

Breakout session: Smart Farming

Definition

Several challenges need to be addressed.

- a) leveraging on hyper-connectivity
- b) enabling interoperability of solutions and semantically enriched information distributions
- c) facilitating object and data reuse across application domains

What are the takeaway from this breakout session?

We have had three subjects, which have been discussed

- What are the relevant standards for smart farming?
- What is the reference architecture model?
- What are the semantic interoperability standards?
- The relationship with the IoF2020

Starting with the first subject: what are the relevant standards for the smart farming domain?

- There is ISOBUS for safety and interoperability between the machines, and the presentation from AEF provided some rationale for this standard
- If we want to talk about synergies, the farmers are playing a key role, and we need to consider what they are waiting for
- We need to identify to which group we are talking about, and also we need to determine the boundaries
- There are a lot of high level standards in this area with a wide scope and can be extended to other vertical silos

The second subject, which reference architecture model to refer to?

- There are 19 use cases in the IoF where the LSP will structure the debate, but the question for IoF today is: which model / High Level Architecture do you want to use?
- We have:
 - o Definition and use of architecture reference models
 - o Existing competing architecture with different models
- The RAMI/IIRM4.0 model could be a one of the options for the transcription of the Agrifood architecture
- Domain model as a baseline for IoT services
 - o AIOTI HLA: the domain models along with the functional model could be used

The third subject is dealing with semantic interoperability standards

- How far can we go with the definition of interoperability for the ontology initiative in the agrifood sector?
- ETSI CIM is a kind of convergence for the difference stakeholders
- ETSI is the place to make talk different stakeholders

We need to have the extension of the requirements for the development of the semantic. The information that we call for is to provide the access to the different clouds.

The different platforms for the exchange of the data are today not possible because these platforms: 365Famnet, MyJohnDeere, etc... are proprietary

There are three communities which don't talk to each other.

- **The first group** is the XML messaging standards communicating the event, AEF, AgGateway with the scope of precision farming and production
- **The second group** is ontology which describe things in the world, the academic research world, where they have hundreds of models: Agrovoc
- **The third group** is the supply chain, the Agrifood and where they belong to the different worlds EPCIS GS1 is part of the IoF2020

Conclusion:

- Digitalization in agriculture will play a key role to address the needs for food of our growing population in a sustainable way.
- We are already in the middle of the digitalization of Agricultural machinery.
- More and more players provide services and offer big data based prescriptions. This will foster the adoption of smart farming.
- Smart Farming can only be successful with cloud-based seamless data exchange and partnering of the companies in the value chain.