ICT-AGRI-Food Forum| +++
online, November 19th, 2020| +++

ATLAS –Interoperability for the digital Agriculture

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Facts and Numbers

- ATLAS will run over 42 months
- 1399.5 person months
- 9 work packages
- 51 deliverables
- 13 milestones
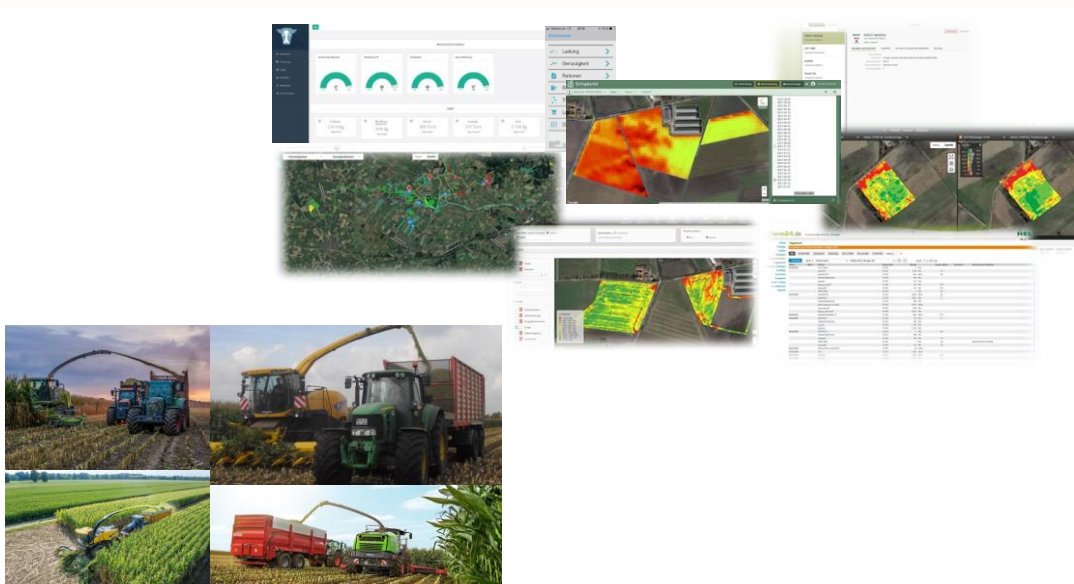- 12,890,976.25€ grant requested

Consortium

o **30 partners from 8 different European countries**
  o Universities and research institutions
  o Industry
    o Machine Manufacturers through AEF (as LTPs)
      o CNH Industrial, Kverneland, John Deere, Claas, AEM, ...
  o SMEs
    o AgriCircle, agroapps, Robot Makers, Meteomatics, fodjan, Libelium
  o Agricultural cooperatives and commercial farms
    o DLG, Hellenic Agricultural Organization, Association of Latvian Organic Agriculture
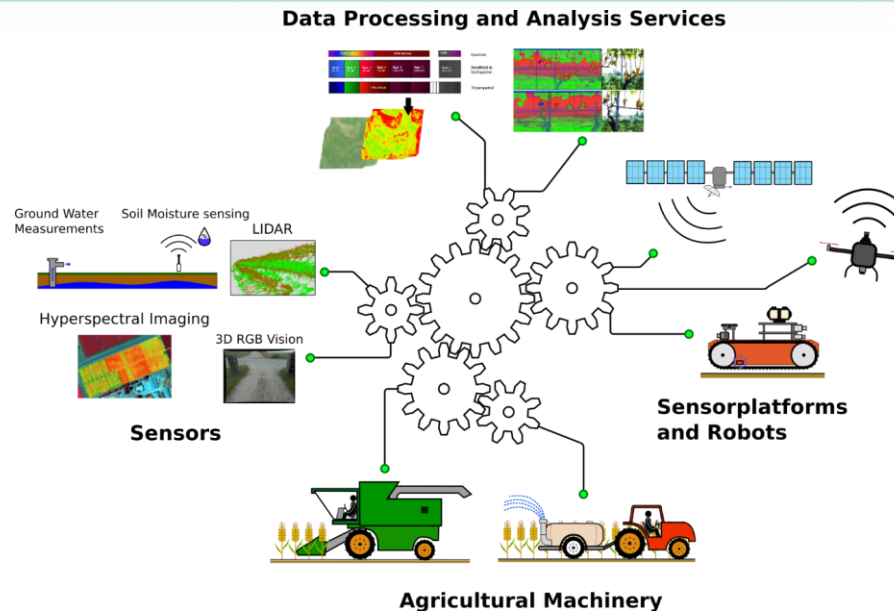
Farming is complex!

- o **Example: One Farm, 7 different Software Systems**
  - o This will probably increase in the future
- o **Lots of things to manage**
- o **Very heterogeneous landscape of machines, sensors and data platforms**

Interoperability in digital Agriculture

Data Processing and Analysis Services

Ground Water Measurements · Soil Moisture sensing · LIDAR

Hyperspectral Imaging · 3D RGB Vision

Sensors

Sensorplatforms and Robots

Agricultural Machinery

o **Exchange of data between all entities is a key-capability**
  - o Syntactic level: compatible messaging standards, programming language agnostic
  - o Semantic level: transmitted data conveys a shared meaning that enables the integration of business processes

ATLAS Interoperability Architecture - Drivers
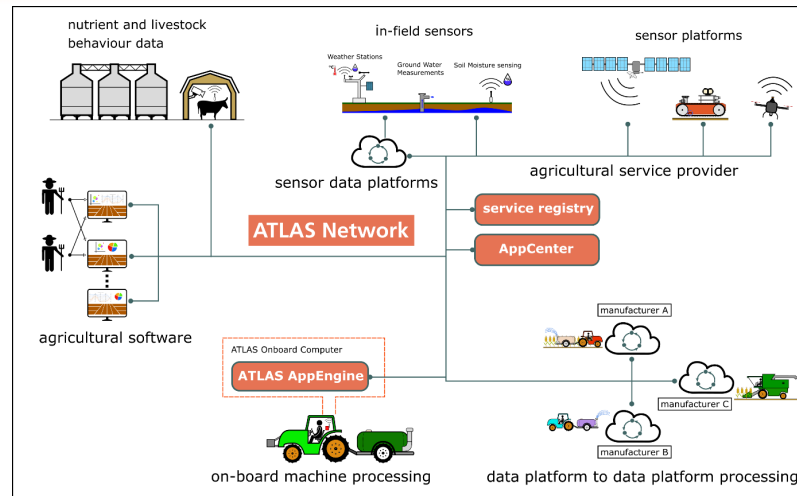
o **Openness and lowest possible entry barriers**

o **Interoperable with supporting well defined current standards**

o **Decentralized with a minimum of centralized components**

o **Ability to evolve the interoperability to react fast to emerging needs and innovation**

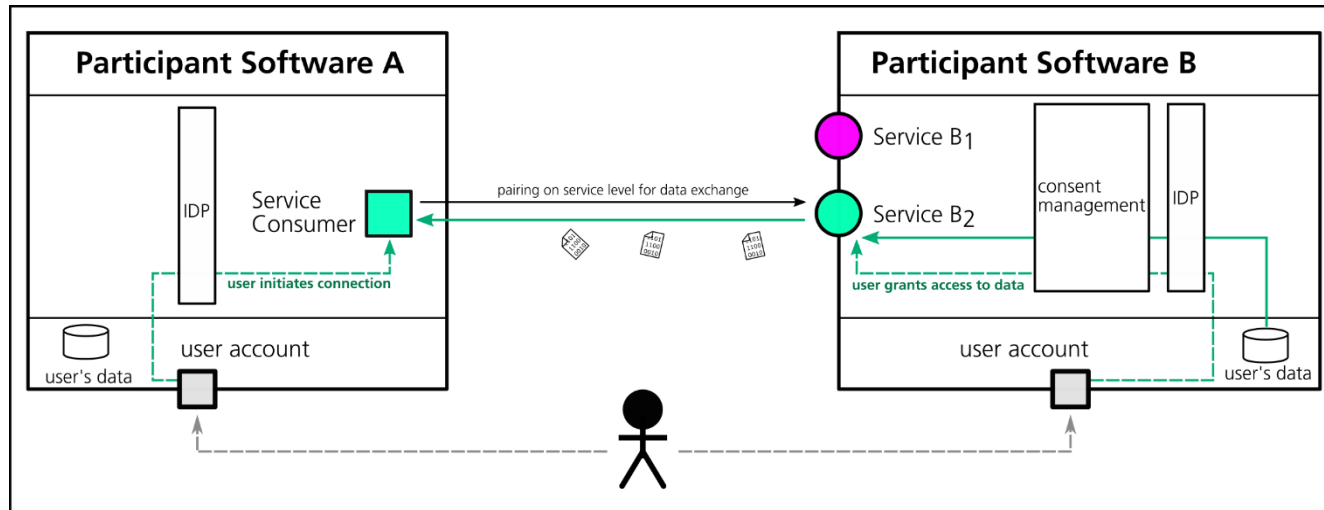o **Providing offline functionality to different use cases**

ATLAS Interoperability Architecture
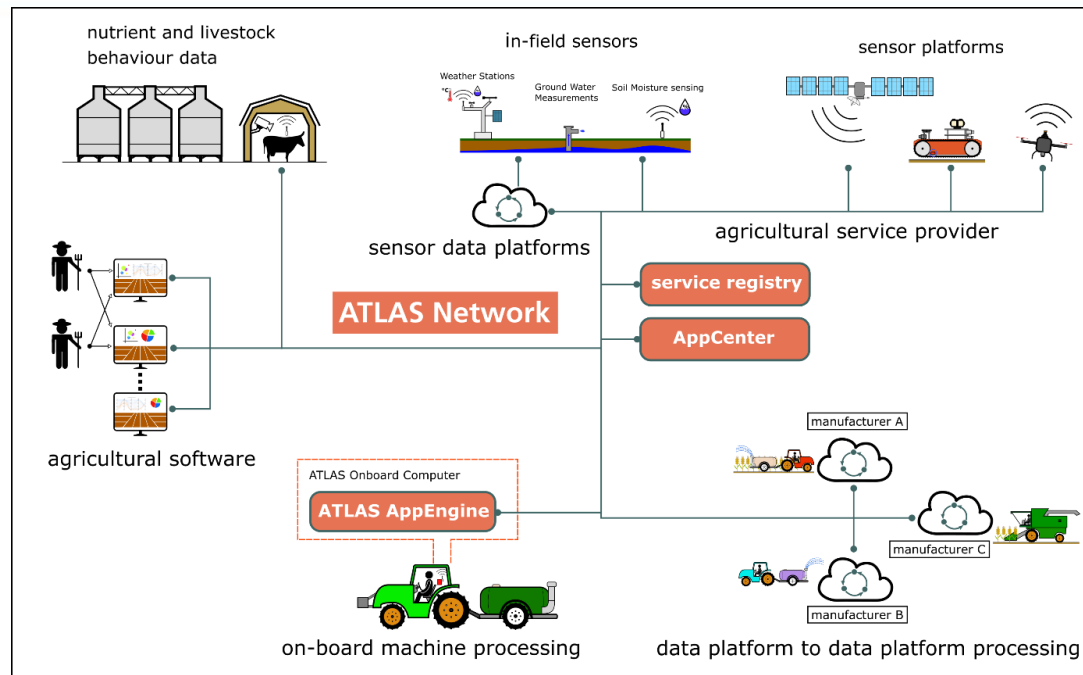
o **Reference architecture Designed along concrete use-cases**

o **Two basic concepts complementing each other:**
  o Data-platform based data exchange and processing
  o Edge computing and processing capabilities

Participants, Services and Service Templates

- Participants are identified legal entities referenced in the ATLAS Registry
- Services are the basic interoperability building blocks in ATLAS
  - Services are provided by participants
  - Services implement a specific template
- Service templates describe semantically related agricultural or technical functions
  - API, parameter and data format specification

Farms and Test Sites

- **13 agricultural operations available in the consortium**
  - Italy, Romania, Latvia, Switzerland, Germany
  - 5 pure research farms
  - 6 commercial farms
  - 2 combined research / commercial farms

- **Apples, cherries, chestnuts, arable crops, vineyards, forestry, potatoes, orchards, fruit production**

- **poultry farming, beef cattle, pigs, mother cows**

Pilot Studies and Use Cases
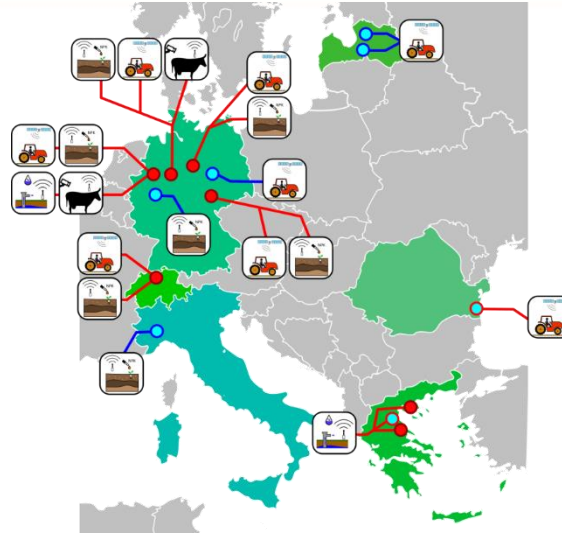
o **Conducted on the test sites to demonstrate and evaluate the platform and the interoperability of sensors, machines and services**

o **Use cases defined through ATLAS end-users**
  o Targeted application of plant protection
  o Advanced Irrigation Management
  o Soil state and soil readiness analysis
  o Behavioural analysis of livestock

Summary

o **New level of interoperability**
   o Agricultural machines, sensors, data services

ATLAS enables:

o **Simplified processes from farm to fork**
   o Simplified Communication
   o Digital connection to the consumer
   o Avoidance of multiple data collection processes
   o Data sovereignty is at the farmer

o **New business models for and with the farmer**

ATLAS
AGRICULTURAL INTEROPERABILITY
AND ANALYSIS SYSTEM

Thank you!

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