

## News December 2014

### A Gain for LogDynamics: Prof. Michael Freitag Joins the Research Cluster

Since 1 October 2014, Michael Freitag has been Professor for Planning and Control of Production and Logistics Systems in the faculty of Production Engineering at the University of Bremen. At the same time, he is taking over leadership responsibility at BIBA – Bremer Institut für Produktion und Logistik GmbH – in the research division of Intelligent Production and Logistics Systems.



Michael Freitag studied Electrical Engineering at BTU Cottbus, specialising in Automation and Communication technology. He then did his PhD at Bremen University, focussing on the non-linear dynamics of production systems. In 2004 he became Managing Director of the Collaborative Research Centre 637 “Autonomous Cooperating Logistic Processes”. In 2008 he alternated and led projects with the steel manufacturer ArcelorMittal about the optimisation of logistical processes. As well as his industry involvement, he was also teaching at the Jacobs University in Bremen. At Bremen University, Michael Freitag is involved in the modelling, simulation and optimisation of complex production and logistics systems, with the development of planning and control methods and with the automatisation of material flow through robots and flexible transport systems.

Now the Research Cluster LogDynamics can also benefit from his competences, as Michael Freitag has recently become its 21st member.

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## Boosting Demand for Industrial ICT Innovations in Europe – Be Part of the Process!



We invite you to participate in a survey which aims at estimating the requirements of the companies and stakeholders' opinion on the uptake of Information and Communication Technology (ICT) innovations in transport and logistics. Issues of interest are in particular:

- the current uptake of ICT in transport and logistics,
- existing limitations which hamper a wider use ICT solutions,
- suitable policy measures that could improve the uptake process.

The aim is to include the survey conclusions into the roadmap on demand-side ICT innovation policies in the logistics sector in Europe. The roadmap will support European policy makers in decisions on future development of innovation policies. Therefore it is crucial that experts and leading companies participate in this future-oriented and policy-shaping think-tank process.

Be part of this process by participating in the survey: [Survey](#). Your responses will be kept confidential. The survey is user-friendly and you should be able to complete it within 10 minutes. We appreciate your willingness to participate and value your feedback.

The survey was initiated by the European project [MAPDRIVER](#).

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Details: [Survey](#)

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## New Research Project Aims to Provide Standards for Sensor-based Data Capturing Systems within Temperature-controlled Transports



At the end of October, the German research project NOTIERT concerning the development of a standard for the application and operation of sensor-based data capturing systems within temperature-controlled transport logistics was formally launched. The project is funded by the Federal Ministry for Economic Affairs and Energy (BMWi). In addition to the Institute of Shipping Economics and Logistics, the companies Brehmer GmbH & Co. KG and scemtec Sensor Technology GmbH take part in NOTIERT. The overall project coordinator is the Institute of Distribution and Trade Logistics (IDH).

The Background of NOTIERT are the results of last year's successfully completed project SMITH, which investigated the improvement of energy efficiency within passive temperature-controlled transports on the example of liquid aluminum. Temperature controlled logistics are required in a variety of industries to ensure the condition of the transported goods. While passive temperature-controlled transports only use thermally insulating containers, the area of active temperature-controlled logistics supplies individual containers up to whole trailers with electrical energy to obtain the desired temperature range, regardless to the current environmental conditions. However, standardized systems and requirements for permanently recording and analysis of relevant factors are still missing for both active and passive temperature-controlled transports.

In the context of NOTIERT, a standard for the application and operation of sensor-based data capturing systems within temperature-controlled trans-

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port logistics should be developed until summer 2016. This norm describes a standardized overall system of hardware and software components with freely combinable sensors suitable for seamless recording, storage and evaluation of relevant measurement parameters. Thus, by developing norms and standards, innovative research results from projects such as SMITH are integrated and transferred into industries and logistics companies - innovative ideas are turned into practical solutions.

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## Advanced Manufacturing/ Industry 4.0 and Urban Development – The example of India



Industry 4.0 and Advanced Manufacturing are topics of high international relevance. They are currently intensively discussed both in the academic literature, and in practice within the framework of Industry 4.0 which denotes the so-called 4th industrial revolution. They depend to a high degree on the availability of adequate digital infrastructures and well-functioning logistics systems, and they have a number of repercussions on cities and regions.

As there has not been much work done yet regarding the interrelations between Industry 4.0 and urban development, the report on this project to be published by acatech (Deutsche Akademie der Technikwissenschaften) deals with a new field of academic and practical interest, especially as it also takes up an international development cooperation perspective. The acatech project (November 2013 until September 2014) presented here on “Advanced Manufacturing/Industry 4.0 and Urban Development – Connected, sustainable and urban economic activities in the industrial sector in the context of local, regional and global ICT-based value and logistic chains using the example of selected Indian metropolises” was commissioned by Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ). The study was conducted in close cooperation with the Indian National Academy of Engineering (INAE).

This project has been jointly conducted by Prof. Dr. Bernhard Müller, Leibniz-Institut für ökologische Raumentwicklung, Dresden, and Prof. Dr. Otthein Herzog, TZI, Universität Bremen and Jacobs University Bremen with the assistance of Dr. Irene Eiermann, acatech.

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## Experience the Potential of Cyber Physical Systems through a Serious Game

The University of Bremen, faculty of production engineering in cooperation with the BIBA institute are regularly offering master students projects on specific relevant research topics. Such a topic was addressed by the four students Alexander Bader, Tobias Batzdorf, Jörn Rosendahl and Patrick Wölfl. They have developed a serious game aiming at conveying the industrial potential of CPS applications.



Within only seven months, the students have developed a serious game “EPIL – Einsatzmöglichkeiten und Potenziale von Industrie 4.0 in der Logistik“ (Possible application and potential of internet of things concept in the logistics). The application offers a mixed reality using smart glasses for picking and storing containers (coloured bricks) on a ship under time constraints in combination with the use of a multi-touch table at which the players will interactive design the production processes with and without the use of IoT concept. While trying to solve the challenge in the gamified process, the player will get introduced to the underlying technologies and also experience that he will only be able to solve its task in an optimal way by applying the IoT concept, which is realised in the Serious Game software. With this application, the students have managed to visualise the IoT concept and thus to increase the awareness of the potential of CPS technology.

You can personally have a look and try out this game in the BIBA Gaming Lab. This lab offers several Serious Game applications for conveying skills on different topics within logistics and supply chain management like creativity methods supporting innovation, IoT/CPS service development, as well as several SCM topics. It is based on active participation and experimental learning approaches.

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## Internationalization ▲

### Studying and Researching in Asia? Yes!

To think outside the box is helpful. Always! Unimportant if it is in a disciplinary or a cultural way. The Erasmus Mundus project FUSION allows this possibility and has scholarships available for German students or researchers at the University of Bremen.



The Erasmus Mundus Mobility Program is founded by European Union and supports and international collaborations, who are willing to have an interdisciplinary and intercultural exchange. The Research Cluster *LogDynamics* is now involved with the International Graduate School in three projects: Clink, FUSION and gLINK. Students, PhD students, postdocs, tutors and staff have the opportunity to study or conduct research for a period of time at one of the participating universities. From the University of Bremen four departments of *LogDynamics* are actively involved in the exchange: physics/electrical engineering, mathematics/computer science, industrial engineering and economics. FUSION - Featured eUrope and South Asia Mobility Network now provides Germans who are studying, researching or working at the University of Bremen with the unique opportunity to stay at one of the partner universities in the following countries: Afghanistan, Bangladesh, Bhutan, Nepal, Pakistan, China, India and Thailand.

*LogDynamics* was able to welcome 16 guest students coming from Asia so far. These guests were Bachelor, Master and PhD students. All outgoing and incoming students will be provided with local support wherever they choose to go. The application has to be handed in via an online portal, the evaluation and selection will be done by the project consortium. The chances for people from Bremen are very high!

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## Go-ahead for International Collaboration of Three Transport Cluster

A cooperation like this requires a special setting for its launch. For the international agreement of transport clusters coming from Bremen, Morocco and the Canary Islands the Transnational Workshop „Port and Sea Terminal Management“ on



Fuerteventura offered a good possibility for celebrations. The workshop was held in November 2014 as part of the European InTraRegio project (Towards an Intermodal Transport Network through Innovative Research-driven Cluster in Regions of Organised and Competitive Knowledge) and parallel to the SALT Conference 2014 (Salón Atlántico de Logística y Transporte) in Fuerteventura. The trilateral agreement provides the basis for future cooperation between the regions of Bremen, Canary Islands and Morocco in research and innovation projects concerning transport and logistics. The first project ideas are already developed and will be implemented shortly. The project is part of the issue of sustainable short distance sea shipping, which aims to establish a maritime naval corridor between southern Morocco and Bremen via the Canary Islands.

This cooperation is majorly influenced by prior work done during the InTra-Regio project which aimed to improve the cooperation capacity in the use of intermodal transport of the participating regions. Using a variety of different transport systems helps these regions to create a better and more efficient network. Parties to the agreement are: LogDynamics Research Cluster at the University of Bremen represented by Professor Hans-Dietrich Haasis, Cluster of Transport and Logistics of the Canary Islands represented by the President Javier Santana Fraga and Cluster LOGIPOLE SMD (cluster Marocain de la Logistique et du Transport) represented by the president Yassine Rhanmouni.

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## Ceremonial Founding of the Association of the Asian-German Knowledge Network for Transport and Logistics



During the 3rd International Symposium „Innovative Logistics Management“ from 26th to 28th November in Bremen, the statute of the new association of the Asian-German Knowledge Network for Transport and Logistics (AGKN) was ceremoniously signed by the founding members last week. Following, the Management Board and the Advisory Board were elected at the first General Meeting of the new association. A total of eight institutional (Institute of Shipping Economics and Logistics, University of Bremen, University of Applied Sciences Bremen, University of Applied Sciences Merseburg, Shipping Research Centre of The Hongkong Polytechnic University, Logistics Research Institute of Guangxi University, Vietnam University of Commerce and School of Logistics and Supply Chain of Naresuan University from Thailand) as well as two personal (Dr. Irina Dovbischuk and Prof. Dr. Joachim Daduna) partners count to founding members. The Asian-German Knowledge Network for Transport and Logistics (AGKN) was launched by Chair of Business Administration, Production Management and Industrial Economics at the University of Bremen as a web-based platform for communication and knowledge sharing between selected universities in Germany and Asia as a joint project funded by the Federal Ministry for Education and Research.

The aim of this four-year project was to develop and to realize an approach on how to enhance the visibility of German research structures in the Asia Pacific Research Area (APRA) in the specific field of transport and logistics. Due to the success of the AGKN platform and against the backdrop of intensifying the cooperation between the participating institutions, the idea was born to set up a long-term network structure. Thus, German, Vietnamese, Chinese and Thai partners mutually developed the statute of AGKN to found a non-profit international association in November 2014.

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## Events ▲

### VIA BREMEN Conference Project Logistics



**VIA BREMEN**  
PORTS + LOGISTICS  
FOR YOUR BENEFIT

Date: **12th of January 2015**  
Location: Haus der Bürgerschaft,  
Bremen

On the 12th of January 2015 VIA BREMEN organizes the conference with the motto „Project Logistics in Times of Growing Complexity and Increasing Dynamism“. Nowadays companies and employees are forced to act within a complex and dynamic market environment with increasing demands on project logistics. Cross-trades are daily business, cargo weights and volume are increasing and projects have to be done within only a short period of time. This combines with higher competition and cost pressure, economic and political uncertainties that affect logistic projects majorly. Knowing this background future prospects of a successful project logistics will be practically demonstrated and discussed during the event.

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### Factory Planning Today and Tomorrow



Date: **15th of January 2015**  
Location: BIBA, Bremen

Experts from industry and research will present approaches, methods and future requirements for the planning of production and logistics. The organizer is the VDI working group handling equipment, material handling, logistics together with the BIBA institute and the GPS Planfabrik GmbH. After that there is the possibility of exchanging ideas within a relaxed atmosphere and some refreshments. You are asked to register until the 12th of January 2015. To do so please send an E-Mail to [er@biba.uni-bremen.de](mailto:er@biba.uni-bremen.de). Also non-VDI-members are highly welcome. The registration and participation for this event are for free.

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### Special Edition: „RFID im Blick“

With the third special edition “RFID im Blick” from Bremen we dare discuss the fourth industrial revolution and demonstrate the potential by numerous examples. Industry 4.0 - a megatrend? The next step of the technological revolution or a technical evolution? With this journal we hope to provide you with some answers to these questions and the opportunities of modern information and communication technologies used in production and logistics.



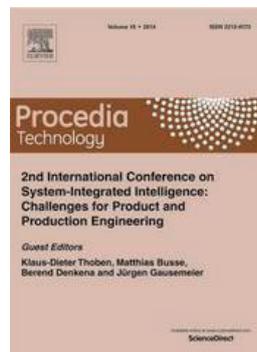
The internet is a major part of the modern life and is especially important for the economy. There the World Wide Web can be seen as one of the main drivers of innovation in recent decades and it is an indispensable part of today's working and living environment. Everyday tasks are often facilitated by the use of various Internet technologies. Experts refer to this as the „Internet of Things“ where objects exchange information independently and can interact with one another as well as with humans. This trend will also affect future factories. Therefore experts refer to this as the „factory of the future“ or of the „fourth industrial revolution - Industry 4.0“. This journal is available in German.

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### Proceedings SysInt 2014

The proceedings of the 2nd International Conference on System-integrated Intelligence: New Challenges for Product and Production Engineering (SysInt 2014) have been published as volume 15 of Procedia Technology. The publication follows an Open Access model, thus all papers are available for download free of charge: [www.sciencedirect.com/science/journal/22120173/15](http://www.sciencedirect.com/science/journal/22120173/15).



This volume contains the collected research and development activities presented at the 2nd International Conference on System-integrated Intelligence (SysInt) held in Bremen, Germany from July 2nd to 4th, 2014. The SysInt 2014 was the second in a series of events started in 2012 in Hannover, the next conference will take place in Summer 2016 in Paderborn. Involved in the organization are: LogDynamics, the ZWE ISIS of the University of Bremen, the University of Paderborn and the University of Hannover.

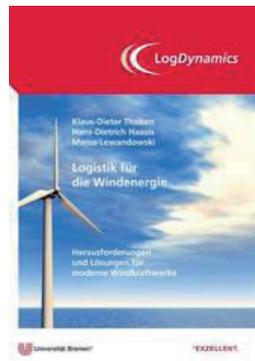
The subtitle of the conference series, New Challenges for Product and Production Engineering, is even more important today than in 2012 with trends suggesting a major transformation of the way we make things - a transformation which is entirely based on the capabilities of system-integrated intelligence. On a European level, the respective catchword is Factories of the Future, while in Germany we speak of Industry 4.0, a term that puts a name to what is felt to be yet another industrial revolution: Following the initial one in the 18th century, we have seen the advent of mass production and numerical control, and are now addressing the fundamental issues of autonomy in industrial processes. The promise that parallels this transition is set against a wide range of technological, organizational and societal challenges.

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## Logistics for Wind Energy – Challenges and Solutions for the Modern Wind Plants

The wind energy sector on sea (Offshore) and on land (Onshore) is confronted with the task of cutting expenses in the production of electricity. Substantial efficiency potential lays in a lifecycle crossing view and an optimisation of the whole supply chain – from the product development over the transportation to the recycling. The term “wind energy logistics” combines different concepts, processes and technologies that provide a crucial contribution to this goal. The industry symposium “Logistics for Wind Energy – Challenges and Solutions for Modern Wind Plants“ brought together important stakeholders and research facilities of the sector. Task and approaches to logistic question marks along the lifecycle and the successful dealing with elements of uncertainty (wind, weather, gearbox failure etc.) along the supply chain were being discussed. The proceedings are available in German. There was a broadcast about the event at buten un binnen, Radio Bremen TV: [Video](#)



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## Call for Papers ▲

### Smart SysTech 2015 European Conference on Smart Objects, Systems and Technologies

**June 16 to June 17, 2015**

Institute for Industrial Management at RWTH Aachen University Aachen, Germany  
[www.smart-systech.eu](http://www.smart-systech.eu)



Organizer: Information Technology Society within VDE  
Technical Co-Sponsorship: IEEE Germany Section  
Co-Organiser: AIM Germany  
Media Partners: ident  
Sponsors: IR-Systeme GmbH

Full papers (4-8 pages) may be submitted electronically in PDF format in English language until 17th of February 2014. Accepted contributions will be published in the VDE conference proceedings and in the IEEE Xplore® Digital Library. See [smart-systech.eu/html/call\\_for\\_papers.html](http://smart-systech.eu/html/call_for_papers.html) for details.

#### Important Dates

Paper submission due: February 17, 2015  
Notification of acceptance: March 31, 2015  
Publication-ready versions due: May 5, 2015  
Posters, demos, videos submissions due: May 5, 2015

#### Topics of Interest:

Smart Objects and Technologies: Embedded Smart Objects, RFID Transponder/NFC Technologies and Architectures, Ultra Low Power Concepts, Distributed Intelligence, Sensors and Actuators, Printed Electronics and new Materials, Smart Object Manufacturing Technologies

Smart Objects and Communication: Wireless Networks: Technologies and Auto-configuration, Sensor Networks, Smart Dust, Communication Protocols and Service Abstraction, Standardization and Regulatory Issues, Antenna Design and Air Interface, Anti-collision schemes, Propagation & Channel Modeling

Industry 4.0: Cyber-Physical Systems, Internet of Things, Life Cycle Management, Smart Factory, Smart Grid, Smart Metering, Home Automation

System Design, Integration and Applications: Smart Objects and Applications, AutoID System Design, ID and Sensors in Cloud Computing, System Modeling, System Security, Security, Privacy Concepts, Cryptographic Methods, Middleware and Databases, Dependable Systems, Reliability, Positioning and Localization

Economic, Security and Sociologic Aspects of Smart Objects: Logistics and Supply Chain Management (e.g. Tracking and Tracing), Smart Logistics, Manufacturing Control, Industrial Process Automation, Health Care, Pharmaceutical, Business Value and Performance Measurement, Business Models, Security and Privacy, Sociological Aspects and Technology Acceptance, Energy- and Sustainability Management, eMobility

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Available at [www.smart-systech.eu](http://www.smart-systech.eu)

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