

THE JUST-IN-TIME PORT CALL: MAKING VISION A REALITY



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There is an urgent call for the maritime industry to reduce CO2 intensity in international shipping. The International Maritime Organization (IMO) agreed to reduce greenhouse gas emissions by at least 40 per cent over 2008 levels by 2030 and 70 per cent by 2050. One way container shipping can help the IMO meet these goals is through an optimised, Just-In-Time (JIT) port call process, which will facilitate vessel steaming speed optimisation and reduce CO2 emissions.

To help make this vision a reality, DCSA initiated a multi-year Just-in-Time Port Call Programme to establish digital standards for the port call process. These standards will allow carriers, ports, terminals and other

service providers involved in a port call to exchange event data in a uniform way, enabling automated data exchange, which is imperative for achieving a JIT port call.

The DCSA JIT Port Call Programme has produced and published interface standards and messaging Application Programming Interface (API) specifications for all 50 event timestamps defined in its port call data definitions, which address the six main parts of a port call:

- Berth arrival planning
- Pilot boarding place arrival and service planning
- Pilot boarding place and berth arrival execution

- Start cargo operations and services
- Services and port departure planning
- Port departure execution

DCSA's complete framework of JIT port call standards supports digital port call planning, increased operational efficiency and optimal resource utilisation. It is the next major milestone in the effort to achieve a digital, global, transparent, JIT vessel voyage ecosystem following the 2020 publication of DCSA Standards for Operational Vessel Schedules (OVS). DCSA OVS standards enable automatic sharing of schedule information between vessel operators and their partners.

To provide a global industry framework that preserves investments, DCSA

collaborated with the International Taskforce Port Call Optimization (ITPCO) and IMO to align port call data definitions with existing standards.

PORT CONGESTION AND THE LACK OF TRANSPARENCY

The lack of transparency in international multi-modal transportation is a significant contributor to port congestion and supply chain disruptions, which have been exacerbated by the COVID-19 pandemic. While there are many small issues that combine to cause port congestion, having good quality data from end to end in a transaction between shipping lines and ports will provide the transparency required to identify exceptions and their causes, allowing shippers to take mitigating actions.

Achieving this transparency requires interoperability between the systems used for data sharing by all parties in the supply chain. And interoperability can only be achieved by standardising the following elements:

- Data semantics – data formats and definitions of terms (e.g. ship arrival) must be the same for every stakeholder – including carrier, port, and terminal. Aligning data semantics will give stakeholders ‘one truth’ in data, providing a standardised basis for analysis to improve decision making and increase efficiency.

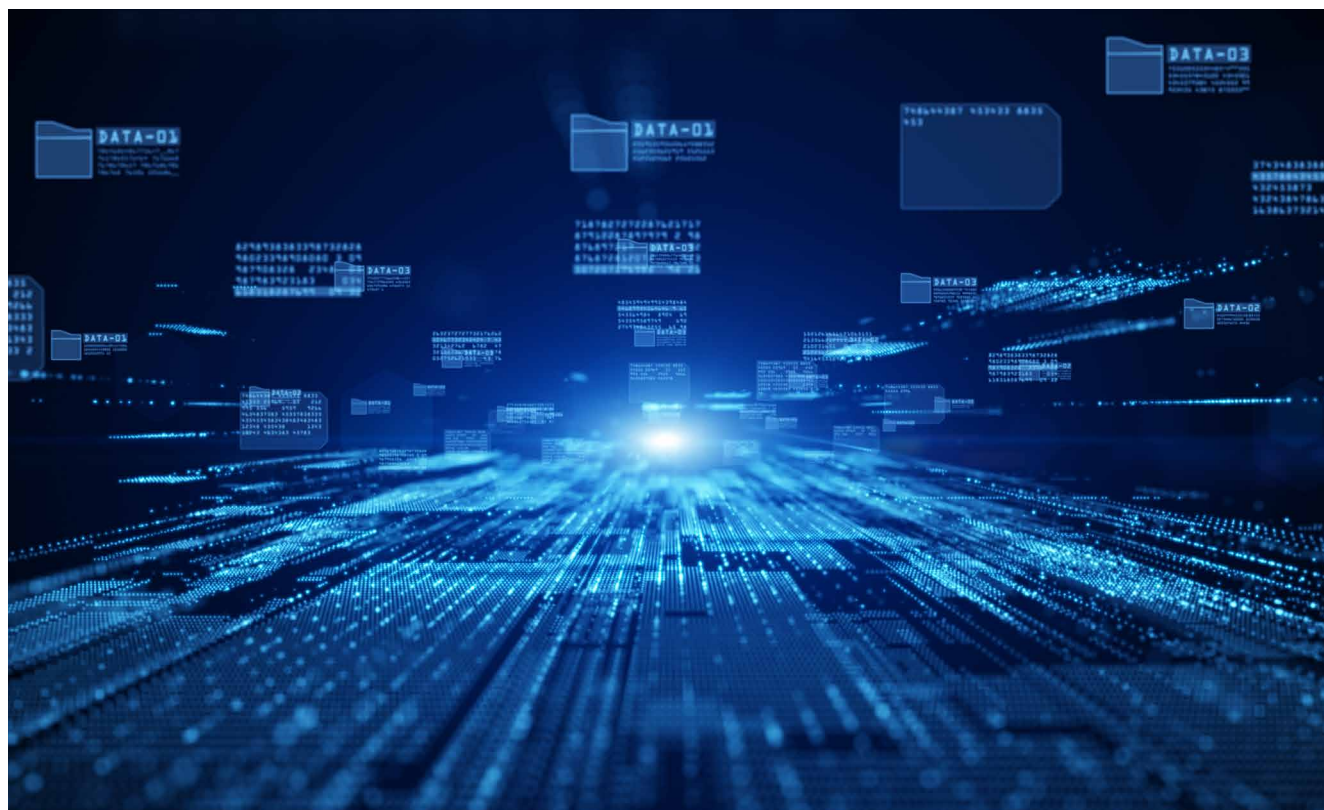
- Data integration – proprietary solutions keep data in silos. Systems must have a standardised way to communicate data with each other. The API is a modern technology used in many industries, such as banking and e-commerce, to enable standardised, real-time data exchange. If adopted by container shipping, APIs will enable the industry to respond faster to changing conditions.
- Data metrics – when data metrics are aligned across ports, performance can be universally measured, analysed, and optimised. Currently, communications data cannot be tracked, which makes performance measurement and optimisation virtually impossible.
- Multi-modal transport requirements – standards must account for the requirements of different modes of transport (e.g. vessel, truck, rail, barge etc.).

DCSA’s mission is to enable interoperability between systems for all stakeholders in the port call process, as well as between container shipping lines and their customers. As a nonprofit, independent organisation, DCSA publishes open-source standards that are vendor-neutral and free for everyone to use. Wide adoption of DCSA standards will ensure interoperability, which will lead to greater transparency and efficiency across the supply chain.

PROOF OF CONCEPT: THE PORT OF HAMBURG

DCSA JIT Port Call standards are being tested by carriers, ports and terminal operators at multiple ports around the world. The first proof of concept (POC) has been implemented by the Port of Hamburg cluster with promising results. The cluster is a collaboration between the Hamburg Port Authority (HPA), the Hamburg Vessel Coordination Center (HVCC), CMA CGM, Evergreen and Hapag-Lloyd, with DCSA facilitating.

As Germany’s largest port by volume and the third-busiest port in Europe, the Port of Hamburg is an innovative industry leader that has been an early adopter of many advanced technologies. Participating in the cluster is one more step in the multi-year evolution that HVCC began a few years ago to fully digitalise ‘handshakes’ between parties (e.g. carriers, terminals and port authorities) during ship arrival, rotation and departure. For HPA, the test provides an opportunity to intensify data sharing between cluster participants while widening the data-sharing ecosystem beyond the port community to include sharing of operational data with government organisations. For the carriers, CMA CGM, Evergreen and Hapag-Lloyd, the pilot provides valuable experience communicating via digital standards with the port community, which can





be applied to future interactions with other ports.

Creating standards that optimise data sharing between port call participants is only the first step towards achieving a JIT port call process. The second step is for carriers, ports, terminals and other relevant service providers to implement the standards using API technology, which will enable real-time data exchange. While technical readiness varies by stakeholder, the organisations involved in this POC were all able to meet the necessary requirements.

Organisations must also be prepared to address the human factors involved in making such a significant change. Existing port call processes are already optimised using available technologies, so participants must come to embrace the mindset that implementing new technologies and digitalising processes will succeed in improving communication and eliminating inefficiencies.

The collaboration and alignment at work in the Hamburg JIT POC demonstrates the mindset, pragmatism and leadership industry participants must embrace to drive transformative change. The stakeholders interviewed for this piece agree that the time is right for the conversation in the industry to move from 'if' digitalisation will take place, to 'how' and 'when'.

STAY TUNED FOR RESULTS FROM THE HAMBURG CLUSTER

Achieving a standards-driven port call ecosystem will enable both public and private stakeholders to collaborate to provide carriers with a transparent and efficient port call experience which can be passed on to their customers in the form of increased reliability and customer satisfaction. Further results and learning will be shared in the coming months as the POC ends and live implementation begins.

The port call is the perfect way to showcase how critical it is to have an interoperable technology framework that enables seamless communication and cross-stakeholder collaboration. By adopting DCSA standards for JIT port calls and OVS, the industry will see the emergence of a new vessel voyage ecosystem in which these activities are collaborative, digital, data-driven processes. Carriers, ports, terminals, service providers and customers of container shipping alike will benefit from greater efficiency, transparency, sustainability and lower costs.

By improving efficiency and transparency, digital standards will not only help mitigate disruption, they will foster a higher level of trust between stakeholders. Once trust through transparency is established, real innovation can occur—innovation that will enable reliable, easy-to-use, secure, and environmentally friendly container transportation services.

ABOUT THE AUTHOR

As the CEO of DCSA, Thomas Bagge is responsible for building strong relationships with stakeholders in shipping and beyond, as well as leading the team to achieve DCSA's mission of enabling systematic collaboration in container shipping through technology standardisation. Prior to joining DCSA, Thomas was instrumental in a number of transformational activities involving technology, process and people at Maersk.

With two decades of experience in transportation and logistics, Thomas has an in-depth understanding of customers and industry drivers, as well as the challenges of digitising the container shipping industry.

ABOUT THE ORGANISATION

Digital Container Shipping Association (DCSA) is a neutral, non-profit group founded by major ocean carriers to digitise and standardise the container shipping industry. With the mission of leading the industry towards systematic collaboration, DCSA drives initiatives to make container transportation services transparent, reliable, easy to use, secure and environmentally friendly. DCSA's open-source standards are developed based on input from DCSA member carriers, industry stakeholders and technology experts from other industries. DCSA member carriers include: MSC, Maersk, CMA CGM, Hapag-Lloyd, ONE, Evergreen, Yang Ming, HMM and ZIM. Please download DCSA standards at dcsa.org.

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