Overview of ISO 5909

“Data interchange processes of blockchain based negotiable maritime bill of lading related to e-Commerce platform”

Lin WANG
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Background of ISO 5909 project

**ISO 5909**: Data interchange processes of blockchain based negotiable maritime bill of lading related to e-Commerce platform

Initiated in ISO/TC154 JWG8 (joint working group with UNECE)

- **PWI approved** (Preliminary work item)
  - August, 2020
- **NP approved** (Preliminary work item)
  - February, 2022
- December, 2021
  - Form4 and draft approved
  - NP ballot initiated
    (NP : New Project)
- May, 2022
  - Comments collection on draft for CD ballot
    (CD : Committee Draft)
ISO 5909: Data interchange processes of blockchain-based negotiable maritime bill of lading related to e-Commerce platform

1. Blockchain eBL processes
   - Type 1: The letter of credit mode (provided by bank)
   - Type 2: Third party financial services mode (provided by e-Commerce platform)
   - Type 3: House B/L mode

2. Reference architecture, functional architecture and functional requirements of Blockchain eBL

3. Data elements of Blockchain eBL

Reuse and align with the UN/CEFACT projects
   - UN/CEFACT global Bill of Lading (Waybill) subset of MMT-RDM
   - UN/CEFACT project on Transfer of MLETR-Compliant Titles
Roles of Blockchain eBL related parties

- Carrier
- Export Country
- Forwarders and other related parties
- Port of loading
- Presenting Bank
- e-Commerce platform
- Blockchain eBL
- Issuing Bank
- Consignee
- Port of destination
- Import Country
- Shipper
- Other trade documents transfer
- eBL title transfer
- Goods transfer
Type 1: The letter of credit mode (provided by bank)

1. Order in force (between buyer and seller)
2. Transport contract
3. Send goods and request to issue eBL
4. Receive goods and issue eBL
5. Endorse eBL
6. Receive trade documents and Audit
7. Transfer trade documents
8. Receive trade documents and Audit
9. Escow and Release eBL
10. Documents against Payment, receive trade documents
11. Surrender eBL and get delivery order (DO)
12. Get goods from port of destination
13. Order and Transport contract completed
Type 1: The letter of credit mode (provided by bank)

- **eBL Title transfer**

- **Goods transfer**

- **Order transfer**
Type 2: Third party financial services mode

(provided by e-Commerce platform)

1. Order in force (between buyer and seller)
2. Transport contract
3. Send goods and request to issue eBL
4. Receive goods and issue eBL
5. Endorse eBL
6. Access trade finance services from bank based on smart contract and credible data from trade documents (e.g., AutoPay, Bank Payment Undertaking)
7. Transfer trade documents
8. Receive trade documents and Audit
9. Escrow and Release eBL
10. Documents against Payment, receive trade documents
11. Surrender eBL and get delivery order (DO)
12. Get goods from port of destination
13. Order and Transport contract completed
Type 2: third party financial services mode

- **eBL Title transfer**

- **Goods transfer**

- **Order transfer**
Type 3: House eBL mode

1. Order in force (between buyer and seller)
2. Transport contract
3. Send goods and request to issue House eBL
4. Send goods and request to issue eBL
5. Receive goods and issue eBL
6. Receive goods and issue House eBL
7. Endorse House eBL and eBL
8. Receive trade documents and Audit
9. Transfer trade documents
10. Receive trade documents and Audit
11. Escrow and Release eBL and House eBL
12. Documents against Payment, receive trade documents
13. Surrender eBL and get delivery order (DO)
14. Get goods from port of destination
15. Order and Transport contract completed
Type 3: House eBL mode

- **House eBL Title transfer**
  - Carrier
  - NVOCC
  - Shipper
  - Advising Bank
  - Issuing Bank
  - Consignee
  - Escrow
  - Broker
  - Endorse House eBL
  - Documents against Payment

- **eBL Title transfer**
  - NVOCC
  - Shipper
  - Advising Bank
  - Issuing Bank
  - Consignee
  - Escrow
  - Broker
  - Endorse eBL
  - Documents against Payment

- **Goods transfer**
  - Goods status:
    - Shipper prepares the goods
    - Shipper sends the goods
    - Cargo
    - Ship leaves
    - Ship arrives
    - Ship leaves
    - Ship arrives
    - Goods Off-load
    - Custom Release
    - Consignee receives the goods
  - Location of goods:
    - Place of sending the goods
    - Port of loading
    - Transit Port (optional)
    - Port of destination
    - Place that Consignee received goods

- **Order transfer**
  - Trade status:
    - Pending Payment
    - Pending Shipment
    - Pending Delivery
    - Complete
    - Cancelled
Reference architecture

Blockchain eBL platform
- eBL title transfer
- Goods transfer
- Other trade document transfer

e-Commerce platform
- Transaction service
- Financial service
- Logistics service

Carriers, Shipper, Consignee, Issuing Bank, Advising Bank, others (e.g. Forwarders)

Seller, Buyer
Technical architecture

- **eBL application layer**
  - eBL title transfer
  - Goods transfer
  - Other trade documents transfer

- **eBL service support layer**
  - Login
  - WEB service
  - API service
  - Authentication
  - Signature verification
  - Digital watermarking
  - Customer information verification & Audit
  - Notification
  - Document upload & storage

- **Blockchain service layer**
  - Smart Contract
  - Distributed ID service
  - Key management
  - Encryption & Decryption
  - Inter-leger service

- **Blockchain basic platform layer**
  - Computing
  - Consensus
  - Virtual Server
  - Cipher
  - Inter-leger function
  - Storage
  - Network
  - Cloud infrastructure
Data elements of blockchain eBL (FFD)

- **Blockchain required data elements**
  - Examples:
    1. Asset ID
    2. Onchain Transaction ID and timestamp
    3. Role List (e.g., Shipper organization ID)
    4. Title owner status (e.g., New title owner ID, change time)
    5. B/L holder status (e.g., New B/L holder ID, change time)
    6. Goods status (e.g., New goods status, change time)
    7. Order status (e.g., New order status, change time)

- **Additional required data elements**
  - Relate to the eBL but are not to do with Blockchain
    (e.g., traditional B/L data elements, details of container and cargo, etc.)
THANKS

Lin WANG
ISO 5909 project leader
Email: zhenling wl@Alibaba-inc.com