yield	Basic	Complete	Activity
DeLaval	✓	↻	↻	✓
GEA	✓	n.a.	✓	✓
Lely	✓	✓	✓	↻
Fullwood	✓	✓	✓	✓
Boumatic	-	-	-	✓
SAC	✓	-	✓	✓
NEDAP	-	-	-	✓
SCR	-	-	-	✓
Dairymaster	-	-	-	↻
....				
✓ 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?

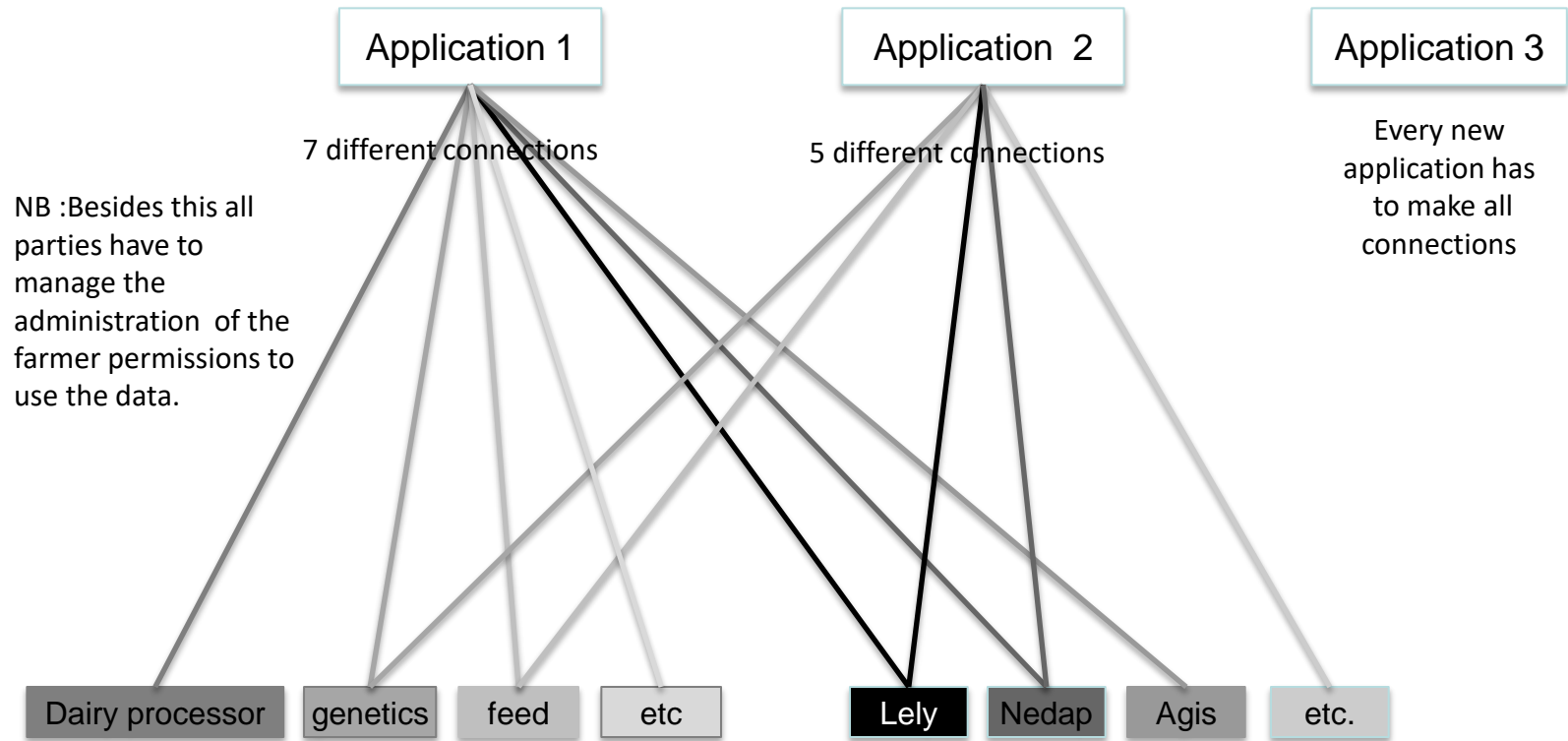


- Stimulate standardization: Agroconnect and ICAR ADE workgroup

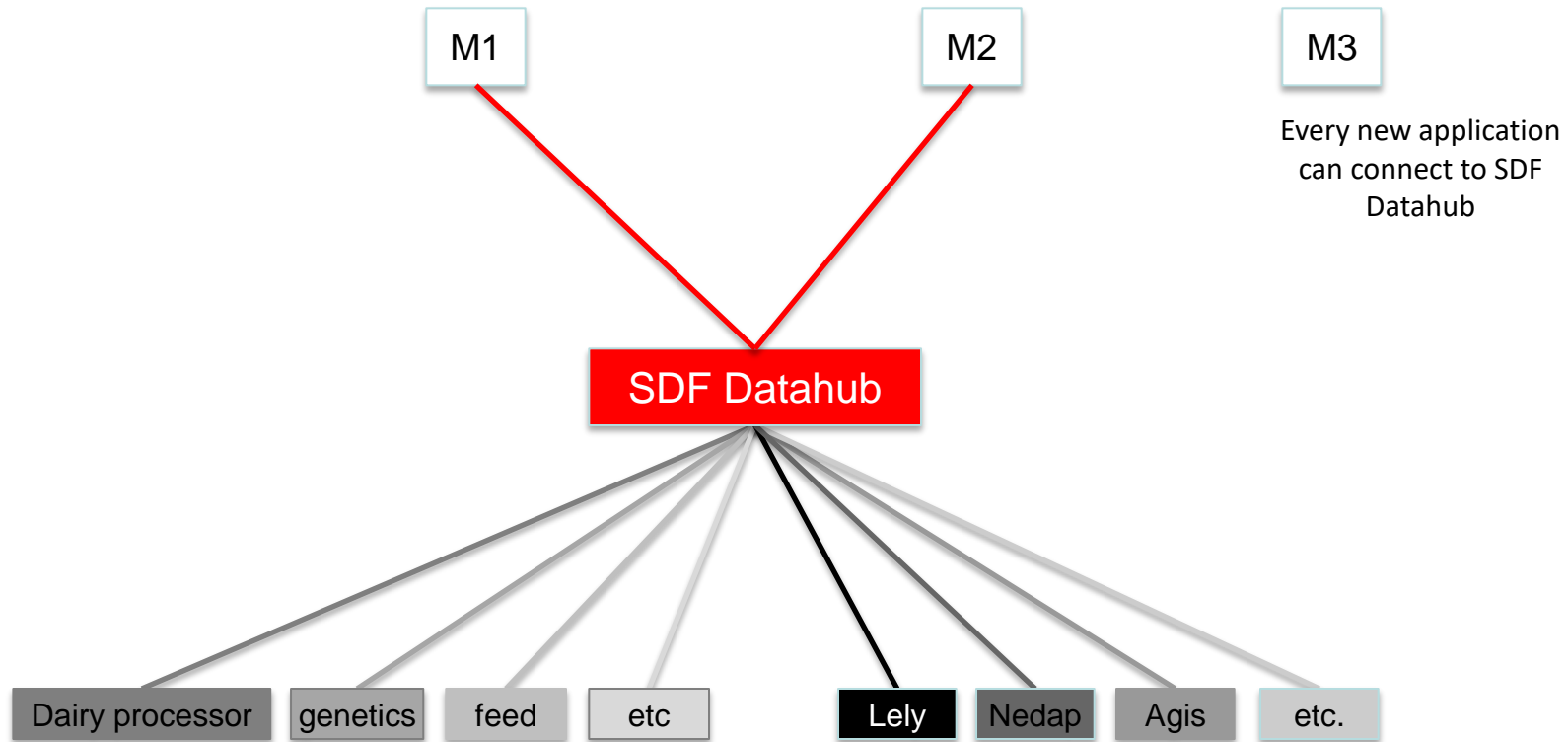


- Initiate SDF Datahub
  - Together with FrieslandCampina and Agrifirm, CRV has taken the initiative to set up the SDF Datahub.
  - This SDF datahub will solve some of the issues

# Current road (simple example)



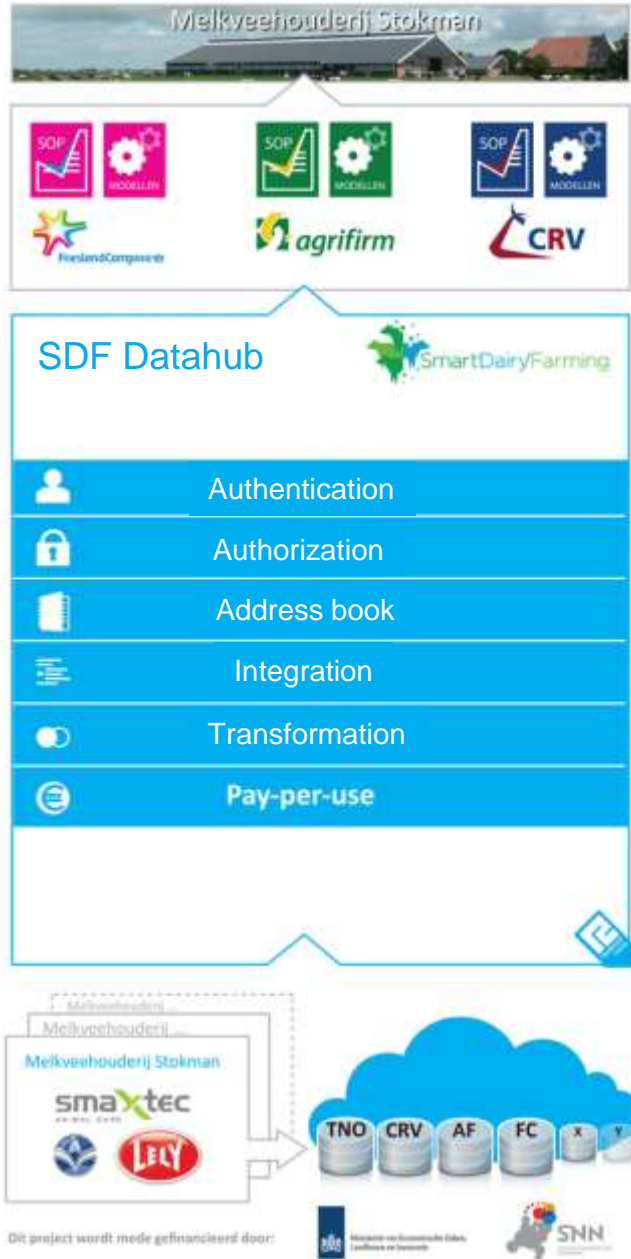
# Use SDF Datahub (example)



Every new application  
can connect to SDF  
Datahub

Every source has it's own standardized interface

## SDF Datahub



- 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**