



# LIVING IN YOUR OWN BUBBLE

FROM LEGACY TO DOMAIN DRIVEN DESIGN

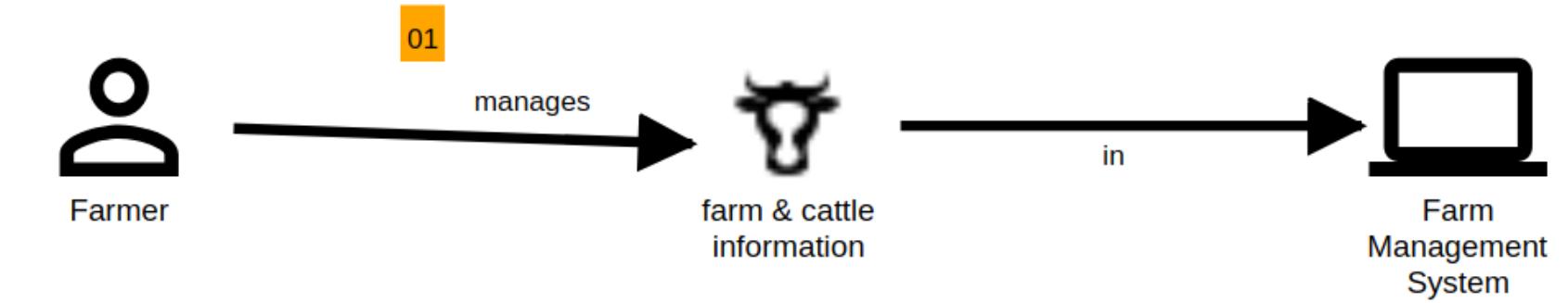
# ABOUT ME

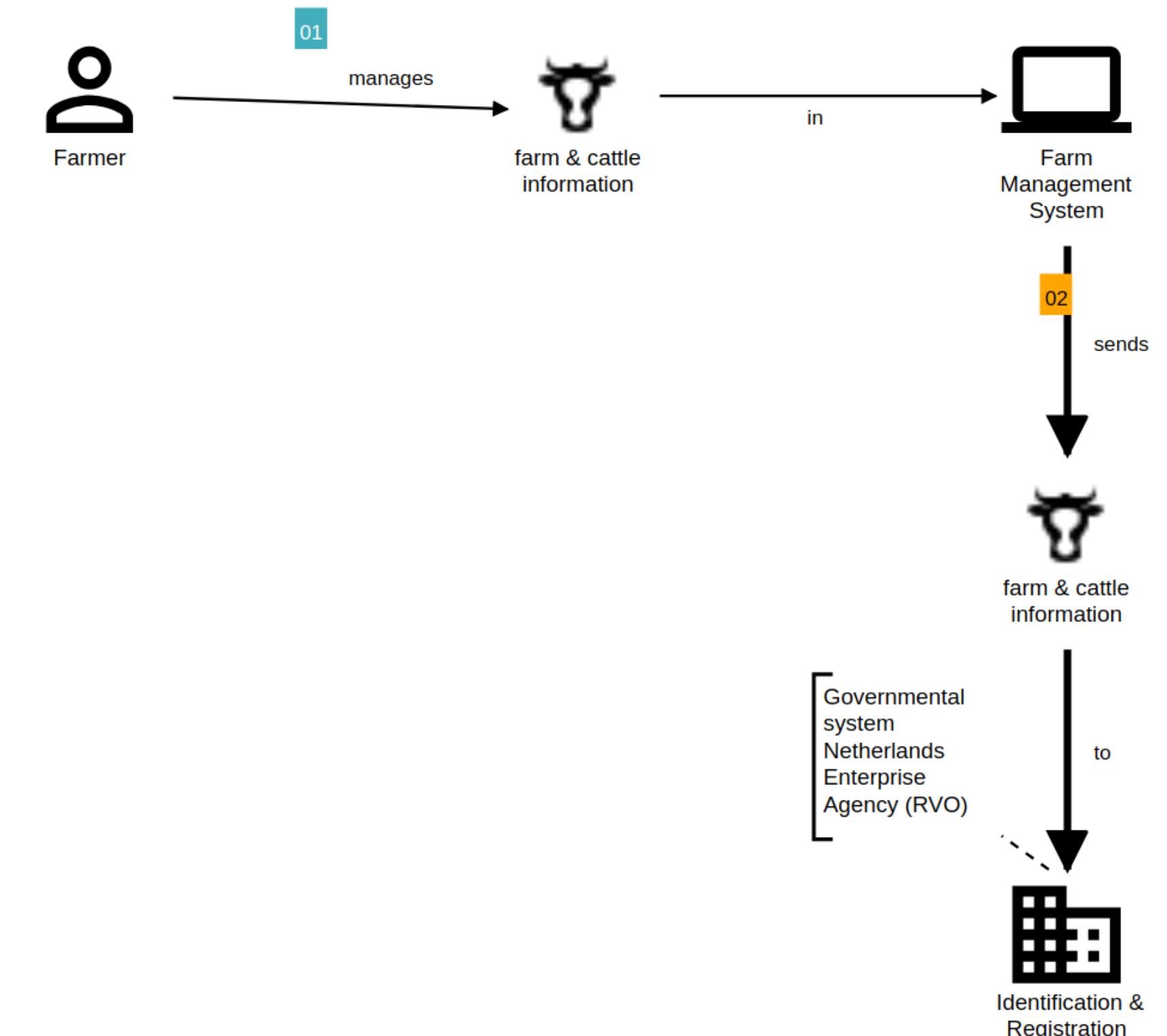
- Jacob Duijzer, Vught, the Netherlands.
- Helping developers, teams & organizations build better software.
- Agile Coach | Enabling Team Lead | Consultant | Speaker @ [Team Rockstars IT](#)
- Follow me: <https://linkedin.com/in/jacobduijzer>

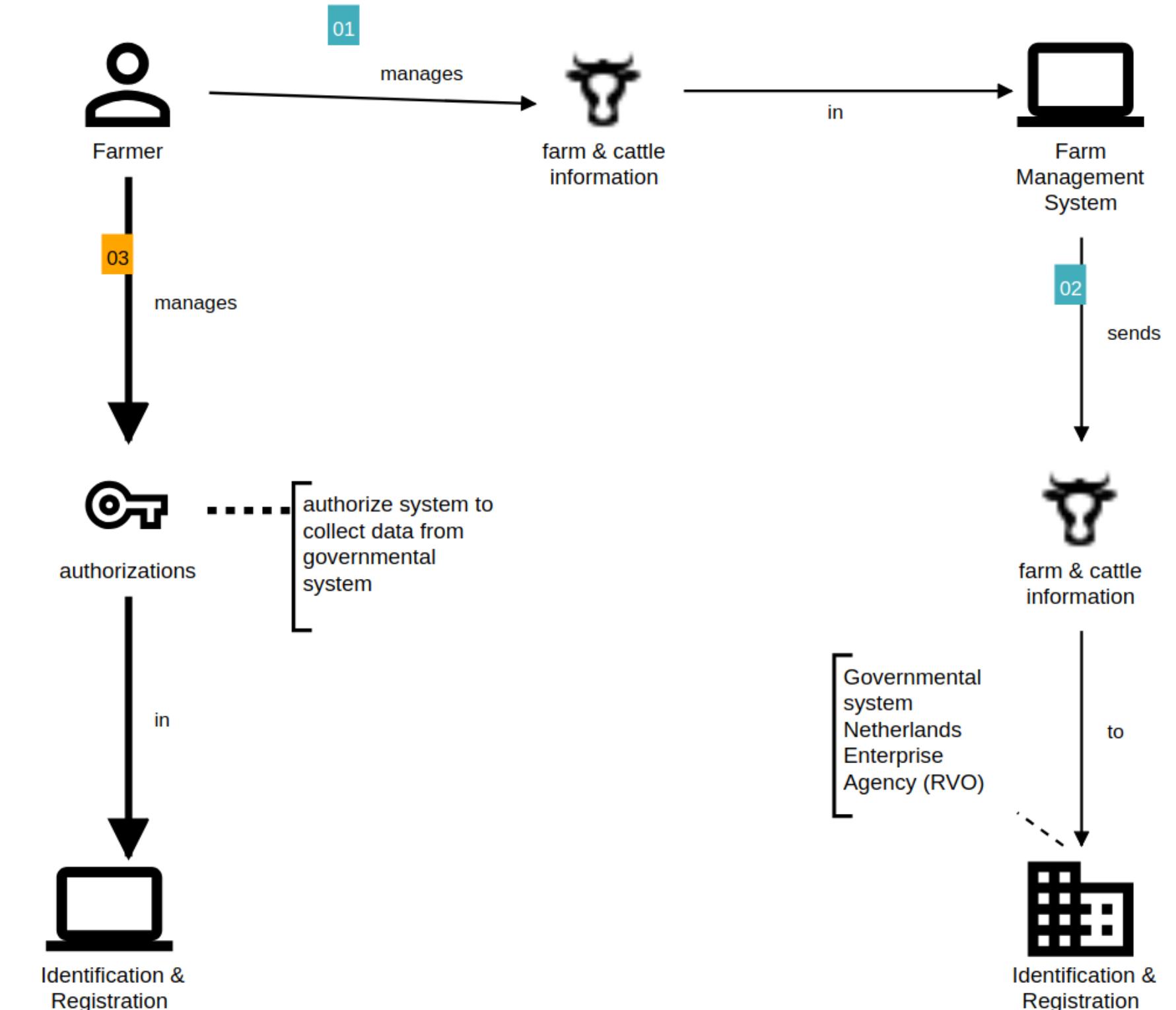


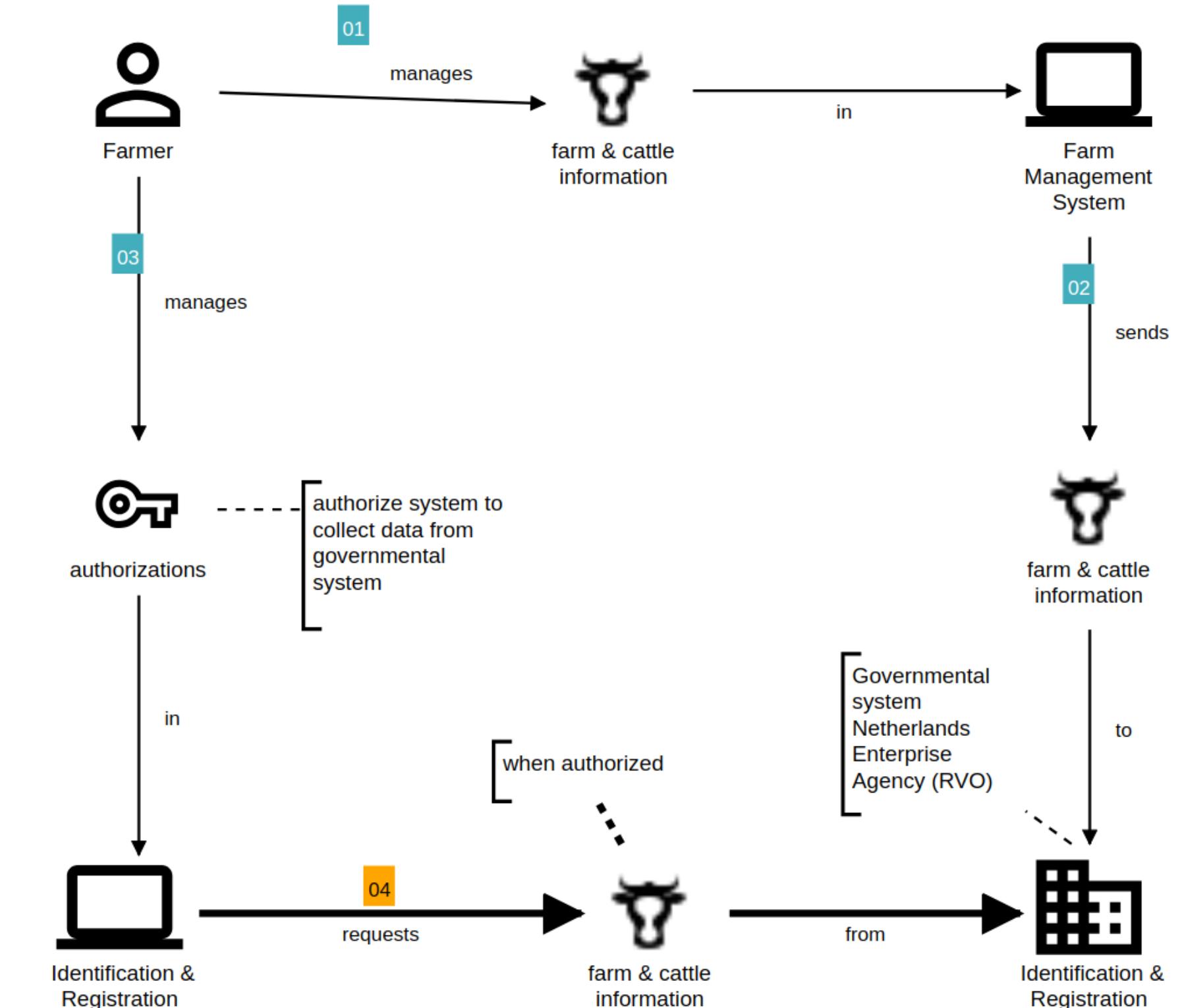


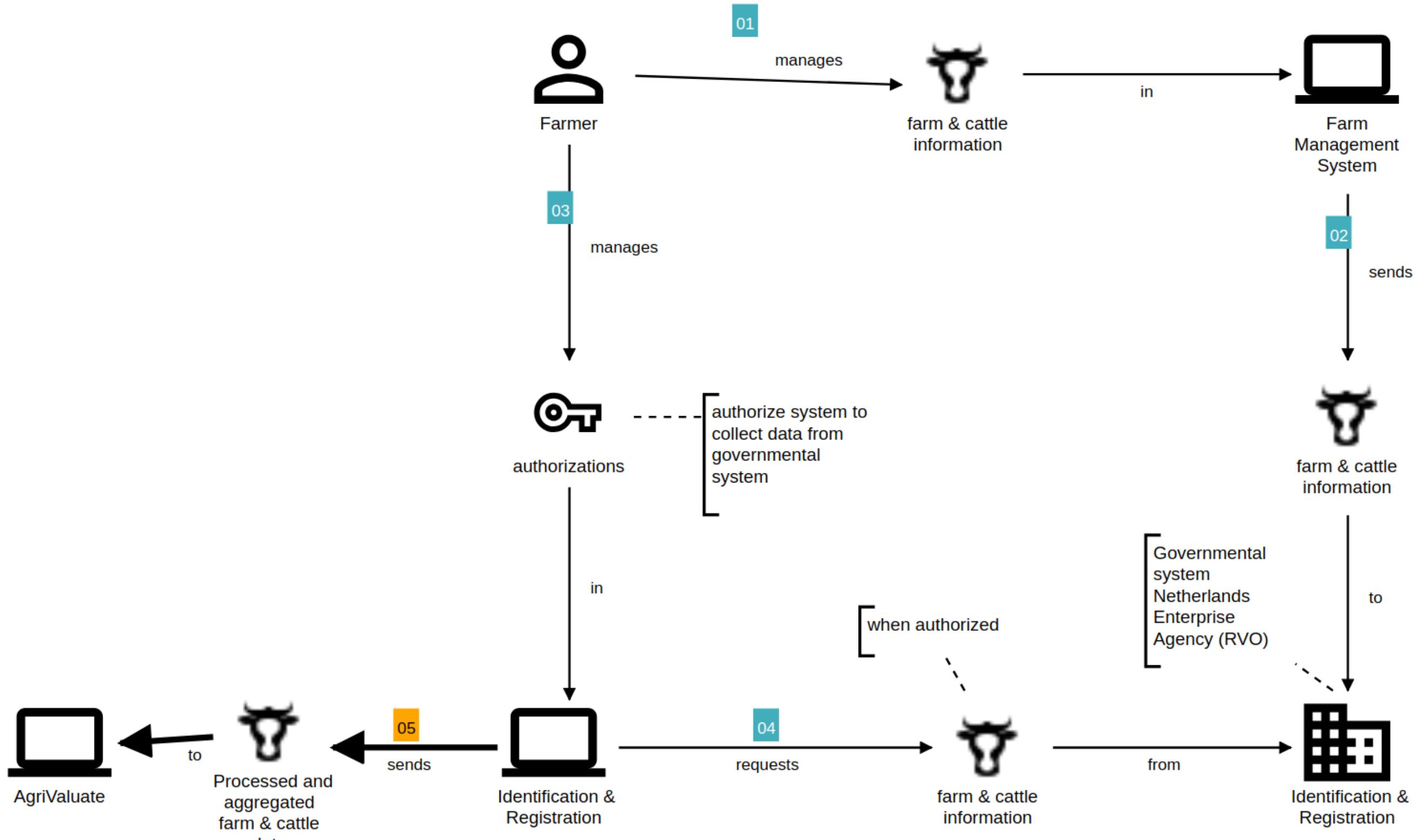
# F FARMS, COWS & PHOSPHATE RIGHTS

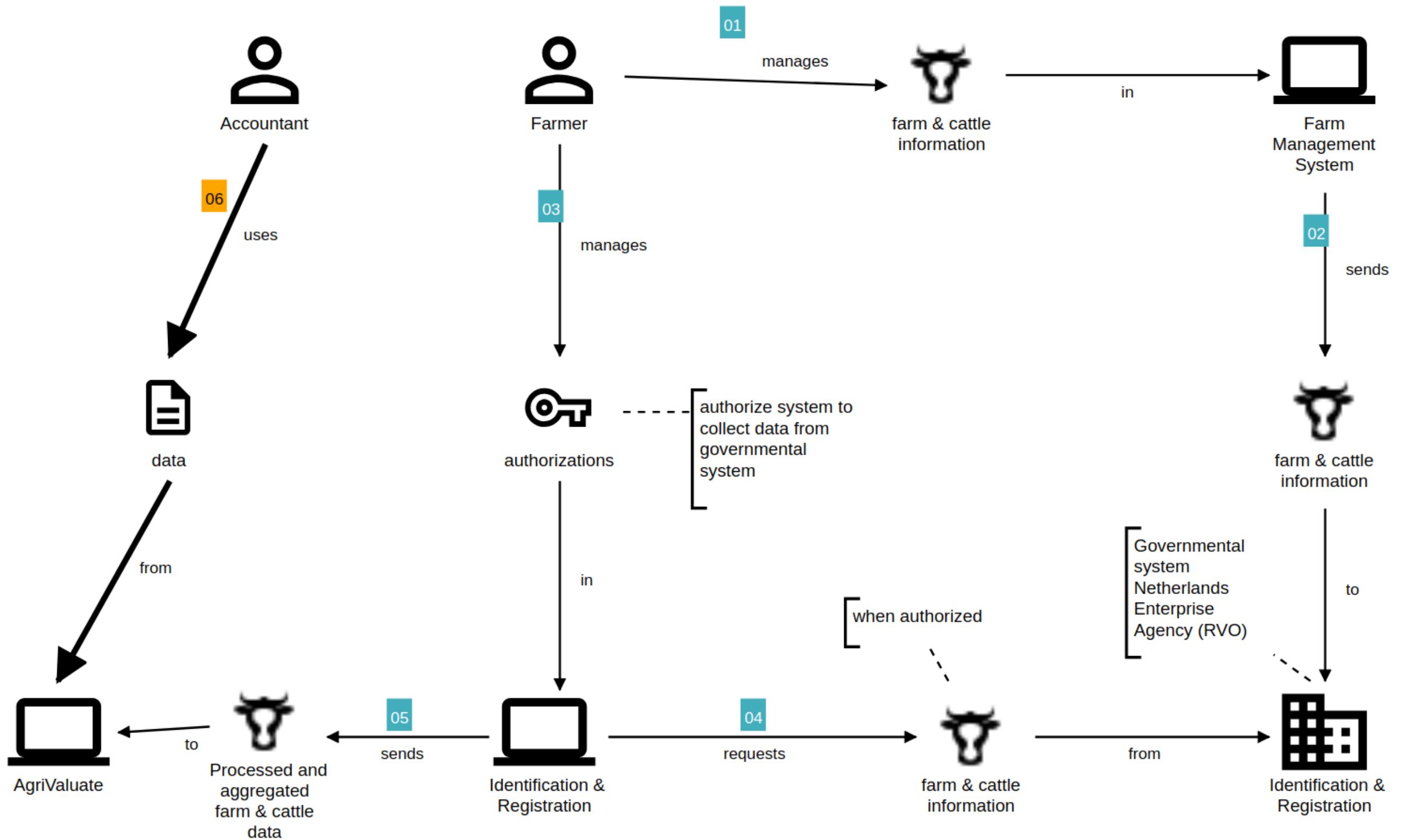


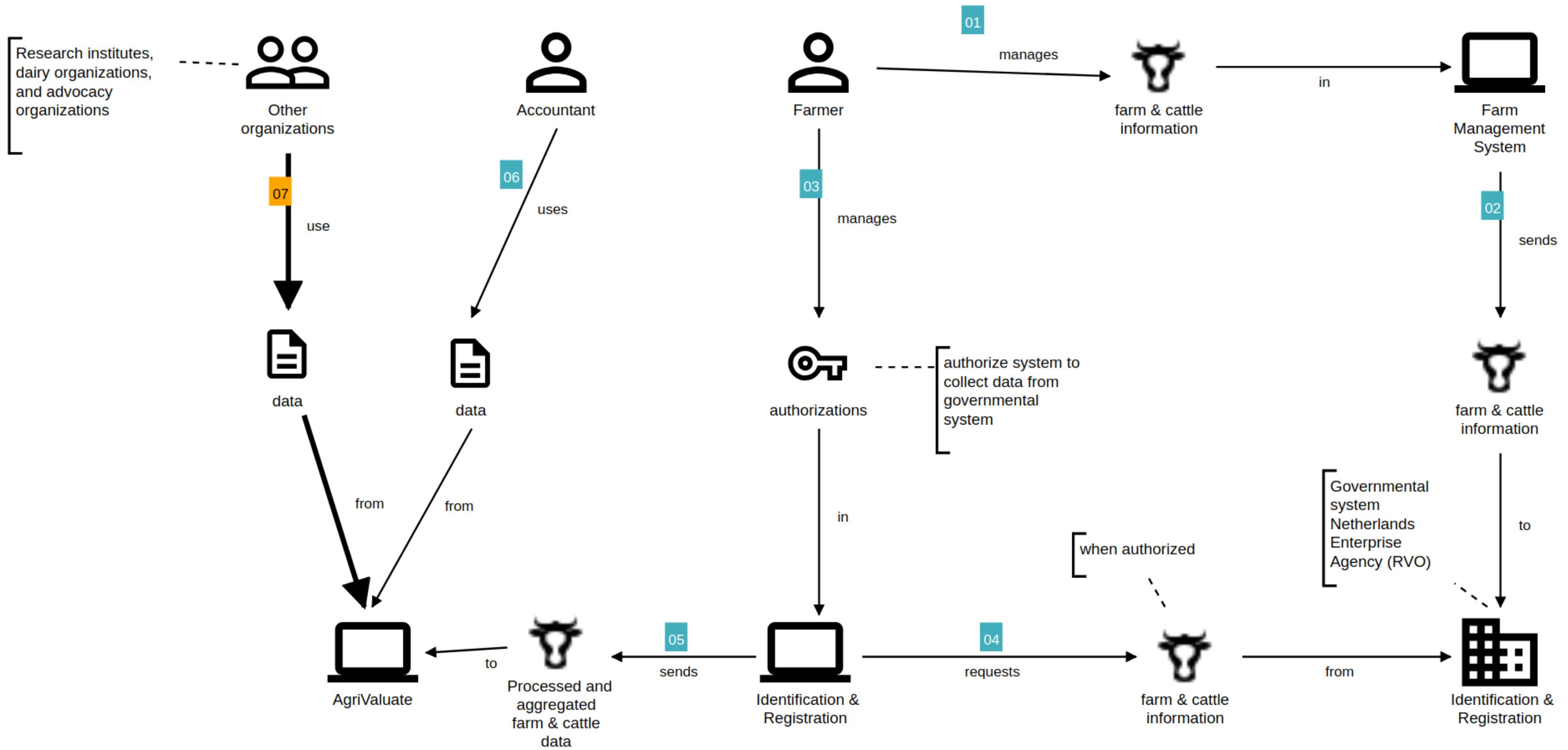


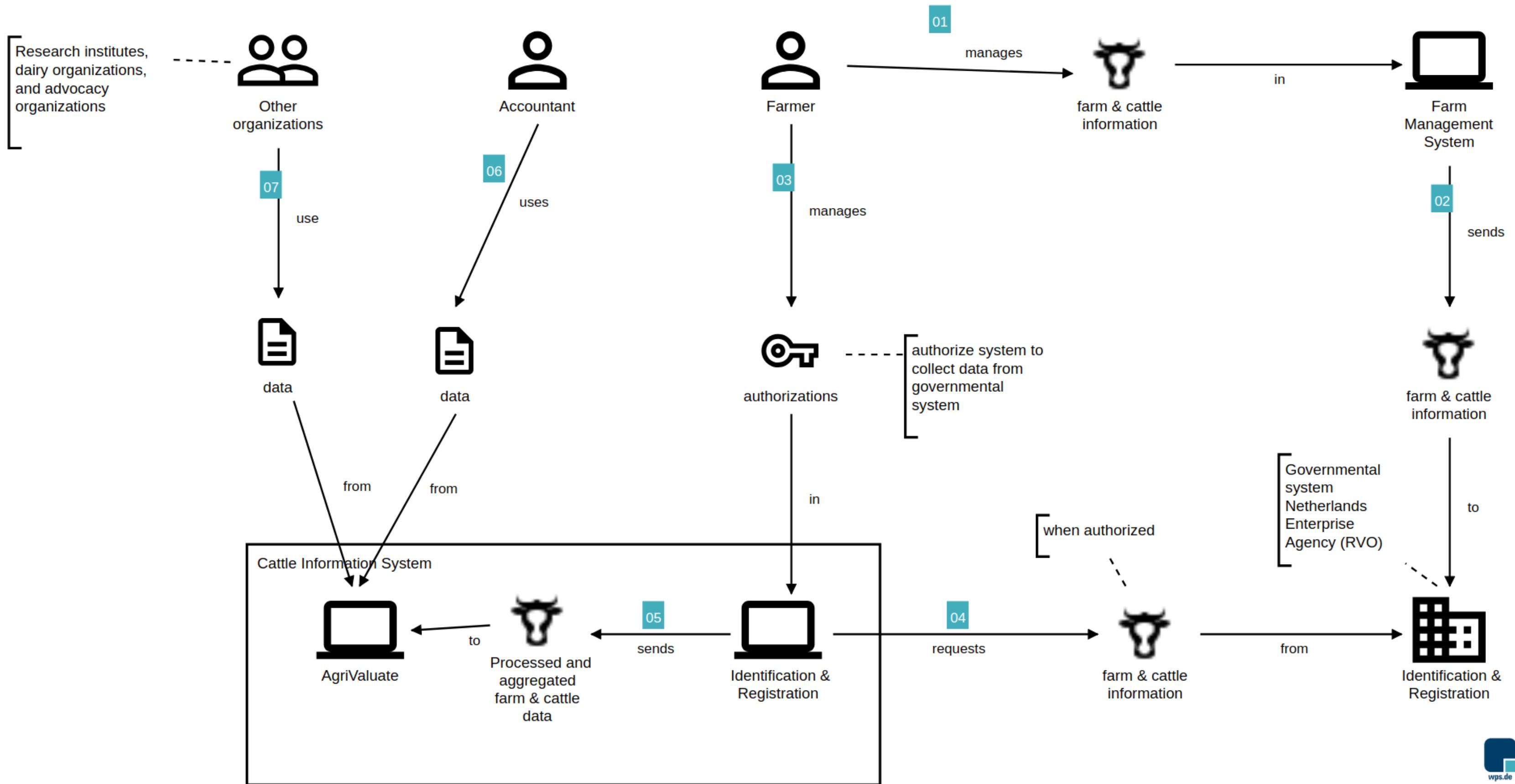




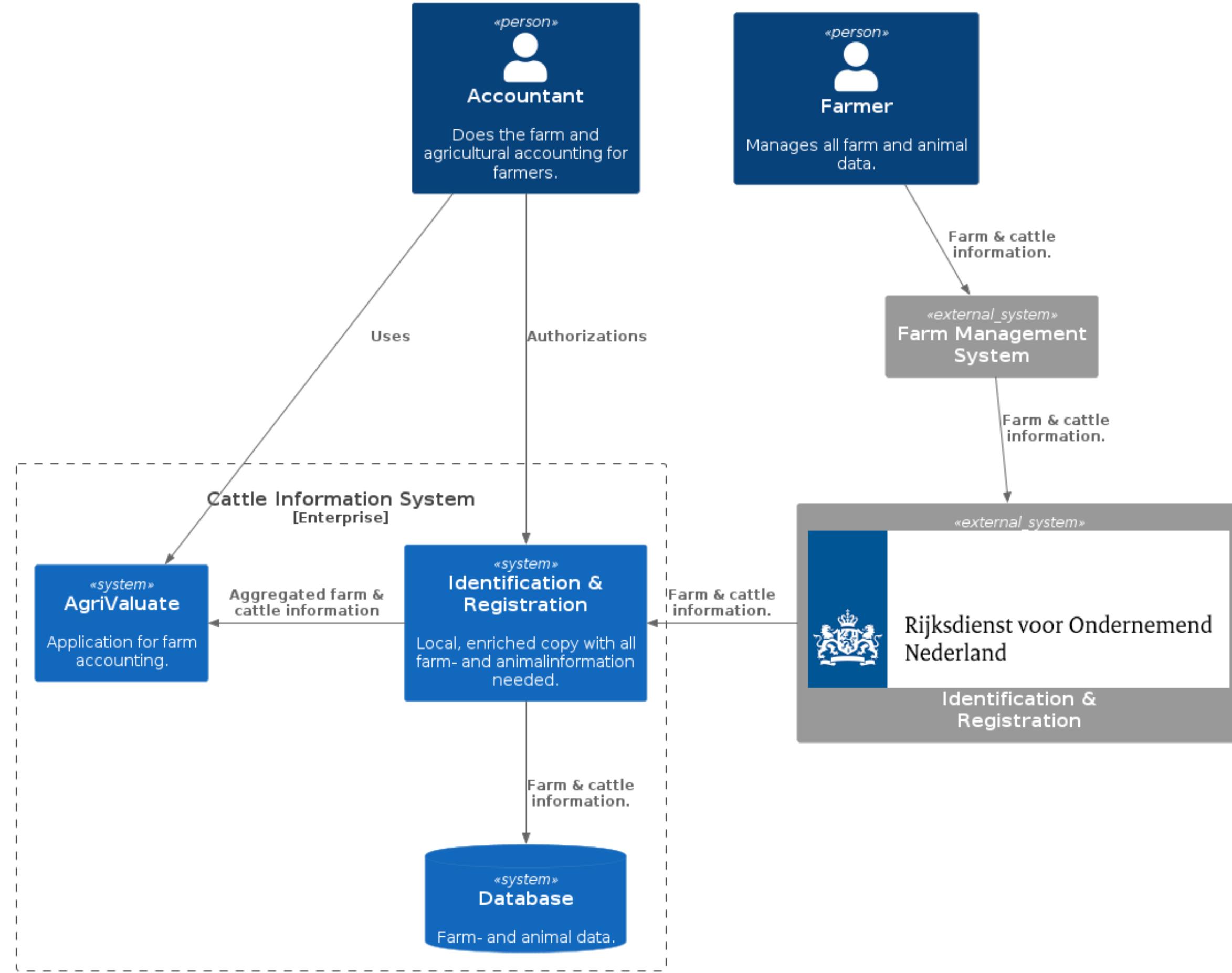








# Cattle Information System - Context Diagram





# NEW FEATURES & REQUIREMENTS

# ANIMAL CATEGORY DETERMINATION (EXISTING FEATURE)

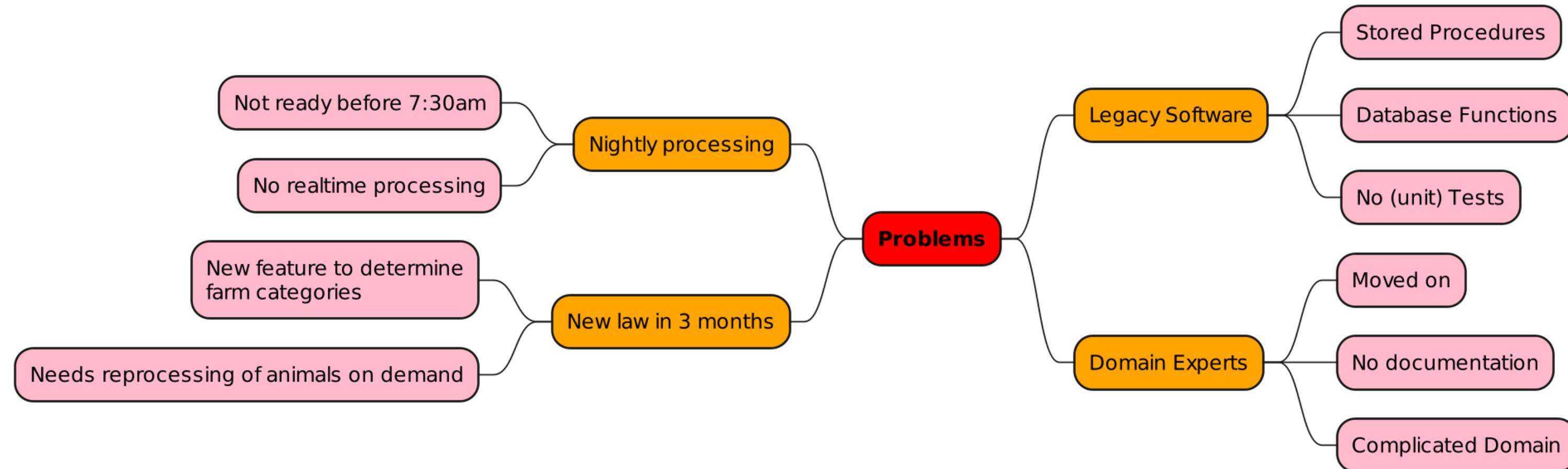
## Welke dieren fosfaatrechten?

Diercategorie	Definitie
100	Melk- en kalfkoeien: dit zijn koeien ( <i>bos taurus</i> ) die in elk geval 1 keer hebben gekalfd en geen melkkoe meer zijn.
101	Vrouwelijk en mannelijk jongvee jonger dan 1 jaar voor de melkveehouderij (dikwijls voor de vleesveehouderij).
101	Vrouwelijk jongvee tot 1 jaar voor de vleesveehouderij dat bestemd is om een melkkoe te worden.
102	Vrouwelijk jongvee van 1 jaar en ouder voor de melkveehouderij.
102	Vrouwelijk jongvee van 1 jaar en ouder voor de vleesveehouderij dat bestemd is om een melkkoe te worden.
Nuka	Mannelijk en vrouwelijk kalf van een melk- en kalfkoe tot en met 14 dagen (niet voor de vleesproductie).
Jongvee van een zoogkoe	Vanaf dag 0 is dit jongvee voor de melkveehouderij of vrouwelijk jongvee voor de vleesveehouderij te worden.

## Welke dieren geen fosfaatrechten?

Diercategorie	Definitie
104	fokstieren: dit zijn stieren van 1 jaar en ouder.
112	witvleeskalveren van ca. 14 dagen tot ca. 8 maanden.
115	startkalveren voor rosévlees of roodvlees.
116	rosevleeskalveren van ca. 3 maanden tot ca. 8 maanden.
117	rosevleeskalveren van ca. 14 dagen tot ca. 8 maanden.
120	weide en zoogkoeien: dit zijn koeien die in elk geval 1 keer hebben gekalfd en geen melkkoe meer zijn.
122	roodvleestieren van ca. 3 maanden tot de slacht. Ossen en vrouwelijke dieren die op deze leeftijd voor de vleesproductie worden gehouden.
	jongvee van een melk- en kalfkoe ouder dan 14 dagen dat u alleen houdt voor de vleesproductie.
	jongvee van een zoogkoe dat u alleen houdt voor de vleesproductie en niet bestemd is om een melkkoe te worden.

# PROBLEMS



# SPECIFICATIONS

## CattleInformationSystem.Specs

generated Jun 6, 2023, 11:25 AM GMT+2

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Filter by Keyword      Filter by Scenario Result Test results

+ - CattleInformationSystem.Specs 1 Passed 0 Failed 0 Others

✓ Incoming Animal Events

- ✓ A newborn female on a milk breeding farm
- ✓ A newborn female on a milk farm, dying the next day
- ✓ A newborn female on a milk farm, dying the same day
- ✓ A newborn female on a milk breeding farm, giving birth after 3 years
- ✓ A newborn male on a milk farm, different event date
- ✓ A female cow, moving to two farms
- ✓ A female cow, moving to four farms
- ✓ A female cow, moving to two farms, then dying
- ✓ Female, sold and bought, gave birth with, a different event date than the actual birth date
- ✓ Female, sold and bought to a meat farm
- ✓ Female, sold and bought, gave birth on arrival, died the same day
- ✓ Male, being born on a meat breeding farm, moved to different farms, turning 1 years old
- ✓ Male, being born on a meat breeding farm, moved to a milk breeding farm, moved to another farm, turning 1 years old

### ✓ Feature: Incoming Animal Events

Animal events, coming from the Netherlands Enterprise Agency (RVO) should be processed and inserted or updated in the database.

#### ✓ Scenario: A newborn female on a milk breeding farm 1s 707ms

✓ Given the following event(s)

Gender	DateOfBirth	Reason	CurrentUbn	TargetUbn	EventDate
Female	2017-03-23	Birth	20000000001		2017-03-23

✓ When it is added to the incoming events table

✓ Then it should be processed and stored in the database

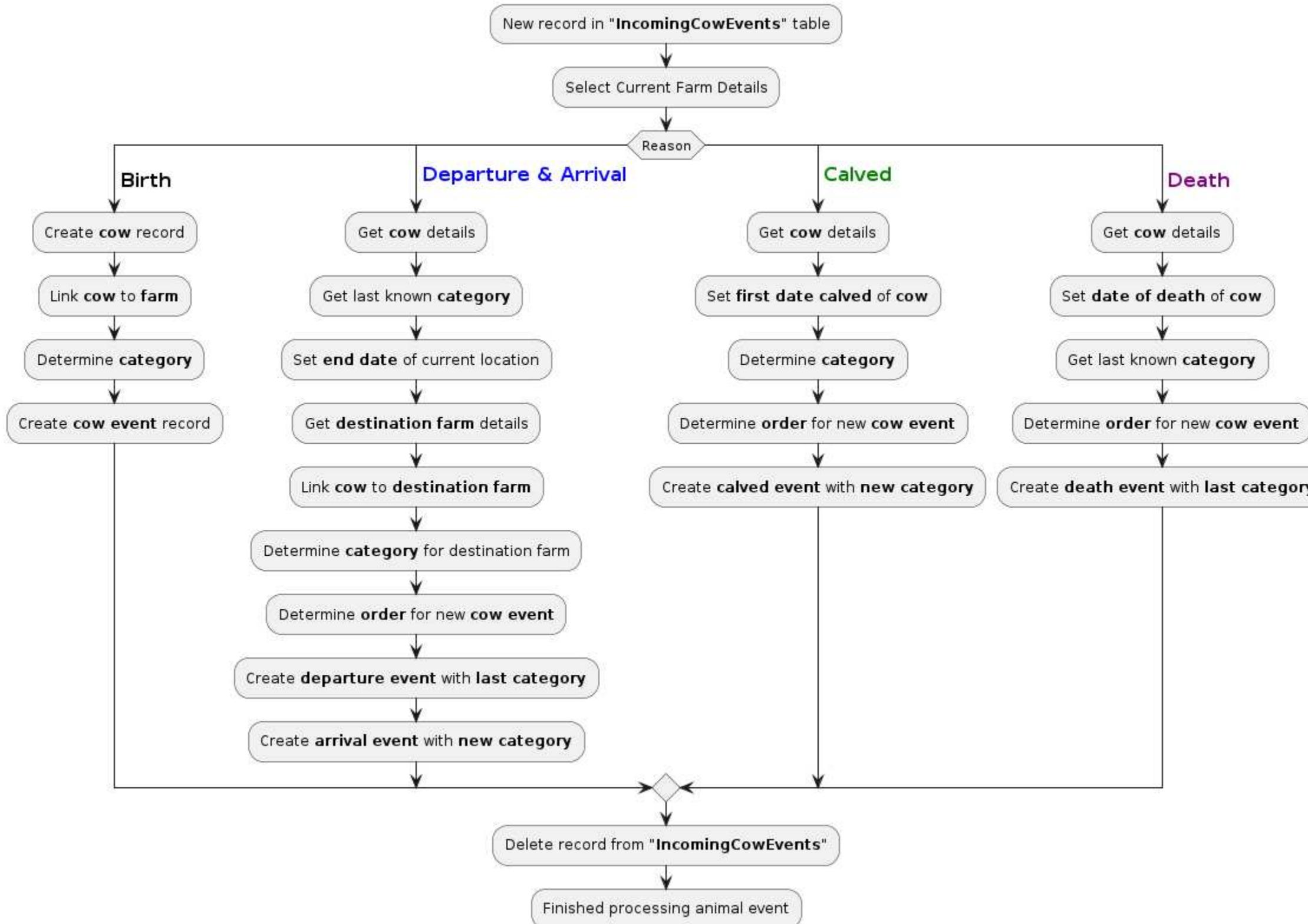
✓ And have the events(s)

Ubn	Reason	Order	Date	Category
20000000001	Birth	0	2017-03-23	101

✓ And have the location(s)

Ubn	StartDate	EndDate
20000000001	2017-03-23	

# ANIMAL EVENTS



# THE LEGACY CODE

- Database trigger
- Database functions
- Specifications

A wide-angle photograph of a rural landscape at sunset. The sky is filled with dramatic, golden-yellow clouds. In the foreground, there's a field of tall, golden grass. To the right, a large wooden barn with a dark metal roof stands next to a tall, cylindrical wooden silo. A red tractor or piece of farm equipment is parked near the barn. The background shows rolling hills covered in green trees under the setting sun.

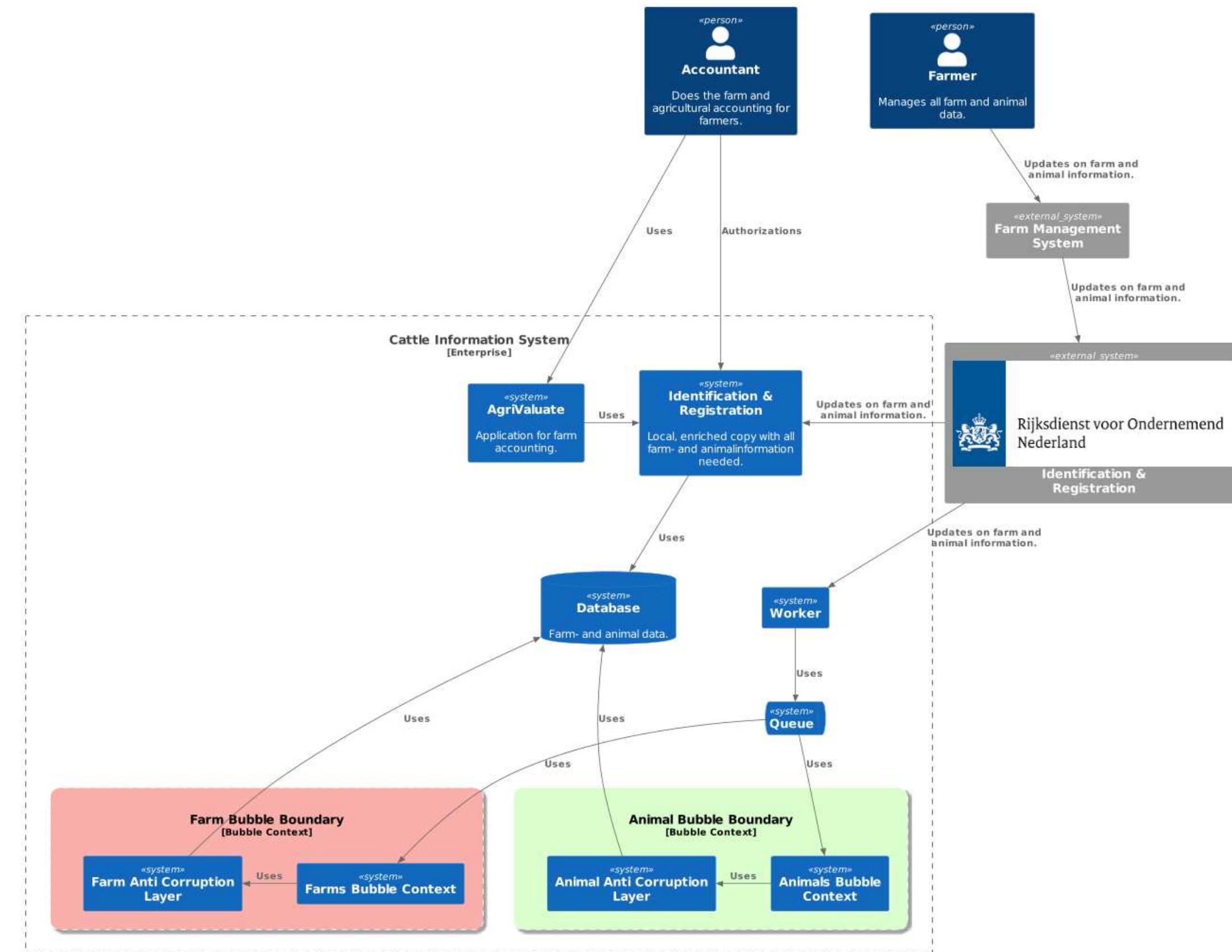
# THE BUBBLE CONTEXT TO THE RESCUE

# THE BUBBLE CONTEXT

*A 'bubble' is a **small bounded context** established using an Anticorruption Layer (ACL) for the purpose of a particular development effort and not intended necessarily to be expanded or used for a long time.*

*Eric Evans - Getting Started With DDD When Surrounded by Legacy Systems*

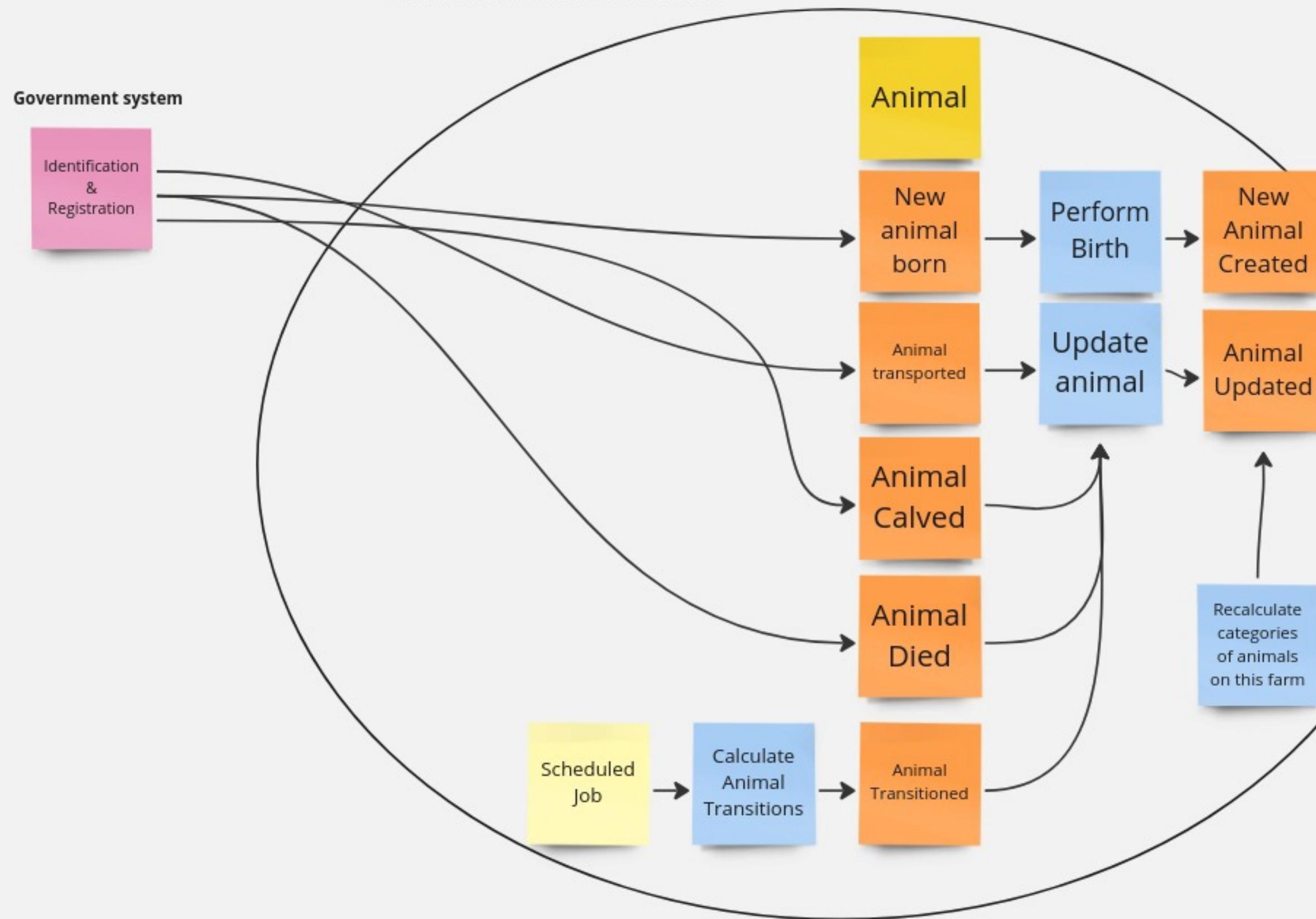
## Cattle Information System with Bubble Contexts - Context Diagram



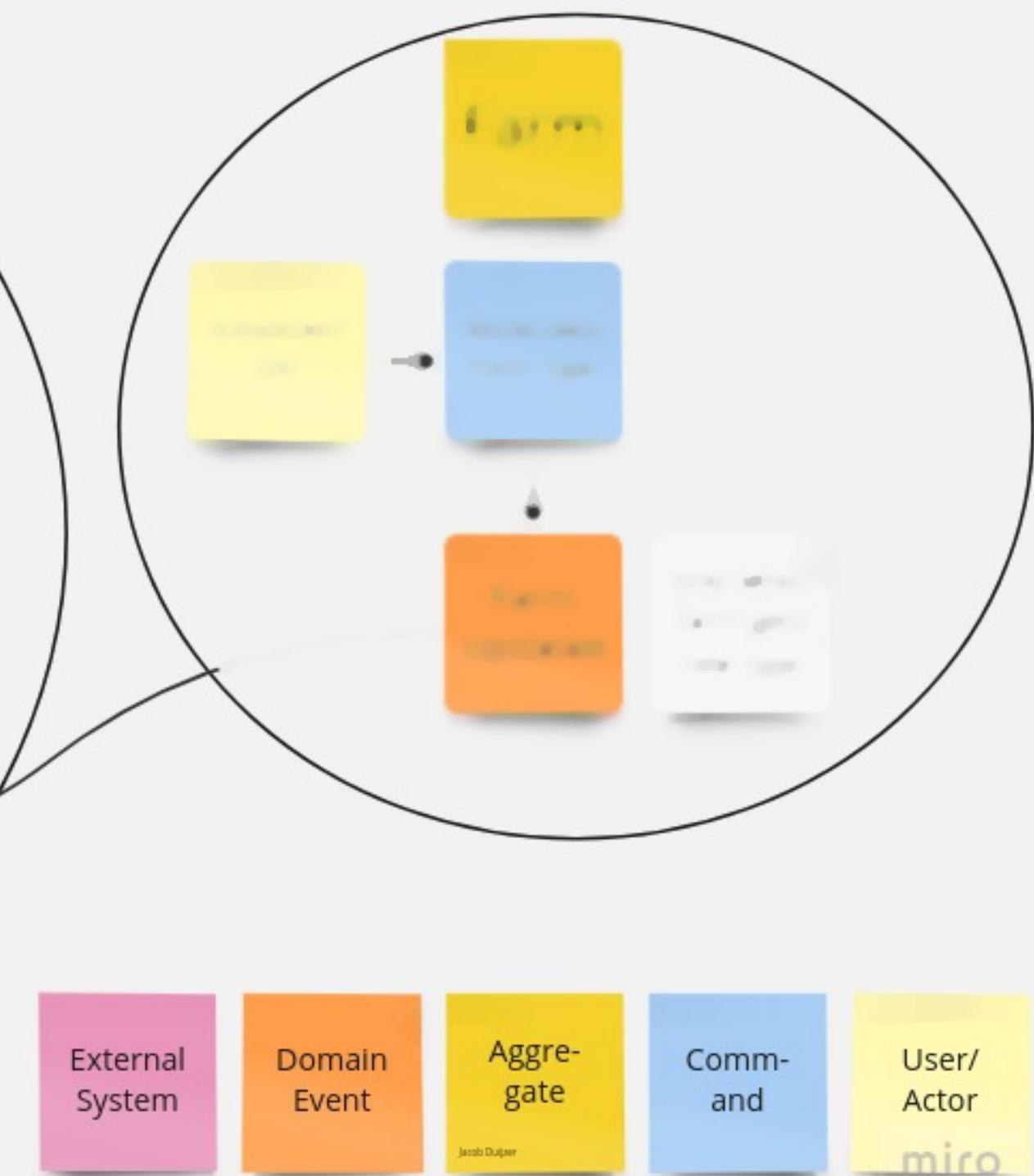
### Main characteristics of the bubble context strategy

- Modest commitment to DDD
- No synchronization risk (uses legacy database)
- Works when there is a limited range of data needed from legacy

## Animal Bubble Context

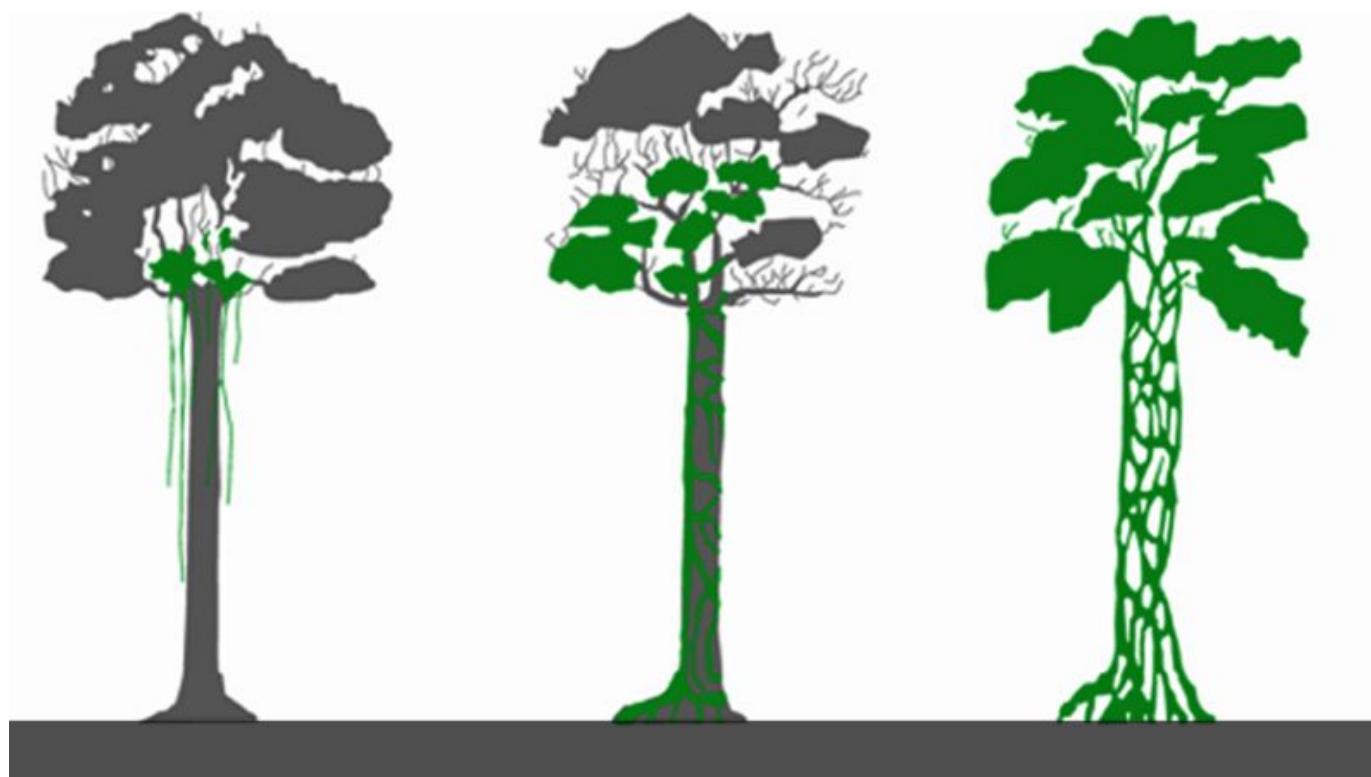


## Farm Bubble Context



# THE ANIMAL BUBBLE CONTEXT

- Replacing existing software (database functions, triggers)
- Using the Strangler Fig pattern
- Introducing a queue
- Enabling fast, on-demand, per animal processing





# LIVING IN THE BUBBLE

*Disclaimer: this is not a real application, just a less complex recreation!*

# GOALS

- What does the Anti Corruption Layer look like?
- The data flow inside the bubble
- Handling the different events
- Implementing the last event handler, the Departure \* Arrival event



A photograph of several cows standing in a field. The cows have various patterns of white, brown, and black. Some have long, shaggy manes. They are wearing yellow ear tags with black numbers. The background shows a bright blue sky with some clouds and green trees on a hillside.

# KEY TAKEAWAYS AND FUTURE DIRECTIONS

## FUTURE DIRECTIONS

- Autonomous Bubble Context
- Exposing Legacy Assets as Services
- Expanding a Bubble

## KEY TAKEAWAYS

- Working with legacy code can be very cool!
- The **Bubble Context** can give your applications a **second life** (or at least extend its life)
- Using **different bubbles** can help **autonomous teams**, create value stream teams (Team Topologies)
- Using a **ubiquitous language** is really important (even when that means using Dutch in your source code!)
- **Specifications by Example**, reusable, automated, "business readable" specifications is very powerful



QUESTIONS?

# THANKS FOR LISTENING!

@ jacob@duijzer.com

 [linkedin.com/in/jacobduijzer](https://linkedin.com/in/jacobduijzer)

 [github.com/jacobduijzer/LivingInYourOwnBubble](https://github.com/jacobduijzer/LivingInYourOwnBubble)



# SOURCES

- [Getting Started with DDD When Surrounded By Legacy Systems - Eric Evans](#)
- [Living In Your Own Bubble - GitHub Repository](#)

Images from Unsplash:

- [Anoek Folkertsma](#)
- [Jo-Anne McArthur](#)
- [Ryan Song](#)
- [Rajesh Ram](#)
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