Electronic data exchange for the transport and logistics via mobile communication technologies

한국전자문서산업협회
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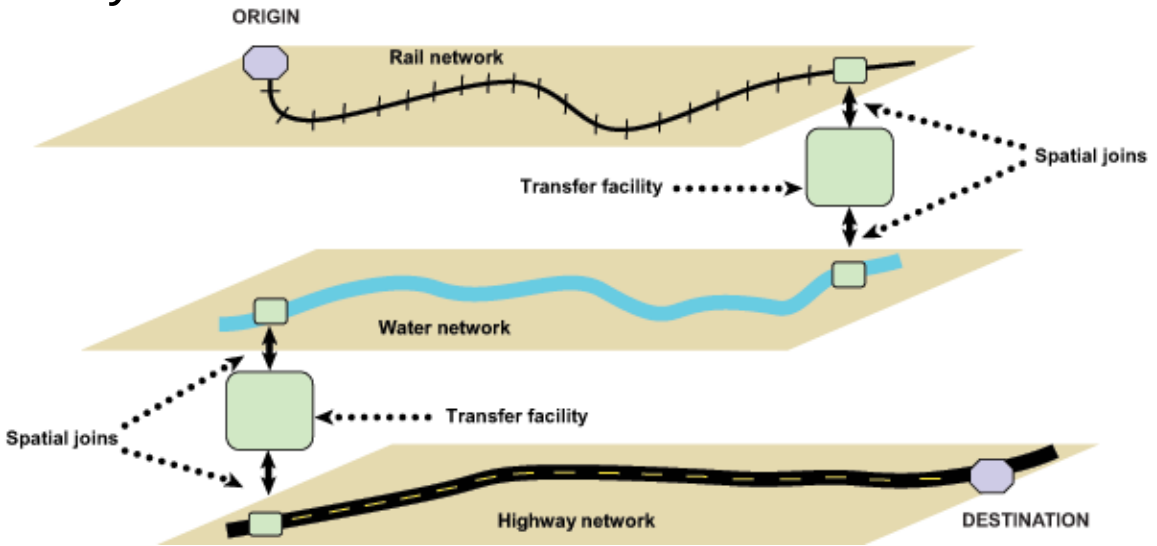
Contents

I. Project purpose

- The specification of the business requirements and essential data items suitable to be transferred using mobile technologies during the delivery of transport services
- In reality, as a result of the diversified nature of the modern intermodal, synchromodal and multimodal transport infrastructures, the actual routes deployed often vary from the contractual arrangements.
- The reasons for these deviations are very varied but most often result from operational considerations.
- However, changes in itineraries during transport movements can also be pointers to security and other risks of interest to cross-border agencies.



I. Project purpose

- The tracking of the trade items is made more difficult with every operational route change.
- All the parties are needing new methods by which they can be informed of all such changes in safer, more precise and prompt ways.
- Modern mobile technologies can assist in providing real-time information to keep all interested parties up to date along the transport chain.
- These new communications methods are not suitable for exchanging large-scale amounts of data and therefore the key data requirements need to be identified to support short, sharp efficient data deliveries at regular intervals.
- This project will base its work on the Multi Modal Transport (MMT) reference model and will analyze the required subset business process scenario and identify the relevant data items and structures needed for supporting real-time mobile technologies.

II. Scope

- Specifying real time and geographical data items to be useful to exchange in order to increase transparency, reliability and completeness during the transport movements of consignments;
- Developing BRS based on the MMT high-level BRS;
- Developing an RSM to help users apply the identified data items in standardized message structures.
- Develop a guideline for implementing the scenario defined in the BRS and RSM deliverables

III. Deliverables

- Business Requirements Specification (BRS) as defined during the business requirements gathering
- Requirements Message Specifications (RSM)
- XML schema of the required messages
- Guideline document.

IV. Initial Contributions

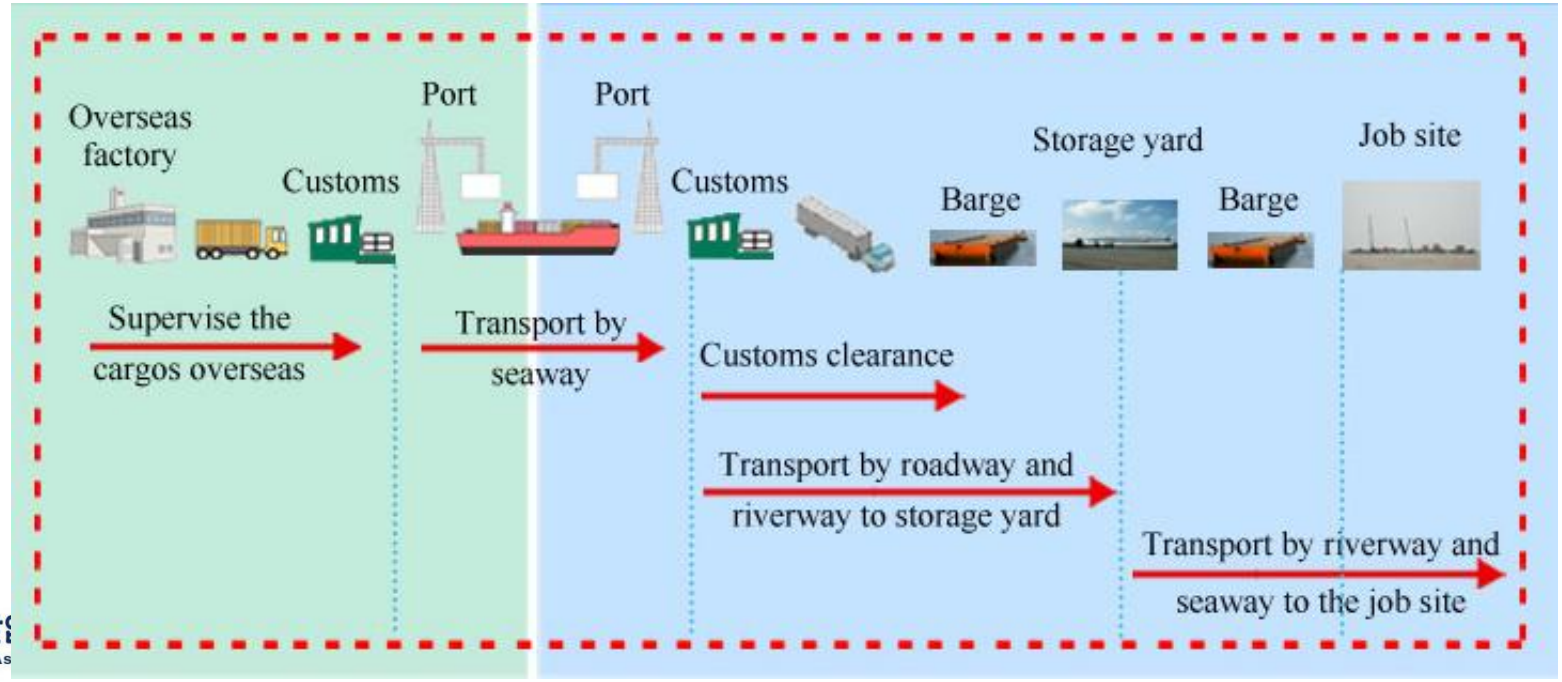
- T&L's Multi-Modal Transport Reference Data Model (project p1023)
- BRS IFTM International Forwarding and Transport
- UN/CEFACT Modelling Methodology (CEFACT/TMG/N093)
- UN/CEFACT ebXML Core Components Technical Specification Version 2.01
- Artefacts from the South Korea Electronic Bill of Delivery for Logistics (eBOD) project

V. Related Work

Definition of Multimodal and Intermodal transport

- Multimodal transport is that in which it is necessary to use more than one type of vehicle to transport the goods from the place of origin to their final destination, but mediating a single contract of carriage.
- Intermodal Freight Transport is the movement of goods in one loading unit, which uses successively several modes of transport without handling of the goods themselves in transshipment between the modes.

- European Commission (1997)



V. Related Work

Barriers of Multimodal and Intermodal transport

Operational problems, for example:

- Train decoupling
- Use of rail infra for both passenger/freight transport
- Terminal opening hours

Organizational problems, for example:

- Co-ordinations between multiple partners and timing of road haulage

Economical problems , for example

- High transshipment cost

V. Related Work

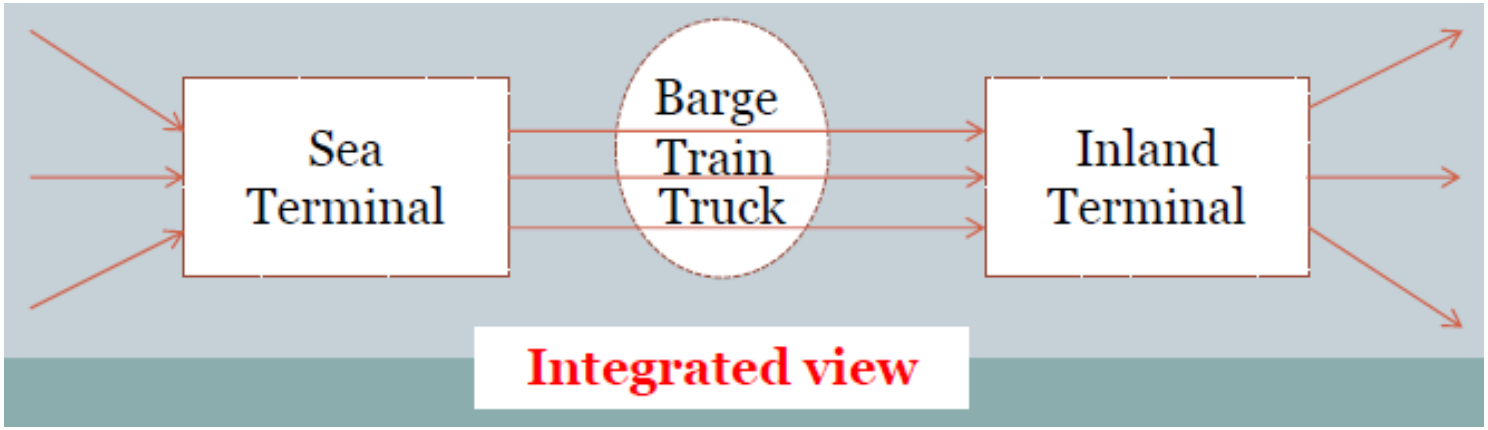
Definition of Synchromodal transport

Core idea:

- Constantly tuning inside and between good chains, transport chains and infrastructure so that given the aggregated transport demand, and at any moment in time, the best modality can be chosen.

Possible benefits:

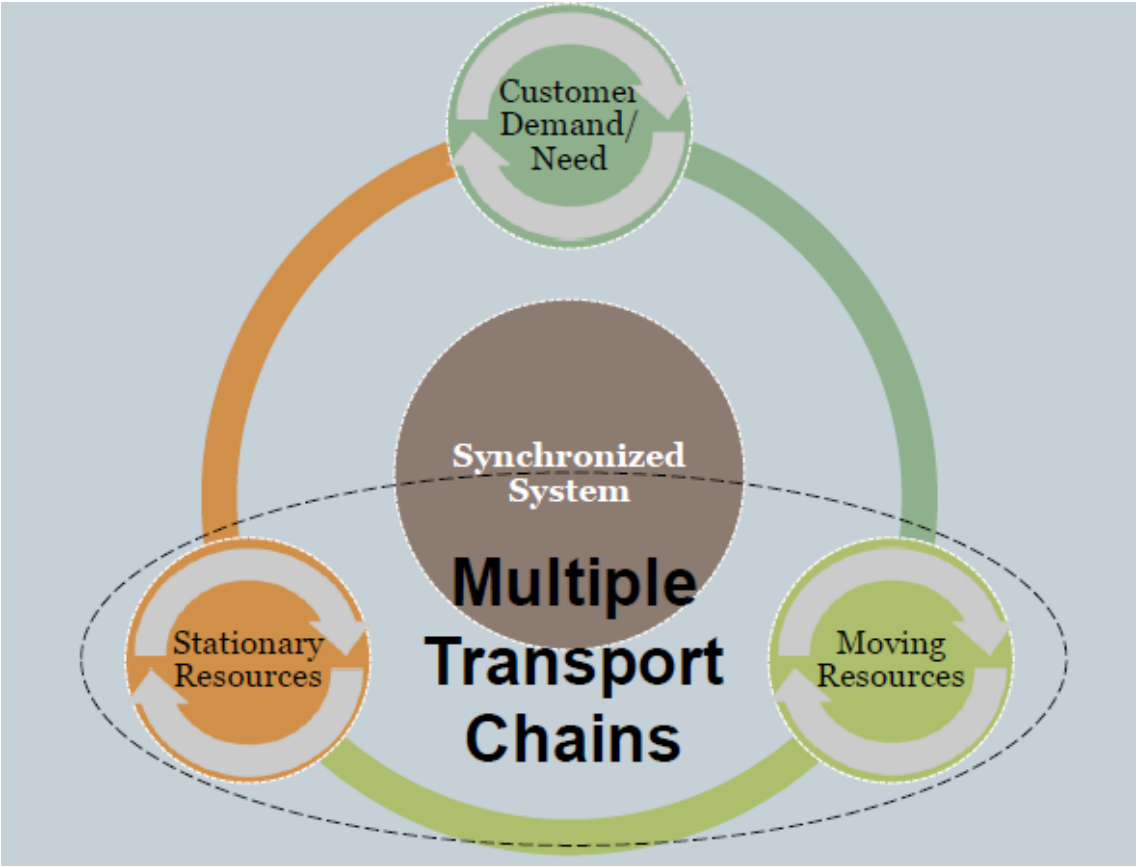
- Increasing the flexibility in transport choices
- Increase the utilization of rail and inland waterway
- Optimal use of available capacity on the network



V. Related Work

What must be synchronized?

- Customer demand and needs should be synchronized in real time.
- The status information of stationary resources should be synchronized.
- The dynamic information of moving resources should be synchronized.



V. Related Work

MMT processes

- Commercial Processes

  Issuing of Despatch Advice and Packing List,

- Logistical (Transport) Processes

  Booking of Cargo Space, Issuing of Shipping Instructions,

  Issuing of Transport Contract Document (AirWaybill, etc.), Transportation of Goods,

  Requesting and Issuing of Transport Status Reports, Freight Invoicing

- Regulatory Processes

  Import/Export Declarations, Cargo and Transit Reports, Cross-border Regulatory Data Pipeline

  Certificates of Origin, Phytosanitary Certificates,

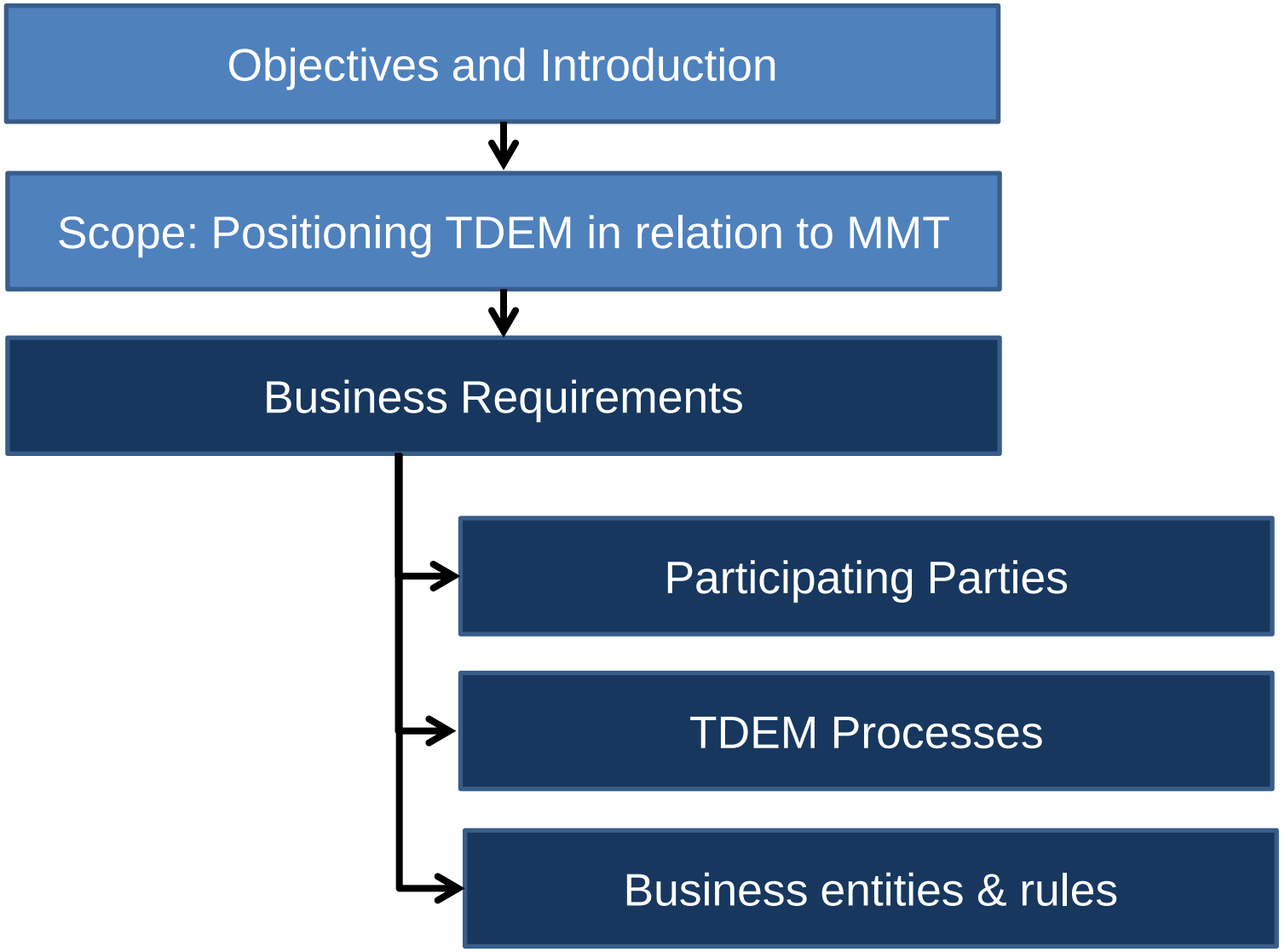
  Dangerous Goods Declarations including OECD Hazardous Waste notifications

- Financial Processes

  Cargo Insurance

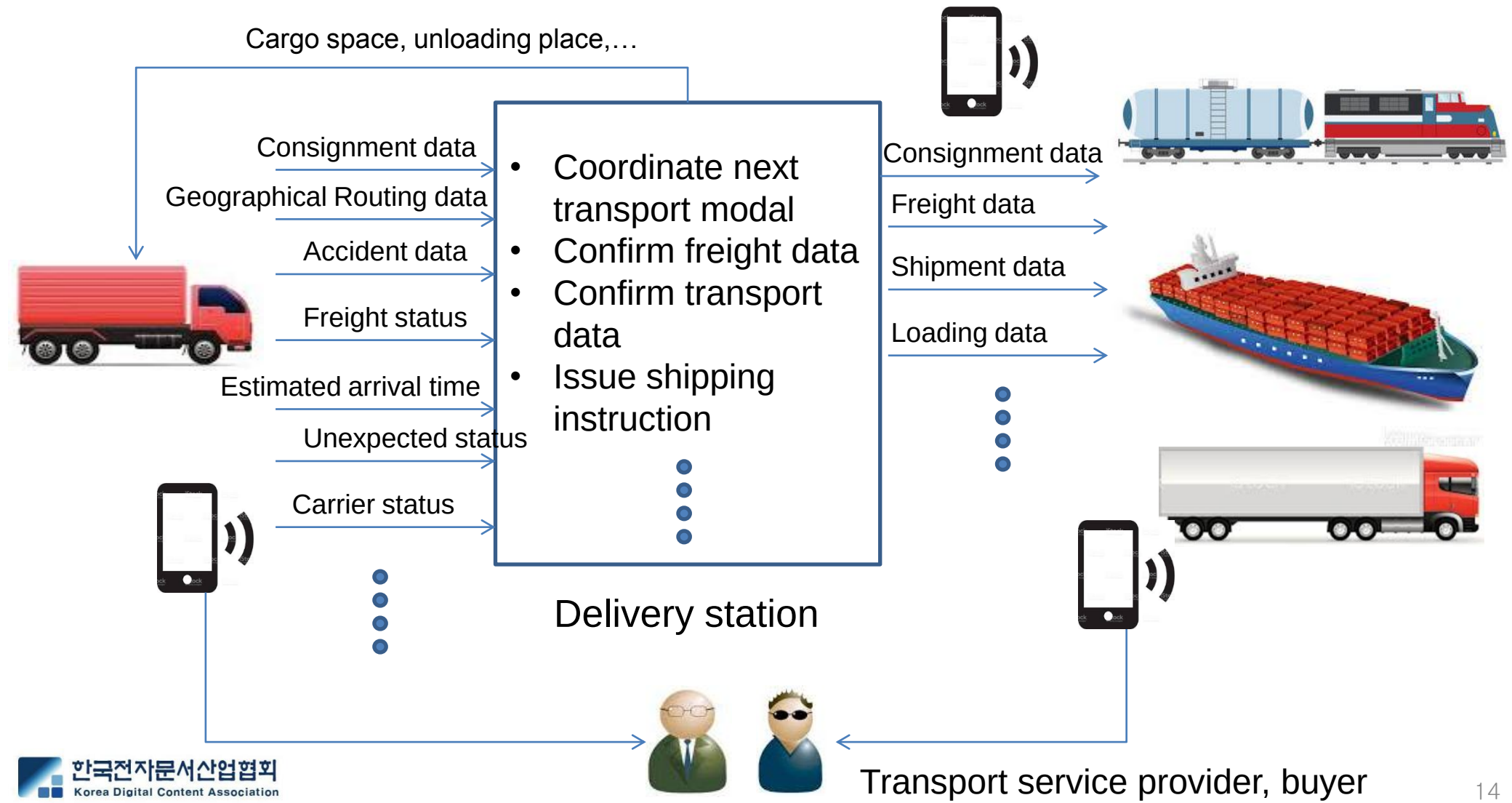
VI. Business Requirement Specification

BRS Contents for T&L Data Exchange via Mobile (TDEM)



VI. Business Requirement Specification

Conceptual diagram for TDEM



VI. Business Requirement Specification

Data entities for TDEM

- Data for Carriers
  - Change of loading/unloading or transhipment, change of cargo space
  - Change of shipping instructions
  - Change of cargo station
  - Change of regulation in shipment
- Data for delivery station
  - Arrival time of carrier, freight size, weight or caution
  - Change of carrier status
  - Accident/unexpected status notification of carrier
- Data for Transport service provider or buyer
  - Transport route, current geographical position of freight,
  - Status report of transport
  - Freight condition in transport
  - Cargo status

- Thank you -