

Achieving Traceability in International Supply Chains

UN/CEFACT Supply Chain Cross-Industry Track & Trace project

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Transparency in Supply Chain

Innovation & Standards are needed to increase the **efficiency, resiliency and sustainability** of logistics!

Smart containers

- Physical reliable data for end-to-end visibility
- UN/CEFACT Smart container project achievements

Cross industry Multimodal Track & Trace

- Track & Trace beyond a single mode of transport
- UN/CEFACT Supply Chain Cross-Industry Track & Trace project

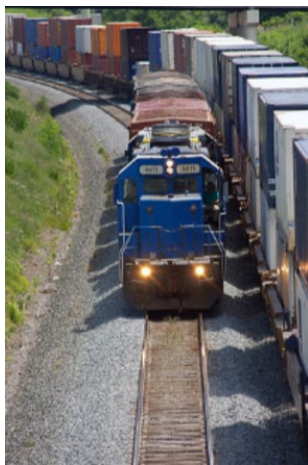
The Maritime Ecosystem Needs Innovation to Avoid "Paving the Cow"



BY MIKAEL LIND ET AL. 12-09-2020 03:20:00

by Mikael Lind, RISE (Research institutes of Sweden), Hanane Becha, UN/CEFACT, André Simha, MSC (Mediterranean Shipping Company SA), Steen Erik Larsen, A.P. Moller – Maersk, Eyal Ben-Amram, ZIM, and David Marchand, Traxens

*Avoid Paving the Cow → Business process should not be automated as it is BUT should be **rethought** first to enhance its effectiveness and efficiency!!*



Cooperation on intermodal standards vital for supply chain efficiency



Story by: Hanane Becha, Todd Frazier, Rudy Hemeleers, Steen Erik Larsen, Bertrand Minary, Henk Mulder, André Simha and Jaco Voorspuij
October 7, 2020 | Features

End-to-end supply chains typically involve several modes of transport and a wide range of stakeholders. The original Seller, as well as the final Buyer of the product have little visibility of the location and condition of the product during transportation.



Intermodal Supply Chain Facilitation through Adoption and Implementation of International Communications Standards

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17 articles

By Hanane Becha, Todd Frazier, Rudy Hemeleers, Steen Erik Larsen, Bertrand Minary, Henk Mulder, André Simha, and Jaco Voorspuij.



By Hanane Becha, Todd Frazier, Michael Schröder and Jaco Voorspuij 23/12/2020

This article is a follow-up to two earlier pieces, produced largely by the same authors, outlining the development of semantic and technical interoperability in digitising global multimodal supply chains.

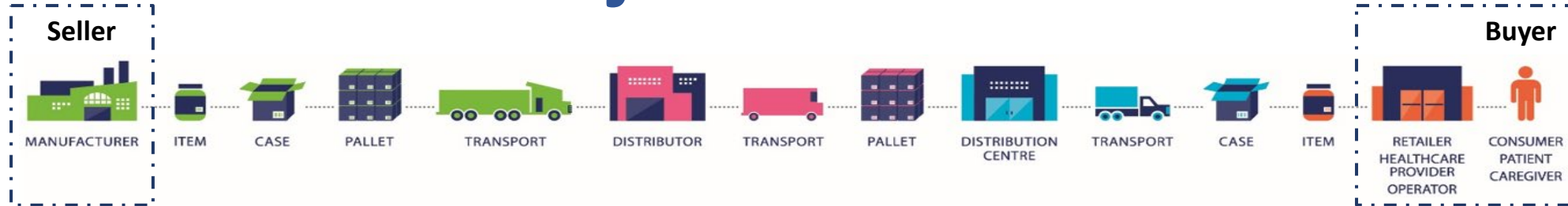
Transparency Multimodality Interoperability Collaboration Standards

➤ Transition from the standards adopted by individual transport modes to multimodal efforts standards organizations

➤ Information is searchable, available, and interpreted the right way



UN/CEFACT Cross Industry Supply Chain Track & Trace Project



The mission of this project: Where is the product at any time?

- Enable tracking and tracing of products (or assets) and information sharing in *standard* electronic format.
- Define *use cases* to explain the data that will be generated and captured concerning products or other traded items (e.g., lots).
- Track and trace any *traded and identified items* including transport equipment or assets (e.g., box, pallet, container, etc. ... Even empty!).
- Logistic services: transport the traded goods between the *seller* and the *buyer*.

Track & Trace Project

Current Status and Deliverables

- Information gathering phase: Green Paper compiling concepts, scenarios, and use cases for all primary modes of transport - has been completed (82 pages)

Formal DELIVERABLES of the project:

- White Paper: “*Integrated Track and Trace for Multi-Modal Transportation*” presented to the 27th UN/CEFACT Plenary in April 2021
- Business Requirements Specification (BRS) detailing the Business Processes of Cross Industry Track and Trace
- Message structures (as class diagrams) for the business transactions and XML Schemas


Tracking & Trace Methods

- Traditional tracking methods – manual and automated
- Automated Identification and Data Collection (AIDC) methods
 - Radio Frequency Identification Technology (RFID-based tracking)
 - Optical Character Recognition Technology (OCR-based tracking)
- Global Positioning System using Internet of Things (IoT) telematics devices (GPS-based tracking)

Note. The environmental parameters captured by smart containers are not part of the T&T project

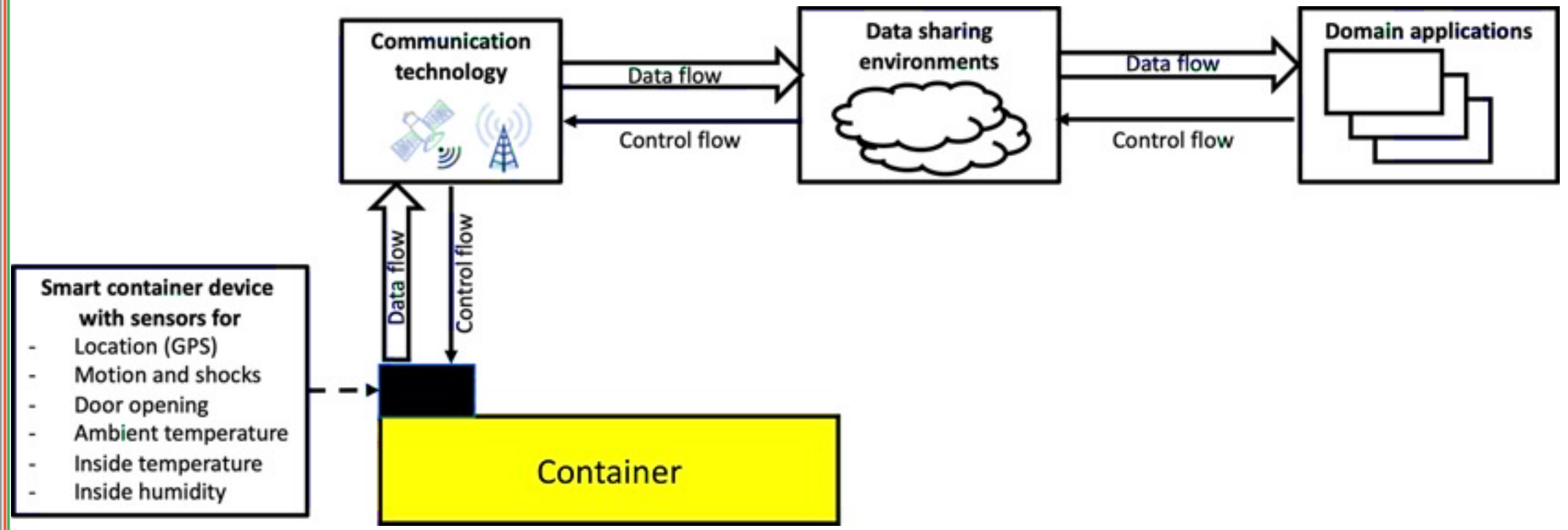
What is a Smart Container ?

- A smart container is “*transport equipment outfitted with an IoT*” device.
- Any Transport Equipment could become Smart asset
- *Takes measurements and communicates with the outside world*

 *where is my container ? Conditions of my goods?*

- No single player of the logistic chain has a granular door-to-door overview
- Evidence of the physical trip execution
- Delineation of the responsibilities of the different players
- Good candidate for *Data Pipelines*

Smart Container Data Flow



The power of Smart Containers

Going beyond business as usual

- Regular events versus significant alerts..
- Predictive services

7298 Views

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The Power of Parameters in Smart Container Solutions

Delivering data that matters, from periodic events to context-based alerts

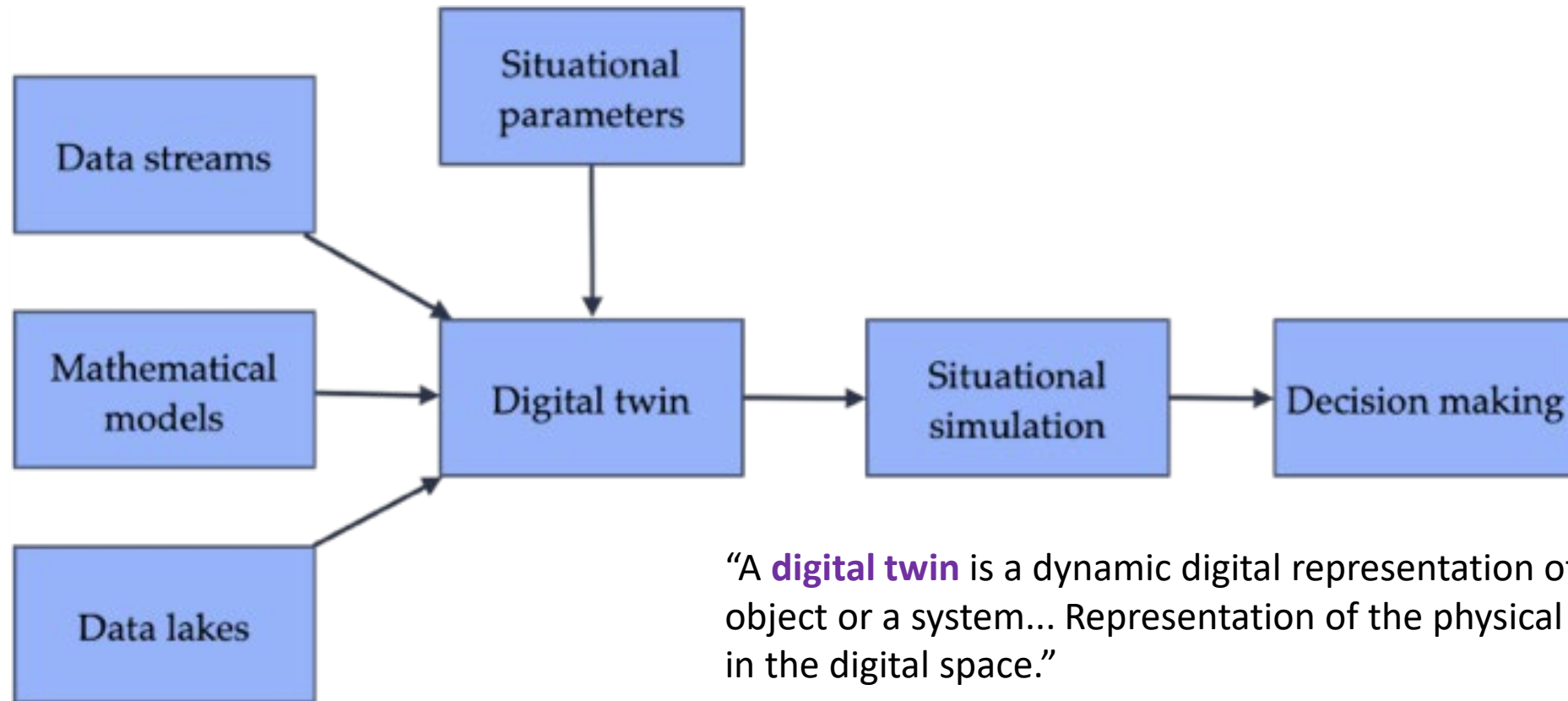


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BY HANANE BECHA 04-28-2020 09:14:09

Smart containers hold promise for revolutionizing supply chains. As leading carriers adopt smart container solutions, they gain valuable data that can be shared with shippers and other supply chain stakeholders. But generating and

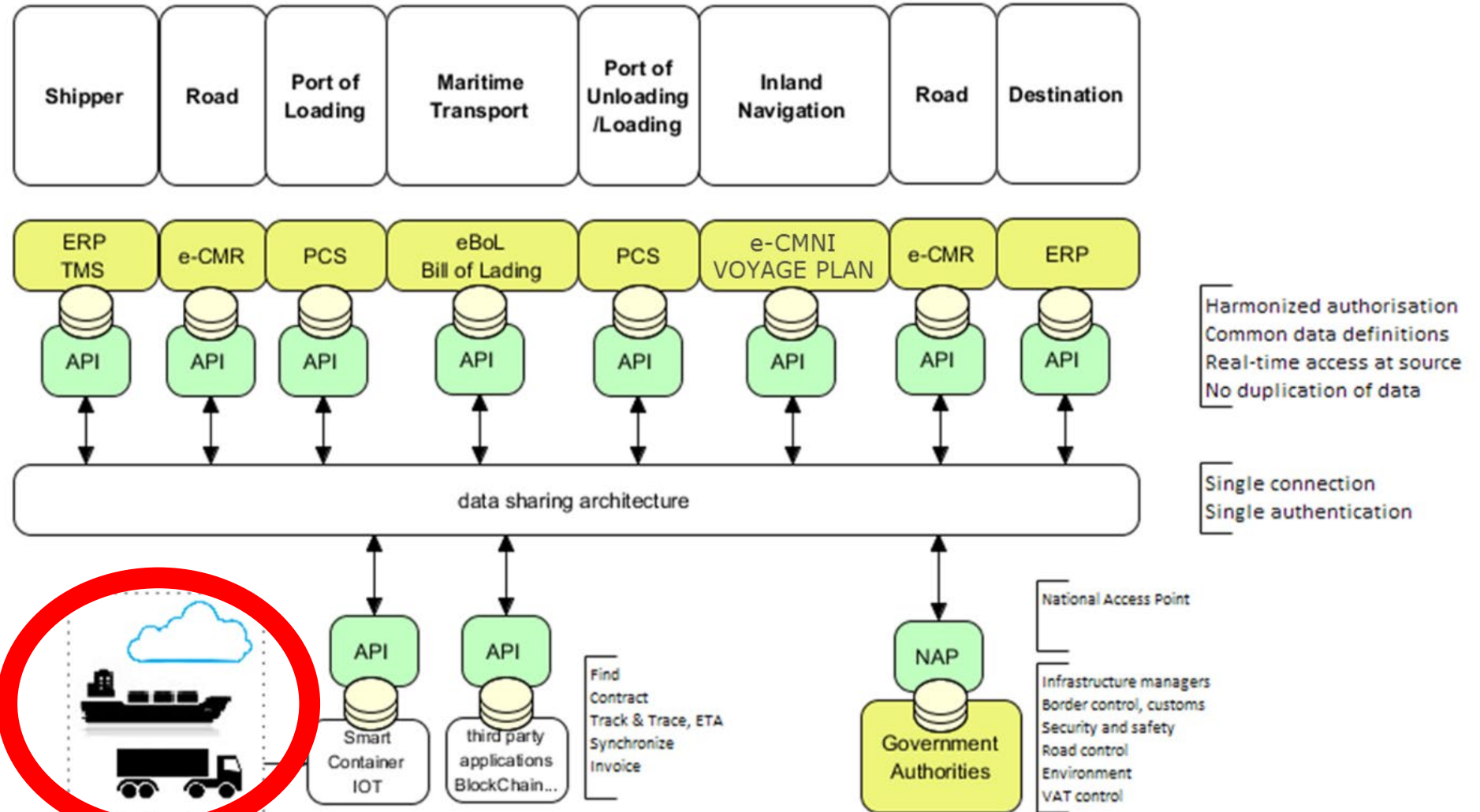
Digital Twin for well-informed decision making



“A **digital twin** is a dynamic digital representation of an object or a system... Representation of the physical world in the digital space.”



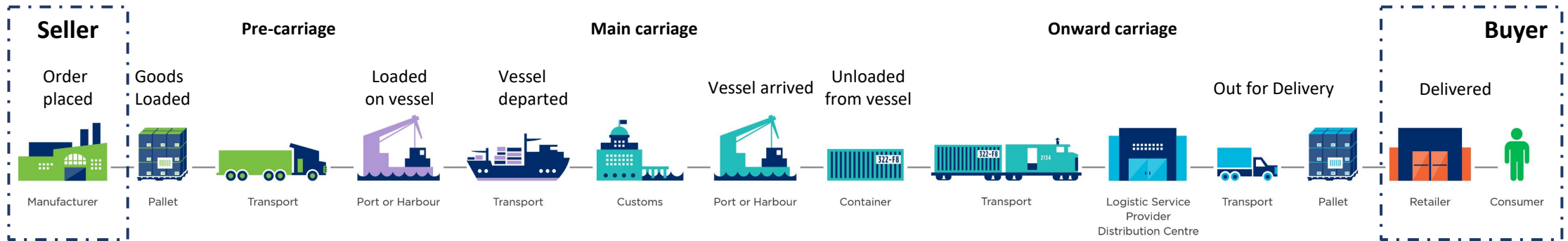
Multiple Digital streams to enhance the transparency The smart container: The new actor in the Supply Chain



Standardized Smart Container data is key to smart Supply Chain

UN / CEFACT

Track & Trace Data and Data Pipelines Waypoints



- Electronic record of data about the goods and movement built up from the supply chain
- Data can be provided in ‘snippets’ at various waypoints
- The person who knows the information to be true should provide the data
- Those who need the information should have access to those data fields to perform their role

Key take away messages

- Logistics industry is *essential* for the world economy
- Logistics industry is a *fragmented* self-organized ecosystem
- Digital Data Streams (DDS) are important for a better *context awareness* and *decision making*
- *Track & Trace Standards can* enable multimodal transparency
- Smart Containers *complete the missing* link offering an end-to-end visibility
- Innovation is needed to enhance *predictability* and *efficiency*
- Standards secure investments and facilitate integration of DDS
- Collaboration of all actors is needed for *resilient eco-friendly* supply chain

Thank you

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