eGovernment Domain Discussion – 34th UN/CEFACT Forum

Vice Chair
Mr. Tahseen Ahmad Khan
Domain Coordinator
Mr. Kaushik Srinivasan

Date
Oct 29-30, 2019
Location
International Maritime Organization, London
Room 12
# Agenda – Oct 29, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker and Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00 – 10.30</td>
<td>eGov Domain – Update Discussion on Whitepaper project on use of IoT in Trade Facilitation</td>
<td>Tahseen Khan, Vice Chair Kaushik Srinivasan, Domain Coordinator Virginia Cram Martos – Project Leader, IoT Whitepaper</td>
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<tr>
<td>10.30 – 11.00</td>
<td>Coffee Break</td>
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</tr>
<tr>
<td>11.00 – 12.30</td>
<td>Discussion on Whitepaper project on use of IoT in Trade Facilitation</td>
<td>Virginia Cram Martos – Project Leader, IoT Whitepaper</td>
</tr>
<tr>
<td>12.30 – 14.00</td>
<td>Lunch Break</td>
<td></td>
</tr>
<tr>
<td>14.00 – 15.30</td>
<td>Discussion on cross border distributed ledger project for digital certificate of origin</td>
<td>Steve Capell, Project Leader, Cross border distributed ledger project</td>
</tr>
<tr>
<td>15.30 – 16.00</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>16.00 – 17.30</td>
<td>Discussion on proposed project on digital ID for Trade</td>
<td>Working Group</td>
</tr>
</tbody>
</table>
# Agenda – Oct 30, 2019

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<thead>
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<tr>
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</tr>
<tr>
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<td>Coffee Break</td>
<td></td>
</tr>
<tr>
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<td>Cross Border Authentication, Data Retention and Time Stamping</td>
<td>Working Group</td>
</tr>
<tr>
<td></td>
<td>Closing Remarks</td>
<td></td>
</tr>
</tbody>
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eGovernment Domain Update – Recap from April Forum
Recap

• Action Items from April forum
  • Issue Call for participation for IoT Whitepaper project
  • Mutual Recognition for trusted trans-boundary electronic interaction
    • Continue work on International Convention on Mutual Recognition to understand how we can complement UNCITRAL’s work on Mutual Recognition through a project
  • Begin work on project on cross border exchange of Digital Certificate of Origin using Blockchain
  • Prepare and finalize project proposal for Digital ID for Trade project
  • Study certain emerging technologies such as Quantum Computing, Artificial Intelligence in the context of IoT Whitepaper project
  • Conduct more research on ePayment Systems particularly on the issue of electronic transferable records to see if framework/standards are required for implementation of UNCITRAL Model Law
  • Pursue data retention and timestamping as a separate project
IoT Whitepaper Project
Background

IoT devices are expected to be 50bn in 2020! This creates huge possibility for trade facilitation while throwing open a number of challenges in adoption and implementation.

Challenges include technology, operations, interoperability etc and lack of standards for data using IoT devices.

To understand these issues better and the usage of IoT with emerging technologies such as Blockchain and Artificial Intelligence, work on the IoT Whitepaper was started after the April Forum.

Scope of the project

The scope includes two whitepaper deliverables

1. Use of IoT in Trade Facilitation – focus areas include

About IoT
- What is IoT?
- Elements of IoT
- Challenges and Risks

Use of IoT with
- Blockchain
- AI and Big data
- 5G, Edge
- Autonomous Things

Application Areas
- Supply Chain
- Agriculture
- Energy
- Healthcare
- Government

2. Use of UN/CEFACT standards in IoT

Data Standards  Process Standards  Message Standards  Cyber Security Issues
Timeline and Approach

Project Website

https://uncefact.unece.org/display/uncefactpublic/Internet+of+Things+for+Trade+Facilitation

Project Timeline

• The project commencement was May 2019.
• Focus areas/Chapters identified by June 2019
• Multiple conference calls held to identify Chapter Coordinators
• Draft Chapters for first Whitepaper being submitted

Next Steps

• Identify chapter coordinators for Standards Whitepaper
• Once drafts are finalized, submit to secretariat for review
• Whitepaper due for submission by Apr 2020 Forum
Cross border exchange of digital preferential Certificate of Origin
Why inter-customs ledger?

Unlike national single windows which streamline interactions between a government and its regulated community, the inter-government ledger (IGL) focuses on cross-border processes which are still very paper intensive. The goal is to reduce the cost of trade and improve uptake of FTAs.

RBA – AU cost of trade is not decreasing as fast as the world benchmark.

UN/ESCAP – 44% of trade costs are related to border procedures.

Productivity commission – origin rules are so complicated that they erode much of the FTA concession.

Figure 12: International Trade Costs
Relative to value of domestic production

Figure 2: Imports into Australia, 2015-16
By type of tariff entry and trade agreement

Preferential claimed
Agreement preference not claimed

0
20
40
60
80
100
120
Preferential claimed not claimed

New Zealand
Singapore
USA
Thailand
Chile
ASEAN & NZ
Korea
Japan
China
Despite our “digital world” there is still a mountain of physical paper documents in international trade processes that present non-tariff barriers to exporters.

Certificates of Origin, for example, are
1. Issued by chamber to exporter
2. Provided to forwarder by exporter
3. Sent to importer via courier
4. Provided to customs agent by importer
5. Given to customs with clearance pack.
6. Goods may be held at port if the paper “doesn’t look right”
Better Certificates of Origin

Importing regulators have no way to trust authenticity of docs direct from parties in exporting country. But they will trust digital docs if they are sent via exporting regulator. The G2G channel solves the trust problem.

The Digital Process

1. Digital data provided to exporting regulator by identified chamber (or exporter)
2. Forwarded securely to importing regulator and immediately validated.
3. All interested parties can verify the certificate is sent and valid.
Scope of specifications

The IGL is a blockchain anchored multi-channel architecture for governments to securely exchange digital data and for any third party to verify the integrity of the data. The IGL specification is provided as a suite of standard interfaces (APIs) that can be used by industry or governments in each jurisdiction (the yellow boxes on the diagram).
Specification Timeline and Approach

Timeline of standard development

• The project commencement was April 2019.
• Early draft API specifications were developed by July 2019
• An interim face-to-face meeting was held in Singapore in September 2019
• Based on lessons from the Singapore meeting, next draft API specs are due November 2019.
• Final specifications are due April 2020

Approach to standard development

• Agile, collaborative & iterative – and informed by real implementations
• AU implementation (alpha) is github.com/trustbridge
• SG implementation (alpha) is github.com/tradetrust
Proposed Project on Digital ID for Trade
Digital ID for Trade

Last Forum, we saw a number of digital ID systems implemented in different countries (Estonia, India, Australia etc) or for different use cases (GLEIF etc)

Each system has a different implementation approach for solving a variety of use cases including trade facilitation, financial inclusion etc

Given that identity is an important element in cross border trade, a project was proposed to be launched to assess the various implementations and showcase best practices for facilitating cross border trade
**Scope of the project**

The scope includes two deliverables

1. Whitepaper on case studies of existing Digital Id systems and their implementation methodologies in the context of cross border trade

2. Guidance material for developing digital ID systems to facilitate cross border paperless trade

3. Focus areas include

   - **Identity and Verification**
     - Identity Attributes
     - Scope of Identification
     - Verification of ID
     - Types of ID Schemes

   - **Standards**
     - ID Definition
     - Data Exchange
     - Trust
     - Authentication and Validation

   - **Other Issues**
     - Regulatory
     - Mutual Recognition
     - Cyber Security
     - User Experience
     - Interoperability
Timeline and Approach

Project Timeline

• The project proposal has been prepared and submitted to Bureau for review and approval

• Project Team
  • Lead – Vijay Kumar, India
  • Co-Lead – Chris Gough, Australia

• Project focus areas to be discussed during London Forum

Next Steps

• Issue Call for participation – Nov 2019 (subject to Bureau’s approval)
Artificial Intelligence in Trade Facilitation
Artificial Intelligence in Trade Facilitation

- Cross border trade results in huge amount of structured and unstructured data as part of buy-ship-pay process

- Last Forum, we saw that AI has evolved to Machine Learning (predictive analytics) and Deep Learning (image processing, video analytics)

- In the context of cross border trade
  - A number of use cases have emerged where AI is used to ensure quicker processing of paperwork and drive reduction in cost.
  - Some of these implementations use AI with Blockchain and IoT

Artificial Intelligence in Trade Facilitation

- Discussion areas for London Forum
  - Case Studies in the use of AI in Trade Facilitation
  - Standards that are being developed for use of Big Data and AI
  - Technologies behind AI that power Machine Learning and Deep Learning
  - Discuss the launch of new project on use of AI in Trade Facilitation
Authentication mechanisms in cross border paperless trade
Authentication mechanisms in cross border paperless trade

• Over the last two forums, we had several discussions in mutual recognition of cross border electronic trade documents. The topics can be found at

• Link -

• Key highlights from these discussions
  • Existing mutual recognition mechanisms are bi-lateral or regional
  • Need for standardization of these mechanisms for interopeability
  • UNCITRAL has been doing work related to « Legal issues related to Identity Management and Trust Services »
  • UN/CEFACT could play a role defining key components and highlighting best practices in existing cross border mutual recognition mechanisms
Authentication mechanisms in cross border paperless trade

• Next Steps
  • Discuss current implementations of bi-lateral or multi-lateral mutual recognition mechanisms
  • Discuss launching a project to study authentication mechanisms in cross border paperless trade that can act as a basis for future work on Mutual Recognition
Data Retention and Timestamping
Data Retention and Time Stamping

- Last forum, the group discussed issues around data retention and time stamping including:
  - Use of appropriate storage systems for data preservation
  - Compliance management
  - Emergence of cloud and its impact on data retention
  - Use of timestamping systems for storing critical data

- Rapid change in storage, computing technology has created a need for standardization in data retention

- Discussion areas
  - Case Studies and Best Practices in the context of trade facilitation
  - Use Cases for timestamping
  - Impact of privacy laws on data retention
  - Discuss the launch of a new project?

How time stamping works?
eGovernment Work Programme
2019-2020
eGov Work Programme 2019-20

- At eGovernment domain, our focus is continuously look at emerging technologies to
  - Assess their impact on trade facilitation
  - Understand how UN/CEFACT standards can be used in the context of these emerging technologies

- Work completed
  - Two Whitepapers on Blockchain that are published

- Current Work
  - IoT Whitepaper project that focuses on the use of IoT in trade facilitation, use of UN/CEFACT standards in IoT and case studies
  - Project on cross border exchange of Digital Certificate of Origin using Blockchain
eGov Work Programme 2019-20

- Proposed Work
  - Digital ID for Trade
  - Authentication mechanism for cross border paperless trade
  - Data Retention and Timestamping
Interested in learning more or contributing as an UN/CEFACT expert member?

Join us on Oct 29th and 30th at the 34th UN/CEFACT London Forum

Location - Room 12, International Maritime Organization, London

Thank you