

TIC4.0 NEWSLETTER

1st Semester - 2024

Embracing the 4th Industrial Revolution in the Port Terminal Industry



Top News

CTAC and TOC:

Discover the updates from both events and the role of TIC4.0 in them.

Two publications:

Check out the two new publications of the semester.

Next General Assembly:

Norfolk (VA), US, 21st November 2024



TIC4.0 Newsletter

TIC4.0 - Central office

Boulevard Industriel 9, Anderlecht, 1070 Brussels (Belgium)

TIC4.0 - Projects office

Avda. Muelle del Turia s/n, Edificio APV

E-46024 Valencia, Spain

Copyright of TIC4.0. All rights reserved.





Embracing the 4th Industrial Revolution in the Port Industry

TIC4.0 NEWSLETTER

Introduction

The first semester of 2024 has seen TIC4.0 achieving significant milestones. Firstly, our association has surpassed the 60 member mark, with important companies such as DP World joining our ranks. Secondly, the publication rate has ramped up: two publications have been made available to the public. In these, new topics such as the conversion of the EDI format to TIC4.0 and Terminal Automation have been covered. Furthermore, work has started on the official recognition of the TIC4.0 standards by the British Standardisation Institution (BSI) in the form of a PAS.

In April 2024, the TIC4.0 members gathered for the first General Assembly of the year in the Mediterranean city of Valencia, Spain. Held very closely to the CTAC conference, the event had record-breaking participation, a reflection of the growing commitment of our associates.

Our representatives have been also very active at important events worldwide:

- Port and Terminal Technology Conference (Savannah, USA)
- TOC Europe (Rotterdam, Netherlands)
- TTClub Innovation in Safety Award Conference (London, UK)
- Innovation European-funded projects

Last, but not least, the European projects in which TIC4.0 is active are taking shape. In addition to FOR-FREIGHT and SEAMLESS, this year has witnessed the kick-off of the MISSION project. With a foreseen duration of 40 months, MISSION aims to make advances on the innovative world of just-in-time port calls. TIC4.0 will advise on standardisation matters, assisting with its expertise and know-how.

IN THIS NEWSLETTER, WE WILL COVER THE MAIN TIC4.0 HIGHLIGHTS OF THE SECOND SEMESTER, NAMELY

1 - TIC4.0 PUBLICATIONS: 2024.010 & 2024.011 RELEASES	4
2 - TIC4.0 GENERAL ASSEMBLY VALENCIA, APRIL 2024	6
3 - NEXT GENERAL ASSEMBLY	7
4 - PARTICIPATION IN CONFERENCES AND CONGRESSES	8
5 - PROJECT OFFICE	9
6 - NEW MEMBERS	10



1- TIC4.0 PUBLICATIONS

[CLICK HERE TO
DOWNLOAD](#)

TIC4.0 is proud to share with you our latest publications: **2024.010** and **2024.011**. A significant achievement, these releases have opened up new important topics such as automation and EDI while expanding on previous ones.

[CLICK HERE TO
DOWNLOAD](#)

2024.010 Content

KPI “Throughput” definition

A definition of the “throughput” KPI has been made by the experts of the TIC4.0, making the first time a KPI has been expressed in TIC4.0’s semantics. The definition includes the way of calculating it and defines it as “the sum of objects moved by and/or in a subject during a period of time”.

JSON to FLAT & FLAT to JSON “|” Version:

In TIC4.0 grammar, the dot “.” will be replaced by the bar “|” to improve performance. Testing in a large-scale database revealed low performance due to the dot separator. After testing, the pipe character “|” was chosen for its optimal performance.

Container Handling Equipment (CHE)

This release has made further refinements to the definitions of the movements of machines, its basic movements (pitch, yaw, roll) and specific positions (left, right, up and down). From this release (2024.010) onwards, these will be placed under “Container Handling Equipment” and no longer under “Drive”.

2024.011 Content

EDIFACT to TIC4.0

Since its inception, the EDIFACT standard has been used by ports and other logistics providers. The goal is to translate EDIFACT data into the TIC4.0 data standard/model, providing definitions, data formats, models, and examples for easy implementation, facilitating the translation and integration of EDI data into TIC messages or data lakes.

KPI definitions

KPIs “Carrier Visit Turnaround Time”, “Average Carriervisit Turnaround Time”, “Vessel Turnaround Time”, “Truck Turnaround Time”, “Productivity”, “Productivity Gross”, “Productivity Net”, “Carrier Productivity Cargo Operations” and “Carrier Productivity Carrier Ready to Work” have been defined during this publication period, offering a comprehensive overview on these operational performance indicators.

Reefer definitions

This Release defines the subject “Air”, with the aim of using it as a generic subject for other TIC4.0 areas. Furthermore, a revision of definitions for “Unplugged”, “Plugged”, “Unpowered” and “PowerSource” are provided including the characteristics of the cargo reefer.





WHITE PAPERS

In these two releases, a series of White Papers developed by the different task forces have been published. These papers help to understand how the challenge of standardization in the different areas will be addressed from TIC4.0.

WHITE PAPER "TERMINAL AUTOMATION"

TIC4.0 focuses on enhancing and fostering terminal digitalisation via standardisation and interoperability. As such, the proposal is for TIC4.0 to establish solution-agnostic guidelines to ease automation and enable system integrations

[CLICK HERE TO
DOWNLOAD](#)

HEALTH ENSURING OPERATIONAL PERFORMANCE

Data is reshaping the Ports and Terminals industry. TIC4.0 is creating a common language to standardize processes and improve maintenance, ensuring equipment health and operational efficiency.

[CLICK HERE TO
DOWNLOAD](#)

WHITE PAPER EDIFACT TO TIC4.0

This whitepaper explores integrating EDI into terminal operations with TIC4.0, using metadata for insights and converting EDI data into TIC formats or a centralized data lake.

[CLICK HERE TO
DOWNLOAD](#)

HEALTH ENSURING OPERATIONAL PERFORMANCE

TIC4.0 enhances port operations by tracking equipment health, predicting maintenance needs, reducing downtime, and cutting costs through early issue detection and preventive strategies.

[CLICK HERE TO
DOWNLOAD](#)

2 - TIC4.0 GENERAL ASSEMBLY VALENCIA - APRIL 2024



WE CONTINUE TO GROW THANKS TO THE COMMITMENT OF OUR MEMBERS.

**THANK YOU ALL FOR
ATTENDING TO THE
FIRST '24 GENERAL
ASSEMBLY!**

Held alongside CTAC 2024 in the emblematic Clock Tower Building of the Port Authority of Valencia, the TIC4.0 General Assembly saw a large attendance of associates and guest organisations.

The guests enjoyed a technical visit to the Port of Valencia's facilities and a dinner during which they sampled traditional Valencian dishes, as a prelude to the General Assembly that took place the following day.

Once again, we have the opportunity to see part of the industry gathered at an important event for the sector's growth. We can reconnect with collaborators who share a common goal: to equip the industry with the best tools to develop as a sector and provide the community with efficient and sustainable operations.

During the meeting, the collaboration between TIC4.0 and Boston Consulting Group was presented in relation to the first terminal industry Digitalisation Benchmark, an initiative that is being developed in 2024 to get a reliable picture of the digitalisation landscape and maturity in the port terminal sector worldwide.

3 – TIC4.0 NEXT GENERAL ASSEMBLY

Norfolk (VA), US, 21st November 2024



On behalf of the TIC4.0 Executive Council, we would like to announce the next TIC4.0 General Assembly, which will take place in the **Norfolk (VA), US, 21st November 2024**

Due to the great success of the TIC4.0 General Assembly experience in Valencia in collaboration with CTAC, we have decided to capitalize on this synergy and hold the second General Assembly of 2024 in conjunction with the PORT TECHNOLOGY SUMMIT NORTH AMERICA 2024. We trust that we will achieve the same level of attendance and engagement



PORT TECHNOLOGY
SUMMIT NORTH AMERICA

4 - PARTICIPATION IN CONGRESSES AND CONFERENCES



BRINGING TIC4.0 CLOSER TO THE INDUSTRY

Another semester full of events showcasing TIC4.0's work, objectives, and the value it aims to generate in the industry. As happens every year, during the first semester, TIC4.0 focuses its presence on fairs and conferences in Europe, where events like TOC Europe and CTAC are significant opportunities to engage with the community and where TIC4.0 plays a prominent role.

[PRESS HERE TO SEE THE FULL CONTENT](#)



CONTAINER TERMINAL
AUTOMATION CONFERENCE
EUROPE



5 – PROJECT OFFICE



Athens General Assembly

The General Assembly of FOR-FREIGHT was held in Athens, Greece, from March 4th to 8th.

TIC4.0 presented the results of the report on standardisation, which is its main task in the project. Furthermore, it explored the possibilities of making a correspondence with the IATA standard "OneRECORD" for airport logistics.

The Assembly saw interesting presentations by the PLOTO project, which aims to develop strategies and monitoring systems to enhance resilience against extreme events. Lastly, the visit concluded with a visit to Goldair's handling facilities and the Athens International Airport's apron and airside areas.



Plenary Meeting in Duisburg

TIC4.0 has been active in tasks related to developing concepts for cargo handling interfaces and analyzing autonomous processes in the context of port operations. We are contributing to the analysis of the impact of current standards on the interoperability of systems within the FORFREIGHT platform.

Our team, led by Gonzalo Sandiás, has been coordinating efforts with Fundación Valenciaport to develop and present an innovative solution.

Digitize the maritime sector to improve maritime safety and protect public health by reducing port traffic, associated costs, and greenhouse gas emissions.



MISSION

MISSION will develop an interoperable, real-time digital optimization and decision support tool for coordinated port call operations. This will enhance time, fuel consumption, environmental impact, and safety across the maritime supply chain. Stakeholders will benefit from increased transparency and information sharing, improving resource and capacity planning, including port hinterland modalities, in compliance with the Maritime Labor Convention.

The project commenced with the meeting in Copenhagen in January, where the first contacts between the project partners were established. TIC4.0's main responsibility is to coordinate WPI Process and Technical Interface Standards and to lead task T1.1 Evaluation of existing standards including stakeholder analysis. This latter task is in the final stage of development and will be the project's first tangible result.



During the first semester of 2024, 8 companies have joined TIC4.0 as full members and two as affiliated, broadening the scope of the association by providing their extensive experience within the industry and their different points of view, further enriching the growth and development of TIC4.0.

FULL MEMBERS



AVLINO leverages advanced artificial intelligence and operational data to enhance container terminal operations by predicting and mitigating inefficiencies. Through AI-powered digital twin modeling, AVLINO optimizes container moves and reduces costs. Their suite of solutions includes AICON Berth for real-time berth planning, AICON Dispatch for improving dispatch efficiency and equipment utilization, and AICON Yard for optimizing yard container handling and preventing unnecessary rehandles, all aimed at streamlining cargo flow and maximizing revenue for terminal operators.



CAD-IT Consultants, a Singapore-based company with 15 global offices and 32 years of experience, specializes in digital transformation. They offer solutions to enhance innovation, quality, productivity, and throughput. CAD-IT supports clients in adopting Industry 4.0 technologies like IoT, AI, Computer Vision, AR, Telemetry, Cloud Computing, Big Data, and Engineering Simulation. Their expertise includes port digital transformation projects covering planning, scheduling, operations, engineering, truck monitoring, HSE, and advanced analysis. They implement these changes using lean methodology and Smart Port System (SPS) technologies.





Based in Israel, Conbo AI provides digital visualization solutions to increase process visibility in real time. Among other solutions, Conbo AI provides: Visibility platform – Real-time tracking and analysis of moving objects using existing cameras (land, sea, rail), yard/Gate. Berthline Operations real-time management tool – event long and enhanced predictability and safety. Workforce dashboard – Real-time tracking and analysis of moving objects using existing cameras and carbon Emissions monitoring and reduction.



DP WORLD

DP World is a global logistics provider covering the whole range of services and operations in cargo logistics, port terminals, maritime and free trade zones. With more than 100,000 employees, DP World is present in 75 countries, operating in container logistics, Ro-Ro and vehicles handling, breakbulk, solid/liquid bulks and cruises/ferries, among others.



GullsEye is a company whose main product is a terminal operating system that accelerates container, ro-ro, general cargo, liquid cargo services in the terminals. With advanced monitoring and reporting modules GullsEye guarantees customer satisfaction and provides comprehensive auditability.



Lynxis is an innovation platform dedicated to transforming landside logistics facilities, including marine, intermodal, and inland cargo terminals. They help these facilities optimize operations by mitigating risks that impede cargo flow. Lynxis works closely with customers to create a comprehensive blueprint that integrates infrastructure, equipment, technology, and personnel into a cohesive operational model.



For over 60 years, Mi-Jack Products has been designing highly durable and reliable material handling equipment. Their Rubber Tired Gantry (RTG) cranes are among the most advanced and versatile handlers in the industry, with features like Power-on-Demand, GPS-guided steering, and customizable dimensions.



Duisport, the world's largest inland port, offers comprehensive logistics solutions. Their services are divided into four main areas: industrial areas and logistics properties, logistics services (including intermodal transport, project logistics, and chemical logistics), packing logistics, and contract logistics. Duisport manages settlement processes and provides consulting services, making it a globally recognized full-service provider in the logistics sector.

JOIN THE TIC4.0 COMMUNITY

FULL MEMBERS



AFFILIATED MEMBERS



ENDORSED BY



MEDIA PARTNERS





For more information, visit www.tic40.org or contact:
secretary_general@tic40.org.
president@tic40.org.

