



Nordic Cattle Data eXchange – a shared standard for data transfer

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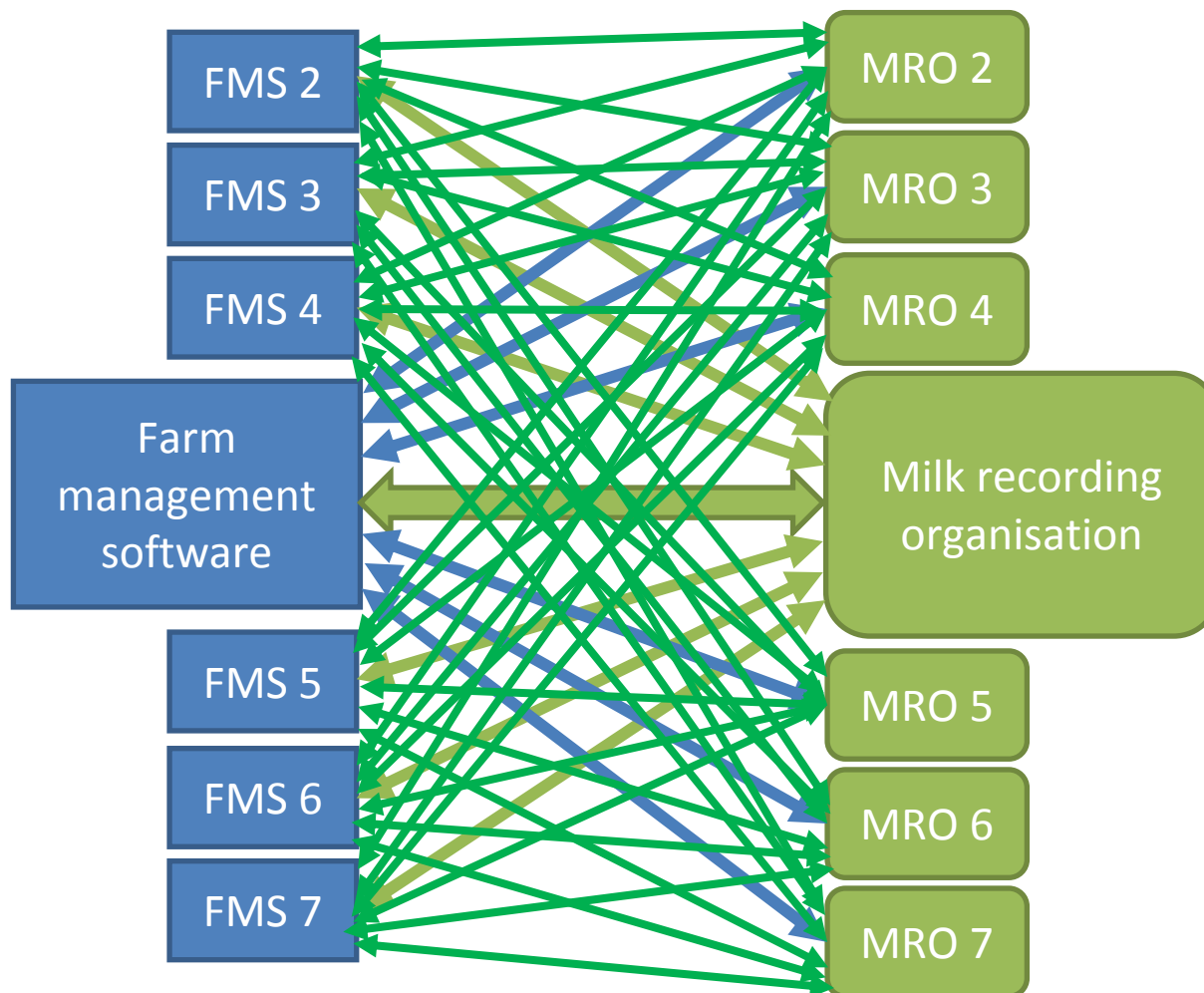
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Need for easy electronic data capture

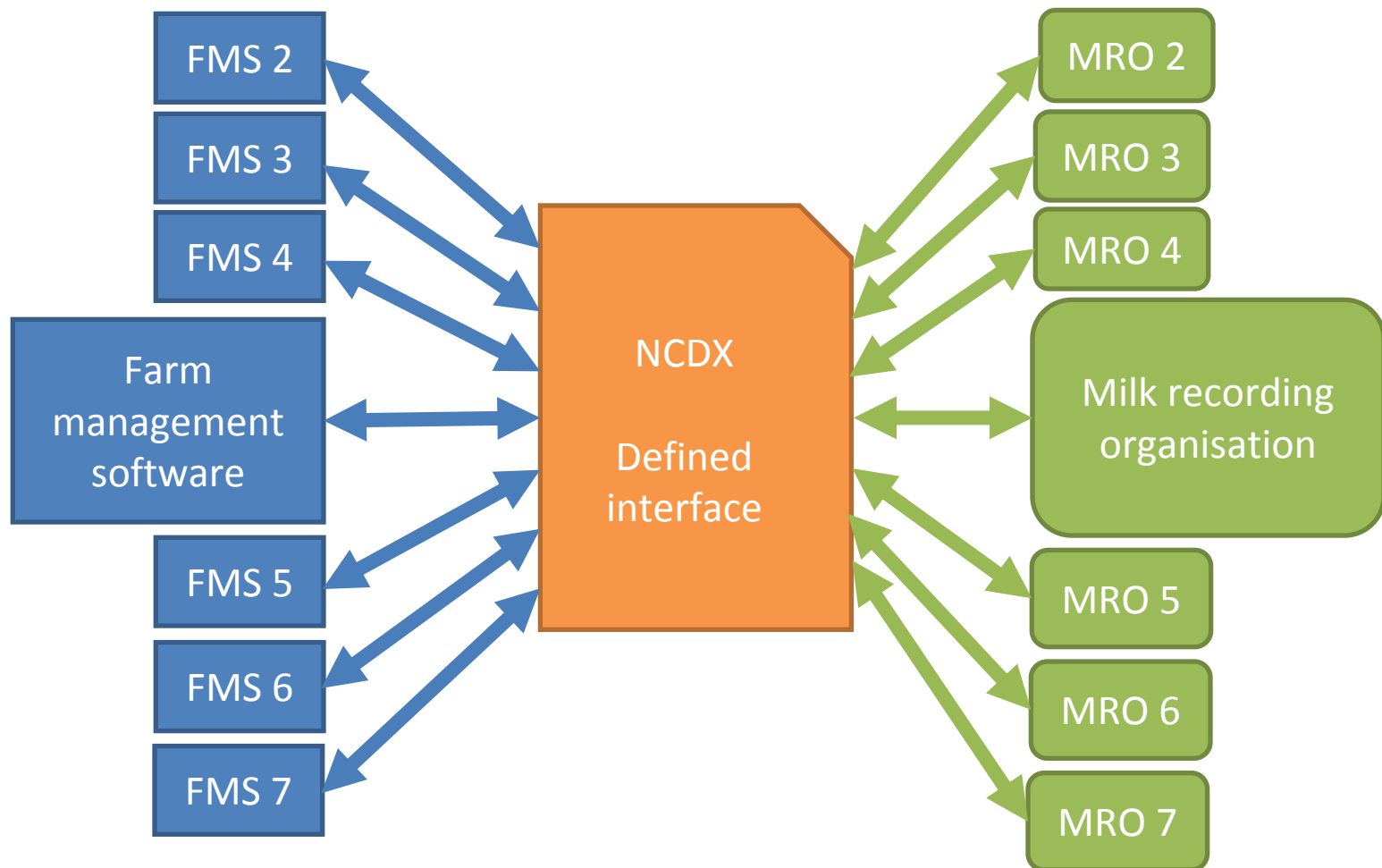
- Growing herd size
- More farms with permanent electronic milk measurement
- Automatic milking (30-40 % of all cows in the Nordic countries)
- Reliable animal data needed in the farm management software



The problem



The solution



Nordic Cattle Data eXchange (Nordic CDX)

Nordic CDX development was begun in 2013 and finalised November 2015

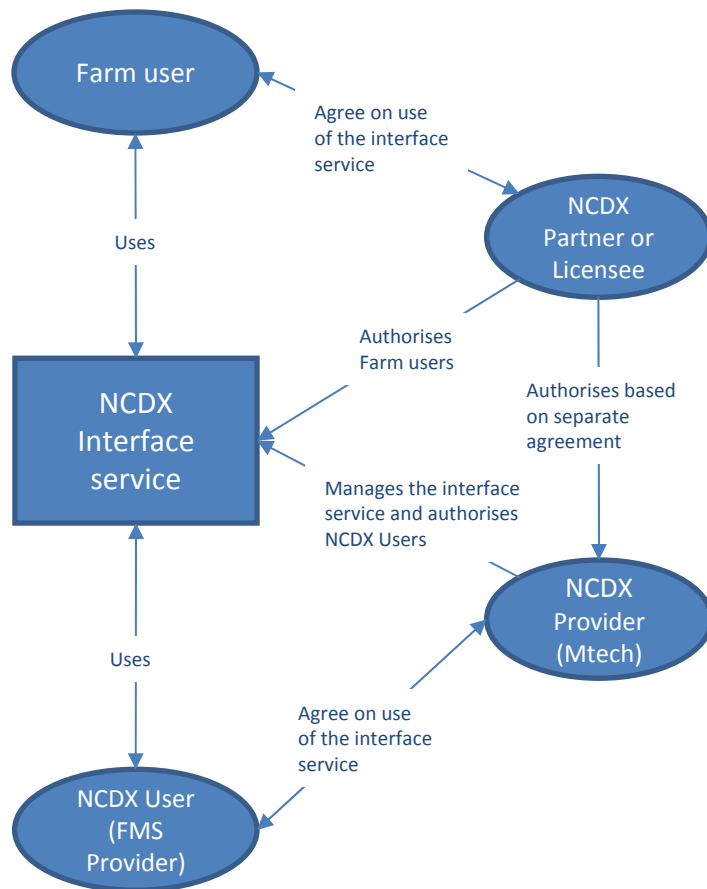
Milk recording and breeding organisations from

- 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

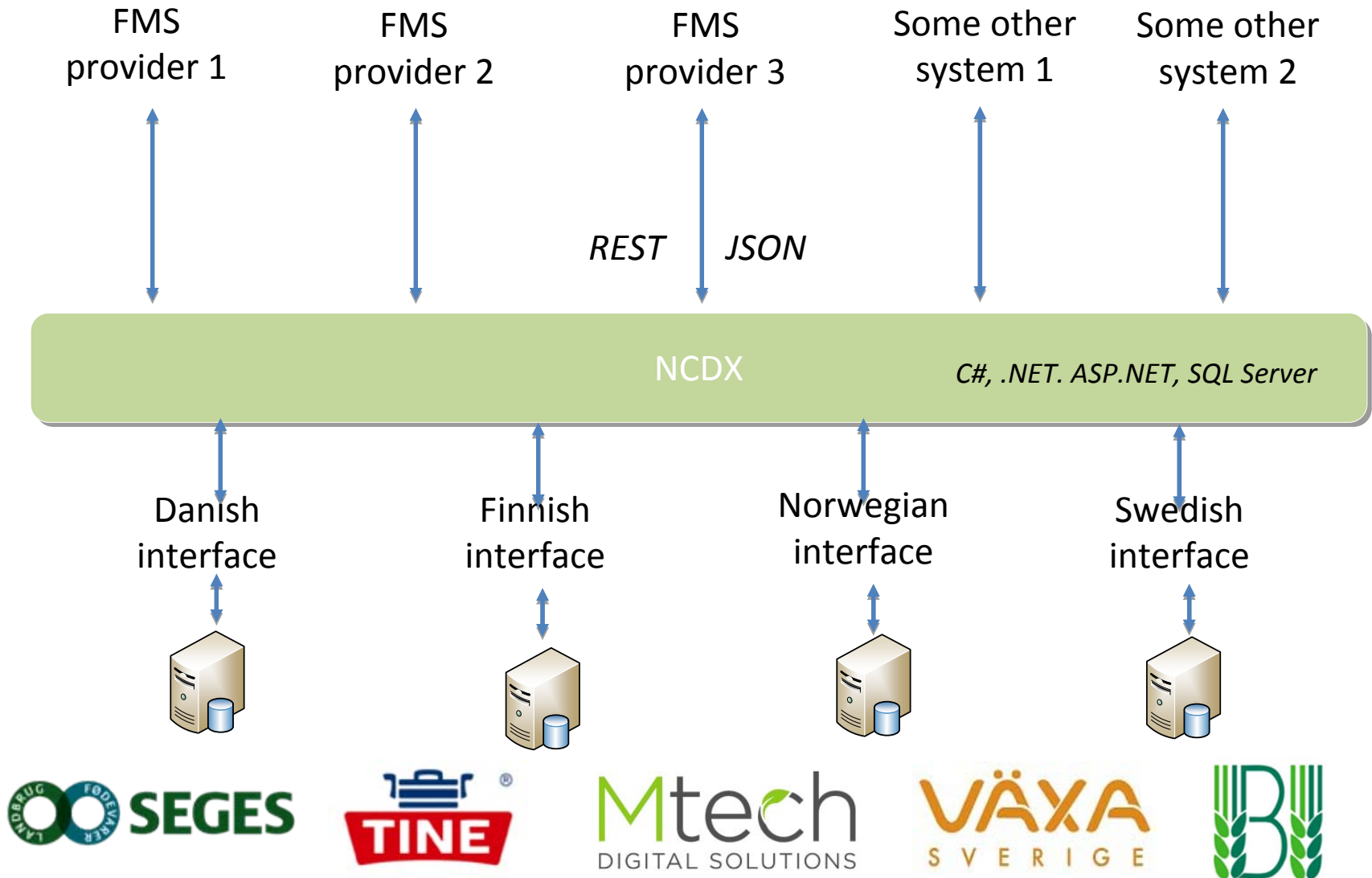
From the FMS provider's perspective

- 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

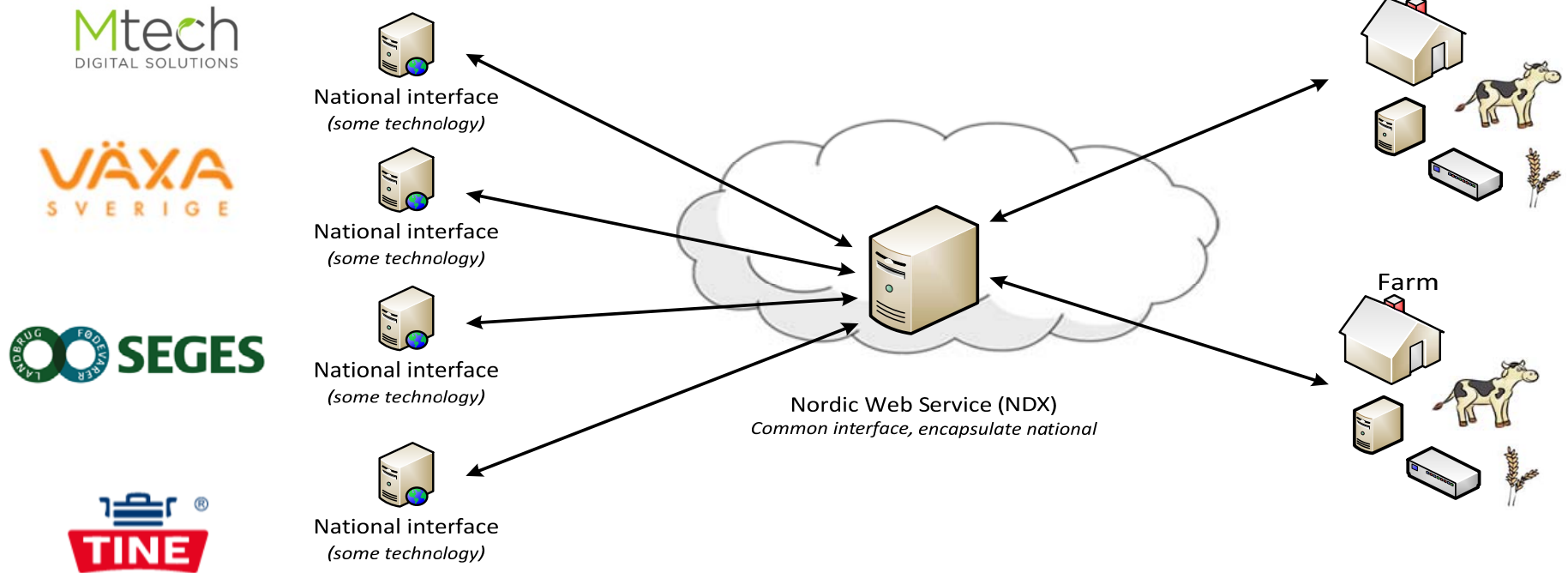
From the Farmer's perspective

- 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 ndx/v1/animalarrival	Send a Movement/transfer into herd from FMS to national DB
POST ndx/v1/animaldeparture	Send a Movement/transfer out of my herd from FMS
POST ndx/v1/animalmilkingresult	Send ICAR-compliant milk inspection from FMS to National DB (NCDX)
POST ndx/v1/dryingoff	Send an Drying off event from my FMS to national DB
POST ndx/v1/getanimaldepartures	Receive a Movement/transfer out of my herd from NCDX into FMS
POST ndx/v1/getcodesets	Returns list of found codesets
POST ndx/v1/getherdlist	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**

