

LogDynamics News

Prof. Dr. Herbert Kotzab Awarded Emerald Award for Excellence

Prof. Dr. Herbert Kotzab – member of the LogDynamics research cluster – was awarded the “Highly Commended Award” by the “Emerald Literati Network Awards for Excellence 2012” initiative. He received this well renowned distinction together with fellow researchers Christoph Teller, David B. Grant und Leigh Sparks, awarded for their article „Antecedents for the adoption and execution of supply chain management“ in Supply Chain Management: An International Journal, Vol. 16, No. 4, 2011. The purpose of this paper was to develop a conceptual model that includes drivers of supply chain management (SCM) adoption and execution identified in the literature, provide a set of measurement scales that operationalise constructs within this model, empirically verify a hierarchical order of antecedents that affects the adoption and execution of SCM, and assist management by providing a focus on those SCM conditions and processes that need to be prioritised to increase successful SCM adoption and execution. The findings provide a hierarchical focus for financial, personnel and management initiatives to increase integration within a supply chain and improve competitiveness.

The Awards for Excellence are presented annually and encourage the pursuit of excellence in research. With over 100,000 authors worldwide, the Emerald Literati Network continues to be in a class of its own. Emerald’s unstinting effort to bring the authors’ work to a wider audience has resulted in a potential readership of 17 million users worldwide, from Australia to Zimbabwe.

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Intelligent Dispatching Enables Local Delivery 2.0

The project “Autonomous Courier and Express Services” develops an agent-based dispatching system for courier services with its industrial partners tiramizoo GmbH and Aimpulse Intelligent Systems GmbH. In this transfer project, the AI Research Group of the Center for Computing and Communication Technologies (TZI), University of Bremen, applies its research findings in autonomous logistics to courier and express services. The two-year project will start in April 2013 and will be funded by the German Research Foundation (DFG). Tiramizoo contributes its process expertise. With same-day delivery, the company is setting a new standard by guaranteeing timely delivery from local retailers. It enables customers to buy products online, which are delivered within only a few hours.



The high complexity of express services poses new challenges for planning and control. Changing amounts of shipments, individual properties of the heterogeneous fleet, and immediate deliveries increase the dynamics of these logistic processes. The project aims at automating the respective control processes. Considering the couriers' current position, they receive new fitting delivery requests on their mobile devices. When a courier drops out on short notice or when there is heavy traffic, the system rearranges its plans automatically. Therefore, the service quality increases through shorter transit times and higher reliability. The platform optimizes processes of several available courier companies by exchanging orders between them. Aimpulse contributes its highly scalable agent platform Aimpulse Spectrum which is applied for simulation and execution in the transfer project. The company develops solutions for logistics control and analytics. By IT-based process analysis and detailed simulations Aimpulse enables evaluation of logistic strategies.

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ELLIOT – Experiential Living Lab for the Internet of Things

The project “ELLIOT” aims at developing an experiential IT platform where users/citizens will be directly involved e.g. in experimenting with new concepts related to applications and services in the Internet of Things (IoT). The ELLIOT experiential approach will be explored and its technology platform tested within different application areas, namely logistics, wellbeing and environment. A crucial step in order to validate the capacity for users/citizens to co-create IoT based services. The ELLIOT Living Lab @ BIBA is associated with the application in logistics. Related questions deal with the safety and security of goods and humans in transport scenarios. Through risk detection transport damage and accidents should be avoided while at the same time consistency of supply chains and logistic processes are improved.

To foster the fruitful environment for user involvement in a living lab, a modular toolkit for the Internet of Things (IoT) was developed. This toolkit includes a selection of sensors and actuators which can be easily connected to an intra-network using a plug-n-play approach. The toolkit GUI provides an easy to use interface to observe sensor data and to configure an IoT service on your own. With this solution, users can explore IoT technologies and understand their functions. In addition to this toolkit, a demonstrator was developed. This demonstrator is built around a forklift model which is able to carry the IoT toolkit in various configurations. This provides the opportunity to explore and experiment the configured services yet in a safe environment. After this stage the service is set up in a real environment to be tested under real conditions.

The project (EU, FP7-ICT, 09/2010-06/2013) started in 2010 and will finish in June 2013; it is now focusing on the exploitation of project results from the different environments for various purposes.

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Multi-agent System for Industrial Conveyor Technology

The student masters' project in computer science "Virtual Logistics Lab (VLL)" investigates the use of multi-agent systems for the control of industrial conveyor technology. Therefore the Log*Dynamics* Lab of the University of Bremen refines real industrial conveyor technology, high rack systems and sorting systems and develops cyber-physical system components which can be adjusted flexibly and modularly into one complete system. Automation solutions and conveyor technology for intra logistical task settings are widely used in logistics. As part of the project different automation solution elements like roll conveyor, automatic high racks and sorting systems will be planned, programmed and commissioned. Constantly changing framework conditions complicate the use of different system components, although logistic providers operate in a dynamic environment.

The project is supervised by BIBA and TZI. A part of the project committed to developing a system architecture where the process planning and control is delegated to mechanical sub-systems, represented through agents. Thus, every sub-system surmises a cyber-physical system component. The connection to further sub-systems is not a fixed and central electrical wiring, as usual. It will be a flexible, free and definable interface through agent communication within the multi agent system. This approach promises a higher flexibility through modularization of the complete system, reduction reduced complexity as well as the opportunity to maximize efficiency for individual systems without retroactive effects on other components of a system.

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More Transparency – Project RAN Successfully Completed

In January 2010 the research project RAN was launched as a part of the technology programme "Autonomik – Autonomous, simulation based systems for small and medium-sized enterprises" by the Federal Ministry of Economics and Technology. With a funding of 23 Million Euros rendered by the ministry and by adding up the numbers of the project partners it raised a budget of 46 Million Euros in total. The project concluded successfully in December 2012.

New industry standards were set by the consortium made up of renowned automotive manufacturers, logistics companies, suppliers, technology partners, IT companies and research institutions. Developing methods and approaches to control order processing across-companies, the attention was set on the use of RFID technology as a future-oriented way to mark transport devices and goods. As a result of the project, the "Infobroker" allows every partner in the complex production- and logistics networks of the automobile industry to access exactly the information which is currently required. Data transfer proceeds close to real-time and thus images the material flow with high transparency. In this way and by the use of specifically developed assistance-systems users are enabled to control production and logistic processes more efficiently.



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IGS Student as a Guest Speaker at the Institute of Logistics and Operations Management

Nagham El-Berishy, a PhD candidate at the international Graduate School for Dynamics in Logistics (IGS), at the University of Bremen has been invited to a visit to University of Central Lancashire (UCLan) to give a presentation to the Institute of Logistics and Operations Management (ILOM), Preston, North West England. The invitation came from Professor Yahaya Yusuf, Director of the ILOM and Professor at the Lancashire Business School (LBS). Nagham's El-Berishy stay was in furtherance of the internationalisation strategy of the institute to forge links with universities worldwide.

Nagham's PhD research presentation entitled "Towards Green Logistics in Batch Process Industry Planning" examined the challenges in integrating production and distribution processes in the batch process industry under green logistics aspects. It was followed by a lively question-and-answer session by the postgraduate students and the academics from the ILOM. She received her MSc. degree in Industrial Engineering at Production Engineering Department, Alexandria University, Egypt. In 2010, she received a German Egyptian Research Long term Scholarship (GERLS 10) to carry out her PhD research in Logistics at one of the leading Institute in Germany under supervision of Prof. Dr. Bernd Scholz-Reiter. Since April 2011, she conducts her PhD research titled "Green Logistics Oriented Framework for Integrated Scheduling of Production and Distribution Networks".



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The Latest News about Intermodal Transportation in Europe



EU project InTraRegio aims at strengthening the European cooperation in the field of intermodal transportation. The acronym stands for „Towards an Intermodal Transport Network through innovative research-driven clusters in Regions of organised and competitive knowledge”. Bremen is represented by three partners in the consortium: WFB Wirtschaftsförderung Bremen GmbH, BLG Logistics Group AG & Co. KG and the University of Bremen through the Log*Dynamics* research cluster.

In December 2012 the project launched a newsletter which features up-to-date information about intermodal transportation and hints at relevant events. If interested in a free subscription, please contact Daniel Pavlov: dpavlov@uni-ruse.bg

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Details: www.intraregio.eu, [InTraRegio Newsletter](#)

Events

Log *Dynamics* at the CeBIT 2013

Date: 5th - 9th of March 2013

Venue: Hannover

We'll be there: Hall 9, Stand B50

5-9 March 2013 · Hannover · Germany

The CeBIT logo consists of the word "CeBIT" in white, sans-serif font, centered within a red square.

The Research Cluster *LogDynamics* exhibits at CeBIT 2013 at the booth of the University of Bremen together with its member institutes BIBA – Bremer Institut für Produktion und Logistik and TZI – Center for Computing and Communication Technologies. Further exhibitors are the working group “Computer Architecture” and the “Graduate College - System Design”.

The highlight of the joint booth will be the model of a port terminal developed in the *LogDynamics* cluster. The model is a result of the RFID-based Automotive Network (RAN) project and illustrates the RFID-based vehicle handling in a port. The observer can watch the whole logistic processes in the port by tracking a model car. The model is completed by a parallel animation showing how the information generated by RFID in the port is passed on to partners within the supply chain, by the so called “Infobroker” developed in the RAN project.

We are looking forward to your visit at **booth B50 in hall 9!**

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Join the Booth “Logistics Factory – Automation in Logistics” at HMI 2013

Date: 8th – 12th of April 2013
Venue: Hannover

The aim of the joint booth at Hannover Messe from 8th to 12th of April 2013 will be to illustrate the whole logistic chain with partners from science and industry. At the joint booth in the research **hall 2, booth C62** the logistic chain will be illustrated through agents with their products and ideas. The booth provides an overview over the entire chain as well as an insight in details about this topic. The concept of the booth follows an interdisciplinary approach by bringing together the different areas of logistics and to show their connections. Typical elements from the logistic process chains are to be presented and functional processes of the material and information flows are to be clarified. The partners will be able to present their projects and products in a process chain, thus providing the fairgoers with a holistic view. If you are interested in joining, please do not hesitate to contact us!



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Logistics Day 2013

Date: 18th of April 2013
Venue: BLG-Forum im Speicher XI, Bremen



TAG DER LOGISTIK
18. April 2013

Themed “Logistics make it possible!”, Logistics Day 2013, by the Bundesvereinigung Logistik (BVL) e.V., takes place on 18th of April. Research cluster Log*Dynamics* and its institutional members BIBA and ISL will participate in the Bremen’s central event titled “More than Job and Career – Logistics make it possible!” again, organized by VIA BREMEN. The convention, supported by well-known agents of the harbor and logistic hub Bremen/Bremerhaven, will open up its doors for the second time in a row in the BLG-Forum and addresses itself to everybody interested in logistics.

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Save the Date: LDIC 2014

Date: 10th – 14th of February 2014

Venue: Bremen



The next **International Conference on Dynamics in Logistics (LDIC 2014)** has been timed: the fourth event of the Log *Dynamics* conference series will be held from **10th to 14th of February 2014** at the University of Bremen. The conference is concerned with the identification, analysis, and description of the dynamics of logistic processes and networks. The spectrum reaches from the modelling and planning of processes over innovative methods like autonomous control and knowledge management to new ICT technologies, mobile communication, and networking.

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***EXCELLENT.**