



Model-Based Systems Engineering #2

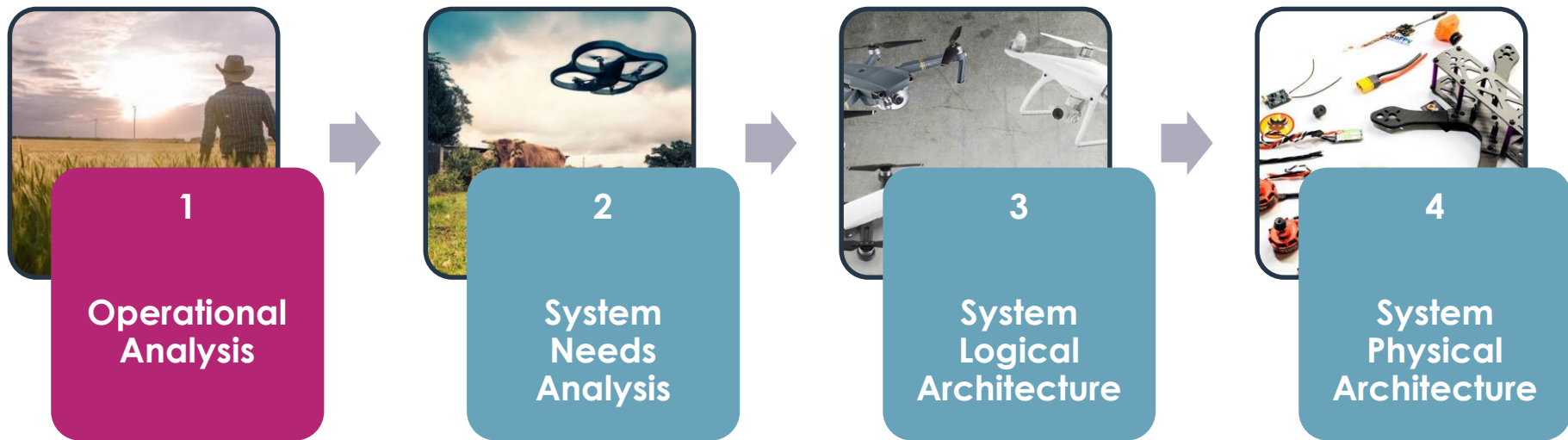
ENSTA CSC_5RO08_TA





Session #2 : Operational Analysis

Methodological Overview



Operational Analysis allows us to:

- Identify **key stakeholders**
- Establish **stakeholders' operational activities**
- Establish the **interactions** between stakeholders
- Ensure the exhaustiveness of **pains & gains**

Operational Analysis is performed for each market segment

- To reach a proper comprehension of stakeholders needs
- To check how design will address these needs (in next steps)

Focus on Agricultural market segment

Example of a Farmer profile



Marie is a winegrower in the area of Bordeaux. She owns and cultivates a parcel and produces a high quality wine recognized worldwide.

Digital ease: ○○○○○○

Level of expertise: ●○○○○○

Frequency of use: ●●●○○○

Key issues

- Gather information about her field to set her agricultural equipment to optimize treatments.
- Schedule fertilization treatments
- "Plug and play" devices with minimum effort

Personality

- Little interests for digital tools
- Low tolerance for breakdowns

Focus on Inspection market segment

Example of a Inspection startup profile



Digital ease: ●●○○○

Level of expertise: ●●●●○

Frequency of use: ●●●●●

Key issues

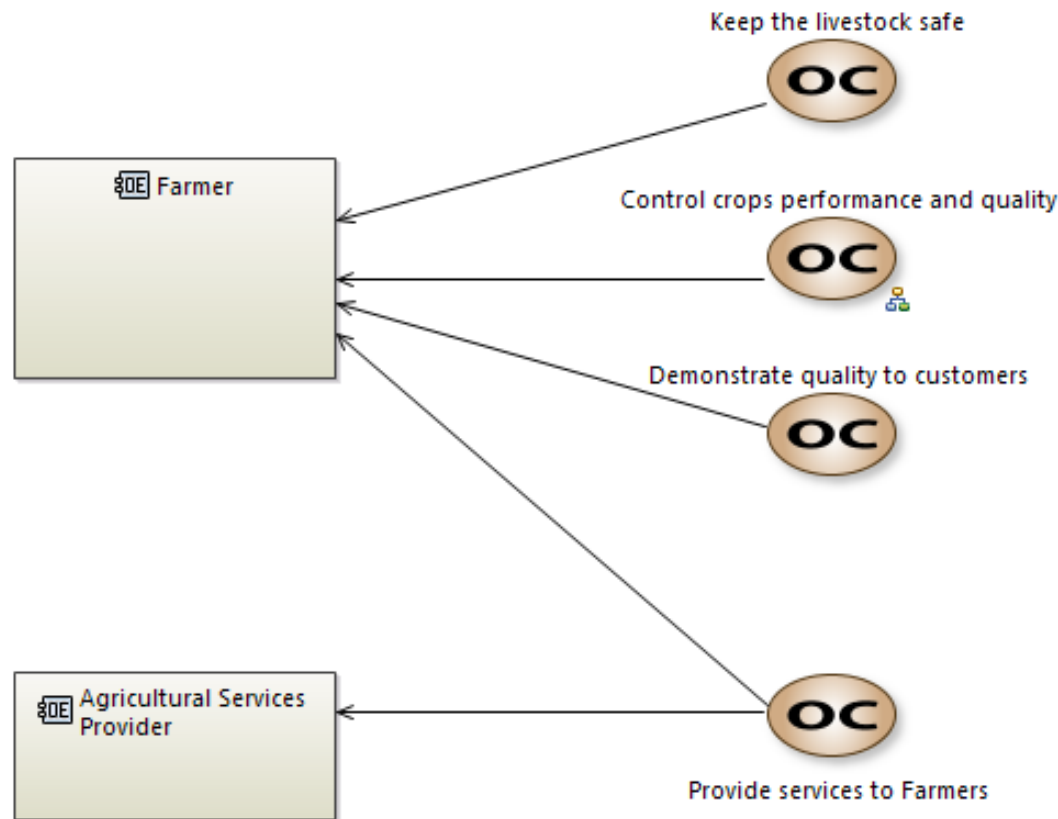
- Challenging access to upper aircraft surfaces
- Minimize the usage of installation infrastructure
- Get assistance in defect detection

Personality

- Low tolerance to breakdowns
- No particular interest for new technologies
- Has fatigue issues

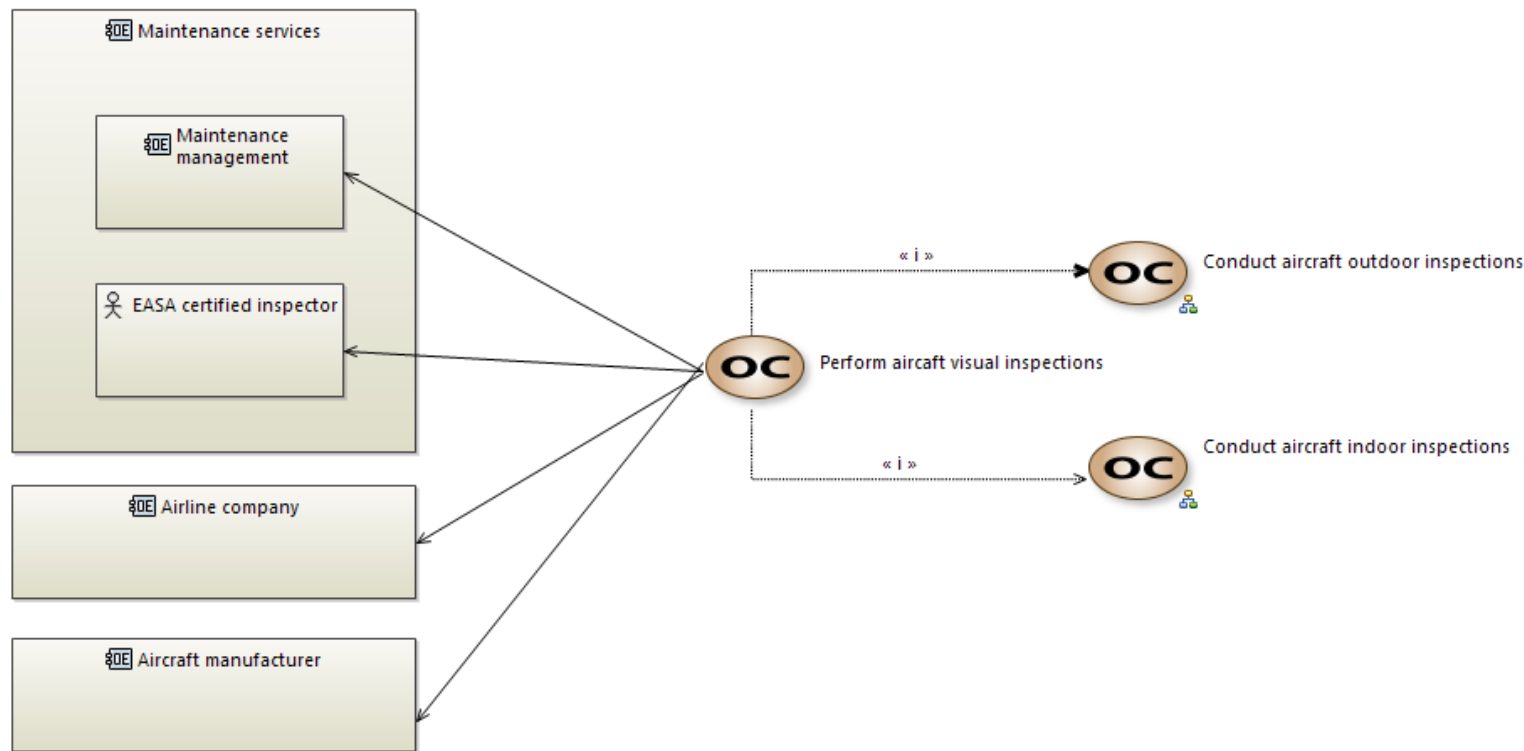
Peter is a certified aircraft inspector working for a maintenance organization. He operates under a lot of stress (time) and carries a heavy responsibility due to the high level of subjectivity of inspections.

Stakeholders Operational Capabilities



Stakeholders Operational Capabilities

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10'



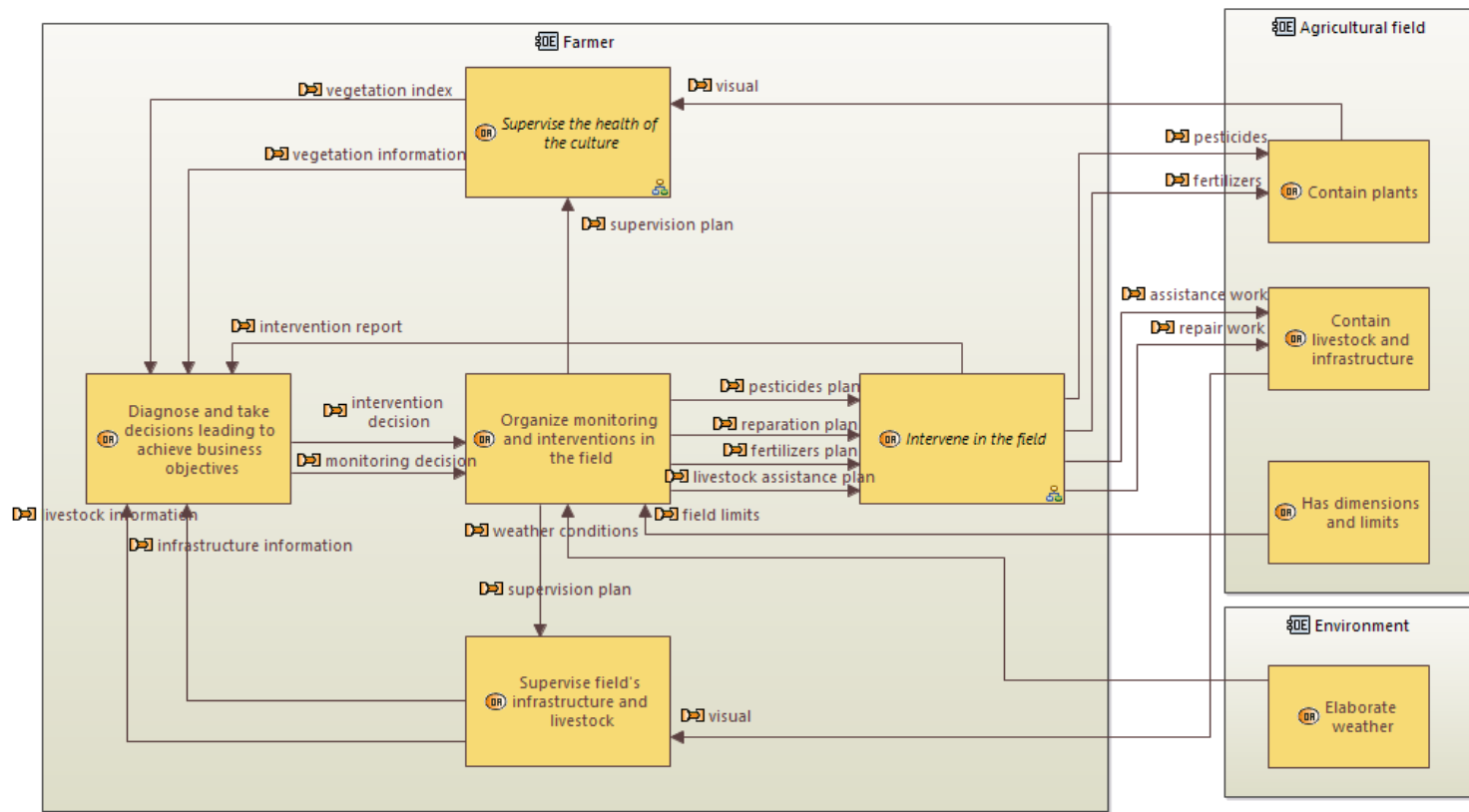
QUESTION 1

What **jobs** are performed
by a farmer / an aircraft
inspector ?

QUESTION 2

What are the
pains & gains of a farmer
/ an aircraft inspector ?

Operational Activities of “Farmer” Stakeholder



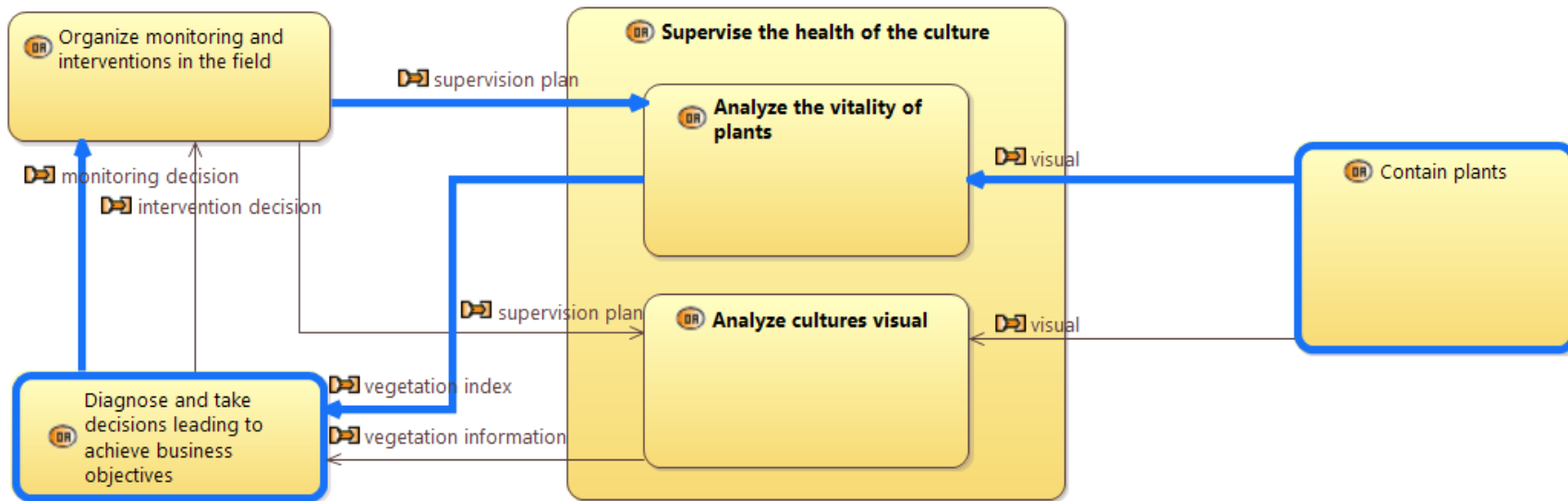
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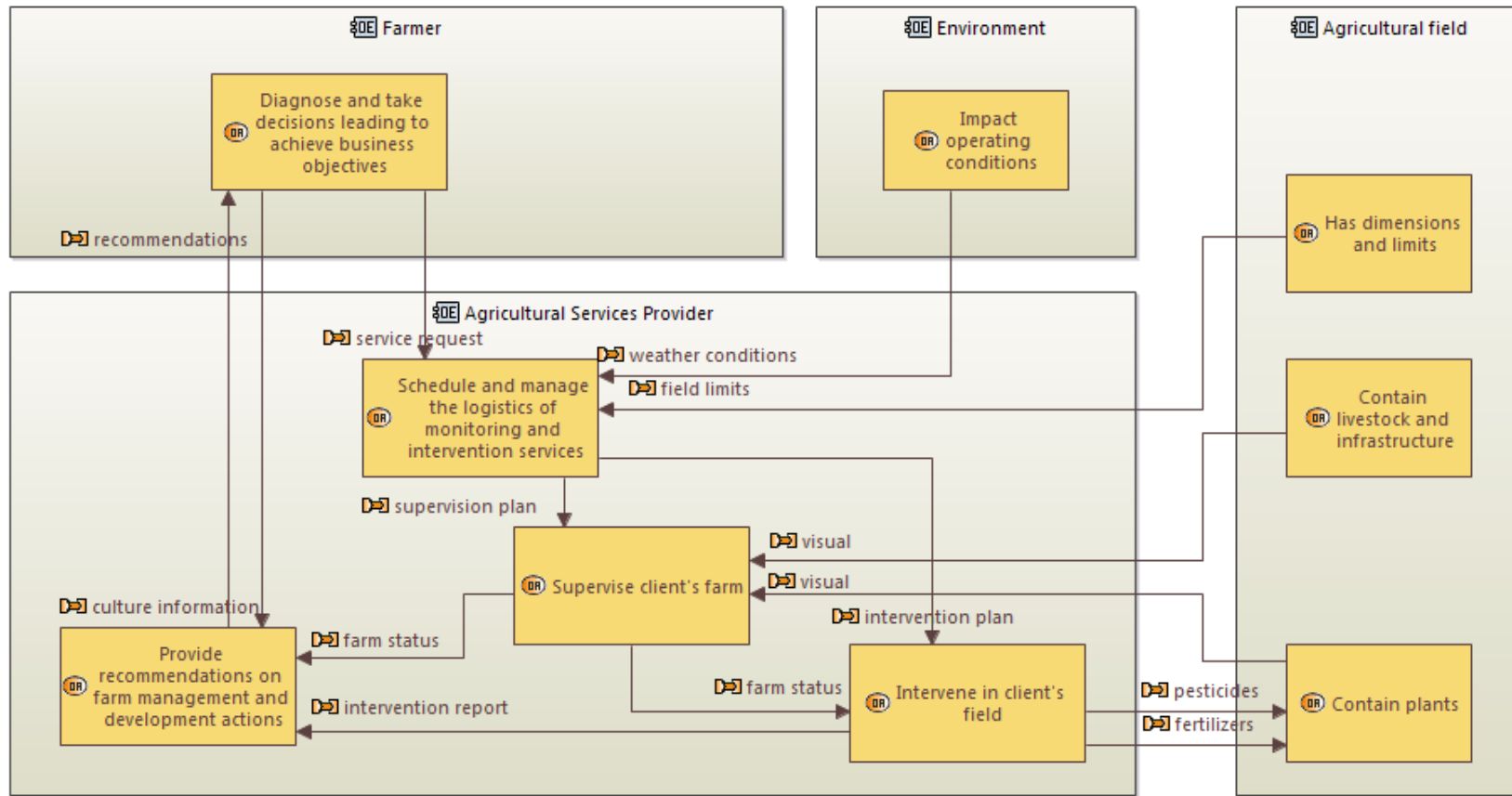
Operational process – monitoring of the culture



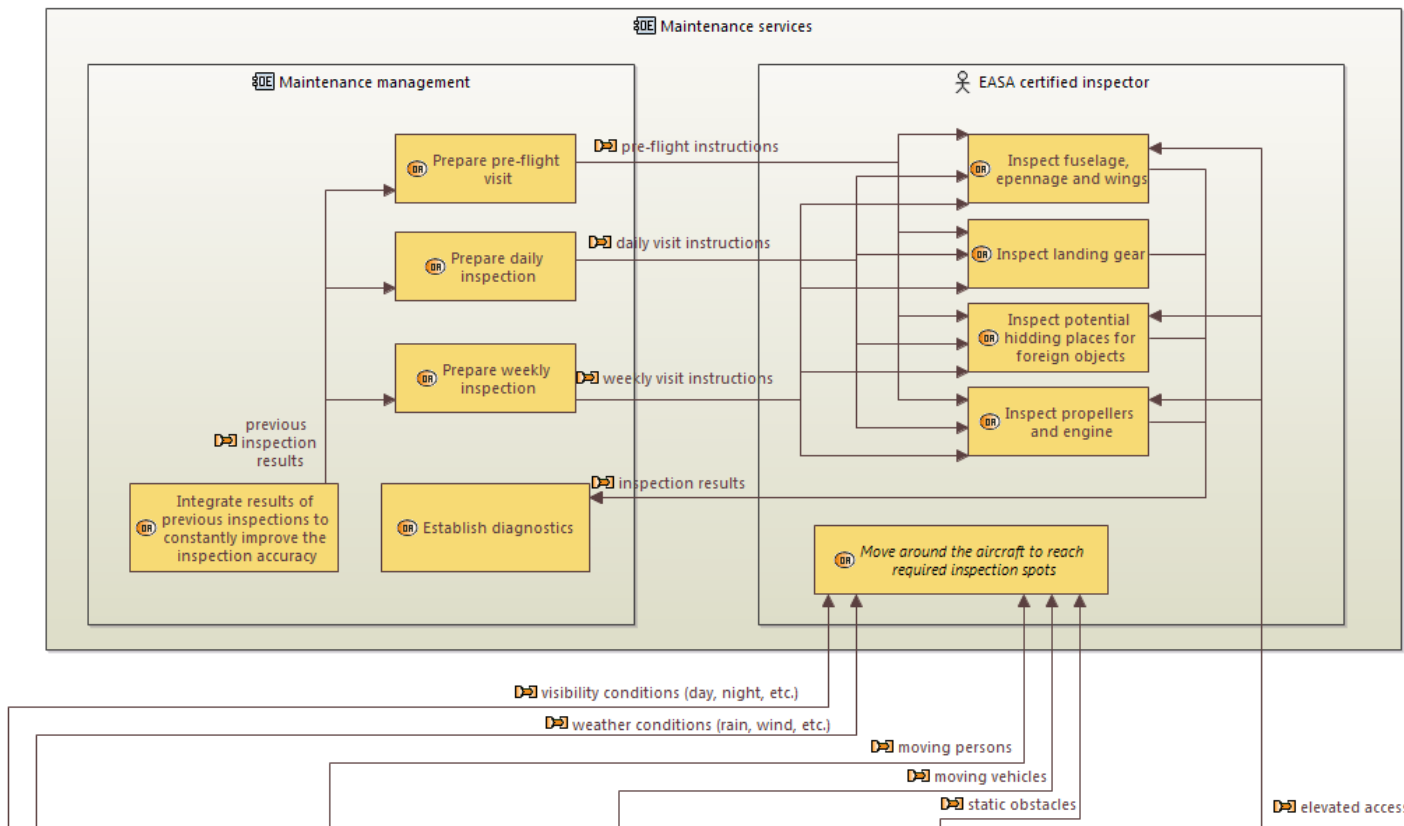
Monitor crops health - by Farmer



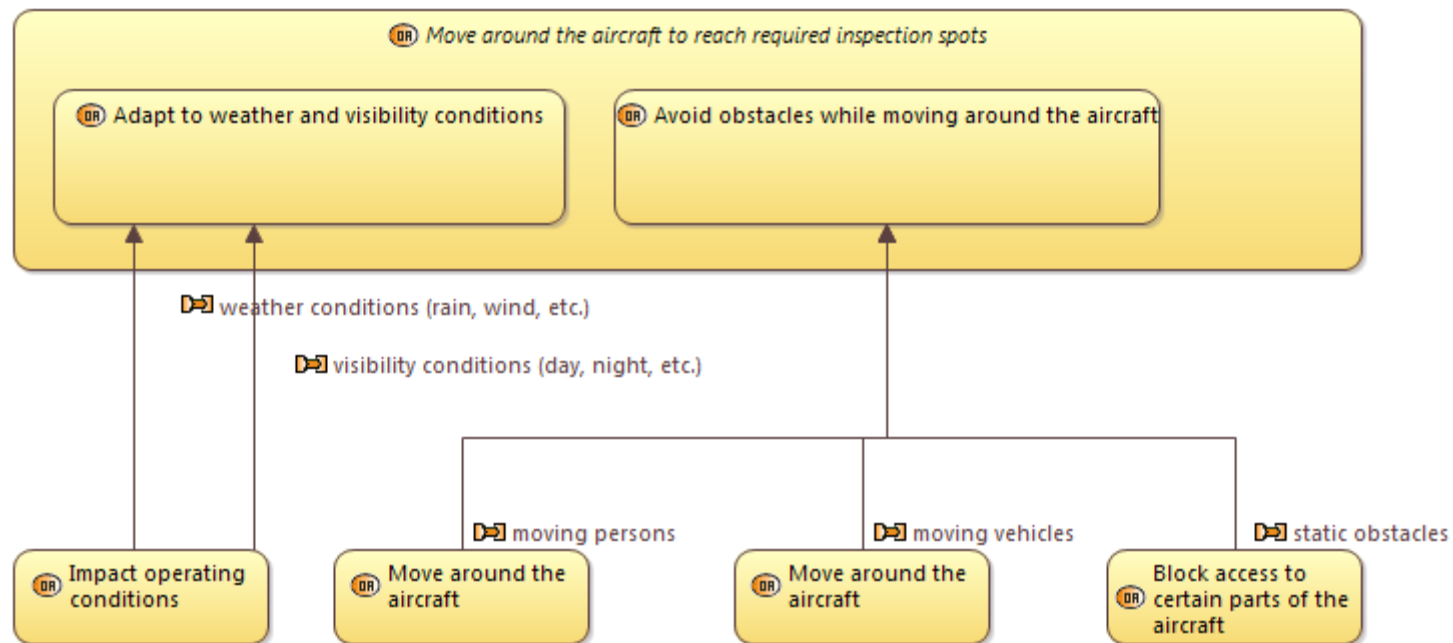
Operational Activities of “Service Provider” Stakeholder



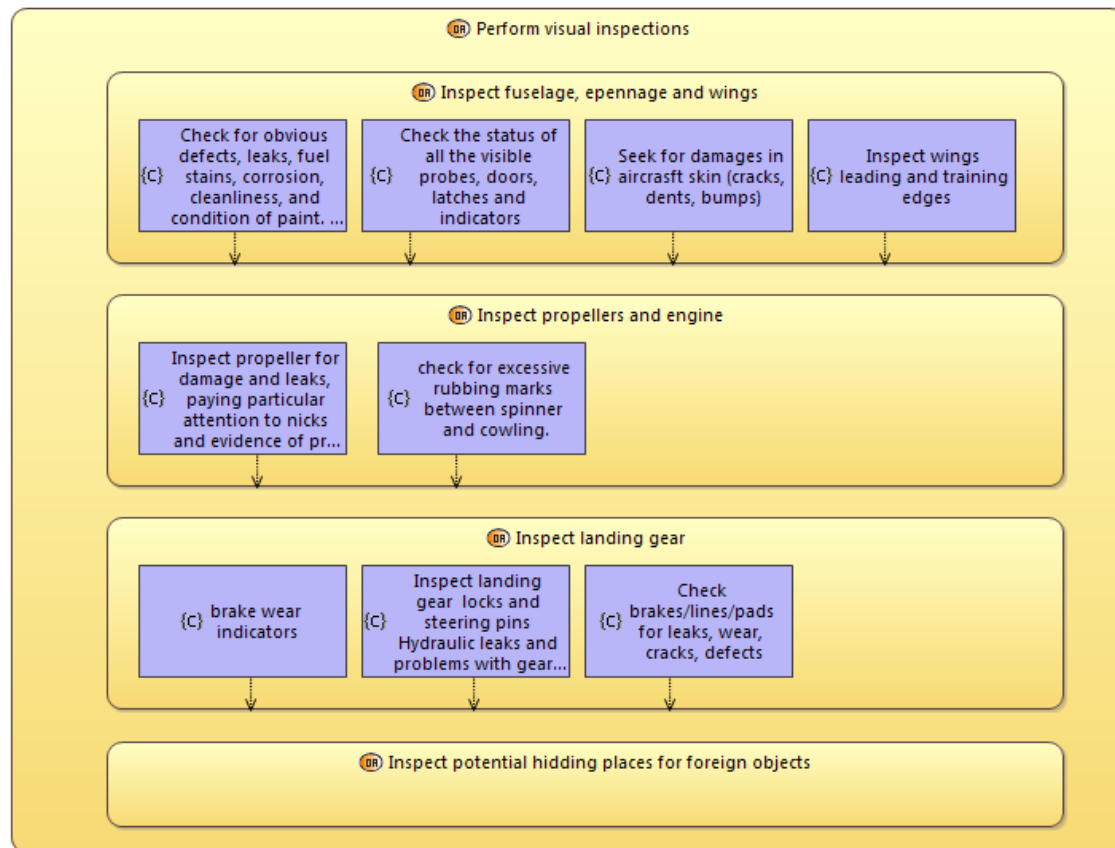
Operational activities of “Aircraft Inspector” stakeholder



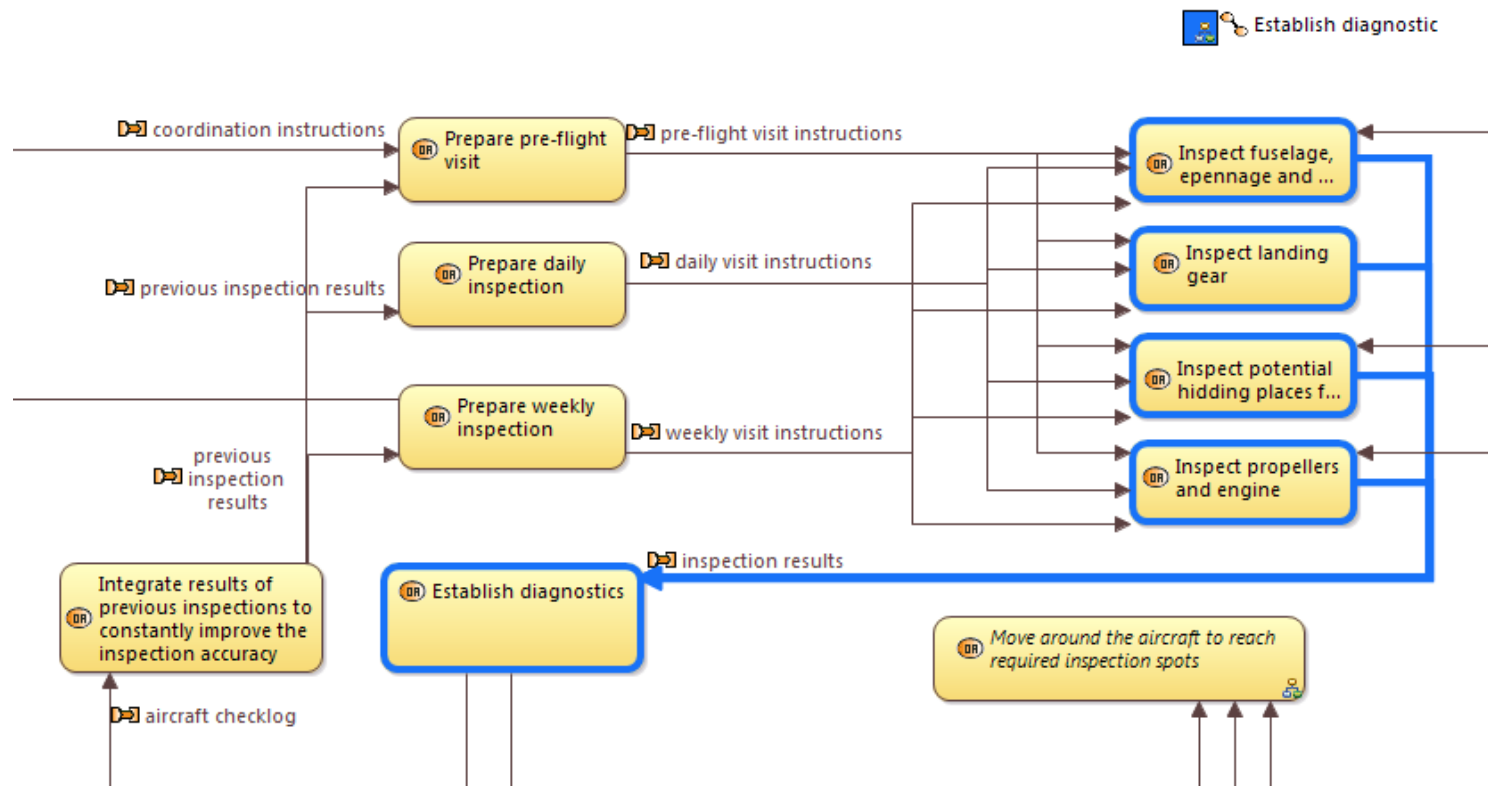
Details of activity « Move around the aircraft »



Details of activity « Perform visual inspections »



Operational process - Establish diagnostic



Value analysis – Customer Profile

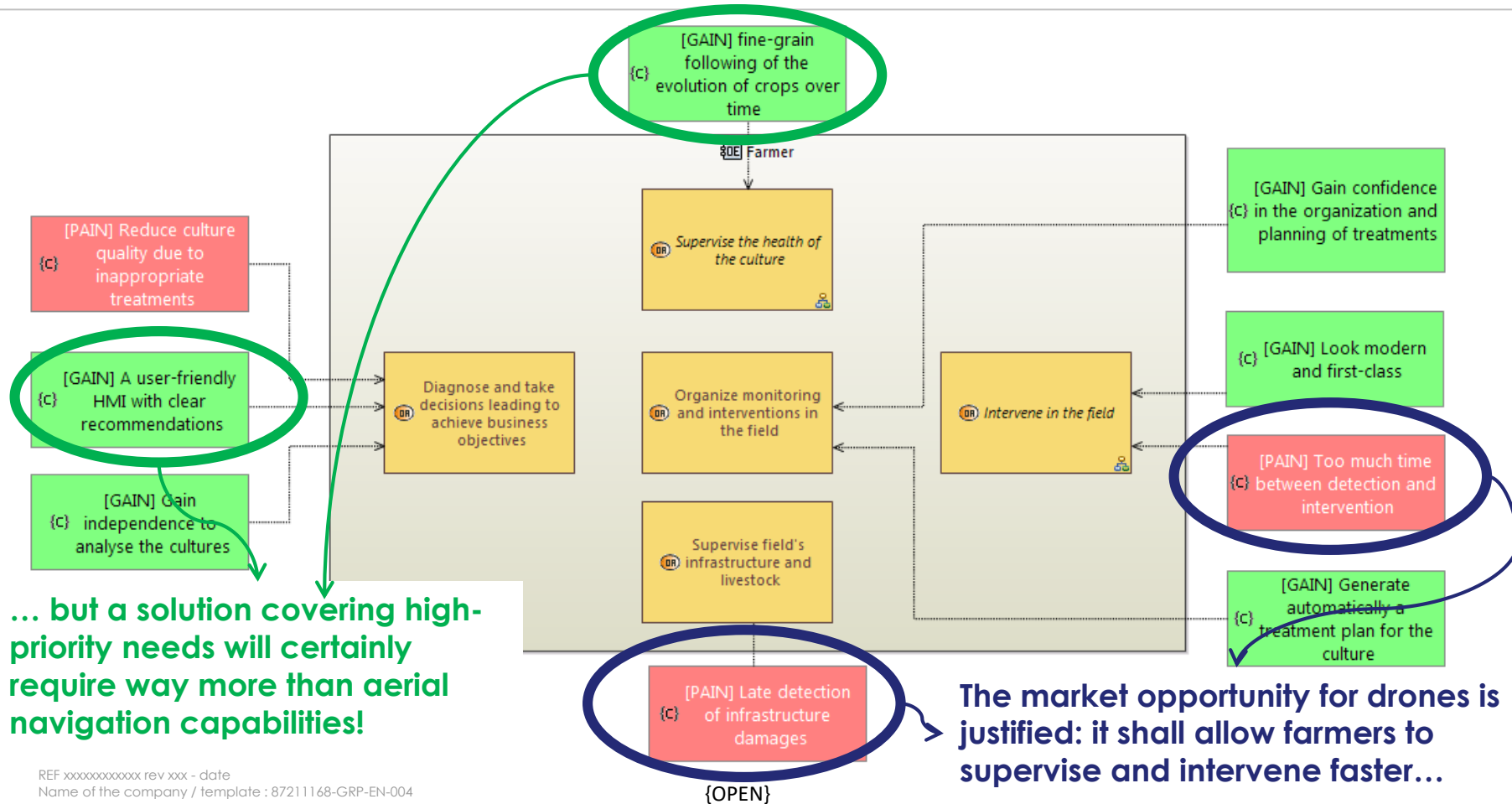
■ The **customer profile** describes a specific customer segment in a structured and detailed way

■ It breaks the customer down into its:

- **Jobs:** what customers are trying to get done in their work and in their lives
- **Pains:** anything that annoys the customers before, during and after trying to get a job done
- **Gains:** the outcomes and benefits your customers would like

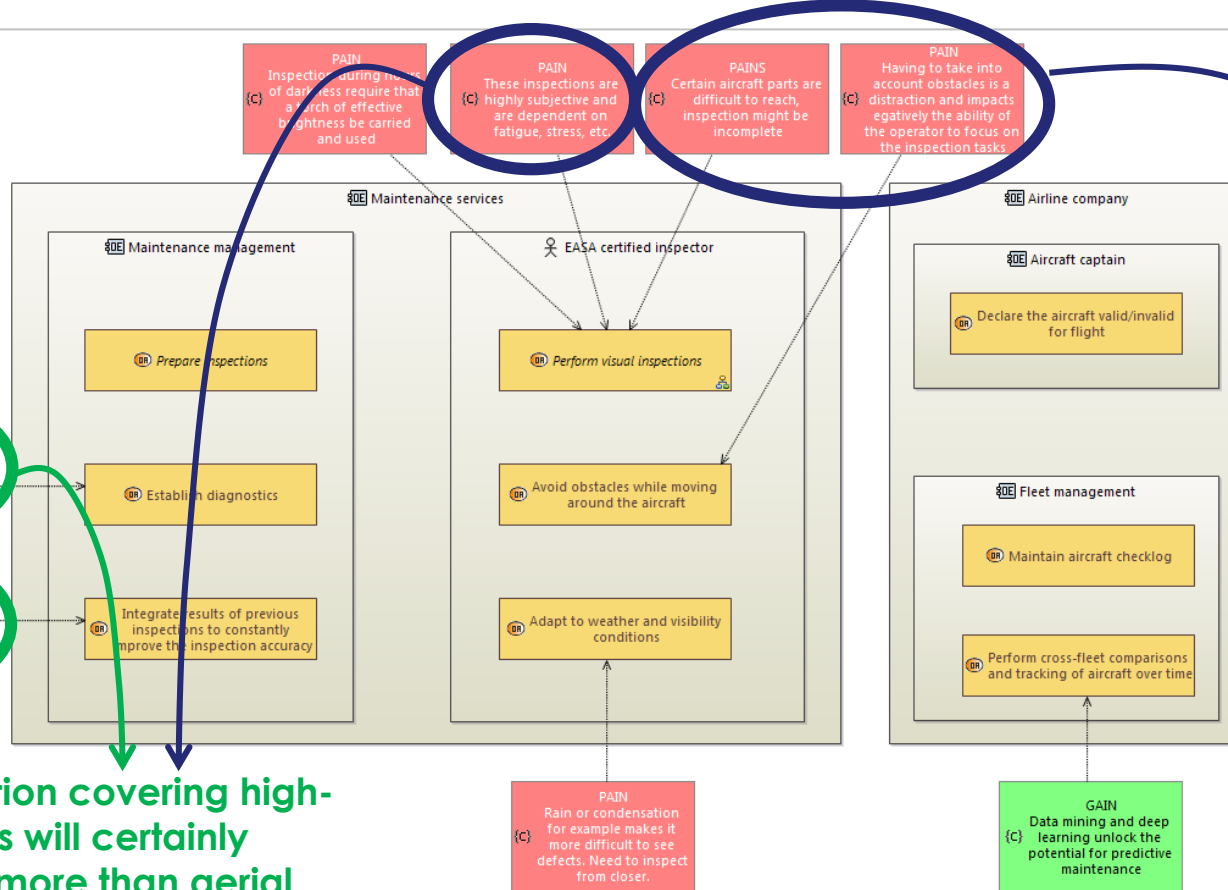


Farmer Customer Profile



Aircraft Maintenance Organization - Customer Profile

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The market opportunity for drones is justified: they provide easier access to aircraft...

... but a solution covering high-priority needs will certainly require way more than aerial navigation capabilities!