



# Nordic Cattle Data eXchange – a shared standard for data transfer

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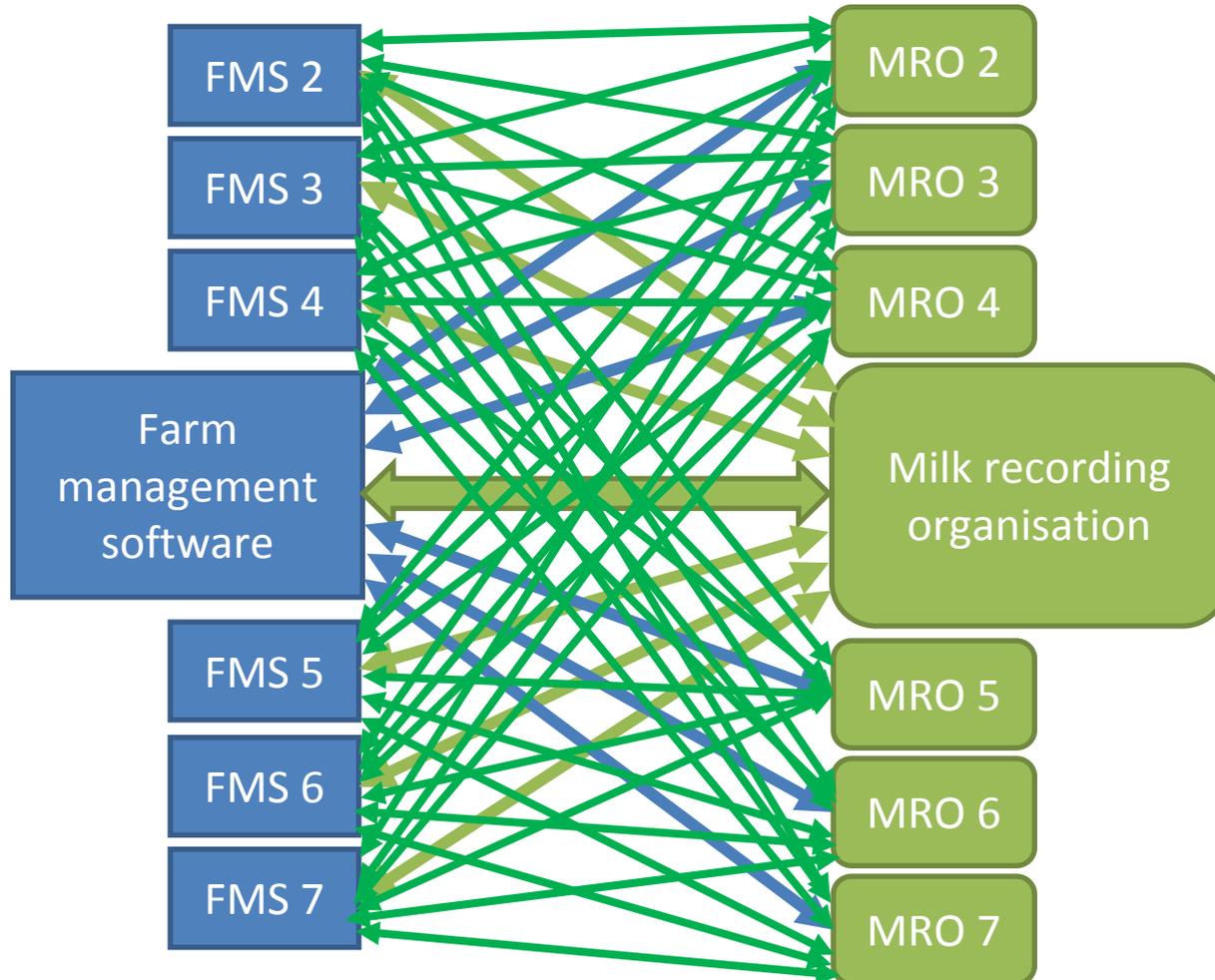
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# Need for easy electronic data capture

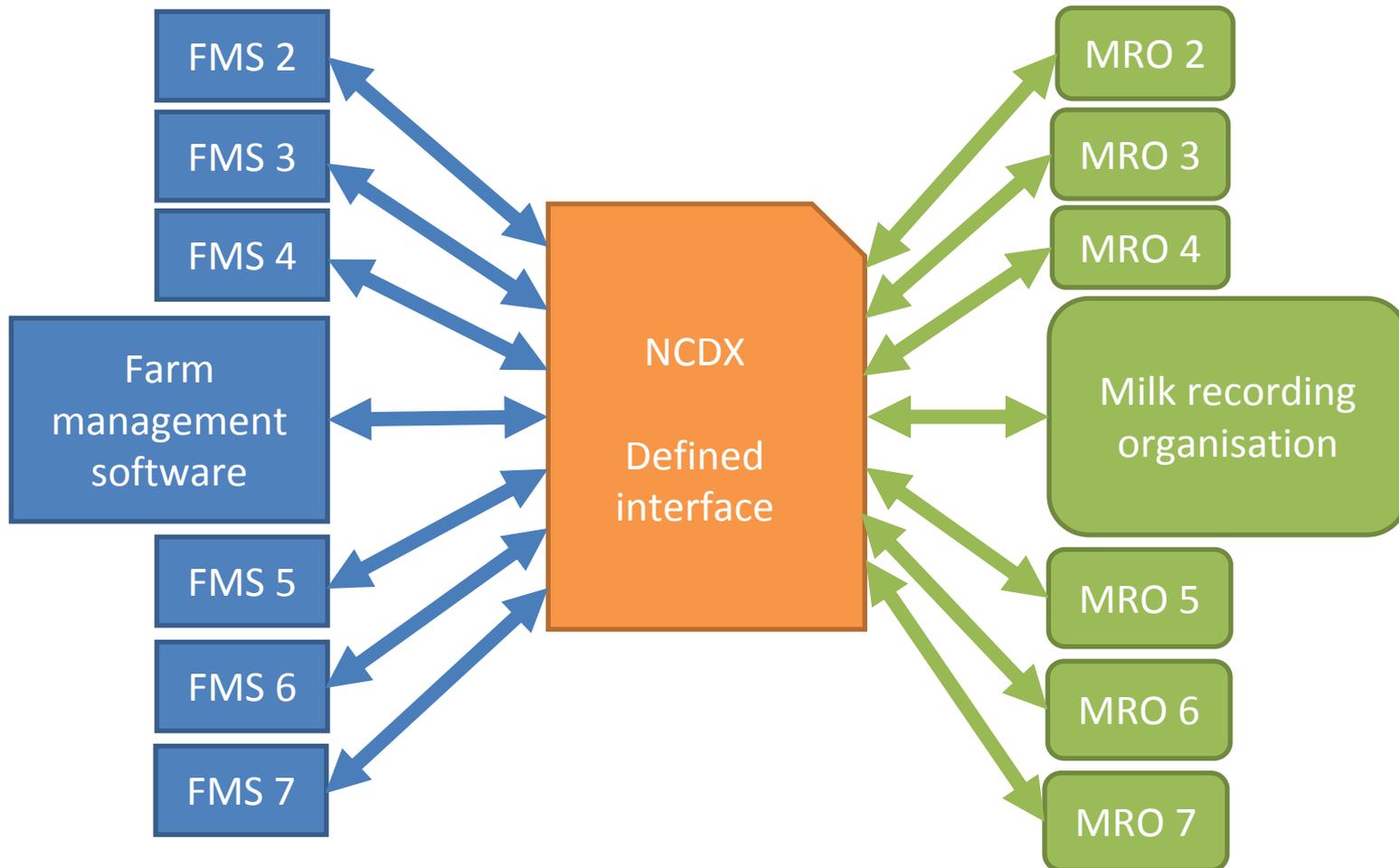
- Growing herd size
- More farms with permanent electronic milk measurement
- Automatic milking (30-40 % of all cows in the Nordic countries)
- Reliable animal data needed in the farm management software



# The problem



# The solution



# Nordic Cattle Data eXchange (Nordic CDX)

Nordic CDX development was begun in 2013 and finalised November 2015

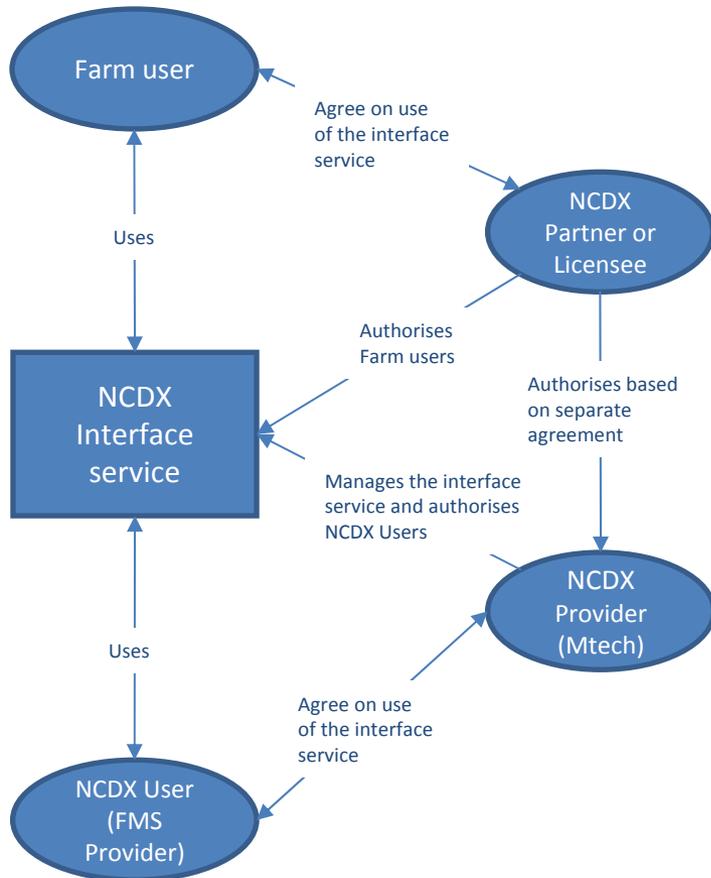
Milk recording and breeding organisations from

- Finland (ProAgria and Faba)
- Sweden (Växa Sverige)
- Denmark (Seges) and
- Norway (Tine)
- Iceland (Bændasamtök Íslands) joined later as a partner

The Nordic CDX provided as a technical service by Mtech in Finland on behalf of the partners listed above.



# Nordic CDX: Parties of the interface service



## Stakeholders

- **NCDX user:** A Farm Management Software provider like Delaval, Lely, GEA, SaC
- **NCDX Partners:** Mtech (Finland), Växa Sverige (Sweden), Seges (Denmark) and Tine (Norway), Bí (Iceland)
- **Farm user:** Farmer using FMS to exchange information via NCDX

## NCDX User

- Makes a single partnership contract with NCDX Provider

## Farm User

- Makes a separate agreement or otherwise is granted authorisation to the Interface Service by the NCDX Partner responsible

# Nordic CDX: Main Benefits

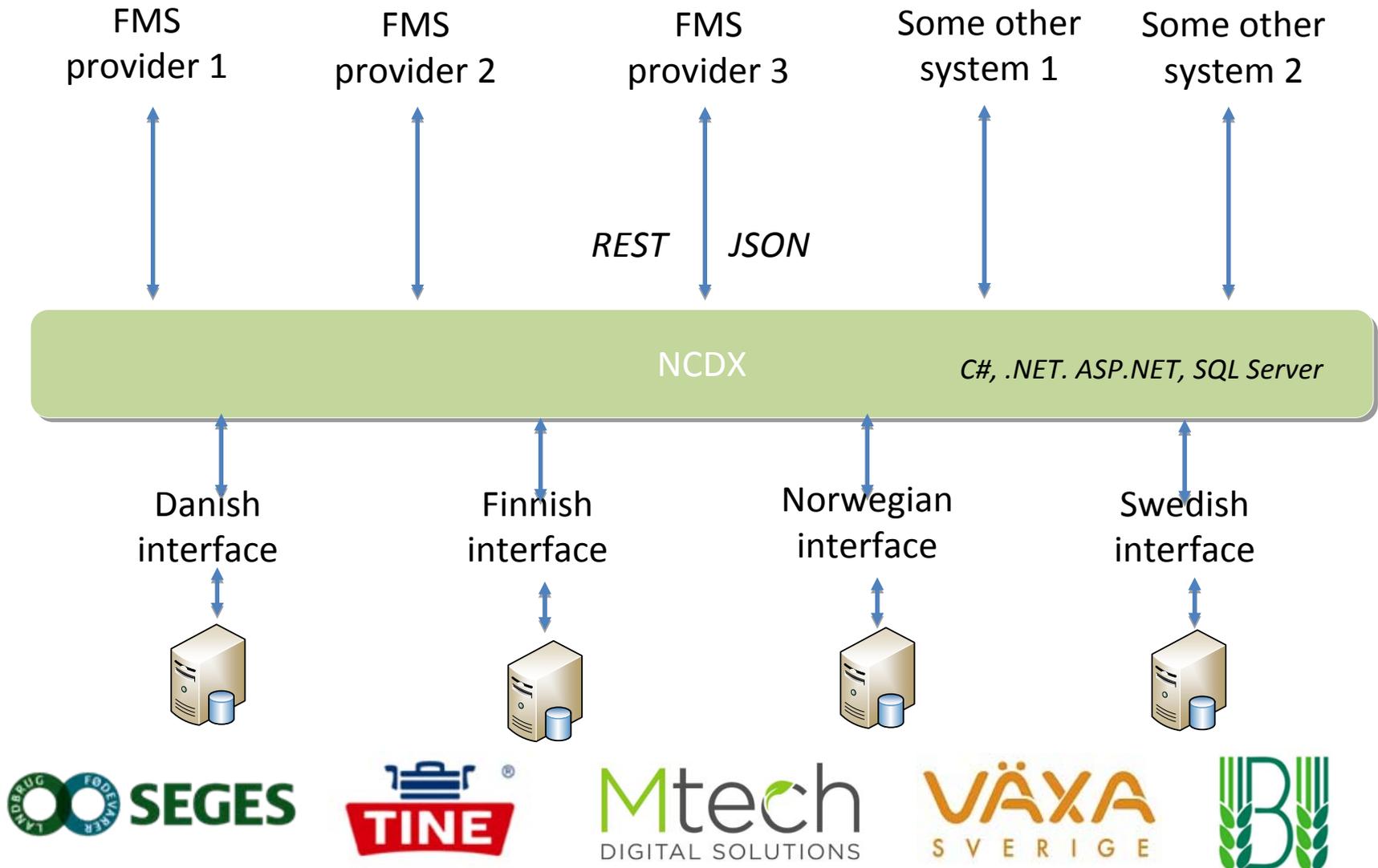
## From the FMS provider's perspective

- 1. One interface service** to integrate with the milk recording systems of all NCDX Partners. One integration and better quality of service
- 2. Common information description and standard**, which harmonises as much as possible the information
- 3. Modern web based technology** (REST, JSON), which makes it easy to develop the service and extend the information content exchanged
- 4. Developed to be also extendable for more NCDX Partners to join the co-operation:** potential for even higher benefit later on

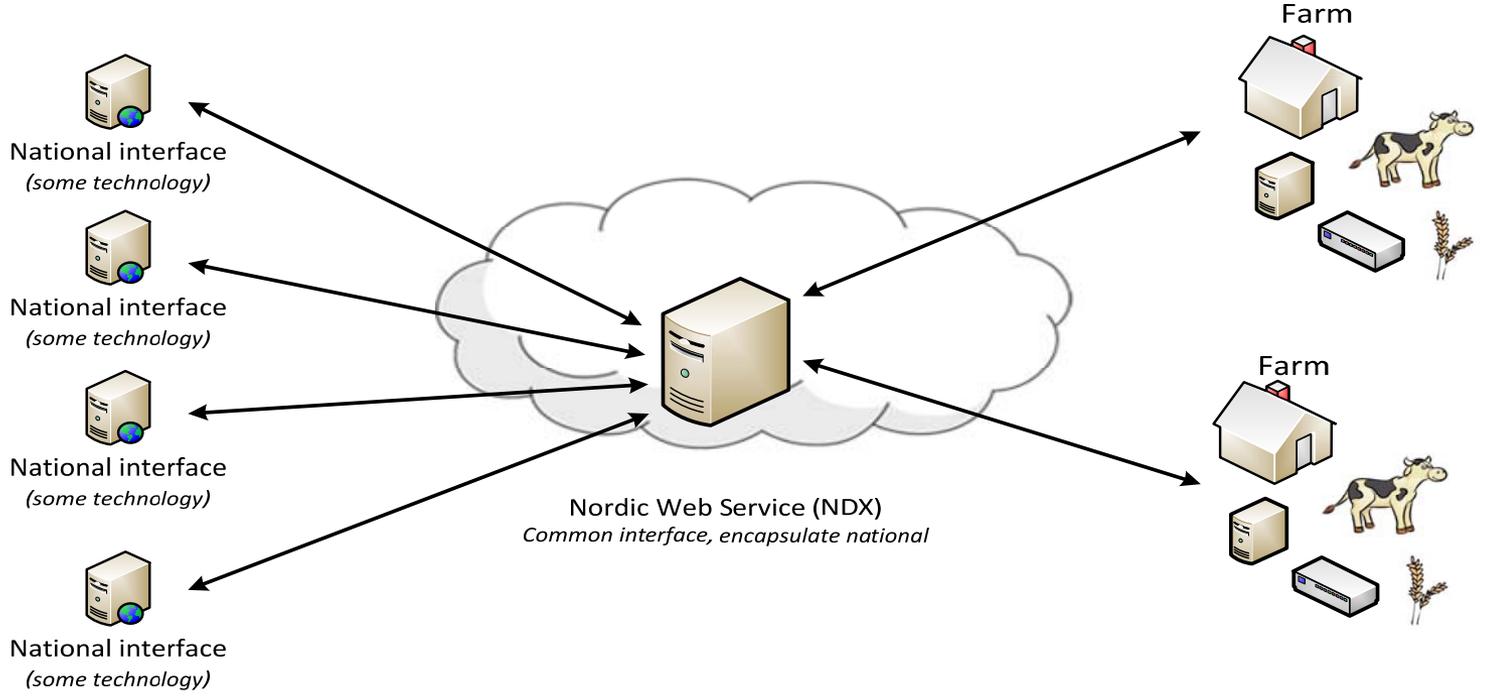
## From the Farmer's perspective

- 1. Better, easier and more automated data exchange between information systems. Less work and effort and more benefit from the existing technology solutions**

# Nordic Cattle Data eXchange



# Nordic Cattle Data eXchange



# Nordic CDX – version 1.0 main data content

- **Cow lists and basic cow information**
- **Recording and milk analysis results**
- **Production related events, e.g.**
  - Animal movements
  - Calving
  - Heat
  - Pregnancy check
  - Dry off
- **Other types of information like code sets, service information etc.**



# Our on-line documentation

- <https://test.nordiccdx.com/help>

## NCDX API description

General description of NCDX API

## NCDX

Contains endpoints and business logic for processing events

API	Description
POST <a href="#">ndx/v1/animalarrival</a>	Send a Movement/transfer into herd from FMS to national DB
POST <a href="#">ndx/v1/animaldeparture</a>	Send a Movement/transfer out of my herd from FMS
POST <a href="#">ndx/v1/animalmilkingresult</a>	Send ICAR-compliant milk inspection from FMS to National DB (NCDX)
POST <a href="#">ndx/v1/dryingoff</a>	Send an Drying off event from my FMS to national DB
POST <a href="#">ndx/v1/getanimaldepartures</a>	Receive a Movement/transfer out of my herd from NCDX into FMS
POST <a href="#">ndx/v1/getcodesets</a>	Returns list of found codesets
POST <a href="#">ndx/v1/getherdlist</a>	Request an initial herddataset for FMS, so one can start up the system without entering all data on a herd

# Current status

Where are we now (February 2018):

- NCDX is now in production for Finland and Lely
- NCDX implementation is quite ready in Sweden
- NCDX in pilot phase in Norway
- NCDX implementation is underway in Iceland
- NCDX implementation is scheduled for 2018 in Denmark
- One significant FMS provider has signed the partnership contract, one more has been agreed upon, and there are talks with several others.
- There have been serious discussions with several other MRO's to join

