



MOnitoring the yard in CONtainer Terminal

Scheda informativa

Informazioni relative al progetto

MOCONT

ID dell'accordo di sovvenzione: IST-1999-10057

[Sito web del progetto](#) 

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1 Gennaio 2000

**Data di
completamento**
31 Dicembre 2001



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Coordinato da
SCIRO S.P.A.
 Italia

Obiettivo

Most container terminals operate a Terminal Operating System (TOS). A TOS is a software tool running on standard PC boards, to record the positioning of containers inside the yard and to plan handling operations. TOSs are usually fed with manually collected information often unreliable or late. This is a major cause of several problems and reduces the effectiveness of terminals. The project aims to provide TOSs with precise container positioning in the yard. To do so, the container locations are gathered from the field using a tracking system made of a GNSS coupled to inertial navigation sensors, and integrated with a visual identification system reading the container identification numbers. The system will be mounted on board handling machines. MOCONT will provide a working pre-prototype.

Objectives:

MOCONT is a tool for data capture and processing, covering different modes of transport, to support operations relevant to modal changes during containerised transport. The project aims at developing a system to trace the containers within the terminal yard in real time. It is composed of two parts: a location and an identification system. The location system integrates D-GNSS and Inertial Navigation, and is dedicated (but not limited) to reach stackers. Reach stackers are "small" container handling machines used in several ports throughout Europe. The identification system will be applicable to any lifter, and it will be a visual-based one, since most terminal operators deny the application of tags on containers for identification purposes. With this aim, the solution does not imply any intervention on containers, or major installation of equipment on the yard, neither for location, nor for identification purposes. Finally, an interface (the middleware) will be added to adapt the system to any TOS without changing its characteristics. The target is to eliminate time and personnel consuming control activities performed to check the status of the yard (i.e., the position of containers inside the yard). That is to say that, container handling shall be tracked by the system, reducing the intervention of human operators.

Work description:

The work is based on a problem solving approach. It is a matter of increasing the reliability level of the information fed to and treated by Terminal Operating Systems. To do so, a system composed of a container location system and a container identification system is going to be developed. Both location and identification systems will be developed in order to be used and customised either as a whole (i.e., the MOCONT system), or separately. The solution proposed is expected to be opened to any possible TOS available from the market, in order to make the solution applicable to any container terminal already provided with a TOS. To fulfil such a preliminary requirement, the integration of the container location and identification system is added to the development of a middle layer interface -the middleware- which connects the two systems mentioned above with the TOS. The research and development activities can be logically grouped into three main groups. The first group is composed of all activities dedicated to the definition of the overall system requirements, mainly developed with a tight and close connection between all partners. The second group includes all design and implementation tasks. During this activity, the design of location and identification subsystems will be completed. Then, the two pre-prototype modules will be realised. The third group deals with the project assessment and evaluation and with dissemination and exploitation activities. The assessment and evaluation phase is performed throughout the whole project lifetime, accompanying the technical work and assessing the results achieved. The dissemination and implementation phase starts with a workshop, i.e., a dissemination event performed through the end user club (a group of end users not member of the partnership), which is expected to feed the requirements with some remarks, comments, and even recommendations. At the end of the project lifetime, visits to the site of end user club members will be set. Moreover, a MOCONT web page will be implemented and updated whenever a major result is achieved.

Milestones:

Within the scope of MOCONT three modules are developed as preliminary result, namely the container location module, the container identification module and the synchronisation and communication module. They will be then integrated into a single system, namely the MOCONT pre-prototype, mounted on board a reach stacker that identifies and locates containers in a yard. The system will display on board the location and the identification number of the container handled. A middleware to interface MOCONT to the TOS will be developed. The communication to the TOS will be simulated.

Programma(i)

Argomento(i)

Meccanismo di finanziamento

CSC - Cost-sharing contracts

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