I1 - Low Cost Wireless Sensor Network based on Open Hardware

**Summary of the innovation**

To engage small-medium farmers into next generation agricultural processes, it is essential to present them with products and services that have as low entry cost as possible. To this end, a simple, effective and low cost wireless sensor network deployment was needed so that farmers will benefit the most from what a platform such as FIspace has to offer.

However it is often the case that sensor network equipment is really expensive and is only compatible with the vendors’ software management solution. This leads not only to vendor lock-in, but also extends the investment depreciation far back in time.

By utilizing open hardware and low cost Arduino-based solutions, along with several sensor integration and hardware modifications activities, we were able to develop a significantly lower cost wireless sensor network, targeted at small farms. The wireless sensor network is accompanied by software modules for management of the gathered values, as well as being able to communicate these measurements to other platforms via the web.

**Key features / capabilities**

* **Low Cost Wireless Sensor Network:** Several medium ready solutions were integrated together in order to bring down the cost of the hardware deployment.
* **Easily extensible:** Introducing new network nodes to the network is done through a plug and play manner.
* **Data Management:**  The Wireless Sensor Network is accompanied by management software responsible for collecting the measurements, storing them, presenting them to the user, and communicating them to other systems if needed.

**Maturity level (TRL - Technology Readiness Level)**

* **TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)**

**Availability**

* **Deliverable (report)**
  + **WP 400 deliverables**
  + **Code available on FIspace Apps repository.**

**Licensing**

* FIspace license

**FIspace partner(s) that own innovation & contact points**

* NKUA (Sokratis Barmpounakis, [sokbar@di.uoa.gr](mailto:sokbar@di.uoa.gr))
* Innovators (Makis Stamatelatos, [makis.stamatelatos@innovators.gr](mailto:makis.stamatelatos@innovators.gr))

Business Partner Correlation and Recommendation

**Summary of the innovation (max. 1000 characters)**

In the context of modelling business entities in the FIspace platform and providing intelligent services for collaboration of business partners, a recommendation mechanism has been designed with focus on co-relating and providing recommendations for potential business partners based on numerous factors and parameters. The mechanism plays a significant role in accelerating participation of a new-coming business partner in the FIspace platform but also ensures future discovery and establishment of business relations and interactions.

**Key features / capabilities**

* Recommendations mechanism for potential business partners, which exploits and correlates entity properties such common business activity, established relations and location relevance.
* Recommendations that may trigger potential partnerships are based on:

1. Established business and communication relationships (1st and 2nd level partnerships)
2. Partner’s business activity (i.e. followers of the same company’s profile)
3. Location information of registered entities

**Maturity level (TRL - Technology Readiness Level)**

* TRL 7 – System prototype demonstration in operational environment

**Availability**

* Deliverable (report)
  + D200.3 – D200.4
* Open source project
  + https://bitbucket.org/fispace/gui

**Licensing**

* GPL3

**FIspace partner(s) that own innovation & contact points**

* NKUA, Sokratis Barmpounakis – [sokbar@di.uoa.gr](mailto:sokbar@di.uoa.gr)

FIspace Studio – FIspace Update Site

**Summary of the innovation (max. 1000 characters)**

The FIspace SDK consists of a number of Eclipse Plug-Ins. FIspace Studio and FIspace general update site are two forms of FIspace SDK releases provision.

* FIspace update-site is a publicly available binary package, which delivers in a compact way the FIspace Plug-Ins. This binary package (includes FIspace plug-ins) can be installed in any eclipse IDE instance.
* FIspace Studio is a binary distribution based on eclipse platform. It is a fully-customised eclipse IDE (eclipse product) in terms of graphics and parameterisation (splash screen, intro page, about dialog, versioning and preferences).

**Key features / capabilities**

* Public provision of FIspace SDK binaries.
* Cross platform availability.
* Extensibility, by a fully-customisable source.
* Simplicity using an automated exporting process.

**Maturity level (TRL - Technology Readiness Level)**

* TRL 9 – actual system proven in operational environment

**Availability**

* Deliverable (report)
  + FIspace Deliverable D200.5: “FIspace integrated Release V2”
* Open source project
  + https://bitbucket.org/fispace/plugin/src/3479e3301e5288484aa353880730ef434632121f/fispace-studio/?at=default
* Video
  + https://www.youtube.com/watch?v=E3vfJXR2Ays

**Licensing**

* FIspace license

**FIspace partner(s) that own innovation & contact points**

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