# EUROPEAN CONFERENCE ON

# 🗖 4 TRANSPORT LOGISTICS 🗲 🗲

**ICT drives transport logistics cooperation** 

05th – 07th November 2014 Fraunhofer Institute for Material Flow and Logistics, Dortmund (GERMANY)



ECITL: ICT drives transport logistics cooperation

05th – 07th November 2014 Fraunhofer Institute for Material Flow and Logistics (IML) Dortmund (GERMANY)

# **FOREWORD**

# WELCOME

#### BY MINISTER OF ECONOMIC AFFAIRS, ENERGY AND INDUSTRY OF THE STATE OF NORTH RHINE-WESTPHALIA

# **DEAR CONFERENCE PARTICIPANT,**

Message from the Minister for Economic Affairs, Energy and Industry of the German State of North Rhine-Westphalia to the European Conference on ICT for Transport Logistics, Dortmund, November 5-7, 2014.

As North Rhine-Westphalia's Government's Minister in charge of economic policy, I am extremely delighted that the 7th European Conference on ICT for Transport Lo¬gistics is taking place in our State this year.

The topic of this year's conference, 'ICT drives transport logistics cooperation', re $\neg$ flects in many ways the priorities and the general thrust of our policy.

With logistics and ICT, the focus is on two sectors that have been identified by the State Government as being exceptionally capable and promising driving forces for North Rhine-Westphalia as a business location. Logistics and ICT are two of the key areas of North Rhine-Westphalia's economy.

In order to keep strengthening our strengths, we are centring our economic policy on eight lead markets, 'Mobility and Logistics' and 'ICT' amongst them. In these markets, we intend to push forward innovation and so preserve the competitiveness of our enterprises and of North Rhine-Westphalia as an investment destination.

We are basically keen to focus on cross innovation, connecting the various industries, and the collaboration of the research and business communities. The aim is to ensure an immediate and successful research-to-business transfer of knowledge and technology.

Especially the two sectors being topic of this conference have a lot of potential for a win/win relationship. This is also shown by some of the latest developments here in North Rhine-Westphalia which the State Government appreciates very much:

Both our 'state clusters', *Logistik.NRW* and *IKT.NRW* decided in April 2013 to take their collaboration to the next level by signing a cooperation agreement. The aim is to deepen conceptual collboration in Research and Development, build a network targeting future issues and so keep the competitive edge of North Rhine-Westphalia.



The European Conference on ICT in Dortmund is another splendid example of the cross innovation principle: On the one hand, it connects the logistics and ICT sectors by addressing the potential and options for application of ICT-tools for logistics. On the other hand, it provides a forum where the players from the research and business communities can meet and enter into discussion with one another.

I am confident that - over the coming three days - you will find a perfect platform for a profitable exchange, inspiring talks, fresh insights and promising options for cooperation.

On that note, let me wish you a successful conference, many innovative results and last, but not least a very good time.

Gewelt Cerim

**Garrelt Duin** Minister of Economic Affairs, Energy and Industry of the State of North Rhine-Westphalia



# **FOREWORD**

# WELCOME

#### **BY VORARLBERG UNIVERSITY OF APPLIED SCIENCES (FHV)**

# **DEAR LADIES AND GENTLEMEN,**

We are delighted welcoming you at the 7th ECITL conference in Dortmund. The city of Dortmund and the Fraunhofer IML are one of the best addresses in Germany to organize this yearly conference. This year's ECITL focus on how "ICT drives transport logistics cooperation". This theme highlights the international importance of efficient and effective logistics and supply chain management.

We invited practitioners, scientists and politicians from all over Europe. They will present you logistic and supply chain challenges, business needs, trends and solutions from different perspectives. This year's ECITL conference has several parallel sessions dealing with logistics cooperation and collaboration, inventions and innovations as well as digitalization of transport logistics and supply chains. For the first time, we installed Key Note Sessions. Leading professionals from politics, research and industry will present emerging topics in transport logistics and supply chain.

The concept of alternating the ECITL conference with its Scientific Day is now well established. All submitted papers were reviewed by two experts from the Scientific Board. For this year's Scientific Day, 13 researchers have been invited. This researchers have the possibility presenting its research results and outcomes.



One pillar of the great success of past ECITL conferences is the interactive discussion including Q&A with and from presenters and the audience. Therefore, we would like to encourage you for pro-active conference participation. Please feel free to ask questions and confront the presenters with your perspectives and views.

At this place, we would like to take this opportunity to express our sincere thanks to all the sponsors, key note presenters, session moderators, presenters and guest speakers for their interesting and valued contributions. We would also like to express our gratitude to the events team at Fraunhofer IML and EffizienzCluster LogistikRuhr for their support and help in organizing this event.

#### Jens Schumacher Vorarlberg University of Applied Sciences

Florian Maurer Vorarlberg University of Applied Sciences





# **FOREWORD**

# WELCOME

#### BY FRAUNHOFER INSTITUTE FOR MATERIAL FLOW AND LOGISTICS (IML)

# **DEAR CONFERENCE PARTICIPANT,**

I heartily welcome you to the »7th European Conference on ICT for Transport Logistics« (ECITL 2014) at Fraunhofer-Institute for Material Flow and Logistics IML in Dortmund. In cooperation with Fachhochschule Vorarlberg and EffizienzCluster LogistikRuhr and supported by the European Commission we created a program with focus on information and communication technologies (ICT) and how they drive transport logistics and cooperation in logistics. We look forward to discuss these hot topics with scientists and practitioners. The following key aspects will be analyzed und discussed:

- · Opportunities and advantages of increased application of ICT
- · Innovations for the future in transport logistics cooperation, which ICT can create
- · ICT as enabler for innovative and green logistics
- Co-operative Intelligent Transport Systems (C-ITS)
- · Enhanced information exchange opportunities through ICT
- · Safety & security in logistics as well as ICT as enabler of safety & security
- · Safe and secure data exchange

The conference will start with a »Scientific Day«, based on a double-blind reviewing process, and presentations of current research results. Thursday and Friday constitute the »Industry Days« with speakers of the European Commission, reports from EU and related projects referring to relevant topics such as intelligent freight, secure communication and sustainable and green logistics.



I want to take this opportunity to thank the European Commission for their continued support of ECITL and everyone in the organization team - especially Carina Neveling and Nina Brökelschen from ECM, Florian Maurer from FH Vorarlberg and Andrea Kapahnke from Fraunhofer IML - for their hard work to make the 7th ECITL in Dortmund a success.

On behalf of all my colleagues from Fraunhofer, the Scientific Committee and the Co-Organizers I want to thank you for joining us at the ECTIL 2014 and wish you a great time in Dortmund!

#### **Uwe Clausen**

Director, Fraunhofer-Institute for Material Flow and Logistics IML & Institute for Transport Logistics ITL, TU Dortmund



7

# **FOREWORD**

# WELCOME

#### BY EFFIZIENZCLUSTER LOGISTIKRUHR (ECM)

# **DEAR CONFERENCE PARTICIPANT,**

The times when logistics stopped at national borders are long since gone. We are required to bundle know-how, to share knowledge and to develop international solutions to the same extent at which new technologies link the world as globalization continues to progress and trade barriers disappear. This is also the message spread by the European Conference on ICT for Transport Lo¬gistics ECITL. So, we are particularly delighted to host this important scientific conference together with Fraunhofer Institute for Material Flow and Logistics IML. I would like to extend a warm welcome to all participants.

The subject of this year's conference has high priority for the EffizienzCluster LogistikRuhr and its partners. IT is playing a more and more important role in logistics, yet the reverse is also true: Logistics is one of the most important sectors for IT. In the EffizienzCluster we early on recognized the importance of software and modern information and communication technologies (ICT) for logistics and adjusted our research projects accordingly. The majority of our more than 35 projects and associated research projects is based on the implementation of intelligent information and communication technologies and new software solutions. Logistics and IT are growing together to become "hybrid services" in the cluster. Only in this way is it possible to meet the rising demands on logistics, and only in this way is it possible to achieve considerable increases in efficiency and thus to gain a competitive advantage. At the same time, logistics can also enhance its profile as a high-tech industry by implementing IT logistics. At ECITL 2014 we will see just how far these developments have already progressed in the field of transport logistics.





Numerous future-oriented developments will continue to accelerate the possibilities of information provision and networking. Together with the EffizienzCluster LogistikRuhr and its research projects we are making a decisive contribution towards putting logistics in a position to develop in that direction and to manage the demands of future challenges. It is one of our key tasks to develop and implement integrated strategies for research, innovation and market development at a European level.

It is all about preparing tomorrow's protagonists in logistics for future challenges and technological developments in European logistics. It is essential for research and innovations to reach the people who manage logistics and really move things. Building bridges between theory and practise has also been a very important goal for us in organising the ECITL 2014.

Modern information and communication technologies make an important contribution towards more cooperation and collaboration. Attending the ECITL can also help you to extend your very personal network. With this in mind, I wish you a thrilling conference with lots of new experiences and contacts for successful European collaborations.

#### Thorsten Hülsmann

EffizienzCluster LogistikRuhr (Managing Director EffizienzCluster Management GmbH)



# VORARLBERG UNIVERSITY OF APPLIED SCIENCES (FHV)

The Vorarlberg University of Applied Sciences (FHV) is a public post-secondary university and is located in Dornbirn / Austria. The FHV was founded in 1989 and is owened by the State of Vorarlberg.

The University has a total of 12 bachelor and master degree programs in the field of business, engineering and technology, design and the social sciences. Six of these degree programs are at the bachelor's level and six at the master's level. The high levels of didactic skills of the lecturers guarantee a universal quality of instruction throughout the campus. These quality standards are supported by state-of-the-art laboratories, in which students and staff work on current research topics. The immediate connection between research and studies means that students come into contact with current research questions early on. Also, the FHV maintains strong relationships and cooperates with more than 100 universities worldwide.

The FHV conveys knowledge and skills at university level in teaching, research and training to ensure the regional living space and make an important contribution to economic and social development in Vorarlberg. The university connects local business strengths through the FHV-network of international partners in science, business, economy and politics.



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# FRAUNHOFER INSTITUTE FOR MATERIAL FLOW AND LOGISTICS (IML)



The Fraunhofer Institute for Material Flow and Logistics IML is said to be first address in the holistic logistics research and is working on all fields of internal and external logistics. According to the idea of Fraunhofer, problem solutions for the immediate benefit for companies are worked out on the one hand. On the other hand, preliminary research of two to five years, in individual cases beyond that, is executed.

At the Institute, founded in 1981, there are at the moment 260 employees as well as 250 post-graduates and students with pre-diploma, supported by colleagues in workshops, laboratories and service areas. Future logisticians with diploma as well as bachelor students in logistics and students of related faculties are practically guided and involved in projects. Beside the location in Dortmund, there are additional locations in Frankfurt/ Main, Prien at Chiemsee and Hamburg as well as international offices in Lisbon and Beijing. For interdisciplinary projects the Institute can draw on a total of 20,000 employees of the entire Fraunhofer association.

Made-to-measure arranged teams create cross-industry and customerspecific solutions in the area of materials handling, warehouse management, supply chain management, simulation supported business and system planning and also traffic systems, closed loop economy, resources logistics, building logistics and e-business. Not least the Fraunhofer IML is acting as general coordinator for the multi-institute central theme »Internet of Things« within the entire Fraunhofer association. The office of the Fraunhofer-Alliance traffic, in which 19 Fraunhofer-Institutes bundle their traffic relevant competences, is also located in Dortmund.

Initiated by Fraunhofer IML, 120 companies and 11 research institutes won the »Spitzenclusterwettbewerb« of the German Government in 2010. The three directors of the Institute who also hold chairs at the Technical University Dortmund in the faculty mechanical engineering, take care of manifold research associations in fundamental researching.



# EffizienzCluster LogistikRuhr (ECM)

The EffizienzCluster LogistikRuhr is one of fifteen leading edge clusters in Germany and the top research and innovation cluster for logistics in Europe. This cooperation network is now taking on a new and active role in managing society's challenges: Tomorrow's logistics should work towards conserving the environment and resources, ensuring urban supplies and towards meeting people's needs as individuals.

All in all, more than 170 project partners from the scientific and business communities are actively involved in the EffizienzCluster. The partner scientific institutions include, among others, the Fraunhofer Institutes for Material Flow and Logistics IML and for Software and Systems Engineering ISST, the universities of Dortmund and Duisburg-Essen as well as the Wuppertal-Institute. The companies involved include large international groups as well as small and medium-sized companies from all over Germany. They represent the entire value added chain of logistics.

The work of the EffizienzCluster covers seven key topic areas and currently includes more than 35 research projects. These projects focus on the development of technologies and solutions for complex logistic value added services. They aim at creating more efficiency in logistics by autonomizing logistic processes. At the same time, logistic service processes are to be directed by criteria for sustainability.

The EffizienzCluster also stands for a significant increase in research and innovation projects involving logistics in the European Union. The cluster management helps companies to analyse their potential for research projects and innovations on the European market and assists them in finding partners and building partnerships at European level.



Carina Neveling

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#### **Dagmar Grote Westrick**

Manager International Projects e-mail: dagmar.grote.westrick@effizienzcluster.de tel.: +49 (0) 208 9925 448 We would like to take the opportunity to express our sincere thanks to all sponsors, which are:

# INTELLIGENT CARGO IN EFFICIENT AND SUSTAINABLE GLOBAL LOGISTICS OPERATIONS (ICARGO)

iCargo is a 42 month European Union funded project. The iCargo project aims at advancing and extending the use of ICT to support new logistics services that: (i) synchronize vehicle movements and logistics operations across various modes and actors to lower CO2 emissions, (ii) adapt to changing conditions through dynamic planning methods involving intelligent cargo, vehicle and infrastructure systems and (iii) combine services, resources and information from different stakeholders, taking part in an open freight management ecosystem. To achieve these targets, iCargo will design and implement a decentralized ICT infrastructure allowing real world objects. new planning services including CO2 calculation capabilities and existing systems to co-exist and efficiently co-operate at an affordable cost for logistics stakeholders. The iCargo infrastructure will include Intelligent Cargo items to facilitate reactive decision-making and to integrate information obtained from on-going execution (all modes) into planning processes to optimize environmental performances, including real-time information about traffic and transport infrastructure conditions. iCargo involves representatives of the main stakeholders in three main areas of activity: (i) research and technological development, involving leading ICT companies and institutes to integrate in iCargo the necessary technology components. including results from key related EU projects, and to develop innovative approaches and business models for co-modal transport environmental optimization and dynamic planning; (ii) implementation, demonstration and validation of three extensive pilots in end-to-end multi-actor intermodal chains, involving users from logistics companies, shippers and public authorities; (iii) extensive dissemination of research results, demonstration and pilot cases validation activities, aimed at transferring iCargo results to the international transport logistics community and supporting take-up and extensive exploitation immediately after the project.



iCargo is the main sponsor of the ECITL.



# **SPONSORS**

# **STADT DORTMUND / TOWN OF DORTMUND**

#### Dortmund - the right choice for logistics

Logistics is a sunrise industry with plenty of potential for growth which is actively promoted in Dortmund. It's one of Germany's most important logistics locations with 900 logistics companies and around 27,000 employees. In Dortmund, an ideal mix of companies from all areas of logistics can be found. There are currently around 50 distribution centres, together with well-known companies such as IKEA, ETL Fiege, Kaufland, Rewe, Tedi and ThyssenKrupp Materials who use Dortmund as their base to distribute goods all over Europe. The city does not just have a leading position in logistics planning, software and plant engineering, but also in the networking of trade, logistics and ICT. Furthermore Dortmund is leading in the field of research and development with two universities as well as a Fraunhofer Institute specialised in logistics.

A great place to live and to make business!



Please visit our booth at the exhibition – the key account logistics, Ralf Finger, is expecting you!

# **GEBRÜDER WEISS – TRANSPORT AND LOGISTIC**

With around 6,000 employees, 150 company-owned locations and a turnover of 1.2 billion euros in 2013, Gebrüder Weiss ranks among the leading transport and logistics companies in Europe. In addition to its core business of overland transport, air & sea freight and logistics, the company also operates a number of highly specialised industry solutions and subsidiaries under the umbrella of Gebrüder Weiss Holding AG, based in Lauterach (Vorarlberg, Austria). This includes logistics consultancy x vise, tectraxx (industry specialist for hi-tech businesses), inet-logistics (software solutions for TMS transport management), dicall (telephone service, consulting and telemarketing), Railcargo (railway transport) and the Gebrüder Weiss parcel service GWP, a shareholder in the Austrian company DPD. This bundling of services allows us to respond to customer needs guickly and flexibly. Having implemented a variety of ecological, economic and social initiatives, the family-owned company, which has a history going back 500 years, is considered a pioneer in terms of sustainable business today.

Gebrüder Weiss is the sponsor of the Best Paper Award. This award is honored with 700,00 Euro.





# **PARTICIPATING PROJECTS**

# iCARGO

"Intelligent Cargo in Efficient and Sustainable Global Logistics Operations" (short: iCargo) is a four year collaborative project funded under the European 7th framework program between twenty nine organizations with expertise in logistics and ICT, including commercial operators, trade associations, research organizations and public authorities. The iCargo project aims at supporting the evolution of the logistic industry towards a mature business ecosystem, based on cooperation between specialized actors to offer competitive and efficient door-to-door logistics solutions.

The project will build an open affordable ICT infrastructure that allow real world objects, existing systems and new applications to efficiently cooperate, enabling mores cost effective and low CO2 logistics through improved synchronization and load factors across all transport modes. By targeting improved interoperability between different organizations' systems and taking cargo centric view of logistics processes the project aims at advancing and extending the use of ICT to support new logistics services that:

- Synchronize vehicle movements and logistics operations across various modes and actors to lower CO2 emissions
- Adapt to changing conditions through dynamic planning methods involving intelligent cargo, vehicle and infrastructure systems
- Combine services, resources and information from different stakeholders, taking part in an open freight management ecosystem.

Central to this purpose is the Common Framework, the core reference model allowing ecosystem member to interact, by mediating between the different standards and systems in use. iCargo follows the vision:

"By 2020, efficient, low-carbon end-to-end transport and logistics services will be planned, executed and completed cooperatively in a global freight business ecosystem, based on fully interoperable cargo, vehicle, infrastructure and freight management systems, supporting optimal resources usage and real-time alignment of intermodal plans with ongoing operations". iCargo focuses on the following business-level innovations:

- Collaborative planning, mainly supporting pooling and sharing resources across the logistic chain. The ecosystem will support the user in deciding the services to be used to compose the final logistic chain.
- Logistic chain composition based on services, providing automatic support in composing and orchestrating the different available transport and logistic services.
- Re-planning of logistic chains by (or on behalf of) the client, in case of goals changes or events happen during the execution time.
- Optimization of the use of resources of the logistic chain, allowing the Logistic Service Providers to be more situational aware and so to optimize the use of transport resources.
- Monitoring the environmental footprint, providing smart tools and shared methodologies for environmental data gathering and reporting.

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Further information are available from the project website http://www.i-cargo.eu/ or from the iCargo representatives:



Contacts:

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Project Leader Servet Balcioglu e-mail: servet.balcioglu@atos.net

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# **PARTICIPATING PROJECTS**

# e-Freight

# Capabilities for Co-modal transport Paperless Freight Transport and Logistics in a co-modal context.

e-Freight is a research and development project co-funded by the European Commission under the 7th Framework Programme. The project has 31 partners from freight transport related industries and research. 14 Member States and Norway are represented. It started January 1st 2010 and was extended to finish at the end of 2013. In the White Paper for Transport published in March 2011 by DG MOVE, the e-Freight policy initiative is key action 7, advocating 'creation of the appropriate framework to allow tracking goods real time, ensure intermodal liability and promote clean freight transport'. The e-Freight policy initiative will take into account outcomes of the projects presented at the ECITL, and in particular the e-Freight R&D project. Indeed, the e-Freight R&D project outputs are in line with the White Paper 2011 aims:

- 1. A standard framework (e-Freight Framework) for freight information exchange covering all transport modes and all stakeholders.
- 2. A multimodal e-waybill (MWB) for all carriage of goods, irrespective of mode.
- Single Windows, i.e. national one-stop administrative shops for businesses to report to authorities in all modes based on standardized data model in compliance with EU and international regulations called the Common Reporting Schema (CRS).



The project implements the vision of paperless planning, execution and completion of transport and logistics operations. It also provides an efficient and secure mechanism for seamless connectivity between all modes (Access Points). All these are key determinants in achieving co-modality and in providing a competitive European freight transport system whilst promoting environmental sustainability.

The project has developed an e-Freight platform that facilitates efficient development of e-Freight Solutions (software applications to deploy the e-Freight Framework) based on a Service-Oriented Architecture (SOA). The e-Freight platform facilitates, additionally, integration with SafeSeaNet (SSN) and e-Customs to support cooperation between administrations in security, safety and environmental risk management.

#### **Project Achievements**

The impact of the project's value proposition for seamless connectivity and interoperability among Logistics Services Providers and Clients, Transport Network Managers and Transport Regulators, has been positively evaluated in four Business Cases and eight different European countries involving all surface transport modes represented by 10 individual consortium partners including large and small businesses and authorities.

The effectiveness of the Next Generation Single Window capabilities were demonstrated by means of deployment of a National Single Window for Latvia.

Recently, the e-Freight project created links between surface and air transport through a pilot case which has been designed to demonstrate the e-Freight connectivity and interoperability capabilities based on the use of the e-Freight Access Points and the exchange of the multimodal e-waybill information.

The e-Freight project worked closely with all major standardisation organisations in order to ensure that its results contribute to global interoperability: Partners of the e-Freight consortium have been active members of OASIS's ubl, GS1's eCom Logistics Group and ISO and UN/CEFACT relevant Technical Committees. As a result:

- The main e-Freight Framework messages are included in OASIS/UBL 2.1 version being published in 2013.
- GS1's Transport Instruction message was co-branded with the e-Freight project.
- ISO 28005, "Security management systems for the supply chain Electronic port clearance (EPC)" was made compatible to e-Freight's Common Reporting Schema.
- e-Freight's Single Window approach was recognized at the UN/CEFACT Forum in 2013 as a logistics orientated option for a Single Window solution in Europe.



Contact:

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# **PARTICIPATING PROJECTS**

# **FUTUREMED**

FUTUREMED is a project funded under the MED Programme that aims to improve the competitiveness of port systems in the MED area by improving accessibility through technology and procedural innovations, and guaranteeing sustainability of transport. The idea focuses on the realization of interoperable management information systems and on the reduction of externalities.

The project intends to define and implement, by means of concerted territorial actions and pilot projects, sustainable middle- and long-term development strategies. These will be focused on:

- the removal of the current barriers concerning accessibility of ports (seaside and landside);
- the integration of ports with the hinterland;
- · the development of logistics activities and intermodal transport connected with ports;
- the development of infomobility aiming at fostering attractiveness and making port system more efficient;
- the specialization of port systems.

Specifically, the project addresses three currently strategic sectors for the MED area: freight, passenger and touristic traffics. The project intends to make freight and passenger flows seamless by means of experimental activities and pilot projects concerning interoperable information systems which integrate port systems with inland logistics infrastructures and with transport and service operators.

Within the project, two specific platform targeted towards professional working in the port-hinterland environment will be developed:

The Visibility Platform: will provide visibility on available intermodal services of the Mediterranean ports towards their hinterland, including a maritime-rail intermodal planner. Port-hinterland integration will be further supported by an Intermodal Dashboard on Mediterranean ports' intermodal connectivity.

The Cruise Platform: will mainly address the needs of national and regional policy makers, providing information on the development of cruise services in the Mediterranean regions including KPIs. It will also incorporate standardized interfaces with relevant platforms following the concept of a cruise ecosystem.

In the framework of the FUTUREMED project, 6 national platform have been set up for the 6 countries represented in FUTUREMED (Italy, France, Greece, Cyprus, Spain, Slovenia), gathering stakeholders interested in the project, which are validating and advising our work. These same stakeholders,

belonging to the Port-Hinterland area, together with the FUTUREMED partners, will create by the end of the project the FUTUREMED Observatory; a EEIG which aims to provide expertise and to be a key driver of change in the improvement of port-hinterland integration.



Contacts:

Project coordinator: **Andrea Campagna** E-mail: coordinator.futurmed@regione.lazio.it Project Communication : **Stefano Dondi** E-mail: sdondi@regione.emilia-romagna.it



Projet cofinancé par le Fonds Européen de Développement Régional (FEDER) Project cofinanced by the European Regional Development Fund (ERDF)

# **PARTICIPATING PROJECTS**

# LOGINN

For LOGINN, innovation in logistics encompasses three distinct and interlinked dimensions: business models, logistics practices and technological applications.

Only considering these three dimensions together, allows to effectively uptake innovative solutions. The main objective of LOGINN is to facilitate and accelerate the commercial uptake of logistics innovation, by turning knowledge and research into investment in innovation, more specifically LOGINN objectives are

- Raising the profile and understanding of innovation in logistics, by identifying current and expected market developments and defining logistics innovation in terms of drivers, critical success factors, barriers overcome and impacts achieved.
- Identifying policies, regulatory measures, financial mechanisms and socio-economic aspects that are required in support of accelerating the development and diffusion of logistics innovation.
- Encouraging greater involvement in and acceptance of innovations by promoting and disseminating the knowledge created within the project to a variety of relevant stakeholders and by establishing synergistic links to complementary initiatives at a European level.
- The overall strategy of LOGINN to support the above objectives makes intensive use of social networking approaches and mechanisma through:
- The creation of an enlarged logistics community that comprehends all stakeholders involved in the value chain: the Associated Partners Group (APG)
- The establishment of a communication/collaboration platform for stimulating discussion, validating project results and achieving consensus among stakeholders and support the community: the LogisticsArena which is alive and active since February 2013.



Get engaged, be logistics! LogisticsArena.eu

# **CULTURAL VISIT & INDUSTRIAL TOUR(S)**

#### 5TH OF NOVEMBER 17:45 - 19:30 H

#### **CULTURAL VISIT – THE NEW DORTMUND**

Dortmund has long since set its course towards structural change and has developed into a desirable high-tech site in North-Rhine Westphalia. In the TechnologieZentrum, TechnologiePark and BioMedizinisches Kompetenzzentrum, the future of Dortmund continues to grow.



The top address for e-commerce "Stadtkrone Ost" and the e-port are also among the impressive stops on this city tour. A particular high-point,

which you will even be able to observe during its transformation, is the site PHOENIX: where once a steelworks extended over a huge area, a modern cityscape has been created, in the center of which is a 24-hectare lake.

Recommendation: only limited places available; first-in first serve principle; registration during ECITL.

#### 6TH OF NOVEMBER 16:30 - 18:30 H

#### **INDUSTRY TOUR 1 – ATLAS: THE SHOE FACTORY**

Located in Dortmund, atlas - the shoe company is one of the leading manufacturers of safety shoes in Europe. Almost 2 million pairs of high-tech shoes are produced annually at the ultra-modern production site.

A team of over 1.450 employees ensures that the enormous daily production runs smoothly. As a shoe specialist with many years of experience, we develop sector-specific safety shoes. Every shoe coming out of our factory is of excellent quality and is tailored specifically to the needs of our customers.

Last year, the production and warehouse area was increased to a size of 300.000 sqm allowing a great capacity of up to 350.000 pairs of safety shoes to be stored on site. This way, optimized supply logistics are available to our customers worldwide.



# **CULTURAL VISIT & INDUSTRIAL TOUR(S)**

#### 6TH OF NOVEMBER 16:30 - 18:30 H

#### **INDUSTRY TOUR 2 – IKEA DISTRIBUTION CENTER**

"To create a better everyday life for the many people by offering a wide range of well-designed, functional home furnishing products at prices so low that as many people as possible will be able to afford them." That is vision and business idea of IKEA. To realize the business idea IKEA needs among other things an efficient supply chain. IKEA Distribution Services is an integrated part of this world-wide supply chain between suppliers and customers, both in the store and at their home. From the Distribution Centre Dortmund of IKEA Distribution Services in Dortmund-Ellinghausen not just all deliveries to customers in Germany and Belgium are shipped; furthermore all stores in Europe are supplied with low volume articles. In addition, the after sales service for the IKEA kitchen range Faktum is handled for all European countries since summer 2013. With these tasks the Distribution Centre Dortmund role within the distribution network of IKEA.



#### 6TH & 7TH OF NOVEMBER

Fraunhofer IML is said to be first address on all fields of internal and external logistics. At the institute, founded in 1981, teams create cross-industry and customer-specific solutions among other things in the area of materials handling, warehouse management, supply chain management, and also traffic systems. Fraunhofer IML ranks internationally among the top three logistics institutes in the world.

At the 6th of November, 14:00 - 16:00 o'clock and at the 7th of November, 10:30 - 12:00 o'clock we are glad to offer you the possibility to visit the LivingLab cellular transport systems and the openID Center.

#### LIVINGLAB CELLULAR TRANSPORT SYSTEMS

The ideal logistics space is empty. With LivingLab cellular transport systems the Fraunhofer IML is revolutionising intra-logistics. Massively constructed and in-flexible continuous conveyor technology is replaced by numerous small autonomous vehicles which flexibilise material flow.

The intelligent, interlinked transport vehicles carry out transport from a high-rise store to workstations. They coordinate with each other independently without any central control. They are capable of moving on rails in the high-rise store and completely freely on the ground, i.e. without any guide markings. This ensures the maximum of flexibility. The transport performance of the total system can be adjusted by the number of vehicles.



The Fraunhofer IML implements swarm intelligence following the example of the animal world, as well as autonomous behaviour in the transport vehicles, so that they communicate with each other and can coordinate their route planning. Collisions are avoided by an intelligent sensor concept as well as priority rules similar to those in road traffic.

#### Conclusion: Biggest artificial intelligence experiment in intralogistics worldwide.

# **SIDE EVENTS**

#### **OPENID-CENTER**

The vision of the Internet of Things determines the daily work at Fraunhofer IML. It is the vision of a logistics system in which goods organize the route to their destination themselves – a paradigm shift in the world of logistics. The background is that logistical processes are becoming ever more complex. Goods used to be transported only to retailers, but today they are transported directly to the consumer a million times. Today's systems will no longer be able to cope with the



flood of goods and data in the coming years. The solution is in the Internet of Things. As on the virtual data highway, packages steer themselves decentrally by means of shared intelligence through the global logistics networks. In other words, clever packages that know where they're going!

The Fraunhofer IML is advancing the paradigm shift, and this requires a sufficient development and test area. This is why the Fraunhofer IML brought the openID Center into being in 2005. An open platform over 1,500 sqm with the aim of researching, developing and testing logistics software and auto-identification systems. For many years now in the openID Center the Fraunhofer IML has been working in pioneering projects together with partner organisations from industry and commerce. The conclusion of each project provides a fully functional, expandable experimental field.

#### Conclusion: The only open integration platform for autoID technologies worldwide.

### **SCIENTIFIC DAY**

After the great success of past the ECITL Scientific Day's, we are delighted to organize the 3rd edition event. This year we received 32 papers from all over Europe and Asia. All papers were doubleblind reviewed and carefully selected for an oral presentation at the ECITL and publication in the "International Journal of Advanced Logistics (IJAL)". Furthermore, all relevant papers were reviewed for the "Gebrüder Weiss Best Paper Award".

The evaluation criteria for the "general" and GW Best Paper Award review and its particular significance were:

General Evaluation Criteria	Significance	Gebrüder Weiss Best Paper Award Evaluation Criteria	Significance
Quality of content	15%	Clear introduction	
Quality and level of innovativeness	20%	(incl. general introduction to the topic, structure, purpose and aim of the paper)	10%
Significance for theory or practice	15%	Description of the scientific methodology	1504
Quality of presentation	10%	(incl. method & tools)	1370
Appropriateness of research methodology	10%	Application of the scientific methodology	20%
Decisive overall for full paper presentation	30%	Theory / Literature processing	15%
		Practical / Empiric part	25%
		Presentation of the findings and its degree of	
		innovation	15%
		(e. g. extension of existing literature, etc.)	
		Submission time delayed?	-15%

The "Gebrüder Weiss Best Paper Award" will be awarded by Andreas Pichler as representative of Gebrüder Weiss on the 06th of November, during the conference dinner. Anticipated, it was a neckand-neck race between a few papers and external decision makers got consulted.

At this place, we would like to take the opportunity to express our sincere thanks all authors and their contributions. Also we would like to thank Gebrüder Weiss, especially Andreas Pichler, for the kind collaboration and cooperation and the sponsoring of the Best Paper Award. Finally we would like to thank all reviewers of the International Journal of Advanced Logistics and the ECITL scientific board, which are:

Germán Herrero	ATOS Research
Jannicke Balsrude-Hauge	Bremer Institut für Produktion und Logistik
	GmbH
Prof. Dr. Yao-Hua Tan	Delft University of Technology
Prof. Dr. Michael Henke	Fraunhofer IML
Prof. Dr. Uwe Clausen	Fraunhofer IML
Dr. Bernhard Holtkamp	Fraunhofer ISS
Prof. Dr. Matthias Klumpp	FOM University of Applied Sciences
Prof. Dr. Rod Franklin	Kühne Logistics University
Hans Westerheim	SINTEF
Prof. Dr. Boris Otto	Technical University of Dortmund
Prof. Dr. Henk Zijm	University of Twente
Prof. (FH) Dr-Ing. Jens Schumacher	Vorarlberg University of Applied Sciences

# **SCIENTIFIC DAY**

For the opening and introduction of the ECITL conference and the scientific day, we are delighted welcoming Mr. Günther Horzetzky. Mr. Horzetzky is a representative of the Ministry of Economics and Trade in Nord-Rhein-Westphalen. The following key note presenter will be Yoon Seok Chang. Yoon, in co-operation with Florent Frederix, is chief-editor of the International Journal of Advanced Logistics, and will take over the responsibility of a key note speech highlighting the importance of research and its significant contributions to development and welfare. Afterwards the parallel sessions will start.

Planning of a new logistics project: A development planning of smart material handling machine using the bottom-up strategy.

# **SESSION: SMART LOGISTICS**

# **KEY NOTE PRESENTATION**

Recently, the demand for the 'light weight' product such as mobile phone, lap top, semiconductor and etc has been growing rapidly. Such growth caused the need of the specific material handling machine for 'light weight' cargo. However, in most warehouses in Asia, the handling of light weight products is heavily dependent on the manual work which causes inefficiency. To address such inefficiency and specific requirement, the development of smart material handling machine was essential in Korea.

However, identifying requirements and planning a new type of machine are not simple tasks since there are process differences in warehouse operations, too many technologies, on-going developments, user requirements and etc.

For the systematic research, this paper proposes a bottom-up strategy and defines smart Material handling machine to develop considering various factors: user requirements, process characteristics in warehouse, trends of technology, market environment and etc. The Bottom-up strategy we propose is found useful to prioritize candidate technologies and to determine key research subject. We could reflect various ideas, opinions and information during the research process.

#### **PRESENTER: YOON SEOK CHANG**

Yoon is a professor of School of Air Transport & Logistics and a director of Ubiguitous Technology Application Research Center, at Korea Aerospace University. He is also a director of Convergence IT Research Center (ICT-Unmanned Aerial Vehicle and Logistics Convergence Research Center) designated by Ministry of Science, ICT and Future Planning (MSIP, Republic of Korea). He was served as dean of information system and service at Korea Aerospace University and was a visiting scholar at the department of computer science, Caltech, USA. Prior to joining Korea Aerospace University, he was a visiting professor of KAIST, a senior research associate of Cambridge University, a senior application engineer of i2 and a visiting professor of Arizona State University. He finished his PhD from Imperial College London, UK, 1997 majoring manufacturing system at the department of Mechanical Engineering. He was the editor of the Evolution of Supply Chain Management, published (Kluwer Academic Publisher) and is currently serving as an editorial board of members of Human Factors and Ergonomics in Manufacturing and Service Industries (Wiley, USA) and International Journal of Advanced Logistics (Taylor & Francis). His research interests are ICT applications in logistics area and smart machine design.





## **SESSION CHAIR: YOON SEOK CHANG**

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He is also a director of Convergence IT Research Center (ICT-Unmanned Aerial Vehicle and Logistics Convergence Research Center) designated by Ministry of Science, ICT and Future Planning (MSIP, Republic of Korea).

He was served as dean of information system and service at Korea Aerospace University and was a visiting scholar at the department of computer science, Caltech, USA. Prior to joining Korea Aerospace University, he was a visiting professor of KAIST, a senior research associate of Cambridge University, a senior application engineer of i2 and a visiting professor of Arizona State University. He finished his PhD from Imperial College London, UK, 1997 majoring manufacturing system at the department of Mechanical Engineering. He was the editor of the *Evolution of Supply Chain Management*, published (Kluwer Academic Publisher) and is currently serving as an editorial board of members of *Human Factors and Ergonomics in Manufacturing and Service Industries* (Wiley, USA) and International Journal of Advanced Logistics (Taylor & Francis). His research interests are ICT applications in logistics area and smart machine design.

# **Roadmap towards a smart logistics ecosystem**

#### Presenter: W. J. (Wout) Hofmann

Authors: W. J. (Wout) Hofman, H. J. M. (Harrie) Bastiaansen

Currently, the fundamentals of a technical infrastructure for a logistics 'systems-of-systems' are laid, facilitating improved, more effective and efficient logistics services based on higher levels of self-organization. Through situation awareness with enhanced methods for sharing (real-time) data, logistic stakeholders can improve decision-making, which allows for coordinated actions to overcome transport bottlenecks, optimize capacity utilization, and support synchromodality based on real-time chain composition. The required information infrastructures for such system-of-systems supporting self-organization are technically realized by means of distributed, interrelated and interoperable functions for data manipulation, process support, end-user interaction, semantic interoperability and controlled (data) security. Incorporating functionality for compliance with (inter)national laws and regulations further evolves the system-of-systems into what is referred to as a 'smart logistics system'.

As components of the technology to realize a system-of-systems are becoming mature, their successful introduction and application critically depends on innovation diffusion. This paper proposes a Living Labs approach in which the relevant challenges identified for innovation diffusion are addressed. Whilst (besides logistics organizations) also authorities are involved in creating such smart logistic ecosystems, these authorities also need to collaborate in the Living Labs to realize its longterm vision and goals.

The first steps towards the roadmap that is described are already being taken in EU funded projects, but the approach needs to be validated further in practice.





# **SESSION: SMART LOGISTICS**

#### WED 5.11 13:55 - 14:20 H

# **Cooperative Intelligent Transport Systems for freight transport**

### **Presenter: Evangelos Mitsakis**

Authors: Evangelos Mitsakis, Josep Maria Salanova, Georgia Aifadopoulou, Evangelos Mintsis, George Tsoukos

Transportation is one of the most significant key enablers of the European economy accounting for a significant part of the energy consumption, employments and economic activity. Road transportation is the maximum exponent of the transport sector, especially of the freight transport sector. Various attempts for developing and deploying cooperative freight transport technologies based on cooperative Intelligent Transport Systems are presented in this paper, focusing on the Cogistics project and the provision of speed advice to truck drivers based on the Energy Efficient Intersection Service. The speed advice algorithm is applied to the simulation environment of the city of Thessaloniki, obtaining fuel consumption and CO2 emissions reduction of up to 4%.

# Discrete Event Simulation as a Strategic Decision Instrument for a CO2- and Cost-efficient Distribution Chain Applied in the FMCG Sector

#### **Presenter: Markus Rabe**

Authors: Markus Rabe, Mehmet Umut Sari, Till Fechteler, Luca Fernando Ruini

Globalization leads to growing distribution distances in logistics. This increases the cost- and energyrelated effort for the transportation of goods. As a consequence, companies need to react to ensure their competitiveness, in the best case already in the strategic planning of the distribution chain. Due to the fact that the distribution chain is a complex and dynamic network, it is difficult to reach adequate results with analytic methods. Discrete event simulation is an approach to achieve results that consider the dynamics of the system. In this paper it is discussed how discrete event simulation is suitable for the strategic design of the distribution concerning an optimal exploitation of CO2 emissions, costs and service level applied for a case in the food sector. This has been realized by application-oriented scenarios in the context of a European project called e-SAVE that came out in the course of the seventh framework program (FP7). With the simulation approach, various distribution chain scenarios have been modelled, beginning with two independent distribution chains and later with various design alternatives with an increasing merging level. Finally, the results have been compared and evaluated concerning the impact of the factors given above, in order to identify the most CO2- and cost-efficient alternative. As assessment instrument the discrete event simulation tool SimChain has been utilized. In this context, the data model of the tool and several features of the implemented building blocks have been amended with respect to the requirements of the distribution scenarios.

# **SESSION: SMART LOGISTICS**

#### WED 5.11 14:45 - 15:10 H

# **Decentralized Approach to Logistics Execution Monitoring in Multi-actor Network**

### Presenter: Eetu Pilli-Sihvola

Authors: Eetu Pilli-Sihvola, Antti Permala, Ville Hinkka, Oliver Klein, Karri Rantasila

To challenge dominant centralized solutions, a reference solution for transport execution monitoring was developed utilising the messaging framework and the access point infrastructure in multiactor network. The development required design of new standard, forwarder independent approach to logistics business information exchange, covering all transport modes and all stakeholders. The developed XML-based messaging framework and access point infrastructure enable the implementation of interoperable digital transport solutions at different stages of the transport process (booking, planning, monitoring, and completion). In the monitoring solution, notifications on the departure and arrival of shipments are received via Transport Status messages in real-time. The information transmitted can be manually input or it can come from automated identification solutions utilising a variety of technologies like barcodes and RFID. The functional viewpoint of the monitoring application consists of two perspectives: the logistics service consumer (LSC) and the logistics service provider (LSP). Accommodating for both roles in one application offers some synergies compared to individual and dedicated solutions. Finally, the solution was tested in a business case to evaluate the benefits and weaknesses of the proposed solution comparing to predominant centralized solutions.

# **SESSION: INTEROPERABILITY AND CONTROL**

#### 35

#### **SESSION CHAIR: FLORIAN MAURER**



쑸

Florian, born in June 1979, is a research assistant at the Vorarlberg University of Applied Sciences. Florian received his Bachelor degree in Business Administration and his Master degree in Business Process Engineering at the Vorarlberg University of Applied Sciences. Additional, Florian holds a diploma in Politics of the University of Salzburg. Currently, Florian is working for his PhD at the Bundeswehr Universität München. His field of research comprises resilience and robustness in transport logistic networks and supply chains. Before his academic career, Florian was working for several companies in the field of transport logistics, supply chain management and ICT (e. g. Austrian Railways, Transflow (Imtec), etc.).
### **SESSION: INTEROPERABILITY AND CONTROL**

#### WED 5.11 15:30 - 15:55 H

# Interoperability in Supply Chain and Logistics. What can the Common Framework offer? – A scientific evaluation

#### **Presenter: Hans Westerheim**

Authors: Hans Westerheim, Jannicke Baalsrud Hauge

Different business models fostering more flexible management of supply chains have been proposed in recent years. The rapid technology development is supporting more reliable and efficient ICT based cooperation among stakeholders in the supply chain. The technology itself, serving as infrastructure for cooperation has evolved and also tools and frameworks assisting the development and deployment of these technologies have been developed. During this evolvement there have been several attempts to organize different artefacts into frameworks for interoperability. The motivation for this paper is to evaluate qualities held by the Common Framework in relation to new business models, interoperability and other frameworks offer any new qualities serving interoperability in the supply chain management sector compared to established frameworks? The idea behind this evaluation is that the Common Framework from the beginning was focusing on the needed interfaces, based on business requirements, in opposite to some of the technical based frameworks. The study was based on a combination of literature review and design science. The main contribution from this paper is to put Common Framework in a context with other interoperability frameworks suitable for supply chain management.

WED 5.11 15:55 - 16:20 H

# Network Structures and Decentralized Control in Logistics: Topology, Interfaces, and Dynamics

#### **Presenter: Till Becker**

Authors: Till Becker, Daniel Weimer, Jürgen Pannek

Decentralized or autonomous control in logistics has continuously developed over the last decades. Trends such as Ubiquitous Computing, Industry 4.0, and Cyber-physical Systems foster the transition from centralized control to decentralized approaches. While there has been a lot of research on control algorithms and miniaturization of information and communication technology, comparably little is known about the effect of the underlying structures of the logistic networks on decentralized control. This article aims at revisiting the topic of decentralized control with regard to the topology of logistic networks and at highlighting the importance of the relation between topological structure and control procedures in order to propose directions for future research.

### **SESSION: INTEROPERABILITY AND CONTROL**

WED 5.11 16:20 - 16:45 H

# A Study on the ejecting zones for automatic picking system in pharmaceutical industry

#### Presenter: N. U. Kim

Authors: N. U. Kim, Y. S. Chang, W. R. Kim, J. H. Kim, H. C. Choi

Automatic Picking System (APS) has been adopted in many distribution centres for pharmaceutical products. In APS, products are automatically ejected to a conveyor which brings the products to other place. Defining ejecting zones is an essential work to operate APS efficiently, but there are almost no research on defining the ejecting zone. The ejecting zone is a moving zone on the conveyor and it corresponds to one picking order. Products are ejected while the zone passes channels in which the products are stored. In this paper, we studied a method to define an ejecting zone. Firstly, we explained three methods to define the ejecting zones and how they works. Secondly, we analysed the properties of picking orders with the consideration of the structure and the picking mechanism and presented various types of picking order that reflect actual picking environment. Finally we presented a guideline that suggests which type of ejecting zone is suitable for various types of picking orders from the point of order fulfilment time and the consumption of energy using a computer simulation.

#### **SESSION: RISK MANAGEMENT**

#### **SESSION CHAIR: UWE CLAUSEN**

Uwe is Managing Director of the Institute of Transport Logistics at TU Dortmund University and – in joint appointment - also director of the Fraunhofer-Institute for Material Flow and Logistics in Dortmund (since 2001) and Chairman of the "Fraunhofer Traffic and Transportation Alliance" (since 2003). He worked in the logistics service industry as European Operations Director at Amazon.com and logistics manager at Deutsche Post DHL. In July 1995 he achieved the title of Dr.-Ing. with his doctoral thesis on transportation network optimisation at TU Dortmund University.

He is Member of the board of ECTRI European Conference of Transport Research Institutes, since 2012 (representative of Fraunhofer within ECTRI since 2005). He is Advisory Council Member of the Association of German Transportation companies (VDV). He is member of the scientific advisory board of the Bundesvereinigung Logistik (BVL) e.V. and Chairman of the Scientific Committee EffizienzCluster Ruhr.

He was Member of the DFG (German Research Foundation) experts board "System technology" on the subject "Traffic and transportation systems, logistics, quality management", from 2004 - 2012. From July 2002 till July 2005, Prof. Clausen was dean of the engineering faculty at TU Dortmund University.

His research areas include green logistics, commercial traffic modelling, intermodal transportation, mathematical optimization, network optimization and distribution systems.





### **SESSION: RISK MANAGEMENT**

#### WED 5.11 13:30 - 13:55 H

# A Simulation-based Decision Support Framework for Real-Time Supply Chain Risk Management

#### Presenter: Mustafa Güller

Authors: Mustafa Güller, Emre Koc, Tobias Hegmanns, Michael Henke, Bernd Noche

In today's competitive and dynamic market conditions, Supply Chain Risk Management (SCRM) has become a key concern for organizations in order to respond effectively to market uncertainties and disruptions. There are several sources for supply chain risk such as process, control, demand, supply and environment. Natural disaster and manmade crises have also put negative impact on the performance of supply chains. In addition, risk management in the supply chain is a challenge due to the fact that the time, place, and severity of risks are fairly unpredictable. Controlling and monitoring risk in real-time is critical to providing a quick response to unanticipated events in order to reduce the consequences of these events. Hence, there is an immediate need to incorporate the risk management, computer simulation and real-time information systems into a framework to assist decision makers in evaluating and managing supply chain risks. This paper develops a framework for the design of a simulation-based decision support system for the real-time management of disruptions and mitigation of risks in supply chains. The agent-based simulation is integrated into the framework in order to analyse the detailed interactions among various actors of the supply chain and evaluate the risk management process. The proposed simulation platform also provides a virtual marketplace that takes into account the interdependencies of the decisions made by costumers and company.

### Invited Presentation: Network Structures and Decentralized Control in Logistics: Topology, Interfaces, and Dynamics

#### Presenter: Joachim Kochsiek (Fraunhofer IML)

The presentation reports on challenges and solutions related to the safety and security in the transport chain. Counter-terrorism, theft and extreme weather are causing greater efforts by logistics operators. How can these challenges be met efficiently will be described based on two research projects. A perspective on a future research agenda for land transportation security will be given.

Internationally active participants in the transport chain had to make large investments due to the requirements of security measures in transport as a result of the attacks of 9 September, 2001. The ISPS Code was first relevant for port terminals and shipping lines. Other requirements, such as the pre-announcement or the 100% x-ray scanning of containers, but also the partial transfer of the ISPS requirements in a similar form to inland transport, lead to the expectation of higher costs and inefficiencies for the transport chain. However, from the perspective of the carriers, terrorism is not the main challenge. Daily "business" is theft of goods, with a larger organization and brutality of criminals. The requirements for protection against terrorism and against theft can form a symbiosis. The proven and already enhanced measures against theft, developed by the logistics industry of its own accord, can also satisfy the counter-terrorism. Controversial discussed terror precautions may be dispensed with these measures. Thus, the required 100% screening of shipping containers prior to shipment to the U.S., can be limited to a few suspicious container, driven by a process related approach, which is being developed in a research project. This keeps costs low and brings added value due to the higher protection against theft. In particular, the necessary "easyness" of for a growing economy of the transport chain remains adhere. The presentation gives a deep insight into the relationships between technology, organization and human resources to meet the challenges efficiently.

In addition to protection from terrorism and theft, another aspect to the challenges of the transport chain occurred in recent years, namely extreme weather events such as the hurricane Kyrill or the flooding in Saxony (Germany) in 2002. Globalization and the efficiency of production are more than ever dependent on functioning (disability-free) transport of goods. Interruptions of transportation have initially extreme financial impact on production (see the failure of air traffic in a large part of Europe during the eruption of Eyjafjallajökull 2010). More prolonged interruptions, especially the land transport measures, can also be extreme repercussions on the supply of the population with essential basic products (medications, food and energy). The likelihood and length of such disruptions is increasing regarding of the rising extreme weather conditions and the ever more extensive transport in typical extreme weather regions. Approaches to counter supply interruptions, such as through information, organization, cooperation and preparation among others, are shown.

**SESSION: RISK MANAGEMENT** 

WED 5.11 14:20 - 14:45 H

# Risk Assessment Profiling Procedure (RAPP) for Air Cargo Security

#### **Presenter: Doron Levy**

Authors: Doron Levy, Yvonne Ziegler

The presentation offers a risk assessment profiling procedure (RAPP) for air cargo based on leveraging the role of the human factor along the security process. RAPP is based on principles taken from the Israeli method of passenger profiling and suspicious signs published by the United State Department of Homeland Security. RAPP is challenged with the plot of 2010 to bomb an all-cargo airplane using explosives concealed in printers originated from Yemen.

The core competence of RAPP is individually assessing the risk of each shipment by a qualified agent, who looks for suspicious signs and anomalous patterns and addressing the level of risk by adjusting appropriate technological resources for detecting the explosives. RAPP allows less screening of cargo and makes the security process of air cargo more active. The combination of the human factor and the right technological resources enhances the level of success in securing air cargo.

## **Emergency Sourcing Risk Mitigation Strategies for the Supply Chain of a Discrete Part Manufacturer**

#### **Presenter: lakovou Eleftherios**

Authors: Iakovou Eleftherios, Vlachos Dimitrios, Keramydas Christos, Tsiolias Dimitris

Powerful socioeconomic factors have been transforming dramatically traditional supply chains into complex multi-national, multi-echelon supply networks of conflicting interests on the part of the engaged stakeholders. Today's globalized supply chains are more vulnerable than ever to disruptions and delays; hence, increased resilience against various types of risks that threaten an organization's operational continuity is of great value. This paper studies emergency sourcing (ES), a common risk mitigation strategy, in the context of the supply chain of a discrete part manufacturer. Alternative ES strategies are examined through a quantitative discrete-event simulation model. The proposed methodology determines the optimal capacity level to be reserved from the emergency supplier of each discrete part taking into account all inventory-related costs including the premium cost to be paid for emergency capacity reservation. Thus, it is possible to decide on: a) the feasibility of emergency sourcing, i.e. the maximum premium cost to be paid to an emergency supplier in order to ensure the long-run feasibility of the applied ES strategy given the contracted capacity level, or b) the optimal levels of the contracted emergency capacity for a given premium cost. The proposed quantitative simulation-based methodology could be employed by decision-makers when deciding on the potential implementation of an ES risk mitigation strategy. Moreover, the key findings of the research document the critical effect that disruptions impose on the economic and operational performance of a manufacturer's supply chain, as well as the beneficial role of emergency dual sourcing in mitigating risk impacts and safeguarding operational continuity.

#### **SESSION: IT ARCHITECTURES**



## **Session Chair: Bernhard Holtkamp**

Bernhard is born in 1955, got his diploma and Ph.D.in computer science from the University Dortmund. For more than 30 years he is working on applied research. He was a research assistant at the University of Dortmund, held a position as Adjunct Research Professor at the Naval Postgraduate School in Monterey, California, and was head of department in Fraunhofer ISST for more than 10 years. For several years now he is manager strategic project development for Fraunhofer ISST. A core theme of his work is cloud computing that provides the basis for the Fraunhofer Innovation Cluster "Cloud Computing for Logistics". In this context he was involved in the implementation of the Logistics Mall.

#### WED 5.11 15:30 - 15:55 H

## A Software Architecture for a Transportation Control Tower

#### **Presenter: Remco Dijkman**

Authors: Anne Baumgraß, Remco Dijkman, Paul Grefen, Shaya Pourmirza, Hagen Voelze, Mathias Weske



A Transportation Control Tower is a software application that facilitates transportation planners with easily monitoring and dispatching transportation re-sources. This paper presents a software architecture for such an application. It focuses in particular on the novel aspects of the software architecture. These are: the ability to easily configure the monitoring of resources and tasks; the ability to automatically create the statements for monitoring resources and tasks based on the transportation plan; and the ability to dynamically adjust the monitoring statements, based on adjustments to the transportation plan. A prototype of the software architecture is implemented and evaluated on three usage scenarios.

**SESSION: IT ARCHITECTURES** 

WED 5.11 15:55 - 16:20 H

# Unleashing the ICT potential in the complex digital business ecosystem of international trade: The case of fresh fruit import to European Union

#### **Presenter: Yao-Hua Tan**

Authors: Thomas Jensen, Yao-Hua Tan, Arjan Knol, Niels Bjorn-Andersen

The digital ecosystem for import of goods in international trade is analyzed, in-efficiencies are identified and their possible causes are revealed. The business ecosystem is rather complex and interlocked with many actors and various rules and regulations. It is supported by a digital business infrastructure, which however is very disjointed. The communication of information among the actors involves many disconnected information systems and manual processes, which introduce delays and lower data quality. This has severe consequences in the shape and form of increased lead-time, which our case analysis of import of fresh fruit reveals is critical for the quality of the fruit. However, the coordination is difficult since information is stored in isolated information systems and only shared among few actors. The ICT potential in the digital business ecosystem could be unleashed by using a state of the art integrated information infrastructure to exchange information between the actors and their information systems in real time. This potentially could ameliorate the complexity of business ecosystem and thereby be a foundation for improvements of the business processes for all import to EU including of course fruit.

WED 5.11 16:20 - 16:45 H

#### A Study of building a New Warehouse Control System Architecture

#### Presenter: D.W. Son

Authors: D.W. Son, Y.S. Chang, H.C. Choi, W.R. Kim, A.G. Higuera

In the warehouse, typical logistics software of the warehouse is Warehouse Control System (WCS). WCS provides an integrated interface to a broad range of material handling equipment. It is able to manage and control equipment in the warehouse. We analysed key functions and limitations of existing WSC and suggest a new architecture for WCS. To address such requirements and limitation, a new architecture and functions of WCS/Human Machine Interface (HMI)-Equipment Control System (ECS) are suggested. In this paper we introduce a pilot system according to defined WCS/HMI-ECS architecture.

#### **INDUSTRY DAY 1**

# FUTURE LOGISTICS AND SUPPLY CHAIN MANAGEMENT PERSPECTIVES

The Internet of Things (IoT) refers to the interconnection of uniquely identifiable embedded computinglike devices within the existing Internet infrastructure. IoT is expected to offer advanced connectivity of devices, systems, and services that goes beyond machine-to-machine communications (M2M). The interconnection of these embedded devices (including smart objects), is expected to foster innovative services in many fields, especially in logistics. Continuous growth of global trade, in e-Commerce and m-Commerce are drivers and background of a growing transport and logistics sector. The European report on the 'Common Framework for Information and Communication Systems in Transport and Logistics', a data exchange framework agreed upon by all relevant FP7 projects, is the result of close co-operation between research projects and represents a first step towards a seamless information exchange between all actors in the transport supply chain. e-Freight work will take into account previous and on-going research and development projects and promote improved transparency and interoperability of transport/delivery services between operators, and between operators and e-retailers.





#### **Moderator: Uwe Clausen**

Uwe is Managing Director of the Institute of Transport Logistics at TU Dortmund University and – in joint appointment - also director of the Fraunhofer-Institute for Material Flow and Logistics in Dortmund (since 2001) and Chairman of the "Fraunhofer Traffic and Transportation Alliance" (since 2003). He worked in the logistics service industry as European Operations Director at Amazon.com and logistics manager at Deutsche Post DHL. In July 1995 he achieved the title of Dr.-Ing. with his doctoral thesis on transportation network optimisation at TU Dortmund University.

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His research areas include green logistics, commercial traffic modelling, intermodal transportation, mathematical optimization, network optimization and distribution systems.

# Logistics and the Digital Economy AND SOCIETY

The new Juncker Commission is expected to resume work in November 2014. Among the ten priorities of the new Commission digitalisation of our society and economy will play an important role for Europe's development in the next decade. Digitalisation of economy and society will progress rapidly, and the logistics sector is affected on two main fronts: On one hand side Digital Economy is expected to generate more demand for goods transport and advanced supply chain management. At the same time digital tools offer logistics service providers opportunities to implement leaner and cleaner business processes providing competitive advantages in global competition.

Commission's programmes like Horizon 2020 and initiatives like the e-Freight offer opportunities to collaborate on advancing Europe's economy in both the ICT and transport sector. The European Innovation Partnership on Smart Cities and Communities will serve as platform to pilot new digital logistics services at large scale in particular in urban environments, and the focus area on Internet of Things will provide and test the tools for successful implementation.





#### **Presenter: Wolfgang Höfs**

Head of Sector for "Strategic Planning and Communication" in European Commission's Directorate General CONNECT (Communications networks, Content and Technology), is focused on ICT for transport and mobility and related policy issues. He works in the Smart Cities and Sustainability unit which manages a portfolio of around 60 research and innovation projects on the information and communication technologies' aspects of transport and mobility. He is in particular engaged in international research cooperation issues, acting as European facilitator of the EU-US cooperation on ICT for transport research.

Before joining the Commission's services, he worked for major players in transport and software industry on the implementation and integration of mission-critical IT systems in different European countries. At Schenker AG he accounted the rollout of the web-based tracking & tracing system in their European land transport network.

He studied in London [UK] and Dortmund [DE] and holds a Master's Degree (Dipl.-Inform.) in Computer Sciences (Informatik) and Business Administration from Technical University Dortmund. His personal research interests are focused on sustainable transport systems, smart mobility and the development of the Digital Economy and Society.



### **Internet of Things**

Today's companies need to operate more and more effectively and efficiently. Many business parameters are less predictable than in the past. Additionally, dynamics in global markets have increased. The traditional ways of designing and operating logistics systems are not able to handle these new challenges any more.

Industrie 4.0 (or Integrated Industry) is an upcoming solution to manage the growing complexity in such systems. One of the key axioms of Industrie 4.0 says that the grade of decentralisation and self-organisation will rise in parallel to the complexity. By implementing self-organisation especially in real-time-relevant applications and systems in decentralised environments the split- up into two layers becomes possible: The normative layer in the sense of an overlaying Supply Chain Management and the operative layer for material flow, transport and other real-time-relevant activities. The benefit of such a split is the ability to use modularised and standardised modules, based on cyber physical systems for the operations, and services including business objects for the normative activities.



#### **Presenter: Michael ten Hompel**

Michael, born in 1958, studied Electrical Engineering at RWTH Aachen and graduated from Witten/Herdecke University in 1991. In 2000, he joined the managing board of Fraunhofer Institute for Material Flow and Logistics in Dortmund (since January 2005: Managing Director) and became head of the Chair of Materials Handling and Warehousing at TU Dortmund University.

Besides his work as scientist, Michael also worked as entrepreneur. In1988, he founded GamBit GmbH in Dortmund and was managing partner of the company, mainly dealing with the development and realization of Warehouse-Management-Systems, until he left in February 2000.

His work mainly focusses on the planning of logistics systems, logistics software, warehouse management, identity technology, and development of material flow systems. He is named to be one of the fathers of "Internet of Things" and participated to a large extent in the development of "Shuttle Technology" and "Cellular Intralogistics". In 2010, he initiated together with 120 member companies and 11 research institutions the "leading edge cluster" (Spitzencluster) "EffizienzCluster" set up by the Federal Ministry of Education and Research (BMBF). His role in founding the "LogistikCampus", an interdisciplinary research center of TU Dortmund University, was substantial.



Besides other commitments Prof. ten Hompel is member of the board of both, BVL and BITKOM, Chairman of the board of Fraunhofer Academy and member of acatech (National German Academy of Science and Engineering). Michael ten Hompel was inducted into the Hall of Fame of Logistics in 2012.

# E-Freight – for more efficient and less costly freight transport

The Commission is working on the development of a policy initiative on e-Freight, with the aim to improve information exchange between all stakeholders in the supply chain:

Further information on e-Freight :



- The roadmap of the initiative: http://ec.europa.eu/smart-regulation/impact/planned ia/docs/2013 move 001 e freight.pdf
- The public consultation: http://ec.europa.eu/transport/media/consultations/2013-01-17-efreight en.htm



### **Presenter: Fleur Breuillin**

Fleur is a policy officer at the European Commission. At the General-Directorate for Transports, she develops the e-Freight policy initiative, building on the results of related R&D projects. Fleur holds a Master Degree in Civil Engineering with a specialisation in Transports, as well as a degree in business management. Previously, Fleur worked at the French Transport Ministry. She was responsible for the road safety group of Predit (the national transport research programme), and then worked on the French ecotax for trucks. In the past, she also developed traffic management models for the transport research laboratory of the University of Florida.



### **INDUSTRY DAY 1**

#### **PARALLEL A**

# **INTELLIGENT TRANSPORT SYSTEMS – INTELLIGENT iCARGO**

Intelligent Cargo (in Efficient and Sustainable Global Logistics Operations (iCargo)) is a 42 month funded by the European Union. iCargo focuses on the use of Intelligent Transport Systems (ITS) and aims at supporting the evolution of the logistic industry towards a mature business ecosystem. It bases on cooperation between specialized supply chain actors to offer competitive and efficient door-to-door logistic solutions. iCargo allows business ecosystem members to collect, share and harmonize status information through the different execution systems and devices operating along the logistic chain. The harmonization mechanism bases on cloud technology, while semantic software agents can be instructed to detect and react to specific kinds of events. Currently iCargo is in its 37th month. This parallel session highlights the business need for iCargo and its administrative and technical implementation. Also, this session gives a demonstration how iCargo works and highlights the advantages and benefits the single user and the whole logistics industry will gain.



### **Moderator: Germán Herrero**

Germán joined Atos in March 2006, where I now serve as Head of the Transport & Trade Logistics sector, responsible for all technology research and development activities for supply chain and logistics projects in Atos (ARI). Germán is in charge of develop new business opportunities with technology approach in innovation on global supply chain development, urban logistics, Green logistics, Food supply chain optimization and Big data in logistics. During the last years, Germán has been working in several FP7 projects related to logistics and electric vehicle as Cassandra, iCargo, or Co-gistics EU projects and transfer the acquired experience and research results to the market. His career includes research and development in areas like Semantic Web technologies as he was involved on several semantic Web R&D projects, as the FP6 NeOn project.



# An Integrated Production Model changes PostNord's needs of Routeplanning & Scheduling

PostNord is one of the largest Nordic Logistic providers and operating in market undergoing huge changes. The traditional mail markets are decreasing due to digitalization, traditional B2B logistics follow the general cycles and eCommerce is rapid evolving. The changes in both the postal and the logistical market have forced PostNord towards an Integrated Production Model, which demands changes in how to execute both production and distribution. Turning into an Integrated Production Model means that flows and processes will be merged while there also is a need for increased flexibility. Since transport and last mile are the largest areas in the cost base there are needs for drastic changes in the current way that PostNord utilizes Route planning & Scheduling.

#### **PARALLEL A**



#### **Presenter: Cristion Ostergaard**

Christian has the last +25 years been working in the postal business in Post Danmark (Denmark), Bpost (Belgium) and now PostNord (Nordics). He has been Head of Logistics in the Danish Parcel business and was in charge of reengineering the processes leading to a new sorting structure in Denmark. He was Program Director in charge of reconstructing Bpost's parcels business from 2005 to 2009, reengineering products, prices, processes, organization and logistical set-up and turning a loss making business profitable. The last 5 years he has been working on a corporate level in PostNord with Business Information and Production Alignment and since April 2014 he is Business Demand CIO, Technology & Infrastructure focusing on the IT aspects of PostNords Integrated Production Model. Christian has an MBA from Copenhagen Business School in Strategy and Marketing.



## **Innovation in iCargo**

The presentation discusses "what is new" in iCargo concept, in other words it discusses the innovations in iCargo. iCargo brings market and stakeholder transformations based on new capabilities for sharing timely information under optimised processes. New ICT capabilities that are essential for stakeholders to face these transformations to optimise resources are also discussed.

# **PARALLEL A**



#### **Presenter: Servet Balcioglu**

Servet is iCargo Project Coordinator and Country Business Development Director within Atos Research and Innovation. Servet has previously held Business and Project Management roles. His background is in Telecom and Software within hi-tech business management. Servet got his diploma at the George Mason University in Virginia (USA).







### The Commercial Benefits of iCargo

iCargo is an ICT solution that synchronizes vehicle movements & logistics operations and allows adaptation to changing conditions through dynamic planning methods by combining services, resources, and information from different stakeholders taking part in an open freight management ecosystem. By combining these services & technologies, iCargo enables reduction in logistics service clients' transportation cost, reduction of their carbon footprint, and improve their pro-active customer service. In addition, this will also provide revenue growth and business automation services for logistics service providers. This presentation will explain how those benefits can be achieved by both types of organizations quickly and efficiently.

#### **PARALLEL A**





#### **Presenter: Kenneth Sherman**

Kenneth is the Vice President of the IntelliTrans business unit of TransCore. IntelliTrans is a leading provider of rail, truck, and transload transportation management solutions and services to the bulk and break-bulk commodity industries, including the forest products, plastics & chemicals, metals, mining, aggregates, and energy markets. There he is responsible for the day-to-day operations of the business, including product development, information technology, and operational services. Ken has been with IntelliTrans for over 10 years. Prior to that, he was with GE Plastics for 17 years, having a variety of roles including Master Black Belt and Supply Chain Leader. He has a BS and MS in Mechanical Engineering from Rensselaer Polytechnic Institute, and lives in Atlanta, GA with his wife and 2 children.

### **INDUSTRY DAY 1**

## **PARALLEL B**

# INTERACTIVE DISCUSSION : E-FREIGHT AND THE COMMON FRAMEWORK – THE WAY FORWARD

The Commission is working on the development of a policy initiative on e-Freight, with the aim to improve information exchange between all stakeholders in the supply chain:

Further information on e-Freight:



- The roadmap of the initiative: http://ec.europa.eu/smart-regulation/impact/planned\_ia/docs/2013\_move\_001\_e\_freight.pdf
- The public consultation: http://ec.europa.eu/transport/media/consultations/2013-01-17-efreight en.htm

The Commission funded during the past decade a number of projects aiming at providing first solutions for implementing e-Freight objectives of information exchange simplification. In particular, these projects together achieved the establishment of a data model called the Common Framework: www.efreightproject.eu

The e-Freight session at the ECITL: expectations.

This session aims at getting feedback from major logistics stakeholders on :

- The potential that is offered by improved information exchange for logistics, and potential challenges related with it.
- · What is expected from the Commission to support such developments / the e-Freight policy.
- The solution proposed by EU-funded projects, the Common Framework



#### **Moderator: Fleur Breuillin**

Fleur is a policy officer at the European Commission. At the General-Directorate for Transports, she develops the e-Freight policy initiative, building on the results of related R&D projects. Fleur holds a Master Degree in Civil Engineering with a specialisation in Transports, as well as a degree in business management. Previously, Fleur worked at the French Transport Ministry. She was responsible for the road safety group of Predit (the national transport research programme), and then worked on the French ecotax for trucks. In the past, she also developed traffic management models for the transport research laboratory of the University of Florida.

# The e-Freight (Common) Framework – From an IT provider Perspective

In order to accommodate better utilisation of transportation resources, ensuring that all vehicles and load units are well utilised at all times, it is imperative that electronic information about the movement of goods is made available, so that cargo may be properly sorted and consolidated at all transhipment points. The framework for information exchange developed in a number of EU projects over the last few years, called the e-Freight or Common Framework, defines what is considered necessary and sufficient information to be exchanged between the stakeholders in freight transport (covering all modes). The key electronic documents defined in this Framework are now part of the UBL 2.1 standard, which is in process to become a truly global standard through ISO. The e-Freight Framework is a condensed, but complete set of electronic documents that supports intermodal freight transport.

As an IT service provider, we deal with different types of companies:

- Logistics companies that service clients in different industrial sectors (communities) where information exchange standards are already established. Here there may be the need to transforming between different formats of electronic documents (messages). In such transformations, the e-Freight Framework provides an efficient intermediate format.
- When developing applications for companies that are not yet using electronic communication, these are providing information exchange using the e-Freight Framework electronic documents.

#### **PARALLEL B**



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#### **Presenter: Jan Tore Pedersen**

Jan Tore is Managing Director of Marlo a.s. He holds an MSc in Control engineering and a PhD in manufacturing from the Norwegian University of Science and Technology (NTNU) and an MSc in Computer Science from University of California at Santa Barbara.

Since the early 1990ies, Jan Tore has been active in EU and national projects for development of innovative logistics solutions and related information technologies. Noticeable projects are e-Freight (DG MOVE) and iCargo (DG CONNECT). For the last 3 years, Marlo has been cooperating with 3M, DHL and Gebrüder Weiss to develop the Software-as-a-Service solution MixMoveMatch – aimed to ensure that transportation resources are utilised to their maximum capacity.

Before founding Marlo, his experience includes business and technology development of advanced software systems (The Kongsberg Group), and business- and technology development in the maritime sector (The Kvaerner Group), including an integrated system for ships covering all onboard control and navigation capabilities. From 1995 to 1998, Jan Tore held a part-time position as professor at the Technical University of Norway in the field of mechatronics. From October 2009.

# Shipper's point of view: Optimizing European physical distribution by leveraging network partners

Today's physical distribution in the EU is still characterized by very conservative processes: warehouses and factories are spread around Europe and are picking and packing customer deliveries on their premises transportation companies are requested to transport those deliveries from the supplier's door to the customer's door over long distances limited planning, operational synergies and optimalization of assets are taking place. Best practices exists where the partners of the physical distribution network are leveraged better and the tasks are executed where it is most optimal. Delegating the "customer packaging" activity to the last network hub results often in:

- shipper warehouse efficiency improvements (>10%)
- substantial truck load utilization improvements (from 30% to +80%)
- substantial CO2 emission reductions (30%)

One of the prerequisites is that the different network partners are working in an integrated electronic way together and are exchanging their data in a standardized electronic fashion.

3M (Mix, Move, Match) has been developed with the support of the EU to allow a smooth integration of all network partners in the EU physical distribution process. M3 is a cloud based software open to all shippers, transport companies and service providers. Stop being conservative and join us in developing the future physical distribution models for Europe!

#### **PARALLEL B**





#### **Presenter: Patrick Van De Vyver**

Patrick, a Belgian, is currently working and living in Switzerland. He studied initially informatics and got a commercial engineering degree. Subsequently he specialized in logistics and supply chain and got a European Master in logistics. During his 35 years career with 3M he has been relocated to the Netherlands, Germany, Belgium and Switzerland. Within his professional life, he initially developed IT computer systems later he switched to logistics and became responsible for various countries within Europe and various business supply chain organizations across Europe. Currently he is responsible for 3M's physical distribution in EMEA (warehousing, transportation & trade compliance). Patrick is strongly interested in optimizing the EU physical distribution networks and is open to collaboration with other.

# Seamless Information Streams – A Freight Forwarders Point of View

Achieving seamless data and information flows between consignors, consignees, freight forwarders, 3rd party logistics providers and authorities is a century old dream. But during the past few years technologies have become available that make this vision more feasible then ever before in the history of logistics.

As a freight forwarder and a 3rd and 4th party logistics provider Gebrüder Weiss is committed to the utilization of new technical means for an optimized supply chain. Therefore a common framework for information and communication systems in transport and logistics is a great step forward. By improving the interoperability between all the stakeholders in the supply chain new business opportunities can be generated. However, a higher integration of all stakeholders also comes at the price of higher dependencies and, thus, bears new risks. The presentation will outline the major advantages, opportunities and risks of such a common framework from a freight forwarders point of view. And it will give an outlook to what future developments can be expected in practice in the coming years.

#### **PARALLEL B**



#### **Presenter: Andreas Pichler**

Andreas earned an economics degree from the University of Applied Sciences Vorarlberg in 2000 and a master's degree in information management from the University of Liechtenstein in 2010.

He worked as a business and IT consultant and a project manager for several years before he joined Gebrüder Weiss in 2007. Since 2009 he is a member of the corporate IT management team and is heading the IT project management office. He also leads the innovation board at Gebrüder Weiss and is responsible for all R&D projects. During this time Gebrüder Weiss has participated in several EU and nationally funded research projects, among them EURIDICE and Logistics 4 LIFE. Since 2014 he is Vice President IT-Services Administration and Project Management.
### Terminal user point of view

In the Global Economy the share of a logistics in the the cost of any consumer's Product is estimated in average 20 - 25%. Some scientist would argue even for more. The same goes for the energy consumption or the environmental pollution each Product is responsible for. To transport a product to the Consumer from the Factory where it has been produced or assembled, fuel is being consumed and therefore the pollution of environment has taken place. It is however possible to reduce the pollution caused by the transport by simply choosing the proper mode of transportation. No need to mention that Intermodal Chain saves up to 60% of CO2 emmisions compared to pure road transport.

It is a duty of logistics Providers to choose the transport mode that would be the most suitable in all the aspects. They decide whether to use road or rail, combined transport. Of course, they tend to use the cheapest and easyest way of transport. Easy way for them equals less work and worries. The environmental acceptance is not a proper decisive Category yet.

The road transport is easy to order and follow. The cargo unit is under physical controll of the truck driver through out the transport. Even the transportation process is very clear to everybody. Every person, that drives a car can imagine the whole process of road transportation. They can visualize it.

The Intermodal transport on the other side gets blurry after the unit is delivered to the terminal. Only few specialist for Intermodal and Railway transport know exactly how the transport process will unfold. That 'uncertainty' is what gives Intermodal transport a disadvantage on the Transport Market and only very specialized Logistic Providers or Freight Forwarders are actually using it full time.

To change the habbits of those who decide which transport mode shall be used, we need to improve transparency inside the Intermodal chain. How to achieve that?

By introduction of proper in-time information flow of relevant, useful information and through Channels that should be identical on every site, every Terminal, every Intermodal Chain. This is a huge task as Intermodal Transport includes a chain of stakeholders with many Operating Systems and different Procedures and Approaches. The solely point where different transport modes and all the stakeholders in the Intermodal Transport Chain meet is the Terminal. In order to make Intermodal Transport more popular, we need to unweil the 'Secrets' behind the Terminal Gate.

#### PARALLEL B



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#### **Presenter: Janez Merlak**

Janez has been employed by the regional Combined Transport Operator Adria Kombi since 1995, after leaving the college for Biotechnology in Ljubljana. During accumulation of practical knowledge of the transport industry, the company management decided to send him to University of Traffic and Maritime Studies to get theoretical background and he graduated in 2000. He applied for another Programme at the same College and got his B.Sc. degree in 2003. All the scientific work solving of problems came from the real sector. The solutions have been tested or implemented in his work surrounding at Adria kombi. Since 2006 he has been promoted to Chief Operation Officer at Adria kombi, where he is still active. Beside the work in operations, he has been appointed to diverse R&D Projects from IT Development at Adria kombi to Marco Polo and other EU Programmes. Since 2007 he is appointed as a Guest Expert in Logistics and holds Lectures about Intermodal Transport for students of University in Maribor, Faculty of Logistics. Janez represents Adria Kombi in the ECOHUBS project, providing the end user requirements and the strategic thinking around the vision for raising the efficiency, organization and environmental footprint of Intermodal Terminals to transform them to Green Hubs in the whole transport chain.

# Towards a Neutral Logistic Information Platform – An Authority's Point of View

In this presentation with the title "Towards a Neutral Logistic Information Platform" I will get in to the development of of a platform where the information that is available by one of the involved governmental authorities will be shared, not only between the authorities, but also with the business community.

On one side of the platform will be the business community, like i.e a Port or Airport Community System, or a specific community for the trade and transport of perishable goods. Within this business community data can be re-used and can be enhanced between the traders and the different logistic partners in the supply chain. This information will be send to, or preferably pulled, by the authorities to fulfill the required formalities and declarations.

On the other side of the platform will be a governmental single window for trade and transport. This single window makes it possible to use a one-stop-shop for inspection and quality control of the goods. So different authorities will inspect the goods, when necessary in one place on a logistic resting point.

An other step that will focussend on is the so called "Pipe Line Concept" that is also studies in the Cassandra project.

### **PARALLEL B**



#### **Presenter: Pieter M. Verbakel**

After graduating from Gymnasium I studied Chemical Engineering at the Technical University at Eindhoven where I graduated in 1975. I've worked for 8 years as a research developer for a pharmaceutical company in the Netherlands. In 1984 I joint the Customs Laboratory as a manager of analytical development team. During my work there I studied Tax & Customs Law and European Law at the University of Leiden where a graduated in 1993. In 1994 I became a managing director at one of the smaller customs offices in the Rotterdam Port Area and in 1999 Head of Information management at the Customs District office in Rotterdam.

During that time I worked closely with the Port Authority of Rotterdam to establish a port community system (PCS) in Rotterdam. This PCS is one of the founding companies op the European Port Community Systems Association. In 2008 I became a Master in Information Management from the Newport Business Academy. Since 2010 I work almost full time on the implementation of a Single Window for Trade and Transport in the Netherlands and since 2012 I am the deputy project coordinator for the TEN-T AnNa-project with a special tasks on Stakeholder Consultation and Participation and Business Proces Analysis.



### **INDUSTRY DAY 1**

### **PARALLEL A**

# TRANSPORT LOGISTICS & SUPPLY CHAIN INVENTIONS AND INNOVATIONS

Innovations in the transport & logistics sector are very difficulty to establish due to the economic pressure in this sector. However models like "Uber" show that there is a strong need to re-think the develop in the freight logistics sector and the impact of new business models on to it's development in the near future. New collaboration models, bottom-up transport models etc. are just a few key words in this context, which should ultimately lead to more green and cost effective transport and logistics solutions. The session will present some recent innovative business models in the transport and logistics sector and will try to assess their impacts. The goal is to try to identify the inhibitors and accelerators to innovation in the logistics sector based on real-world examples.





#### **Moderator: Jens Schumacher**

Jens (Dr-Ing.) received his Master Science in computer science in 1992 at the University of Bremen. He started as research Engineer at BIBA in 1992 and was work package leader for the Esprit III PASHA project:" Parallel Software - Hardware Application" EP#7074 (from 1992 to 1994) at BIBA PLT. Then he was work package leader for the ESPRIT III LOCOMOTIVE project: "Logistic Chain Multidimensional Design Toolbox with Environmental Assessment" EP#8615 (from 1994 to 1997). In 1997 he became Manager of the "Centre of Research for Electronic Commerce in logistics" (FOLO) at the University of Bremen. From 1998 onwards he was Head of Department "Logistics and Globally Distributed Production" at BIBA PLT/IKAP and responsible for managing over 50 Projects for BIBA including over 10 Projects funded by the European Commission. From March 2003 until October 2005 he was a research assistant in the production technology faculty at the University of Bremen. From 2005 on he has been appointed to a research professorship in the research centre for product and process engineering at the University of Applied Sciences Vorarlberg where he successfully continues his research activities in several EU-funded projects like EURIDICE, L4Life, Perimeter, etc.

# Innovative business models in logistics

Innovative business models in logistics.

### **PARALLEL A**





### **Presenter: Georgia Aifadopoulou**

Georgia is a senior researcher at the Centre of Research and Technology Hellas (CERTH) in the Hellenic Institute of Transport (HIT). Her professional and research expertise covers the fields of: Freight transport & Logistics. Traffi c & Mobility Management, Transport Systems Optimization and ICT applications in Maritime and Multimodal Transport. She holds a civil engineer diploma, Master degrees in Operations Research and in Transport Management and a PhD in Freight Transport Optimization. She is Head of Sector at HIT, undertaking implementation projects and supervising research projects in the Domain of Intelligent Transport Infrastructure and Demand Management. She has a more than 25 years involvement in European research projects, related to new technology applications in transport & logistics management and control, being responsible for systems specifi cations, pilot projects implementations, evaluation & results exploitation. She acted as project manager for various Greek and International Research and Development Projects. She is currently Managing Director of the Thessaloniki Technology Park SA, an organization aimed at innovation taken up by industrial stakeholders for regional economic development.

# A bottom-up approach to meet the needs of the operators and synergies with ALICE

LOGINN is an EU funded Coordination Action aiming at stimulating the discussion among main public stakeholders, market players and researchers in the intermodal and freight logistics domain in order to identify mechanisms to facilitate & accelerate the commercial uptake of logistics innovation, by turning knowledge and research into investment in innovation.

As we know, in any field, STARTING the discussion and REACHING a fair participation is always a the real challenge. The project approach was to adopt collaborative digital tools to create a fertile environment where the logistics operators could feel confident enough to share their views and knowledge.

The LogisticsArena (www.logisticsarena.eu), is the web platform, to host the discussion and favour the sharing of viewpoints and experiences on: (a) what is the current state & expected developments on intermodal freight transport & logistics research and innovation? (b) which are the observed drivers and barriers? (c) how can these be overcome? (d) how can investments be attracted in accelerating logistics innovation?

Therefore, the Arena represents an interesting starting point and source of information for decision and policies makers, as such the natural interface with ALICE initiative.

### **PARALLEL A**



### **Presenter: Margherita Forcolin**

Margherita is Program Manager at Centre for Technology and Innovation Management (CeTIM) in Leiden (NL).

Qualified IT manager with more than twenty years of experience in software development and a strong background in Object Oriented methodologies, she has participated and managed several IT research projects with Regional, European & international scope. She has been involved in numerous EU funded research projects, always playing relevant roles: technical coordinator in ToolEast Projects and coordinated the development of the Intelligent Cargo Concept within the EURIDICE project. Margherita is now coordinator of the LOGINN Coordination Action and MobiS FP7 project and inspiring soul ot the LogisticsArena (www.LogisticsArena.eu).

As LOGINN coordinator she takes part in the Working Group 3 of ALICE Initiative.

### Pathways to logistics innovation- challenges, barriers and opportunities: How to get around the stones on the road to innovation uptake in logistics?

The ability to innovate and to implement innovative solutiosns within a company is vital for the European economy and the ability of European companies to thrive on the world market. However, low rate of innovation uptake, combined with low efficiency of the logistics system are challenges to overcome . Studies reveal that the utilization of e.g. trucks on the roads vary between 30 to 50%, partly caused by the reduced size of each product and more efficient packaging, but also because the transport capacity was not adjusted correspondingly. This is only one example showing the need for innovation supporting cost and emission reduction and efficiency improvement. Based upon a review on research projects and relevant scientific journals, LOGINN has identified a number of innovative solutions related to each one of its innovation dimensions. These solutions included business models such as crowdsourcing and the green supply chain, practices involving e-freight & paperless transport and best practice collection & exchange tools, and supporting technologies such as big data and cooperative systems, at the same time also several barriers that hinders a fast uptake. This talk will summarise these findings and discuss differen aspects and different stakeholders needs, before it outulines a set of actions (based on a step model) that can be undertaken for fostering innovation uptake.

### **PARALLEL A**



# **Presenter: Jannicke Baalsrud Hauge**

Jannicke is research scientist at Bremer Institut für Produktion und Logistik (BIBA). She has been responsible for and managed BIBA contribution in several EU and national projects in the field of Innovation in and ICT for logistics and productions as well as education/training (serious games and GBL). Her main research topic is logistics and risk management in production networks and the mediation of skills using educational games. She is currently involved in the Loginn and GaLA projects. Authored 100+ papers. She is teaching risk management, decision making and collaboration in SC at the University of Bremen and responsible for the BIBA gamingLab.



### **INDUSTRY DAY 1**

### **PARALLEL B**

# FROM GOOD IDEAS TO GOOD PRODUCTS AND SERVICES: WAYS OF EXPLOITATION AND COMMERCIALISATION OF R&D RESULTS

Each research and innovation action aim to achive certain results. Often scientific results are the most visible ones especially during the runtime of the project itself. The more interesting ones – at least from the perspective of the economic impact to be addressed – are those results which have the potential to be developed further and to become real business cases and real products or services. In the session "From good ideas to good products and services: ways of exploitation and commercialisation of R&D results" three currently running or finished projects will present business ideas and ways of exploitation.



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### **Moderator: Thorsten Hülsmann**

Thorsten holds a diploma in Economic Geography, Organisation Sociology and Political Sciences (University of Bonn). He worked as head of the logistics sector development team at Economic Development Agency Dortmund before he was appointed CEO of EffizienzCluster Management GmbH in May 2010 and holds this position until today. Since 2013 Thorsten is head of business development and networks at GlobalGate GmbH. Thorsten was an invited expert within UNESCO-WTA cooperative project on science city development and gave consultancy to Inwent GmbH, GTZ, TechnologyCenter Dortmund and the Economic Development Agency of the Region Ruhr in various projects.

# Port-Hinterland development for containerized traffic

The present paper introduces the ICT system being developed within the FUTUREMED project to enable the realization of a port-hinterland Customs Corridor between the port of Civitavecchia (Rome) and a logistics facility in central Italy 90km distant. Such corridor is interested by containerized traffic for long-distance destinations, but also for central Italy, with a catchment area including more than 7 million consumers.

FUTUREMED (2012-2012) is in general working all over the European Mediterranean area to increase the competitiveness of port systems by improving accessibility through technology and procedural innovations, and guaranteeing sustainable transport. It focuses on the realization of interoperable management information systems and on the reduction of externalities. The project addresses three strategic sectors: freight, passenger and touristic traffics. It will define sustainable middle- and long-term development strategies.

In this context, the above mentioned customs corridor is being implemented adopting the UIRnet telematics platform and connecting the container terminal of the port of Civitavecchia with the Interporto di Orte logistics facility. This virtual corridor will be providing infomobility data to the devoted authorities according to established procedures and formats in order to allow truck operators to move containers from the port as soon as they are handled by the terminal operator directly to the Interporto di Orte. This clearly represents an advantage in terms of time. It avoids the T1 document to be prepared, saving time and paper, and speeds up the transit time in the port favoring its attractiveness. The Italian national logistics telematics platform UIRnet (www.uirnet.it) is integrating the information coming from on-board units of carriers (trucks), information from the port systems, and information of third party systems, such as those of Customs and coming from the Port Captain's System.

The paper will be illustrating the system, the application context and the benefit for the involved stakeholders, especially for those involved in containerized traffic, logistics facilities and service implementation and management.

#### **PARALLEL B**



### **Presenter: Andrea Campagna**

Mechanical engineer since 2001 and PhD in Transport Engineering since 2005, Andrea is currently fellow researcher at CTL - Centre for Transport and Logistics. Sapienza University of Rome. Expert consultant for several EU transport research projects: GIFTS - Global Intermodal Freight Transport System (2002-2004), CyberCars (2002-2004), CyberMove (2003-2005), FREIGHTWISE (2006-2010), X-POSSE (2011-2013). Expert consultant also for EU MED projects on transport and logistics, such as DevelopMED (2009-2011), Limit4Weda (2010). The Lazio Region appointed him in 2012 as Technical and Scientific Coordinator of the FUTUREMED strategic project (2012-2015). He worked on territorial cooperation and development as for transport and logistics, specifically in the APQ Programme ITALMED project (2010-2011), and in the Lazio Region Plan for Transport and Logistics (2008-2009). He carried on several projects on city logistics national level. In 2012 he participated in the Urban Freight Study for DG Move. Has been lecturing since 2002 as expert in Transport Department, University of Rome Engineering Faculty, on logistics, supply chain management and freight transport.



# A cloud-based approach for efficient proof-of-delivery

A Proof-Of-Delivery service offered in a SaaS model. It can be downloaded and used as a mobile app or through the web. The service provides the possibility to monitor the correct execution of any type of deliveries/pick-ups. The input/orders can be directly input in the system through relative interface (web service/XML) to ERP/WMS/Routing back-end systems. The "proof" could vary from scanning of any type of tags/cards to data capture/OCR to manual input.

### **PARALLEL B**





#### **Presenter: George Tsoukos**

George is the Head of the Applications Design and Development Unit of TREDIT S.A. George holds a Diploma on Electrical Engineering and Computer Science from the National Technical University of Athens (NTUA) and a Joint MBA from NTUA, the University of Athens and the University of Pireaus. George has more than 10 years of experience in the telecommunication and software engineering sector, where he has designed and developed large-scale applications using state-of-the-art technologies and modelling techniques. He has been quite actively involved in several EU funded projects regarding ICT for logistics and the e-freight such as FREIGHTWISE, E-FREIGHT, EURIDICE and SMART-CM. He has also been involved in the deployment of Intelligent Transport Systems as well as in the design of specific applications for effective port operations including Terminal Operating and Port Community systems for various ports in Greece.

# Multimodal Promotion – Tool for intelligent bundling of transport flows

Road transport volumes will increase in the coming years, while transport infrastructure capacities are already confronting their limits under the current level of utilization. Construction of new or the expansion of existing infrastructure is difficult to realize or long term projects. However there are free capacities available on rail and especially on inland waterways. A difficulty regarding the planning of such combined transport is the complexity, the required expenditure of time and the necessary previous knowledge.

The cloud-capable tool "Multimodal Promotion" identifies transport alternatives in combined transport towards direct transport by truck. The design of a direct D2D-routing under consideration of timeschedules shows the best multimodal transport solution. The evaluation of the transport chains contains time, costs and C02-emissions information.

There are two business cases for the usage of the tool. First case is the use in a transport network as a management tool. Based on timetables the partners could identify possible transport alternatives in the transport network. Furthermore transport flows could be analyzed permanently regarding their bundling and shifting potentials. The result is a higher utilization of the transport resources and reduced transport cost.

The second business case is the use of Multimodal Promotion as location marketing tool. With the integration of Multimodal Promotion on the homepage of a location, for example a port, transport opportunities and contact data of the logistic operators are shown to the user. For this information the user just needs to enter the transport chain related data into the tool.

The presentation also shows barriers, potential customers and further results of our tool.

### **PARALLEL B**



### **Presenter: Achim Klukas**

Studies of logistics at the Technical University of Dortmund with the key aspects transportation logistic, planning of logistic systems, work organisation and automation technology. Since 2007 Scientific Consultant at the Fraunhofer-Institute for Material Flow and Logistics, Dortmund, in the department for Transportation Logistics. The Working fields are organisational and operational concepts for rail freight and inland waterway transports, market studies in the field of transportation logistics, planning of transport networks for hinterland transports and multi-modal transport chains.



# FUTURE LOGISTICS AND SUPPLY CHAIN MANAGEMENT PERSPECTIVES

Aim of this session is to discuss the future of transport logistics and supply chain management, the detection of trends and developments (political, environmental, social, etc.) and emerging technologies from different point of perspectives. The area of tension comprises the perspective of academia, industry and politics. For example, Kulwant Pawar is Professor at the University of Nottingham. He is a leading researcher in the field of supply chain management and representes the perspective of research and science. Markus Bangen is member of the board of the Duisburger Hafen AG and represents the perspective of the logistics industry. The third presentation represents the perspective of politics on emerging topics in transport logistics and supply chain management. An interactive discussion is desired and the audience is encouraged for a proactive discussion.



### **Moderator: Rod Franklin**

Rod is Professor and Managing Director of Executive Education at the Kuehne Logistics University. In his role at the Kuehne Logistics University Rod teaches classes in innovation, operations, decision analysis, game theory and critical thinking to graduate students and logistics professionals. His research focuses on supply chain efficiency, sustainable operations and the application of Future Internet technologies to supply chain management.

Rod has extensive experience in the areas of corporate strategy, operations management, supply chain management, information technology and consulting. Besides his current work, Rod has held field management positions at Kuehne + Nagel, Viacore, ENTEX Information Services, Digital Equipment Corporation, Arthur Young & Company, Booz Allen & Hamilton, Theodore Barry & Associates, Cameron Iron Works and General Motors Corporation. He has also taught logistics and supply chain classes at the ETH Zurich, Duke University's Fuqua School of Management, Ohio State University's Fischer Business School, the Antwerp Management School and the WHU Otto Beischeim School of Management.

Rod holds a Bachelor of Science degree in Mechanical Engineering from Purdue University, a Master of Science degree in Mechanical Engineering from Stanford University, a Masters in Business Administration from Harvard University and a Doctorate in Management from Case Western Reserve University. Rod is a registered professional engineer, a member of the IIE, INFORMS, the Academy of Management, the System Dynamics Society, the Association for Computing Machinery, and a frequent speaker on Future Internet, supply chain, product and corporate development issues.

# Social Responsibility: dilemmas and challenges for Supply Chains?

It is well established that society faces some big challenges ahead. This has led to a general call for more focus on sustainability and socially responsible business practices. Equally it is widely acknowledged that human-induced climate change is caused by production and consumption patterns that have emerged to meet society's evolving needs. There are increasing amounts of legislation to try to encourage more sustainable practices and to reduce carbon dioxide emissions as well as encouraging manufacturers to take back and recycle their products at the end of their useful lives. In contrast outsourcing business activities to low-cost developing nations has become an indispensable strategy for companies in developed countries. The adoption of such a strategy has helped companies to gain unique competitive advantage through the reduction of materials cost, production cost, and capital investment cost. While corporations in developed nations tend to have stringent guidelines in place for the protection of workers' rights, health and safety regulations, these are often non-existent in developing nations. The social issues such as living wages, working hours and working conditions, use of child labour, abuse of human rights remained largely overlooked and unaddressed. The consequence of such inaction has been disastrous.

Evidence suggest that global companies are increasingly being held responsible not only for their own social performance, but for their suppliers in developing nations. Since 'a company is no more socially responsible (SR) than its supply chain', addressing SR from the supply chain perspective is key to progress in this area. In the recent past many global companies have taken initiatives to make their supply chains more socially responsible through the implementation of practices such as carbon dioxide emissions controls, supplier assessment in codes of conduct and social audits, international standards, and extending frameworks. However, it is debateable if such efforts have delivered desired social responsibility results. In this presentation, therefore, it proposed to raise social responsibility within the context of global supply chains. For instance, how we build SR capacity and capability within a logistics and supply chain and what challenges are likely to be faced when designing and implementing the best possible chains or networks and yet remain competitive.





#### **Presenter: Kulwant S Pawar**

Kulwant holds a chair in Operations Management and is the Director of the Centre for Concurrent Enterprise. He has extensive industrial, consultancy and research experience in a variety of multi-national enterprises around the globe in the area of new product design & development (NPD), logistics and supply chain management, manufacturing and operations management. His research interests include collaboration in NPD teams, organisational readiness for NPD, design performance, knowledge transfer and share in the extended supply chains and comparative analysis of supply chain networks and configurations between Europe, China and India in a variety of sectors and industries. He has published over 300 papers, including articles in leading international journals such as the International Journal of Operations and Production Management, International Journal of Production Economics, R&D Management, Technovation, Concurrent Engineering and Manufacturing Technology Management. He has edited over 30 conference proceedings. He is the founder and Chairman of the International Symposium on Logistics (www.ISL21.org), which has been held annually since 1993 in Europe and other parts of the world. He has also been co-organising the International Conference on Concurrent Enterprising (ICE) since 1994. He was Editor-in-Chief of the International Journal of Logistics: Research & Application (2002-2007) and is a member of editorial boards of several journals. Kulwant has been involved in more than 30 EU and EPSRC funded research projects and has coordinated and managed a number of national and international projects and networks. Kulwant sits on several international professional committees, boards and expert panels.

# duisport – Research Activities on Innovative Solutions for Intermodal Transports

Duisburger Hafen AG is the holding and management company of the Port of Duisburg. The duisport Group, to which the subsidiaries of Duisburger Hafen AG also belong, offers full service packages in infra- and suprastructure including relocation management for the port and logistics location. Logistics services supplementing the portfolios of companies based in the port complete the Group's service spectrum. Thus the duisport Group considers itself as a partner of the logistics sector and makes its own contributions to optimize transport chains delivering to and from industry and retail.

The duisport Group as co-founder of the largest research cluster in logistics – the EffizienzCluster LogistikRuhr - participated in 5 research projects initiated by the EffizienzCluster LogistikRuhr.

The research projects Multimodal Promotion and LoFIP (Logistic Future Internet Platform) address solutions to increase intermodal transports. Multimodal Promotion is a web tool enabling to plan and organise direct door-to-door routes, considering the timetables of the various modes of transport (road, rail, waterways) and facilitating new connections with more efficiency.

LoFIP addresses one of the major challenges in logistics: the most reliable and resource efficient implementation of logistics processes. This is based on the integration of various logistics partners and thus the optimization of logistics processes between different companies. LoFIP faces these challenges with innovative technologies of the Future Internet.





#### **Presenter: Markus Bangen**

Markus studied law at the University of Bonn focussing on Transport and European Community law from 1992-1997. In 2000 he worked at Elliot & Mayock, LLP, San Francisco, USA. His professional career started the same year at the Duisburger Hafen AG as Head of the Department for Law, Personnel and Superstructure. Since 2008 he is Member of the Board of the Duisburger Hafen AG and since 2009 Chief Representative of the Dortmunder Hafen AG

In due course of his professional career he represented the Duisburger Hafen AG in several national and international Expert groups. As a personal member of the circle of economic affairs initiated by the Federal Department of Transport, Construction and Urban Development he assisted in developing and realizing the general project plan for freight transportation and logistics for the Federal Government of Germany. Besides further important projects concerning national right (EU-Rail packages, guideline 2000/59/EG or EU security guidelines), he represented the Duisburger Hafen AG in the boards of national and European associations being e.g. responsible for the official statement and positioning of the Duisburger Hafen AG regarding the European regulations and terms of reference (e.g. TEN, Motorways of the Sea, Marco Polo, Port Package, Naiades, RIS, etc).

### **INDUSTRY DAY 2**

### PARALLEL A

### **GREEN TRANSPORT LOGISTICS**

Worldwide, the three most recent decades were each warmer than the preceding decade since 1850. Global surface air temperatures have risen more slowly in recent years, leading some to question the urgency of the climate change problem, but during the same time period, warming in the oceans has continued apace. The Intergovernmental Panel on Climate Change (IPCC) points out, that oceans retained more than 90 percent of heat trapped by greenhouse gases since 1970, that heat energy normally cycles back and forth between the air and ocean and concludes, that business-as-usual will lead the world far above the "2 degrees Celsius of warming" target. Such a global temperature rise is "extremely likely" to have been caused by humans and warming oceans will cause thermal expansion, contributing to accelerating sea-level rise, more severe flooding and extreme weather. The environmental impacts of freight transport depend on transport volume, the share of transport carriers on the total transport volume and the energy efficiency of single transport carriers. While other sectors could reduce their CO2 emission levels compared to 1990 – at least in many European countries - the emissions in freight transport have risen by more than 40%. Global standards and detailed measurements should be used as a basis for continuous improvement of processes and structures in transport and logistics.





#### **Moderator: Uwe Clausen**

Uwe is Managing Director of the Institute of Transport Logistics at TU Dortmund University and – in joint appointment - also director of the Fraunhofer-Institute for Material Flow and Logistics in Dortmund (since 2001) and Chairman of the "Fraunhofer Traffic and Transportation Alliance" (since 2003). He worked in the logistics service industry as European Operations Director at Amazon.com and logistics manager at Deutsche Post DHL. In July 1995 he achieved the title of Dr.-Ing. with his doctoral thesis on transportation network optimisation at TU Dortmund University.

He is Member of the board of ECTRI European Conference of Transport Research Institutes, since 2012 (representative of Fraunhofer within ECTRI since 2005). He is Advisory Council Member of the Association of German Transportation companies (VDV). He is member of the scientific advisory board of the Bundesvereinigung Logistik (BVL) e.V. and Chairman of the Scientific Committee EffizienzCluster Ruhr.

He was Member of the DFG (German Research Foundation) experts board "System technology" on the subject "Traffic and transportation systems, logistics, quality management", from 2004 - 2012. From July 2002 till July 2005, Prof. Clausen was dean of the engineering faculty at TU Dortmund University.

His research areas include green logistics, commercial traffic modelling, intermodal transportation, mathematical optimization, network optimization and distribution systems.

# Beyond EN 16258 – towards a global standardisation of the calculation of CO2(e) emissions along supply chains

European countries are expected to reduce their total annual Greenhouse Gas (GHG) emissions by at least 20% by 2020 and by 60-80% by 2050, compared to 1990 emission levels. In order for the logistics sector to contribute to achieving such emissions reductions, and thus to optimise their efficiency and effectiveness, it is necessary to be able to compare different supply chains. Standards for the calculation of CO2 emissions are a prerequisite for such comparability. EN 16258 is an important step towards such a standardisation; however, it is a European standard and with more and more supply chains being of international nature, a global standard will be needed. Other organisations, corporates and interest groups have also developed approaches for a CO2 emission calculation standard. This contribution reflects how on-going work and efforts worldwide could be aligned to achieve a further convergence of existing emission calculation tools and approaches.

# **PARALLEL A**



# **Presenter: Verena Charlotte Ehrler**

Verena is a researcher in commercial transport at the DLR German Aerospace Centre in Berlin and a lecturer at the Wildau Institute of Technology and the Kühne Logistics University. Based on a degree in Business Administration from St. Gallen University, Switzerland, she holds a PhD in Transport Research from the Technical University Berlin, Germany. Verena is coordinator of the EU co-funded project COFRET Carbon Footprint of Freight Transport.



### Ports and Terminals in the view of emissions

Compared to the carbon footprint of the total global transport chain, transhipment nodes as sea and inland navigtion terminals are minor polluters, however, to eventually provide a complete and coherent picture of transport-related emissions, the ports and terminals may not become excluded. The paper elucidates the relevant processes and an approach to monitor and report emissions.

### **PARALLEL A**



### **Presenter: Jens Froese**

Jens' first career was in sea service when he swopped his comfortable ship master's chair for a wooden seat in universities' lecturing halls to graduate as a survey engineer, specialized in sea survey and hydrography, and later additionally as an industrial engineer, specialized in maritime logistics.

Besides lecturing at his home university in Bremen, the international Jacobs University with students from 120 countries, he is a visiting professor at a number of universities from China to Scandinavia and professor emeritus of Technical University Hamburg-Harburg.

Research in maritime logistics covering the sea transport, the ports and preand post-sea transport always was an important issue of his academic career. He conducted a large number of research projects on national, European and global level focusing on special areas of the whole transport chain.



# **CO2** calculator for intermodal terminals

CT terminals serve the envelope of loading units between transport modes, to support innovative rail products and enable the development of efficient transport chains. But they also mean additional costs, energy consumption and associated greenhouse gas emissions. The relevant method of calculation and declaration of such values, the DIN EN 16258 from the year 2013, however, transhipment facilities saves straight on. Therefore, we have been busy since 2011 the "CO2 Fußabruck" of combined transport terminals in detail to identify measures and identify the specific energy consumption / emissions to be reduced. The advantages of our approach are: Methodological analogy to the standard terminal is regarded as a functional unit, processes are mapped, strong issuers are worked out, savings can be identified and improvements are proposed, all parties in the transport chain obtain improved values for the field of combined transport terminals .

### **PARALLEL A**



### **Presenter: Klaus-Uwe Sondermann**

Klaus is authorized signatory of KombiConsult GmbH, a company specializing in intermodal logistics solutions consulting firm with headquarters in Frankfurt am Main. After graduation, Klaus was involved as a project engineer at a plant engineers with the development and demonstration of a rapid transfer system for combined transport and port handling technologies since 1991. After a stopover since 2003 he is at KombiConsult active in consulting projects around the Combined Road-Rail Transport-Water Street. In addition to the increased efficiency of rail corridors, the implementation of relocation projects and combined transport terminals, it is increasingly been to ecological issues.



# Green Logistics - Comparability of the Environmental Effects of Logistics Services

Raising environmental scarcity, climate change and further environmental effects require the identification of relevant control levers for realizing "green" logistic services that are efficient in terms of resources as well as energy. For this, a standardized, comprehensive and usage-related method for the ecological assessment of logistics processes and systems was developed in the R&D project "Green Logistics". This method covers three relevant segments of logistics activities: logistics real estates, intralogistics and transport. The developed method provides a holistic framework for a reasonable comparison of different service providers.

Global players are accepting social responsibility. Today companies want to promote environmental protection measures and are actively reducing emissions. GHG emissions as well as further environmental indicators are increasingly used as selection criterion for logistics products and services. However, neither logistics service providers nor shippers are already enabled to assess logistics processes or purchased services concerning their ecological impact in a comprehensive and comparable manner. Today's standards (e.g. GHG protocol, EN 16258) offer only insufficient guidance for establishing comparable results: For instance, the EN 16258 excludes all impacts of short-term assistance processes (e.g. tugboats) and warehouse activities, although studies proved that up to 30% of the GHG emissions of distribution systems may be caused by processes in logistics real estate premises.

For establishing the method envisioned, the project consortium "Green Logistics" accomplished various tasks: Existing methods and standards were analysed concerning their applicability and relevant gaps have been identified to be closed. By means of a detailed relevance analysis all subprocesses of logistics services were assessed concerning their environmental impact as a single process as well as its influence on the whole logistic service. For each relevant logistics sub-process the consortium derived adequate rules for calculating the respective ecological impacts; including relevant allocation rules, parameters as well as examples for guidance. The developed method and its procedures and assumptions are currently discussed on international level with relevant initiatives.

### **PARALLEL A**



### **Presenter: David Rüdiger**

David Rüdiger is with the department of environment and resource logistics at the Fraunhofer IML (Dortmund) since 2010. He studied Logistics at the Technical University of Dortmund and the Dublin Institute of Technology. His professional competence includes the monitoring and optimization of energy efficiencies and environmental performances of supply chains. Recently one of his major activities was to define and to establish a standardized allocation method for transport and warehousing emissions. Further topics of his recent projects were alternative engine concepts and their perspectives in transport systems, the relation of electric-ity consumption and warehouse design/configuration and the optimization of biomass logis-tics, i.e. the efficient collection of different input sources with low and volatile quantities.


## **INDUSTRY DAY 2**

# **PARALLEL B**

# SUSTAINABLE DEPLOYMENT OF COOPERATIVE ITS FOR LOGISTICS

The CO-GISTICS session will focus on presenting the first set of results of deployment of cooperative intelligent transport systems (C-ITS) applied to logistics. These session will present the objectives, CO-GISTICS Reference Architecture and the deployed services, the evaluation standards" services based on C-ITS, including road, network and traffic characteristics, geographic extent, simulation algorithm or service logic, and an example of Trieste Business Case.



#### **Moderator: Zeljko Jeftic**

Zeljko is head of IRU Projects. Zeljko started his career as many of us, as engineer. His first job was at Volvo where he was developing new vehicle active systems for increased road safety and energy efficiency. Some of these systems you can buy on new Volvo cars. Following that he spent 6 years at ERTICO – ITS Europe where he held position of Senior Project Manager. For many of us he is better known as Mr. FREILOT.

Since 2013 Zeljko heads IRU Projects where he is responsible for company's involvement in all EC activities, including co-funded projects, technology platforms, such as ERTRAC and Advisory Groups, such as EU Urban Logistics Advisory Group.

IRU Projects itself is representing global interests of bus, coach, taxi and truck fleets and works closely with the International Road Transport Union and its 170 members in 75 countries.



# **Introducing CO-GISTICS**

CO-GISTICS is a 3-year project funded by the EU under the Competitiveness and Innovation Programme. CO-GISTICS will deploy cooperative ITS services for logistics. The integration of currently existing freight and transport systems and services, with innovative solutions such as cooperative services and intelligent cargo, will lead to increased energy efficiency and more sustainable mobility of goods.

Seven logistics hubs, Arad, Bordeaux, Bilbao, Frankfurt, Thessaloniki, Trieste and Vigo strongly believe in the integration of currently existing freight and transport systems and services, with new solutions such as cooperative services and intelligent cargo. This will help to make operation of their goods, trucks, roads, harbours, airports and rail terminals more sustainable, i.e. reduce CO2 emissions and improve cost-efficiency.

CO-GISTICS will deploy 5 C-ITS services:

- · Intelligent parking and delivery areas
- Multimodal cargo
- · CO2 emissions estimation and monitoring
- Priority and Speed advice
- · Eco-drive support

Each of the pilot sites includes all the partners for a successful after-project life, from public authorities to logistics operators. The user groups will include fleet operators, trucks, freight forwarders, terminal operators and logistics providers. The consortium will install the services on at least 325 vehicles (trucks and vans).

#### **PARALLEL B**



# **Presenter: Lina Konstantinopoulou**

Lina is a Senior Project Manager at ERTICO working under the Safe mobility sector from November 2008. She holds a Masters Degree in International Trade and European Integration with focus on freight transport and Bachelors in European Economics from the University of Staffordshire. She is the coordinator of CO-GISTICS CIP pilot project (COoperative loGISTICS for sustainable mobility of goods) and she is also coordinating iMobility Support FP7 project (Supporting the iMobility Forum). She had been coordinating the "iCar Support project (FP7 project, DG INFSO) and she was responsible for the WP1 user needs - CityLog project (FP7 project, DG RTD). She was responsible for the IP project FP6 CVIS Deployment enablers sub project (DEPN). She was previously working for ICCS (Humanist, Ask-It, Intuition projects) and ITS Hellas.

# Architecture

In Co-Gistics it is deployed cloud-solutions that support the five cooperative logistics services as a result from the combination of cooperative mobility services and smart logistics through the introduction of the M2M (intelligent cargo, Freight Object). In order to enable the technological integration, a Reference Architecture is defined to capture the concepts of the system architecture and provides a framework in which the logical and physical architectures may be developed, as well as focuses on the users and user services. In this context, the Co-Gistics Reference architecture merges different systems and solutions coming from the ITS environment (already tested and validated in most of the sites selected in the project), together with new core services as the traffic and itinerary services, the CO2 monitoring service as well as cloud service to facilitate real time communication and freight object virtualization to support the five cooperative logistics services.

#### **PARALLEL B**





#### **Presenter: Germán Herrero**

Germán joined Atos in March 2006, where I now serve as Head of the Transport & Trade Logistics sector, responsible for all technology research and development activities for supply chain and logistics projects in Atos (ARI). Germán is in charge of develop new business opportunities with technology approach in innovation on global supply chain development, urban logistics, Green logistics, Food supply chain optimization and Big data in logistics. During the last years, Germán has been working in several FP7 projects related to logistics and electric vehicle as Cassandra, iCargo, or Co-gistics EU projects and transfer the acquired experience and research results to the market. His career includes research and development in areas like Semantic Web technologies as he was involved on several semantic Web R&D projects, as the FP6 NeOn project.

# **INDUSTRY DAY 2**

# The CO-GISTICS services

The CO-GISTICS services.

### **Presenter: Ralf Willenbrock**

Ralf, Project and Business Development Manager, graduated in Physics at the University of Berlin (Germany) in 1993, he has 5 years' experience in software development and IT-Operation as well as 10 years in project management, especially in the field of R&D and implementation of new technologies (Traffic Information, Telematics Services for Automotive, FCD). He joined VW subsidiary "gedas" in 1995 and moved to T-Systems, after gedas and T-Systems merged to one company in 2007. Since then, he is in charge for business development in the field of I.T.S., Satellite Applications (Galileo, Copernicus) as well as for partnering activities in the area of free flow toll collection in Greater China and Europe. He leads the I.T.S. department of T-Systems P.

#### The evaluation



Evaluation of C-ITS has received significant attention during the last years, especially for the preparation of business models supporting the large scale deployment of C-ITS. There is a need for defining "evaluation standards" in order to obtain reliable and comparable benefits of the different mobility and safety services based on C-ITS, including road, network and traffic characteristics, geographic extent, simulation algorithm or service logic.

#### **Presenter: Georgia Aifandopoulou**

Georgia is a senior researcher at the Centre of Research and Technology Hellas (CERTH) in the Hellenic Institute of Transport (HIT). Her professional and research expertise covers the fields of: Freight transport & Logistics, Traffi c & Mobility Management, Transport Systems Optimization and ICT applications in Maritime and Multimodal Transport. She holds a civil engineer diploma, Master degrees in Operations Research and in Transport Management and a PhD in Freight Transport Optimization. She is Head of Sector at HIT, undertaking implementation projects and supervising research projects in the Domain of Intelligent Transport Infrastructure and Demand Management. She has a more than 25 years involvement in European research projects, related to new technology applications in transport & logistics management and control, being responsible for systems specifi cations, pilot projects implementations, evaluation & results exploitation. She acted as project manager for various Greek and International Research and Development Projects. She is currently Managing Director of the Thessaloniki Technology Park SA, an organization aimed at innovation taken up by industrial stakeholders for regional economic development.



# The Trieste Business Case: Co-operative Intelligent Parking Service for the Trieste Port

This contribution introduces the general overview of the Intelligent Parking management problem regarding the Trieste Port site. The Intelligent Parking Service (IPS) solution can help co-operation among several public and private institutions, understanding and addressing new opportunities for a better usage of border region between Port and the Urban City. The presentation illustrates and classifies the ongoing work within the European co-funded project CO-GISTICS that includes a specific prominent action on the IPS Service deployment. Considering the most critical issues in the contest of the Port of Trieste, we point out that the analysis research developed in the CO-GISTICS project has already shown that parking demands often exceed capacities, both in the sense of space availability and organizational aspects.

## **PARALLEL B**



## **Presenter: Walter Ukovich**

Walter graduated in Electronic Engineering at the University of Trieste in 1970. He is currently full professor of Operations Research at the Faculty of Engineering of the University of Trieste. The scientific activity of Walter Ukovich has produced since 1970 over one hundred papers in different areas, such as: vector, multi-criteria and multi-objective optimization, management of distribution networks and systems, traffic control, public transportation systems, organization and management of health systems, production planning and control, logistics, innovation and evaluation problems.



### **INDUSTRY DAY 2**

# PARALLEL A

# INTERNET OF THINGS IN TRANSPORT LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Logistics and Supply Chain Management are a premium industry. Without information technologies and digitalization, Logistics and Supply Chain Management would not work. For example, over the past 10 years the amount of logistic information has increased by the factor 1000, and the computer factor increased by a factor of 30 - 50.

However, a next evolutionary step is the so called "Internet of Things (IoT)". IoT refers to the interconnection of uniquely identifiable embedded computing-like devices within the existing internet infrastructure. IoT focuses on "Machine-to-Machine" communications. Backbones are cloud-based GPS and Radio Frequency Identification (RFID). Data gathered from GPS and RFID technologies not only allows supply chain professionals to automate shipping and delivery by exactly predicting the time of arrival; they can monitor important details like temperature control, which impact the quality of a product in-transit. Furthermore, IoT helps logistics and supply chain professionals to...

- reduce asset loss
- reduce and save energy consumption (e. g. fuel, etc.)
- ensure temperature stability
- manage warehose stocks
- etc.

This session consists of three industry related presentations to show how IoT is applied in logistics and supply chain industry. The first presentation will show how SME's are and get involved in IoT issues. The second presentation will show, how RFID is applied in rail logistics. The third presentation focuses on a RFID case study made by Identec Solution AG. Identec is the world market leader in RFID applications.



#### **Session Chair: Florent Frederix**

Florent is currently serving the Trust and Security unit of the Directorate-General for Communications Networks, Content and Technology as a principal administrator. In this capacity he is responsible for a portfolio of research and innovation projects in the domain of cyber security and involved in related policy development such as the Network Information Security directive.

Before joining the cyber security team, he was Head of the RFID Sector from 2006 to 2012 at the European Commission. This sector was responsible for the RFID policy and the emerging Internet of Things.

Since January 2012 he is also Editor-in-Chief of the International Journal of Advanced Logistics.

In his 20+ year career before joining the EU Commission he held positions in industry. For over 10 years he was Research Programmes Manager at Alcatel and in that role he contributed as initiator of some of the more important projects, to Alcatel's success in ADSL (broadband over telephone). Prior to joining Alcatel in 1991, Florent was also co-ordinator of the team that developed the AESTHEDES computer aided design system for pre-press applications.



# LogiCon: involving Freelance Truck Drivers and very small transport operators in the logistics information flow

Typically, logistics services are delivered by a combination of multiple players working together in dynamic and volatile relationships. While large Logistic Service Providers have technological means to support their business transactions, at some time, operations rely on SMEs with limited IT support, creating a disadvantage when working amongst bigger players as well as increasing the manual support to the operations for all: even a small reduction on this human support would have a major impact. This situation is applicable to other medium to big transport operators in Spain, Europe and globally, as they collaborate continuously with SME operators.

FP7 LogiCon Project is working to provide SMEs access to the information flow: using a Living Lab approach, LogiCon is delivering apps for web and smart phone for SME trucking companies and truck drivers to support service information exchange, e.g. tracking of truck departure and arrival, creating and sending of transport orders and invoices. The app solutions and architecture behind can communicate directly with large Transport Management Systems of forwarders and shippers using generic mechanisms to make the solution more acceptable than a specific solution for customers or TMS systems.

# **PARALLEL A**



# **Presenter: David Quesada**

David is co-owner and Technical Director of ENIDE. With ICT engineering background, he has worked in the technology industry for almost 20 years, mainly focused on the technology strategy and managing of complex IT projects at international level, in sectors as logistics and transport as well as major events (as Olympic Games).



# **RFID** in Rail

A common standardized RFID solution for the European railway to track and trace wagons and locomotives for, logistics and maintenance purpose. RFID projects are ongoing in several European countries as Finland, UK, France, Austria, Switzerland, Norway, Germany etc. The Swedish Transport Administration has installed about 180 RFID readers until now and another 150 will be installed allover Sweden.

#### **PARALLEL A**





### **Presenter: Lennart Andersson**

Lennart is the project manager in the Swedish Transport Administration, responsible for the development and national deployment of RFID-systems on the Swedish railway network. The task also includes promoting a common RFID-standard for rail in Europe. Lennart has a degree in electronic engineering enhanced by additional studies at the Stockholm University and the Royal Institute of Technology (KTH). After 18 years of work on navigation- and instrument-landing systems with the National Aviation Authority, Lennart started working for the National Rail Administration in 1990 (from 2010 a part of the Swedish Transport Administration) with detector and presentation systems. For the last 8 years he has had a focus on the introduction of RFID as a means to improve service to the rail transport operators and their clients but also as a way to reduce track maintenance costs.

# How the IDENTEC I-CHEM Active-RFID Solution Saves Time and Money for Chemical Logistics Facilities by Managing Truck Traffic

Major chemical companies in Germany have decided to standardize on a common active-RFID, ATEX certified system, called I-CHEM, to improve their gate processes. The BASF facility in Ludwigshafen and the "Chempark" facilities in Leverkusen, Uerdingen, and Dormagen, have been the first adopters of I-CHEM and as such have become industry leaders in gate efficiency. I-CHEM was developed by IDENTEC SOLUTIONS AG specifically for the chemical industry. The system allows forwarders to use "express lanes" to significantly reduce the time per transaction and therefore increase throughput capacity at the gates. Essentially, the facilities are able to serve more vehicles in less time without increasing their footprint or adding heavy infrastructure. This presentation explains how the I-CHEM solution works and the benefits already realized by both chemical companies and forwarders.

# **PARALLEL A**



#### **Presenter: Herbert Hohmann**

Herbert leads the European Smart Sensor Platform ("SSP") sales activities for IDENTEC SOLUTIONS AG. Throughout his career he has held various managerial positions in manufacturing and process industries and is regarded as an expert in automated solutions. Herbert graduated as "Diplom-Ingenieur" in Electrical Engineering from the Technical Hochschule Mittelhessen in Friedberg/H and lives in the Cologne Area.



#### **INDUSTRY DAY 2**

## PARALLEL B

# ICT NEEDS OF SMEs IN THE LOGISTICS AND TRANSPORT INDUSTRIES

The session will focus on ICT needs of SMEs in Logistics and Transportation industries. After a short introduction of ALICE, the Alliance for Logistics Innovation through Collaboration in Europe, Rod Franklin will introduce the big picture of challenges that the Logistics Service Providers will face in the upcoming years and which are the opportunities for new SMEs in this context. Afterwards, Stefano Persi will discuss how new technologies are facilitating supply chain integration of the information removing barriers between companies including SMEs and freelances. Finally, Andreas Nettsträter, will give and overview on new ICT technologies, like Cloud Computing, the Internet of things, big data and the future internet and how they are constantly changing the way people work and collaborate, including opportunities for SMEs in the transport and logistics sector.





#### **Moderator: Fernando Liesa**

Fernando is Logistics Innovation Leader at ENIDE and Secretary General at ALICE European Technology Platform on Logistics and holds a PhD since 2004 by University of Zaragoza (Spain). Since then, he has worked in the field of knowledge transfer and research management being the last 8 years linked to logistics and supply chain management. Fernando worked in Zaragoza Logistics Center (one of the MIT Global Scale Network centers and the only one in Europe) from 2006 to 2014 as Knowledge Transfer Director, from 2007 to 2014 as General Manager of the Spanish Center of Competence in Logistics, CNC-LOGISTICA and Coordinator of the Spanish Technology Platform in Logistics, Logistop. Dr. Liesa has actively coordinated and participated in several national and FP7 projects such WINN, SECURESCM, SoCool@EU, CASSANDRA, CO3, SAFEPOST, LOGICON, CORE and EUROSKY. Contribution in these projects ranked from developing research to doing technology and knowledge transfer aiming industry take up. Fernando Liesa led the creation of the European Technology Platform in Logistics, ALICE through the WINN project acting as coordinator of the former. Fernando cooperated with EIRAC in the definition of the EIRAC Strategic Agenda 2010-2030+, and with ERTRAC in the definition of the Research and Innovation Roadmap: Sustainable Freight System for Europe: Green, Safe and Efficient Corridors (2011).

### The need for change in logistics operations

The increasingly negative impact that logistics operations are having on the environment and urban activities requires logistics service providers to rethink how they deliver their services. New business models, management systems and collaboration frameworks are needed if logistics service providers are to meet societal demands for improved sustainability and commercial requirements for improved efficiency. Traditional thinking will need to be revised and new ideas injected into the industry if the changes demanded are to be realized. While many innovations will come from the current industry leaders, it will be the small to medium sized firms who are closer to customers and who have less history to protect that will provide the major new ideas for changing the industry. This presentation will discuss the changes that the industry is to enjoy a fruitful and beneficial future. In addition, the presentation will cover how SMEs can act as the engines of change and engage more fully in the future of the industry.

#### PARALLEL B



#### **Presenter: Rod Franklin**

Rod is Professor and Managing Director of Executive Education at the Kuehne Logistics University. In his role at the Kuehne Logistics University Rod teaches classes in innovation, operations, decision analysis, game theory and critical thinking to graduate students and logistics professionals. His research focuses on supply chain efficiency, sustainable operations and the application of Future Internet technologies to supply chain management.

Rod has extensive experience in the areas of corporate strategy, operations management, supply chain management, information technology and consulting. Besides his current work, Rod has held field management positions at Kuehne + Nagel, Viacore, ENTEX Information Services, Digital Equipment Corporation, Arthur Young & Company, Booz Allen & Hamilton, Theodore Barry & Associates, Cameron Iron Works and General Motors Corporation. He has also taught logistics and supply chain classes at the ETH Zurich, Duke University's Fuqua School of Management, Ohio State University's Fischer Business School, the Antwerp Management School and the WHU Otto Beischeim School of Management.



Rod holds a Bachelor of Science degree in Mechanical Engineering from Purdue University, a Master of Science degree in Mechanical Engineering from Stanford University, a Masters in Business Administration from Harvard University and a Doctorate in Management from Case Western Reserve University. Rod is a registered professional engineer, a member of the IIE, INFORMS, the Academy of Management, the System Dynamics Society, the Association for Computing Machinery, and a frequent speaker on Future Internet, supply chain, product and corporate development issues.

# LogiCon: involving small and medium transport operators

Smaller SMEs often have limited or no IT support for their activities creating a disadvantage when working amongst bigger players. Their large business partners and customers usually have more advanced tooling but cannot use it to communicate with SMEs. This endangers the position of the SMEs for example because they cannot offer the same visibility to the end-customer as large operators can. The SME's backdrop in IT support thus weakens their market position. Also the administrative processes can be further supported as currently they require several manual operations, which requires additional efforts and can create quality mistakes. Even a small reduction of this effort would have a major impact for both sides.

LogiCon is delivering apps for web and smart devices for very small LSP to support service information exchange and management. These tools allow direct communication with large Transport Management Systems of forwarders and shippers, so replacing information exchange via phone/ mail/manual email. Moreover, they are designed using an universal and neutral approach, based in different standards, allowing them to interact with many operators.

SMEs will benefit by improving performance and simplifying procedures with their partners - before, during and after the operations - and reducing the preparation and management of invoice. As a result, business with major operators should increase by offering added value services and becoming preferred partners for them.

#### **PARALLEL B**





#### **Presenter: Stefano Persi**

Stefano is Co-founder and Business Development Director of ENIDE. He currently acts as ALICE WG3 on Information Systems for Interconnected Logistics Vice-Chair. Previously Stefano was Project Manager of Transport & Manufacturing Sector in the Research & Innovation division of ATOS. He has a Degree in Computer Engineering from the University of Modena (Italy). Certificated PMP from the PMI association. His previous experience is in embedded development in the fields of automotive (engine control for diesel injection systems), telecommunication and aerospace. He is experienced in Management, as well in Development and Integration areas in international projects. He participated in several projects for the European Commission. Some of them are: WINN, LOGICON, EUROSKY, CORE, MyWay, TRACEBACK (www.traceback-ip.eu), CASSANDRA (Common assessment and analysis of risk in global supply chains), iCargo (Intelligent Cargo in Efficient and Sustainable Global Logistics Operations) and CoCities (Cooperative Cities extend and validate mobility services).

# The role of new technology for logistics operations

New ICT technologies, like Cloud Computing, the Internet of things, big data and the future internet are constantly changing the way people work and collaborate. These technologies are also changing logistics and supply chain management offering new opportunities and chances from industry and SMEs. The presentation will give an overview about flexible logistics services and infrastructures based on existing prototypes and demonstrators both from research and industry.

# **PARALLEL B**



## Presenter: Andreas Nettsträter

Andreas studied Computer Science with minor Mechanical Engineering at the University of Dortmund. He is responsible for European cooperation and projects at the Fraunhofer Institute for Material Flow and Logistics in Dortmund. His focus is on innovative ICT solutions for logistics and manufacturing, like Cloud Computing and the Internet of Things.



# DAY 1 SCIENTIFIC DAY

WED 5.11

	ТОРІС	SPEAKER
12:00-12:30	Registration	
12:30-12:40	Jens Schumacher, Uwe Clausen Vorarlberg University of Applied Sciences, Fraunhofer IML	Welcome
12:40-13:00	Günther Horzetzky Ministry of Economics, Energy, Industry, SME, and Trade	Welcome & Opening
13:00-13:20	Chang Yoon Seok, Florent Frederix Korea Aerospace University, European Commission	Opening & Key Note
	SMART LOGISTICS; Session Chair: Yoon Seok Chang	
13:30-13:55	W. J. (Wout) Hofman Roadmap towards a smart logistics ecosystem	W. J. (Wout) Hofman, H. J. M. (Harrie) Bastiaansen
13:55-14:20	Josep Maria Salanova Cooperative Intelligent Transport Systems for freight transport	Evangelos Mitsakis, Josep Maria Salanova Grau, Georgia Aifadopoulou, Evangelos Mintsis, George Tsoukos
14:20-14:45	Markus Rabe Discrete Event Simulation as a Strategic Decision Instrument for a CO2- and Cost-efficient Distribution Chain Applied in the FMCG Sector	Markus Rabe, Mehmet Umut Sari, Till Fechteler, Luca Fernando Ruini
14:45-15:10	<b>Eetu Pilli-Sihvola</b> Decentralized Approach to Logistics Execution Monitoring in Multi-actor Network	Eetu Pilli-Sihvola, Antti Permala, Ville Hinkka, Oliver Klein, Karri Rantasila
15:10-15:30	Coffee Break	
	INTEROPERABILITY AND CONTROL; Session Chair: F	lorian Maurer
15:30-15:55	Hans Westerheim Interoperability in Supply Chain and Logistics. What can the Common Framework offer? – A scientific evaluation	Hans Westerheim, Jannicke Baalsrud Hauge
15:55-16:20	<b>Till Becker</b> Network Structures and Decentralized Control in Logistics: Topology, Interfaces, and Dynamics	Till Becker, Daniel Weimer, Jürgen Pannek
16:20-16:45	N. U. Kim A Study on the ejecting zones for automatic picking system in pharmaceutical industry	N. U. Kim, Y. S. Chang, W. R. Kim, J. H. Kim, H. C. Choi
17:30-23:59	Cultural Visit // Come Together Event	

# DAY 1 SCIENTIFIC DAY

TOPIC

**SPEAKER** 

	RISK MANAGEMENT; Session Chair: Uwe Clausen	
13:30-13:55	<b>Mustafa Güller</b> A Simulation-based Decision Support Framework for Real-Time Supply Chain Risk Management	Mustafa Güller, Emre Koc, Tobias Hegmanns, Michael Henke, Bernd Noche
13:55-14:20	Joachim Kochsiek Safety & Security in Land Transportation	Invited Session
14:20-14:45	<b>Doron Levy</b> Risk Assessment Profiling Procedure (RAPP) for Air Cargo Security	Doron Levy, Yvonne Ziegler
14:45-15:10	lakovou Eleftherios Emergency Sourcing Risk Mitigation Strategies for the Supply Chain of a Discrete Part Manufacturer	lakovou Eleftherios, Vlachos Dimitrios, Keramydas Christos, Tsiolias Dimitris
15:10-15:30	Coffee Break	
	IT ARCHITECTURES; Session Chair: Bernhard Holtkam	ıp
15:30-15:55	<b>Remco Dijkman</b> A Software Architecture for a Transportation Control Tower	Anne Baumgraß, Remco Dijkman, Paul Grefen, Shaya Pourmirza, Hagen Voelze, Mathias Weske
15:55-16:20	Yao-Hua Tan Unleashing the ICT potential in the complex digital business ecosystem of international trade: The case of fresh fruit import to European Union	Thomas Jensen, Yao-Hua Tan, Arjan Knol, Niels Bjorn- Andersen
16:20-16:45	<b>D.W. Son</b> A Study of building a New Warehouse Control System Architecture	D.W. Son, Y.S. Chang, H.C. Choi, W.R. Kim, A.G. Higuera
17:30-23:59	Cultural Visit // Come Together Event	



# DAY 2 INDUSTRY DAY 1

# THU 6.11

	ТОРІС	SPEAKER
08:30-09:00	Registration	
09:00-09:05	Welcome, Introduction and Opening	Jens Schumacher Vorarlberg University of Applied Sciences
09:05-09:10	Welcome, Introduction and Opening	<b>Uwe Clausen</b> Fraunhofer Institute for Material Flow and Logistics
09:10-09:15	Welcome, Introduction and Opening	Joost De Bock European Commission
DAY 2	FUTURE LOGISTICS AND SUPPLY CHAIN MANAGEMENT PERSPECTIVES MODERATION: UWE CLAUSEN	THU 6.11
09:15-09:55	Logistics and a digital economy and society	<b>Wolfgang Höfs</b> European Commission
09:55-10:25	Internet of Things	<b>Michael ten Hompel</b> Fraunhofer Institute for Material Flow and Logistics
10:25-10:50	e-Freight – for more efficient and less costly freight transport	Fleur Breuillin European Commission, DG Mobility & Transport (DG MOVE)
10:50-11:15	Round Table / Interactive Discussion	
11:15-11:20	Introduction to the parallel sessions	Jens Schumacher Vorarlberg University of Appl. Sciencessessions

11:20-11:45 Coffee Break & Booth Presentation

DAY 2	PARALLEL A INTELLIGENT TRANSPORT SYSTEMS - INTELLIGENT CARGO MODERATOR: GERMÁN HERRERRO	THU 6.11
	ТОРІС	SPEAKER
11:45-11:50	Opening & Introduction	<b>German Herrerro</b> ATOS Research
11:50-12:15	An Integrated Production Model changes PostNoro needs of Routeplanning & Scheduling	d's <b>Christian Oestergaard</b> Post Denmark
12:15-12:40	Innovation in iCargo	Servet Balcioglu ATOS Research
12:40-13:05	The Commercial Benefits of iCargo	Kenneth Sherman Intellitrans AB
13:05-13:30	Round Table / Interactive Discussion	

13:30-14:30 Lunch & Booth Presentation

#### DAY 2 PARALLEL B

# INTERACTIVE DISCUSSION: E-FREIGHT AND THE COMMON FRAMEWORK – THE WAY FORWARD

THU 6.11

MODERATOR: MODERATOR: FLEUR BREUILLIN

	торіс	SPEAKER
11:45-11:50	Opening & objective	<b>Fleur Breuillin</b> EU Commission, DG Move
11:50-12:00	The e-Freight (Common) Framework – From an IT provider Perspective	Jan Tore Pedersen MARLO
12:00-12:10	Shipper's point of view: Optimizing European physical distribution by leveraging network partners	Patrick Van de Vywer 3M
12:10-12:20	Seamless Information Streams – A Freight Forwarders Point of View	Andreas Pichler Gebrüder Weiss
12:20-12:30	Terminal user's point of view	Janze Merlak Adria Kombi d.o.o.
12:30-12:40	Towards a Neutral Logistic Information Platform – An Authority's Point of View	Pieter Verbakel NL customs
12:40-13:30	Round Table / Interactive Discussion: the point of view of s potential benefits, challenges and any needs for evolution	several logistics players on

13:30-14:30 Lunch & Booth Presentation

# DAY 2 PARALLEL A TRANSPORT LOGISTICS & SUPPLY CHAIN INVENTIONS AND INNOVATIONS

**THU 6.11** 

**MODERATION: JENS SCHUMACHER** 

		SPEAKER
14:30-14:35	Opening & Introduction	<b>Jens Schumacher</b> Vorarlberg University of Applied Sciences
14:35-15:00	Innovative business models in logistics	<b>Georgia Aifadopoulou</b> CERTH - Centre of Research and Technology Hellas
15:00-15:25	"A bottom-up approach to meet the needs of the operators and synergies with ALICE"	Margherita Forcolin CeTIM - Center for Technology & Innovation Management
15:25-15:50	Pathways to logistics innovation- challenges, barriers and opportunities: How to get around the stones on the road to innovation uptake in logistics?	Jannicke Baalsrud Hauge BIBA
15:50-16:15	Round Table / Interactive Discussion	
16:15-16:30	(Short) Coffee Break	
16:30-18:30	Industrial Visit(s): "Atlas Shoe Factory" or "IKEA Europear	n Distribution Center"
18:30- 23:59	Conference Dinner, Networking	

#### DAY 2 PARALLEL B THU 6.11 FROM GOOD IDEAS TO GOOD PRODUCTS AND SERVICES: WAYS OF EXPLOITATION AND COMMERCIALISATION OF R&D RESULTS MODEDATOR: THORSTENI HÜLSMANN

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	ТОРІС	SPEAKER
14:30-14:35	Opening & Introduction	<b>Thorsten Hülsmann</b> EffizienzCluster LogistikRuhr
14:35-15:00	Port-Hinterland development for containerized traffic	Andrea Campagna University of Rome, Centre for Transport and Logistics
15:00-15:25	A cloud-based approach for efficient proof-of-delivery	George Tsoukos TREDIT S. A.
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Multimodal Promotion – Tool for intelligent bundling of transport flows	<b>Achim Klukas</b> Fraunhofer Institute for Material Flow and Logistics
15:50-16:15	Round Table / Interactive Discussion	
16:15-16:30	(Short) Coffee Break	
16:30-18:30	Industrial Visit(s): "Atlas Shoe Factory" or "IKEA European	Distribution Center"

18:30- 23:59 Conference Dinner, Networking

# DAY 3 INDUSTRY DAY 2

FRI 7.11

	TOPIC	SPEAKER
08:30-09:00	Registration	
09:00-09:05	Opening of Industry Day 2 - Introduction	Jens Schumacher Vorarlberg University of Applied Sciences
09:05-09:15	Announcement ECITL 2015	
DAY 3	FUTURE LOGISTICS AND SUPPLY CHAIN	FRI 7.11
	MANAGEMENT PERSPECTIVES MODERATOR: ROD FRANKLIN (K&N)	
09:15-09:35	MANAGEMENT PERSPECTIVES MODERATOR: ROD FRANKLIN (K&N) Social Responsibility: dilemmas and challenges for Supply Chains?	<b>Kulwant S. Pawar</b> University of Nottingham
09:15-09:35 09:35-09:55	MANAGEMENT PERSPECTIVES MODERATOR: ROD FRANKLIN (K&N) Social Responsibility: dilemmas and challenges for Supply Chains? duisport – Research Activities on Innovative Solutions for Intermodal Transports	<b>Kulwant S. Pawar</b> University of Nottingham <b>Markus Bangen</b> Port of Duisburg (Duisburger Hafen AG)
09:15-09:35 09:35-09:55 09:55-10:15	MANAGEMENT PERSPECTIVES MODERATOR: ROD FRANKLIN (K&N) Social Responsibility: dilemmas and challenges for Supply Chains? duisport – Research Activities on Innovative Solutions for Intermodal Transports tbc	Kulwant S. Pawar University of Nottingham Markus Bangen Port of Duisburg (Duisburger Hafen AG) Politicians View tbc

10:35-10:55 Coffee Break
# DAY 3 PARALLEL A GREEN TRANSPORT LOGISTICS

**MODERATOR: UWE CLAUSEN** 

	TOPIC	SPEAKER
10:55-11:00	Opening & Introduction	<b>Moderator</b> Fraunhofer IML
11:00-11:20	Beyond EN 16258 – towards a global standardisation of the calculation of CO2(e) emissions along supply chains	Verena Ehrler German Aerospace Center (DLR)
11:20-11:40	Ports and Terminals in the view of emissions	Jens Froese Green Efforts, Jacobs University Bremen
11:40-12:00	CO2 calculator for intermodal terminals	Klaus-Uwe Sondermann Kombi-Consult
12:00-12:20	Green Logistics - Comparability of the Environmental Effects of Logistics Services	<b>David Rüdiger</b> Fraunhofer IML
12:20-12:40	Round Table / Interactive Discussion	

## DAY 3 **PARALLEL A INTERNET OF THINGS** MODERATOR: FLORENT FREDERIX

12:45-12:50	Opening & Introduction	Florent Frederix EU Commission
12:50-13:15	LogiCon: involving Freelance Truck Drivers and very small transport operators in the logistics information flow	David Quesada ENIDE
13:15-13:40	RFID in Rail	<b>Lennart Andersson</b> Trafikverket Sweden
13:40-14:05	How the IDENTEC I-CHEM Active-RFID Solution Saves Time and Money for Chemical Logistics Facilities by Managing Truck Traffic	Herbert Hohmann Identec Solutions AG
14:05-14:30	Round Table / Interactive Discussion	

14:30-14:45 Highlights / Summary of the 7th ECITL & Lunch Break / End of the 7th ECITL

# FRI 7.11

## DAY 3 PARALLEL B SUSTAINABLE DEPLOYMENT OF COOPERATIVE ITS FOR LOGISTICS

**MODERATOR: ZELJKO JEFTIC** 

	ТОРІС	SPEAKER
10:55-11:00	Opening & Introduction	<b>Zeljko Jeftic</b> IRU Projects
11:00-11:15	Introducing CO-GISTICS	Lina Konstantinopoulou ERTICO
11:15-11:30	Architecture	<b>Germán Herrero</b> ATOS Research
11:30-11:45	the CO-GISTICS services	Ralf Willenbrock T-Systems
11:45-12:00	The evaluation	Georgia Aifantopoulou CERTH - Centre of Research and Technology Hellas
12:00-12:15	The Trieste Business Case	Walter Ukovich ICOOR
12:15-12:40	Round Table / Interactive Discussion	
DAY 3	PARALLEL B	FRI 7.11

FRI 7.11

### ICT NEEDS OF SMES IN THE LOGISTICS AND TRANSPORT INDUSTRIES MODERATOR: FERNANDO LIESA

12:45-12:50 Opening & Introduction	<b>Fernando Lies</b> a ENIDE
12:50-13:15 The need for change in logistics operations	<b>Rod Franklin</b> Kuehne Logistics University
13:15-13:40 LogiCon: involving small and medium transport operators	Stefano Persi Enide
13:40-14:05 The role of new technology for logistics operations	Andreas Nettsträtter Fraunhofer IML

14:05-14:30 Round Table / Interactive Discussion

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