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Future Internet Business Collaboration Networks in Agri- Food, Transport and Logistics



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About

The EU-funded Flspace project has delivered a novel, innovative and open Business Collaboration Space that, based on Future Internet technologies, enables seamless collaboration in open, cross-domain business networks and allows for establishing an ecosystem of users from various industrial sectors as well as IT solution providers. Leveraging concepts established in the B2C world, such as social networking and app stores, Flspace allows overcoming the problems that plague modern businesses when working in unfamiliar geographies or with unfamiliar partners. In addition, Flspace integrates an App Store that shall allow domain ICT vendors to develop useful applications that can be combined and “mashed up” using Flspace services to create innovative, integrated services for activities such as machinery control, environmental management, tracking and tracing, contract development, planning and resource management.

In its initial release Flspace focuses on two domains (Transport-and-Logistics and Agri-Food) that are two of the largest business domains in the European Union. The food and beverage industry experienced an annual turnover in 2010 of more than €955 billion, and the Transport and Logistics industry had an annual turnover of approximately €525 billion in the same year (all statistics from Eurostat). While exhibiting a large aggregated turnover, both domains are highly fragmented: over 99% of the producers in the food and beverage industry are classified as SMEs, and approximately 67% of T&L service providers fall into the same category. Hence, these industries are highly attractive initial target application domains for novel B2B collaboration solutions such as Flspace. Numerous studies and anecdotal evidence indicates that improved collaboration, planning and execution through advanced ICT could yield savings of between 10% and 15%. Just as importantly, CO2 emissions from agricultural operations (12.5% of total emissions) and transport activities (14.0% of total emissions) amount to the largest combined source of greenhouse gas emissions. Better farm and transport management could significantly reduce these emissions.

Flspace Foundation

To govern, expand the basic functionality and support the sustainability of the Flspace platform a group made of companies, a government agency and universities have established the Flspace Foundation in August 2015. The Foundation is the promotor of the open source and innovative business collaboration platform in agri-food, transport and logistics, called Flspace. The guiding principle for the platform is that companies should be able to exchange and reuse information with their partners and service providers without building custom links with all of these companies. This should be an easy and straightforward process with smartphone apps and online internet of things applications. These apps are able to interact with each other or a third party provided for a user's permission. The goal of the apps is to support decision making and make the life of entrepreneurs easier.

The role of the Foundation is to make an open source first version of the platform available and then further develop the platform with the user community of app builders and platform operators. It will also actively support the establishment of business ecosystems based on these open source platform specifications. The Foundation explicitly seeks collaboration with the industry, to support the interoperability between current commercial platforms.

Flspace Approach

A high level schematic of the Flspace collaboration platform showing its relationship to domain users and its Foundation based on FIWARE generic enablers (GEs) is shown in Figure 1.

Flspace has developed a multi-domain collaboration and integration service, based on FIWARE and Future-Internet technologies, enabling new business models that overcome these deficiencies. The basic central features of the Flspace collaboration service are:

- Provisioning of the Flspace service follows the Software-as-a-Service delivery model, which means that Flspace services can be accessed anywhere at any time via any device;
- The Flspace service is an open service that can be extended and customized for specific stakeholder demands by integrating domain apps (similar to the iPhone and Android business models);
- A domain app store facilitating the marketing of targeted applications that take advantage of the collaboration and mash up services of the Flspace and its underlying FIWARE generic enablers;
- A collaboration manager for business-to-business networks that supports the planning and execution of business operations from a global perspective with message-based coordination among the involved business partners;
- Integrated techniques for monitoring and tracking on the basis of data integration from the Internet of Things, including sensor systems and smart item technologies accessible via FIWARE generic enablers;
- Information integration from legacy and third party systems enabled through a service-based integration layer that is enabled and supported by FIWARE generic enablers;
- Role-based views for the individual participants in the business networks along with integrated security and privacy management for fine-grained access control to confidential information;

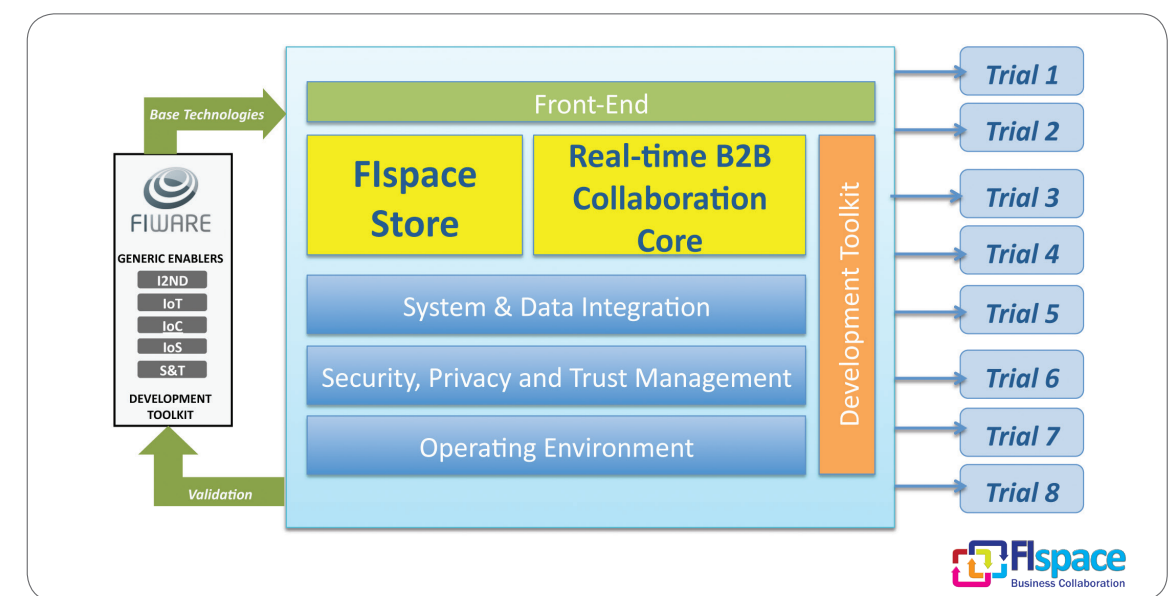


Figure 1 The Flspace concept based on the FIWARE