MERCOSUR BLOCKCHAIN FOR AEO MASTER DATA EXCHANGE

b-Connect Project
16,886 km of land border with 10 countries

7,367 km of coastline

8.5 million km²

16,886 km of land border with 10 countries

7,367 km of coastline

Land Borders - 61

Airports - 66

Ports - 255

207 million inhabitants
Mutual Recognition Agreement - AEO
**Overview**

**Macro Vision**
- According to WCO directives.
- To create a Federative network. Data does not belong to anyone, it belongs to everyone (distributed processing solution).
- Solution restricted to member countries (collaborative).
- The only solution is Blockchain (peer to peer).

**Details**
- Smart P2P contracts represent the bilateral agreement.
- Smart Contract is used for governance rules and business rules.
- Governance: Both countries’ signature is a prerequisite to build the network.
- Business: Data from Brazil is recorded with “BR”. Data from Uruguay is recorded with “UY”.

**WCO Directives**

**Smart P2P contracts**

**Federative Network**

**Integration with legacy systems**

**Open sourced to member countries**

**Scalability**
Overview

Macro vision
- According to WCO directives
- To create a Federative network. Data does not belong to anyone, it belongs to everyone (distributed processing solution)
- Solution restricted to member countries (Multi signed Smart Contract)
- Code developed by the Member Countries (collaborative)
- The only solution is Blockchain (peer to peer)

Details
- Smart Contract represents the Bilateral Agreement.
- Smart Contract is used for governance rules and business Rules.
  - Governance – Both countries’s signature is a pre-requisite to build the network
  - Business – Data from Brazil is recorded with “BR”. Data from Uruguay is recorded with “UY”
Step 1a Bilateral Agreement BR-UY

b-CONNECT

Communication Channel

Bilateral agreements

Brasil

Uruguai

Br

Uy

Br

Uy
Step 2a Smart Contract BR-UY

Agreement

- Participants:
  - BR, UY
- Signatures:
  - BR, UY
Step 1b Bilateral Agreement AR-UY
Step 2b Smart Contract AR-UY

Agreement
- Participants:
  - UY, AR
- Signatures:
  - UY, AR
PERMISSIONED BLOCKCHAIN
Data flows through an encrypted tunneling channel, between countries and according to the respective agreement.
BR node – Data recorded

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No data flows from BR to AR
Next Steps

Actual stage
- Data and files exchanged within de blockchain
- Expansion to new nodes possible
- Proof of concept is ready and running
- Not a Brazilian solution, but a Federative Solution
- Belongs to the signature countries

Next steps
- Celebrate Regional agreements – Expand to different countries.
- Celebrate multiregional agreements – two or more regions

Challenges and Future Vision
- Blockchains interoperability - Essential to use WCO Data Model.
- Massive non-AEO Master Data Exchange - Risk Management
Obrigado! Thanks! Merci! Gracias!

Ronaldo Salles Feltrin Correa
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