Digital Identity Standardization for Trade Facilitation

UN/CEFACT Forum
eData Domain Meeting

10 May 2023, 9:30-12:30 CET
Authors: Clare Rowley and Hans Huber
Agenda

- 10 May 9.30-12.30 CET
  - Opening: Vice-Chair Tahseen Ahmad Khan and Domain Coordinator Kaushik Srinivasan
  - Introduction of project: what have we done and achieved to this point
  - Feedback from initial interviews
  - Required characteristics of global identifiers for actors involved in cross-border movement of goods and services
  - Presentation of table of contents
  - Conclusion
Introduction of the Project: what we have done and achieved to this point
In the context of digitalizing international trade and supply chains, identification of **legal entities and assets** is integral.

**Hypothesis**

The current lack of consistent identification hinders development and digitalization efforts.

**Purpose**

Evaluate legal entity and asset identification management in **cross border paperless trade**.

Many forms of **Identity** exist today that have limitations when it comes to dealing with online transactions.
Project Scope

- How existing UN/CEFACT deliverables could be used by Digital ID systems?
- How trust services could be used to facilitate trade and related processes?
- Possible/required changes to existing UN/CEFACT deliverables to support authentication and Authorization?

Explore how global identification schemes could be integrated into the Core Component Library and supported by mapping.
Project Deliverables

**Whitepaper (including Annex)**
- Inventory of existing identification schemes, authentication, and authorization approaches.
- Assessment of integration into core component library.
- Cost/benefit analysis.
- Description of necessary mapping.

**Guidance Material**
- Implementation guide for standardizing the identity layer in the international trade supply chain.
**Important Reference Materials**

**Global Identifier Schemes:**
- ICC DSI Key Trade Documents and Data Elements

**Functions of Identifiers:**
- UN/CEFACT Whitepaper Integrated Track and Trace for Multimodal Transportation
- World Trade Organization and World Economic Forum: The promise of TradeTech: Policy approaches to harness trade digitalization
- Bank of International Settlements (BIS): Corporate digital identity: no silver bullet, but a silver lining
- Financial Stability Board: A Global Legal Entity Identifier for Financial Markets

**Objects in Supply Chains:**
- UN/CEFACT Whitepaper Integrated Track and Trace for Multimodal Transportation
- BRS Integrated Track and Trace for Multi-Modal Transportation

**Verifiability:**
- White Paper: eDATA Verifiable Credentials for Cross Border Trade
- ICC DSI Trust in Trade
Activities so far

Achievements

- Approval of the project
- Kick-off meeting (8 March)
- Interviews with participants
- Alignment meetings (18 May)
- Identification of participants in the role of Contributors and Reviewers
- Table of Contents Proposal
- Participation in 40th UN/CEFACT Forum
Feedback from Initial Interviews
### Feedback from Initial Interviews

#### Topics for this project

<table>
<thead>
<tr>
<th>Topic</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Subject and object relations in Supply Chains</td>
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<tr>
<td>Legal Entity Identification most pressing need</td>
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<td>Customs and Air Cargo Use Cases to illustrate</td>
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<td>Identifiers in the transfer of exclusive control of negotiable instruments (eB/L)</td>
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<td>Options to rendering schemes of Legal Identity identification interoperable</td>
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<tr>
<td>Trusted parties and their role in Supply Chains</td>
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<tr>
<td>Survey on existing identifiers for legal entities</td>
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</table>
Subjects and Objects to be Identified

Subjects
- legal entity
- natural person
- Consignor Ltd.
  - employee
    - CEO
    - Staff Financial
    - Staff Logistic
- Logistics Co.
  - service provider's employee
    - Staff Admin
    - Staff HazardGoods
- Buyer B.V.
  - customer's employee
- Bank AG
  - bank's employee
    - Staff Trade
    - Staff IT

Objects
- immaterial object
  - data
    - document
    - bill of lading
    - invoice
    - certificate of origin
  - data aggregates
  - software instance
  - intangible assets
    - bank balance
    - securities
    - payments
  - single information objects
    - 1400 kg
    - polyethylene
    - granulate
    - non-hazardous
  - natural resources quotes
    - carbon emission quotas
    - fishery quotas
    - timber quotas

- material object
  - merchandise
  - Consignment (merchandise aggregates)
  - Kit
    - Machines
    - Container
    - IoT device
  - Locations
    - Buildings
    - Warehouses
    - Production Plants
Subjects and Objects as Credentials Allow for Global Verifiability
Verifiable Electronic Bill of Lading in a Letter of Credit Transaction

Subjects
- legal entity
- natural person

Exporting Area
- LogSP Co.
- LogSP employee
- Seller Ltd.
- Seller employee
- Seller Bank
- Seller Bank employee
- TradeFinance Staff

Object
- immaterial object
- SaaS
- eBLaaS
- eB/L 123

Importing Area
- Staff Buyer
- Buyer’s employees
- Buyer B.V.
- 3rd Controller
- TradeFinance Staff
- Buyer Bank employees
- Buyer Bank
- L/C Issuing Bank
- 3rd Controller
- Port Worker
- Port Operator employees
- Port Operator
- Customs Officers
- Import Customs Auth

Verification
- Entitlement (delegated authority)
- Issuance, Presentation, Transfer
- Transfer of Exclusive Control

1. Data Transfer to LogSP/SF, issuance on eBLaaS
2. B/L issuance on eBLaaS by LogSP
3. L/C: Control/Transfer/Presentation of B/L to Buyer Bank
4. Copying B/L to Advisor/Negotiating Bank
5. LC payment: Control Transfer to Buyer
6. Clearance to import customs
7. Cargo Release, presenting B/L to Port Operator
8. Verification

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Verifiable Invoice in a Factoring Transaction
Required characteristics of global identifiers for actors involved in cross-border movement of goods and services
Digital ID systems that are well implemented

- Allow users to establish identity of users, businesses, and assets as part of a cross-border trade transaction
- Enable trusted third parties to verify this identity
- Provide confidence to parties to the transaction including individuals and businesses
- Ensure safe access and transfer of online information
- Facilitate compliance with required regulations

Hypothesis

- The current lack of a consistent identifier for the many actors involved in cross-border movement of goods and related service **hinders the development of effective IT-support systems and limits digitalization** efforts by trade standards organizations.
- For example, digital validation of legal entity identity is a **foundational element of trust services**.
# Required Characteristics of Global Identifiers for Actors Involved in Cross-Border Movement of Goods and Services

<table>
<thead>
<tr>
<th>Identifier or Identifier System Characteristics</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1. Unique identification of legal entities</td>
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<td>2. Code to be a unique dumb alphanumeric string</td>
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<td>3. System flexibility</td>
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<td>4. Strong global governance framework</td>
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<td>5. Competition and anti-trust</td>
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<td>6. Globally federated model</td>
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<td>7. High quality data</td>
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<td>8. Local integration</td>
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<td>9. Data Validation</td>
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<td>10. Sustainable funding</td>
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<td>11. Intellectual property in the public domain</td>
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<tr>
<td>12. Open access free of charge</td>
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Source: [FSB Report Global Legal Entity Identifier for Financial Markets](https://example.com)
### Producing a Scored Inventory of Global Identification Schemes

<table>
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<tr>
<th>Approach</th>
<th>Comments</th>
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<td><strong>Outset</strong></td>
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<tr>
<td>- Note jurisdictional identification schemes</td>
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<td>- Known schemes: 1,037</td>
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<td>- Fun facts: max per jurisdiction Germany (176), followed by United States (60), Colombia (59), and Brazil (30). Average number per jurisdiction = 4. Mode = 2.</td>
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<td>Verification is complex and costly due to the different business registration systems and standards</td>
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<td><strong>Survey</strong></td>
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<td>- Stage 1: Determine which global identifiers to score</td>
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<td>- Stage 2: Score the chosen identifiers according to the characteristics agreed upon</td>
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Presentation of Table of Contents
Table of Contents (proposal)

1. Executive Summary
2. Introduction
3. Definition of identification, authentication, authorization and attestation
4. Opportunities (draw picture of what identifier verifiability and identifier standardisation could enable)
5. The role of identifiers in Supply Chains
6. Identifiers (including functions & characteristics required)
7. Identifier relations
8. Verifiability
9. Identifier use cases requiring verifiability
10. Identifier interoperability and standardization requirements
11. Subject identifiers in UN/CEFACT Core Component Library and inventory of global entity identifier schemes
12. Implementation recommendations
13. Recommendations of further work to be conducted
Conclusion
Timeline

Next steps

▪ Launch survey to all experts
▪ Finalize list of contributors
▪ Draft content

Timeline proposed at introduction webinar

- March: Identify participants
- April to August: Content development
- September: Finalize paper
- October: Presentation in UN/CEFACT Forum

40th UN/CEFACT Forum (Geneva) 8-12 May
41st UN/CEFACT Forum (Bangkok) 2-6 October
Appendix
Summary of Contributor and Reviewer Interviews

Experts from
Australia
Belgium
Brazil
Canada
China
France
Germany
Ghana
India
Netherlands
United Kingdom
USA
Spain
Switzerland
...

Experts from areas of
Customs
Identity
Information Technology
Logistics
Financial
Legal
...

Experts from Industries
Academia
Big Tech
Consulting
Customs Clearance
Freight Forwarding
Identity Technology
NGOs
Textile
...

...
Initial contributions

References from project proposal

- UN/CEFACT Core Component Library and subset data models
  Supply Chain Reference Data Model (SCRDM) and the Multi-Modal Transport Reference Data Model (MMT-RDM)
- ICC DSI IAB Trust in Trade
- ICC DSI IAB Key Trade Documents and Data Elements
- Integrated Track & Trace for Multi-Modal Transportation
- Smart Containers
- eDATA Verifiable Credentials (VC) for Cross Border Trade
- Product Conformity Information Exchange/Sharing
- World Trade Organization and World Economic Forum: The promise of TradeTech: Policy approaches to harness trade digitalization
- GLEIF vLEI Ecosystem Governance Framework
- ISO 17442-1 and ISO 17442-2
- GS1 Trade Identifiers including EPCIS and GTINs.

Additional references

- ICAO – Moving Air Cargo Globally
- MMT RDM and Role in Transport Data
- Food and Agriculture Organization of the United Nations – Phytosanitary Certificates
- UN/CEFACT How can paperless trade contribute to Climate Goals, Webinar: UNESCAP ICC WCO ADB
Limitations

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