

# INTEGRITY

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## The Project INTEGRITY

### ***INTEGRITY – Intermodal Global Door-to-door Container Supply Chain Visibility***

The INTEGRITY-project is funded by the 7<sup>th</sup> Framework Programme for Research & Development and liaises with several EU Directorates. INTEGRITY aims at significant improvements of the reliability and predictability of global door-to-door container transports by optimising the cooperation between transport industry and Customs Authorities in the China-EU trade corridor.



The kernel of the project is the development of the Shared Intermodal Container Information System (SICIS) allowing authorised companies and authorities to access planning and status information of selected consignments. Proactive planning according to the SCEM (Supply Chain Event Management) approach allows problems to be forecast well before they might occur. Matching logistics data with security information, including data from electronic seals, container security devices, and scanning equipment, together with the integration of the AEO (Authorised Economic Operator) concept, are basic concepts. Ongoing efforts, e.g. from the EU-China Customs Project (SSTL) will be included in the total concept.

Demonstrating the benefits following 5000 containers in their door-to-door transport from China to Europe will prove the applicability of the INTEGRITY approach.

## News

### ***After only one year SICIS is ready for use - The first SICIS monitored container arrived Europe***



After project duration of only one year, INTEGRITY has put the IT-platform SICIS - Shared Intermodal Container Information System - into practice.

On Monday, 21<sup>st</sup> September 2009, the first SICIS monitored DHL container started its journey at CMML Warehouse, Shekou, China. After being loaded at the Yantian International Container Terminal (YICT) it was carried to the Europe Container

Terminals (ECT) at the port of Rotterdam where it was discharged. The container reached its final destination - the DHL Warehouse in Rotterdam Albrandswaard - on 16<sup>th</sup> October. Further containers were tracked with the first arrival in Felixstowe for BAP Logistics on 20<sup>th</sup> October. In November, a second wave of containers was tracked.

SICIS tracks containers' routes along the entire logistics chain and registers all events generated by the terminals involved and e.g. by Container Security Devices (CSDs). Equipping containers with CSDs is optional though – SICIS can also track containers which are not fitted with these devices.

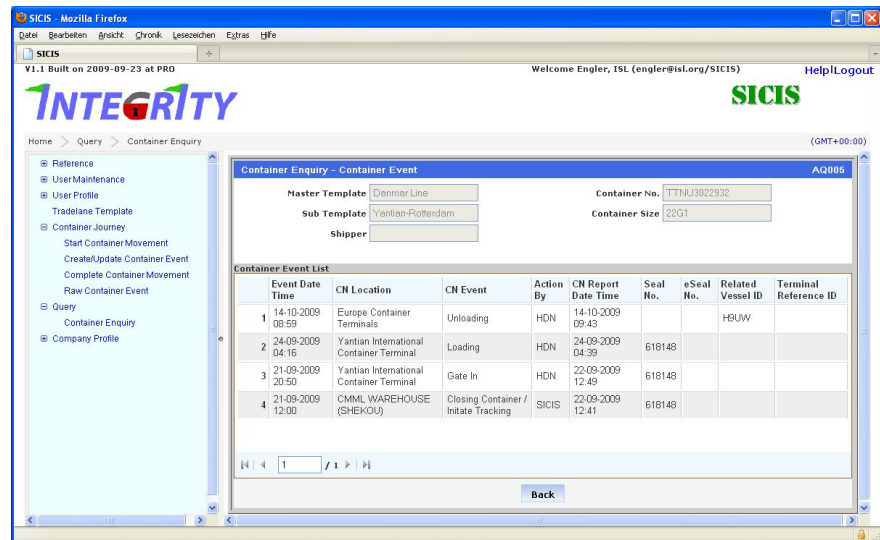
The status of the containers, e.g. deviations

from the route or special security issues, will become immediately visible and if necessary, the responsible participant of the trade lane can take action. A further unique development of SICIS will be to combine the container tracking information with cargo consignment information and vessel tracking data, thereby combining all these information flows into a single stream.

SICIS is an open worldwide platform which all players in the logistics chain can use, it will be a single point where all the logistics and security information is gathered and to which other existing systems can be connected. The technical innovation of SICIS consists of the fact that every kind of CSD resource can be used as a trigger of information. SICIS has the ability to receive the information and to deal with it.

Tony Webster, Director Logistics of A.S. Watson Benelux and Sander Roldanus, A.S. Watson Supply Chain Manager agree about the current situation in transport logistics: "For lots of companies, the logistics chain is still a black hole. Because of that, they can only respond to deviations from schedule at a late stage. And that kind of last minute work always costs money."

SICIS will become the solution for filling this information gap thus reducing this cost factor by achieving Supply Chain Visibility.



SICIS Basic Program – First features are running

## ***The SICIS Features***

SICIS will be developed in different evolutionary milestones. The methodical approach is substantiated in two-part examinations whose stages build on each other and are staggered over time.

### **SICIS 1.0 Basic Program – already running**

The basic features in the SICIS version 1.0 are:

Data Input to SICIS

- Creation of trade lane information (needed for each container)
- Manual data input milestones (start/.../end) of container voyages
- Connection to external systems e. g. HDN and SAVI Trak

Data processing

- Allocating a trade lane template to a container number entered in SICIS (manual container input)
- Allocating a trade lane template to a container number sent by SAVI Trak

Data Output

- Container Enquiry - shows information/milestones of each container

### **SICIS 2.0**

Additional features to SICIS 1.0 are:

Data Input

- Vessel data input or upload
- Connection to external vessel tracking system (e. g. from OHB)

Data processing

- Allocating vessel data to (already contained) container data

Data Output

- Container enquiry - show information of each container and vessel data in Google Maps

### **Further additional features on completion**

Including consignment information - basically a subset of WCO's data model to be inserted to or accessed by SICIS via references.

All these features will be tested with 5000 containers whilst the demonstration phase is running in real life scenarios.

## ***SICIS – User acceptance test and training are accomplished***

From 31<sup>st</sup> August until 4<sup>th</sup> September the Shared Intermodal Container Information System (SICIS) was demonstrated and tested by the responsible development group in Rotterdam.

SICIS uses CSDs (Container Security Devices) which are initialised with handhelds for gathering and transmitting information about transport workflows and security inspection results. Several events like begin of the journey, departure from origin, arrival at gate or quay and end of the journey are documented for all authorised participants of the transport process.

The functionality of the SICIS system was presented by Pauline Chung and Boon Lih Sin from SAVI Networks, Hong Kong. They showed how to activate the CSDs to get a GPS fix and monitor a door-to-door trade lane.

After the demonstration of SICIS, training and user acceptance tests were arranged. Two participant groups activated and initialised the CSDs while the simulation of milestones was carried out by the system developers. The CSDs worked properly and all messages were transmitted.

All tests runs were successfully done. With this progress the first adoption of the SICIS system in a real-world scenario, end of September 2009, could be successfully accomplished.



Test of the SICIS functionality by the development group in Rotterdam.

## ***INTEGRITY on the 16<sup>th</sup> ITS World Congress and Exhibition in Stockholm***

"ITS in Daily Life" was the title of the 16<sup>th</sup> World Congress on Intelligent Transport Systems and Services, which took place in Stockholm from September, 22<sup>nd</sup> to 25<sup>th</sup> 2009.



For the first time the ITS World Congress and Exhibition was a multi-modal event including ITS solutions for road, railway, aviation and sea transport.

Within the SEVENTH FRAMEWORK PROGRAMME the EU Commission invited INTEGRITY amongst other EU funded projects to present its work on intermodality in the "European Research Area". With this stand the EU Commission accomplished an impressive international meeting point for interested public authorities, companies, research institutions and administration representatives. The EU

stand provided an excellent basis for active information exchange about the different research areas and results.

In company with more than 30 other EU funded projects INTEGRITY presented its research and development activities and the INTEGRITY management team took advantage of useful networking on the ITS 2009.



## ***2nd European Conference on ICT for Transport Logistics successfully concluded***

The conference, which was focused on "Energy Efficient and Sustainable Logistics" was held on the 29<sup>th</sup> and 30<sup>th</sup> of October in Venice. The number of participants demonstrates once again the importance of Freight Logistics as the backbone for the European economy and the need to harmonize the interfaces between different transport modes and institutions in Europe.



Nowadays logistics based on "Information and Communication Technologies" (ICT) plays a vital role for the sector. Delays in the availability of necessary freight information accounts for a serious loss of time in transport (e.g. of containers), showing clearly that the optimization of information logistics can lead to a substantial reduction of logistics costs whilst at the same time reducing the carbon footprint of logistics operations.

The audience came from industry, administration and academia. This multidisciplinary group allowed the conference participants to approach the conference issue "Energy Efficiency and Sustainable Logistics" from different angles and interests. The conference topics were backed-up by the research results of several European research projects, namely EURIDICE, FREIGHTWISE, INTEGRITY, KOMODA, SMARTFREIGHT and SMART-CM.

In addition to the high profile line-up of speakers the conference encouraged the exchange of ideas on various topics as part of parallel interactive sessions on day two. ISL – coordinator of the EU funded project "INTEGRITY – Intermodal Global Door-to-Door Container Supply Chain Visibility" organized a session on "Container Security".



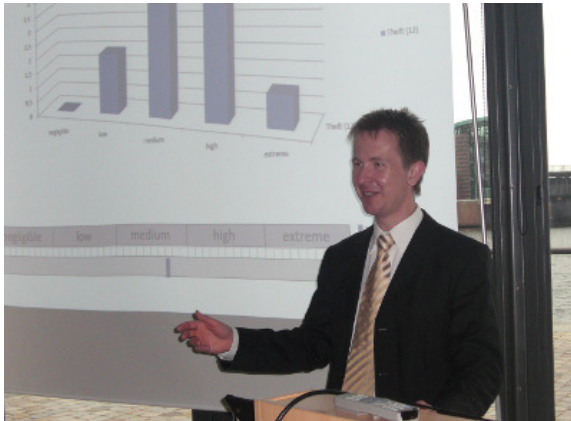
Speaker Prof. Frank Arendt, ISL

The encouragement of the participants led to the common decision to organize the "3<sup>rd</sup> European Conference on ICT for Transport Logistics" on the 4<sup>th</sup> and 5<sup>th</sup> of November 2010 in Bremen. The local host for this conference will be the "Institute of Shipping Economics and Logistics" (ISL) co-located in Bremen and Bremerhaven.

## **ISL organized Security Event Management workshop**

On September 28<sup>th</sup> ISL hosted a "Security Event Management" workshop which brought together practitioners and scientists from Europe to exchange experiences on issues in the field of "Container Security".

In the keynote "Container Security" Prof. Frank Arendt (ISL) presented risks and vulnerabilities in container transport and highlighted measures how to improve security in container transport.



Rainer Müller, ISL

Rainer Müller (ISL) moderated the workshop wherein the participants exchanged their experiences in container security and defined a set of criteria and events which has impact on the security of container transport chains. Afterwards a questionnaire has been carried out to identify the impacts of these criteria and events on the security of current transport chains. Later on the result of this questionnaire has been presented and discussed.

In the meantime Michael Obsadny (ISL) presented a demonstrator of the "Security Event Manager" software, which can be used to calculate a current security status of container transports.

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## **ISL on the Hamburg International Conference of Logistics**

On September 10<sup>th</sup> and 11<sup>th</sup> the HICL2009 - Hamburg International Conference of Logistics - took place at the Hamburg University of Technology (TUHH) for the 4<sup>th</sup> time. The HICL brought together scientists and practitioners from all over the world to exchange ideas and information on the latest advancements and issues in the field of "Supply Chain Performance".

On behalf of ISL, Dr. Nils Meyer-Larsen took part in the conference. In line with the session "Performance in Transport Logistics and Supply Chain Optimization" he presented the topic "Optimizing Visibility and measuring Performance in Intermodal Container Supply Chains" and introduced the EU funded projects CHINOS and INTEGRITY to the audience.

Dr. Meyer-Larsen highlighted the benefits of using RFID on containers (container tags and electronic seals) and showed how events which are generated by us-



Dr. Nils Meyer-Larsen, ISL

ing RFID can be applied in a Supply Chain Event Management (SCEM) system which was developed by ISL.

This system offers all actors of supply chains the benefit of optimizing logistics processes by automated procedures and comprehensive and expeditious availability of data. The outcome of this will be the improvement of reliability and security of container transports.

### ***IJSTL special issue "Container Security and Supply Chain Visibility"***

Guest editors Prof. Frank Arendt and Dr. Nils Meyer Larsen invite logistics experts to present papers for a special issue of the International Journal of Shipping and Transport Logistics (IJSTL)

The special issue "Container Security and Supply Chain Visibility" will be published in 2010 and focuses on innovative concepts and visions about how security and optimisation of logistics processes, which create real supply chain visibility, can be obtained in the best possible and acceptable way. Contributions may focus on one issue (e.g. a technological solution) or - preferably - on a complete picture of future procedures. Therefore, the presentation of different scenarios for possible developments and roadmaps is envisaged.

Topics of interest include, but are not limited to, areas of container security in intermodal supply chains such as:

- Management of risks and uncertainty
- Technological security systems (container security devices, scanners, etc.)
- IT platforms
- Role of Customs Authorities
- Future security processes
- Future processes between industry and administrations, benefits and win-win situations
- Special requirements of specific trade lanes
- Cost-benefit analysis

Submitted papers (full paper due: 30 November, 2009) should not have been previously published nor be currently under consideration for publication elsewhere.

All papers are refereed through a peer review process. A guide for authors, sample copies and other relevant information for submitting papers are available on the website of IJSTL.

Author Guidelines: [www.inderscience.com/mapper.php?id=31](http://www.inderscience.com/mapper.php?id=31).

## Events

September 2009	First Test Run of SICIS
16. October 2009	Beijing Jiaotong University, Presentation for School of Management staff on modern logistics and INTEGRITY
29. – 30.10.2009	ECITL'09 - 2 <sup>nd</sup> European Conference on ICT for Transport Logistics, Venice
13. November 2009	EIRAC high level meeting, Brussels, Presentation on INTEGRITY
16. November 2009	Dryports, Emmen, Presentation on INTEGRITY
24. November 2009	South Korea Shipping and Trade delegation, Rotterdam, Presentation on INTEGRITY
01.12.2009	WP-Leader Meeting, Bremen
02.12.2009	INTEGRITY and SmartCM Meeting, Cologne
03.12.2009	CLECAT Freight Forwarders Conference, Brussels
08.12.2009	SICIS Consignment Level Meeting, Hongkong
February 2010	Project Management Meeting No 4, Den Haag
07. – 09.07.10	IAME Annual Conference of the International Association of Maritime Economists, Lisbon
04. – 05.11.2010	ECITL'10 – 3 <sup>rd</sup> European Conference on ICT for Transport Logistics, Bremen

## Project Partners



**Coordinator**



Ministerie van Financiën



Port of Felixstowe



Europe  
Container Terminals



Yantian International  
Container Terminals



Trimodal Container  
Terminal Venlo



Duisburger Container-Terminalgesellschaft  
Multimodal Container Network



HM Revenue  
& Customs



**XEROX**



A.S. Watson Group



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