IPIC 2023

9th International
Physical Internet Conference

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Athens, Greece

# Thrive with standards moving towards the Physical Internet

IPIC-2023

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# Starting Points

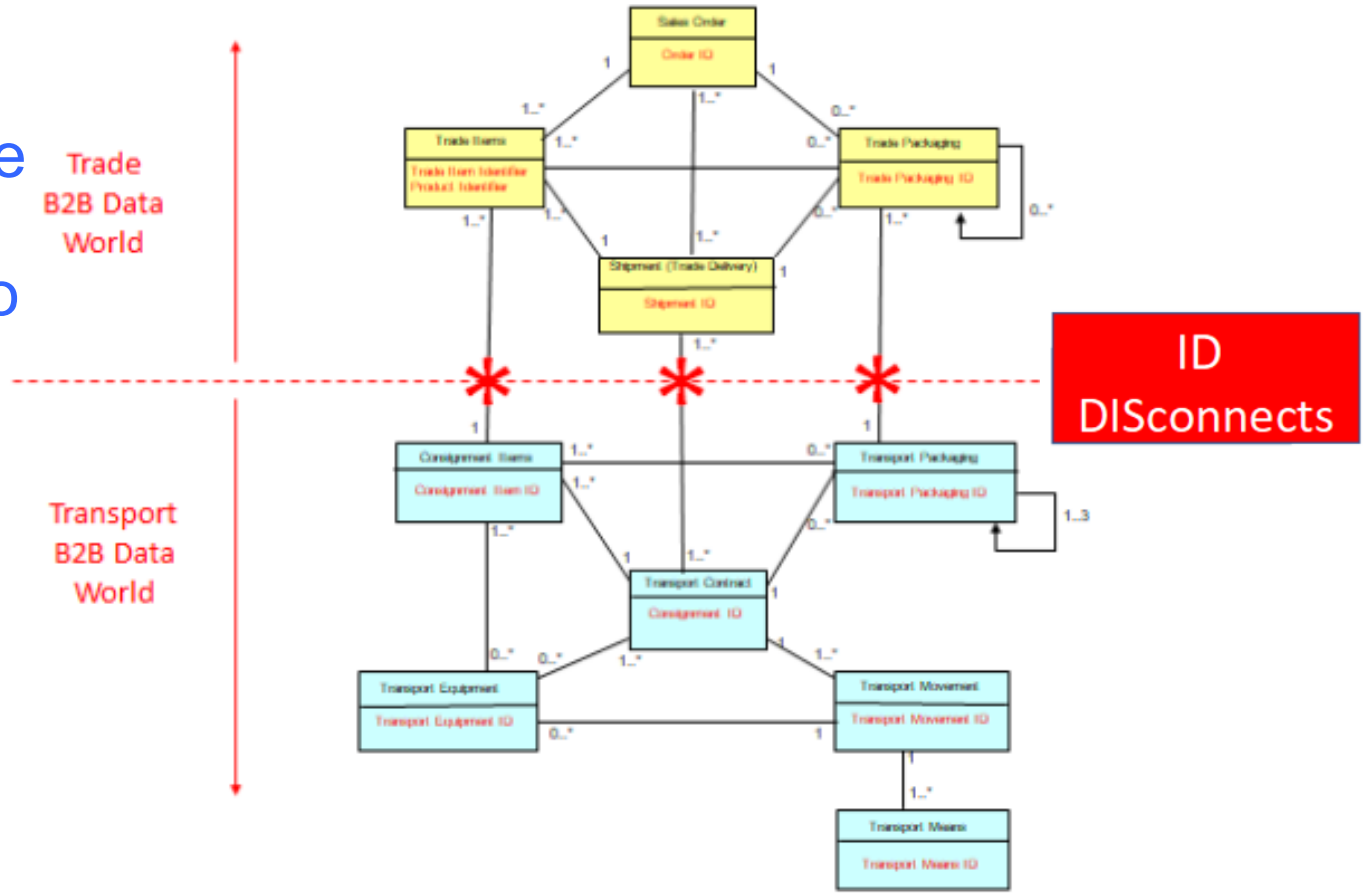
- All **TRANSPORT** is driven by a **TRADE** transaction
- Sellers and Buyers ask two main questions from Transportation
  - ***Where are my Goods?***
  - ***Are my Goods still in good condition?***

So, All **TRANSPORT** data flows
**must be linked** to the **TRADE** transaction

- Cargo does not move unless data moves
- **Physical Internet does not work unless data moves**
- Data does not move (well) without global data standards

# Trade – Transport DISconnect

- UN/CEFACT recognised Trade and Transport actors use different entities and objects to manage their daily operations
- They also tend NOT to use common identifiers NOR link the identifiers used in Transport with those used in Trade.



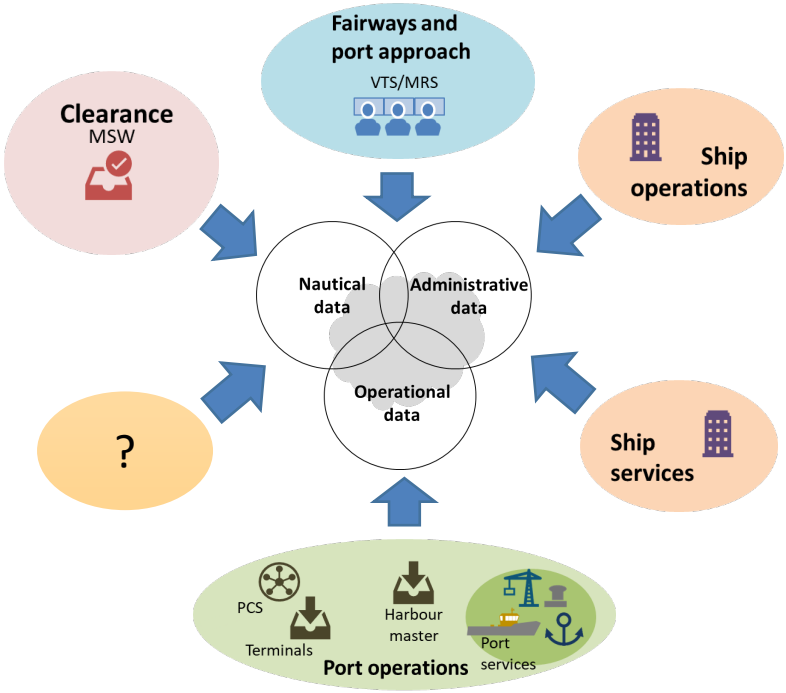
# Scope of this presentation

- Focus on standards that are close to industry users processes
- Present their main features
- Show how they help fix the DISconnect
- Map them into a simple visual framework against below simplified Supply Chain


- Benefits of using the framework for industry users and standardisation efforts

# Maritime and Ports – ISO 28005





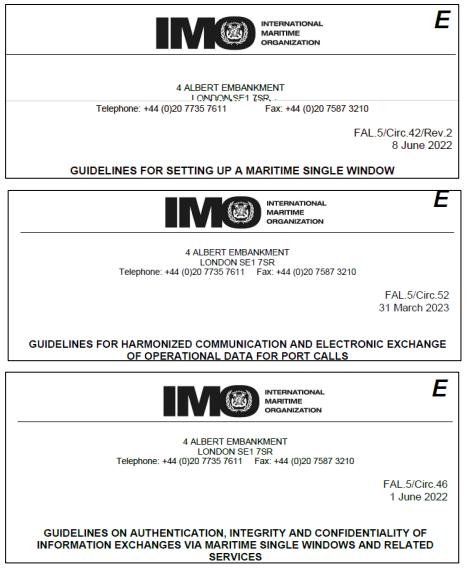

2000: The FAL Compendium defined how the FAL Convention could be implemented by electronic means.

2019: Establishment of the new IMO Compendium

**>2021:** IMO Compendium becomes a **focal point for further global standardisation of ship-shore cooperative processes.**

**ISO 28005 series provides technical specifications for the maritime community**

# Main components of ISO 28005



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FAL.5/Circ.42/Rev.2
8 June 2022

GUIDELINES FOR SETTING UP A MARITIME SINGLE WINDOW

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GUIDELINES FOR HARMONIZED COMMUNICATION AND ELECTRONIC EXCHANGE OF OPERATIONAL DATA FOR PORT CALLS

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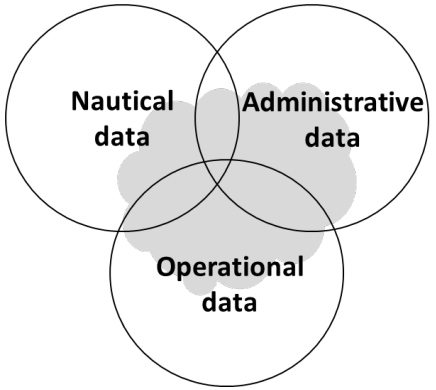
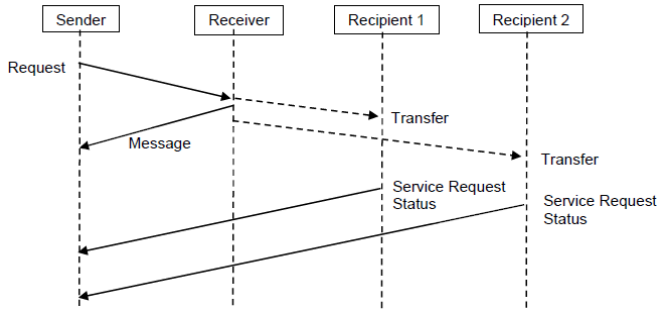
FAL.5/Circ.46
1 June 2022

GUIDELINES ON AUTHENTICATION, INTEGRITY AND CONFIDENTIALITY OF INFORMATION EXCHANGES VIA MARITIME SINGLE WINDOWS AND RELATED SERVICES


Principles and semantics for data exchanges between ship and shore in line with IMO guidelines.

A technical specification for development of a set of consistent APIs to support a business process.

A data model where data elements can be selected to meet the requirements of the business process.

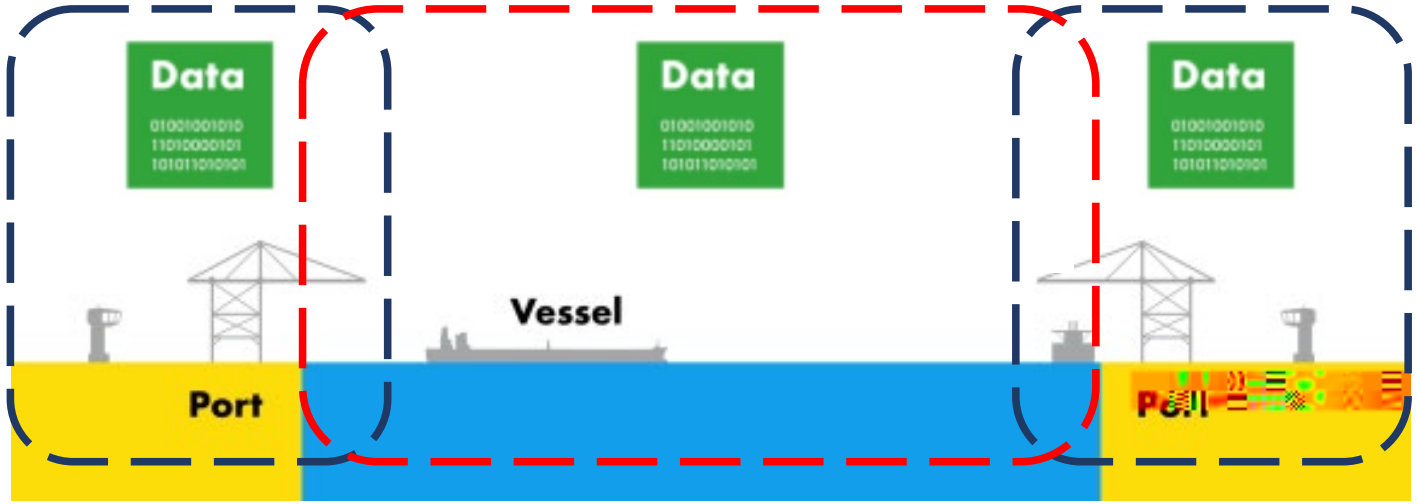
**Message Implementation Guides (MIG)** that specify the APIs to support a business process, e.g. maritime single window, just in time etc.

ISO 28005-1 (API design principles)

ISO 28005-2,3,… (**business processes** and data elements)

# Supporting Key Maritime Initiatives

- Port Call Optimization and Just-in-Time Arrival will deliver major contributions to solve many current problems in Maritime and Ports operations
- ISO 28005 is being updated based on efforts by
  International Taskforce Port Call Optimization (ITPCO) and
  IMO Global Industry Alliance for Sustainable Shipping (JIT Arrival)




Port Call Optimization
Just In Time Arrival

# Connecting Maritime with Landside Transportation

From the start, 10 years ago, ITPCO recognised **maritime** transportation **must be an integral part** of the end-to-end supply chains

Focus: movement of the vessel:

- Realizing safe and sustainable berth to berth navigation
- Important for shipping, shippers, terminals and ports


Related: movement of the vessel's cargo:

- Realizing reliable and sustainable end to end supply chain
- Important for shippers

# Smart Containers (UN/CEFACT)

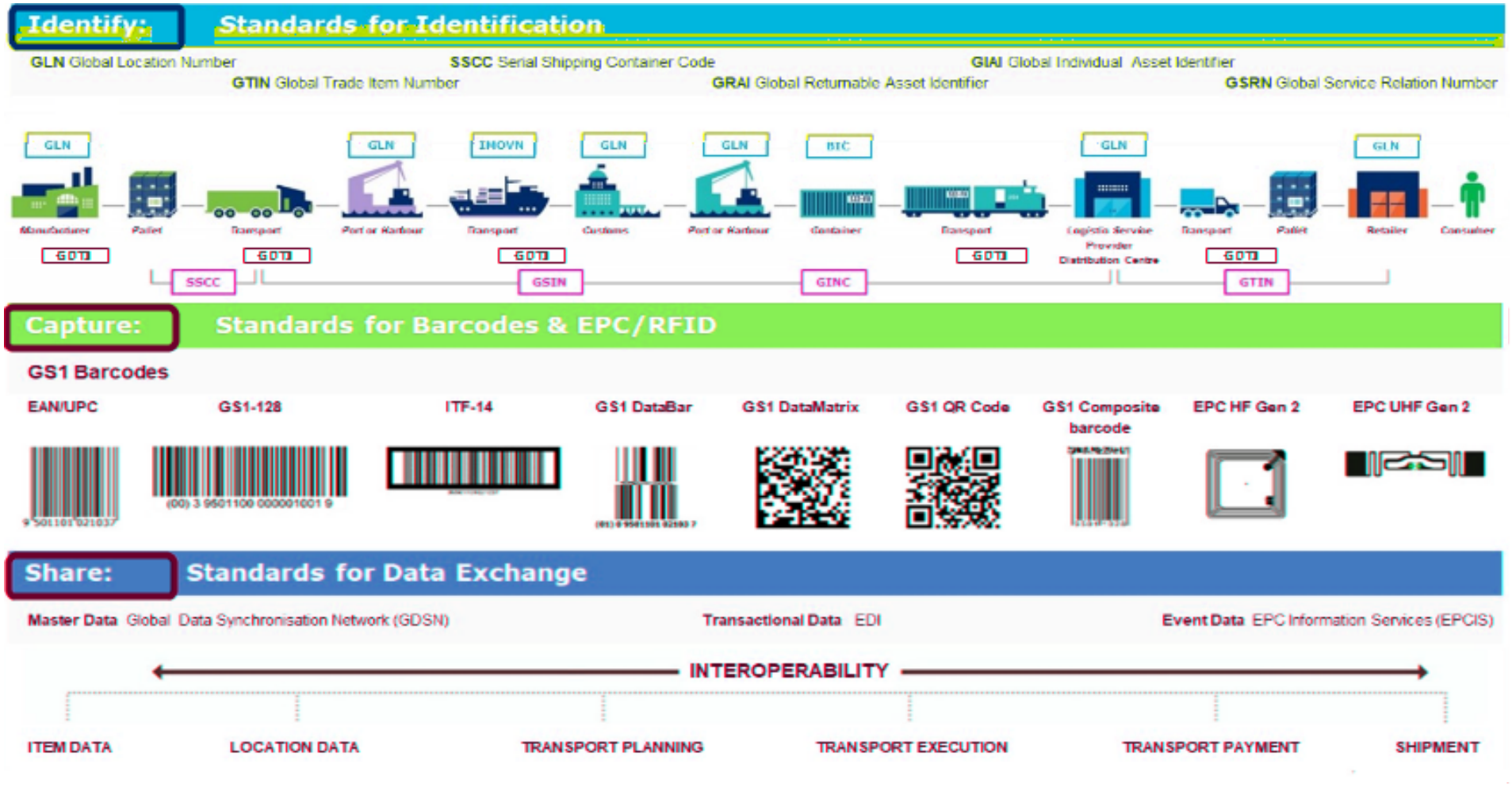
- Latest standard released 2019
- A smart container is
  *“a container equipped with an IoT device”*
- An IoT device in this context is any device that takes measurements that may be used to determine the condition of the cargo or the environment around the cargo


- **The container may be any size and shape used in <u>any mode of transport</u>**
- The standard describes **22 Use Cases (covering all currently common practices)** that may benefit from using smart container standards
- The UN/CEFACT smart container standard builds on existing standards
- **PI containers would benefit significantly from implementation of the UN/CEFACT Smart Containers standard**

# Integrated Track and Trace for Multi-Modal Transport (UN/CEFACT)


- 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
- 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**
- Linking the Transport and the Trade domain identifiers through Events
- Standard (BRS) released in 2022

# Identify – Capture – Share
# A global system of standards



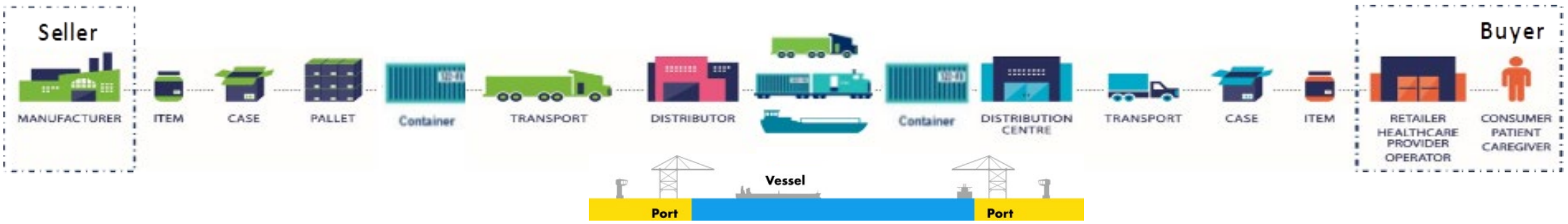
# BRS – Main observations

- **No need to develop new standards;** just combine proven standards that already exist.
- **Events enable linking Trade Identifiers to Transport Identifiers** at all relevant steps in the journey of Goods from Seller to Buyer
- The **"Chain of Events"** enables stakeholders to always know "Where are my Goods?"
- The approached proposed is **applicable for all Sellers and Buyers in all sectors, trades, types of goods and modes of transport**

## Events - Process steps:

1) Packing
2) Consolidation
3) Combining consignments
4) Loading consignment onto transport means
5) Unloading consignments from transport means
6) De-consolidating consignments
7) Shipment splitting event

# Putting them into Perspective




**Maritime & Ports (ISO 28005)**

Container stuffing

**Intermodal container**
Digital Container Shipping Association

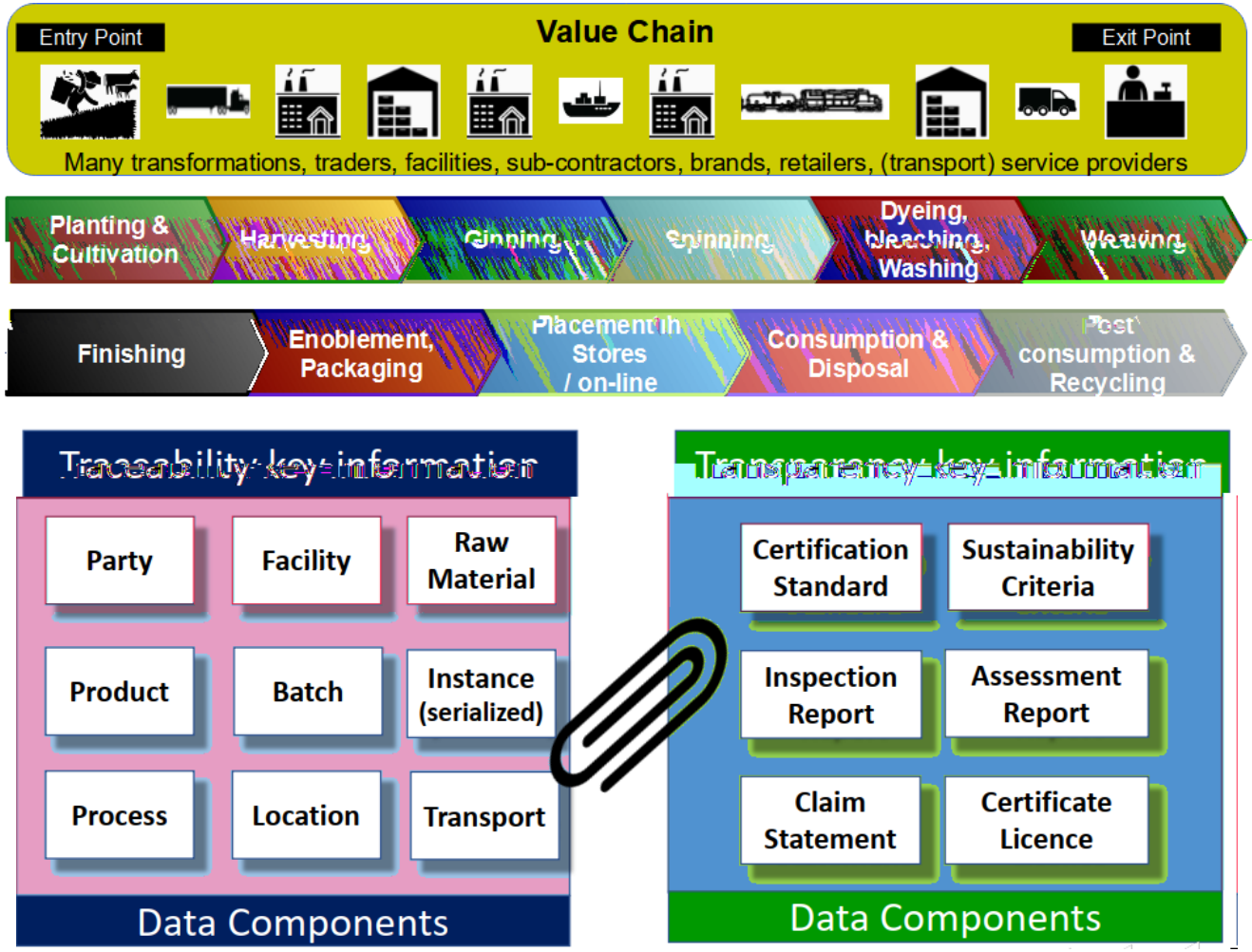
Container stripping

**Smart Assets/Containers**
UN/CEFACT

**Integrated Track and Trace for Multi-Modal Transport**
**UN/CEFACT**

# Extending to the Value Chain / Trade domain

- Value Chains consist of many stages and
- They rely on transport between many of those stages.
- Regulations and Customers demand ever more data related to Product Transparency, ESG and UNSDG



# UN/CEFACT Standards for Product Transparency / ESG requirements

Entry Point

**Value Chain**

Exit Point

Many transformations, traders, facilities, sub-contractors, brands, retailers, (transport) service providers

**<u>Combining Traditional Visibility and Product Transparency</u>**

(e.g., of the conditions under which products were made, and where they were made such as working conditions, use of chemicals) requires extending existing standards, creating further interoperability. E.g.,

**“Sustainable textile and leather traceability and transparency project.”**

**“Digital Product Conformity Certificate Exchange”**

# In Conclusion

- **New regulations require to combine information** from many stakeholders at many stages across transport and logistics networks and even the entire Value Chain
- Standards developed are "**looking at the bigger picture"** more and more
- **Collaboration across standardisation efforts is increasing**
- Frameworks presented help facilitate the coordination of efforts
- Standards users can get **better guidance on combining various standards** to meet their business needs

**Framework of robust standards exists to deliver the interoperability necessary for the Physical Internet**

# Discussion

Questions and Answers

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# Back-up Slides

- Where to find more information

# References

- Integrated Track and Trace for Multimodal transport
  - BRS on UNECE website
- Smart Containers
  - BRS on UNECE website
- ISO 28005
  - Part-1 ; Part-2 ; Part-3
- International Taskforce Port Call Optimization
  - https://portcalloptimization.org
- Just in Time Arrival
  - JIT Arrival Guide
  - EERA JIT Arrival report
- Digital Product Conformity Certificate Exchange
  - Public Review White Paper on UNECE website