Future of customs: Blockchain@TAXUD experience

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The Digital Single Market

Commission's strategy ensuring access to online activities for individuals and businesses

- Fair competition
- Consumer and data protection
- No geo-blocking
- Limiting copyright issues
- ...
• 22 European countries

• Leading role for EU in blockchain

• €300M to blockchain projects by 2020

EU Blockchain Partnership  (APRIL 2018)
Expertise hub to access, share, produce, disseminate knowledge on blockchain technologies

- Mapping initiatives
- Technical developments
- Expertise & community building
- Sectoral & cross cutting issues
- EU interest use cases
- Inputs for EU policies & actions

EU Blockchain Observatory (FEBRUARY 2018)
What's in blockchain for TAXUD?

• A potentially foundational technology for the Digital Single Market
• Unique capabilities and benefits
• Enjoying growing momentum and interest

What blockchain is NOT:

• A solution to all problems!
TAXUD started exploration of blockchain technology in 2017

1. Study and PoC in the excise domain (EMCS)
   - Test the applicability of the technology as main component of an "illustrative" system
   - End-to-end, transaction-oriented pattern
   - Permissioned, private blockchain; Hyperledger Fabric (open source)
   - No involvement of Member States or Traders
   - Technology exploration outside of TAXUD's projects context

2. PoC in the field of temporary admission (eATA)
   - Blockchain as an additional layer to ensure trust in a centralised solution
   - Data anchoring & notarisation pattern
   - Permission-less blockchain, on a private network but anchored to a public blockchain; Ethereum (open source)
   - With the collaboration of the International Chamber of Commerce
   - Inscribed in TAXUD's electronic customs MASP (project fiche 3.2)
From hub & spoke, *message exchanges involving many silo'ed databases*

... to *data sharing* on a single ledger visible to all involved actors

From 10 to 6 workflow steps: 40% less complex!

**EMCS blockchain Proof of Concept**
What is it?

More than **70 countries**

+200,000 paper carnets/ year

ATA carnets digitisation as part of **EU digital customs**

How does it work?

**Issue:** How can any of the participants be sure that the system is not altered behind the scene?

**Country A**

1. Customs export

**Country B**

2. Customs import

3. Customs re-export

4. Customs re-import

**Duty-free temporary admission of goods**

**Goods + passport (ATA)**

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**The ATA carnets**
1. Notarisation of carnets & transaction

- New eATA carnets
- Transaction (import, export)

   - Carnet notarisation
   - Transaction notarisation

2. Automation of consistency checks

- Transaction (import, export)
- Transaction notarisation

   - Alert in case of potential claim/fraud

**ATA blockchain**

**Blockchain add-on**

Private blockchain

Public blockchain

European Commission
State of play

• EMCS study and PoC completed; demonstrated blockchain potential

• Challenges
  • Data confidentiality
  • Scalability and performance
  • Security
  • Deployment, operation and re-configuration
  • Compliance to data protection & privacy regulations (GDPR..)

• eATA PoC completed successfully
Next steps

- **Objectives for 2019**
  - Validate that we can deploy and operate across MS
  - Steer system design in the right direction (policy changes, use cases)

- **Actions are being taken**
  - Workshop in May 2018
  - Awareness and training for Policy Officers & technical staff
  - Pilot for SEED on blockchain (registry of economic operators)
  - Research activities in several critical areas
Key takeaways

- Blockchain has characteristics that are interesting for public authorities.

- Blockchain is no panacea, no general solution. Additional work required before adopting Blockchain/DLT in our technology portfolio.

- Joined discovery and implementation approach between EU Commission and Member States.
EMCS PoC: cf. video (6 min)
https://youtu.be/qsmo7VOqATI

eATA Blockchain PoC: cf. article in WCO News
https://mag.wcoomd.org/magazine/wco-news-87/digitization-ata-carnets/

European Blockchain Partnership

Report from Scientific Foresight Unit (STOA), DG EPRS, European Parliament