



Blockchain@TAXUD experience

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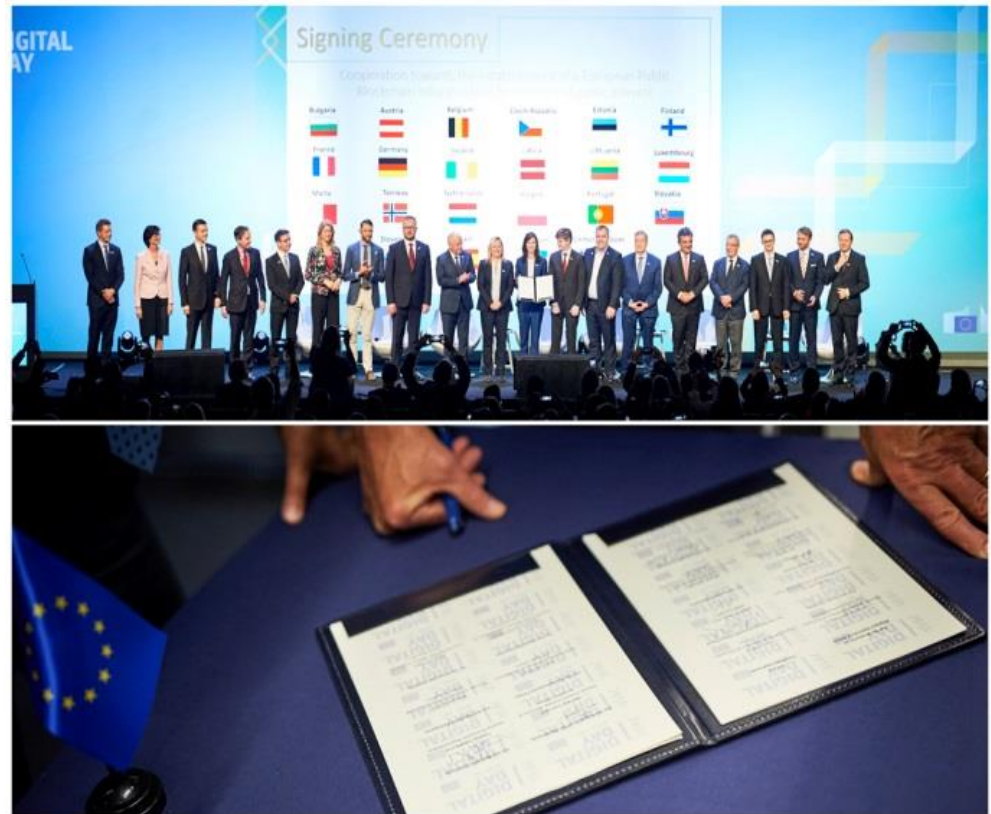
The Digital Single Market

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)

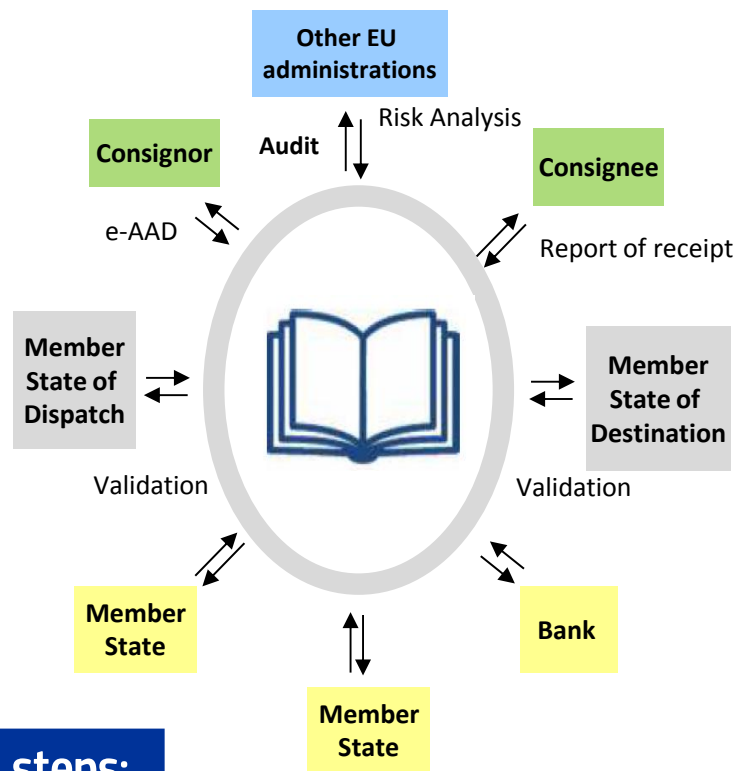
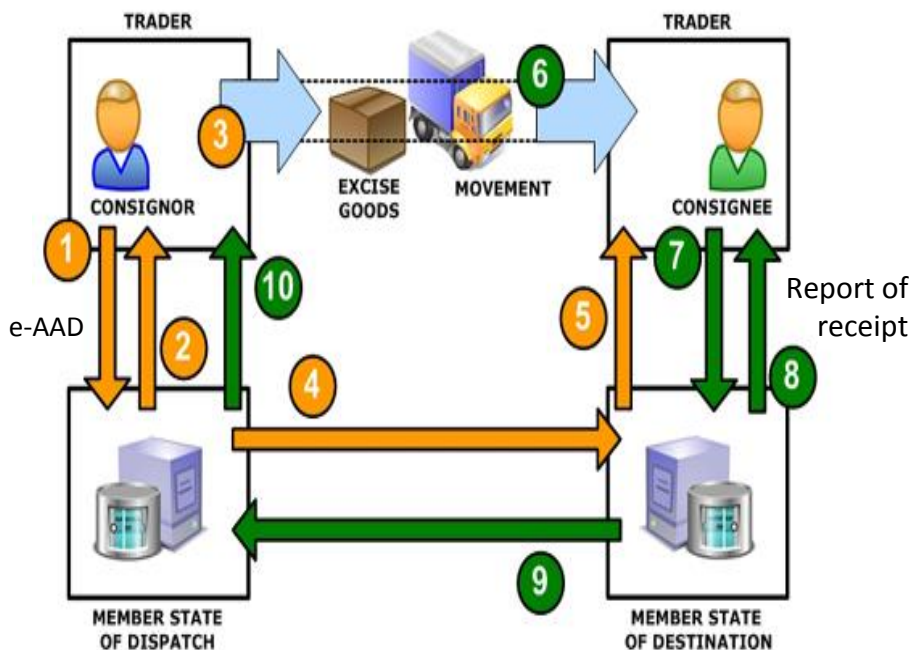
- Test the applicability of the technology as main component of an "illustrative" system
- End-to-end, transaction-oriented pattern
- Permissioned, private blockchain; Hyperledger Fabric (open source)
- No involvement of Member States or Traders
- Technology exploration outside of TAXUD's projects context

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'd databases


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



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

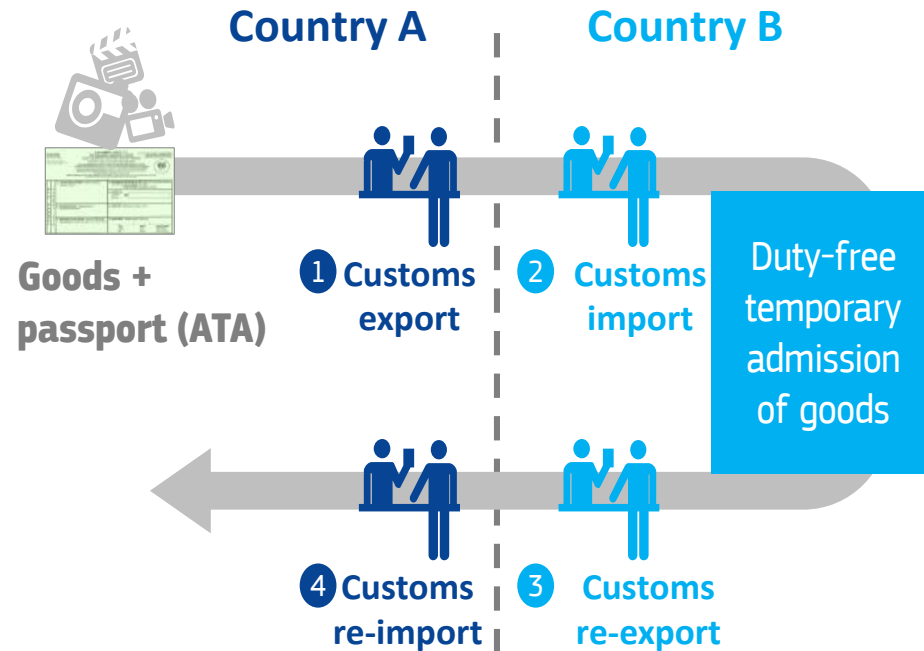
EMCS blockchain Proof of Concept

What is it?

<small>Issuing Association Association émettrice Organisatie van uitgifte</small> <small>Association des Douanes de Commerce Association de la Région Frontière des Douanes Association des Douanes de l'Europe</small>		A.T.A. CARNET / CARNET A.T.A. FOR TEMPORARY ADMISSION OF GOODS POUR L'ADMISSION TEMPORAIRE DES MARCHANDISES <small>INTERNATIONALE AANSPRAKELIJKE ORGANISATIE INTERNATIONAL GUARANTEE CHAIN CHAÎNE DE GARANTIE INTERNATIONALE</small>	
<small>VOOR DE TIJDELIJKE INVOER VAN GOEDEREN CONVENTION DOUANIÈRE SUR LE CARNET A.T.A. POUR L'ADMISSION TEMPORAIRE DES MARCHANDISES DOUANE-OVEREENKOMST BETREFFENDE HET CARNET A.T.A. VOOR TIJDELIJKE INVOER VAN GOEDEREN CONVENTION ON TEMPORARY ADMISSION / CONVENTION RELATIVE À L'ADMISSION TEMPORAIRE / OVEREENKOMST BETREFFENDE TIJDELIJKE INVOER</small>			
<small>(Before completing the Carnet, please read Notes on cover page 2 / Avant de remplir le carnet, lire la notice en page 2 de la couverture) / (Alvorens het Carnet in te vullen, de toelichtingen op bij 2 van de couvertures lezen)</small>			
A T A C A R N E T G A R N E T A T A	A. HOLDER AND ADDRESS / Titulaire et adresse / <small>Holder en adres</small>	G. FOR ISSUING ASSOCIATION USE / Réservé à l'association émettrice <small>Voorbehouden aan organisatie van uitgifte</small> FRONT COVER / Couverture / Omslag	
	B. REPRESENTED BY* / Représenté par* / <small>Vertegenwoordigd door*</small>	a) CARNET No., Carnet N° BE <input type="text"/>	
	C. INTENDED USE OF GOODS / Utilisation prévue des marchandises / <small>Voorgenomen gebruik van de goederen</small>	b) ISSUED BY / Délivré par / Afgegeven door	
		c) VALID UNTIL / Valable jusqu'au / Geldig tot year / année / jaar month / mois / maand day (inclusive) / jour (inclus) / dag (inclusief)	

- More than **70 countries**
- +200,000 paper carnets/ year
- ATA carnets digitisation as part of **EU digital customs**

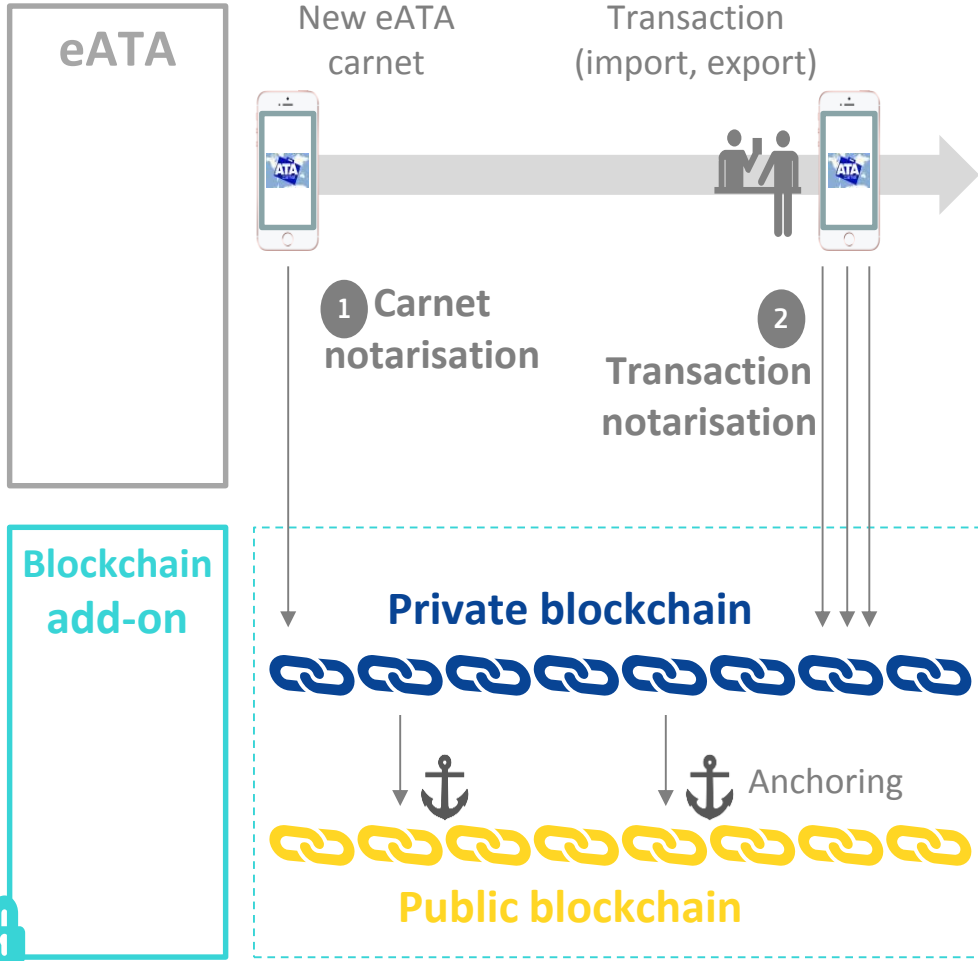
How does it work?



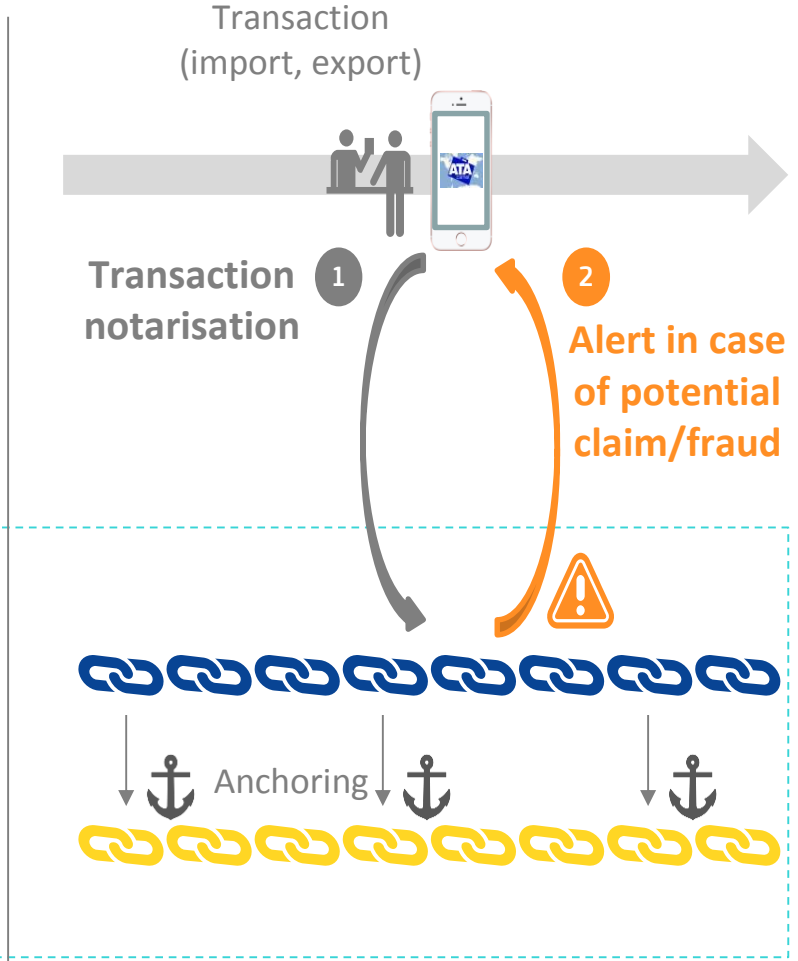
Issue: How can any of the participants be sure that the system is not altered behind the scene ?



1 Notarisation of carnets & transaction



2 Automation of consistency checks



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/qsmo7VOqATl>

eATA Blockchain PoC:

- cf. article in WCO News : <https://mag.wcoomd.org/magazine/wco-news-87/digitization-ata-carnets/>
- demonstrator: <https://poc.webexpert.ch>

European Blockchain Partnership

<https://ec.europa.eu/digital-single-market/en/news/european-countries-join-blockchain-partnership>

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

[http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/581948/EPRS_IDA\(2017\)581948_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/581948/EPRS_IDA(2017)581948_EN.pdf)

Additional information