

News

Excellent Support for the Logistics Research

Logistics was the first scientific focus at the University of Bremen, which became a Junior Research Group Leader in the scope of the Excellence Initiative. Since August 2013 Professor Tobias Buer leads the cooperative junior research group "Computational Logistics" of the University of Bremen and the ISL - Institute of Shipping Economics and Logistics. He also supports the research cluster *LogDynamics* - the 33-years-old business economist joined the interdisciplinary research cluster in October 2013.



The aim of the junior research group is the development and analysis of computer-aided procedures for the cross-company planning in logistics. Thereby questions of the maritime logistics are of particular importance, e.g. the improvement of the planning of networks of routes through an alliance of shipping companies or the reduction of the transport of empty containers by an improved company-crossed coordination of forwarding agents and ship owners. To achieve these objectives, the junior research group cooperates with one of Europe's leading institutes for maritime research, the ISL, which also belongs to *LogDynamics*.

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Young and Dynamic in Logistics

With Professor Jürgen Pannek the scientific focus "Logistics" of the University of Bremen gained further support. Since February 2014 he holds the position of the junior professor for dynamics in logistics in the faculty Production Engineering- Mechanical and Process Engineering of the University of Bremen. The internationally active scientist brings skills and experiences from various fields: mathematics, economics and aerospace technology to Bremen. Also, the cluster *LogDynamics*, which was joined by Prof. Pannek recently, benefits now from these interdisciplinary competences. Now *LogDynamics* counts 18 members and new accessions are in preparation.



The future scientific work of Professor Jürgen Pannek focuses on the development of methods and procedures for the modelling, simulation and control of logistic processes, systems, chains and networks. Thereby, dynamics and complexity should be integrated in the management of a production- and logistics system. In the course of this, the scope ranges from the conception phase, for example for global Supply Chains, to Control Implementation of truck journeys in the close formation and therefore stretches the boy from big to small like from theory to practice.

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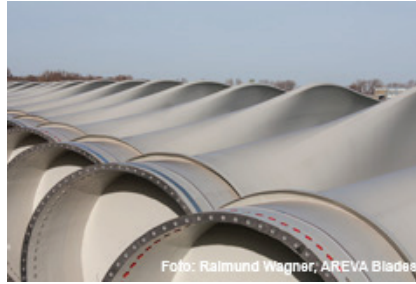
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International Award System for the Production of Rotor Blades for Wind Energy Plants

The research project “mapretec” started three years ago: A new system should improve and accelerate the production of rotor blades for wind energy plants in future. Now the Institute for Integrated Product Development (BIK) in the department of Production Engineering of the University of Bremen as project manager and the companies SAERTEX (Saerbeck) and AREVA Blades (Stade) can be proud of an international award for their work. They received the JEC Innovation Award of the Global-Composite-Community JEC. It was handed over during the JEC Composites Show, the leading European trade fair for composite materials, in Paris.



Internet
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The project mapretec carries the full title “Procedure for the Preform-Production through Flat Deposition of a Spatial Component as the Basis for an Automated Process Chain for the Rotor Blade Production” and is supported by the ministry of the environment and coordinated by the Project Management Jülich. Its objective is to automate the production of rotor blades more by using new production systems.

Wings, especially of Offshore-Wind Energy Plants, are regularly more than 620 meters long and basically consist of fibre reinforced synthetics. Extensive glass- and carbon fiber layers up to 130 square kilometres have to be stacked on top of each other crease-free, formed and afterwards connected with synthetic resin. Today, the darning of the sheets is still made manually and is very elaborate. That is to be made easier: through a combination of automated cutting, automated deposition of the materials and the preform-technique. Using the computer-aided engineering (CAE) the geometries for the spatially complex are defined. Assisted by sensors, the computers control initially the cutting of the sheets and afterwards these are automatically formed on a special, new-developed device (Preforming).

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Demographic Change and Advancement Demand: Competencies Development and Work Processes Redesign

Considering the demographic development and the technological and structural change, longstanding models of the work organization, personnel policy and the competencies development in companies are reaching their limits. New solutions are already required medium term. The Bremer Institut für Produktion und Logistik (BIBA) has been occupied with this task. The 39 month research project “Work process-oriented competency development for the harbor of the future” (ArKoH) mainly concentrates on maritime economy, but will also look over other branches. The cooperative project ArKoH analyses the future development of the production and installation of offshore-components and other port-related activities. It is supported by the Federal Ministry of education and Research and attended by the Project Management Agency



DLR (German National aeronautics and space research centre). The BIBA, the ITB, the TST-Trainingscenter for Security and Transport GmbH (Bremen), the M.I.T e-Solutions GmbH (Friedrichsdorf) and the Logistik Service Agentur GmbH (Bremerhaven) participate. The project is coordinated by the BIBA. Furthermore the chamber of commerce Bremen, the Maritime Cluster of Northern Germany (Hamburg) and the Pumacy Technologies AG (Berlin) are involved. They support the project among other things with their expertise.

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Build up Competences with Serious Games



Learning using technology-supported games- that is the subject of the European excellence-network "Network of Excellence (NoE) on Serious Games with the title "GaLA" (Games and Learning Alliance). With the integration of markets, the increasing complexity of cooperative compounds, the technical progress and the increasing cost pressure the forms of teaching, training and learning are changing. With the classic linear front teaching (lecture) the competencies required today and the requirements due to a lifelong learning cannot be build up properly. A method of the future is the "Serious Gaming" – education and training using games.

In this field, the researchers of the BIBA rate among the best of Europe. With the focus on production and logistics they deal with the development of technology-based systems for the qualification especially in the economy and study. The provision with effective, flexible offers for the mediation and consolidation of determined competencies is meanwhile regarded as a strategical economic factor, whereby the "Serious Gaming" is increasingly coming in the view of the companies. The intensified international competition for well-trained staff and the very dynamic technology development promote the search for new, suitable qualification systems.

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Boosting Demand for Industrial Innovations in Europe



MAPDRIVER

The LogDynamics research cluster participates in the MAPDRIVER project: „Building and Implementing Strategic Roadmaps of Demand-side Policy Measures to boost Demand for Industrial Innovations". The project is being funded by the EU Competitiveness and Innovation programme and has shortly been kicked-off. The project aims to support, develop and promote the creation of a Roadmap to facilitate the uptake of ICT innovations in European transport with regards to freight and passenger transport.

The issue of transport and logistics is in fact a key priority in the framework of this new programming period 2014-2020, which intends to shape sustainable, integrated and „intelligent? transport systems by 2050. The transport sector has entered a period of mature technology offer that needs to be taken to the market, most of which is based on ICT. In addition, the issue of different standards and regulations set by each state amplify the lack of a common regulatory system that leads to major difficulties when it comes to data transmission and compatibility of systems. Finally, another important challenge refers to the

poor cooperation among transport chain actors; while users are reluctant to accept new technologies and services that are rarely easy to uptake.

These main shortcomings and challenges will be addressed by the MAPDRIVER project by:

- supporting the creation of a Roadmap to increase the market uptake of innovations through demand-side innovation policies
- promoting demand-side measures to complement many other European initiatives in the framework of achieving wider goals set by the EC such as Horizon 2020, TEN-T and Connecting Europe Facility
- boosting demand for European innovations by involving key stakeholders from the private and public sector while fostering the private-public partnership with a market-oriented purpose.

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The Intelligent Container: Researchers of the University of Bremen Optimize the Quality of Food Transports



Fruits should be placed on the markets fresh and in a good quality and they should not be getting stale during transport from producer to consumer .

The Intelligent Container meets these requirements. Since 2004, researchers at the University of Bremen under the leadership of Professor Walter Lang work at the project "Intelligent Container" to optimize the transport of food using new technologies, so that cargos are identified through RFID-technology (RFID=Radio frequency-identification) and sensor networks continuously monitor the temperature in the container and the condition of the fruits. Due to satellite communication technology, the monitoring of the containers is also possible at sea . With the collaboration of science experts, the food industry and the electronic industry have established , that due to the use of innovative sensor technologies a win-win-situation can be evolved between consumer and producer, in which the best possible quality is achieved with very little transportation losses.

The innovation alliance "The Intelligent Container" unites six research institutes and 17 companies which work together on the development of sensor networks and software for the transport of food. The research project with a value of nine millions euros was initiated by the University of Bremen by the research association MCB (Microsystems Center Bremen) and Log Dynamics (Bremen Research Cluster for Dynamics in Logistics) and supported by the Federal Ministry of Education and Research. The industrial partners come from the logistics (Rungis Express, Kühn Transport- und Lagergesellschaft), from the container and trailer construction (CHS, Cargobull Telematics), from the communication technology (OHB Teledata), from the electronics (Elbau GmbH and Texas Instruments Deutschland, Vírtenio GmbH, ISIS-IC) and from the software industry (Alcas, EMIC, ProSyst Software, Seeburger, Otaris, Microsoft). The project was completed successfully in 2013.

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To Asia or to Europe? Scholarships for Mobility in the Logistics Research



FUSION is an ERASMUS MUNDUS program supported by the EU. It has the aim to intensify the cooperation between selected universities on an international level. Project partners are - apart from the University of Bremen/LogDynamics - a total of nine European universities and eleven universities from Asia. Research- and study is supported by all skill levels, meaning Bachelor, Master, promotion or PostDoc and employees. After Bremen follows Afghanistan, Bangladesh, Bhutan, Nepal, Pakistan, India or Thailand. The residence time reaches from 1 month for employees, 4-10 months for students, 6-10 months for PostDocs to 5-10 or 27 months for doctoral candidates, depending on the "mobility". It is possible to collect scientific, as well as cultural and social sustainable experiences and to generate relationships.

Previous projects have shown, that successful cooperations are carried out and promoted by the people. Since last year, the international postgraduate-team of the International Graduate School for Dynamics in Logistics (IGS) has been reinforced by the first scholarship holders of the ERASMUS MUNDUS project cLINK (Centre of Excellence for Learning, Innovation, Networking and Knowledge). The first six guests come from Bangladesh, Bhutan, India, Pakistan and Thailand. Debkalpa Goswami from Kalkutta is one of them. FUSION complements cLINK and offers scholarships for an exchange in both directions, which enables the additional possibility of research- and study-stays of the German colleagues in Asian partner universities.

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Bremer Logistic Delegation on a Ten Day Travelling Conference through Asia



Unique and innovative is the new platform of the travelling conference through Asia. The travelling conference was initiated by the Institute of Shipping Economics and Logistics as well as the Chair of Business Administration, Production Management, and Industrial Economics of the University of Bremen. Held and implemented was the conference from the 16th till the 24th of February by Prof. Dr. Hans-Dietrich Haasis and Irina Dovbischuk. The logistic and educational trip was under the patronage of the Asian-German Knowledge Network of Transport and Logistics (AGKN), which is supported by the International Bureau of the German Federal Ministry of Education and Research. The meetings of the travelling conference did not take place as usual on one day and in one location, but instead the participants visited in ten days several Asian locations and took part in academic excursions of logistic and transport businesses. This is to create the possibility of getting German experts as well as Asian experts from Ho Chi Minh City, Hanoi, Shanghai and Hong Kong together. The subject matter of the conference is based on the exchange of the current theme: "Re-

liable Hinterland and efficient maritime ports” between German scientist and experts from the Asia-Pacific research area.

The list of participating institutions was attended by high-caliber: Besides the ISL, as well as the University of Bremen, there also participating are the Fraunhofer-Center for maritime logistics and services, Berlin School for Economics and Law, University Hamburg, National Economics University Hanoi, Hong Kong Polytechnic University, Shanghai Jiatong University, Ho Chi Minh City University of Transport and also many others of the locally-based logistic companies and education and research institutions.

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International Exchange of Experiences in the Range of Mobile Communication Networks

Thomas Pötsch is doctoral candidate in the International Graduate School for Logistics and was from October until end of December 2013 as guest researcher at the New York University (NYU) in Abu Dhabi, United Arab Emirates. The aim of this research exchange was, to work together with the local colleagues at scientific subjects. Mister Pötsch could consolidate several topic areas for his dissertation and could gain knowledge for the solution of his research subjects. Especially the fields of the statistical measurement analysis system and the development of innovative methods of resolution were hereby emphasized.

The area of the papers deal with the optimization and reliability studies of data transfer in mobile communication networks. The focus lies on the machine-to-machine communication and how it is used, for example in logistics for product monitoring. One of the research priorities was the examination of existing communication protocols in mobile phone networks. From the collected knowledge, a new communication protocol is currently developed in collaboration with the NYU Abu Dhabi and the NYU New York which should allow an efficient and reliable data transfer. The results will be published soon.

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BIBA@CeMAT 2014 Highlight at the World's Leading Trade Fair of Intralogistics: Special Show Innovative Logistics Solutions



Date: **May 19 - 23, 2014**

Venue: Hannover Messe, Hall 27, Stand B35

No isolated presentation of individual modules, but presentation as an interaction and demonstration of the connection between the diverse processes in the logistic chain and as an experience- this specific concept has been established in the last years. The CeMAT this year (May 19th - 23rd) in Hannover has been expanded by the new, great show "Innovative Logistics Solutions" and is being organized by the IDH and dialog4research. Apart from the logistic chain, an own forum is also part of the special show in hall 27.

The Bremer Institut für Produktion und Logistik GmbH - BIBA will be part in this setting with an own booth. The researchers will present -with the help of exciting demonstrators- their competences in the area automation technology and robotics in logistics.

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Call for Participation SysInt 2014



Date: **July 2 - 4, 2014**

Venue: Atlantic Hotel, Bremen

The **2nd International Conference on System-integrated Intelligence: New Challenges for Product and Production Engineering (SysInt 2014)** focuses on new challenges for product and production engineering in manifold areas. At this, the conference provides a forum for academia and industry, centered around the main track „Enabling Technologies“. Further, five special symposia deal with different aspects of system-integrated intelligence:

- Perceptive Robotics (CFP)
- Intelligent Systems: Enabling Technologies (CFP)
- The Future of Manufacturing: Cyber-Physical Production Systems (CFP)
- German Malaysian Workshop (CFP)
- Structural Health Monitoring (CFP)

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Registration: www.sysint-conference.org/registration.html

Third international symposium “Innovative Logistics Management”

Date: **July 15 - 17, 2014**

Venue: Stadtwaage, Bremen



In the framework of the AGKN for Transport and Logistics, the Institute of Shipping Economics and Logistics, the University of Bremen, and Guangxi University invite the members of *LogDynamics* to jointly launch the third international symposium on “Innovative Logistics Management” from July 15th to July 17th, 2014 in Bremen, Germany. The thematic core of the symposium is sustainable and innovative solutions for efficient traffic systems and logistics processes in global supply chains. Organizers expect participation from local experts from China, Laos, Vietnam, Thailand, and Germany to discuss innovation-oriented solutions in line with the innovation strategy of each participating country. The symposium will be held in Stadtwaage (English for “weigh house”), a building with hundreds of years of history, which was built in 1440.

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LDIC 2014 Dynamics in Logistics - Research Meets Application



Transport goods in a meaningful manner from A to B – that’s yesterday’s logistics . Today’s logistics offer methods, which enable to react fast and flexible to the dynamic technical and socio-economic developments. Special attention should be paid to the efficient resource sharing and knowledge management as well as new technologies like Cyber Physical Systems and Networking. These diverse aspects were presented and discussed in the scope of the fourth “International Conference on Dynamics in Logistics” (LDIC 2014). The fourth conference of the conference series, initiated by Log Dynamics, took place from February 10th, to February 14th 2014 at the University of Bremen. More than 200 participants from all over the world were guests in the hanseatic city. The convention book of the conference will be published at the renowned Springer-Verlag in the series “Lecture Notes in Logistics”.

For the first time, the best scientific contribution to the 4th International Conference on Dynamics in Logistics – LDIC 2014 was honored with the „Best Paper Award“. The winner is Dorota Slawa Mankowska from the Martin-Luther-University Halle-Wittenberg with the paper titled: „Synchronization in Vehicle Routing: Benders’ Decomposition for the Home Health Care Routing and Scheduling Problem“. The award including prize money of 300 euros has been handed out by the Conference Chairs Prof. Dr.-Ing. Klaus-Dieter Thoben und Prof. Dr. Herbert Kotzab.

Parallel to the LDIC 2014, the “International Dialogue Event” was organized by the European project InTraRegio. InTraRegio is an acronym for “Towards an Intermodal Transport Network through innovative research-driven clusters in Regions of organized and competitive knowledge”. The conference had the aim to support the cross-border dialogue and the cooperation in the application of new technologies for intermodal transport chains.

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Gala Reception for the 60th Year Jubilee of the ISL

On March 31st 2014, the Institute of Shipping Economics and Logistics received around 140 invited guests to its traditional annual reception in the Universitätsallee.



This year it was dominated by the 60 years of existence of the institute. In convivial company and together with the team of the ISL, the participants looked back on six decades of the maritime transport and logistics research and discussed the development of the Bremen institute. Apart from numerous visitors from politics, economy, science and management, several former directors of the ISL took part.

The ISL was founded on March 30th, 1954 due to a decision of the senate of the Free Hanseatic City of Bremen as foundation "Institute of Shipping Research". From this day on, the purpose of the foundation should be the science-based research in the field of shipping. In the course of time, the remit of the institute were continuously extended with a view on the development of the international economy and logistics. So that today, complex transport chains and their sections are captured, analyzed, simulated and optimized.

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LogDynamics at CeBIT 2014

With twelve exhibitors, the "Joint stand Bremen / Bremerhaven" on this year's CeBIT was staffed very well. From the March 10th - 14th, 2014 they presented themselves on the world's largest information technology exhibition in Hannover and gave an impression of the

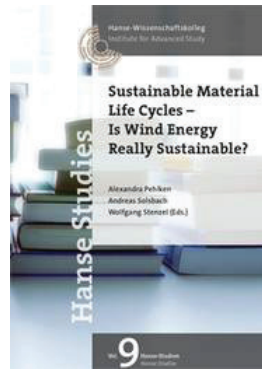


level of performance of the IT sector in the state of Bremen. In this scope, the Bremen Research Cluster for Dynamics in Logistics (LogDynamics) presented themselves focusing on the knowledge of transfer. The Research Cluster at the University of Bremen demonstrated the fields of application of new key technologies for complex processes in production and logistics. In the scope of the "Innovation Forum of Bremen" LogDynamics also contributed to the exciting lecture program.

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Publication Now Available on Sustainable Materials in Wind Energy

Renewable energies, for example wind energy, are regarded as sustainable energies. A conference at the Hanse-Wissenschaftskolleg (Institute for Advanced Study, HWK) in June, 2012, raised the question whether this is really the case: "Sustainable Material Life Cycles – Is Wind Energy Really Sustainable?" Among others, BIBA – Bremer Institut für Produktion und Logistik GmbH, BIK - Institut für integrierte Produktentwicklung and LogDynamics Lab, all located at the University of Bremen, illustrated their latest research on this topic during the conference. The presentations and discussions addressed all materials involved throughout a full life cycle of a wind turbine. Furthermore, the raise of awareness for technicians and professionals using for instance context-sensitive support through mobile ICT has been jointly developed between BIBA and LogDynamics.



Sessions on the most relevant issues structured the event:

- Material Flows and Sustainability
- International Developments
- Life Cycle Approach
- Logistics and Rotor Blades

Stimulating presentations and lively discussions characterized all sessions. With wind energy being a very young field, a lot of research still needs to be done, especially on all aspects of sustainability. Two areas were identified as especially relevant: offshore wind park maintenance and material efficiency. With this volume, first interdisciplinary discussions started in the field of material efficiency in the renewable energy sector. The book is a valuable milestone for further related research in this field.

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Big Data in Mobility and Logistics – BDMobiLog 2014



Call for Papers

Workshop at INFORMATIK 2014, Stuttgart, September 22 - 26, 2014

www.fzi.de

The BDMobiLog 2014 workshop shall bring together researchers and practitioners who use Big Data or apply Big Data technologies in mobility and logistics and shall support technology transfer from foundational research into practice. The workshop covers diverse application areas of Big Data in mobility and logistics including, but not limited to:

Transport logistics, Production planning and control, Production scheduling, Process planning and monitoring, Maintenance logistics, Service parts demand analytics, Quality control and test planning, Supply Chain Management, Smart Factory, Integration and visualization of sensor and mobility data, Data-driven supply chain and traffic optimization, Risk and congestion management, Disruption management, Mobility service analytics, Traffic flow analytics, Traffic flow modelling and Prescriptive analytics in mobility and logistics.

Important Dates

Paper submission deadline: April 22, 2014

Author Notification: May 20, 2014

Camera ready version: June 23, 2014

Workshop: September 22, 2014

Submission

Submissions must be in PDF format and follow the LNI style guidelines

www.gi.de.

Full papers must not exceed 12 pages. Short papers, work in progress and industrial papers must not exceed 8 pages. Contributions shall be submitted via EasyChair online submission system at www.easychair.org.

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Special Issue OR Spectrum

Call for Papers

„Collaborative Planning in Transportation“

Submission Deadline: **October 31, 2014**

Special Issue Completion: **End of 2015**

www.springer.com



A high performance of transportation is a key factor of the success of logistics networks. In particular for small and medium-sized enterprises, horizontal collaboration is considered as a promising support to further reduce operational costs. Seeking for adequate mechanisms to increase the efficiency of their operations, the concerned enterprises have recognized the necessity to exploit the prospects of success offered by collaborative planning. Although a close cooperation within a coalition of partners mostly implicates long-term commitments, the involved collaborative planning tasks for reconciling joint activities refer to all planning levels: the strategic, tactical and operational level.

We invite researchers and practitioners to contribute to this special issue by submitting papers on the development and application of quantitative approaches for collaborative planning in the transportation area. Contributions investigating horizontal cooperation of equipollent partners (e.g. groupage systems of freight carriers or shipper coalitions) or vertical cooperation among partners in inhomogeneous coalitions (consisting e.g. of carriers, forwarders and/or shippers) are expected. The considered type of collaboration may refer to the strategic level (e.g. the establishing of a common infrastructure), to the tactical level (e.g. the joint usage of transportation networks), or to the operational level (e.g. the exchange of transportation orders). Reports from successful examples and their quantitative analysis, e.g. from existing freight coalitions, are also in the focus of this special issue given that solid operations research has been applied.

The topics of special interest include, but are not limited to the following:

- the setup of transportation coalitions
- cooperative business models for transportation activities
- scalability of interactions within the range from pure competition to close cooperation
- decision support enabling collaborative planning
- models for profit sharing between collaborating partners
- concepts sustaining the stability of coalitions

All papers submitted to this special issue should report original work and will be peer reviewed according to the standard of OR Spectrum. According to the politics of OR Spectrum, high quality papers OR papers are wanted that are relevant to the scope of the journal, rigor in applying state-of-the-art OR techniques, innovative, and promising to have an impact on future work of the scientific OR community.

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