Log*Dynamics* News

Event „Innovations in Logistics“

Date: **14th of April 2011**, 5 - 9 p.m.
Venue: BIBA, Hochschulring 20, Bremen

On the occasion of the Logistics Day, the BIBA - Bremer Institut für Produktion und Logistik GmbH will be hosting an event themed „Innovations in Logistics“ in cooperation with the Chamber of Commerce Bremen and the WFB Bremen Economic Development on 14th of April 2011.

As part of an interesting and varied programme, the economic and politic background in the Federal State of Bremen will be presented by the Minister for Economy Martin Günthner. Reputable speakers of the industry will report on innovations in logistics from their fields. An exhibition together with our cooperation partners, as well as the introduction of BIBA demonstrators will offer the opportunity of getting a further insight into innovative technologies and their fields of application. The following get-together offers an opportunity to professional discussions with logistics experts.

All interested in logistics are welcome to participate in the event.

Contact: Aleksandra Himstedt him@biba.uni-bremen.de
Details and Registration : www.tag-der-logistik.de/veranstaltung/1256; www.biba.uni-bremen.de/index.php?id=301

BreTeCe – Bremen Technology Center

BreTeCe develops solutions and services for functional testing of mechatronic products. Many manufacturers are faced with the challenge of arranging their product portfolio more attractive compared to the competition. As a result, additional product functions are often realized through the use of programmable electronic systems. Thus a technical product becomes a mechatronical product.

Due to the interaction of mechanical, electronic and software-technical elements mechatronic products have a high complexity. This especially applies when multiple programmable electronic systems are integrated within a product. The effort to ensure the correct functionality of the product rises with its complexity. In most cases, the correct functionality can not be proved on a formal, analytical way. The product is subject of various tests. The definition of these tests is a challenging task as real conditions of the future operations have to be simulated during these tests. Overall, the testing process is time-consuming and requires a significant share of development costs.

BreTeCe sets the goal to reduce time and effort for testing complex mechatronic products. The three substantial optimisation potentials for this can be seen in an earlier beginning of the test phase, improved the interoperability of the test

Bremen Research Cluster for *Dynamics* in Logistics

Contact

Spokesman

Prof. Dr.-Ing. Bernd Scholz-Reiter
Tel.: +49 421 218 5576
E-mail: bsr@biba.uni-bremen.de

Managing Directors

CRC 637

Dipl.-Inf. Jakub Piotrowski
Tel.: +49 421 218 9790
E-mail: pio@biba.uni-bremen.de

International Graduate School

Dr.-Ing. Ingrid Rügge
Tel.: +49 421 218 5639
E-mail: rue@biba.uni-bremen.de

Log*Dynamics* Lab

Dipl.-Ing. Dieter Uckelmann
Tel.: +49 421 218 5550
E-mail: uck@biba.uni-bremen.de

Editor

Dipl.-Betriebsw.Aleksandra Himstedt
Tel.: +49 421 218 5618

equipment and the optimisation of the test process. Therefore, the project consortium is focusing on the standardisation of test system interfaces, cross-linking physically separated test facilities, an advanced test management and a semi-automated generation of test cases. From the 5th - 7th of April the project consortium will present first solutions on the basis of a demonstrator at this year's Aerospace Testing in Hamburg (**Hall B4, Stand M35**).

Contact: Dr.-Ing. Carl Hans han@biba.uni-bremen.de

True Greenness – Green Logistics beyond Process Optimisation and CO2 Compensation

Unlike other industries operating in direct contact to their customers, logistic service providers still hesitate to implement sustainable transport offers. Consequently the BLG LOGISTICS Group started to experiment with the term "True Greenness" to describe sustainable transport concepts apart from process optimization and CO2 compensation.

Climate protection is an important issue of the 21st century. The rising public awareness concerning ecological and social business practices applies pressure to companies from all business sectors. Therefore, many logistic service providers initiate climate protection programs under the name of "Green Logistics", driven by the rising awareness of sustainability issues. However, many of the activities are driven by PR or optimization aspects. BLG LOGISTICS introduced the term True Greenness at a workshop of the EU project "Logistics for LIFE" in November 2010. True Greenness demands a logistic service that focuses on real sustainability instead of primarily economic aspects. The logistic service provider offers to execute a specific service with reduced emissions or even carbon neutral. In return, the customer accepts additional costs. The logistic service provider gains a competitive advantage by offering an environmental-friendly service in addition to the fastest and the cheapest possible transport.

Therefore, the leading thought of True Greenness is the extension of the product portfolio with new, sustainable services and the distinction of this service from a differently motivated (process optimisation) or less suitable approach (CO2 compensation). True Greenness demands logistic services focusing on real sustainability and requiring the development of new service characteristics meeting the rising demand created by a responsible market .

Contact: Wolf Lampe Wolf.Lampe@blg.de

Cognitive Robotics for Automation of Logistic Processes

Globalisation causes an increasing transport of goods. Nowadays, most goods are shipped in containers and are transhipped onto trucks for further transport. The containers are unloaded manually since they are mostly chaotically packed, the variety of transported goods is high, and time requirements are strict. The unloading of containers is a strenuous task, as goods have a weight up to 70 kg. This poses health risks, which include medical condition affecting the spine, the effects of pesticides and poisonous gases as well as injuries through unexpectedly falling objects. Human labour is hence a high cost factor. This, combined with unhealthy working conditions, makes automated solutions highly desirable. The "Parcel Robot", an autonomous unloading system developed by BIBA, can successfully unload chaotic stacked cubic cargo from containers. The know-how gained during the development of the system will flow directly in the "RobLog" project, which focuses on universal cargo, but particularly on the unloading of coffee bags. The goal of the project is to develop a system for the autonomous discharge of universal cargo out of containers.

E-mail: him@biba.uni-bremen.de

Address

Log*Dynamics*
Bremen Research Cluster for Dynamics in Logistics
c/o BIBA
Hochschulring 20
D-28359 Bremen

Internet

www.logdynamics.com

Legal Notice

Universität Bremen
Bibliothekstraße 1
D-28359 Bremen
Telefon: +49 421 218-1
Homepage: www.uni-bremen.de
Tax ID Number: DE 811 245 070

Unsubscribe

Please send an email with the word „UNSUBSCRIBE" as title to :newsletter@logdynamics.com

The challenges to an automated system in this application are significant. The variety of different objects is reflected in the variance of the shapes, sizes and weights, which have to be detected by suitable sensors. The gripper has to realize the safe grip and transport, even if the goods are deformed and bulky. A new robot kinematics has to be developed for the limited work area in a container. It still has to be flexible and strong enough to handle the goods. For the motion planning, collisions will be detected and avoided. Of course, changing environmental conditions will have to be considered, so that the reliability of the system can be guaranteed.

The project is funded by the European Commission with 7.86 million Euros. The consortium consists of BIBA and Hochschule Reutlingen as well as five other participants: University of Örebro, Jacobs University, University of Pisa, and the companies Qubiqa and Vollers .

Contact : Moritz Rohde roh@biba.uni-bremen.de

Experiences of a Brazilian Researcher at BIBA

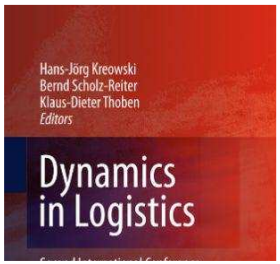
As a consequence of a successful partnership with Brazilian universities in the scope of the project LogGlobal – Improving Supply Chains (BRAGECRIM) BIBA hosted the guest scientist M. Eng. Vanina Macowski Durski Silva from Federal University of Santa Catarina. The researcher completed this month her one-year-activities working at BIBA in one of the LogGlobal subprojects concerning the “Development of a Transaction System for Supporting the Collaborative Transportation between Manufacturing Industries and Maritime Carriers”. Ms. Silva, who is a PhD-student in Production Engineering - Logistic and Transportation concentration area - accomplishes at BIBA her “Sandwich Doctorate”. This name is adopted by the Brazilian entity CAPES for designing a special modality of doctorate degree. It consists in a normal doctorate programme started in a Brazilian university with a duration of 4 years, of which the students spend a period of a 6-12 months at an institution outside Brazil.

According to Ms. Silva, the opportunity to be a part of BIBA’s team was an excellent step in her academic career: “BIBA is a well-known research institute and it is a very interesting experience to be part of it. I have seen different approaches for logistic problems which I can apply in benchmarking for the Brazilian scenarios.” she states. Among the several developed activities it was possible to better explore the German scenario related to the industries, logistic and technologic tools. The partnership with BIBA’s team was also powerful for join-collaboration in scientific paper’s writing and international conferences’ participation. As a result of this successful partnership BIBA has accepted another Brazilian invitation for a project about Intelligent Logistic Platforms coordinated by the State University of Campinas. For Ms. Silva the partnership with BIBA does not end with this one-year-activity. Instead it “begins” now, with the new project and other forthcoming: “The major outcomes are the consolidation of the team’s knowledge, the comprehension by both sides of their strength and weakness and the definition of research topic of common interest“.

Contact : Vanina Macowski Durski Silva vaninadurski@gmail.com

---

Dynamics in Logistics
Second International Conference, LDIC 2009, Bremen, Germany, August 2009, Proceedings



Kreowski, Hans-Jörg; Scholz-Reiter, Bernd; Thoben, Klaus-Dieter (Eds.)

The volume comprises the proceedings of the second International Conference on Dynamics in Logistics LDIC 2009. The scope of the conference was concerned with the identification, analysis, and description of the dynamics

of logistic processes and networks. The spectrum reached from the planning and modelling of processes over innovative methods like autonomous control and knowledge management to the new technologies provided by radio frequency identification, mobile communication, and networking. The growing dynamics confronts the area of logistics with completely new challenges: It must become possible to rapidly and flexibly adapt logistic processes and networks to continuously changing conditions. LDIC 2009 provided a forum for the discussion of advances in that matter. The volume consists of one invited paper and of 47 contributed papers divided into various subjects including mathematical modelling in transport and production logistics, routing in dynamic logistic networks, sustainable collaboration and supply chain control policies, information, communication, autonomy, adaption and cognition in logistics, radio frequency identification in logistics and manufacturing networks, applications in production logistics, and logistic solutions for ports, container terminals, regions and services.

Details: www.springer.com/978-3-642-11995-8

Events

Successful Representation of BIBA at Two Joint Booths at the CeBIT

In hall 7 in the AutoID/RFID Solutions Park at the joint booth of the AIM-D e. V., researchers of the BIBA presented two projects: the research-project ProKon that examines the application of innovative luK-technologies to process control within the management of loads and load carriers of seaports. The demonstrator, a small truck pulling a so-called roll-trailer, was exhibited at the booth. Project-coordinator Anne Schweizer outlines: „The live-representation encouraged the visitors to enquire immediately." Also, the model of a seaport terminal which was exhibited within the project RAN (RFID-based Automotive Network) fulfilled its function to the utmost satisfaction. By means of the unloading, processing and transfer of a model-car, it presented the potentials of automatic RFID-Identification and location of vehicles by reference to global process chains.

At the table of the logistic factory at Bremen's joint booth in hall 9, interested fairgoers were able to get hands-on understanding about the complex interaction of logistic processes in Bremen. „The visitors operated the multi-touch table intuitively. The table of the logistic factory is a crowd puller which contributes, among other things, to the continuous transfer of scientific results.", project-coordinator Ann-Kathrin Pallasch said. At the same booth the BIBA also presented research and development concerning „State-oriented Maintenance". Project-coordinator Marco Lewandowski is glad about the numerous suggestions for new fields of applications. The researcher especially considers the fact that industry and science exhibit on the same platform, as one of the exhibition's advantages at Bremen's joint booth. Even the organiser Alesja Alewelt, the managing director of the company FAIRworldwide, states: „All exhibitors at the joint booths of Bremen were enthusiastic about the CeBIT 2011, especially considering it a platform for the marketing of products and the publication of research results." Whether the newly established contacts will lead directly to new research projects will become apparent during the next weeks and months. „The dissemination of our research results and the extension of our network are equally important parts of our work.", Pallasch summarises.

Contact: Ann-Kathrin Pallasch pal@biba.uni-bremen.de

LogDynamics Participates in „JUST WORTH KNOWING: Intelligent Systems"

Under the patronage of the Senator for Education and Science, the exhibition „JUST WORTH KNOWING: Intelligent Systems" took place in the House of Science from the 20th of January until the 19th of March. The research cluster LogDynamics contributed to the exhibition with the intelligent container. Its contribution to the course of lectures constituted the lecture „From Automatic Identification to Intelligent

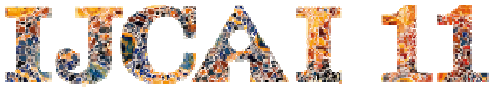
Systems“. Dieter Uckelmann reported on the current projects of LogDynamics, explained the five steps from the identification to autonomous control, and by means of the „Intelligent Truck“ exemplified the connection of RFID, sensor technology, transparent communication and software agents. Dr. Luling Lo, Chief Operating Officer of Ospig GmbH & Co. KG, who has run several projects together with the Log*Dynamics* research cluster, reported on the practical experience of transferring scientific theory into the industry.

Contact: Aleksandra Himstedt him@biba.uni-bremen.de
Details: www.einfach-wissenswert.de

Calls

AILog-2011 - Call for Papers

International 2nd Workshop on Artificial Intelligence and Logistics (AILog-2011) at IJCAI 2011
Barcelona, Spain, July 16, 2011
http://www.sfbtr8.spatial-cognition.de/ailog-2011



IMPORTANT DATES
April 4, 2011 Paper submission deadline
May 9, 2011 Notification of acceptance
May 20, 2011 Camera-ready papers due
July 16, 2011 Workshop at IJCAI 2011

MOTIVATION
Logistics is concerned with the organization and control of processes in space and time in order to transport or manufacture goods and the coordination of the resulting flows of material and information, as well as monetary flows. In a globalized economy, these processes become increasingly hard to handle: the resulting logistic networks get complex and show great dynamics, which results in partial observability and more and more prevents centralized process planning. Thus, recent trends in logistics point towards solutions with distributed and self-organizing processes, and methods from AI are increasingly used to tackle the emerging spatio-temporal problems.
Also, the use of techniques from AI and cognitive science enables to move from a de-centralized view of cooperating autonomous units to an "emancipated" society of logistic units interacting among themselves and with human agents. Particularly the interaction with humans in logistic processes (with users, system designers, analysts, or other stakeholders) is becoming a crucial in increasingly complex processes.
AILog-2011 is supposed to provide a forum for interdisciplinary research between logistics and AI. Often, researchers in logistics apply interesting AI techniques to solve existing problems, but do not have close contact to the progress of research in this field. Similarly, AI researchers are often not aware of the possibilities to connect their work to state-of-the art logistics. AILog-2011 is an opportunity to bring together researchers from different disciplines to share and discuss ideas and focus on open problems.

TOPICS OF INTEREST
This workshop addresses researchers in AI that apply their methods to logistics problems or see the potential to do so as well as researchers from logistics that use or develop AI methods in their work.
We encourage contributions addressing the following research and application areas:
Possible Research Areas:

Knowledge representation and reasoning
Multi modal interaction
Cognitive robotics
Cognitive modeling
Spatial and temporal reasoning
Ontologies
Neural or fuzzy systems
Logic and constraint programming
Ambient intelligence
Planning and scheduling
Multi agent systems
Data mining
Case-based reasoning
Machine learning
Human-machine interfaces
...
Possible Application Areas:
Transport logistics
Production planning and control
Assembly and disassembly
Process modeling and monitoring
Process planning
Intelligent manufacturing systems
Production Scheduling
Inventory organization and optimization
Automated inspection and quality control
Supply chain management
Traffic control and management
...

Submitted papers must be in PDF format and follow the IJCAI style guidelines. Technical papers must not exceed a length of 6 pages.
For submitting your paper, please use the Easychair online submission system at http://www.easychair.org/conferences/?conf=ailog2011 .
The paper submission deadline is April 4, 2011.
Submitted papers will be reviewed by at least two reviewers. There will be no double-blind review, so anonymization of submissions is not necessary.
Papers selected for presentation at the workshop will appear in the workshop proceedings.

PROGRAM COMMITEE (tentative)
Ana Bazzan (Universidade Federal do Rio Grande do Sul, Brazil)
John Bateman (University of Bremen, Germany)
Jürgen Branke (University of Warwick, UK)
Neil A. Duffie (University of Wisconsin-Madison, USA)
Boi Faltings (EPFL Lausanne, Switzerland)
Fred van Houten (Technical University of Twente, Netherlands)
Eyke Hüllermeier (University of Marburg, Germany)
Kap Hwan Kim (Pusan National University, Korea)
Stefan Kirn (University of Hohenheim, Germany)
Herbert Kopfer (University of Bremen, Germany)

Andreas D. Lattner (University of Frankfurt, Germany)
Martin Lauer (Karlsruhe Institute of Technology, Germany)
Ramon López de Mántaras (IIIA-CSIC, Spain)
Jacek Malec (Lund University, Sweden)
Laszlo Monostori (Hungarian Academy of Sciences, Hungary)
Norman Sadeh (Carnegie Mellon University, USA)
Hedda Schmidtke (Karlsruhe Institute of Technology, Germany)
Jaime Sichman (Universidade de São Paulo, Brazil)
Gerhard Weiss (Maastricht University, Netherlands)
Katja Windt (Jacobs University Bremen, Germany)
Stefan Wölfl (University of Freiburg, Germany)

ORGANIZERS
Kerstin Schill
Collaborative Research Center "Spatial Cognition", Bremen, Germany
Bernd Scholz-Reiter
Collaborative Research Center "Autonomous Cooperating Logistic Processes", Bremen, Germany
Lutz Frommberger
Collaborative Research Center "Spatial Cognition", Bremen, Germany
---

CONTACT
For any inquiries about the workshop refer to the workshopp website at http://www.sfbtr8.spatial-cognition.de/ailog-2011/ or contact Torsten Hildebrandt hil@biba.uni-bremen.de

---

Universität Bremen