Deliverable D500.1.2

Detailed plan for educational and training activities: plan and schedule

WP500

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The FIspace Project

Leveraging on outcomes of two complementary Phase 1 use case projects (FInest & SmartAgriFood), aim of FIspace is to pioneer towards fundamental changes on how collaborative business networks will work in future. FIspace will develop a multi-domain Business Collaboration Space (short: FIspace) that employs FI technologies for enabling seamless collaboration in open, cross-organizational business networks, establish eight working Experimentation Sites in Europe where Pilot Applications are tested in Early Trials for Agri-Food, Transport & Logistics and prepare for industrial uptake by engaging with players & associations from relevant industry sectors and IT industry.

Project Summary

As a use case project in Phase 2 of the FI PPP, FIspace aims at developing and validating novel Future-Internet-enabled solutions to address the pressing challenges arising in collaborative business networks, focussing on use cases from the Agri-Food, Transport and Logistics industries. FIspace will focus on exploiting, incorporating and validating the Generic Enablers provided by the FI PPP Core Platform with the aim of realising an extensible collaboration service for business networks together with a set of innovative test applications that allow for radical improvements in how networked businesses can work in the future. Those solutions will be demonstrated and tested through early trials on experimentation sites across Europe. The project results will be open to the FI PPP program and the general public, and the pro-active engagement of larger user communities and external solution providers will foster innovation and industrial uptake planned for Phase 3 of the FI PPP.

Project Consortium

- DLO; Netherlands
- ATB Bremen; Germany
- IBM; Israel
- KocSistem; Turkey
- Aston University; United Kingdom
- ENoLL; Belgium
- KTBL; Germany
- NKUA; Greece
- Wageningen University; Netherlands
- PlusFresc; Spain
- FloriCode; Netherlands
- Kverneland; Netherlands
- North Sea Container Line; Norway
- LimeTri; Netherlands

- Kühne + Nagel; Switzerland
- University Duisburg Essen; Germany
- ATOS; Spain
- The Open Group; United Kingdom
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Dissemination Level

PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	X
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Executive Summary

The FIspace project is targeting towards stakeholders in system development as well as towards stakeholders that are interested in building on IT based solutions in solving pressing problems in their economic activity. With this understanding, the project and its partners need to interact with potential stakeholders to make them aware of the project and to support them in preparing for phase 3 of the program.

The interaction with the stakeholders will develop during the course of the project depending on its development and outcome. To support the interaction, groups within the project that are at the forefront of stakeholder communication have made first preliminary plans on how to organize the interaction and what material might be needed in making the interaction successful.

The relevant project groups are primarily the groups dealing with the trials as they know their constituency and need to stepwise get them involved in preparation for phase 3 of the program. A second group involves the partners that have the expertise to make system development groups able to build on the results of the project in future application development activities. As a last group of relevance the project builds on partners that support potential organizers of follow-up projects in gatting such projects off the ground.

This deliverable has collected information from all three groups to bring up their initial plans on how to move forward in terms of interaction and material development. Of course, these initial plans will need to be further developed and revised in line with experiences and project developments. However, the deliverable provides a first base on which the project can build.

A specific issue concerns project internal interaction that enables all partners to gain the expertise necessary for successful and competent interaction with stakeholders. So some activities relate to the internal communication aspects.

The deliverable differs from general dissemination as the activity plans are not geared towards the general public but towards dedicated stakeholder groups that the project partners consider potential partners during the ongoing project but especially for phase 3 of the project. The core of these groups are stakeholders that are already participating actively in the development of the project even that they are not listed as official partners. They are the primary multiplicators. A second group involves stakeholders that are being regularly informed for getting prepared for phase 3.

The content of this deliverable needs to be regularly revised. To this end it will provide the basis for a summary project plan that project partners could revise in the course of the project.

Abbreviations

App	Software Application		i.e.	id est = that is to say
AEF	Agricultural Industry Electronics Foundation		IP	Intellectual Property
D	Deliverable		IPR	Intellectual Property Rights
DoW	Description of Work		KPI	Key Performance Indicator
EC	European Commission		M	Month
e.g.	Exempli gratia = for example		RTD	Research and Technological Development
ERP	Enterprise Resource Planning		SAF	SmartAgriFood
EU	European Union		SME	Small and Medium Sized Enterprise
FIA	Future Internet Assembly		ST	Sub-Task
FI PPP	Future Internet Public Private Partnership		T	Task
FMIS	Farm Management Information System		TIC	Tailored Information for Consumers
FP7	Framework Programme 7		WP	Work Package
GA	Grant Agreement			
ICT	Information and Communication Technology			

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Part I: Overview

1   Introduction

1.1   Objective of the report

This document is the Knowledge Transfer and Education Plan of the FIspace Project. It is a result of the work in sub task 512, with involvement of the use case trail leaders, and inputs from WP200 and W300 representatives. With the input collected from the other work packages, the report describes the activities and the material already available and the community already involved. Furthermore, the report summarizes future activities and material already planned at this stage of the project. Thus, the current document reflects the existing and planned activities and material and will be updated during the project (M12 and M24 reports).

The sub-task 512 was defined with the main goal of identifying and structuring educational activities and material for internal project participants and external partners interested in participating in phase 2 and phase 3 of the FIspace project. This part of the parent task 510 "Ecosystem Incubation" that deals with the process and actions to build local, regional and cross-border communities across Europe and beyond. Respectively, these communities have to get to know, to understand and to use the project capabilities, and as such, they should be able to exploit the potential for innovation of the FIspace platform. Therefore, sub task 512 provides a core element in leading these partners successfully into the FIspace future. In later steps of the project sub task 513 will establish a collaborative online supporting tool, which assists sub task 512 in transferring knowledge to partners and make information easily accessible.

1.2   Stakeholders and expectations

Internal stakeholder:

Internally, the eight use case trials represented in WP400 as well as work packages WP200, WP300 and also the related tasks of WP 500 will benefit from the collection provided of the present deliverable. In this context the, profiting parties are:

WP400:

- T421: Crop Protection & Information Sharing
- T422: Greenhouse Management and Control
- T431: Fish Distribution & Planning
- T432: Fresh Fruits & Vegetables Quality Control
- T433: Flowers & Plants Supply Chain Monitoring
- T441: Meat Information Provenance
- T442: Import/Export of Consumer Goods
- T443: Tailored Information for Consumer Goods

Use case trails: their individual communities will be educated and trained to be able to manage the FIspace tasks expected from them. A shared overview on parallel actions leads to increased efficiency and saves coordinating time

The present deliverable summarizes each use case trial stakeholder groups and illustrates their individual needs. Furthermore, an overview is given on what already has been done and will be done by the trial in later times of the project.

WP200:

This WP will deliver essential contributions in integrating software developers and educating them in the usage of FIspace and the facilitation of its core functionalities. This is relevant for Open Call Winners in Phase 2 and Phase 3 projects.

WP300:

Similar to WP 200, this WP is to a great extend involved in phase 3 and even the time after the project has ended as they provide knowledge on the FIspace operating platform and its hosting requirements. WP 300 will need to educate phase 3 developers and trial stakeholders in the various options FIspace can offer them. Therefore, this WP benefits as well from a shared overview on current and planned activities and events.

WP500:

The task force of WP500 is responsible for presenting the FIspace project to the outside world. Having a condensed and constantly updated overview on activities and material created by the other WPs and especially by the trials supports their promoting and educating activities in a meaningful way.

External stakeholders:

The predecessor projects SmartAgriFood and Finest projects already identified important external stakeholders. Consequently, a detailed understanding of who those stakeholders are is existing since the beginning of the phase 2 FIspace project. Hence, the FIspace community involves the following type of stakeholders:

- Infrastructure owners
- ICT solution providers including:
    - SME ICT app developers
    - SME ICT system integrators
    - ICT solution providers in general (not included in the previous 2 categories)
- Industry stakeholder groups (food, logistics, others) as potential system users
- Other stakeholder groups as potential system users (farms, etc)
- Owners of national, European and global certification schemes
- European policy groups
- Multipliers in training institutions and research
- SME Intermediaries and community managers (phase 3 proposers)
- Others (not included in the previous categories)

Regarding external partners of the FIspace project, the deliverable will support the fast integration of future partners. These communities have to be prepared to participate in the Open Calls in phase 2 of the FI-PPP programm and for phase 3. Dedicated trainings and events shall secure an efficient and effective understanding of the project and programme content. Accordingly, they will be prepared for their upcoming tasks and responsibilities within the project.

1.3   Future Internet promises and FIspace responsibilities

From a supply chain user perspective, FIspace opens the possibility to solve one of the most pressing problems within the business sectors, the communication within the dynamically changing trade relationships among the wide networks of potential suppliers and customers.

Outside fixed chain trade relationships, the communication among members of principally open business networks is a prerequisite for tracking and tracing, transparency, customer and consumer trust, and, in case of food networks, the support and assurance of food safety and quality. This could have a major impact on the development of business sectors and the competitiveness of industry.

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1.4 .Organization of the report

Sub task 512 represents a bundling entity, which is primary responsible for coordinating activities and material provided by WP200, WP300, WP400 and WP500. As the activities of the different work packages focus on different stakeholders, the report is delineated along the different stakeholder groups that are being addressed within the ecosystem. WP200 and WP300 are primarily focusing on internal and external (with phase 3 interest) development groups, the trials in WP400 address primarily potential user groups or developers associated with them. The link with WP500 is through the groups that might act as project proposers in phase 3 of the program. The goal is to create an overview on the status quo transparent for every participant and facilitate future actions. Accordingly, the basis for constructing a timeline on activities and to identify the material needed for an effective knowledge transfer each trial was asked to provide an overview on their individual target groups. In the context of dedicated trainings it is essential to very clearly depict the target audience and their individual expectations. A number of 'user stories' will show trial specific benefits regarding the FIspace vision. Moreover, past and planned activities to reach specific target groups as well as the related material will be illustrated.

Besides the use case trials, system development stakeholders, e.g. farm management IT-providers or chain IT-providers are focus groups. Regarding the large scale implementation of FIspace, possibilities for stakeholders as potential consortia organizers are of interest for knowledge transfer planning activities.

Part II: Business Stakeholders: Activities and material for support

This part of the report comprises material and activities that primarily focus on stakeholders from the business community that are identified by the various trials identified within the FIspace project as potential users of the systems to be developed. They include user groups that are already linked to the experiments planned within this project within phase 2 of the FI-PPP program, potential user groups that might engage in phase 3 of the program and potential user group with interest to follow up on developments.

2   Communicating with the Farming Community in the Trial 'Smart Spraying'

2.1   Identification of target group

In this trial, six target groups can be identified:

1.   The primary producers, the farmers. They are in number by far the largest group of stakeholders, but in general too small to set up their own ERP or Management In-formation Systems. They therefore rely on System Developers, i.e. producers of Farm Management Information Systems. Advisory modules are up to now bundled with FMIS packages. FIspace is an interesting proposition for farmers as it opens the possibility to deliver the functionalities found in the present FMIS's in independent Apps or services. The possibility to combine Apps or Services from different providers (realized by the business collaboration objects) makes it possible to select the service from that provider which fits the best in the particular requirements of the individual farm.

2.   The advisors. These are organizations that deliver advice on one or more aspects of crop production. Up to now there was an implicit need to develop a FMIS along the provided advisory module to assure access to basic management data on fields or animals. This makes market entrance very difficult as farmers will stick to their present FMIS, or they have to do redundant data entry when they operate more FMIS'. The FIspace architecture provides the possibility to concentrate on the advisory module(s). A requirement is that FMIS' use standardized interfaces to access the functionality of ten advisory modules.

3.   Service providers. The FIspace infrastructure opens also the possibility for service providers, like meteo services, providers of satellite data etc. to provide (data) services that can be used either by the farmers directly or advisors.

4.   The processors of products. Processors of products require data on the way crops are produced. They want access to this data to give advice on how to improve production and for tracking and tracing purposes. The FIspace environment and especially the Business Collaboration objects provide the possibility to give processors access to the data of farmers on a safe and easy manner, as authentication is controlled by the baseline apps from FIspace.

5.   The deliverers of products. Companies that deliver products for farmers can provide information on those products which are useful for the farmers.

6.   The government. Government authorities request information from agricultural production. A clear example is information on agricultural fields with the class of crop grown on them. On the other hand, the government generates valuable information like for example the registration of allowed Plant Protection Products. Use of the FIspace platform to exchange this type of information and to make it accessible to a wider range of users will generate added value.

2.2   Vision and expectations of target group ("user story")

Expectation of the Farming Community:

Target groups that provide apps or services expect from FIspace that they can concentrate on their business and that part of the generic overhead is solved by the platform. They also expect from such a platform that a large part or all of their potential customers can be reached by means of the platform.

Target groups that use Apps or services expect that they can find Apps and Services that are relevant for their business. They expect that those apps/services can cooperate among each other and with their own ERP or FMIS system. They therefore expect that offered apps are certified to comply with certain standards that are required for cooperation, i.e. exchange of data.

What FIspace will deliver (Some of the above called "overhead" that can be delivered by FIspace is):

- An App store where providers of apps can place their Apps or services and where is taken care of distributions and payment.
- A means of authentication and authorization for access to certain data.
- A means to configure cooperation of Apps or Services and definition of events to control those apps.

What FIspace will not deliver, but has to be done by user associations:

The FIspace platform will not specify data interfaces for data exchange between Apps, services and the ERP or FMIS systems. User associations are needed for the domains which co-operate through the FIspace platform. They will specify the interfaces and should also be responsible for testing compliance of apps offered in the App Store.

2.3   Addressing target group during project duration

Past activities:

Past activities were concentrated on the potential providers of Apps and the non-farmer user groups. In the Netherlands there is the Association AgroConnect with all the mentioned non-farmer target groups as members. The interfaces developed for the Crop Protection Information sharing trial are also input for the development of standard interfaces. The result of this work is also brought to the international level; i.e. ISO/TC23/SC19/WG1 & WG 5 and the manufacturers association AEF.

Farmers were intentionally not contacted in this stage of development of the project. To reach this group with success we need running implementations of some of the Apps or Services.

Planned activities:

For the 2014 growing season we will cooperate with four commercial farms which are invited to use the Whole Field Phytophthora Advice parallel to their existing system.

When the advisory system works as foreseen, farmer groups in the region of the participating farms will be invited for demonstrations of the system. Feedback will be used for improvements.

In phase 3 of the FI-PPP program a large scale rollout for all farmers in the Netherlands is foreseen.

2014 will be used for communication and demonstration of the FIspace platform to all other target groups (see table 1). They will be invited to apply for open calls in the third phase of the program if there are projects in the field of agriculture:

Table 1:   Planned activities of the Farming Community trial

Type of communication	Target Group	Focus	Timing
Workshop	Commercial farm partners	Whole Field Phytophthora Advice demonstration	M12 on-going
Workshop	Farmer groups in the region	Further demonstrations of the advice system and feedback	M13 on-going
Workshop	Farmer in the Netherlands	Large scale role out of the advice system	M 15 on-going
Workshop	Regional part-ners and inter-ested groups	Communication and demonstration of the FIspace platform	M7-M24

2.4   Provision of material and utilization plans during project duration

In October 2013 the reference model for crop production will be published and used as input for national (AgroConnect) and international standardization activities. Based on the reference model, a number of interfaces will be specified for data exchange between particular types of applications.

In November 2013 interfaces will be published for

- an advice request
- an advice
- executed field operations

End 2013, early 2014 an interface will be published for

- weather predictions
- past weather

A summary of material available or prepared on request is outlined in table 2.

Table 2:   Provision of material from the Farming Community trial

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Farms	Informational material (documents, presentations)	Y	Y	Usability description of Advice Interfaces	Y	On request
Farms	Informational material (documents, presentations)	Y	Y	Usability description of Weather Interfaces	Y	On request

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3 Communicating with the Farming Community in the Trial 'Greenhouse Management and Control'

3.1 Identification of target group

As already analysed in the business requirements of the WP400 deliverable D400.1, the Greenhouse Management and Control trial has as main objective to improve the business procedures and collaboration mechanisms between different legacy systems, business actors and stakeholders as far as the management of Greenhouses is concerned.

For each one of the scenarios defined, novel Apps, which will be available in the FIspace Store, will provide the opportunity to Farmers, Farm Managers, End-Product Producers etc., to maximize the efficiency of their Greenhouse-related activities, improve the control over the existing systems and will enable the Business–to–Business collaboration between seemingly unrelated Businesses, regardless their location and former activities.

- Farmers/Farm Managers will be able to manage their Greenhouses in a more efficient way, handle their tasks more efficiently retrieving information from multiple back-end systems, meteo services, advisory systems, all of which will collaborate in order to produce the best possible feedback to the stakeholder, which will potentially enable him to maximize his revenues
- End-Product Producers will be able to discover potential partners that interest them in a much more efficient way, retrieve updated information about products and be notified for any emergency situations concerning their products
- Legacy/Back-end systems' owners will deploy their systems in multiple collaboration chains, maximizing their products' usage and thus, revenues
- Developers will be able to upload their Apps to the Marketplaces, which will be used by the various business collaborations
- Various business actors who will be involved in the different scenarios like Consulting Firms, State Agencies etc. will also gain profit from participating in such collaborative chains

3.2 Vision and expectations of target group ("user story")

The Greenhouse trial aims to demonstrate how FIspace will significantly improve the Greenhouses' management and productivity and, –as a result-, increase the revenues of domain enterprises.   In   the context of the Greenhouse, various use cases will take place:

- *Advice Request:* a Greenhouse owner (Farmer) receives feedback from an Advisory System on actions to take, based on the Greenhouse's sensor values
- *Task planning:* a Greenhouse owner receives the task list to be executed in the Greenhouse based on back-end systems, the Farm Manager etc.
- *Search for Farmers:* an end-product Producer is willing to discover new farmers, based on specific criteria (type of product, quantity, price, quality etc.) to create new collaborations
- *Managing Complaints:* an end-product Producer is willing to analyze a received (from a consumer) complaint, with the help of external services like a Traceability platform, a Consulting Firm etc.
- *Product Recall:* a health hazard due to a pesticide is discovered by a State Agency, which is willing to generate a report and notify all the involved stakeholders of the supplying chain

In order to demonstrate the solution to the target groups' vision and expectations that the trial is planning to provide, we select the first one of the above scenarios (Advice Request) to describe it as a **user story:**

Kostas is a farmer, as well as a Greenhouse owner, in which tomatoes are grown. Kostas after many years of effort and experience, still finds difficulties in coping with the greenhouse's environmental conditions often enough, which can either boost or destroy the growth of the plants.

For being able to monitor these conditions, he purchased and installed sensor equipment in his Greenhouse for monitoring temperature, air & soil humidity and PH. However, whenever there are outbound values, which could cause problems at his tomatoes, he is obliged to communicate with an Agronomist specialized in tomatoes, in order to receive a specific advice on the appropriate actions to take. The system, which he has installed, supports a basic FMS (Farm Management System), however, the particular FMS does not give feedback for actions, only identifies the outbound values.

Kostas is informed about FIspace and decides to navigate to the FIspace platform's homepage. He creates an account and logs in. He browses the FIspace Store and finds the Greenhouse *Advice Request App (figure 1)*, which he purchases and installs in his account. He also comes across and acquires the *Marketplace Operations Baseline App*, which also seems interesting.
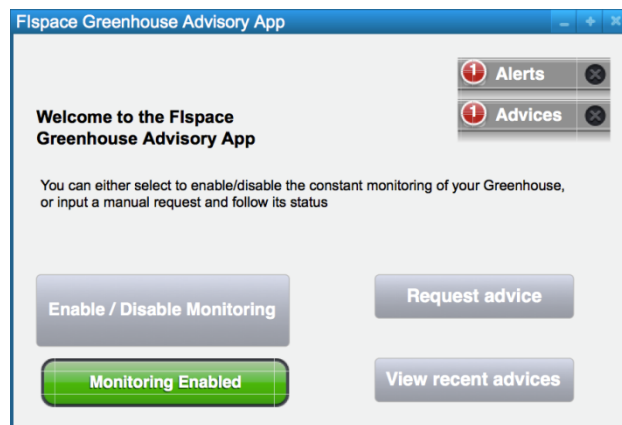
Figure 1:   Example mockup of the Advice Request FIspace app

Kostas hires a Business IT Engineer to configure the *Advice Request app*. In the particular configuration, Kostas' Greenhouse interface is linked to the app. The app requires additionally, an Advisory Service to be linked to the app.

Kostas opens the *Marketplace Operations app* and searches for an Advisory Service Offer for Greenhouse, using the appropriate search criteria. The app responds with some results, Kostas chooses the desired one based on his criteria and the results' descriptions and also installs it. Using the details of the Advisory Service, he finishes setting up the *Advice Request app*, linking it to the new Advisory Service. The *Advice Request app* is ready to use.

Kostas enables the "Constant Monitoring" feature of the Greenhouse's sensors. From that point onwards, whenever there is a sensor value threshold violation, an automatic request is being sent to the linked Advisory Service, which responds with an integrated alert and advice-actions to be immediately taken by the Farmer, via the *Advice Request* app's GUI.

Moreover, Kostas is planning –with the help of a developer- to connect his configured *Advice Request App,* with a Meteo Service he found inside the Marketplace, in order to receive optimized Advice feedback.

Kostas is now capable of coping with these types of events much more efficiently, maximizing the productivity of his Greenhouse.

3.3   Addressing target group during project duration

In the context of the FIspace project, and in particular the Greenhouse Management and Control Trial, steps towards identifying, building-up and nurturing the Greenhouse communities are being planned. These communities will be considered as communication channels between the market and the project.

Already since Phase I of the FI project, in the SmartAgriFood project, activities towards this direction took place, some selected examples of which are presented in the table below (table 3):

Table 3:   Past activities examples of the Greenhouse trial

Type of communication	Target Group	Focus	Timing
Conference	Agri-food businesses	Presentation on Smart Farming in Panta Rhei conference	April 2012
Workshop	End-users, ICT solution providers etc.	Organizing and carrying out the 1st round of discussions panels	March 2012
Workshop	Agri-food businesses, Civil Society, Media	"Rural Enterpeneurship as a way of life"	October 2012, December 2012
Conference	Agri-food businesses, Farmers, ICT community etc.	Presentation on Smart Farming as well as SAF project in the International Fair of Thessalonica	September 2012
Conference	Industry, Policy makers, Civil Society	Introduction of the SAF project in the Smart City Expo & World Congress	November 2011
Conference	Industry, Agri-food businesses	SAF project presentation in GEOCAP Annual Conference	November 2011
Press release in portal	Civil Society – Greek Farmers	Announcement in the OPEKEPE portal about the new SAF project	April 2011
Articles published in the popular press	Civil Society – Greek Farmers	Announcement about the new SAF project	April 2011
Press release in Greek newspapers	Civil Society	FI project description	April 2011

Following the past approach, the FIspace's Greenhouse Management and Control Trial is planning to disseminate the concept of the B2B Collaboration Platform of the FIspace, emphasizing on the Greenhouse Community, the Agri-food businesses, the ICT community, as well as the Civil Society in general.

So far, the planned activities are presented in the table below (table 4):

Table 4:   Planned activities of the Greenhouse trial

Type of communication	Target Group	Focus	Timing
Talk (tentative)	ICT community	Present the FIspace project, emphasizing on the Greenhouse Community to the "SEPE" and "SEPBE"	October 2013
Workshop	End-users, Agri-food businesses, Farmers, ICT solution providers etc.	After the 1st release of the trial specific apps, a workshop will take place emphasizing on the apps' functionalities	FIspace M10 – M12
Workshop	End-users, Agri-food businesses, Farmers, ICT solution providers etc.	After the pre-final release of the trial-specific apps, a workshop on testing and receiving feedback on the apps' functionality	FIspace M21 – M24
Press releases in portals	Civil Society, Greek Farmers	Announcement in the University of Athens portal, the OPEKEPE portal, as well as other domain-specific or not, portals	FIspace M6 – M24
Articles to be in the popular press (tentative)	Civil Society – Greek Farmers	Announcement about the Greenhouse Trial and the FIspace project	FIspace M6 – M24

3.4   Provision of material and utilization plans during project duration

In combination with the activities presented in the previous section, training and educational material is already and is also going to be delivered to various target groups, either for disseminating the FIspace project itself into the Greenhouse Community, or for carrying out useful talks and workshops which will support the expansion and evolution of the FIspace platform itself (table 5).

Table 5:   Provision of material from the Greenhouse Community trial

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Internal partners, dissemination material for external stakeholders	Presentation	Y	Y	An often updated presentation of the Greenhouse Management & Control trial	Y	Owncloud – Dissemination Material
Mainly internal partners	Presentation	Y	Y	2nd Educational Session organized by NKUA team	Y	Owncloud – Meetings – Education Sessions
Agri-food businesses, ICT community, Civil Society	Leaflet	Y	Y	Greenhouse Management & Control leaflet with an overall description of the use cases of the trial as well	Y	Available on request – already distributed to WP500 leadership team
Farmers, Agri-food Businesses, ICT community	Presentation	Y	Y	Greenhouse trial's Apps to be used in the use cases with GUI mockups, functionality description etc,	Y	Available on request
Internal partners, dissemination material for external stakeholders	Presentation	Y	Y	An often updated presentation of the Greenhouse Management & Control trial		Owncloud – Dissemination Material

As the project progresses, the Greenhouse Management and Control trial's team will be constantly updating the existing material, as well as will prepare new educational and dissemination material based on FIspace's new features which are going to be provided during the project.

4   Communication with Food Chains: Fish

4.1   Identification of target group

The Fish Distribution (Re)Planning trial ("Fish trial") is concerned with the planning of logistics and transport activities in the fish industry, and is mainly focused on the part of the transport, i.e. the transport legs from the Norwegian coast to the deep sea ports in continental Europe.

While the main users of the transport services in the trial are the fish industry, other users of short sea shipping could also benefit from the FIspace results. The service providers in the transport chain will also be stakeholders in the trial.

The main stakeholders of the fish trial are:

- The **transport providers**; the main focus is on short-sea shipping, but also deep-sea shipping and truck transport is part of the trial.
- Other **service providers in the short-sea market**; like ports, terminals, warehousing, forwarding services and agents.
- The **fish industry**; the main customer in the trial.
- Other **users of short-sea transport**; while the main case of the trial is on fish transport it is assumed that the results will also be useful for other transport customers.
- **Developers of software**; both developers of FIspace apps and the providers of backend systems in the transport and logistics sector.
- The **Transport and Logistics research community**; the community will be interested in using results from the FIspace project in the on-going work to create more efficient and greener logistics chains.

4.2   Vision and expectations of target group ("user story")

The Fish trial aims to demonstrate how the planning and collaboration facilities of the FIspace platform and apps can improve the efficiency of transport planning, deviation handling, and replanning for the actors in a fish transport chain. The main user story consists of several steps, where each step may involve several actors. The steps are described in detail in FIspace deliverable D400.1. The steps have here been broken down to two main categories: Setting up the transport plans, and the reduction of risk from late cancellations.

- Publishing of transport demands, answering to transport requests and booking of transport. The transport providers, other service providers and the fish industry are involved in these steps, which include describing the transport needs, establishing contact between transport providers and customers, setting up a plan for the transport, and booking resources for the transport. Expected benefits with FIspace:
  - For the fish industry, FIspace will make it easier to establish contact with transport providers and other services. FIspace apps will provide tools for describing and publishing the transport needs, getting in contact with transport providers, and setting up the transport chain. The overall planning and booking process for the transport will be easier.
  - Other short-sea customers will have the same benefits as the fish industry.
  - For the transport providers, it will be easier to establish contact with potential customers, and the visibility of the services will likely be higher. Better planning and booking facilities for the customer will also benefit the providers.
  - Facilities for sharing of necessary information between the customers and the different service providers will make information exchange more efficient.
- Confirmation and prediction of actual transport needs: The transport and other service providers as well as the customers are involved in these steps, where one of the main purposes is to reduce the risk of late cancellations. Expected benefits:

- o The service providers will get information on changes in transport need at an earlier point in time, giving more time (and thus a higher chance) to find replacement cargo and increase vessel utilization. FIspace also provides tools for cancellation prediction and for quickly finding transport needs fitting the vessel schedule that will help in finding replacements for cancelled cargo.
- o FIspace provides tools for efficient replanning of the transport services; this will benefit customers that have to cancel due to delays in other parts of the transport chain.
- o If the providers are able to fill the space from cancelled cargo with replacement cargo, this will also benefit the owners of the replacement cargo, as their transport needs are fulfilled at an earlier time.
- o Service providers in the chain will benefit from higher predictability, as the cargo that is actually going to be loaded on the vessel is known at an earlier point in time.

4.3   Addressing target group during project duration

The Fish trial has been represented in several conferences and meetings during the last month, promoting FIspace and actively gaining attention for the trial´s vision (table 6).

Table 6:   Past activities of the Fish trial

Type of communication	Target Group	Focus	Timing
Meeting/Presentation	Software developer: *Maritech*	Presentation of FIspace and Fish Trial, and discussion of possible interactions	May 2013
Presentation in Hamburg	NCL Agents	Presentation of FIspace	28-29th May
Meeting in Haugesund	APL/NCL customer	Presentation of Fish Trial	24th June
Meeting in Haugesund	Wacker/NCL customer	Presentation of FIspace	6th June
Meeting/conference in Stord	MaritimeClean West /NCL	Presentation of FIspace	26th August

In the upcoming months many meetings and presentations are planned. Furthermore, a research paper and articles will be written (table 7).

Table 7:   Planned activities of the Fish trial

Type of communication	Target Group	Focus	Timing
Stakeholder meeting	Seafood industry, transport community	Present the FIspace project to transport users and providers. Get input on needs for stakeholders not directly represented in trial team.	Autumn 2013
Research project proposal: **"Short Sea Transport"**	Transport community, software developers, research	Proposal will be submitted to the Norwegian Research Council. Project theme will be related to FIspace platform, apps and other FIspace results	Proposal will be submitted October 2013. If funded, the project will run for 3 years
Conference paper: **"Future internet perspectives on an operational transport planning ICT tool"**	Research community: *International Research Conference on Short Sea Shipping 2014*	Based on work done during the FInest project, but paper will also include some FIspace results.	Paper submission: October 2013 Conference: April 2014
Presentation of trial apps proposed for open call	Software developers	Presentation of the open call apps specified by the Fish trial	Autumn 2013
Articles in popular press (transport, engineering and/or research magazines)	Transport community, developers, research community	Presentation of FIspace project and results	FIspace M6 – M24
Conference or journal paper	Research community	Presentation of FIspace results	FIspace M6 – M24

4.4   Provision of material and utilization plans during project duration

During the project, material will be prepared for workshops, meetings and presentations (table 8). The form and content will vary depending on the nature of the workshop or meeting. Typically, it will be in form of PowerPoint presentations explaining the FIspace project in general and the fish trial, as well as the relevance to the theme of the workshop or meeting.

A flyer in Norwegian and English presenting the FIspace project and the Fish Trial has been prepared, and will be used as hand-outs when relevant.

Articles in media, scientific papers and other material published through a third party will be made available on request for project internal use if not already openly available.

Table 8:   Provision of material from the Fish trial

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Workshop participants	Presentations and enquiries for close workshops	Y	N	Y	Y	On request
	Presentations and enquiries for open workshops	Y	Y	Y	Y	ownCloud
	Flyers and presentations	Y	Y	Y	Y	ownCloud
General public, scientific community or stakeholder group	Articles and papers openly available	Y	Y	Y	Y	Publisher's website
General public, scientific community or stakeholder group	Articles and papers not openly available	Y	N	Y	Y	On request

5   Communication with Food Chains: Fresh Fruits and Vegetables

5.1   Identification of target group

The educational material and training activities that will be developed in the course of the project will be focused to provide information to, on the one hand, **stakeholders from the Fruit and Vegetable business as well as service providers**, and on the other hand, **specialised developers for this branch**.

The aim of the FFV trial is to test and present how we can use all the potential of Future Internet and the FIspace platform to improve communication between stakeholders from different stages in the supply network, service providers as well as governmental agencies. For this experimentation, we will focus on developing a trial system that will support the communication of delivery documents, product quality information and feedback as well as exception notifications in selected critical scenarios during distribution of fresh fruits and vegetables.

The trial is guided by a group of key players from the fruit and vegetable business including amongst others:

- EDEKA, the leading German retail group
- LANDGARD & PFALZMARKT two leading cooperatives in Europe with over 10000 associated farmers,
- EUROFINS, a leading laboratory service provider,
- FRUG I COM, the leading Dutch institute for IT innovation in the fruit and vegetable business,
- The working group Fruits and Vegetables of GS1 Germany including the Top 30 producers and traders of fruits and vegetables in Germany,
- EURO POOL SYSTEM, the leading organisation for returnable packaging in the fruit and vegetable sector.

The trial is designed with the aim to provide value for the upstream and downstream stages of the supply network from farm to retail and vice versa. The trial aims at the presentation of the capabilities of FIspace to this target audience and the development of best practice cases together with our associated partners in order to show the benefits of the Future Internet and FIspace. In this context we want to reach out to different groups in order to create even more awareness and interest in our trial. The main groups to be addressed are:

- **Public Associations:** These groups are representing the majority of the business stakeholders and their mutual interests. These groups are key players when it comes to acceptance and support for any sector overarching innovation projects and their dissemination. Our target audience are most importantly the associations from Spain, Germany and Benelux, thus they are representing the largest part of the European fruit and vegetable market.

- **Agri-Food Companies:** This group includes all potential users of FIspace and the Trial's major target audience. The potential user group includes farmers and trade organizations such as agricultural associations, companies associations, auctions, importers, exporters. The focus of the trial is the empowerment of SMEs to participate in electronic data interchange using FIspace as a starting point. For this group we mostly speak of a dialog, since we have to present FIspace and the trial on the one hand, but on the other hand we need to understand needs and critical factors for acceptance of FIspace as a tool for this group of people. We want to address this by different workshops and visits with innovative farmers that already facilitate the web for their business.

- **Developers:** The group of developers is divided into different sub groups such as software providers for farmers, traders and retailers. They also differ in size, since e.g. retailers only do business with large software vendors such as SAP, IBM or ORACLE. The most important group however is the group of SME developers on farming level. We want to educate this group with a workshop and other support activities in order to be able to develop FIspace applications that enable SMEs in the business to exchange delivery documents and product information with large players as well as between each other.

5.2   Vision and expectations of the target group

The vision of the target group of this trial focusses on the communication of product related information together with transaction related information forwards and backwards in the supply chain. In this respect, product information is attached to delivery information in order to have the information on the product right away, latest when the product is received at the customer. A crucial element for the stakeholders is the identification of information to be exchanged between business partners. The identification and coordination of information from a provider and user perspective along the chain is not just an issue for system development but reaches into operational business requirements and business models for reaching system acceptance in the market. The operational integration of data into processes is a major requirement and is therefore a critical success factor for the larger stakeholders. Without this integration the Trial Apps would lose momentum and efficiency since the data will be stored only in a different place. The value for the target group is created, when FIspace capabilities offer an automation of transfer between FIspace Apps and legacy systems.

Another aspect is the question of *appropriate* and sustainable distribution of costs, benefits, transparency needs and confidentiality needs along the chain. Business partners have agreed on a baseline approach where improvements in forward communication of information (from farms /trading to retail/consumers) are matched by some backward communication (from retail to trader/farms) which is scarcely available in present business activities. This is a first step towards a balanced consideration of interests. These baseline agreements are sufficient for app development and can stepwise be extended in line with experiences and development of needs. This flexibility is another critical success factor to be met by the Trial.

The last critical success factor for the trial is the integration of SMEs into the world of electronic data exchange. FIspace Apps have to offer functionalities for SMEs having not sophisticated ICT Infrastructure. The Trial Apps should close the gap in electronic communication between SMEs and highly equipped large companies in the sector in order to enable them to participate in electronic data exchange and overcome current communication deficits, which are causing massive efforts for transfer of data from paper or e-mails to legacy systems at large companies.

5.3   Addressing target group during project duration

From the beginning of Phase II of the FIspace project the Fresh Fruit and Vegetable trial has continued several activities from Phase I and organized several future activities in order to inform stakeholder and promote the project and the program in public, which are presented in the following tables 9 and 10.

Table 9:   Past activities of the Fresh Fruit and Vegetable trial

Type of communication	Target Group	Focus	Timing
Conference (6th International European Forum (IGLS-forum) on System Dynamics and Innovation on Food Networks)	Scientific / European Research Community	Presentation of use case scenarios, and on the general project to a scientific audience involved in several European Research Projects in the field of Food Chain Management	February 2012 Innsbruck-Igls (Austria)
FI-PPP Road Show	Scientific / European Research Community	Presenting the overall project idea and the living lab approach of the FFV pilot	June 2012 Brussels (Belgium)
Research Seminar	Scientific and industrial Research Community	Reporting on FFV related Future Internet research approach and on how to join related initiatives to academia and ICT related SMEs.	July 2012 Bremen (Germany)
Workshop FFV Pilot	Associated Business Partners, interested stakeholders from IT and Food Sector	First get together of interested and associated partners with project members involved in the SAF FFV pilot to define needs and discuss visions for the Future Internet	August 2012 Klein-Altendorf (Germany),
Meeting with EDEKA	Associated Business Partners	Presentation, Discussion and Integration of Germany largest retailer as associated partner in the Trial	August 2012 Hamburg (Germany)
Meeting with Van Wylick		Interview Fruit & Vegetable Trader	August 2012 Cologne (Germany)
Project Seminar on Quality and Food Chain Management	Master Students (Food and Resource Economics)	Introduction of FP7 Projects and development and elaboration of ideas and new concepts on their own. Results e.g.: Logo Scanner Application for Tailored Information for Consumers	Summer Term 2012
Meeting with EUROFINS		Interview, Discussion with largest lab analysis service provider and integration as associated partner in the FFV Pilot and Trial	September 2012
Organizing and carrying out the 3rd round of discussion panels - completed	Business Stakeholders	Results of WPs	October 2012
Pilot Workshop	Associated	Testing of Prototypes together with	December

	Business Partners, interested stakeholders from IT and Food Sector, Project Partners	stakeholders and project partners, documented in a FFV Pilot Video	2012 European EPC Competence Center ,Neuss (Germany)
Food Dynamics Conference	Scientific Community	Presentations and Discussions with the scientific community / SmartAgri-Food Session	February 2013 Innsbruck (Austria)
Fruit Logistica	Business Stakeholders	International trade fair for fresh fruits and vegetables, project poster and FFV Pilot coordinator present, many bilateral discussions with stakeholders	February 2013 Bonn (Germany)
Project Seminar	Master Students (Food and Resource Economics)	Business Management & Logistics Seminar on the needs of transparency in food chains summarized in an ebook	Winter 2012/2013
GlobalGAP	Business Stakeholder / Certification Agency	Introduction of the Project to Global-GAP, Discussion and integration of GlobalGAP as Associated Partner	March 2013
Stakeholder Meeting	Retail, trader, certification bodies, IT-providers, research institutions	FIspace Kick off with the Stakeholders, identifying each stakeholders needs and combining the supply view an future investigations First set of requirements for the Trial	April 2013 Bonn (Germany)
Presentation at GS1 Germany Fruit and Vegetable Working Group on Communication in the FFV Chain	Top 30 German Business Stakeholders in the FFV Sector	First information of the Stakeholders on the Project and the Pilot / Trial as well as agreement to collaborate and use their defined Standards in the Trial	May 2013, Cologne (Germany)
Presentation @ EPS quarterly management team meeting	Business Stakeholders	First Presentation of the project and the trial to all European EPS managers along their quarterly meeting, Discussion on dissemination strategy towards the customers and shareholders (Top 20 in European FFV trade)	June 2013 Bornheim (Germany)
Stakeholder Information alongside the German Fruit and Vegetable Congress 2013	Business Stakeholders	Bilateral discussion with stakeholders	September 2013 Düsseldorf, Germany

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Table 10:   Planned activities of the Fresh Fruit and Vegetable trial

Type of communication	Target Group	Focus	Timing
Workshop	FFV Stakeholder	Educational session for relevant stakeholder, identification of collaboration activities and needs	November 2013, Hamburg
Stakeholder Information	Dutch Production Association DPA	Presentation and discussion about the Project and the Trial, also on Phase 3 and potential roll out strategies	November 2013, The Hague
Stakeholder Information	European Fruit and Vegetable Association FreshFel	Presentation and discussion about the Project and the Trial, also on Phase 3 and potential roll out strategies	November 2013, Brussels
Stakeholder Information	German Fruit and Vegetable Association BVEO	Presentation and discussion about the Project and the Trial, also on Phase 3 and potential roll out strategies	November 2013, Berlin
Workshop	German Association of IT in Agriculture (IT Community)	Joint Workshop of Food Chain Trials at the GIL assembly 2014	February 2014, Bonn (Germany)
Food Dynamics Conference	Scientific Community	Presentations and Discussions with the scientific community FIspace Session	February 2014 Innsbruck, Igls (Austria)

5.4   Provision of material and utilization plans during project duration

The provision of material by the trial is summarized in table 11.

Table 11:   Provision of material from the FFV Trail

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Interested stakeholder	Presentations and enquiries for close workshops	Y	N	Y	Y	On request
Interested stakeholder	Presentations and enquiries for open workshops	Y	Y	Y	Y	Owncloud
Interested stakeholder	Flyers and presentations	Y	Y	Y	Y	Owncloud
Interested stakeholder	Flyers and presentation	Y	Y	Y	Y	Owncloud
Interested stakeholder	App screen Mock-up presentation based on FFV example	Y	N	N	Y	Owncloud
Interested stakeholder	Product information model	Y	Y	N	Y	Under development

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6   Communication with Food Chains: Flowers and Plants

6.1   Identification of target group

We identify the following target groups for this trial:

- Stakeholders directly involved in the trial experiments:
    - Trader/wholesaler of potted plants
    - The selected and participating suppliers of this trader
    - The auction by which a part of the products are purchased
    - The ERP software supplier of the trader
    - The carrier(s) of the trader participating in the trial
    - The customer(s) of the trader (retail) participating in the trial
- Other actors in the supply chain of flowers & plants:
    - Traders of flowers & plants
    - Suppliers of flowers & plants
    - Other customers of the trader (retail)
    - Branch organizations national and international (Union Fleur)
    - The software suppliers of all these companies

6.2   Vision and expectations of target group ("user story")

The management of product quality is of vital importance in supply chains of fresh produce such as flowers and plants. The floricultural industry currently uses data loggers that record sensor data of quality conditions such as temperature and humidity during transport. However, these data are only tracked afterwards and not in real time. The combination of new technologies for tracking and tracing (e.g. RFID), quality monitoring (e.g. wireless sensor networks) and internet connectivity (e.g. cloud computing and web services) enables real-time management of product quality in a supply chain con-text.

This pilot demonstrates the possibilities of Future Internet technologies for dynamic Quality Controlled Logistics in floricultural supply chains. In this approach, logistic processes throughout the supply chain are continuously monitored, planned and optimized based on real-time information of the relevant quality parameters (such as temperature and humidity).

This trial concerns the monitoring and communication of transport and logistics activities focusing on tracking and tracing of shipments, assets and cargo, including quality conditions and simulated shelf life. The trial system will provide practical functionalities in particular for real-time access to quality information including ambient conditions (e.g. temperature), early warning in case of deviations and prediction of remaining shelve life. Implementation of these functionalities is expected to result in:

•   significant reduction of product waste throughout the supply chain;

•   shorter lead times;

•   better capacity utilization;

•   improvements in product quality (longer shelf life) for end-consumers.

6.3   Addressing target group during project duration

The stakeholders are involved intensely by individual interviews, workgroup meetings and stakeholder events. The other target groups are informed less frequent through the usual channels of the organizing partners in the trial: LEI-DLO, Floricode and Mieloo & Alexander. Meetings and newsletters are the communication methods mostly used. Past and planned activities are summarized in tables 12 and 13.

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Table 12:   Past activities of the Flowers and Plants trial

Type of communication	Target Group	Focus	Timing
Presentation http://edepot.wur.nl/265289	Software Community Floricode	Stakeholder meeting "Ketenlogistiek, een goed ID!"	April 11 2013 Sassenheim
Presentation	ECL and „Arbeitsgruppe AgroLogistik" for Niederrhein	Informing stakeholders and potential partners about cooperation possibilities	May 16 2013
Presentation http://edepot.wur.nl/265286	Dutch Horticulture & Software Providers	Informing stakeholders and potential partners about cooperation possibilities	May 28 2013 Greenport Digital Community, Zoetermeer
Presentation	Stakeholder Workshop of the Da Vinc3i project	Informing stakeholders and potential partners about cooperation possibilities	July 11 2013 Waddinxveen

Table 13:   Planned activities of the Flowers and plants trial

Type of communication	Target Group	Focus	Timing
Presentation	Software suppliers and ICT managers	Results of the trial project	1st half 2014
Presentation	Software suppliers Flowers& plants Floricode community	Results of the trial project	1st half 2014
Newsletter project	Stakeholders	Details about the trial	2nd half 2013
Presentation	Software suppliers and ICT managers	Results of the trial project	1st half 2014
Presentation	Software suppliers Flowers& plants Floricode community	Results of the trial project	1st half 2014

6.4   Provision of material and utilization plans during project duration

The trail publishes educational material and various presentations online (see able 14). The following material (leaflets and presentations) is open and free available via the following link:

http://www.tuinbouwdigitaal.net/nl-nl/onderzoek/asmartergreenport/kwaliteitgestuurdett.aspx

The material is constantly updated by the trial responsibles and tailored to stakeholder needs.

Table 14:   Provision of material from the Flowers and Plants trial

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Business Stakeholders	Presentations and enquiries for close workshops	N	Y	Y	Y	On request
Business stakeholders	Presentations and enquiries for open workshops	Y	Y	Y	Y	On request
All interested stakeholders	Leaflets, documents, articles					http://www.tuinbouwdigitaal.net/nl-nl/onderzoek/asmartergreenport/kwaliteitgestuurdett.aspx

7   Communication with Food Chains: Meat

7.1   Identification of target group

Today, newspapers open too often with headlines on meat. For a large part these are related to the health of meat consumers, next to diseases of the animals at the farm. Some other problems are not health related, such as the horsemeat scandal, but still have a negative effect on public opinion about meat.

The present system is based on a one-step-back and one-step-forward principle, in which every meat supply chain partner should record the origin of his (intermediate) meat product/animal and record the partner where it goes to. This enables tracking &tracing in case of meat alerts, but, as shown in the horsemeat scandal this is slow (several days) and imprecise, resulting in very inefficient, damage causing recall action. The focus of the present system is on consumers, which is enforced by the EU regulations. Meat supply chain partners hardly profit of the system. In case of a meat alert tracking and tracing with the present system is cumbersome and ineffective, resulting in a considerable overestimating of what has to be recalled. Some retailers use the present system to provide information to its beef consumers with a smartphone app. But the meat supply chain partners – from farm to retailer – do not get any information from the present system. It is time to reconsider how to comply to the EC regulations 1760/ 2000 and 1169/ 2011, but with profit for the supply chain as a whole and for each meat supply chain partner separately.

The overall aim of a new system should be realising full transparency of the meat supply chain. From farm to consumers, every meat supply stakeholder should be able to look through the supply chain in both directions: Farmers should see when and where their cows go from the slaughterhouse, to a deboner, processor and distributor and see at which supermarket consumers buy the meat of his cow. Consumers should be able to track the origin of their meat, how farmers operate at their farm, as well as how the meat is processed through the supply chain. Meat processor should be able to look in the direction of the farm and in the other direction of supermarket or butcher. This does not mean that everyone gets access to all information. Getting access is restricted to meat items which are related to your item, i.e. you can follow backwards to the cow on the farm and forward to see a steak in the supermarket. Furthermore, any new system should facilitate the present administrative processes of the supply chain partners and it should protect data and give only access to those that are authorised.

As illustrated above, meat supply chains are rather complicated and can have various supply chain partners. We distinguish typical roles of these partners. Sometimes a role is a company and sometimes one company has several roles. The following roles are typical for many meat supply chains: farmers (breeders and fatteners), slaughter, processor, distributors, retailers, and, finally consumers.

Next to these direct parties involved (from fork to farm) there are also other parties involved. There is GS1 with their barcodes and EPCIS standard, certification & accreditation bodies (e.g. SGS, ORGAINVENT, GlobalG.A.P, QS), cloud hosting providers, software solution providers, authorities and the overall society and interested members of the public.

7.2   Vision and expectations of target group ("user story")

The **whole supply chain** benefits from full transparency because it will change its image in the eyes of meat consumers, but also in the society at large. Full transparency enables optimization of the business processes of all meat supply chain partners. It makes it easier to respond to consumer demands and also react adequately on needs of other partners in the meat supply chain. In the new meat supply chain information system tracking & tracing is strongly improved. It will be easier, more effective and faster. Tracking & tracing for the horsemeat scandal took about 4 days and with the new system it would be in the order of magnitude of 4 minutes. If recalls are necessary, they can be surgical, i.e. more precise, less recalled meat items and cutting out the affected parts only. The overall negative effect on meat consumption in general and business of the supply chain in question may be expected to be substantial lower.

Finally, the new system will obviously comply with existing regulations, with EC 1169/2011 and it may be expected that new regulations will be easier adopted and integrated in the new system.

Farmers will get a more direct link with the consumers, which facilitates to differentiating products from those of other farms. If farmers invest in for instance animal welfare or sustainable production, consumers should be aware of that and the new system enables to provide this kind of static farm related information. **Farmers, slaughterhouses and meat processor** can all benefit from the direct link with the consumers, as products can be better based on requirements of consumers and meat supply chain partners. In the end it will facilitate optimising every partner's business process and improve investment decisions.

Retailers are the final link in the meat supply chain before the consumer and therefor they have to provide information to their customers according regulations and legislation. This information should be true, which means certification by accredited organisations. It is not very exhaustively prescribed in the regulations what information should be provided, leaving room for extras, such as already is implemented in the present system to provide information to its beef consumers via smartphone app. In a similar way a new meat supply chain information system can provide all kinds of information, on top of what is required. This can include information of the farm, farming, health aspects of the product, sustainability throughout the supply chain, and many others.

Consumers can get access to the dynamic (meat item related) and static (supply chain partner related and general product information) information by using an app on their smartphone or using a website. In order not to overload consumers, such apps should allow its users to filter the meat related information to those features they are interested in. In this way, retailers can provide an enhanced consumer experience with a proven 'history' of the meat item and a 'brand like name' and approval stamp'.

There are also business cases for **ICT solution providers**, as they can include the reference architecture for meat supply chain information systems in their portfolio and implement it as tailored solution for their customers. *Cloud hosting provider* can enable implementation and *certification bodies* can guarantee correct working of the new system, if they are accredited by *accreditation bodies*.

Authorities are facilitated in their control and regulation enforcement. In case of meat alerts they work is strongly facilitated, which enables a fast, effective, surgical response, with less critique by the media and the general public, resulting in more confidence and trust in the responsible authorities. The *society* as a whole can benefit, the new system makes investing in sustainable production and animal welfare more lucrative. Moreover, no general alarms are required in case of meat alerts.

7.3   Addressing target group during project duration

From past to present to future: list of past activities

Within the FP7 FI-PPP (Future Internet Public Private Partnership) program phase 1, the so called SmartAgriFood project consisted of several pilots on the use of internet in the future. One of its pilots was on Tracking & Tracing and Awareness in the Meat sector (TTAM). The **TTAM pilot** has designed an innovative functional reference architecture for a meat supply chain information system. Furthermore it tested a present solution to inform meat consumers at the supermarket and evaluated how customers of a Bon Preu supermarket in Barcelona think about it. Do they like to be informed what is behind the meat they buy, what kind of information they want, do they want to pay for it? If you are interested in the results and architecture of TTAM pilot, please visit the Website http://www.smartagrifood.eu/ , click on tab "Pilots" and have a look at the *video on SAF's TTAM pilot* and/or read the **pdf-File "Smart AgriFood – TTAM – How it works"**.

In the FI-PPP phase 2 project, FIspace, a follow-up of the TTAM pilot is initiated, which is called the Meat Information Provenance experiment or **MIP trial**. It aims at implementing an EPCIS (Electronic Product Code Information Services) based information system where all business processes of meat supply chain partners that result in a new EPC-label are translated in EPCIS events that subsequently are stored in one or more EPCIS repositories. Apps are used to upload the events and other apps are used to analyse

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the stored information related to an EPC. In this way a full transparent supply chain will be created, in which stakeholders and consumers can get access to the information that is relevant for them only. In other words, consumers get predefined information like it is done in the present system to provide information to its beef consumers via smartphone app.
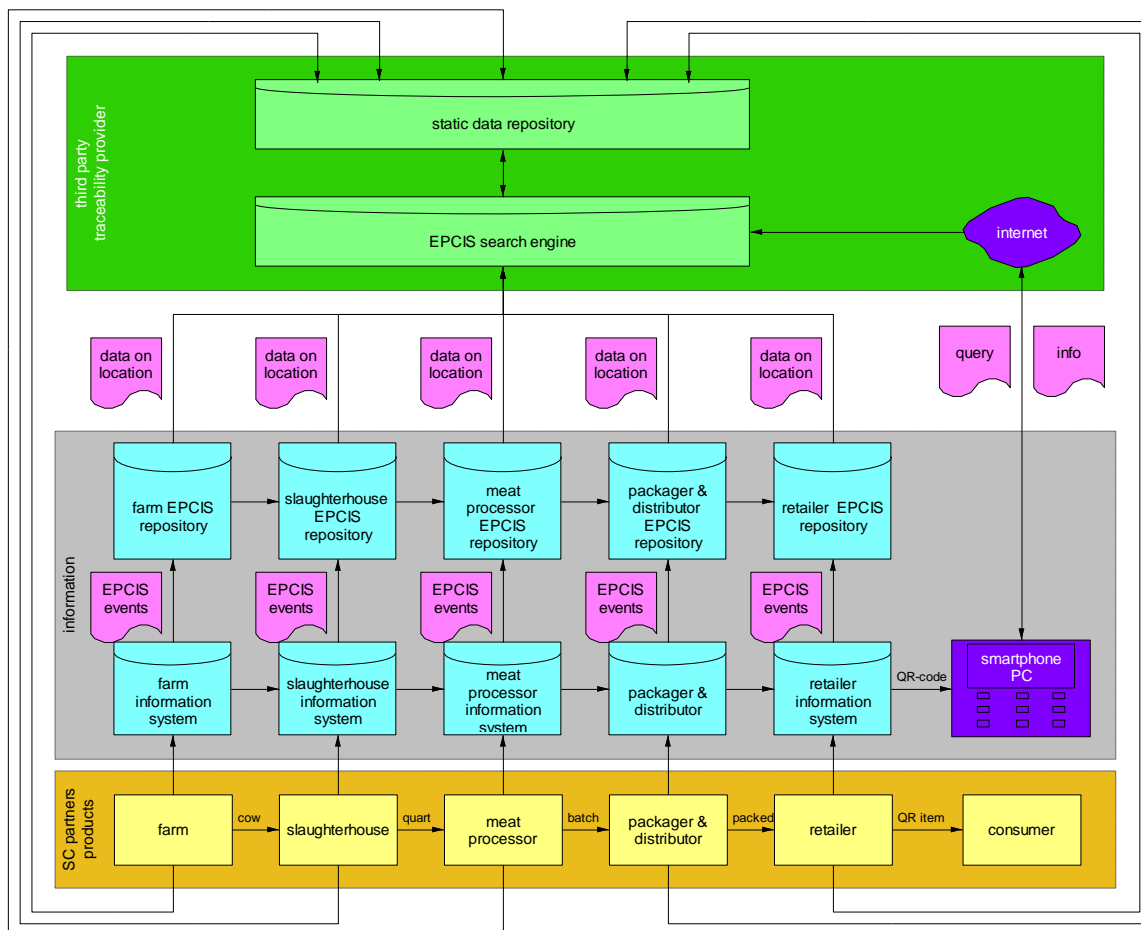
Figure 2:   Reference architecture with the core parts to be implemented and evaluated in FIspace's MIP trial. Any certification activity is left out for complexity reasons.

In FIspace's MIP trial (see reference architecture in figure 2) we will implement an appropriate EPCIS repository, server software to receive and process queries (whether from consumers or from meat supply chain stakeholders). Furthermore we will participate in the open call and ask software solution providers to develop apps that enable meat supply chain partners to upload EPCIS data and to send requests to get fast and easy information to which they have permission to see (typically information related to the EPCIS events of their business processes and meat items). *The result will be a new system for bidirectional tracking & tracing that is easy to use, fast, effective and better than the present system. In the MIP trial technical tests will be performed, as well as appreciation tests.*

The interaction between the trial and the stakeholders from the sector is based on three major activities:

– GS1 Branchengremium Fleisch: Information on the project, the trial and the potentials for Phase 3 is given at the GS1 Brachengremium Fleisch, a quarterly gathering of all major meat companies and retailers.

– Regular Stakeholder Meetings: as continuation from Smart Agri-Food (conceptualisation phase) and to ensure testing of the trial apps, including education and facilitation of FIspace for meat companies.

– Involvement of stakeholders and their ICT solution providers for testing the Trial Apps later in the project,

Besides these major activities various presentations, discussions and meetings with stakeholders are planned for the upcoming month to promote and disseminate FIspace and the trial. Additionally, material for stakeholders is provided via the Smart Agri-Food Pilot Portal, which contains a video and a description of the pilot/trial. Past and planned activities are summarized in tables 15 and 16.

Table 15:   Past activities of the Meat trial

Type of communication	Target Group	Focus	Timing
Scientific Paper	Agri-food busi-nesses	Transparency in meat supply chains: An information systems infrastructure for tracking, tracing and awareness in the meat sector	January 2012
Presentation	Agri-food busi-nesses	7th International European Forum (Igls-Forum): Transparency in meat supply chains	February 2012
Webpage	Agri-food busi-nesses	Article on www.gs1-germany.de	March 2012
Conference	Agri-food busi-nesses	Smart AgriMatics – Paris; Presentation on a) Smart Meat Supply Chain and b) EPCIS	June 2012
Article	Agri-food busi-nesses	STANDARDS-Magazine: "Ganz schön smart – Ressourcenschonung im Lebensmittelsektor"	April 2012
Presentation	Agri-food busi-nesses	Pdf-File "Smart AgriFood – TTAM – How it works"	March 2013
Video	Agri-food busi-nesses	Film on SAF's TTAM Pilot	March 2013

Table 16:   Planned activities of the Meat trial

Type of communication	Target Group	Focus	Timing
Leaflet	Agri-food businesses	What is the MIP trial about	October 2013
Scientific Papers	ICT community; Agri-food businesses	Call for Papers for GIL-conference: a) Meat Trial and b) EPCIS for Transparency	October 2013
Presentation	ICT community	GS1 Solution Provider Meeting	December 2013
Presentations	ICT community; Agri-food businesses	GIL-Conference: a) Meat Trial and b) EPCIS for Transparency	February 2014
Presentation	Agri-food businesses	GS1 Branchengremium Fleisch	February 2014
Workshop (*tentative*)	Consumers	Transparency in the Meat Supply Chain	FIspace M10 – M12
Workshop (*tentative*)	Agri-food businesses	Transparency in the Meat Supply Chain	FIspace M21 – M24
Press releases in portals (*tentative*)	Agri-food businesses	Transparency in the Meat Supply Chain	FIspace M6 – M24
Articles to be in the popular press (*tentative*)	Agri-food businesses	Transparency in the Meat Supply Chain	FIspace M6 – M24

7.4   Provision of material and utilization plans during project duration

The provision of material from the meat trial is summarized in table 17.

Table 17:   Provision of material from the Meat trial

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Meat supply chain partners, consumers	film on SAF's TTAM pilot :video, already available	Y	Y	Y	Y	http://www.smartagrifood.eu/pilots
Meat supply chain partners, consumers	pdf-file "How the TTAM system works" Already available	Y	Y	Y	Y	http://www.smartagrifood.eu/pilots
Meat supply chain partners, Software solution providers	Leaflet as pdf-file, Power Point and maybe in printing fomat (eng./ ger.)	Y	Y	Y	Y	Coming until end of September 2013 e. g. http://www.smartagrifood.eu/pilots

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Meat supply chain partners, Software solution providers	Business sector events for involvement of stakeholders Participation and giving a presentation (the latter if possible) on GIL-Tagung	Y	Y	Y	Y	http://www.gil-net.de/tagungen.php 2014, February 26th with online promotion on e.g. http://www.FIspace.eu/content-type/event
	Participation and giving a presentation on GS1 Branchengremium Fleisch	Y	Y	Y	Y	t. b. d. in 2014 with online promotion on e.g. http://www.FIspace.eu/content-type/event
	Participation as exhibitor and maybe giving a presentation on the Event "Branchentag Fleisch & Wurst"	Y	Y	Y	Y	expected in June 2014 with online promotion on e.g. http://www.FIspace.eu/content-type/event
	Participation as exhibitor and maybe giving a presentation on the Event "Praxistag Lebensmitteltransparenz"	Y	Y	Y	Y	expected in June 2014 with online promotion on e.g. http://www.FIspace.eu/content-type/event
Meat supply chain partners, Software solution providers	Giving a presentation at the GS1 Solution Provider Meeting	Y	Y	Y	Y	Expected in December 12, 2013 online promotion on e.g. http://www.FIspace.eu/content-type/event

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Meat supply chain partners, Software solution providers	Physical Workshops/ Training on how the FIspace works, what the MIP trial is about/ What the business case is/ what needs the stakeholder and/ or Software solutio provider need to fulfill	Y	Y	Y	Y	Beginning with the open call online promotion on e.g. http://www.FIspace.eu/content-type/event
Meat supply chain partners, Software solution providers	Press releases/ Articles in business sector related magazines e. g. STANDARDS magazine, „Fleischwirtschaft", …	Y	Y	Y	Y	Quarterly beginning with open call in November 2013
Meat supply chain partners, Software solution providers	Online public relations measurements: Performance of Web-based seminars on MIP trial	Y	Y	Y	Y	Beginning with presentation of MIP trial on the occasion of Open Call in October 2013
	Newsletter/ Mailings (e. g. GS1 Solution Provider)	Y	Y	Y	Y	Quarterly beginning with open call in October 2013???

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Meat supply chain partners, Software solution providers	Social media activities: Facebook, twitter, linked in	Y	Y	Y	Y	On demand but continuously
Meat supply chain partners, Software solution providers, consumers	Film on "how the MIP works": video, for presentation on Fairs, Websites, YouTube, …	Y	Y	Y	Y	At the end of the MIP trial

8 Communication with Consumer Goods Chains

8.1 Identification of target group

The Consumer Goods trial is concerned with planning and execution of supply chain and logistics activity in consumer goods sector ensuring effective planning of related activities resulting in improved coordination, loss minimization, efficient use of resources and high customer satisfaction level. Many parties including consignee (purchasing, production planning and logistics departments), material supplier, logistic providers (inland transporter, freight forwarder, carriers), port authorities (loading port , unloading port), custom authorities (customs brokers, customs), warehouses (purchaser's warehouse, shipper's warehouse) and ICT service providers are involved in the chain to collaborate to fulfill all roles, tasks and activities. It is a network of organizations, people, technology, activities, information and resources involved in moving products from supplier to customer. There are a number of challenges to be tackled during planning and execution of the activities as below:

- Manual registration of data and human errors.
- Complexity and manual nature of information and data transfer (phone, fax, hardcopies etc.).
- Time delays on information input.
- Communication and collaboration problems.
- Difficulties in tracking and tracing the products because of the non-existence of a unique reference number which can be utilized through all the phases of the transportation process.
- Foreseeing the delays, problems, and bottlenecks, and reacting on-time to eliminate them, is not possible since real-time and trusted data is not available or not visible.
- Re-routing of the containers (if necessary) using the up-to-date data and instructing the logistics providers about such changes on the routes, is not possible considering the current technological infrastructure.
- Since it is really difficult to have reliable data on the timing of the sub-processes, it is difficult to optimize unloading schedules to better utilize the usage of the equipment and space in the warehouses.
- In order to increase the customer satisfaction rate, it is necessary to provide the customer with correct and on-time information about the shipments.

Additionally it is very critical for shippers outsourcing the transport activity to have the ability to reach several different logistics service providers that can fulfil their request in a fast and efficient manner without losing time and effort with manual activities.

8.2 Vision and expectations of target group ("user story")

The import and export of consumer goods trial addresses a supply chain network which can be differentiated by several dimensions; by the nature of the markets (i.e. consumer expectations in the markets), by product ranges (relative importance i.e. priority of a product in that specific market), by sourcing types (production or trading) and also by the agreements and the content of the business done in collaboration with transport service providers and their capabilities.

As depicted in the figure given above, the process starts with a procurement order of raw materials from a material supplier located in the far-east and inbound transportation of the materials to the facility of Arcelik where they will be transformed into finished goods that in turn will be exported as consumer electronics goods to the UK.

The trial includes operational planning of logistics activity in line with the existing production plans (for inbound) and promises to customer (for outbound), purchasing/planning of logistics operations and the timely monitoring and coordinating the execution of the transport activities (figure 3). The trial can easily be scaled up to the total supply chain and also other supply chains in Phase 3.
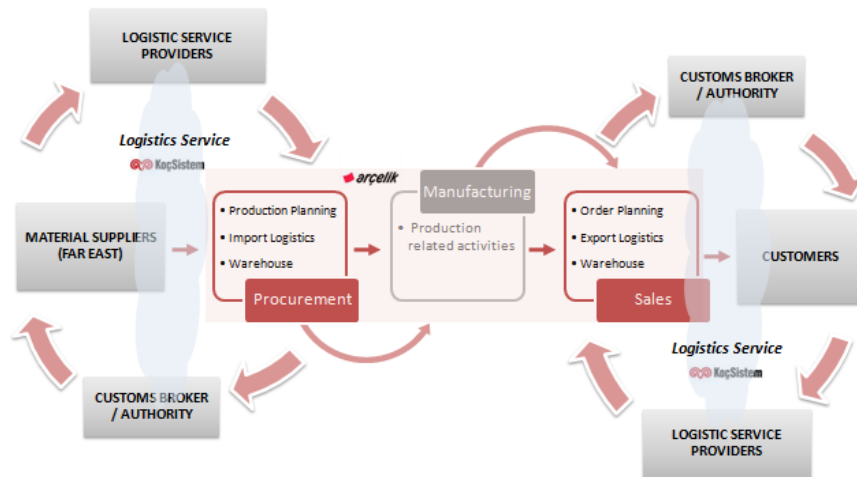
Figure 3:   Layout of Import and Export of Consumer Goods Trial

The trial focuses mainly on two main envisioned processes:

I.   Inbound process (Import) addresses the challenges encountered during the operational planning of the transport activity from the view point of the shipper. Scenario mainly focusses on the management of the transport service, i.e. transport order & booking and organizing the execution of an inbound process for Arcelik. The story is built upon the planning of the transport of materials in collaboration with the Arcelik (consignee), material supplier (shipper) and transport service providers. Cloud-based collaboration services and apps allow a better visibility and potential to reach out new potential partners for collaborating without heavy manual intervention. Potentially it is expected to increase the visibility of SMEs in global business collaboration. Increased visibility of the processes and automated notifications for deviations forms a basis for a more intelligent supply planning leading to more effective supply chains.

II.   Outbound process (Export) mainly focuses on the process of shipment status monitoring and timely deviation handling with automated notifications and triggers for re-planning. The scenario starts when the finished products leaves Arcelik's warehouse located in Turkey and continues till their journey to their end destination in UK. The transport chain planning and optimization with effective and proactive deviation management is necessary to ensure effective production planning, on-time delivery in full and high on shelf availability at the destination with high customer satisfaction level. The trial will explore the benefits of future internet applications that can provide "fast and seamless" real-time information sharing through one channel and increased level of interaction between involved parties.

The Consumer Goods trial will demonstrate how FIspace solutions will tackle the challenges listed in the previous section and provide below solutions to the various stakeholders in the chain:

- Better overview over available capacity / availability (transport means, routes, schedules, price etc.)
- Real-time tracking and data visibility
- Automation of information and documents exchange (less manual work, like phone / email / document printing)
- Ensure security in information transfer
- E-transfer of legal documents where possible
- Integration with the partners' legacy systems (logistic providers, suppliers, authorities) to reduce manual inputs
- An alert system which gives info on deviations/exceptions, and/or periodic reports, rather than being forced to manually check the status of an on-going shipment.
- Foresee possible bottlenecks & problems to be able to take action on-time
- Re-planning of the routes when deviations from the plans occur
- A unique reference number which can be used to trace the materials/products and data associated with them through all the phases of the transport.
- Visibility on environmental carbon footprint and reduction of carbon emissions

8.3   Addressing target group during project duration

The identification of potential users for the Business Collaboration platform as well as Consumer Goods trial has started in the first phase of FI-PPP program in the FInest project and it will continue with the FIspace project in the second phase. A selection of activities that are carried out during the first phase is listed in the table below (table 18).

Table 18:   Past activities of the Consumer Goods trial

Type of communication	Target Group	Focus	Timing
Information Day, Ankara	ERA-NET Transport and ICT stakeholders	FInest solutions and potential collaboration possibilities	January 2013
Innovation week, Istanbul	Civil society, scientific community and professionals	FInest project solutions	December 2012
Conference, Lisbon	Key ICT stakeholders and policymakers coming from all over Europe and Africa	FInest solutions and potential exploitation possibilities	November 2012
Congress, Istanbul	Academicians and professionals in Supply Chain and Logistics	Sustainability issues in logistics systems and supply chains	November 2012
Conference, EUREKA Chairmanship, Istanbul	EUREKA high level representatives, national project coordinators and industry representatives	FInest project solutions	July 2012
Conference, BVL 2012	Academic and Logistics Professionals	FInest project results in Logistics	June 2012
Workshop, Antalya	Arçelik's supply chain global network members	FInest project and its expected results	March 2012
Visit, Brussels	Transport Forum in UEAPME	Identifying collaboration opportunities with UEAPME members	January 2012
Conference, Istanbul	Industry, Policy makers, Civil Society	Procurement, Logistics and Supply Chain Management	December 2011

Type of communication	Target Group	Focus	Timing
Seminar, Oslo	R&D Institute, Industry and Ministry representatives	Improved Intermodal Transport and Logistics Processes, SCM activities	December 2011
Press release in Germany	Civil Society	FInest's ambitions and contribution to sustainable transport and logistics	August 2011
Workshop, Istanbul	Koç Holding group of companies	Announcement of the FInest project	July 2011
Press release in newspapers and ICT Press, Turkey	Civil Society, ICT stakeholders	Announcement of the FInest project	April 2011

The Consumer Goods Trial is planning to disseminate the FIspace's Collaboration Platform with highlighting the supply chain and logistics planning, real-time tracing and tracking and manual deviation handling aspects of the solutions to the potential users, ICT community and the Civil Society in general.

The planned activities in the upcoming period are presented in the table below (table 19):

Table 19:   Planned activities of the Consumers Goods trial

Type of communication	Target Group	Focus	Timing
Presentation	LODER (Logistics Association)	Present the FIspace project	November - December 2013
Workshop	Koç Holding group of companies (potential end-users)	After the 1st release of the trial specific apps, a workshop will take place emphasizing on the apps' functionalities	FIspace M10 – M12
Workshop	UND (International Transporters Association)	After the 1st release of the trial specific apps, a workshop will take place emphasizing on the apps' functionalities	FIspace M10 – M12
Workshop	Arçelik's global network (supply chain gathering) and Zer A.S. (Koç Holding's central purchasing	After the pre-final release of the trial-specific apps, a workshop on testing and receiving feedback on the apps' functionality	FIspace M21 – M24

Type of communica-tion	Target Group	Focus	Timing
	company)		
Press releases in portals	Civil Society,	Announcement in the FIspace web site, Arçelik's web portal as well as other ICT and supply chain specific portals	FIspace M6 – M24
Articles to be in the ICT press	Civil Society, ICT Stakeholders	Announcement about the Supply Chain and Logistics solutions and the FIspace project	FIspace M6 – M24

8.4 Provision of material and utilization plans during project duration

The training and educational material will be prepared and delivered to various target groups for disseminating the FIspace project and Consumer goods trial (table 20). These activities will be carried out during the lifetime of FIspace project to promote and support its expansion for the upcoming period.

Table 20:   Provision of material from the Consumer Goods trial

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Internal partners, dissemination material for external stakeholders	Presentation	Y	Y	An updated presentation of the Consumer Goods trial	Y	Owncloud – Dissemination Material
Potential stakeholders, users, ICT community, Civil Society	Leaflet	Y	Y	Consumer Goods trial leaflet	Y	Available on request

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Potential users, Businesses and ICT community	Flash or video or presentation	Y	Y	Consumer Goods' Apps to be used in the use cases with GUI mockups, functionality description etc,	Y	Available on request

The Consumer Goods trial members will update the existing material and prepare new dissemination and educational material based on the progresses achieved by FIspace project. The activities will be carried out together with the dissemination and community building members during the lifetime of FIspace project.

9   Communication with Consumers

9.1   Identification of target group

The educational material and training activities that will be developed in the course of the project will be focused to provide information to, on the one hand, **consumers**, and on the second hand, **stakeholders** and **developers**.

The aim of the TIC trial is to test and present how we can use all the potential of Future Internet and the FIspace platform to improve food awareness among consumers. For this experimentation, we will focus on developing a trial system that will help consumers to be more aware of the food they buy in the supermarket and that they eat.

Plusfresc is a food retail organization and as a final agent of the chain, has a direct contact with the final consumer. Therefore, as a retail store and distribution platform Plusfresc is a platform where test applications can be implemented together with a direct analysis of the results and its impacts on customers.

The pilot is designed with the aim to provide value for the upstream and downstream next steps in the chain, being consumers downstream and the producers and suppliers upstream. These are the targets of TIC trial educational and training activities that will be addressed:

- **Consumers:** Consumers need to know information of the products they buy, in a fast, easy, reliable and rigorous way. Consumers are becoming more and more interested in being informed of product attributes, so we need to be able to provide to consumers all product related information from farm to fork, according to the interests of each consumer.

  Consumer target include groups of selected consumers in TIC pilot activities such of workshops; and consumers associations and confederations such as OCUC (Organització de Consumidors i Usuaris de Catalunya).

- **Stakeholders:** These are producers and suppliers working in improvements to assure that their products reach consumers giving information of all product attributes. Communicating attributes of their products will add a clear value.

  Stakeholders target include producers and suppliers organizations such as agricultural associations, companies associations (such as GS1 in Spain, AECOC), small and medium enterprise associations (such as Comertia, the Catalan association of the family business of trade organization), purchasing and services centres (such as the Association of pork meat industries, Federation of Food and Beverage Industries and Cluster of industries on wine production).

- **Developers:** The benefit for the software developer is based on the added value that can be provided to the retailer. If it has some economic benefit they will be open to face new projects and to deploy these solutions.

9.2   Vision and expectations of target group

The TIC trial is mainly focused on the data management and provision to consumers. The pilot aim is to provide solutions to all consumer vision and expectation. The functionalities of the App developed with the aim to provide solutions to consumers are described in the form of a user story as follows:

Carl is a frequent shopper at Plus Fresc and he has a Plusi fidelity card. He has received an email informing that Plus Fresc forms part of a new platform called FIspace that offers an App store where he can get/buy different Apps that offer new innovative functionalities.

Carl is allergic to wheat, and cares quite a lot about his weight, although he loves making desserts. Since now they are three at home he has to care about product price and tries to benefit from as much offers as he can.

Carl logs himself in the FIspace platform and accesses the store. He decides to download the PRODUCT INFO App, since each time he enters the shop he spends lots of time looking for products that are gluten free and this App will allow him not only to know which product are gluten free, but to get detailed product information by just scanning the QR code placed in the product). This information can include social, health or environmental aspects. There is also the possibility to scan those quality logos the product provides and obtain their real meaning, since sometimes it is a bit confusing. He enters the App and configures his profile, introducing the type of information he want to get, the preferred language, etc and the fidelity card number. He downloads also the TRAFFIC LIGHT App that will allow him to visualize with easy colour codes the fat, saturates, sugar and salt of the product, based on the Food Standards Agency rules (figure 4):

per 100 grams	low (green)	medium (amber)	high (red)
Fat	≤ 3,0 gr.	> 3,0 gr. and ≤ 20,0 gr.	> 20,0 gr.
saturates	≤ 1,5 gr.	>1,5 gr. and ≤ 5,0 gr.	> 5,0 gr.
Sugar	≤ 5,0 gr.	> 5,0 gr. and ≤ 12,5 gr.	> 12,5 gr.
Salt	≤ 0,3 gr.	> 0,3 gr. and ≤ 1,5 gr.	> 1,5 gr.

Figure 4:   Color codes for Traffic Light App

So as not to buy unnecessary products, Carl wants to prepare his shopping list before going to the supermarket. He is about to start writing it down when he remembers the FIspace platform, he enters and realizes there is a SHOPPING LIST App, and this App allows him, not only to make his shopping list by selecting the product, but by scanning its code, so he scans those products he has at home. He cannot forget to buy the ingredients of the cake for the birthday of his little daughter! But, did he need milk or cream? He enters the SHOPPING LIST App and accesses the recipes, he looks for the chocolate cake recipe and adds the ingredients to his shopping list. He realizes he can add products to the shopping list by family and subfamily categories. Therefore, he adds cream and the chocolate all his family likes the best; Plusfresc own branded 70% cocoa chocolate.

Now Carl is ready to go to the supermarket. Once he arrives, he sees a big banner announcing that customers can improve their shopping experience by FIspace innovative functionalities. He is ready to begin his shopping. Along the aisles, he finds products with a QR code. He reads QRs with his mobile, and through the PRODUCT INFO app he receives tailored information about the products he scans.

Finally, Carl reviews the shopping list and he ticks a box next to each product to be sure he has bought all of them. Unfortunately, Carl does not realize he has forgotten to buy rice. He validates his shopping and immediately the mobile beeps indicating he has missed the rice. Goodness! His wife was going to cook a paella for the birthday party and he could not forget this important ingredient.

Once Carls finishes his shopping he goes back home, and when he opens the milk, the taste is very strange, so he decides to send this complaint through the PRODUCT INFORMATION App. In few days, he receives an answer from Plusfresc thanking the feedback and including an e-voucher from the milk producer for four free of charge bottles of milk.

The next day Carl goes to the supermarket he sees a new banner announcing "AUGMENTED REALITY OFFERS". What is that? Carl enters the FIspace store and discovers the AUGMENTED REALITY App. He downloads it, and when he enters, he receives a message saying "Today special offer in cereals" information Plus Fresc has predefined that the consumer will receive (in a "push" mode). Following the instructions in his mobile, Carl directs his mobile to the cereals and gets information about offers superposed to the image he is getting.

A couple of weeks after, he is at work and receives an email informing there is a security alert related to some tomatoes he has bought, so he is required to get them back to the shop in his next visit so as to give him his money back.

9.3   Addressing target group during project duration

- **Past activities**

Past activities addressing target groups took place in Phase I of FI-PPP in the SmartAgriFood project.

- **Workshops**

The pilot Tailored Information for Consumers as defined and evaluated by involving directly the end-users, the consumers. For this, several sessions were performed in a Bon Preu supermarket, where a panel of consumers participated in defining requirements and tested the Web app. The sessions were called *workshops with consumers*, because of their interactive and open to discussion nature between consumers and the project.

The objective of these workshops was to involve a panel of 15-20 consumers in all the process of the TIC pilot, its conception, development and evaluation. Four workshops were carried out in Bon Preu each one with different objectives: the two firsts ones aimed to identify consumer product information needs and requirements on how to get more product information; the second and third ones aimed to test, improve and validate the developed TIC Web app (figure 5). In the last workshop fTrace from the TTAM pilot and its integration with the Web app was also tested, so consumers could also use fTrace in order to get rich information on meat products. The development of all workshops with consumers in a closed environment enabled detecting and improving the TIC Web App in order to decide on an open deployment in a real supermarket, if the tests assured its viability.
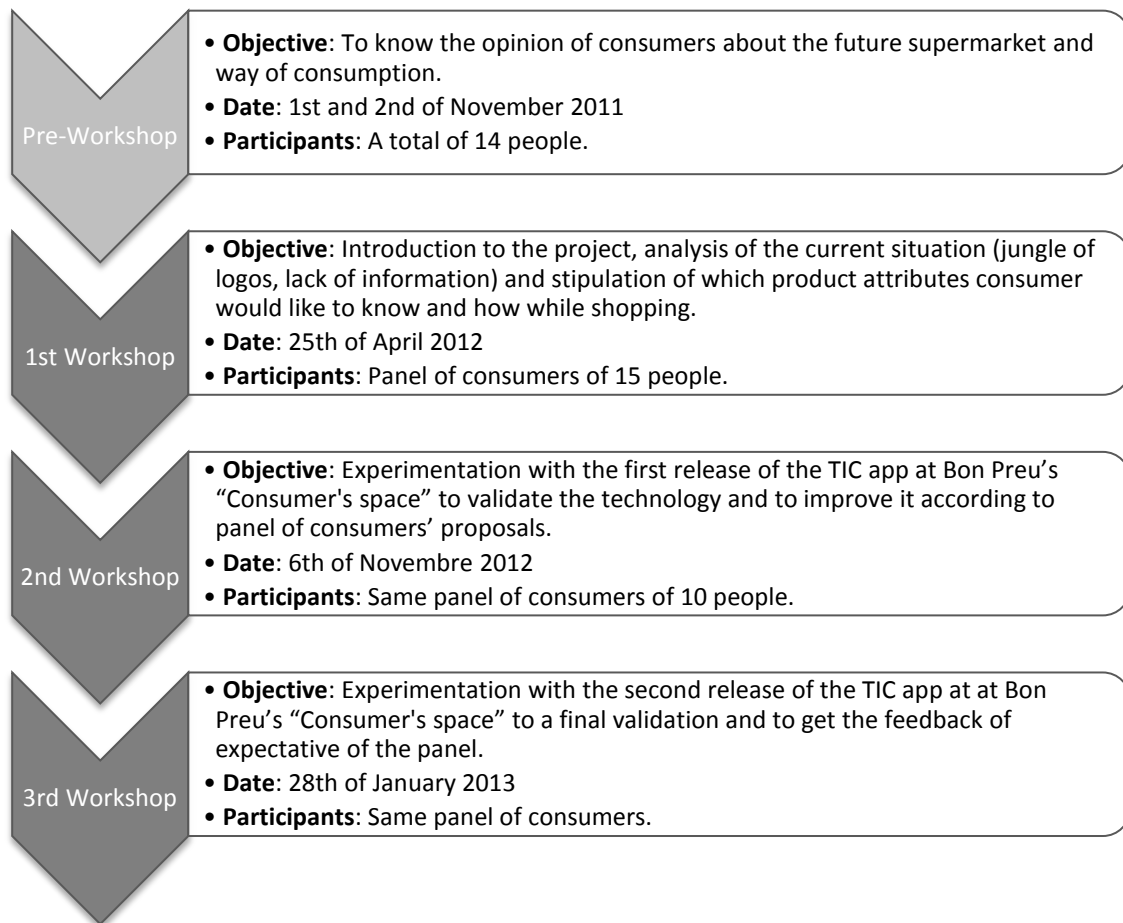
Figure 5:   Objectives of the workshops

- **Congresses**

From Monday 25ht to Thursday 29th of February, the Mobile World Congress was held in Barcelona. SAF was present there in the Future internet- PPP initiative stand, promoted by CONCORD. During these three days all dissemination material created in the project were available (project leaflet, videos,...) and in different slots presentations were performed for all interested participants. ATOS and Bon Preu have been the responsible to attend all participants demands and carried out the demonstrations for all 6 pilots.

- **Planned activities**

The TIC trial is built on a case of shopping experience at a supermarket as described in the previous shopping story in point 2.2.

In order to test all this functionalities of the App, several activities with consumers will be conducted. The main objectives of these activities will be:

- To test the software applications with consumers

- To collect the opinion of consumers about the functionalities of the applications

- To detect weak features of the application in order to solve/improve them

- To determine what are the features more valuable for consumers in order to promote them

- To promote the use of the application among consumers

These activities will be coordinated with the development of the apps, so different workshops will correspond with the different trial releases, expected for months M12, M18 and M24.

The functionalities planned for each release are the following (figure 6):
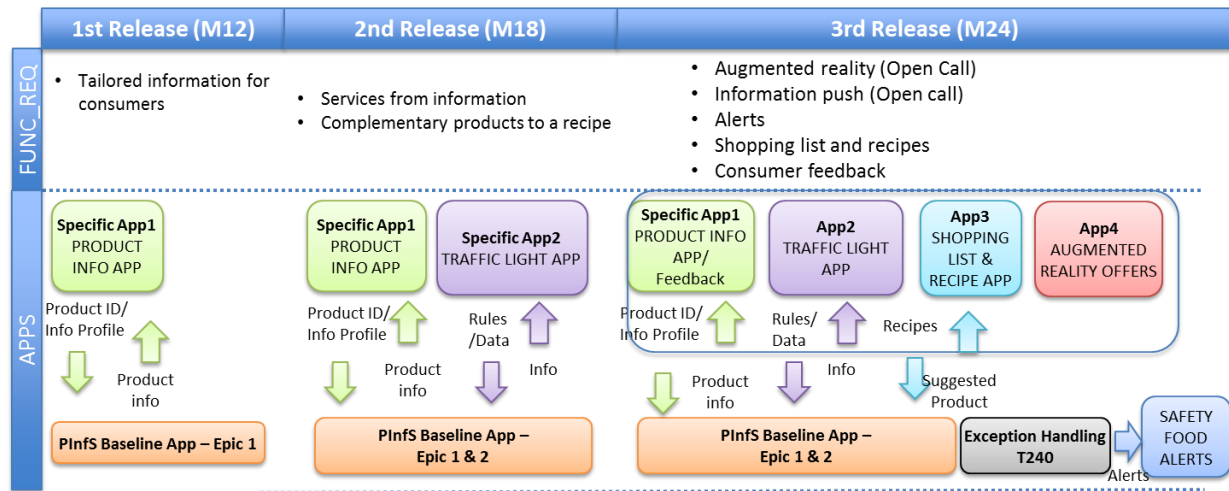
Figure 6:   Planned releases of TIC apps

Based on this releases, different workshops will be carried out with final users:

- **Workshop 1:** to test PRODUCT INFO application at the Consumers' space. For this first workshop a group of trusted consumers will be selected. Since the consumers' space is at Sunka supermarket, costumers with Fidelity card who are usual shoppers at this supermarket will be chosen. The partners of this workshop could also be customers who have attended other PlusFresc activities such as cooking lessons at Sunka space.

- **Workshop 2:** Its main goal is to test the new version of the PRODUCT INFO application and the Traffic Light Food Application. This trial is oriented to a wider audience, as it is important not only to receive feedback from applications usage and usefulness, but also to get more ideas that can be translated to new versions of the released applications or new requirements for the applications that are being developed in that moment. Partners could be general consumers and not only a selected group.

- **Shopping experience at the supermarket 1:** The application will be tested at the supermarket scenario, not only at the consumers' space. Products from supermarket shelves will be scanned to get product tailored information.

- **Shopping experience at the supermarket 2:** The application will be tested at the supermarket scenario, not only at the consumers' space. Products from supermarket shelves will be scanned to get product tailored information.

The diagram in figure 7 describes the planned workshops and activities with consumers. These activities will be accompanied with promotional and informative material such as flyers, power point presentations and designed enquiries.

```
                    ┌─────────────────────┐
                    │ Definition of PRODUCT│
                    │     INFO app         │
                    └──────────┬──────────┘
                               │
                    ┌──────────▼──────────┐
                    │ 1ˢᵗ Workshop with consumers (info requirements: product │
                    │ attributes) planned M12                                 │
                    └──────────┬──────────┘
                               │
                    ┌──────────▼──────────┐        ┌──────────────────────┐
                    │ Development of TRAFFIC│       │ Training of consumers on│
                    │     LIGHT app        │        │ how to use the application│
                    └──────────┬──────────┘        └──────────────────────┘
                               │
                    ┌──────────▼──────────┐        ┌──────────────────────┐
                    │ 2ⁿᵈ Workshop with consumers (mock-│───►│ Improvements │
                    │ up test) planned M18 │        └──────────────────────┘
                    └──────────┬──────────┘
                               │
                    ┌──────────▼──────────┐
                    │ Implementation of the prototype in the "con-│◄──┐
                    │ sumer space"(closed test)│
                    └──────────┬──────────┘
                               │
                    ┌──────────▼──────────┐        ┌──────────────────────┐
                    │ 3ʳᵈ Workshop with consumers (shopping expe-│───►│ Validation and │
                    │ rience) M22          │        │ feedback │
                    └──────────┬──────────┘        └──────────────────────┘
                               │
                    ┌──────────▼──────────┐
                    │ Deployment of the prototype in the│◄──┐
                    │ supermarket (open test)│
                    └──────────┬──────────┘
                               │
                    ┌──────────▼──────────┐
                    │ 4ᵗʰ Workshop Test with consumers (shopping│
                    │ experience in the supermarket) M24│
                    └──────────┬──────────┘
                               │
                    ┌──────────▼──────────┐
                    │      Results         │
                    └─────────────────────┘
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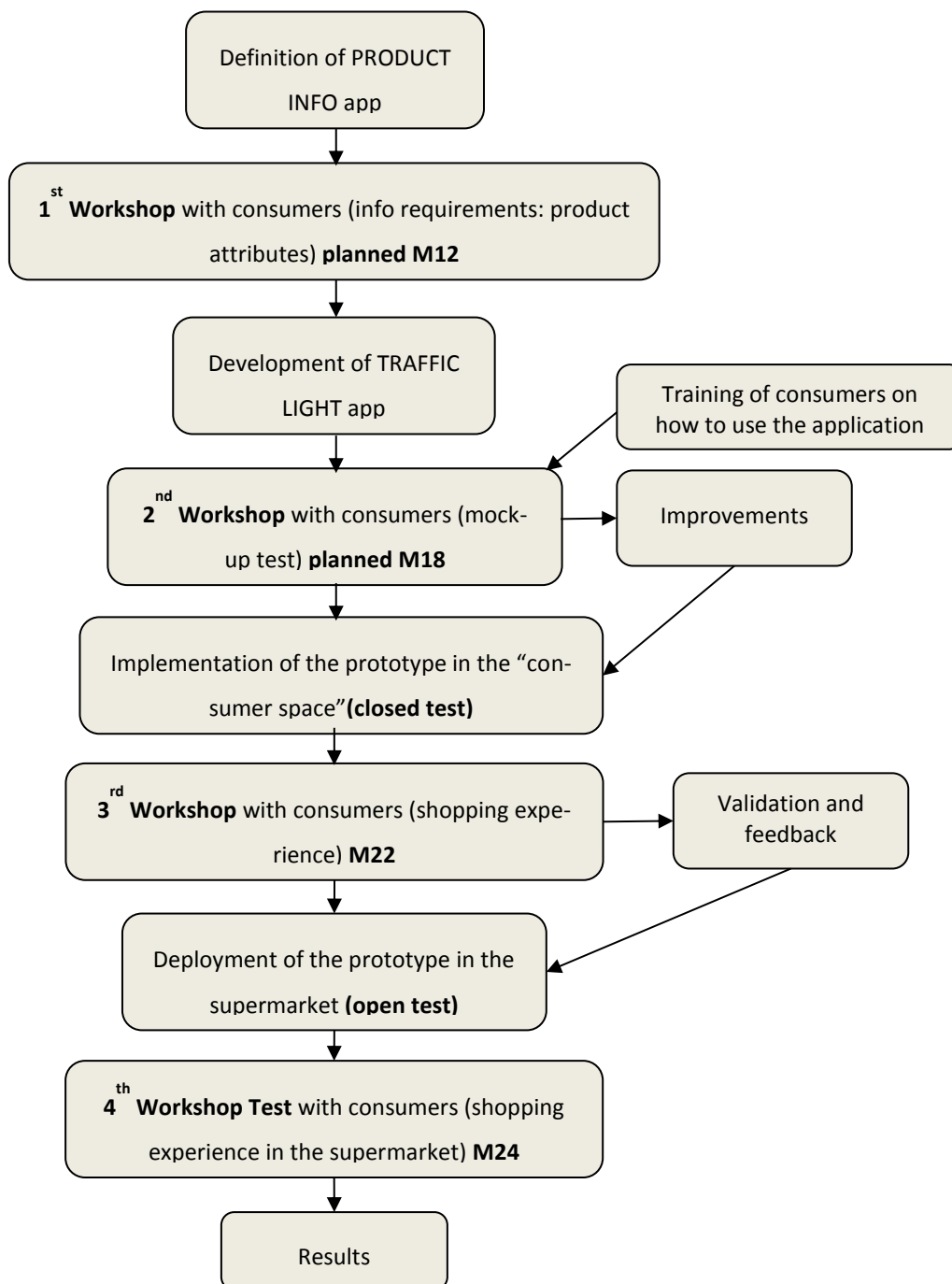
Figure 7:   Workshops planned with Consumer Involvement

9.4   Provision of material and utilization plans during project duration

During the project, different types of materials will be prepared and used according to each activity. In this sense, all documentation will be designed taking into account the type of audience to which it is delivered.

-   Consumers in closed and open workshops: These workshops will begin with a power point presentation showing the participants an introduction to FIspace project and its objective. An specific presentation of the workshop will be followed. Other material will be provided to consumers, such as, specific instruction on the usage of the applications

FIspace
Business Collaboration

- Consumers in general: These activities will begin with a power point presentation showing the participants an introduction to FIspace project and its objective. Presentations will serve to show all the values of TIC App and the benefits consumers can get. Flyers summarized information will be distributed.
- Stakeholders: These activities will begin with a power point presentation showing the participants an introduction to FIspace project and its objective. Presentations will serve to show all the values of TIC App and the benefits for different types of companies in the agri-food sector and other sectors. Flyers summarized information will be distributed.

In the following table the provision of material is summarized.

Table 21:   Provision of material from the Consumers trial

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
Consumers in closed workshops	Presentations and enquiries for close workshops	Y	N	Y	Y	On request
Consumers in open workshops	Presentations and enquiries for open workshops	Y	Y	Y	Y	Own cloud
Consumers, general ans associations	Flyers and presentations	Y	Y	Y	Y	Own cloud
Stakeholders	Flyers and presentation	Y	Y	Y	Y	Own cloud

Besides the material provided to consumers, some information from consumers to be used as feedback received from the workshop. To get this information, consumers will be asked about the usefulness of the applications developed or to be developed, potential improvements, strengths and weaknesses of the approach and the methodology used, etc.

This material will be attached to the notes taken by the organizers of the workshop, on the number of questions the consumer asks user while using the application, average time employed to retrieve information of products, willingness and interest of the users during the experiments, etc.

With all this information a report of workshop results will be elaborated and will be used as an internal document for the extraction of requirements for the design and modification of the released applications.

Part III: System development Stakeholders: Activities and material for support

This part summarizes activities, material and support initiatives directed towards system development groups inside the project as well as groups integrated through open calls or groups that might be interested or engaged in projects evolving during phase 3 of the FI-PPP program. As is common in the market the report distinguishes between groups that engage in farm management systems and groups that deal with non-farm businesses and chain cooperation.

10 Farm Management IT System Providers

10.1 Identification of target group

Farm management IT system providers focus on farmers as customers. A farm management information system is used for collecting, processing, storing and disseminating data in the form of information needed to carry out the operations functions of the farm.

Farm management IT system providers are important stakeholders in the FIspace project. Farm management IT system providers offer often IT services to both famers as to the enterprises that are exchanging information with the farm enterprise. This B2B communication can be facilitated by the FIspace platform when farm management IT system providers collaborate with the FIspace project. This collaboration can most certainly enable farm management IT system providers to improve their services regarding to flexibility, cost and user-experience. Therefore, farm management IT system providers are the main target group for the Open Calls both in Phase 2 and, more importantly in Phase 3. It is expected that a number of these enterprises will develop domain specific applications for the FIspace platform. Most of them are SMEs and focus on a single national market. However, a number of vendors have an international focus. In some countries, system providers are also organized in business associations. These organizations have also to be targeted in support and education activities.

Research centres and university departments are also active in development for farm management information systems and related research. Many of them are active in other FP7 projects.

10.2 Vision and expectations of target group ("user story")

For IT system providers, it is always important to have a detailed knowledge on ongoing and future developments of novel technologies in their field. Based on this expectation, the FIspace project has to address this target group to make them aware of the on-going development. This will also enable them to participate in the current activities. In the long term, FIspace will become a market place which enables the Farm management information system providers to acquire new customers for their products and to market their products more efficiently.

To be able to develop FIspace specific applications, the system providers need detailed information on the platform architecture, its interfaces and the standards used. Additionally, they have to be aware of applications that are needed for the trials (Phase 2) and for future business (Phase 3).

The easiest way to present this information is written documents. For this purpose, extracts from deliverables can be used which are adapted for public use and disseminate only information classified as public and containing only references to sources which are also publicly available. These documents should then be disseminated to those stakeholders who declared their interest in active participation.

10.3 Addressing target group during project duration

Past activities addressing farm management system providers are summarized in table 22.

Table 22:   Past activities of targeted on farm management IT system providers

Type of communication	Target Group	Focus	Timing
Talk	ICT community	Present Semantic web technologies within FIspace on HAICTA conference	September 2013

Table 23:   Planned activities of targeted on farm management IT system providers

Type of communication	Target Group	Focus	Timing
Talk (tentative)	ICT community	Present the standardization results on GIL conference	February 2014
Mailing	ICT community	Create awareness for Open Call	FIspace M7
Website development	ICT community, research	Integration of FIspace results into aXTool (www.agrixchange.eu)	FIspace M6 – M24

10.4 Provision of material and utilization plans during project duration

The provision of material for farm management system providers is summarized in table 24.

Table 24:   Provision of material targeted on farm management IT system providers

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
	Presentations and enquiries for close workshops	Y	N	Y	Y	On request
IT system provider	Description of domain specific applications	Y	Y	Y	Y	On request

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11 Enterprise and Chain IT System Providers

11.1 Identification of target group

The target group involves the following enterprise groups or representatives of such groups:

- Developers and testers that will use the development and experimental cloud infrastructure of the project for system developments.
- Developers interested in contributing to the FIspace core platform, domain specific functionality or user interface widgets.
- Technical representatives of SME's participating in the open call

11.2 Vision and expectations of target group ("user story")

Technically well founded developers need brief instructions about applied technology, development practices, deployment procedures etc.

Software developers will need to use secure access VPN pages to access the systems based on roles and access rights defined before. WP300 will provide the roles and access permission's to the developers. Developers will need to build on a cloud infrastructure (figure 8) and a network architecture that provide an acceptable experimental and production environment that enables them to execute the software developed in WP200 and with a focus on the use case trials defined in WP400.

The testers and/or users linked to the various trials and the FIspace platform will need to connect to the Cloud Architecture securely with appropriate rights by using SSL/VPN technologies. Firewall and IPS technologies will provided by the FIspace Cloud Architecture. Cloud portals are needed that provide to customers the opportunity to create, open, delete and control virtual servers.
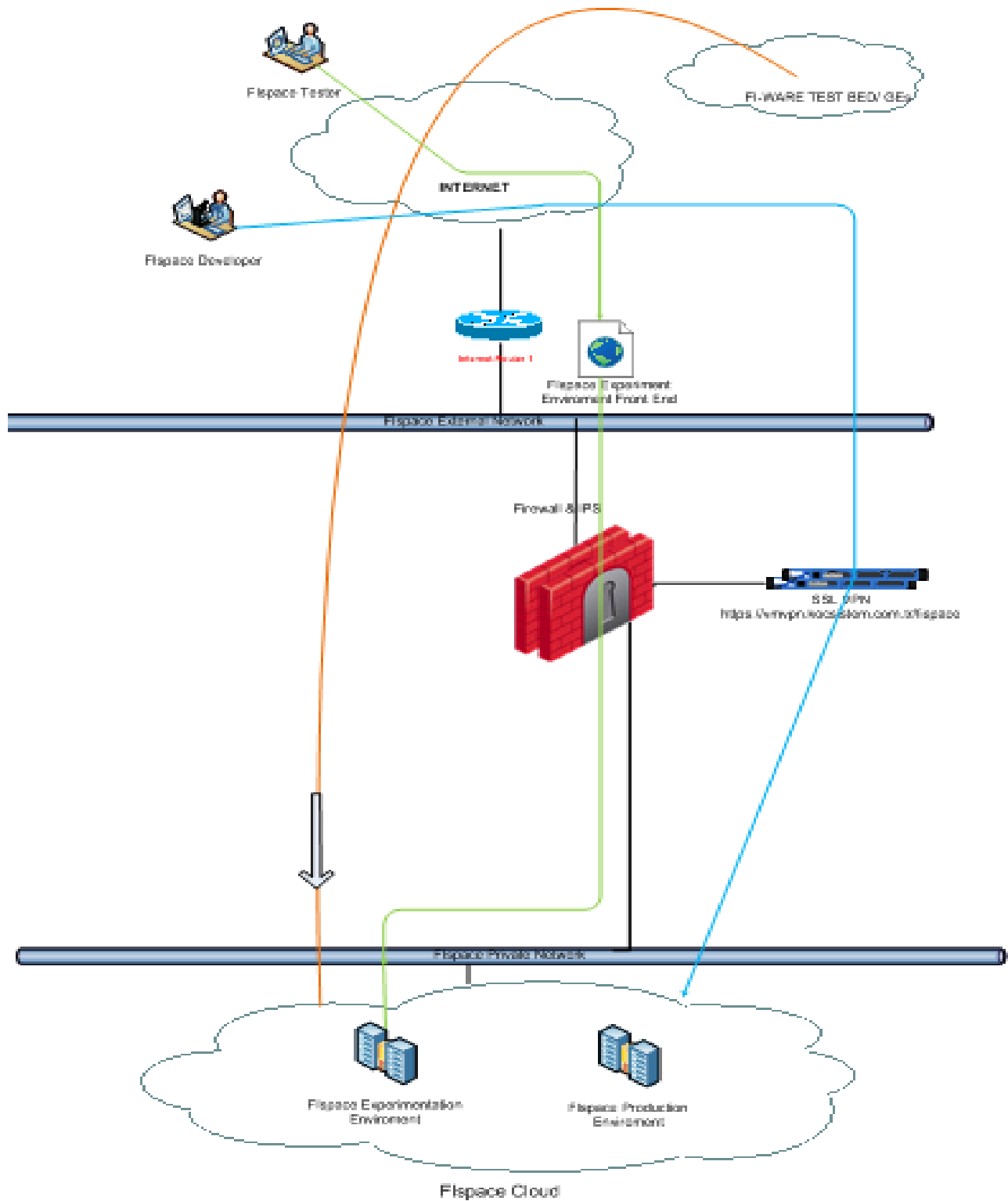
Figure 8:   FIspace Cloud Architecture

11.3 Addressing target group during project duration

Detailed information about FIspace Modules and planned to be used FI-WARE GEs in FIspace infrastructure needs to be presented to the ICT community in a way that it is understood and can be used to create apps for FIspace. Past and planned activities are summarized in tables 25 and 26.

FI-Space Modules and Applications inventory list contains the following items:

- Module or Application Name
- Operating System
- Network
- Considered as to be used GE and GE implementation
- Release/Version of the GE
- Tested / Contact person
- Important Links of GEs
- Applications / Platform
- Remote Access
- Internet Connection
- Resource Availability
- Acceptance Test of GE for the module
- Problems / Success with GEs

FI-WARE GEs inventory list with its items can be found in section "2.4 FI-WARE GEs Installations & Integrations".

The presentation of FIspace has been done in several workshops. Additionally, internal and external educational sessions have been carried out and are planned for the future.

Table 25: Past activities of for enterprises and chain IT-systems

Type of communication	Target Group	Focus	Timing
Collecting Software / GE Inventory List	Developers	Cloud Infrastructure planning	April 2012
FIspace educational session No.1	FIspace partners	'How does the FIspace work?' a dedicated workshop on the platforms facilities	June 2013
FIspace educational session No.2	FIspace partners	'How do I use the FIspace?' trying to tell the story from the user perspective	July 2013

One major aspect of education of ICT communities is to first educate the open call winners in workshops and with educational material. A enhanced and improved version will be provided later in the project to ICT communities.

Table 26:   Planned activities for enterprises and chain IT-systems

Type of communication	Target Group	Focus	Timing
Online meeting (google hangout or skype)	Developers	informational session about what is involved in development on FIspace	after first shortlist with open call candidates is provided.
Online meeting (google hangout or skype)	Developers	technical in dept session about what is involved in development on FIspace	after final open call SME's are selected
Updating Software / GE Inventory List	Developers	Cloud Infrastructure planning	October 2013
Workshop	Developers	SSL VPN Usage	October 2013
Workshop	Developers	Cloud Portal Usage	November – 2013

11.4 Provision of material and utilization plans during project duration

The provision of material is summarized in table 27.

Table 27:   Provision of material for enterprises and chain IT-systems

Target group	Type of material	Availability for project internal use (own use and part-ners)	Availability for distribu-tion to ex-ternal target group	General information	Dedicated material	Located
	Presentations and enquiries for close workshops	Y	N	Y	Y	On re-quest
Project Consortium	Presentation on 'How does the FIspace work?	Y	N	Y	Y	Owncloud
Project Consortium	Presentation on 'How do I use the FIspace?	Y	N	Y	Y	Owncloud
Technical description for non-IT stakehold-ers	Revision of 'How FIspace shall work'(Adapted output from "Ed-ucational Ses-sion I",)	Y	Y	Y	Y	On re-quest
External partners	Revision of 'How do I use the FIspace?	Y	Y	Y	Y	On re-quest

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Part IV: Stakeholders as potential consortium organizers towards Phase 3

This part of the report deals with stakeholders that are envisaged as potential organizers of projects in phase 3 of the FI-PPP program.

12 Phase 3 Stakeholders

The Future Internet PPP phase 3 should capitalize on the investments of previous phases 1 and 2 according to the EC call[1] ensuring that "technological developments and trials taking place in phases one and two will evolve into seed-type activities generating actual take-up of innovative Internet services and applications"[2]. This 3rd phase is organized in two different steps targeting different stakeholders:

- FI-PPP call 3, targeting **SME intermediaries** or organizations with connections to SMEs, Web entrepreneurs, startups, software developers, etc. Examples of such intermediaries are start-up accelerators, crowd funding platforms, venture capitalists, co-working spaces, regional funding organizations, SME associations and technology companies[3].
- These "SME intermediaries" will be organized in up to 20 different consortiums and they will be in charge of launching open calls targeting SME and web entrepreneurs (**developers**).

FIspace project considers phase 3 as a fundamental path towards the project exploitation. "Phase 3 projects will take FIspace to the level where many App developers will build relevant Apps for the FIspace App store and where users will experiment with them in real-life environments stimulating the demand side all over Europe"[4]. It is therefore essential than a proper transfer of knowledge is done in between FIspace and the phase 3 projects (considering both the SME intermediaries and the SME/Web-entrepreneurs).

In the process of defining the training and knowledge transfer activities required for stakeholders part of FI-PPP phase 3 the following challenges have been identified:

- Differentiation in between the needs of SME intermediaries and SME/Web entrepreneurs
- Creation of sustainable ecosystems (including developers and users)
- Steps from development to experimentation and ultimately to exploitation
- Limited overlapping time in between FIspace and phase 3 projects: 1 year and less than 9 months with the SME/Web entrepreneurs. All the training and knowledge transfer activities should be concentrated on this time.

The high level planning defined for training and knowledge transfer activities is:

- Dec 2013 – Apr 2014: Preparation of materials and more details plans to engage with phase 3 projects.

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[1] http://ec.europa.eu/digital-agenda/en/fi-ppp-phase-3
[2] http://ec.europa.eu/digital-agenda/en/fi-ppp-phase-3
[3] http://ec.europa.eu/digital-agenda/en/fi-ppp-phase-3
[4] FIspace D500.1.1 "Detailed plan for community building"

- Apr 2014 – Sep 2014: Engagement with phase 3 projects. Welcome package and some knowledge transfer activities towards SME intermediaries.
- Sep 2014 – Apr 2013: Massive knowledge transfer, educational and training activities for phase 3 projects and developers (including FIspace V2 and FIspace V3)

FIspace plans to deliver the following educational material and activities for phase 3 stakeholders:

1. <u>Support to phase 3 proposers</u>: FIspace will make available in October 2013 a document that provides all the necessary information for proposers including some ideas for topics and project configurations. (FIspace D570).
2. <u>Support to SME intermediaries</u>:
   a. Welcome package to phase 3 projects
   b. Best practices and tools to build sustainable FIspace ecosystems (lessons learned from the FIspace trials and inputs related to exploitation, standardisation and other key aspects for the sustainability of the ecosystem)
   c. Training for trainers: Development, deployment and experimentation
3. <u>Support to developers (SME and web-entrepreneurs)</u>:
   a. Technical documentation of FIspace components and Apps already developed.
   b. Technical documentation to support the design of experiments using FIspace

The tools and channels provided to deliver the above mentioned education material will be:

- Collaborative and online supporting tools: the guides for the FIspace for Users and for Developers, Technical Documentation for all FIspace components and Apps.
- Workshops, webinars and documentation
- Support to the community of developers (most likely using the web-based hosting service for software development used by FIspace internal developers such as Heroku. Support to developers will be done based on the peer-to-peer support from the community.
- Single point of contact (inbox email) for questions and feedback (not focused on supporting developers but SME intermediaries)

FIspace will produce materials and more detailed plans in M12 that will be adjusted and refined according to the phase 3 project needs during the above-mentioned phase of engagement with the selected phase 3 projects (May2014 to September 2014) (tables 28 and 29).

Table 28:   Planned activities for phase 3 projects

Type of communication	Target Group	Focus	Timing
Workshop	Phase 3 projects (SME intermediaries)	Welcome package to phase 3 projects describing the capabilities of FIspace (development, experimentation, available APPs), planned support, input from the trials, and initial information about how to build sustainable ecosystems	May-Jun 2014

At the moment of releasing this document (M6) FIspace cannot deliver more information about detailed transfer activities with phase 3 projects. Such activities will be pre-planned by M12 (April 12) and shared and adjusted while phase 3 projects get on board.

Table 29:   Provision of material from FIspace for phase 3

Target group	Type of material	Availability for project internal use (own use and partners)	Availability for distribution to external target group	General information	Dedicated material	Located
SME intermediaries / Phase 3 projects	Presentations, documents, webinars, and videos Themes included are: Describing the capabilities of FIspace (development, experimentation, available APPs), Tools Inputs from the trials, and initial information about how to build sustainable ecosystems	Y	Y	Y	Y	FIspace Collaborative and online supporting tools
SME and web-entrepreneurs (Developers)	Technical documentation of FIspace components and Apps already developed. Technical documentation to support the design of experiments using FIspace	Y	Y	N	Y	FIspace Collaborative and online supporting tools

Part V: Summary of activities and material

13 Summary

So far no document was available that showed the overall material being present and in preparation from all FIspace partners. Regarding educational sessions and knowledge transfer events a collection is provided via the present deliverable, which avoids double work and allows to use material already usable. Having a shared understanding on what stakeholder groups are integrated in the project and what their individual need are very much contributes to targeted knowledge transfer and suited trainings. Due to the variances in understanding of project related information future trainings will have to be adapted to the individual communities. Regarding to that, language and duration of events are key factors.

This deliverable only represents the current status quo handed in by the contributors However, as the project runs, new material will be developed and existing material will be adapted. Thus, a sustainable way of dealing with what has been done and what plans are emerging involves an ongoing process. Therefore, a "living document" will be published in the owncloud and, if appropriate, in other outlets of the project. As a shared document it will summarize the trials' and WPs' activities and material. Linkages to the location will allow easy access to the information. In the upcoming future, updates on material and events will be added to this document in order to keep track on the latest proceedings. Based on this, we can better prepare training materials and get an overview on planned activities in order to find synergies (e.g. Joint Stakeholder Meetings).

Altogether, the content of the deliverable 510.2 and the living document is envisaged to serve as a guideline and plan for trainings as well as for knowledge transfer in the FIspace project and towards its stakeholders.