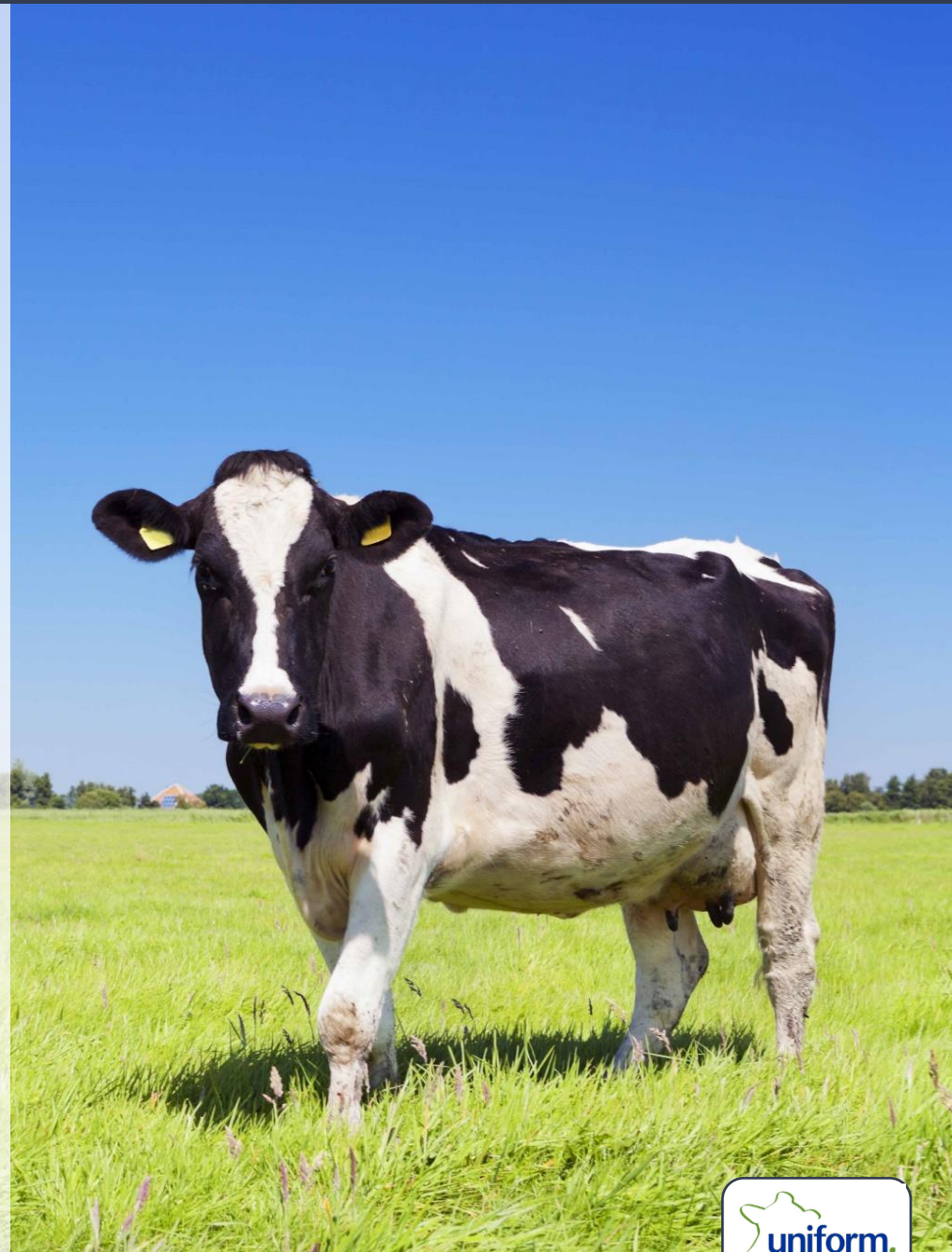




Connecting Dairy Data: Integration of ICAR ADE for multi-level Agricultural Data Systems

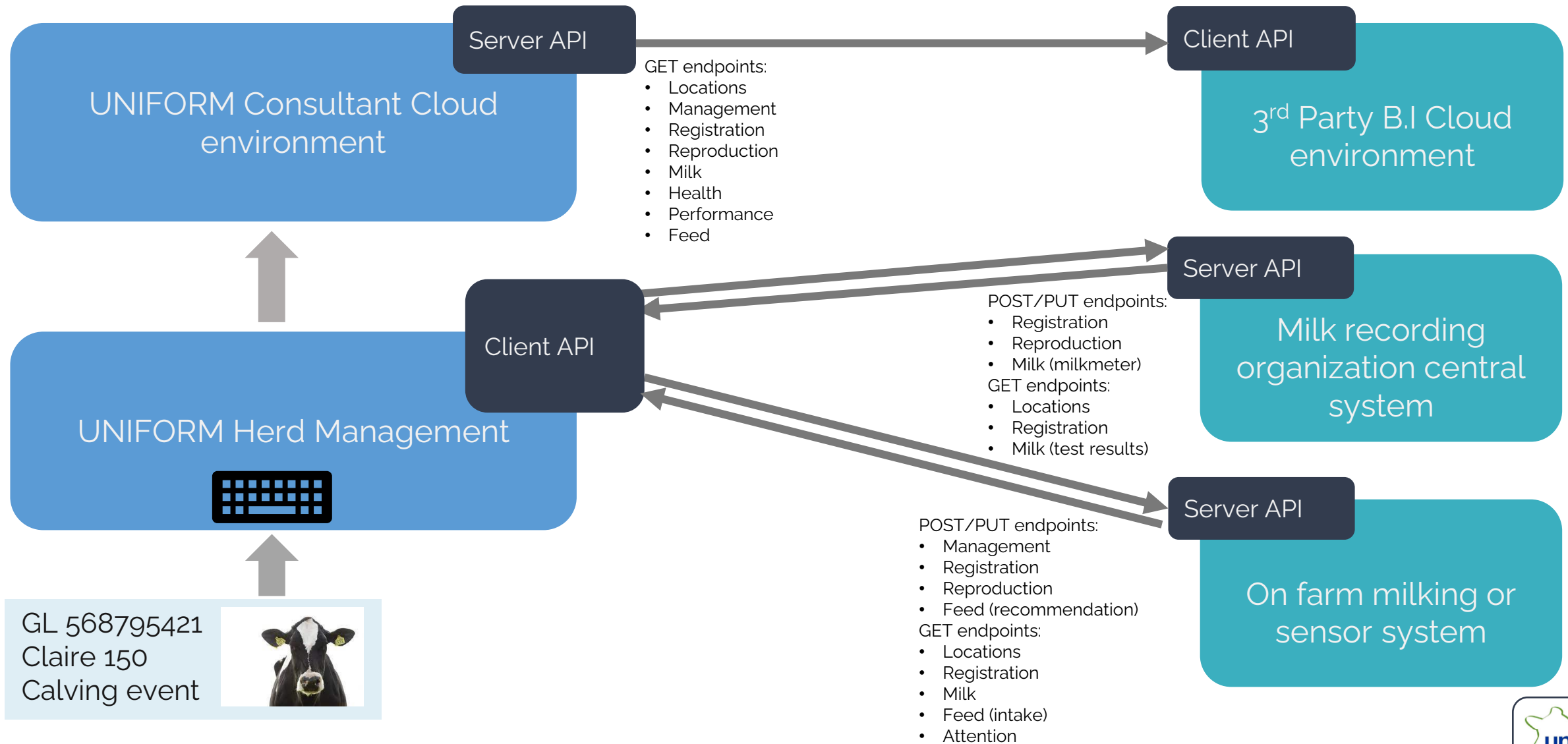
Workshop on ICAR Animal Data Exchange (ADE) Standard
Jasper van der Noord (Product manager)



UNIFORM-Agri herd management system data exchange use cases



User story on and off farm data exchange using ICAR ADE standard



Basic steps

- Discuss which data items should be exchanged.
- Direct the developing party to the ICAR GitHub: [GitHub - adewg/ICAR: Standard messages and specifications for animal data exchange in livestock.](#)
- The other party develops an API based on this.
- The UNIFORM program connects to the API and the data exchange can start.
- **Seems simple and straight forward, but putting bit more effort in it pays off 😊**

Better to prevent

- Due to very wide coverage (On farm systems, National databases, Research) the ICAR ADE GitHub provides a very big number of resources.
- For a data exchange not all resources are needed so the GitHub can be overwhelming.
- UA guides the new GitHub user to the resources needed, which helps:

Cow number	https://github.com/adewg/ICAR/blob/v1.4.1/resources/icarAnimalCoreResource.json
Eartag	https://github.com/adewg/ICAR/blob/v1.4.1/resources/icarAnimalCoreResource.json
Name	https://github.com/adewg/ICAR/blob/v1.4.1/resources/icarAnimalCoreResource.json
Birthdate	https://github.com/adewg/ICAR/blob/v1.4.1/resources/icarAnimalCoreResource.json
Gender	https://github.com/adewg/ICAR/blob/v1.4.1/resources/icarAnimalCoreResource.json
Transponder	https://github.com/adewg/ICAR/blob/v1.4.1/resources/icarAnimalCoreResource.json


- Adding or removing animals best practice is using the registration endpoints births, dead, purchase or departure.
- Within the ADE standard events (Birth for example) require a DateTime property and UCT times. This means that the client and the server need to have date, and the time stored in their databases.
- Make agreements about animal identifiers.

Code lists

- The ICAR ADE standard gives a very nice opportunity to exchange health data, due to the ICAR health code list: [ICAR Central Health Key – ICAR](#)
- This gives the opportunity to exchange health events between 2 systems, because both systems can map their own health events to the correct ICAR health code.
- Exchanging other codes, like for instance departure codes can be facilitated by the ICAR ADE standard as well, but also gives the possibility to deviate from it, which can make data exchange with multiple systems less standard.

Example departure code list

```
1  {
2    "description": "Event for recording live animal departure.",
3
4    "allOf": [{
5      "$ref": "../resources/icarAnimalEventCoreResource.json"
6    },
7    {
8      "type": "object",
9
10     "properties": {
11       "departureKind": {
12         "$ref": "../enums/icarDepartureKindType.json",
13         "description": "Identifies the kind of departure of the animal from the holding."
14       },
15       "departureReason": {
16         "$ref": "../enums/icarDepartureReasonType.json",
17         "description": "Identifies the reason for the departure of the animal from the holding."
18       },
19       "consignment": {
20         "$ref": "../types/icarConsignmentType.json",
21         "description": "Identifies the consignment of the animal from the holding."
22       },
23       "extendedReasons": {
24         "description": "Extended reason codes why this animal has departed.",
25         "type": "array",
26         "items": {
27           "$ref": "../types/icarReasonIdentifierType.json"
```



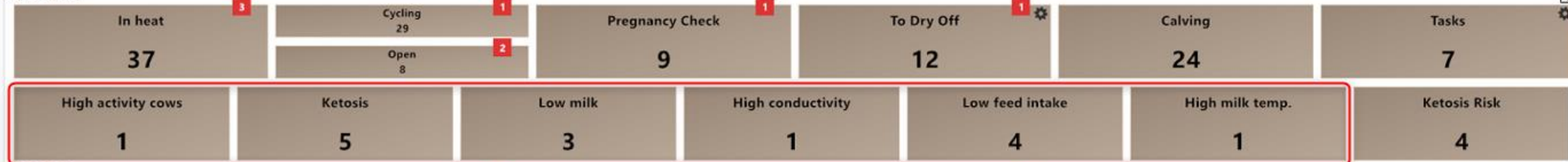
"Age",
"Superfluous",
"Slaughter",
"Sale",
"Newborn",
"LegOrClaw",
"Nutrition",
"Parturition",
"Mastitis",
"Fertility",
"Health",
"Production",
"MilkingAbility",
"BadType",
"Behaviour",
"Other",
"Unknown"

Data from different sources combined

Herd Summary:



Attentions:

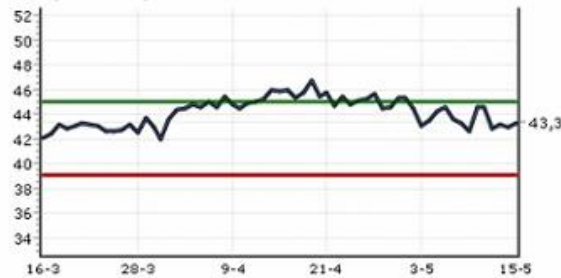


Processes:

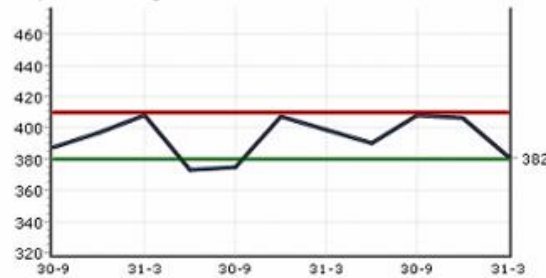


KPI:

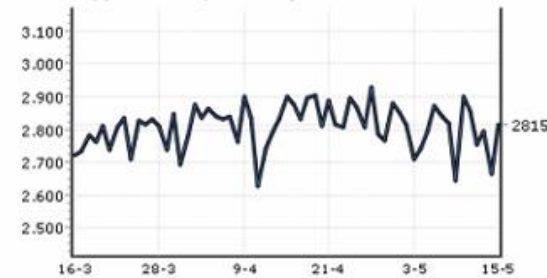
SPP (MilkMeter)



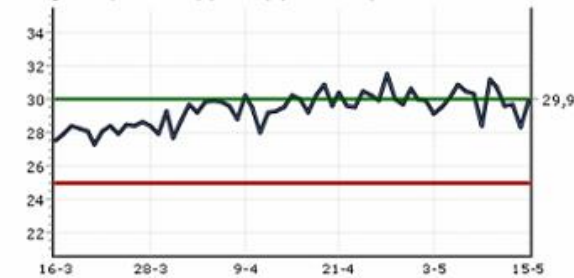
Expected calving interval



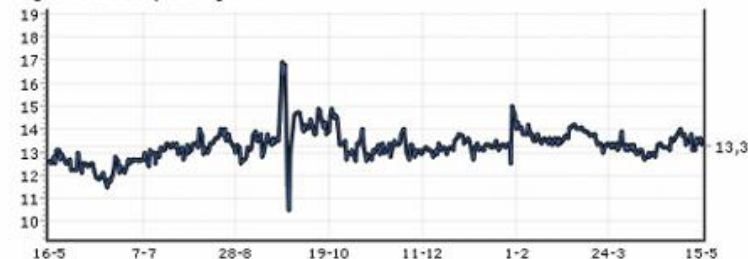
Total day production (MilkMeter)



Avg. milk prod. cow / per day (MilkMeter)



Kg concentrate / 100 kg milk



SPP (MilkMeter)

43,3
42,9

Lifetime production

46528
41623

Calving age heifers

23,1
24,0

Avg week prod / cow (MilkMeter)

29,7
29,8

Insemination Rate

52

Conception Rate

41

Overall Pregnancy Rate

21

Thank you for listening!