



## RFID - Call for Mobilizing Ideas

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Acronym (up to 20 characters)	HubNet			
Abstract (max. 10 lines)	<p>The project will study the development of an automatic hub-network, basing on the idea of the so called Internet of Things.</p> <p>The vision of Internet of Things indicates that logistical units like pallets, bins or even single articles communicate together and coordinate themselves. The preconditions for this vision contain among the autonomous objects self organizing logistic networks.</p> <p>Based on the technology of radio-frequency-identification (RFID), the things obtain an electronic identification and get connected wirelessly to the environment.</p>			
Tick to request that the information given in this form is not to be published				
Classify the idea, either as a Business or Technological idea, according to the classification below				AC
<b>Application/Business Idea</b> If the idea is focused on a business application, use the code ("AA" ..."HC") according to the RFID-reference model defined in <a href="http://www.rfid-in-action.eu/rfid-referencemodel">www.rfid-in-action.eu/rfid-referencemodel</a> (excel Overview) use "OAF" for Other application fields				
<b>Technological Idea</b> If the idea is essentially of a technical nature, use one of the following codes: <ul style="list-style-type: none"> <li>T1 – Tag sensors and cost reduction (polymer and new materials)</li> <li>T2 – Energy supply (new energy supply/harvesting, storage and saving)</li> <li>T3 – Ubiquitous sensors and readers</li> <li>T4 – RFID Information architectures</li> <li>T5 – Smart tags</li> <li>T6 – Middleware</li> <li>T7 – Large scale networks and information systems</li> <li>T8 - Other</li> </ul>				



Please add to this form a short description (maximum 3 pages of text plus – Arial 12, one space - and page of schema that represents graphically the idea. Word (.doc) or a compatible format should be used )

## **Project Acronym: HubNet**

### **Starting Point:**

New concepts in national and international transportation and global delivery should originate new logistic concepts based on the actual requirements and future needs to reduce traffic volume on the streets, stock levels, material stock at the wrong locations and delivery time between the points of origin and actual need.

The improvement will allow the actual supply chain networks to be faster, leaner, cheaper and more flexible. A new concept of supply network will be developed by storing products near the markets, reducing the costs of final product storage in the production plant. Therefore the stock level in the entire network will decrease, because the inventory is near to the consumption local (market or assembly line), and the time to deliver is reduced to the time of transport between the hub and the consumption point. This reduction of time-to-market allows the companies to be more flexible and adaptable to the markets needs, which is a competitive advantage. The consolidation of goods from different clients is also considered to returned and recycled goods, in order to optimise the reverse logistics network.

### **Objectives:**

The increased environmental sensitivity of the EU, as well as the need for increased sustainability and competitiveness are the major drivers for the design of the Hubnet24 project.

The innovative use of advanced logistics methods and more competitive supply chain network is the main objective of the proposed idea.

- The structural design for such logistic networks and the optimised placement of a company within that network is inducing a substantial amount of the costs for the later operation of the network. New ways and methods for the design and evaluation of such networks integrating the levels of the overall network structure, the related operational processes and the facilities realising the processes should be highlighted. It is encouraged that aspects of mobile logistic platforms be considered as part of the entire logistic design which increases the value adding capability of the supply chain.
- For the planning of the operational processes new concepts for the generation of a segment-related network transparency using identification and communication technology enabling collaborative planning and control approaches are to be developed, making it possible for the different partners in the network to generate harmonised plans and react quickly to demand changes and network events.

- Resources carrying out the operational processes in the network are to be redesigned, exploring new ways of adaptability and autonomy in their operations in order to cope with the fast changing requirements in the network. Collaboration between works groups distributed all over the world covering design, planning, production tasks would be enhanced.”

Within the HubNet idea, most of the research effort has been planned towards the development of processes and methodologies for the efficient logistics network. This target will be realised mainly by identifying and developing state-of-the-art methodologies and tools for the logistics network operation. The project output will allow a more efficient logistics network that improves the global and regional delivery, and a more efficient transportation and storage processes.

The HubNet project will support the competitiveness increase of logistics supply network by increasing the efficiency and reducing costs. The increase of the operational efficiency will increase the cost efficiency of the processes, resulting in a reduction of resources spending, energy and human involvement. In addition, direct cost-reduction strategies will be implemented via reducing the number of transports inside the network, the reduction of inventory levels and the reduction of human labour costs in the hub (automatic storage system).

The above-mentioned clearly demonstrates that the Hubnet24 objectives are in full agreement with the objectives set in the focused area, such as the “operational processes and the facilities realising the processes” and “the different partners in the network to generate harmonised plans and react quickly to demand changes and network events”.

#### Activities:

The project HubNet will study the development of an automatic hub-network, basing on the idea of the so called Internet of Things. The vision of Internet of Things indicates that logistical units like pallets, bins or even single articles communicate together and coordinate themselves. The preconditions for this vision contain among the autonomous objects self organizing logistic networks. Based on the technology of radio-frequency-identification (RFID), the things obtain an electronic identification and get connected wirelessly to the environment.

In this context, a hub is an automatic warehouse, with an innovative interface, to provide a fully automated operation. By the assistance of integrated IT-solutions, several hubs will be connected to build a logistical network that works autonomous like the internet and disposes of all relevant information of the material flow within and between the hubs.

In consideration of the market requirements, all goods in the HubNet find the way to the hub, where they are needed, on their own. This does not only mean self-controlling, but already self-organising of the things.

The target development of a new generation of hubs -the HubNet- in conjunction with innovative software solutions contributes to strengthen the competitiveness of the European industries and economy in an innovative way and long term sustainability.

While the distribution dominates logistic networks and supply chains respectively, the redistribution is increasingly integrated to open up synergetic effects, e.g. by linking the delivery of goods with the take-back of returns using the same means of transport.

The concept of HubNet develops a new kind of lean supply with a high flexibility, to give to the market, what it actually needs. The concept contains a solution that integrates the following issues:

- Following the concept of global decentralized stocks, the HubNet supports a fast response to dynamic requirements, using local storage and service capacities at the point of needs.
- The HubNet allows the production companies to focus on their main competences like a lean production by the assignment of supporting activities to other partners.
- The HubNet generates economic and ecological effects of synergies by the optimisation of distribution activities of various suppliers, providers and needs.

Schema:

