UNECE WP24
ISO ITS
Solutions for Intermodal Transport

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6 November 2012

Message

- I have been serving as a co-coordinator with Dominique Vankemmel in the Transport and Logistics Domain of UN/CEFACT.

- I also serve as convener of ISO TC204 Working Group 7.2 on Fleet and Freight Management.

- Prior to my retirement from the US Federal Government I served as the Chief of the Team on Freight Technology and Operations for 17 years.

- Currently I am working to help achieve a vision, along with other colleagues, for an efficient, safe and secure movement of goods using electronic messaging that provides high visibility of the goods and the assets used in moving those goods

- Sorry that I could not be with you today at this workshop. I know Dominique will do well in presenting the material.

Key Issues for ITS and Intermodal Freight

- Items of Importance:
- Service Oriented Architecture
- Web Services
- Many to many relationships versus one to one
- Capture data once, use many times
- Opened possibilities for reduced data errors
  - Higher visibility through federated status queries with all partners through shipment life

Electronic Freight Management FOCUS

- The US conducted a joint study between Government and Industry to apply ITS to Intermodal Freight
- EFM focused on three main goals
  - improving the efficiency and productivity of the freight logistics supply chain through the electronic exchange of shipping information from origin to destination,
  - improving data accuracy, and
  - minimizing costs for shippers and supply chain partners.

Electronic Freight Management Problem

- The problem being addressed was time delays:

  - waiting for information to catch up with the load.

  - A study showed 40% of the time to move goods from one destination to another consists of waiting for information, which delays the transportation segments and causes unnecessary queuing and congestion in ports and other freight exchange points.
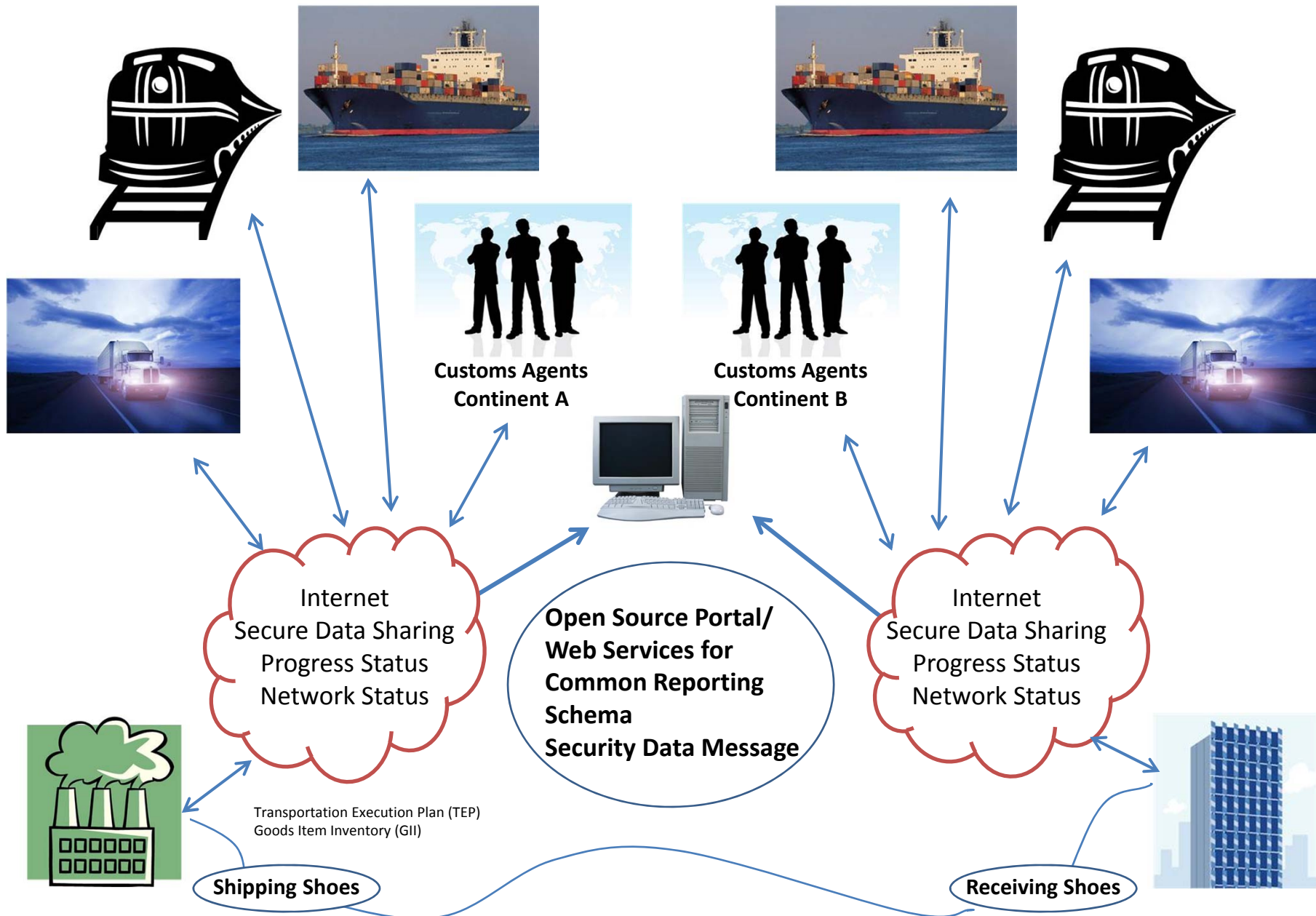
Electronic Freight Management Application

- Rather than creating large databases for each partner to collect and maintain shipment related information,
    - the web services approach used with EFM allows partners to maintain only the data they "create" and then share that data with other authorized users through a common web interface.
- Common web interface reduces the amount of duplicate data entry and the associated data quality problems.
- Improves status reports to shippers and reduces time required to complete status tasks (from 4-6 person-hours down to less than a minute).
- Implementation of digital certificates and "XML signatures" provides the data integrity and security necessary to insure protection of their information.
- The resulting vision is shown on the next slide:

MOVING FREIGHT GLOBALLY USING FREIGHT-X
## Customs Clearance Expedited
Productivity & Security Optimized

Customs Agents Continent A

Customs Agents Continent B

Internet
Secure Data Sharing
Progress Status
Network Status

Internet
Secure Data Sharing
Progress Status
Network Status

Open Source Portal/ Web Services for Common Reporting Schema Security Data Message

Transportation Execution Plan (TEP)
Goods Item Inventory (GII)

Shipping Shoes

Receiving Shoes

Freight-X Governance Model

- Create an open COMMUNITY where interoperability is achieved through common specification and not point-to-point arrangements.
- Freight-X does not replace existing solutions, like EDIFACT or EDI, to support supply chain communities;
  - it complements them and aims to co-ordinate information exchange between different communities.
- The proposed governance model for the Freight-X approach is built around two levels of governance:
- • Global Coordination - providing governance over all common components, standards and registries of accredited Freight-X solutions; managed by the Freight-X Consortium next slide
- • Community Coordination - providing governance over the implementation and use of Freight-X services within a common community.
  - These communities may be based around a single supply chain, a logistics community, or a service provider , depicted as Freight-X Community Providers next slide
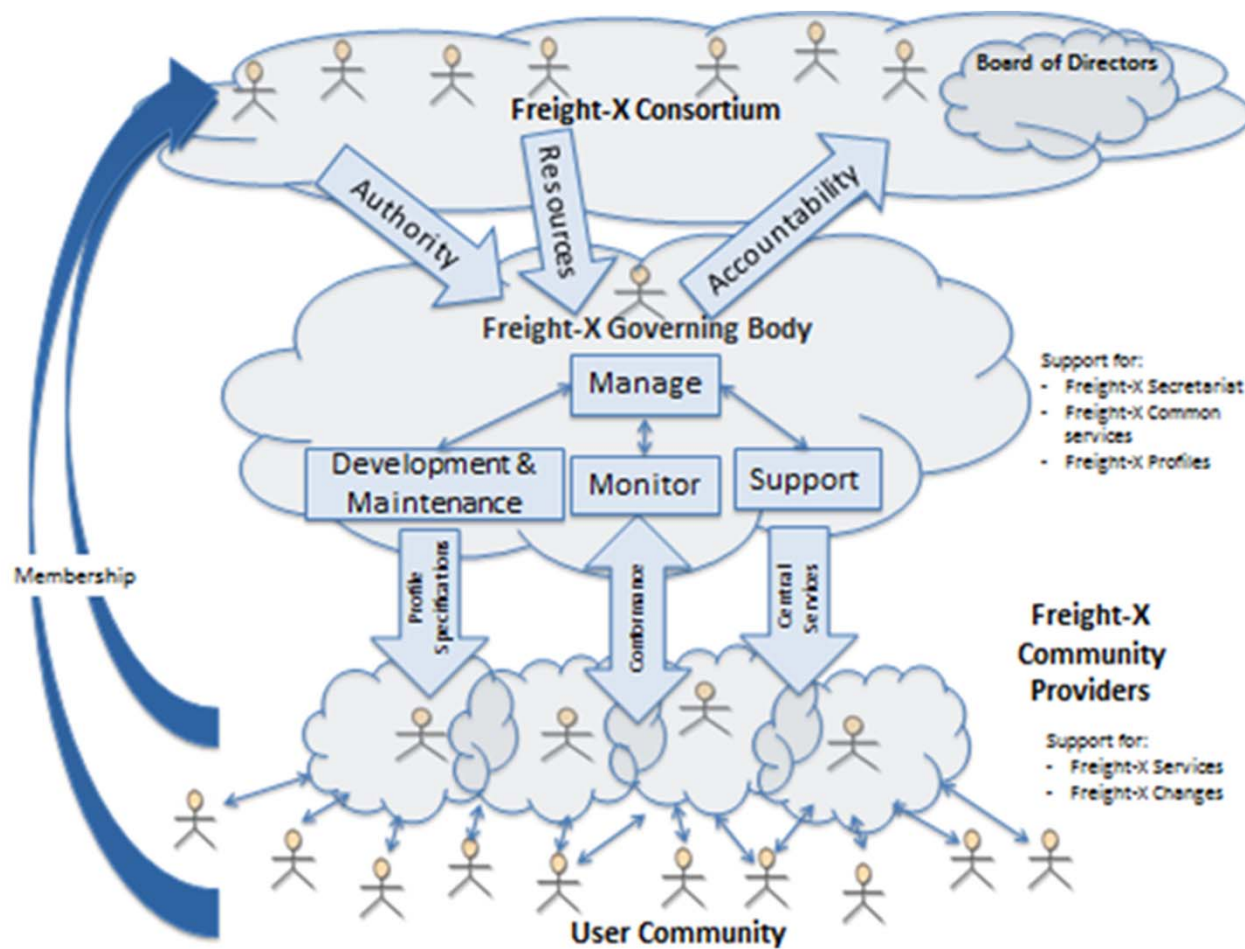
Freight-X Governance model (based on ISO framework) ISO/IEC PDTR1 38502 Governance of IT – Framework and Model

Interoperability Approach

- Data exchange standards are the heart of rules of governance.
- Basic premise is a common semantic model for data required by Freight-X participants.
- All standards shall be treated as one through a common semantic interoperability process where a common interchange format is mapped to the other major formats in a cloud-like environment.
- Need a process whereby mapping to any other format takes place rapidly and then once mapped, the translation is immediate for anyone participating in the governance community of users.
- Each community (eg, EDIFACT, NEAL-NET, GS1, UBL) can continue to operate using its own formats as required.
- 'hub' standards shall address the semantics, syntax, and interchange of data. Agreement is required at each level to ensure interoperability between freight processes.

Interoperability

- UN/CEFACT's principal focus is on facilitating national and international transactions through the simplification and harmonization of processes, procedures and information flows.
- A foundation of the work of UN/CEFACT is the 'Core Component Technical Specification', ISO/TS 15000-5:2005 Electronic Business Extensible Markup Language (ebXML) — Part 5: ebXML Core Components Technical Specification, Version 2.01.
- The 'Core Components Technical Specification' (CCTS) provides a way to identify, capture and maximize the re-use of business information to support and enhance information interoperability across multiple business situations.
- The central concept of the CCTS is the 'Core Component'. The 'Core Component' shall be a building block for the creation of a semantically correct and meaningful information exchange package. It shall contain only the information pieces necessary to describe a specific concept.
- A relationship exists between ''Core Components' and 'Business Information Entities'. 'Core Components' and 'Business Information Entities' are complementary in many respects. 'Core Components' are intended to be the linchpin for creating interoperable business process models and business documents using a controlled vocabulary.

Summary

- ISO TS24533 Freight Processes published July 2012
- ISO TS 17187Freight Processes Governance passed October 2012 but needs comment resolution
- Technical Specifications have a life of 3 years
- Perhaps can be expanded into a data model
- Perhaps can be integrated into Buy-Ship-Pay model

**Thank you to Dominique
and
Thank you to the Audience**

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