



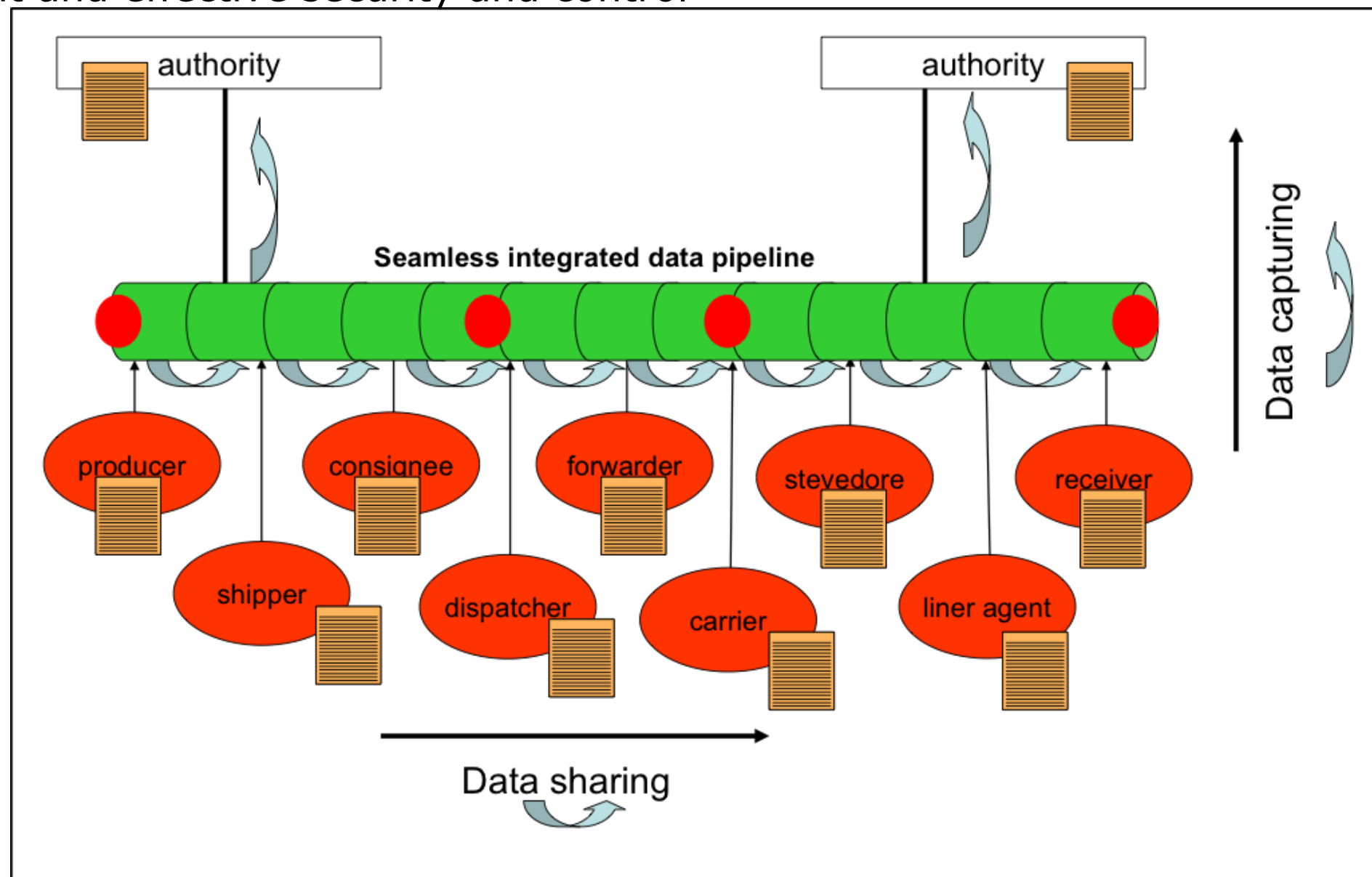
IMPROVING SECURITY THROUGH VISIBILITY

Common assessment and analysis of risk in
global supply chains



- ⑩ Increasing flow of containerised cross-border trade
- ⑩ Growing emphasis on security

Need for efficient and effective security and control



Phases	Brief description	Issues addressed	Status in Cassandra	Implemented by
Phase 1	Cassandra Backbone with dashboards	Upstream data retrieval for risk assessment support via nodes in Living Labs provided by Cassandra partners	Demonstrated in tradelanes of Living Labs	2014
Phase 2	Piggy backing on logistic data and risks	Improving data quality and completeness by interoperability in dynamic chain configurations	Demonstrated in IT Living Lab	2015
Phase 3	Smart and secure tradelanes, improved intelligence	Seamless logistics, (near) real time business - and authority risk analysis	To be developed based on Cassandra concepts	2020

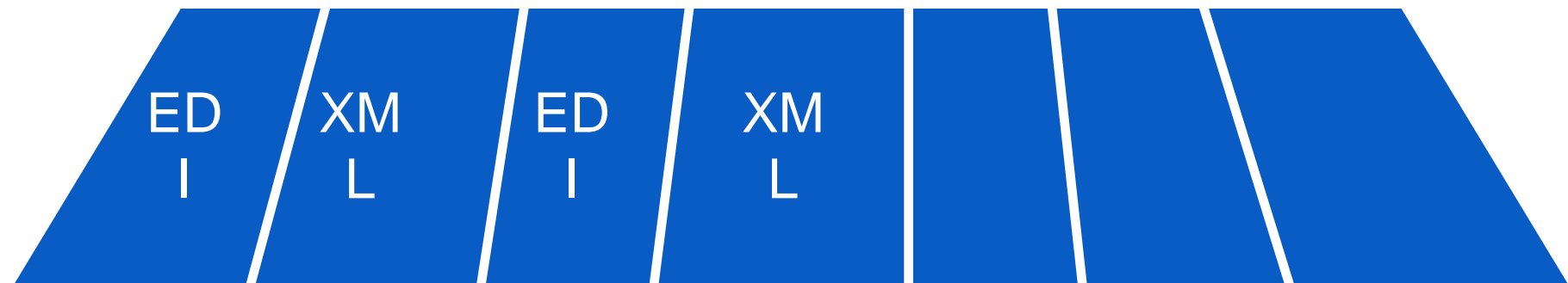
Interoperability

Logistic services (transport, transship, store, stuff/strip) with their behavior

Reference to concepts, associations and rules, easy extendable (networked ontologies)

Incompatible implementations: UML class diagrams are copied and can be amended for different purposes

Large variety of Implementation Guides



Contributions:

- **Completeness of models**
- **Governance: improved interoperability**

Current IT systems are (electronic) business document based.

Thank you for your attention.

Any questions?

Wout Hofman
(wout.hofman@tno.nl)