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 6
<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>
</tr>
<tr>
<td>10.30 – 11.00</td>
<td>Coffee Break</td>
<td></td>
</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

<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>Discussion on use of Artificial Intelligence in Trade Facilitation</td>
<td>Working Group</td>
</tr>
<tr>
<td>10.30 – 11.00</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>11.00 – 12.30</td>
<td>Cross Border Authentication, Mutual Recognition, Data Retention and Time Stamping</td>
<td>Working Group</td>
</tr>
<tr>
<td></td>
<td>Closing Remarks</td>
<td></td>
</tr>
</tbody>
</table>
eGovernment Domain Update – Recap from April Forum
Recap

- Action Items from April forum in Geneva
  - Issue Call for participation for IoT Whitepaper project
  - Mutual Recognition for trusted trans-boundary electronic interaction
    - 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 Preferential 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 the streamlining of 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**
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 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
2. Forwarded securely to importing regulator and immediately validated.
3. All interested parties can verify the certificate is sent and valid.

**Easy!**

Back to certificates:

1. Digital data provided to exporting regulator
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
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 received approval from Bureau
• Call for participation has been issued
• Project Team
  • Lead – Vijay Kumar, India (vijay.koppa@gmail.com)
  • Co-lead – Chris Gough, Australia (christopher.d.gough@gmail.com)
• Project focus areas to be discussed during London Forum

Next Steps

• Study work by done other organizations such as GLIEF, World Economic Forum
• Define whitepaper structure
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.

- Key highlights from these discussions
  - There is a need for mutual recognition of electronic documents
  - Existing mutual recognition mechanisms are bi-lateral or regional
  - Need for harmonization of these mechanisms for interoperability
  - UNCITRAL has been doing work related to « Legal issues related to Identity Management and Trust Services »
  - Need to define the role UN/CEFACT could play to complement this work
Authentication mechanisms in cross border paperless trade

• Next Steps
  • Discuss current implementations of bi-lateral or multi-lateral mutual recognition mechanisms
    • For example: EU implementation of cross border eID authentication
  • Discuss launching a project to study authentication mechanisms in cross border paperless trade in the context of a use case 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 long term preservation of critical data
- Rapid change in storage, computing technology has created a need for standardization in data retention

How time stamping works?
Data Retention and Time Stamping

- Discussion areas
  - Legals aspects around data retention
  - Implementation complexity as a result of variance in
    - Types of data retained
    - Duration of retention
    - Restrictions on when government can access retained data
    - Technology and security requirements
    - Who pays for data retention
  - Impact of data retention and time stamping in trade facilitation processes
  - Impact of privacy laws on data retention – for ex: EU Data Retention directive
- Next Steps
  - Discuss the launch of a new project?
eGovernment Work Programme
2019-2020
eGov Work Programme 2019-20

At eGovernment domain, one of 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
eGov Work Programme 2019-20

- Action Items from London Forum
  - Completion of Current Work
    - IoT Whitepaper project
      - Submit all chapters for Use of IoT in Trade Facilitation Whitepaper for review by December 15, 2019
      - Begin work on Standards whitepaper
    - Project on cross border exchange of Digital Certificate of Origin using Blockchain
      - Look at changing name to Inter Government Ledger for wider applicability and usability
      - Steve to work out dates for project deliverables
  - Begin work for Digital ID for Trade project
    - Interested experts can contact Vijay or Chris to be part of this project
    - To add IMDA’s digital trust protocol project as a third deliverable in Digital Id project subject to Bureau’s approval
eGov Work Programme 2019-20

- Action Items from London Forum
  - Use of AI in Trade Facilitation
    - There is interest from working group to work on this topic through a separate project
    - Need to identify project core team and define scope of project based on which project proposal needs to be prepared for submission
  - Study the possibility of taking up other regulatory documents for development and implementation after success of eCoO project
  - Mutual recognition for trusted trans-boundary electronic interaction to be proposed as a project
  - Authentication mechanism for cross border paperless trade
    - There is interest from working group to pursue further work on this area
    - Some of the aspects relating to this topic may initially be considered as part of the Digital Id project
eGov Work Programme 2019-20

• Action Items from London Forum
  • Data Retention and Timestamping
    • There is interest from working group to pursue further work on this area through a separate project
    • Need to identify project core team and define scope of project based on which project proposal needs to be prepared for submission
Thank you