

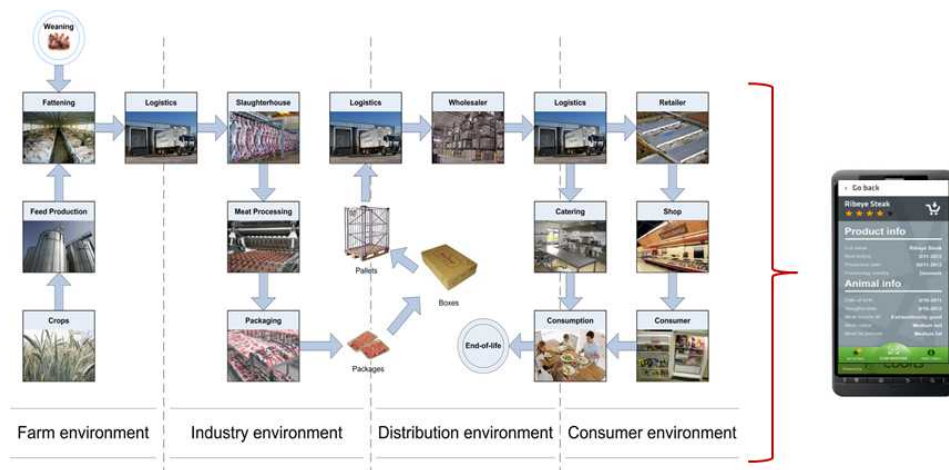
The full functionality of ebbits as a platform for product life cycle management

ebbits partners are working on the final project prototypes which will illustrate the full functionality of ebbits as an Internet of People, Things and Services platform for product life cycle management.

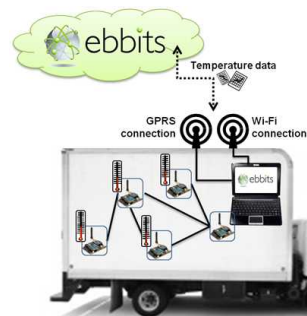
The ebbits platform aims to bridge the gap between virtual enterprises and public information systems, human users and "things" in the physical world. In the agricultural domain, data from all stakeholders in the food production chain will be gathered and presented through mobile applications, providing traceability and interaction with the users such as the consumer who can rate the product. In the automotive manufacturing domain, data from various production processes, stations and systems will be monitored and analysed to provide life cycle costs and energy efficiency calculations. Monitoring of the manufacturing line will be possible through mainstream consumer devices such as tablets and smart phones which enable control of the industrial environment.

Knowing the story of the product

To provide product traceability for, e.g., beef the food traceability prototype collects and compiles all the necessary product life cycle data, making this data available to external applications via ebbits services. The data sources are visualised in the chart below.



The prototype will create a link between the farm and the slaughterhouse where the animal is slaughtered and cut into bulk meat as well as the in-store butcher where the bulk meat is cut into smaller pieces.



It will be collecting information from the various transport phases of the lifetime of the meat and in particular, the transport from farm to slaughterhouse and of bulk meat from slaughterhouse to retail.



In this issue

- The full functionality of ebbits as a platform for product life cycle management
- Demonstrating the viability of the ebbits platform
- From static resources to communicative services

In other news

Meet ebbits:

Campus Party Europe

2-7 September, London, UK
Campus Party is an annual, week-long, 24-hours-a-day technology festival where thousands of "Campuseros" (hackers, developers, gamers and technophiles), equipped with laptops, camp on-site and immerse themselves in a unique environment. ebbits will participate, challenging the participants to create apps based on ebbits. The best ones receive a prize.

The ICEAA 2013 conference

9-13 September, Turin, Italy
At the International conference on Electromagnetics in Advanced Applications, ebbits partners will be presenting the paper: "Multi-Access Interface Selection Based on Data Mining Algorithm". Authors: H. Khaleel, M. Delgado, C. Pastrone, M.A. Spirito, S. Tchabou, R. Garello

ETFA 2013 - IEEE International Conference on Emerging Technology & Factory Automation

10-13 September, Cagliari, Italy
The ETFA conference is a large IEEE-sponsored event dedicated to factory automation and emerging technologies in industrial automation. ebbits partners have submitted a paper with the title: "Bringing the Internet of Things along the Manufacturing Line: A Case Study in Controlling Industrial Robot and Monitoring Energy Consumption Remotely".

The 9th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2013)

7-9 October, Lyon, France
The IEEE WiMob is an international forum for the exchange of knowledge and experience among researchers, developers and practitioners of wireless and mobile technology. The ebbits paper "Denial-of-Service detection in 6LoWPAN based Internet of Things" will be presented at the conference. Authors: Kasinathan P. and Pastrone C. and Spirito A. M. and Vinkovits M.

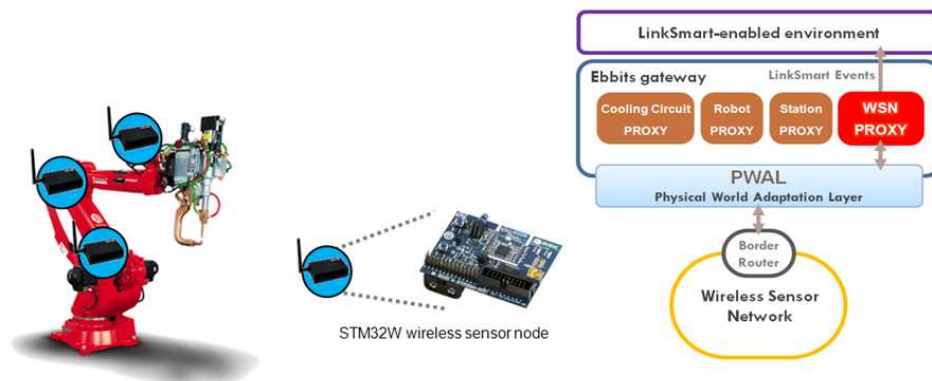
The ebbits platform will integrate with an enterprise resource management system and include a mobile application (app) to retrieve and display the most relevant traceability information to the consumer, including cut, race, quality parameters and best before date with the possibility to rate the meat.

Related paper: *The ebbits platform: leveraging on the Internet of Things to support meat traceability*

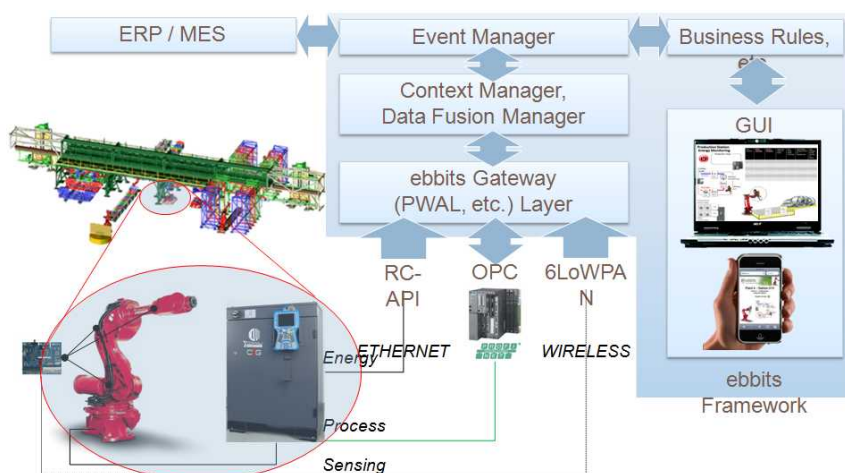
Energy optimisation in car manufacturing

The full functionality of the automotive manufacturing prototype will combine refined versions of the solutions developed during the ebbits project, taking into account the different aspects of the production process. This includes four main areas:

1. A welding line simulation application with the main goal of validating the overall data flow between a framing station within the production line and the ebbits platform.
2. Process oriented energy monitoring and analysis. The aim is to provide a tool for monitoring different processes and compare energy consumption in the various production phases. Energy data is accessed in real time and calculations on consumption are made such as stand-by consumption, consumption during production on different levels (production line, stations and subsystems such as robots). Each production phase is energy profiled and analysis is conducted to calculate the energy efficiency.
3. Wireless sensor network integration with the ebbits platform with the main target of developing a specific proxy interface to expose process data from the field to the upper level of the platform.



4. Robot interaction through tablets/consumer devices: to test and certify the application of common consumer devices such as tablets and smart phones in an industrial environment.



The data extracted from all four refinement areas will provide the necessary input for life cycle costs and energy efficiency calculations.

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to the top ↑

Demonstrating the viability of the ebbits platform

ICT 2013 conference and exhibition

6-8 November, Vilnius, Lithuania
ebbts will have an exhibition stand at the conference which will have more than 4000 researchers, innovators, entrepreneurs, industry representatives and politicians present. The event will focus on Horizon 2020 - the EU's Framework Programme for Research and Innovation for 2014-2020.

Deliverables released:

A selection of deliverables recently completed:

- D1.3.2 Periodic activity, management and financial report 2 (confidential)
- D3.6 Business modelling concepts (public)
- D4.4.1 Implementation of semantic mechanisms in cloud 1 (restricted)
- D4.6 Improvements of scalability, query expressivity, reasoning (restricted)
- D4.7.1 Use case driven semantic models 1 (restricted)
- D4.8.1 Implementation of semantic interoperability mechanisms 1 (restricted)
- D5.1.2 Concepts and technologies in intelligent service structures 2 (public)
- D5.3.2 Specification of sensor fusion and context awareness 2 (restricted)
- D5.5.1 Prototype of control management services 1 (restricted)
- D6.3 Analysis of service description, context and scalability (public)
- D6.4 Implementation of match-making and timescale moderation (restricted)
- D7.1.2 Concepts for a unified lifecycle persistent data fusion architecture 2 (public)
- D7.4.2 Prototype of Data Management subsystem 2 (restricted)
- D7.5.2 Prototype of Event Management subsystem 2 (restricted)
- D8.5.1 Integration of new sensors/actuators in manufacturing scenario 1 (restricted)
- D8.6 Integration of Physical World in traceability scenario (public)
- D8.8.1 ebbits network management & security framework 1 (restricted)
- D8.9.2 ebbits SOA-based communication 2 (restricted)
- D9.2.2 Annual Integration and Quality Assurance Report 1 (public)
- D9.4 Integrated platform prototype with focus on production optimisation (restricted)
- D10.4 First prototype application for production optimisation (restricted)
- D12.4 Market and competitor analysis (public)
- D12.5.1 Exploitation strategy and plans 1 (confidential)
- D12.8.2 Cluster collaboration report 2 (public)

Public deliverables can be downloaded from the project website after they have been reviewed and approved by the EC:
www.ebbits-project.eu

Demonstration activities are steadily increasing to prove the viability of the ebbits platform. Product-like prototypes with a sufficient degree of functionality will be demonstrated to gather feedback from key actors in the manufacturing and food industries as well as from users in general.

The manufacturing demo and the food traceability demo have been presented at several events. The manufacturing demo has been presented at the Hannover Fair in Germany in April and at the Future Internet Assembly in Ireland in May, focusing on the aspect of energy efficient production. The food traceability demo has been shown at the IoT China 2013 conference and exhibition in Shanghai as well as the IoT Week in Helsinki in June, which included presenting the traceability app.

Both demonstrators have been received well by the audience. One example is the IoT Week in Helsinki on 16-20 June, where partners CNET, ISMB and TNM exhibited the ebbits demonstrator on food traceability.

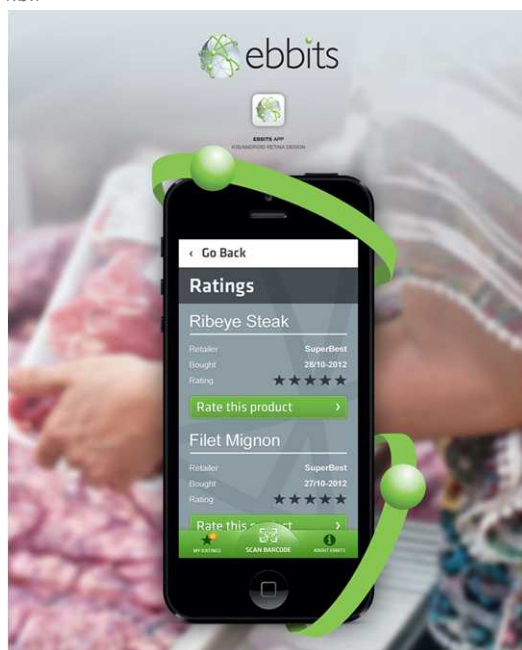
"Although our demonstrator is not fully integrated and ready, we received many positive comments and people were impressed", says Peter Rosengren from CNET, who is pleased that the ebbits booth and the exhibition in general attracted many visitors.

The IoT Week is organised by the European Integrated Project IoT-A (Internet of Things - Architecture) together with several research projects from the IERC European Research Cluster for the Internet of Things. The objective of the IoT Week is to unite the IoT community by offering a platform for presenting the latest news on relevant research topics, providing political and societal insights and offering networking opportunities.

"Apart from the representation of EU-projects there were also many visitors from local industries in Finland, Singapore, Taiwan and China who had come to learn about EU activities in IoT", says Peter Rosengren.

Demonstration activities in ebbits will not only be concerned with managing food and car production but also include presenting ebbits as a generic monitoring platform for other manufactured products such as pharmaceuticals.

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[to the top](#) ↑

From static resources to communicative services

ebbits has contributed to a catalogue of naming, addressing and discovery schemes for the IoT currently researched and adopted in IERC projects, demonstrating how physical devices can be viewed as services and monitored throughout their life cycle.

As part of the IERC-European Research Cluster on the Internet of Things, ebbits partners have contributed to the deliverable D1 "Catalogue of IoT Naming, Addressing and Discovery Schemes in IERC Projects", which was released on 31st of January 2013. The deliverable provides an overview of the different naming, addressing and discovery schemes for the IoT currently researched and adopted in IERC projects.

ebbits solutions are presented, highlighting the concept of virtualisation that allows physical devices, sub-systems and cloud services to be viewed as services or composition of services. Furthermore, the deliverable outlines an introduction to how ebbits manages entities which are static resources being monitored throughout their life cycle, - e.g., cattle or other objects not enriched with computational or communicative capabilities.

Promoting dissemination and cooperation

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The ebbits project is a 4-year project started in 2010. It is partly funded by the European Commission under the 7th Framework Programme in the area of Internet of Things and Enterprise environments under Grant Agreement no. 257852

Read more at:
www.ebbits-project.eu

ebbts partners participate in the IERC cluster which aims at promoting dissemination initiatives and close cooperation with other EU funded IoT projects in specific areas of interest. IERC activities are organised in Activity Chains and ebbts is involved in the following:

AC2 - Naming and addressing schemes. Means of search and discovery (John Soldatos - OPENIOT)

AC3 - Application scenarios, Pilots and Innovation (Amine Houyou - IOT@Work)

AC4 - Service openness and inter-operability issues/semantic interoperability (Philippe Cousin, PROBE-IT, Co-Coordinator Martin Serrano – OpenIOT)

AC8 - Cognitive Technologies for IoT (Abdur Rahim Biswas – iCore)

ebbts partners support the Activity Chains in organising workshops as well as demo sessions during IoT Week 2012 in Venice and during IoT Week 2013 in Helsinki. In addition, activities include producing documents about recent IoT research and practice. The deliverable D1 "Catalogue of IoT Naming, Addressing and Discovery Schemes in IERC Projects" has been produced within the AC2 - Naming and addressing schemes - Means of search and discovery.

Find the deliverable on [the ebbts website](#) or visit the [IERC cluster website](#)

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[to the top](#) ↑

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