RFID-BASED AUTOMOTIVE NETWORK

CONTROLLING THE PROCESSES OF THE AUTOMOTIVE INDUSTRY IN A TRANSPARENT AND OPTIMAL WAY

In the past decades the general conditions of the automotive industry have changed. Individual vehicle requests, new driving systems and constant innovations caused a continually growing variety of models. As a result, automotive manufacturers focus on their core competences and reduce their vertical integration of manufacturing. This leads to the development of global and often complex logistics networks. The goal of the project RAN is a transparent and efficient control of these networks.

Project description

Funded by the Federal Ministry of Economics and Technology (BMWi), the project develops new methods and approaches for the efficient controlling of cross-company order processes. In the project are different partners involved for covering the whole production and logistics chain. Therefore automotive OEMs, suppliers, logistics service providers, IT software and hardware providers and research institutes are part of the consortium.

The project develops standards for the whole automotive industry, which enable an efficient and automated information exchange, by using the latest radio frequency identification (RFID) technology. The goal is an industry-wide agreement regarding the information exchange in order to improve the process transparency, for an efficient process control. As a prototype the concept will be implemented in seven application scenarios, so-called "Use Cases".

Use Case "vehicle distribution"

The Use Case "vehicle distribution" considers the whole distribution chain from the end-of-line at the automobile manufacturer through the processes of the logistics service provider to the car dealer. Within this use case, the BIBA – Bremer Institut für Produktion und Logistik GmbH brings in methods of autonomous control, that were developed by the Collaborative Research Centre

(CRC) 637 "Autonomous Cooperating Logistic Processes – A Paradigm Shift and its Limitations" at the University of Bremen. The goal of this use case is the creation of information transparency along the vehicle distribution chain. All relevant changes in position and status of the vehicle will be captured and communicated between the partners. For achieving this goal, the vehicles will be identified and localized with RFID technology along the distribution chain. Therefore BIBA is taking part in two Sub Use Cases, the first is a test implementation of a Real time Locating Systems in cooperation with Daimler AG in the End-of-Line by an automobile manufacturer. In the second Sub Use Case BIBA is testing a tracking system to locate vehicles on a big yard of a logistics service provider. For the identification of vehicles on the yard a wearable computing system, the so-called easy-Tracing System, is enhanced in cooperation with BLG LOGISTICS. Based on the generated information, a new controlling approach is developed and implemented, consisting of central as well as local elements. This controlling approach enables a quick and flexible response to process deviations.

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Projekt Partner

BLG • BMW • BOSCH Technik fürs Leben • DHL • FZI • DIMENSION DATA • Fraunhofer IML • Hochschule für Technik und Wirtschaft des Saarlandes University of Applied Sciences HTW • IBM • IBS • KEIPER • iwb • REHAU Unlimited Polymer Solutions • Opel Wir leben Autos. • SAP • SIEMENS

Implementation Partner

Lina Namuth Funktionsbekleidung • Solcon Systemi • MOJIX

The Bremer Institut für Produktion und Logistik GmbH (BIBA) at the University of Bremen is a scientific research institute for engineering in production and logistics.
The department "Intelligent Production and Logistics Systems" (IPS) is one of two departments at BIBA and focuses on new concepts, methods and solutions for the improvement of production and logistics processes.

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