AGRIFOOD – FRONTRUNNER IN IOT

IoF2020 – The Internet of Food and Farm

GEORGE BEERS

Venlo, June 29, 2017
ADVANCEMENTS IN FARMING

BIG DATA

SMART SENSING & MONITORING

SMART ANALYSIS & PLANNING

SMART CONTROL
INVOLVING ENTIRE SUPPLY CHAIN AND BEYOND

Smart Farming
tracking & tracing

Smart Logistics

Domotics

Health

Fitness/Well-being
IOF2020 IN BRIEF

73 PARTNERS ORGANISATIONS

16 COUNTRIES

4 YEARS
Start = January 2017

€35 MILLION BUDGET
(€30 million co-funded under EU H2020 programme)
PROJECT OBJECTIVES

IoF2020 fosters a large-scale uptake of IoT in the European farming and food sector. In brief, it aims to:

1. Demonstrate the business case of IoT for a large number of application areas in farming and food sector;
2. Integrate and reuse available IoT technologies by exploiting open infrastructures and standards;
3. Ensure user acceptability of IoT solutions in farming and food sector by addressing user needs, including security, privacy and trust issues;
4. Ensure the sustainability of IoT solutions beyond the project by validating the related business models and setting up an IoT ecosystem for large scale uptake.
Agri-Food and Future Internet (FIWARE)

FIWARE:
Open Sustainable Ecosystem around public royalty-free and implementation driven software platform and standards that will ease the creation of Smart Applications in multiple sectors

Set-up as a EU PPP project – now independent organization (Fiware Foundation)

AgriFood involved from start as one of the ‘verticals’.
AgriFood in FIWARE phases

FI-PPP Phase 1
Use case scenarios & conceptual prototypes

- SmartAgriFood1
  - Smart Farming
  - Smart Agri-Logistics
  - Smart Food Awareness

FI-PPP Phase 2
Large-scale experimentation

- FI-Ware platform
  - App store

FI-PPP Phase 3
Acceleration

- SmartAgriFood2
  - FINISH
  - FRACTALS

- 125 Apps
  - Embedded and tested by users
  - Business plans

IoT Phase 4
Large Scale Pilots

- Internet of Things

XIFI Infrastructures

Use

Capabilities

Needs

FI-Ware Generic Enablers

Instantiate

FI-Ware Generic Enablers

Use

Instantiate

Use

Support

FI-Ware extension and usage (1.9)
FIWARE $\rightarrow$ IoT

Data Source (e.g. Sensor) $\rightarrow$ Application

Data sources (Sensors, Satellite, MIS, Government etc) $\rightarrow$ Applications

SME’s $\rightarrow$ LSP

$\rightarrow$ Actors, Integration, Standards, Business Models, Ethics
Overall concept for 4 year, 30M€ project
5 TRIALS, 19 USE CASES

- ARABLE
- FRUITS
- DAIRY
- VEGETABLES
- MEAT
REQUIREMENTS ➔ RE-USABLE COMPONENTS

USE CASE REQUIREMENTS

- Use case architecture
- Use case IoT system developed
- Use case IoT system implemented
- Use case IoT system deployed

Project level

- IoT reference architecture
- IoT catalogue
- IoT Lab

Reuse

sustain

instance of

IoT reference architecture

Reuseable IoT components

Reference configurations & instances

Collaboration Space

IoT-A

FIWARE

AgGateway

ETSI

GS1

EPCglobal

ISO 383

Coface

Ovum

Flspace

Business Collaboration
TRIAL & USES CASES METHODOLOGY LEAN APPROACH

TECNOLOGY
IMPROVEMENTS
Fine tuning

ECOSYSTEM
END USER FEEDBACK
Involvement & co-creation

BUSINESS
KPIs EVALUATION
Measurement & monitoring

MVP1
Initial Deployment

MVP2
First Release

MVP3
Second Release

DEMO
Large scale
GENERIC APPROACH & STRUCTURE

WP1 Project Coordination & Management

WP2 Trials/Use cases: Knowledge & App development
Lean multi-actor approach

1. CO-DESIGN
2. IMPLEMENTATION
3. EVALUATION

WP3 IoT Integration

WP4 Business Support

WP5 Ecosystem Development

P1
P2
P3

LARGE SCALE

IOF2020 ECOSYSTEM & COLLABORATION SPACE
BUSINESS SUPPORT

KPI & IMPACT
Calculate costs savings and effects on revenue development & financing plans for farmers

BUSINESS MODELS
Different business models will be tested to identify the most successful and sustaining ones

MARKET STUDY
Buying and selling a product is the best lorem service.

PRIVACY GUIDELINES
Develop standard procedures and guidelines to handle sensitive information and to protect IP
TOWARDS THE IOF2020 ECOSYSTEM

- Farmers
- Science Community
- Investors
- Policy-Makers and Regulators
- Cooperatives
- General Public and Media

- End-Users
  - Farm equipment suppliers
  - Food processing companies
  - Retailers
  - Transporters
  - Consumer organisations

- IOF Technology Providers

- NGOs & Interest Organisations

- Agricultural (Independent) Advisory Services

- Business Support Organisations
  - Accelerators
  - Incubators
  - Chambers of commerce
  - Network(s) of enterprises
TOWARDS THE IOF2020 ECOSYSTEM

The ecosystem connects all these different communities and actors to work together on developing new solutions for more sustainable and competitive agriculture in Europe.

The eco-system provides the ground for:

- Enhancing the development and the market uptake of IoT technologies in the agri-food sector;
- Improving the acceptability of the IoT technologies among the end-users;
- Enhancing the interoperability of the IoT technologies developed in the IoF2020 project;
- Paving the way for future replication of IoT technologies in Europe’s agriculture sector.
AMBITON & VISION

IoF2020 will pave the way for:

- Data-driven Farming;
- Autonomous Farm Operations;
- Virtual Food Chains;
- Personalized Nutrition for European citizens.
TRIALS & USE CASES
A MULTI-ACTOR APPROACH

- End-users, farmers
- Infrastructure providers
- IoT integrators
- Researchers
THE INTERNET OF ARABLE FARM

- Within Field Management Zoning (potatoes)
- Precision Crop Management (wheat)
- Soya Protein Management
- Farm Machine Integration
THE INTERNET OF DAIRY FARM

- Grazing Cow Monitor
- Happy Cow
- Silent Herdsman
- Remote Milk Quality
THE INTERNET OF VEGETABLES

- City Farming Leafy Vegetables
- Chain Integrated Greenhouse Production
- Added Value Weeding Data
- Enhanced Quality Certification
THE INTERNET OF FRUIT

- Fresh Table Grapes Chain
- Big Wine Optimization
- Automated Olive Chain
- Intelligent Fruit Logistics
THE INTERNET OF MEAT

- Pig Farm Management
- Poultry Chain Management
- Meat Transparency and Traceability
Agri-Food Frontrunner?

- AgriFood most successful in Acceleration program
- One of the 3 strategic ‘verticals’ for FIWARE
- AgriFood as largest of the 5 IoT Large Scale Pilot

Success factors:
- Innovative sector
- Well organized sector
- SME’s
- Urgency
STAY-TUNED VIA

- Website: www.iof2020.eu

- Twitter: @IoF2020

- Newsletter subscription & contact: communications@iof2020.eu
THANK YOU FOR YOUR ATTENTION!

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