Inte-Transit

Newsletter // Issue 1

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EDITORIAL

Welcome to the first issue of the INTE-TRANSIT project newsletter!

INTE-TRANSIT is a strategic MED project that runs from 2013 through 2015, implemented by 8 partner organisations from 4 Mediterranean countries. The basic aim of the project is to achieve a better organisation of the MED ports and their logistic activities areas and establish a cooperation framework between relevant stakeholders in the MED countries.

Moreover, it is highly expected that extensive knowledge exchange and information sharing will be achieved through the project activities and will be of strategic impact not only for the participating ports but also for the remaining Mediterranean ports, operators and logistic parties.

Inside this issue you will find more on the INTE-TRANSIT project achievements during the 1st year of its execution, especially on VSM technology for the improvement of Port Logistics Management Systems, RFID and DGPS technologies for better container/cargo identification. In addition an interview from the project coordinator, Dr. Angelos Amditis, ICCS is also included.

More information is provided through this issue on the INTE-TRANSIT 1st Training activity that took place in Seville, on November 2013 while project participation in related events is also presented.

Enjoy reading!

Geli Latsa
Dissemination Manager
SEAbility Ltd.

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Interview

Angelos Amditis, Project Coordinator, ICCS

Which needs are you trying to address through the INTE-TRANSIT project?

The circulation of goods/ capitals within the Mediterranean Sea faces a number of challenges. As the carrier of international trade between the EU and the Mediterranean countries and Asia, it represents around 75% of the total trade and presents an annual increase of 6% in the late 1990s and early 2000. Especially in 2004, the sea transport of goods in the Med area countries reached 40.8% of the total sea transport of goods in the EU35. In this frame, the INTE-TRANSIT project is aiming to achieve better logistic organisation of Med ports and their logistic activities areas through the use of modern ICT technologies and to establish a cooperation framework between relevant stakeholders in the Med countries for best practice exchange, cooperation and personnel training.

Which are the specific objectives of the project?

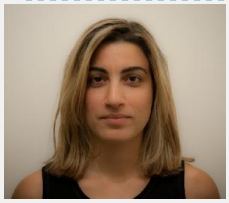
The aims of INTE-TRANSIT cover numerous scientific areas but I could briefly mention the following: The INTE-TRANSIT consortium is aiming at enhancing Med port capabilities so as to better face the increased competition, through the simplification of port administrative procedures and also by providing better and more reliable container tracking. Moreover the strength of the co-operation and networking links between Med ports, relevant authorities and all the actors in maritime transportation is one of our higher priorities. Reduction of intra-port congestion issues via enhanced container localisation and queuing through the use of modern/emerging technologies (e.g. DGPS, RFID, OCR) is also foreseen and is one of the basic pilot objectives. Among the project activities a training framework is also scheduled for ports and their associated logistics areas with the aim to enhance the knowledge of the personnel involved in port operations on new ICT technologies, information management systems and so forth. The 1st Training activity was already held in November 2013 while exchange visits to the different project ports were also organised during the 1st year.

How are you going to demonstrate the proposed solutions?

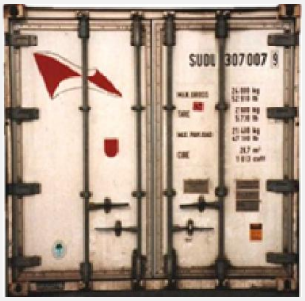
During the project lifetime five pilot activities will run in 4 Med countries - Italy, Greece, Slovenia and Spain. These pilots will demonstrate the improvement of logistic systems and port operations through the usage of the INTE-TRANSIT technologies. The pilot activities are grouped in two different classes. Group A pilot activities will include the installation of a Tracking, Monitoring and Localisation System (for instance RFID, DGPS)on the container terminal equipment (e.g reach-stackers and trucks) enhancing the existing intra-terminal container control and management systems. The positioning and monitoring data of this system will be collected, filtered and processed through the INTE-TRANSIT management platform. The second pilot group will focus in the improvement of the port logistic management system between the ports and the logistic areas through the definition of novel methodologies for the enhancement of existing logistic procedures. In addition, modern technologies (uniform data exchange platforms, OCR, RFID) will be utilised in order to integrate the collection, control and process of the logistic business data into a common logistics platform.

Technologies on container/cargo tracking/monitoring

Athanasia Tsertou, ICCS



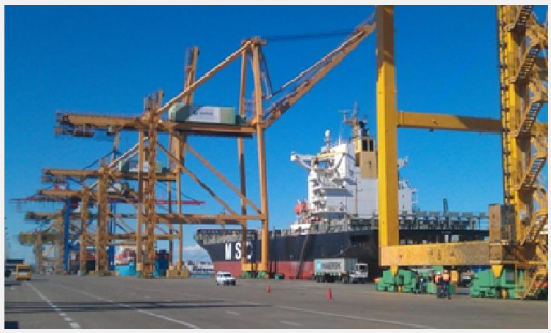
Traditionally, the most popular goods/equipment identification label is the barcode tag. By concept, barcode technology supports line of sight, close proximity reading, which is not well suited for container/cargo identification.



The latter is based on an alphanumeric code printed on the container's door and sides. Normally, reading this code is made using OCR (Optical Character Recognition), which is a mature technology, mostly used for container identification reading purposes, primarily on automated gate systems. Such systems will be installed and demonstrated in INTE-TRANSIT Pilot Group B ports, i.e. in Napoli and Algeciras. A limitation of this technology is that it is only applicable for line of sight, close proximity reading.

A more advanced technology, adopted in INTE-TRANSIT Pilot Group A test sites, namely Piraeus, Valencia and Luka Koper ports, entails using RFID (Radio Frequency Identification) tags and handheld or fixed RFID-readers. RFID is used for container identification on automated yard tracking systems, container security etc. It is is a rapidly growing technology that has the potential to revolutionize port terminal processes as well as inventory control and logistics. Nevertheless, it is not massively deployed yet, mainly due to incompatibilities of systems in the transportation and storage chain and also to non-negligible deployment costs.

Moreover, continuous container/cargo tracking may be performed via location based systems, making use of GNSS (Global Navigation Satellite Systems) or similar positioning techniques. In INTE-TRANSIT, Differential GPS (DGPS) receivers will be installed at the yard equipment (e.g. trucks, reach stackers, front-loaders) carrying the containers. For this purpose, each pilot site from Group A is equipped with a DGPS reference station and connectivity between the station and the receivers for the transmission of the correction signal is maintained either via a Wi-Fi network or a dedicated radio frequency.



The position of the equipment -through DGPS- upon picking-up/releasing containers, will ultimately provide the stacking position of each container in the yard. The output of this procedure will be compiled into GIS (Geographic Information System) data format and will be illustrated on a digital map.

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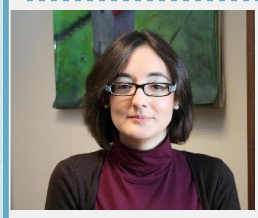
Improvement of Port Logistics Management System: VSM in INTE-TRANSIT

María José González Sánchez, IAT



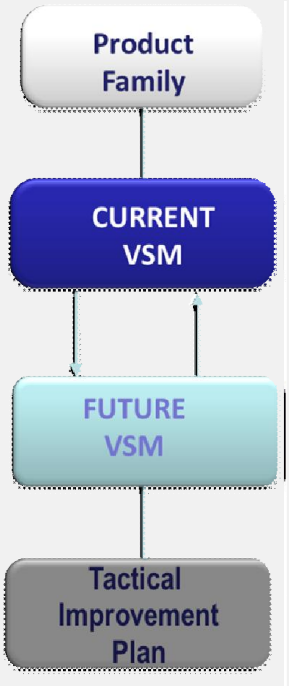
Recently, IAT introduced a new methodology in the ports of Naples and Algeciras Bay in order to improve their logistics processes. This methodology was implemented as a part of the INTE-TRANSIT project, a MED program with the aim of improving logistic processes and increasing technological integration in Mediterranean ports. The methodology used by the ports of Naples and Algeciras Bay consist of four parts, two of which include a tool called VSM. VSM stands for "Value Stream Mapping," a tool used to analyse and understand the flow of material and information that helps one see and understand a process and identify waste. Waste in this context is defined as anything that adds cost to a product or service without adding value, which can include: Transportation, Defects and Rework, Inventory, Waiting, Over processing, Overproduction and Motion. Once all the components of the "Kick-Off Meeting" phase of the methodology have been completed a VSM can be created.

Within the process, two types of VSM'ss are used: current and future. The current VSM analyses the current processes and represents the current statuses of the chosen processes. The future VSM represents the ideal situation once any current waste is reduced or eliminated. The figure annexed shows the VSM process.

Once a current VSM and waste is identified, the future VSM is used to create a Tactical Improvement Plan to define which wastes will need to be reduced first, and how said wastes will be reduced or if possible, eliminated.

This methodology and the use of the VSM tool has already been successfully implemented in the Port of Naples. A current VSM was made, all waste was identified and now the Port of Naples has a future VSM with plans to:

1. Computerise the register of the input data
2. Appropriate location recommendation
3. Optimising movements and location
4. Identifying locations or containers with labels or tags
5. All stakeholders share the same information on the same computer system. They have information of the goods and container in real time; know their status and exact location and the scheduled departure date
6. Recording in real time the output of the terminal container
7. Record any incident and thus yield the history and traceability of any and all containers in the terminal



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Monitoring and tracing of containers and yard equipment : needs and requirements

Kanellopoulos John , PCT

Port of Piraeus

With the advance of globalization, transportation is playing an important role. Containerization is becoming one of the most popular means of transporting goods. Common challenges in managing containers are how to arrange the container schedule and route for avoiding heavy traffic; how to track the container locations continuously and how to minimize intra-port container movements. These challenges make tracking of the vehicles and containers very important.

Modern Terminals are already equipped with Terminal Operating Systems (TOS) that allow them to manage planning, job assignment and container positioning in the container yard. These systems though are based on yard equipment driver confirmation of container positioning and as such remains subject to human error. Physical yard equipment and container tracking is a way to improve container terminal efficiency and in effect, increase profitability, especially in terminals that employ thick stacking. Saving even a few seconds per move, can pile up to a few hours of faster operation for mother vessels resulting in minimizing turn-around times (TAT) of global cargo traffic.

Radio Frequency Identification (RFID) is an emerging technology that uses wireless radio to identify objects from a distance without requiring line of sight or physical contact. Containers' tagging with RFID will enable the tracking of information such as the container number (ID), origin/destination and status of goods inside.

Differential Global Positioning System (DGPS) is an enhancement to Global Positioning System that provides improved location accuracy, from the 15-meter nominal GPS accuracy to about 10 cm in the case of the best implementations.

RFID information when paired with DGPS information can provide the necessary information to track and trace a container within a container yard. The availability of this information leads to:

- Greater Visibility and Control over Terminal operations.
- Improved Terminal Operational Efficiency in terms of asset turnover and labor productivity.
- Real-time container tracking.
- Optimal utilisation of terminal capacity.
- Online seamless access to End Customers.
- Reduction in yard equipment maintenance costs due to minimisation of daily routes.
- Reduction in fuel consumption and emissions.

Port of Valencia

Port of Koper

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The 1st INTE-TRANSIT Training Activity successfully organised in Seville in November 2013

Geli Latsa, SEAbility Ltd.

INTE-TRANSIT has successfully organised its 1st Training Activity on 6-7 November 2013, in Seville. The INTE-TRANSIT project, co-funded by the European Regional Development Fund under the MED Programme, aims at a better logistics organisation of MED ports and logistics areas through the use of modern ICT technologies and at establishing a framework for cooperation between stakeholders in the Mediterranean countries for the exchange of best practices, cooperation and personnel training.

The 1st Training session was hosted and organised by the IAT with the active support of SEAbility, which is the entity responsible for all dissemination activities and training. Approximately 50 stakeholders participated in this event, including management and administrative staff of ports, general professionals of port authorities and/or logistics activity areas bound to maritime ports as well as logistics companies and members of the project Consortium. In the framework of the 1st INTE-TRANSIT Training Activity, the participants explored and gained more in-depth knowledge about different technologies such as RFID, OCR, Port Management Systems, etc., through technical presentations and discussions. More specifically, the topics addressed during this 1st Training Session entitled: " ICT solutions oriented towards the monitoring and positioning of containers and ro – ro: Container logistics using modern ICT technologies" were the following:

- **Container-driven developments in modern shipping and port operations & logistics. Implementation of ICT solutions and lessons learned.**
- **Description of port operations and challenges resulting from thick stacking and automated procedures.**
- **Containers and yard equipment monitoring and positioning.**
- **Information and management systems for port and logistics operations and how they are addressing the issue of system integration.**
- **Modelling and simulation techniques and how they can improve efficiency; description of the VSM methodology.**

The trainers were experts coming from experienced and well-known companies and organisations including SEAbility Ltd., the Institute of Communication and Computer Systems (ICCS), the Piraeus Container Terminal SA (PCT) and the Andalusian Institute of Technology (IAT). In addition, trainees had the opportunity to experience different technologies through a virtual technology lab that was organised in parallel, with the kind contribution of relevant companies and research institutes such as AT4 Wireless, Telvent Transportation, TRANSKAL, IAT- Esfera and ICCS.

This event was the first of a series of training activities that will be organised during 2014 and 2015 in Naples, Algeciras, Valencia and Athens.

The material presented in this 1st Training Activity is also available in the project website: http://www.inte-transit.eu/index.php/en/informationcenter/publications.

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News and events

INTE-TRANSIT participation in the MED Annual event

The INTE-TRANSIT coordinator, Institute of Communication and Computer Systems (ICCS), and the project partner, Valenciaport Foundation, participated in the MED Annual event, which was held in Lisbon on the 23rd and 24th of October 2013. Several transnational cooperation projects in the Mediterranean were presented as well as their access points and the projects' concrete results. ICCS presented the INTE-TRANSIT concept to many event participants and project representatives through the booth sessions. Particular liaison activities included contacts with projects such as: TERENO-MED (Terrestrial Environmental Observatories in the Mediterranean region), PORTA (PORTs as a gateway for Access inner regions), MEDESS4MS (MED Decision Support System for Marine Safety), TERCONMED (Container Terminals as Key Elements in Short Sea Shipping in the Mediterranean) and MEDNET (simplifying and harmonising maritime and port procedures within the Mediterranean region) while Valenciaport Foundation had the opportunity to exchange views and experiences with other European partners, participants in the projects OPTIMIZEMED, MEDNET, FUTUREMED, MAREMED and BACKGROUNDS among others. During the booth sessions several discussions took place regarding the implementation of common strategies and planning procedures towards the improvement of the strategic role of ports as well as maritime and logistics enhancement of ports. It is expected that INTE-TRANSIT will also have a booth at the next MED event so that its results and progress can be presented to the MED (and port) communities. Closing, ICCS had the opportunity to discuss with the JMA representative Luca Palazzo (Joint Managing Authority ENPI CBC MED Programme) and the Cyprus NCP (Planning Bureau, Cyprus) on the status of the programme and current challenges.

INTE- TRANSIT presentation in Logistop Assembly 2013

On 28th November 2013, Antonio Torregrosa, Project Manager of the Valenciaport Foundation, presented the projects INTE-TRANSIT and FUTUREMED during the working session he chaired on "Corridors, Logistic Nodes and Synchromodality", which took place in the framework of the annual meeting of the Technology Platform in Logistics, Intermodality and Mobility (Logistop). Likewise a poster of the INTE-TRANSIT project was presented in a networking area for the exchange of experiences.

INTE-TRANSIT 3rd Plenary meeting

After Valencia and the Port of Koper, the 3rd project Plenary meeting took place in Seville, Spain on 5 of November 2013 and was hosted by IAT. During this meeting, 19 project participants discussed on the work already performed through the different project Work Packages and decide their next actions per WP.
Specifically, the project coordinator presented all the administrative and financial activities (WP1) including reporting and the overall project monitoring. In addition, the WP4 activities on the improvement of information management systems as well as the work to be done have been also discussed. The work plan of WP4 is split in four phases. Currently, INTE-TRANSIT is in the 2nd phase, which is actually the most active period of the project. Group pilot leaders informed the partners about the performed activities and future plans of the different project pilots. Finally, the INTE-TRANSIT Dissemination Leader asked all partners to actively participate in upcoming events and present the project to the different stakeholders.

CONSORTIUM

ΕΠΙΣΕΥ ICCS

LUKA KOPER Port of Koper

PCT

CO.NA.TE.CO. S.p.A.

Agencia Pública de Puertos de Andalucía
CONSEJERÍA DE FOMENTO Y VIVIENDA

SEAbility

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FUNDACIÓN valenciaport

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MED Programme

Axe 3: Improvement of mobility and of territorial accessibility

Objective 3.1: Improvement of maritime accessibility and of transit capacities through multimodality and intermodality

Duration: 1 January 2013 – 30 June 2015

Total cost: 1,834,201.98 Euros

Coordinator: Institute of Communication and Computer Systems

Website: www.inte-transit.eu

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