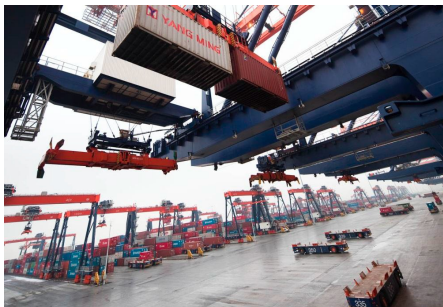


RESEARCH PROJECT

Cargo-ANTs

*Cargo handling by Automated Next generation
Transportation Systems for ports and terminals*



PROJECT DESCRIPTION

Cargo-ANTS aims to create smart Automated Guided Vehicles (AGVs) and Automated Trucks (ATs) that can co-operate in shared workspaces for efficient and safe freight transportation in main ports and freight terminals. The specific objectives are:

1. Increase performance and throughput of freight transportation in main ports and freight terminals and maintain a high level of safety.
2. Develop an automated shared work yard for smart AGVs and ATs.
3. Develop and demonstrate a robust grid-independent positioning system and an environmental perception system that oversees safety of operations.
4. Develop and demonstrate planning, decision, control and safety strategies for Automated Next generation Transportation systems (ANTS), i.e. smart AGVs and ATs.

KEY FIGURES:

- > **Duration:** Sept. 2013 to Sept. 2016
- > **Total budget:** 4,7 Mill. €
- > **Budget for IRI:** 333 k€
(CSIC: 209k€ + UPC: 124k€)

PROJECT PARTNERS:

- TNO, Netherlands
- Volvo Technology, Sweden
- ICT Automatisering, Netherlands
- CSIC, Spain (UPC as third party)
- Halmstad University, Sweden

RESEARCH QUESTIONS:

- Which combination of positioning techniques and sensors allow for **reliable and accurate positioning** for the proposed applications?
- How can **reliable environmental perception** be achieved, in particular moving and stationary object detection, drivable path detection, docking point detection, absolute and relative object positioning?
- How to set up and integrate a vehicle control system, including **high-level site planning, path planning, interaction planning**, and feedback control?
- How can **functional safety** of automated vehicles be achieved?

OUR CONTRIBUTIONS:

- Reliable vehicle localization
- Object detection and classification

IRI CONTACT:

Dr. Juan Andrade Cetto
cetto@iri.upc.edu

