Standard Model of Logistics Information Service Systems
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Goal of the Model and Logistics Information Services Systems

- Guidelines and recommendation to provide a framework of implementation to help both government and business society (Model)
- Simplification of relevant business processes (Systems)
- Harmonization of data requirements (Systems)
- Improve interoperability (Systems)
  - The ability to share logistics information and services
  - The ability of relevant information systems or components to exchange and use logistics information.
  - The ability of systems to operate effectively together by providing and receiving services from other systems and using the services so interchanged
General recommendations

Countries with extensive or growing demand for logistics services

• To utilize logistics information technology systems and many different ICT resources related to logistics services to establish national logistics information service systems as a common platform for effective and efficient information services and future interchange among countries.

• To establish regional mechanism to promote cooperation among member state in development of national logistics information service systems; ideally include coordination of standards and development of cooperation through legal framework.

• To explore the possibility to finance the establishment of such system through government investment or public private partnership

• To adopt the Standard Model of Logistics Information Systems in the development of national systems.
Standard Model of Logistics Information Service Systems

Introduction (Preamble)
Introduction (Preamble)

- Single point architecture

• low cost solution to provide single access point to all logistics services, particularly for SMEs
• enhances the accessibility and handling of information, expedite and simplify information flows
• from system architecture point of view, single access point facility should have
  • information sharing mechanism for both national level system support and transnational level
  • data harmonization and standardization for the two level of systems
Introduction (Preamble)

- Interoperability

• Establish national system with considerations for compatible common standards among different countries in the region.
Standard Model of Logistics Information Service Systems

Overall architecture
### Overall architecture

<table>
<thead>
<tr>
<th>Functions</th>
<th>Recommended national system</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User management:</strong></td>
<td></td>
</tr>
<tr>
<td>importers/exporters, shippers, customs brokers</td>
<td>x</td>
</tr>
<tr>
<td>freight forwarders</td>
<td>x</td>
</tr>
<tr>
<td>warehouse operators</td>
<td>x</td>
</tr>
<tr>
<td>carriers inc agents</td>
<td>x</td>
</tr>
<tr>
<td>terminal operators</td>
<td>x</td>
</tr>
<tr>
<td><strong>Data interchange and messaging e.g. documents transmission, queries, messages</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>x</td>
</tr>
<tr>
<td><strong>Standardizations e.g. data elements, code set, business doc, business process models</strong></td>
<td></td>
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<tr>
<td></td>
<td>x</td>
</tr>
<tr>
<td><strong>Imports/exports clearances e.g. customs, quarantine, trade control</strong></td>
<td>link to relevant interfaces</td>
</tr>
<tr>
<td><strong>Seaport/airport clearance inc. cargo and crew</strong></td>
<td>link to relevant interfaces</td>
</tr>
<tr>
<td><strong>Payment:</strong></td>
<td></td>
</tr>
<tr>
<td>Customs duties, taxes etc.</td>
<td>link to relevant interfaces</td>
</tr>
<tr>
<td>transport related charges</td>
<td>link to relevant interfaces</td>
</tr>
<tr>
<td><strong>Track and trace</strong></td>
<td>link to relevant interfaces</td>
</tr>
<tr>
<td><strong>B2G</strong></td>
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<tr>
<td><strong>B2B</strong></td>
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<td><strong>G2G</strong></td>
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<tr>
<td><strong>Statistical data and data information</strong></td>
<td></td>
</tr>
<tr>
<td><strong>M-All modes; A-Air; S-Sea; R-Road; W-Railway</strong></td>
<td>M</td>
</tr>
</tbody>
</table>
Overall architecture (continue)

• System users
  • importers/exporters, shippers, customs brokers, freight forwarders, warehouse operators, carriers and terminal operators.

• Function
  • All types of data exchange (B2B, B2G, and G2G) are necessary
  • Covering all modes of transport (maritime, road, railway and aviation), multi-modes of transport,
  • Two way of implementation
    • Direct functions, build within the systems
    • Link to relevant interfaces: customs, quarantine, other service providers and etc.
Overall architecture *(continue)*

- **Function**
  - User management *(function)*
    - user and service registration and authentication
    - access-level or authority to data and services.
  - Data interchange and messaging *(function)*
    - Data exchange network and route
    - business documents transmission in electronic way
    - Messages, queries
  - Standardizations *(function)*
    - Developing standards: data elements, code sets, business documents, business process models;
    - Adoption of widely used international standards
Overall architecture (continue)

- **Function**
  - **Information queries (function)**
    - easily access to service resources
    - web-search or system service call from service providers on the internet
  - **Information service (function)**
    - publish information through the national platform portal
    - information related to regulations requirements, administrative services, statistical data etc.
Overall architecture *(continue)*

- **Function**
  - Imports/exports clearances (link)
    - submit declaration documents (cargo manifest, passenger list, crew list)
    - query for clearances status
    - internet link or system connection to government authorities
  - Seaport/airport clearance (link)
    - cargo manifest, passenger list, crew list
    - Ship stowage plan
  - Payment (link)
    - electronic payment for duties and taxes, other transport related charges
    - internet link or system connection to government authorities
  - Track and trace (link)
    - past and current locations and status of cargo, pallet and container
    - End to end for all modes of transport.
Overall architecture (continue)

• **Service**: from national platform, government authorities or third party service providers
  — *The whole process of logistics services and related documents*
  • Application and acceptance of submissions
    • Business instruction or request by electronic means: that is, via a web form on the Internet
  • **Common reporting schema (UBL)**
    • reporting formalities in electronic format and their transmission via a single window
  • **Exchange of documentations between buyers and suppliers**
    • XML schemas of business documents exchange
    • EDIFACT messages exchange
Overall architecture (continue)

- **Service**: from national platform, government authorities or third party service providers
  - *The whole process of logistics services and related documents*
- **Good item itinerary**
  - the route and time schedule for one or more transported items
  - Usually from the transport service provider to the transport user
- **Licenses information**
  - Information such as Export License
- **Reporting and statistics**
  - Logistics related information is reported and tabulate statistics
Overall architecture (continue)

• **Service**: from national platform, government authorities or third party service providers
  – *The whole process of logistics services and related documents*

• **Transport execution plan**
  • a collaborate plan between a transport User and a transport service provider
  • document the details surrounding the provision of a required transport service

• **Transport progress status**
  • collects and reports information about the status of the transport means
Overall architecture (continue)

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Overall architecture (continue)

• **Service**: from national platform, government authorities or third party service providers
  — *The whole process of logistics services and related documents*

• **Transport service description**
  • A document sent by a transport service provider to announce the availability of a transport service

• **Transport status**
  • A document to circulate reports of transportation status or changes in status (events) among a group of participants
Standard Model of Logistics Information Service Systems

Recommended Standards
Recommended Standards

- Analytic framework
  - outlining transport scenarios
  - specify the concepts and relationships
    - scenario description, scope
    - roles and relations.
  - identify critical requirements
  - companies, governments and other organizations
  - identity differences in regulation, administrative authority and management.
  - align with relevant national formalities, procedures, operations and documents and international conventions, standards and practices
  - recommendations on general issues (conventions, regulations, etc.) on simplification and harmonization
Recommendations on technical standards

• Modelling business process and business rules
  • business process and business rules
  • business process: a sequence of activities that add value within the process; more stable
  • business rules: lists of statements describing the operations, definitions and constraints, extracted from the business process; more flexible
  • standardization of business process and business rules
    • A set of business rules: standard components for reusable building blocks
    • A standard business process: reusable modules as bases of implementation
    • Easy for mapping and transformation between any two different standards to improve interoperability
  • Tools: UMM, WCO data model, BRS, RSM, UML
Recommendations on technical standards

• Standardization of information model
  • Identify relevant standards for harmonization and standardization of data
  • Where international standards do not exist, identify national best practice and internationalize it
  • a conceptual schema of a representation of concepts and the relationships, constraints, rules and operation (International standards such as CCTS)
  • specify data semantics for a specific domain of application
  • defined as predefined structures of data format and document format
  • consists of
    • definition of the scope
    • information requirements
    • a conceptual model
• Tools and specifications: UML, EDIFACT and XML schemas, UNTDED and UN/CCL
Recommended technical standards (continue)

• Standardization of codes
  • Codes in UN/CEFACT Recommendations
  • Codes in ISO standards
  • Commodity code (Harmonized System)
  • Codes in IMO standards
  • Codes in international conventions
  • Define new codes based on widely accepted code schemas and coding system
Recommended Standards

- Cooperation between standards setting organizations and industry
  - Establish a coordination mechanism to diminish divergence between national and transnational standards
  - Collaborate with inter-governmental and international organizations
    - UNECE, UNCTAD, the WCO, IATA, IMO, ICAO, ICC etc.
  - Collaborate with relevant industries to harmonize standards
Thank you

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