



# **Smart Food and Agribusiness: Future Internet for Safe and Healthy Food from Farm to Fork**

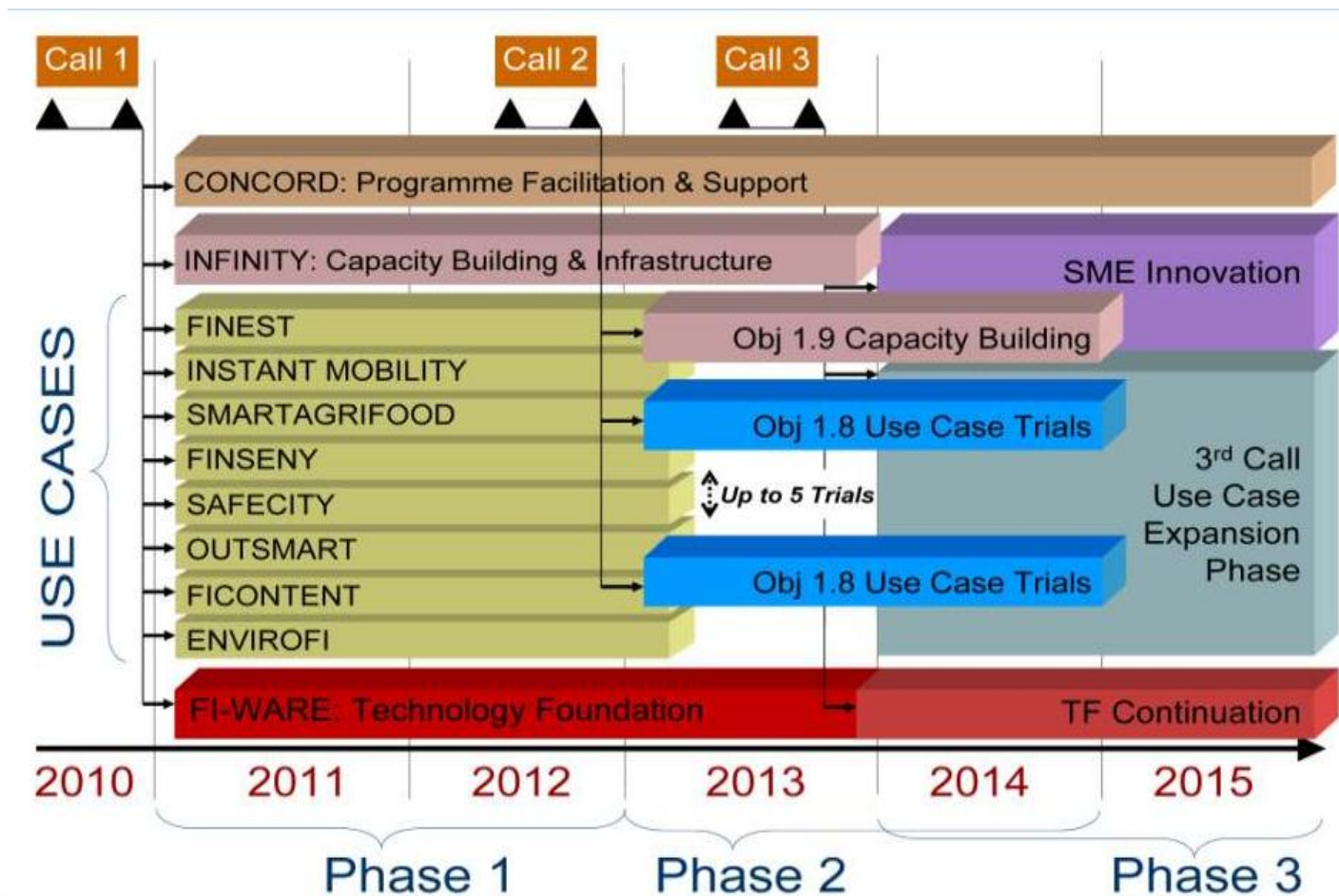
Call: FP7-2011-ICT-FI

Proposal Number: 285 326

Proposal Acronym: SmartAgriFood



# FI-PPP programme architecture



# FI-PPP Implementation Roadmap

## Call 1 Identifier: FP7-2011-ICT-FI (20 July – 2 December 2010) – budget 90M Euro

- Technology Foundation (one IP, 41M Euro, 3 years, 30% flexible)
- **Use Case Scenarios – Phase 1 (7-8 areas, IP, 5M Euro, 2 years)**
- Capacity Building (one CSA, 3M Euro, 3 years)
- Programme support (one CSA, 6M Euro, 5 years)

## Call 2 Identifier: FP7-2012-ICT-FI (18 May – 28 October 2012) – budget 80M Euro

- Use Case Scenarios Pilots – Phase 2 (5 areas, 13.5M Euro, 2 years)
- Capacity Building (one IP, 12.5M Euro, 2 years)

## Call 3 Identifier: FP7-2013-ICT-FI (December 2013) – budget 130M Euro

- Devoted to the expansion and enlargement of many testbeds and pilots (several areas, ~100M Euro, 2 years)

# Phase 1 (Work Programme 2011-12)

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- Derive the **architecture** and identify the **common enablers** of the core platform; start developing components.
- Define the **usage area requirements** on the Future Internet for supporting their business processes, identify the **scenarios for early trials** including the infrastructure to support them; and **start implementing domain specific functionalities**.
- Start the **evaluation of test infrastructures** and consider where investments need to be made to bring infrastructures to the level necessary to enable trials.
- Establish the **programme support and coordination** structures.

# Objectives Smart Agri-Food

To boost the application and use of future internet ICTs in the agri-food sector by:

- identifying and describing the technical, functional and non-functional **FI-specifications** for experimentation in smart agri-food production as a whole system and in particular for smart farming, smart agri-logistics and smart food awareness
- identifying and developing smart agri-food-specific **capabilities and conceptual prototypes**, demonstrating critical technological solutions including the feasibility to further develop them in large scale experimentation and validation
- identifying and describing existing **experimentation structures** and start **user community building**, resulting in an implementation plan for the next phase

# Introduction

## • AGRI-FOOD DOMAIN

- 40 % of the EU's land area being farmed (Eurostat 2010)
- Agriculture has a very important impact on the natural environment
- The food and drink industry is representing 13% of EU manufacturing sector turnover (CIAA 2010, data 2007)
- The EU is the world's largest food and drink exporter with a share of EU exports to world markets of 17.5% in 2008 (CIAA 2010)
- Share of agri-food logistics in the EU road transport is about 20% (Eurostat/TLN 2008, data 2007)
- 11% share of agriculture-related products in total export value of EU countries in 2009 (Eurostat Comext trade data / Eurostat)

## CHALLENGE

## • CHALLENGES TO BE MET

- Increase of world population
- To reduce the effects of climate change
- Growing welfare in emerging economies
- Shift towards a bio-based economy
- Competing claims on land, fresh water and labour
- Etc.

## The SMARTAGRIFOOD project aims to:

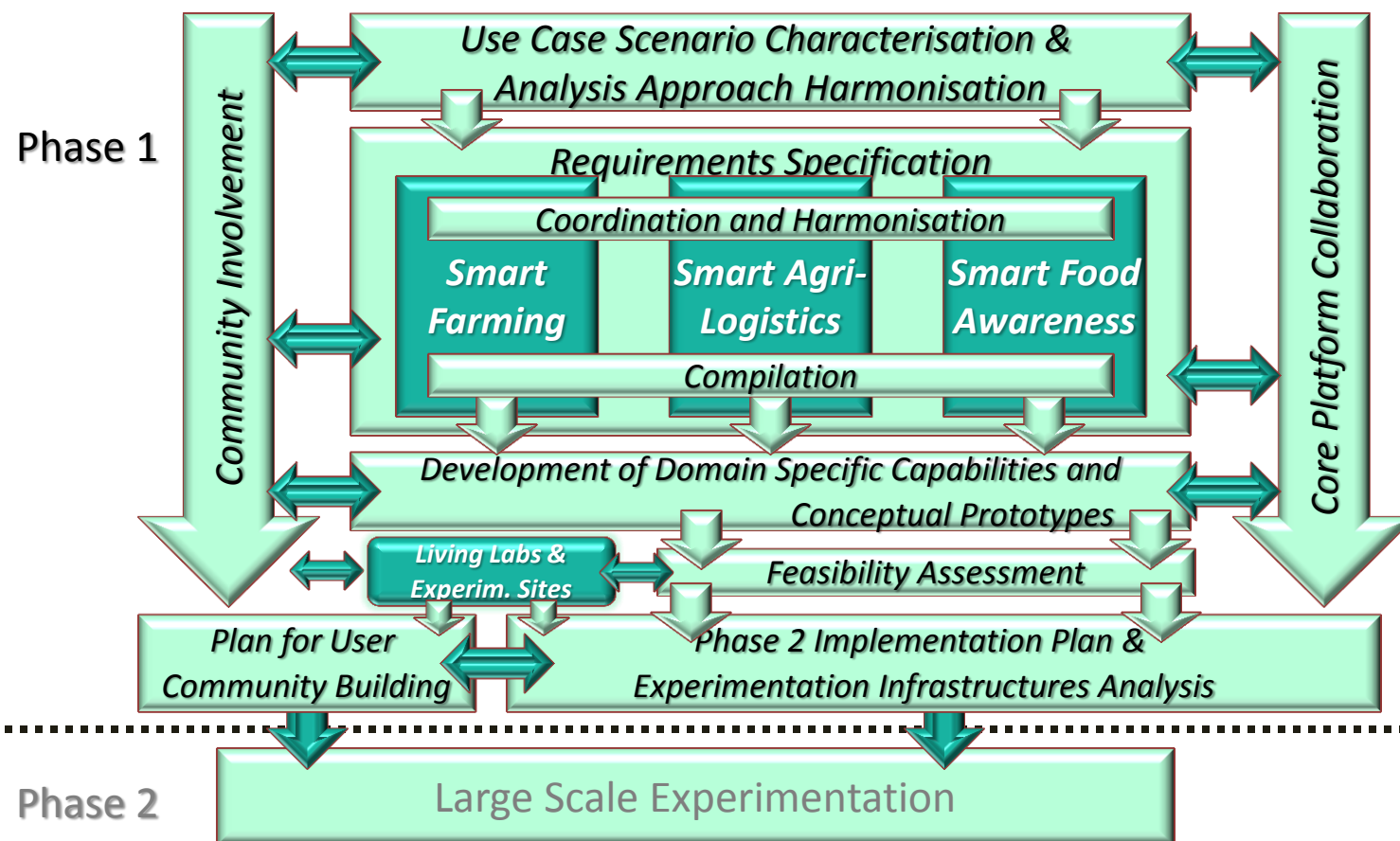
- Boost the application and use of future internet ICTs in Agri-Food
- Increase the competitiveness and sustainability of Agri-Food
- Affect a huge number of Agri-Food SMEs throughout Europe

# Agri-Food-specific characteristics and needs

- Natural conditions (e.g. soil, weather, pests)
- Seasonal growing
- Natural products: growth, decay, high quality variations
- High demands from consumers and society (legislation, certification, food safety)
- High volume distribution
- Governance: large processors, many SME's in global chains
- Dynamic open Supply Chain networks (SCN)

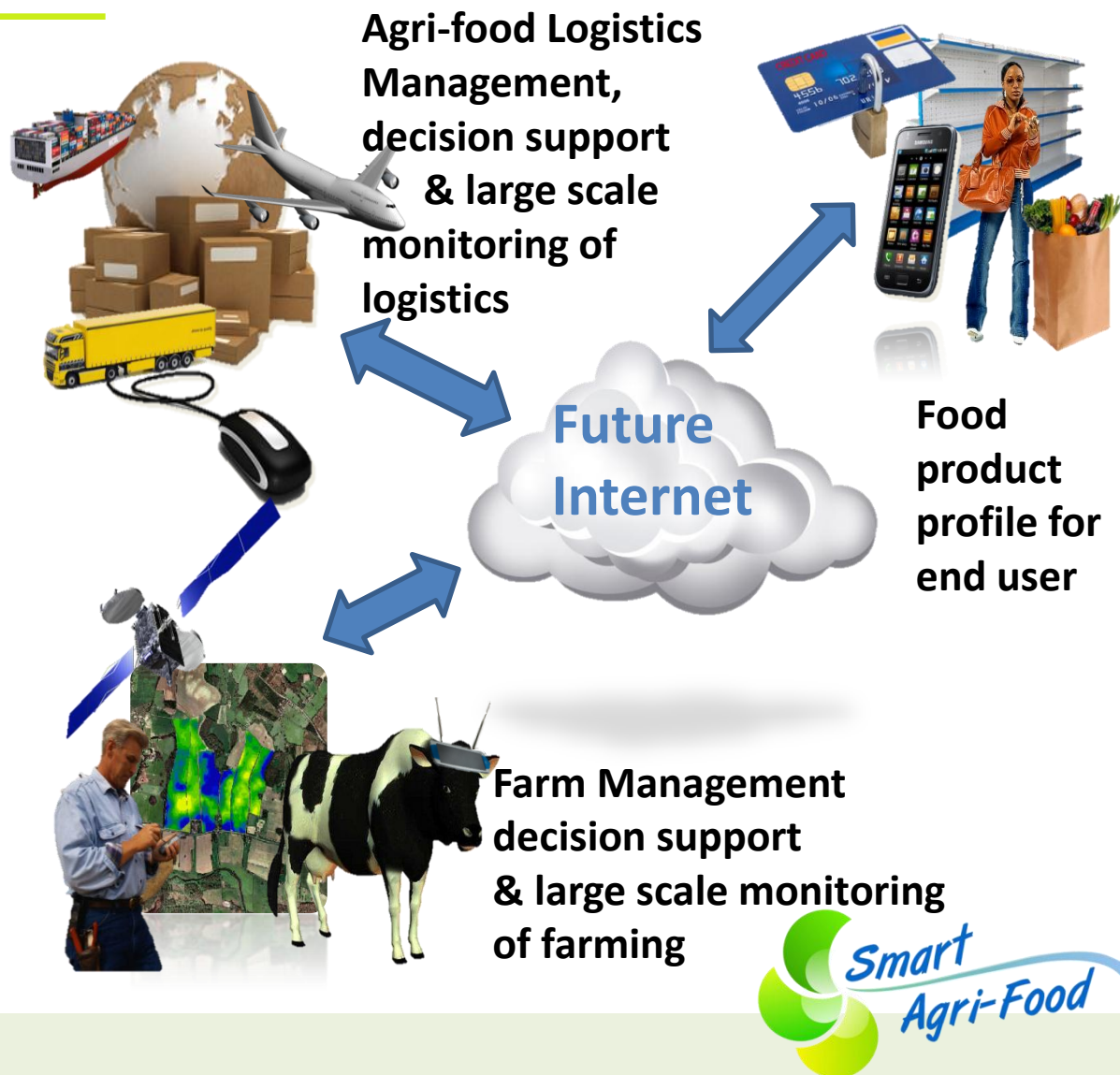
| Generic   | Specific   |
|---|--|
| augmented reality, geo-information, wireless sensors and networks, mobile | precision farming, product storing and conservation  |
| (real time) data handling, context-sensitive eContent, web mash-ups       | on-line business intelligence, integrate scientific knowledge ('active publishing')                            |
| eBusiness, eGovernment eHealth  | crop production message, flower web shops, veterinary issues, animal health/welfare                            |
| social/semantic web, (ERP) cloud software (BPM, SOA, SaaS)                | knowledge networking (at distance), chain info-integration, dynamic planning, tracking & tracing, transparency |

# Overall strategy for SmartAgrifood for Phase 1.



### 3 Use Case Scenario's: from farm to fork

- A. Smart Farming
- B. Smart Agri-Logistics
- C. Smart Food Awareness

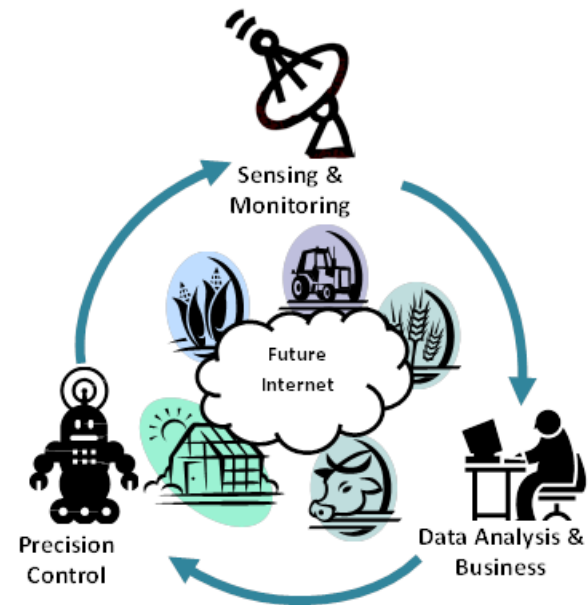


FUTURE  
INTERNET  
PPP



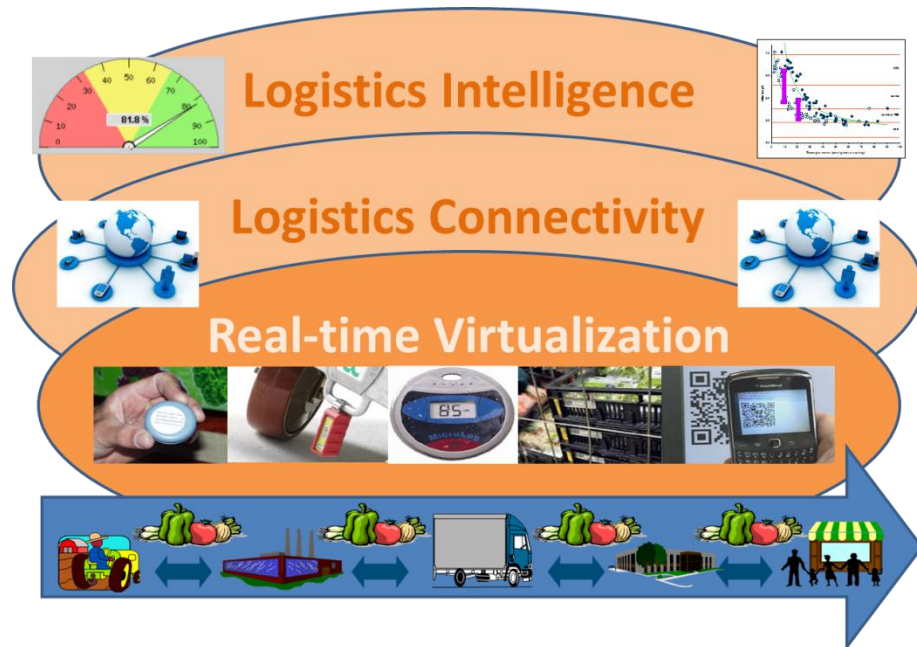
# WP200 Smart Farming

- **Smart Farming**
  - sensors and traceability
- concerns first the use of sensors and monitoring, decision support systems and precise input application so as to make the use of resources more efficient in food production, and secondly concerns ways to improve traceability and the flow of data along the food supply chain



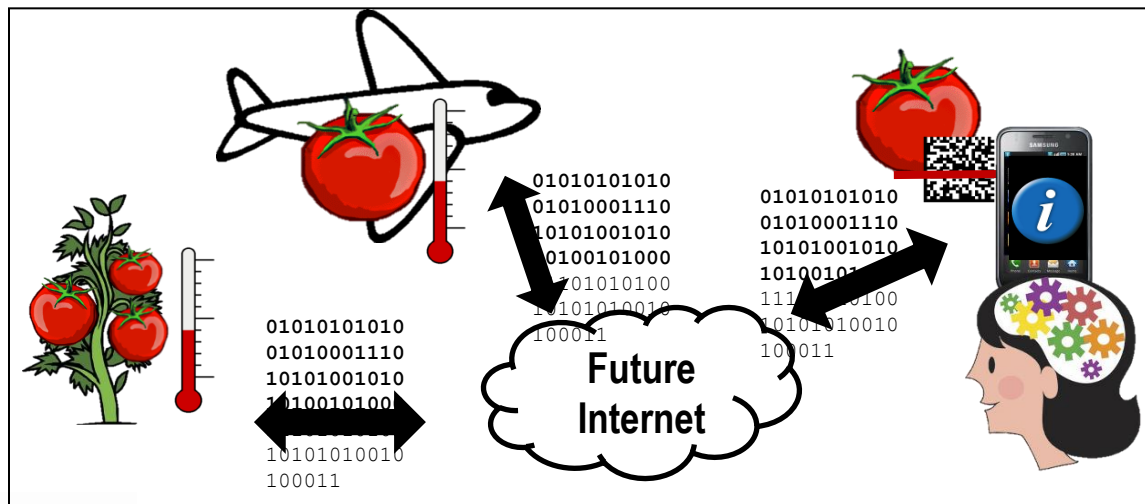
# WP300 Smart Agri-Logistics

- **Smart agri-logistics**
  - real-time virtualization, connectivity, logistics intelligence
- concerns the intelligent matching of supply and demand followed by smart transport and logistics of agri-food products by eg. tracking of food products, conditioned transport using sensors and control systems, remotely controlled early warning systems, and better predictions of food transportation needs



# WP400 Smart Food Awareness

- **Smart food awareness**
  - transparency of data and knowledge representation
- concerns enabling the consumer with relevant information eg. concerning safety, availability, health, environmental impact, and animal welfare, to make informed decision and to make the activities carried out in the entire food production chain transparent



# To conclude (1)

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What benefits can this project bring for ordinary citizens:

- Better quality and safer food, which
  - meets the consumers' demands better,
  - available at the right place in the right time, at reasonable cost,
  - with less impact on the environment
  - through better operations based on improved flow of information
- Greater knowledge and awareness about where our food comes from

## To conclude (2)

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For the members of agri-food chain from farmers through food processing, logistics and retailing, the project will contribute to

- the design of enabling tools for decision making and controls for lowering the inputs
- reducing costs
- increasing market relevant data for all people and organisations involved
- the recognition that farming and food production while technically challenging is central to our collective future

# Consortium

- **21** beneficiaries from **7** countries
- Balanced consortium
- Connected to
  - ETP Food for Life by CBHU
  - ETP Manufuture, subgroup Agricultural Engineering and Technology (AET) by John Deere
  - ETP EpoSS by VTT
  - ICT-agri ERANET by TNO/Wageningen University
  - Network of EHI retail institute
  - Local industry platforms
  - Local governments
  - Euro Pool System

|                 | Research      |     | Industry/<br>end-users |     |
|-----------------|---------------|-----|------------------------|-----|
|                 | Agri-<br>food | ICT | Agri-<br>food          | ICT |
| DLO-WUR         | ++            | +   |                        |     |
| ATB             | +             | ++  |                        |     |
| TNO             | +             | ++  |                        |     |
| CENTMA          | ++            | +   |                        |     |
| ATOS            |               |     |                        | ++  |
| ASI             |               |     |                        | ++  |
| HWDU            |               |     |                        | ++  |
| MTT             | ++            | +   |                        |     |
| KTBL            | ++            | +   |                        |     |
| NKUA            |               | ++  |                        |     |
| UPM             |               | ++  |                        |     |
| Campden BHU     |               |     | ++                     |     |
| Aston Uni.      |               | ++  |                        |     |
| VTT             | +             | ++  |                        |     |
| OPEKEPE         |               |     | ++                     |     |
| John Deere      |               |     | ++                     | +   |
| Wageningen Uni. | ++            | +   |                        |     |
| EHI Retail      |               |     | ++                     |     |
| GS1             |               |     | ++                     | +   |
| SGS             |               |     | ++                     | +   |
| BonPreu         |               |     | ++                     |     |

## To conclude 2.

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It will enhance the dialogue between the user's community and the ICT community to identify, develop and test new concepts for better exploitation of the Future Internet in the agri-food sector



**Thank you!**  
**Questions?**

