Blockchain summer school - Maersk study case

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1 Summary

1.1 The Problem

Maersk being a big corporation has a lot of ongoing transactions all around the globe. Having many subsidiaries that are not in sync, they remotley pull the data and do modifications (that are subject to human error) over it, such that the full information of a transaction is split amongst the databases (Excell spreadsheets) of different smaller organisations.
When submiting a tax report in a country X, the data set $D = \{T_1, ..., T_n\}$, where T_i represents one transaction; must be concatenated from subsidiares $S = \{S_1, ..., S_n\}$, where T_i is split amongst any subset of S. Because of poorly storage of data, and human mistake, some countries dismiss the tax information as being not valid, and thus applying sanctions.
We will define the initial state of a Transaction:
initiator; value; receiver; initiator country; receiver country;
Later in time different subsidiarys should be able to add more data to it.
The tax authorithy needs to be assured that the data is not corrupted, or manipulated.
How can we ensure that when the data is modified the state (transaction) is still valid?
A proposed solution would be to have a shared database, where each modification of an entry (a transactions data) has to be validated by each subsidiary in order to ensure correctness from their point of view.