# iDDEN
## The international dairy data exchange network

**Project iDDEN (international dairy data exchange network)**
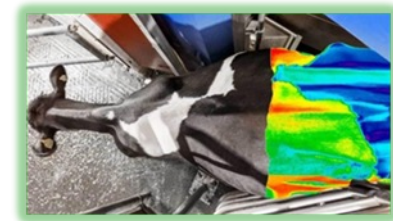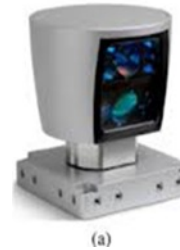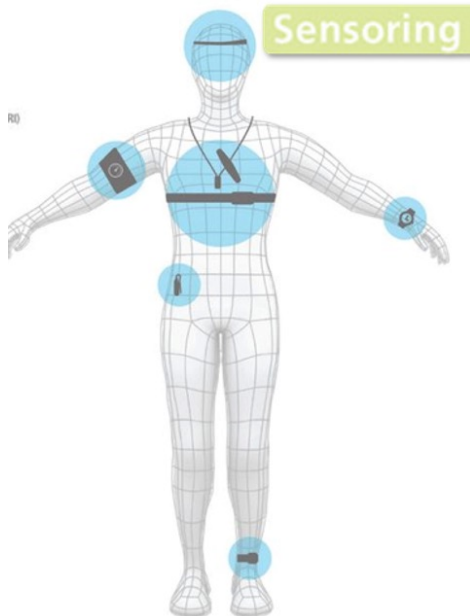
Reinhard Reents

April 27, 2023

Streamlining data exchange between dairy herds, milk recording organizations, farm service providers, dairy equipment manufacturers and on-farm software organizations.

# Dairy cattle

- Farms get bigger each year
- More need to replace (expensive) labor by technical equipment
- Equipment / sensors initially developed for use in humans are adapted to animals
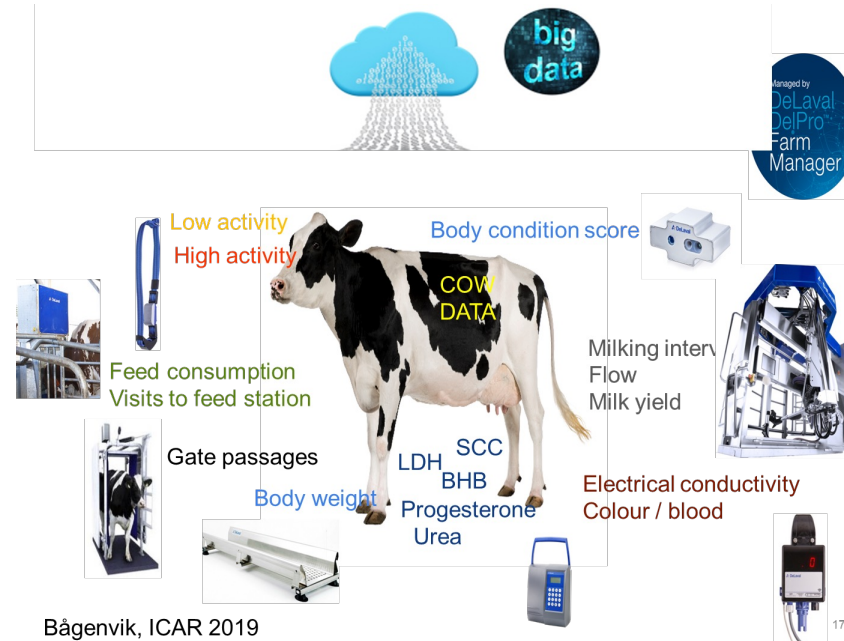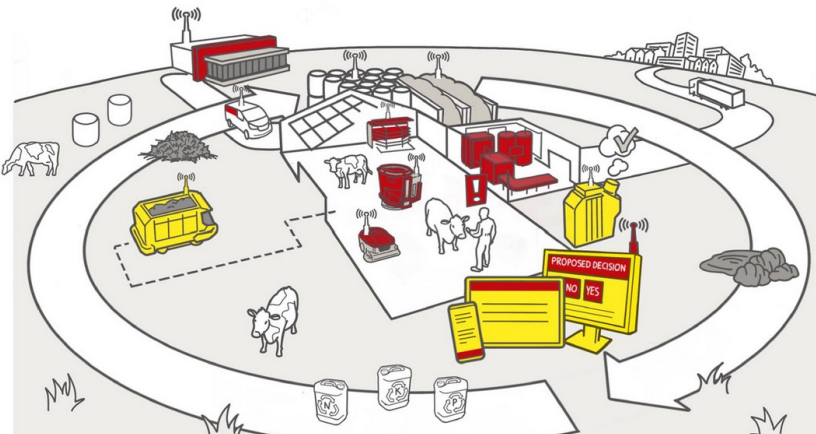
# Automatic milking

- Automatic milking > 50% in all new installations in Germany
- Not only in family farms, 56 stalls rotary AMS in one of the largest herds in Germany
  → data generated every minute

# Availabilty of the new data ?

- Big OEMs can do most things inside of their systems



6. Oktober 2020　I　Presse



Bågenvik, ICAR 2019

# Farmer owned service organisations

- Dairy farmers own many of their service organisations
    - Milk recording
    - Herdbook keeping
    - AI
    - Centrally operating data repositories
    - Genetic and genomic evaluation centres
    - …

- Farmers have asked these organizations to help them make better use of the data that exists and potential data
    - Aim is to make informed decisions based on many data sources

- About 3-4 years ago a core group of people from these organisations started discussions about a joint effort

- Need a critical size to set standards for:
    a. Definition of the data to be exchanged (← working with the ICAR ADE group)
    b. **But also for data transfer mechanisms**

- Need a legal entity to finance the necessary infrastructure

- Aim was a core group of 5-10 shareholders that share a joint vision and bring up the resources that are needed
    – Each of them should represent a geographical area and / or represent more that 1 million milk recorded cows
    – Shareholders of iDDEN understood that there is an ongoing and constant need for development and inclusion of new standards and new data transfer mechanisms

# Current owners/shareholders (DDO)

- Shareholders
  - CRV
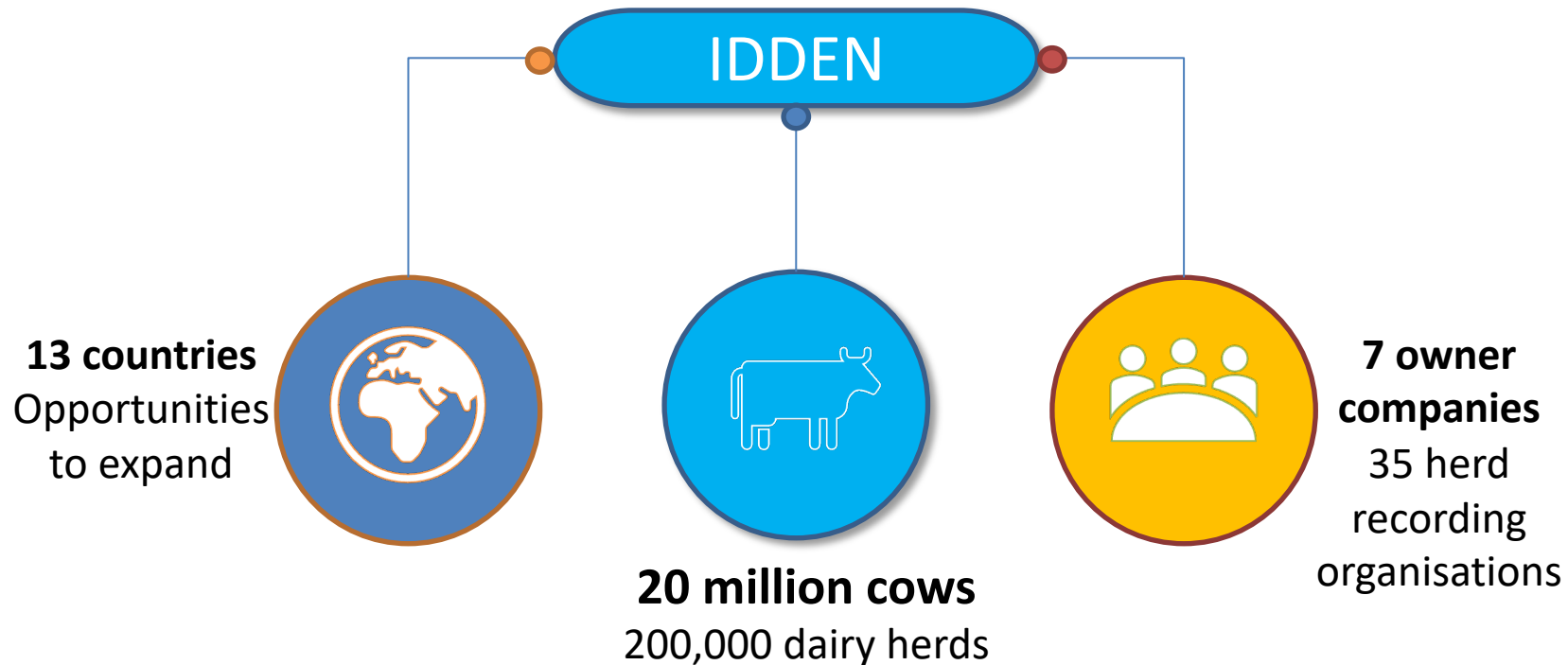  - DataGene
  - Lactanet
  - NDHIA
  - NCDX ApS
  - RDV
  - vit
- ….

- iDDEN was created by the partners as a GmbH (limited liability company) under German law on May 6, 2020,
- Founding Managing Director → Reinhard Reents

Designated Area Responsibilities
- The Netherlands & Belgium
- Australia
- Canada
- USA
- Denmark, Finland, Iceland, Norway, Sweden
- Austria, Germany
- Germany, Luxemburg

# Worldwide Potential, current shareholders

IDDEN

**13 countries**
Opportunities to expand

**20 million cows**
200,000 dairy herds

**7 owner companies**
35 herd recording organisations

- Future customers (OEM, DDO, and others) and additional shareholders will help to be one of the key players world wide, to set a common standard for dairy cattle data and data exchange

# Scope of iDDEN

- Data definitions are based on the ICAR ADE standards as much as possible
  - Prepared to establish new data transfer protocols as required

- Restrict to the technical part of data exchange
  - Partners that want to use iDDEN need to agree (between them) which data they want to exchange and under which conditions

- No data storage within iDDEN
  - Only temporarily to repair technical interruptions
  - Log files to help the customer to monitor the data exchange

- iDDEN shareholders want to make sure that they can enhance, modify and update the data exchange hub as needed
  - Need to 'own' the hub → purchase of the NCXD System that was developed by Mtech in Finland

# What <u>will</u> iDDEN do for you?

- Provide an up to date data exchange system

- Add new ICAR ADE messages as they are developed

- Provide you with tools to monitor the day to day operation of your data exchange

- iDDEN's goal is to have an 'iDDEN ready' standard where the three key elements are standardised

  a. Data definition

  b. Data transfer mechanism

  c. User authentication

**Ultimate goal is to have one universal point of integration**

# Where are we now?

- All shareholders are connected to the iDDEN system

- 31 ICAR ADE messages implemented

- Agreements with two strategic partners and two OEMs

- Good interest from DDOs and service providers



iDDEN - Messages          Version 1.2

**Implemented Messages:**
The iDDEN Hub uses ADE messages for communication with external partners. Following is a list of all implemented messages so far. The list will be growing over time whenever new requirements are identified and defined in ADE.
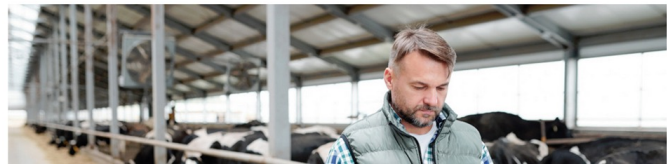
| Number | Event | Comments |
|--------|-------|----------|
| 1 | Milking | Individual milking events |
| 2 | Milking complex | Milking events supplemented by sensor data |
| 3 | Milking by quarter | Teat coordinates, milk weights & time by quarter |
| 4 | Herd list | Animals in the herd |
| 5 | Feed Intake | Feed consumption on the farm |
| 6 | Feedstuffs | Feedstuffs available at the farm |
| 7 | Available Identities | Free animal identities / tags for use for new-born calves |
| 8 | Body Condition | Animal body condition score |
| 9 | Milk recording result | Milk analysis and 24-hour yield |
| 10 | Birth | I&R births |
| 11 | Stillbirth | I&R stillbirths |
| 12 | On movement | I&R entering stock |
| 13 | Off movement | I&R exiting stock |
| 14 | Death | I&R deaths |

Contact    Assortment    Media

cial insemination/ embryo transplant event
l mating event
unning with a bull event
ot to calve again
f event
ncy diagnosis event
rm abortion event
g event, difficulties etc.
rm device information
observation event
t of an animal
 – Diagnoses
 – Treatments
 – Treatment programs
gement – Animal Sets (Groups of Animals)
gement – Animal joins Group
gement – Animal leaves Group

**Trade press release**

## GEA CREATES INTERFACE FOR EXCHANGE OF MILK AND ANIMAL DATA WITH IDDEN

20 Dec 2022

GEA and the International Dairy Data Exchange Network (iDDEN) have entered into partnership. This cooperation aims to optimize data exchange between DairyNet software for GEA equipment and international organizations for animal data collection and processing.

**DeLaval**

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## DeLaval Group making data-exchange easier for farmers

22 March, 2023 | News Press Release

*Stockholm, Sweden, 22 March 2023 – DeLaval Group is improving data handling for farmers by partnering with iDDEN (International Dairy Data Exchange).*

DeLaval, one of the world's leading manufacturers of milking equipment, and its affiliates UNIFORM-Agri, an internationally specialized provider of herd management software, and Dairy Data Warehouse, the world's largest dairy data company, have signed a strategic partnership agreement with iDDEN.

"In almost all countries, farmers are required by law to report their farm data, and sometimes even in multiple systems. That is complicated and time consuming, so through this collaboration we can offer a fast and safe system that will simplify the exchange of data for our customers. They will be able to easily exchange data to and from the DeLaval systems on their farms to local animal track-and-trace organisations and the local milk recording organisations," says Lars Bergmann, EVP Digital Services at DeLaval.

iDDEN is the largest international dairy data partnership, bringing together farmer-owned organisations and national databases across thirteen countries representing approximately 200,000 dairy herds, 20 million dairy cows and 13 million milk recorded dairy cows.

"The dairy industry is becoming increasingly digitalised, and most equipment is, or will be, connected. It is therefore important to have a solid system that offers a harmonised data exchange based on the International Committee for Animal Recording (ICAR) animal data exchange standard, to the benefit of farmers around the world," says Dr Reinhard Reents, Managing Director of iDDEN GmbH.

For DeLaval, it is important to make the data handling easy for the customer. "At DeLaval, we strongly believe in

# Summary

- iDDEN is a data exchange system based on actual technical standards:
  - *On farm data*
  - *Cloud based data repositories*
- A sound technical solution is complex and requires a professional service partner
  - *iDDEN is supported by Mtech (Finland), an experienced agricultural software service provider*
- Uses up to date authentication systems to allow secure data exchange mechanisms
- Owned & governed by a consortium of farmer-controlled member organisations from different countries
- Farmers retain control of their data – they must authorize access
- Interest of many OEMs because iDDEN can solve their problem with numerous costly national interfaces
- Interest from other MROs/DDOs and Farm Service Partners, e.g.
  - *Feed advice*
  - *Health monitoring and advice*
  - *Etc.*

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# THANK YOU

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