

Fødevarer IKT system design

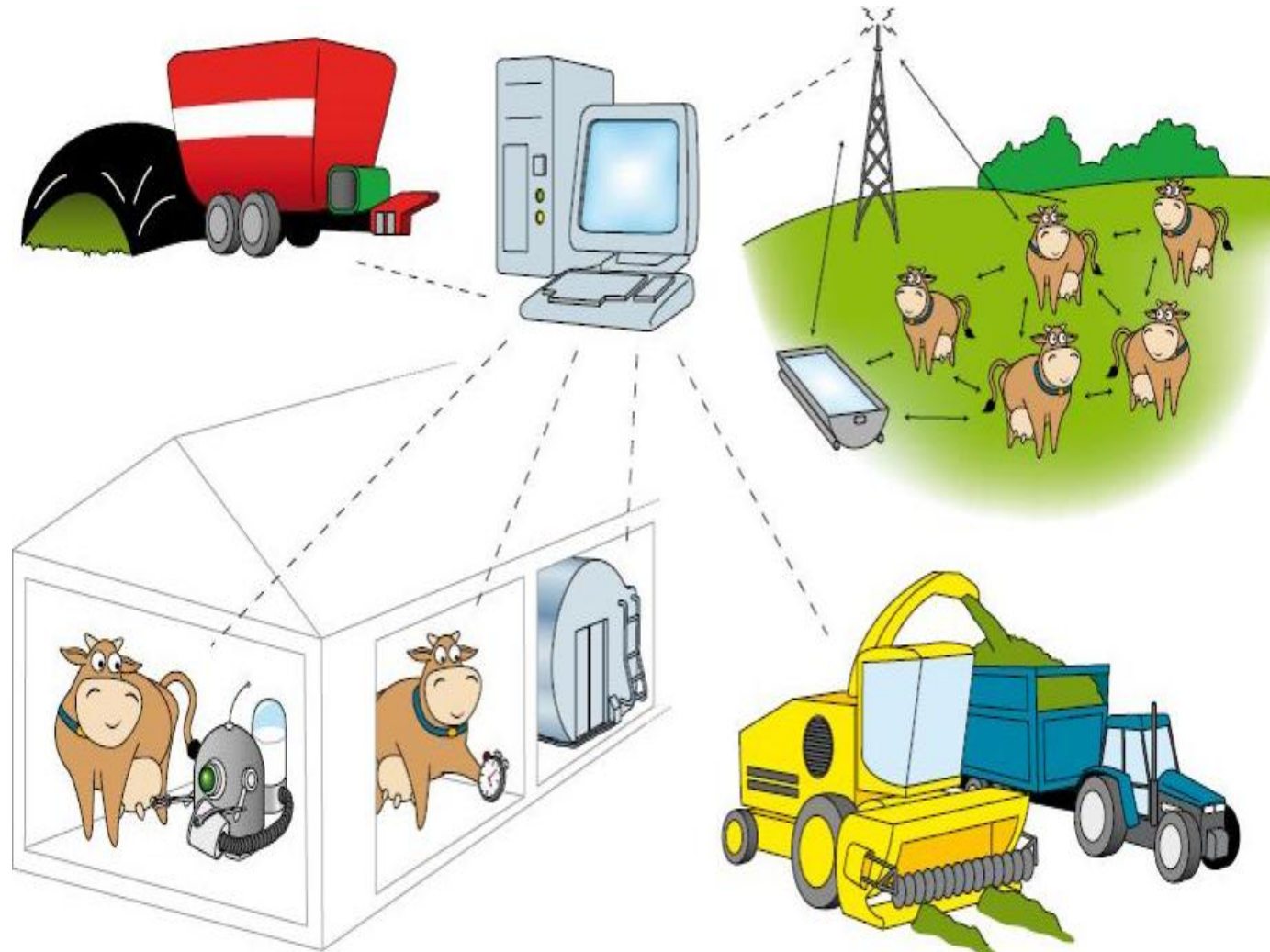
Claus Grøn Sørensen

*Netværksmøde om IKT i landbruget
30 August, 2010*

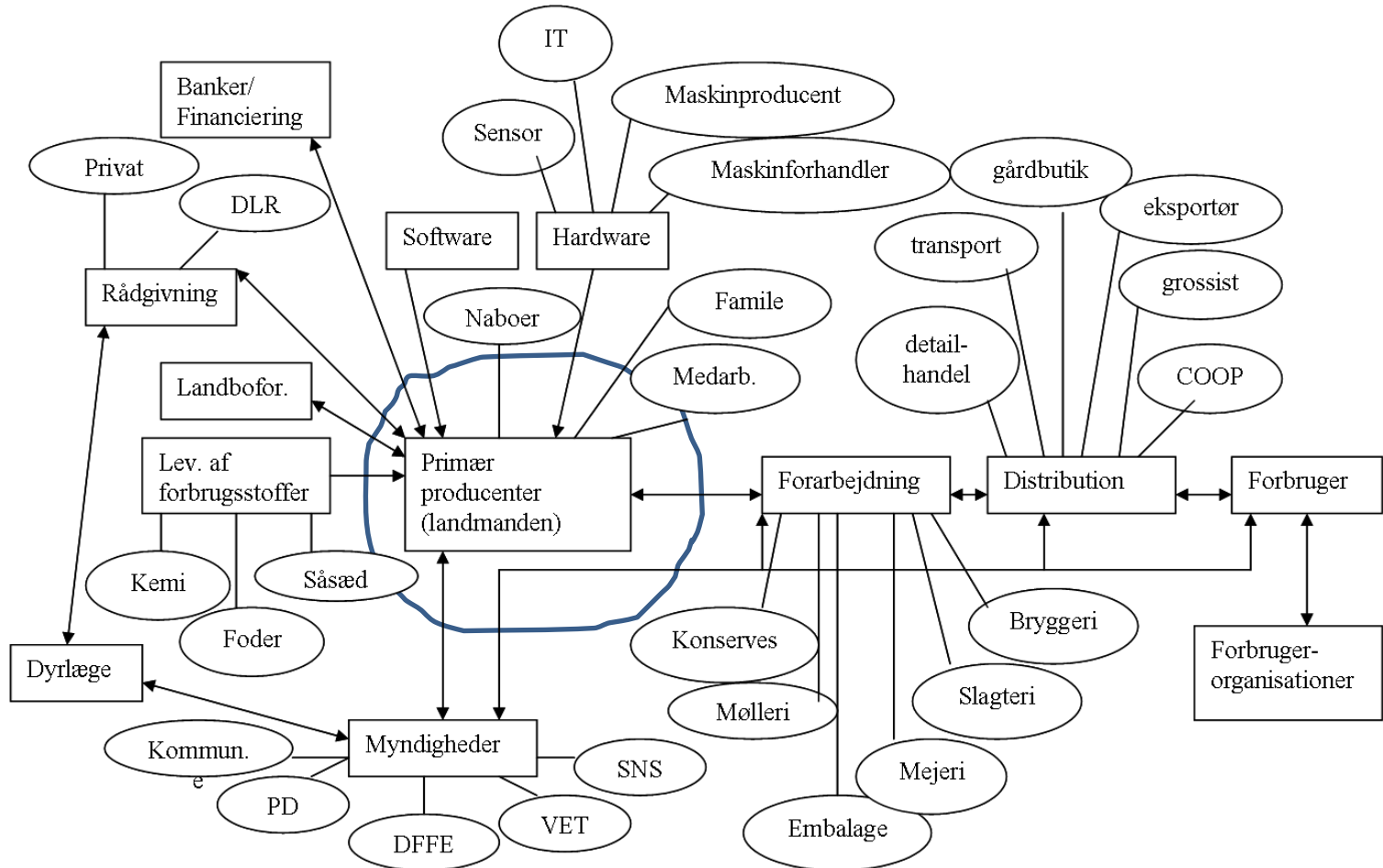
Integrated information management



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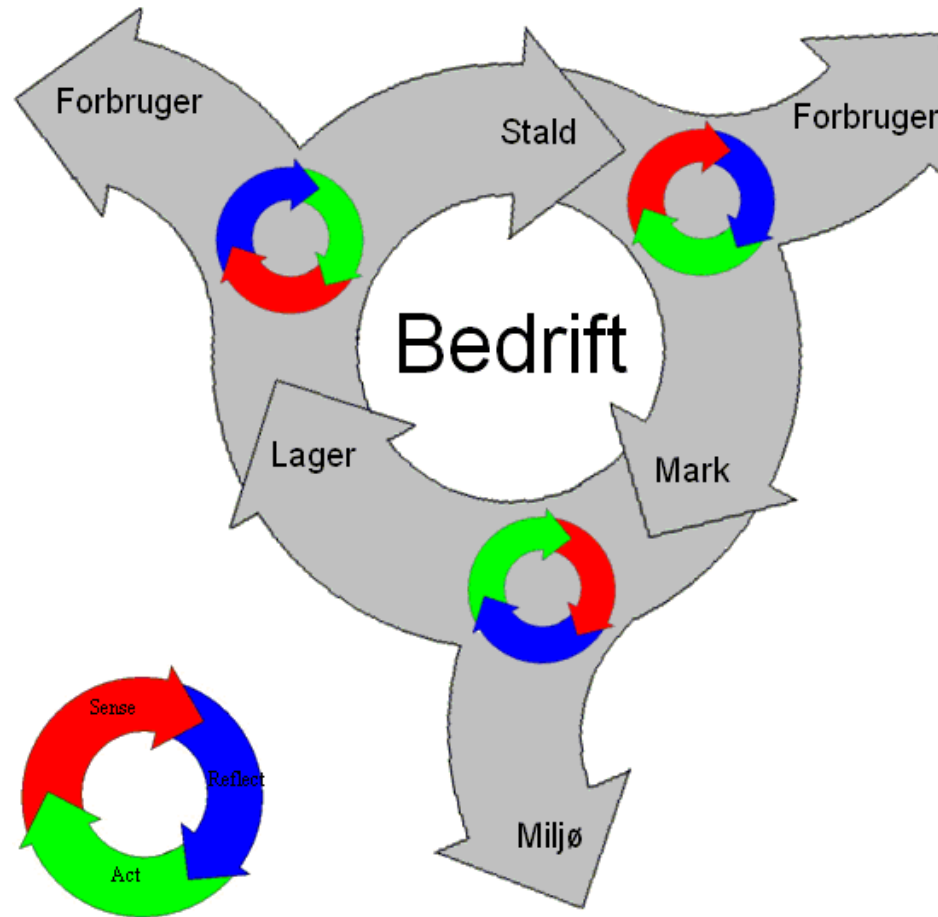
Whole food chain



Interne/eksterne informationsflow



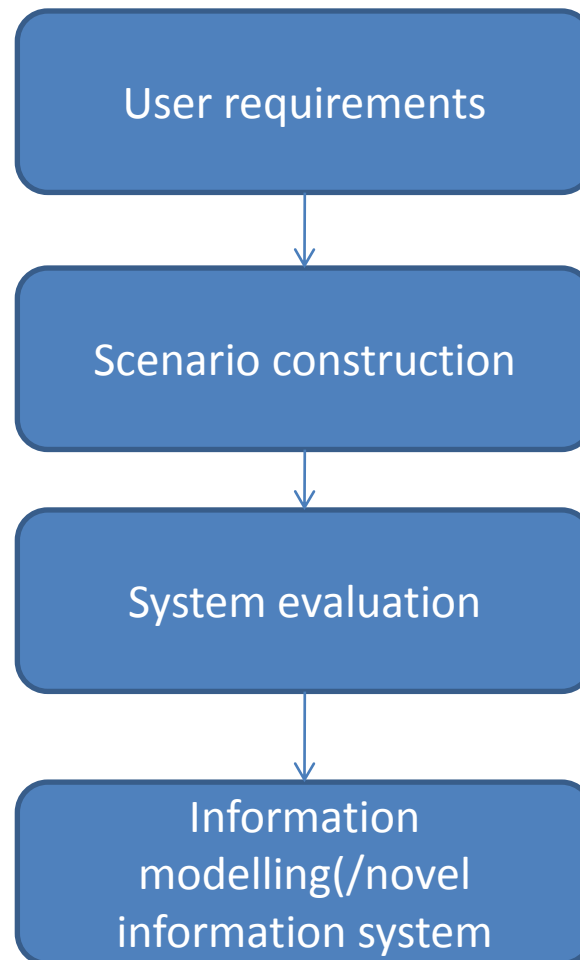
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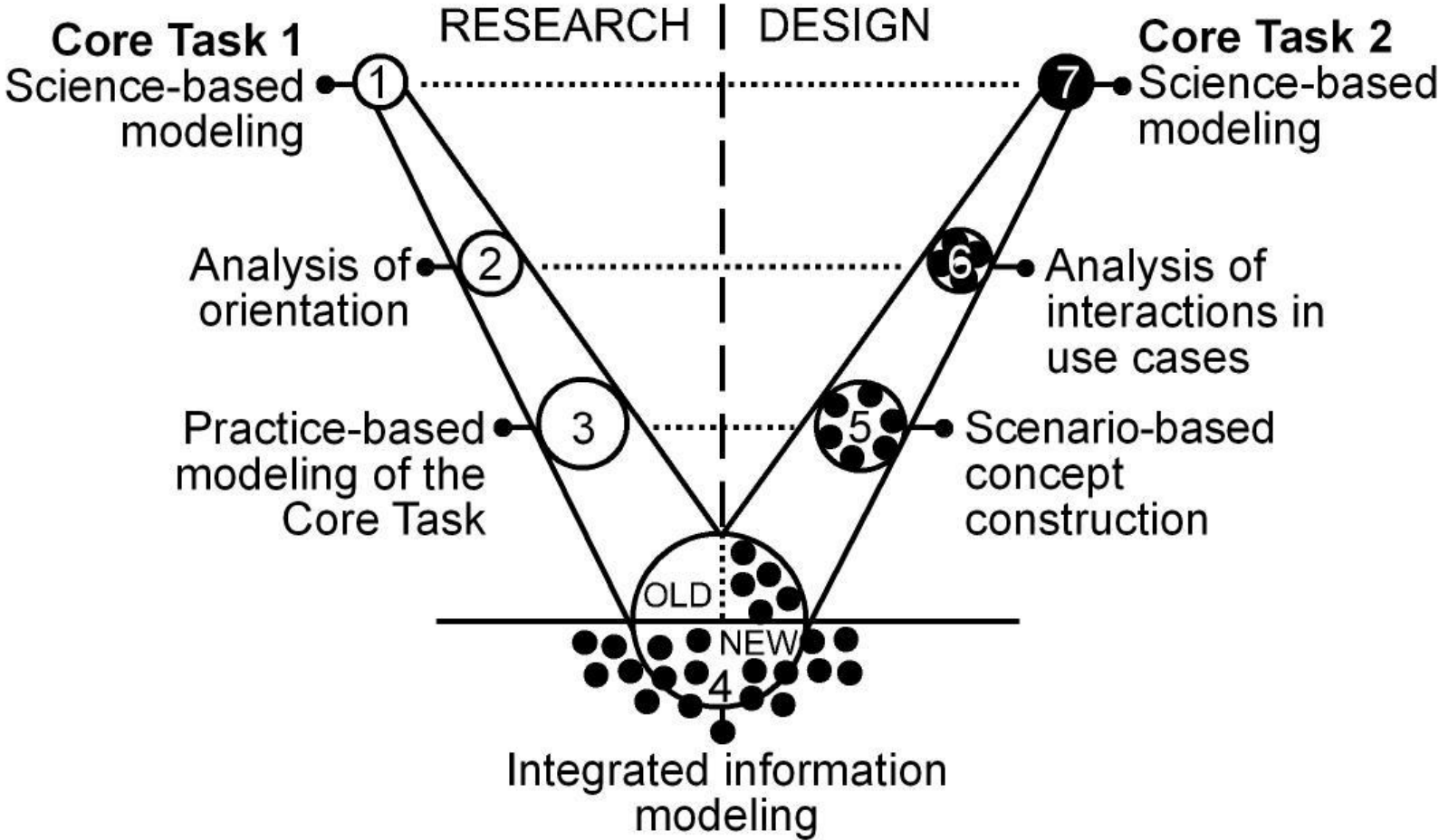
Information system design



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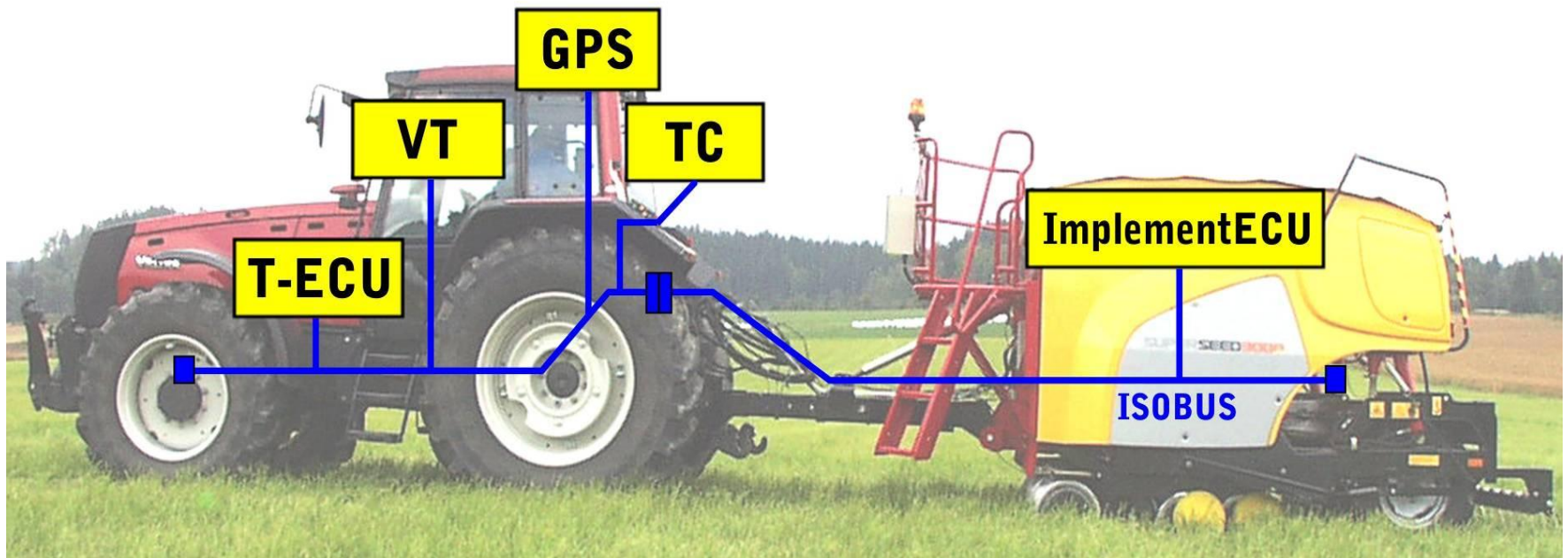
Design method



Parts of ISOBUS system in tractor-implement combination



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Voiced concerns



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- Activities/processes
 - data/ information overload
 - no cross-linking of information
 - needs information in an automated and in a summarised fashion
 - lack of information on market
 - acquisition of auxiliary' material confusing
 - lack of easy accessible information on employee performance, etc.
 - lack of user-friendly software tools

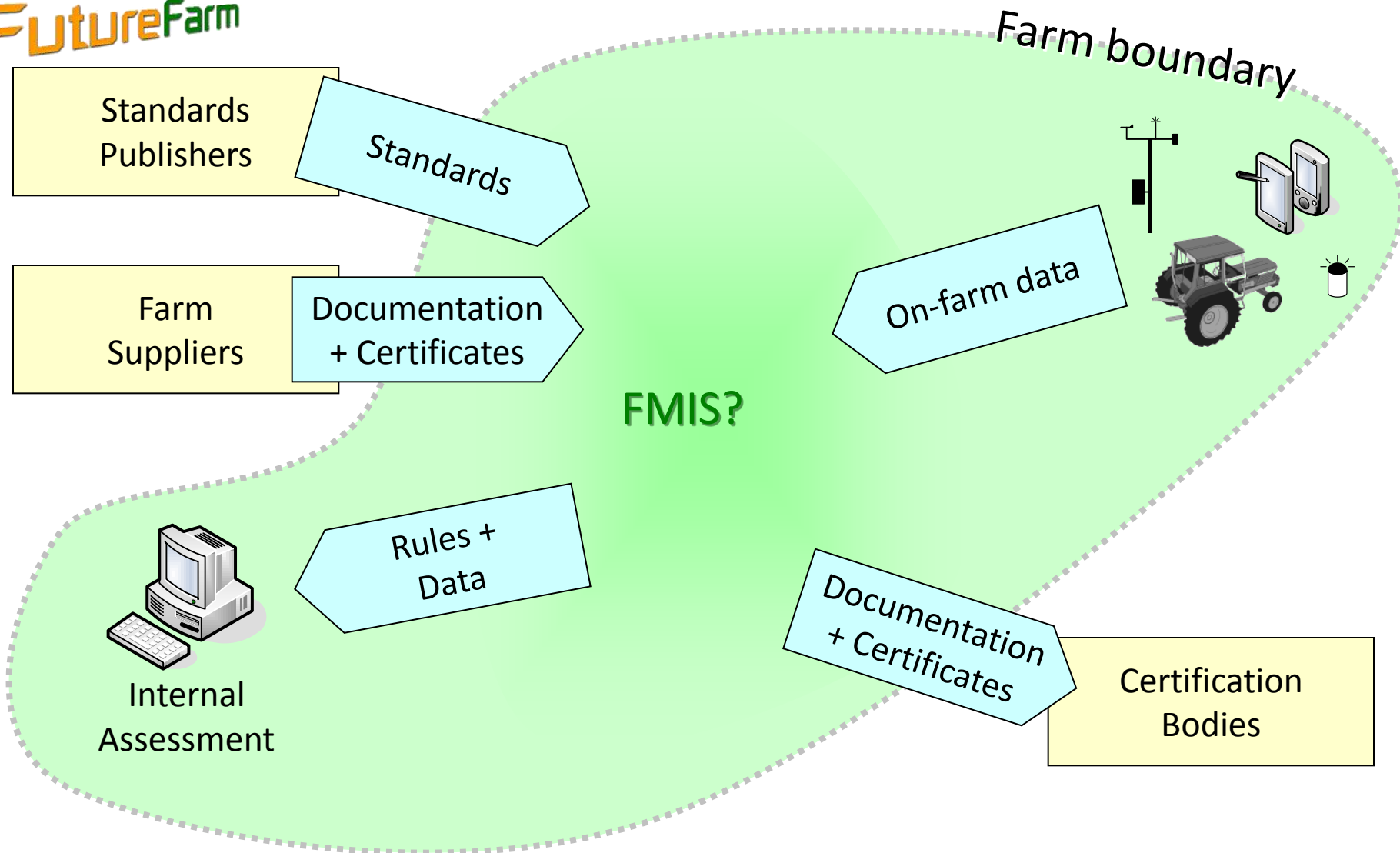
The scenario of precision spraying task utilising the novel system concept



Video

<http://www.mtt.fi/infoxt>

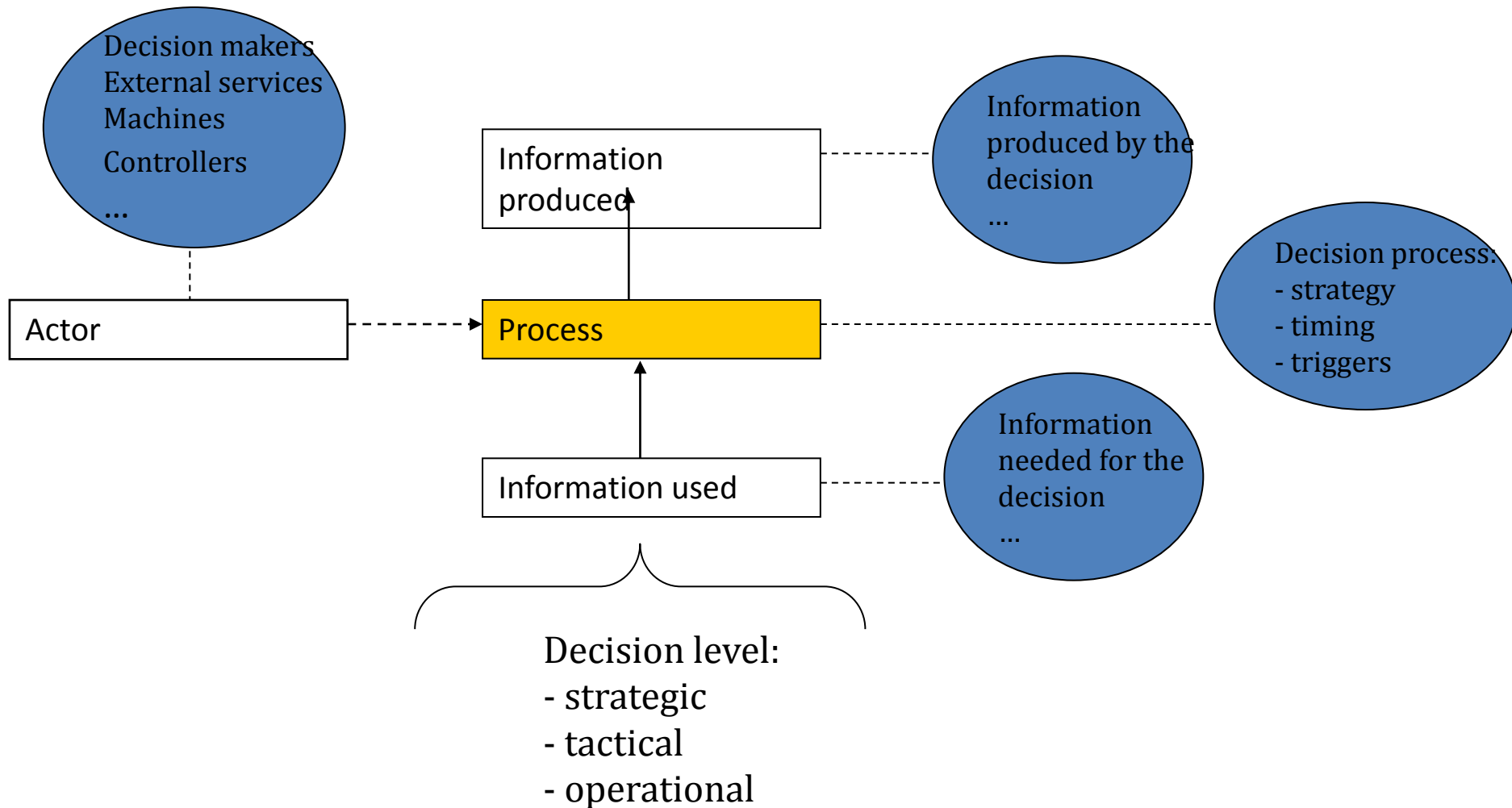
System components



Outline of information modeling approach



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Process

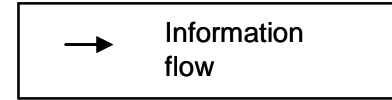
Information usage

Information

The information that actor offers

Actor

Information producer



Actors

Markets

Different buyers and sellers in food industry

Farming advisory

Advising organization: agricultural expert organization

Legislation

Governmental/EU/Environmental rules for the fertiliser process

Weather service

Local weather information provider

External service

Agricultural service company

Decision maker, user

Decision maker "Farmer"

Databases

Data warehouse

1... n

The number of fertilising units

Task Controller

Communication device between working unit and external system (e.g. FMIS)

Implement ECU

Implement controller computer

User Interface (VT)

The Virtual Terminal (VT) is a common user interface for all ISOBUS compatible implements

Tractive unit

Tractor, self propeller spreader or robot

Internal sensors

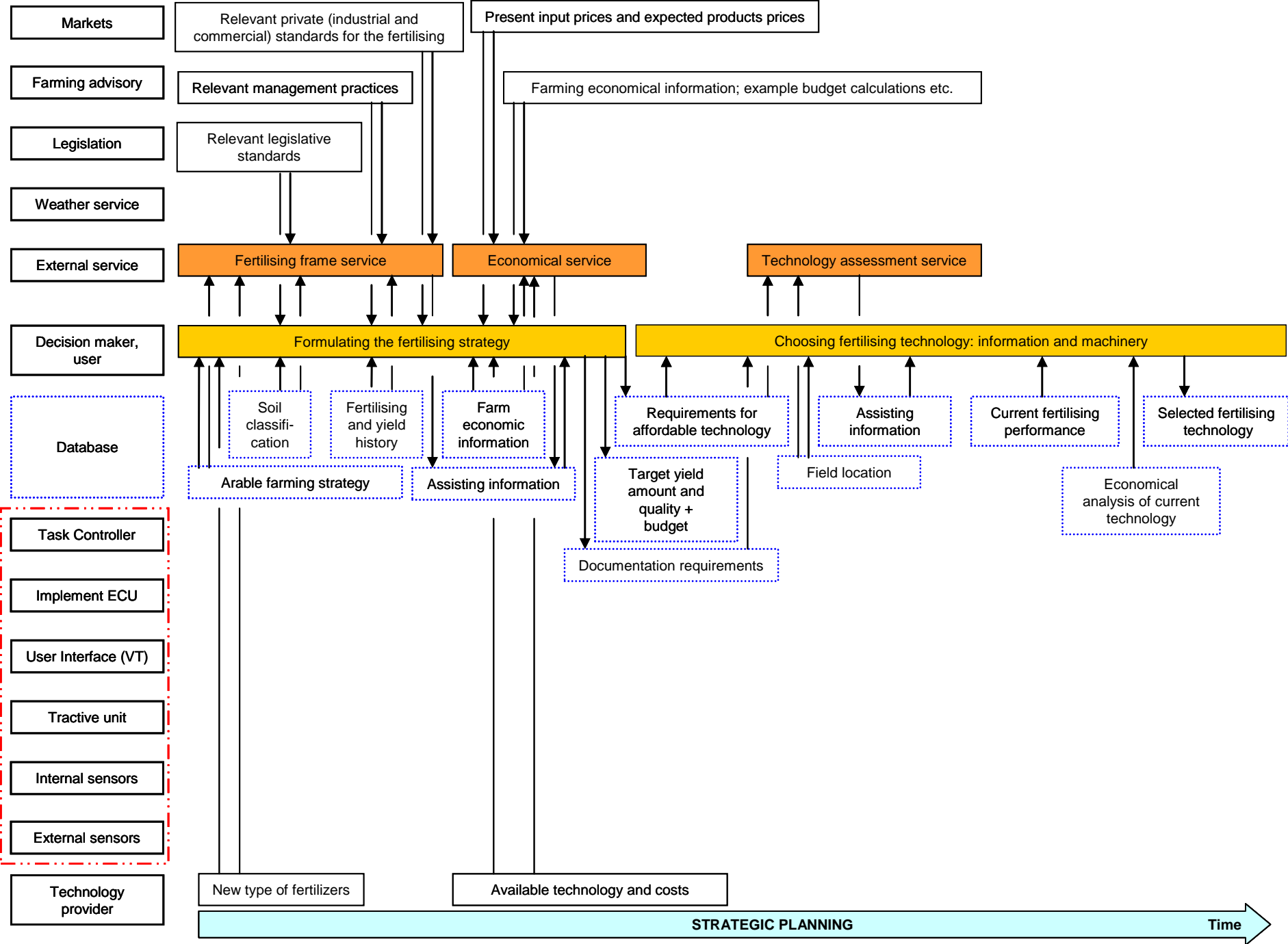
Sensors for the online controls

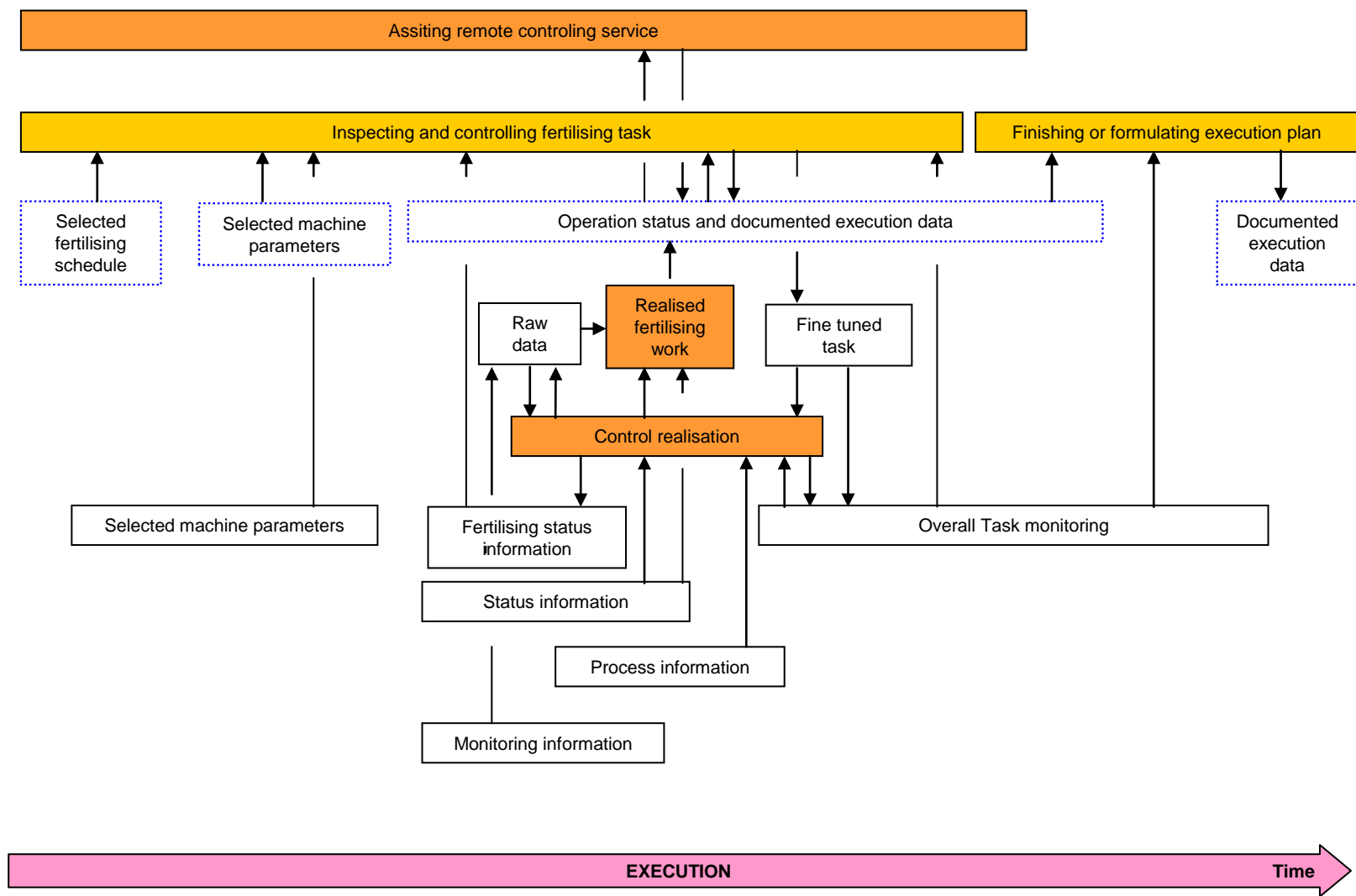
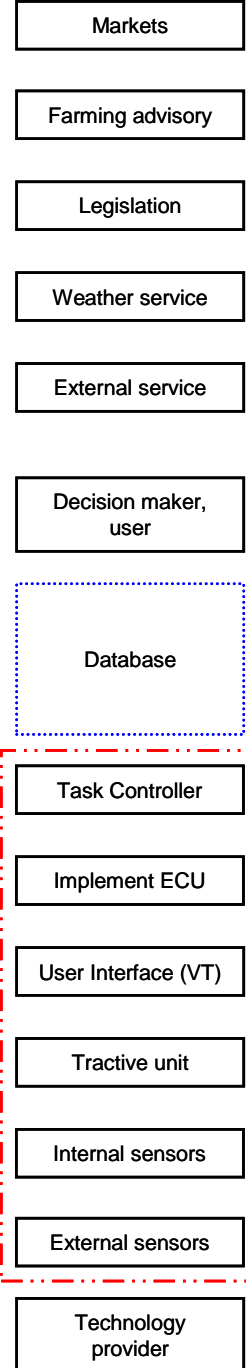
External sensors

Sensors for the monitoring field process, implement or environmental status

Technology provider

Agricultural machinery, hardware and product companies



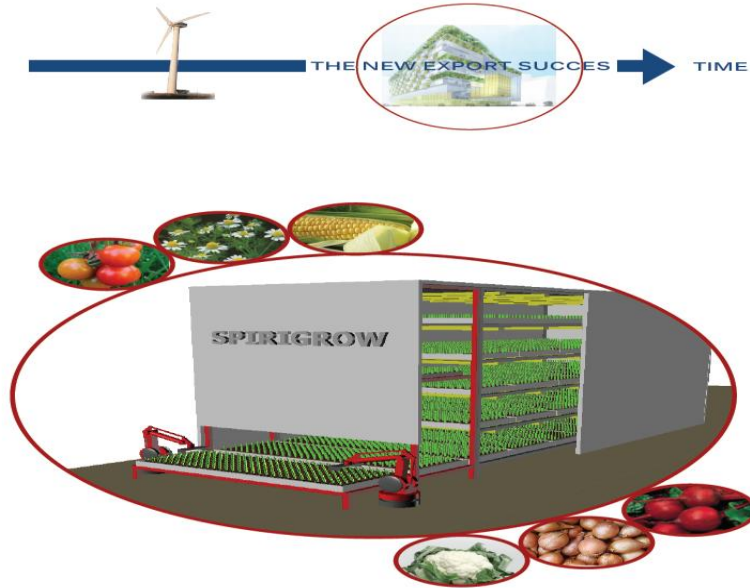


Information models

- Recipe for design of information system:
 - demand for sensor systems
 - demand for communication
 - demand for data/data processing (accuracy, real-time, etc.)

SPIRIGROW:

Platform for Innovation & Research
in **Vertical, Robotic Growing of**
Plants for Food



THE FUTURE CHALLENGE

How will we feed the worlds rapidly expanding population with our existing production systems?

SPIRIGROW VISION

Paradigm shift in existing production by development of IP protected highly automatic multilayer production system.



Partners:





LETTER OF INTENT

PROJECT:

SPIRIGROW: Platform for Innovation & Research in Vertical, Robotic Growing of Plants for Food

I am writing this Letter of Intent on behalf of [Company name].

[Company name] is a company that *[define here current activities of your company and size of company]*.

[Company name] is very interested in activities focussed on developing future innovative production systems for food and non-food products in a highly sustainable, robotically controlled, multilayer growing system. We foresee that outcomes from SPIRIGROW will provide us with innovative knowledge, technologies and protocols that will create new national and international business opportunities for our company in the area of *[define area of relevance to your company: eg robotics, climate control, nutrition, plant growth, plant quality, foods, greenhouse construction, lights, etc]*.