





Towards an IT infrastructure for compliance management by data interoperability the changing role of authorities

<u>Wout Hofman</u>, Harrie Bastiaansen October 2013



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### Content

- The issue of container security
- Requirements to an IT infrastructure
- Technical options
- Proposal for an IT infrastructure
- Conclusions

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### **Container security - the data pipeline**

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## **Container targeting**

- Data requirements
  - Goods: product-packaging-containers-transport means
  - People and entities: buyer, seller, forwarder, etc.
  - Historic data: past behavior of people and entities and past goods flows between origin and destination
- Risk analysis results
  - Green no inspection
  - Orange additional data required
  - Red physical inspection

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## IT infrastructure requirements

- Complete and consistent data
- Dynamic business relations
- Minimization of the administrative burden
- Data ownership and liability
- Non functional requirements
  - Scalability and performance
  - Migration strategy

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Complete and consistent data set - lack of interoperability.

- Duplication of data
- Inconsistent data
- Missing data, both on goods and people&entities

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# **Dynamic business relations**

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## Minimization of the administrative burden

- (Re-)Export, exit, incoming, transit, import
- Piggy back on trader data

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## **Data ownership and liability**

- Commercial sensitive buyer/seller, shipper/forwarder, etc.
- · Liable for a service on an object, not its content

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## **Technical solutions**

- Data push by messaging increase of administrative burden
- Data pull by service orientation
- Data pull based on (linked) open data

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## **Proposed IT architecture - phases**

Phase	Name	Description
Phase 1	Experiments	A basic infrastructure to support controlled experiments
Phase 2	Backbone Infrastructure	Upstream data retrieval to support new controlled experiments
Phase 3	Trader Interoperability	Piggy backing on trader data with improved quality and completeness by interoperability in dynamic chain configurations
Phase 4	Secure Trade Based on Smart Risk Analysis	Seamless logistics based on customs risk analysis with complete and high quality, upstream data

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### **Experiments - Living Labs - Living Lab 1**

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#### **Backbone infrastructure**

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## **Backbone infrastructure - another view**

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Trader interoperability at global scale to improve data quality (= data exactly reflects physical situation)

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Deal with

- Different standards (XML, EDI, ...)
- Different implementation guides of the same standard
- Large number of SMEs end-user solutions are required

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#### 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

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New IT systems based on business concepts and ontologies with consistent implementation variants

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- First prototype available
- Data result yet to be expressed as ontology based on a core ontology
- Integration with dashboard and/or risk analysis engine

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### Various dashboards have been developed ...

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#### Thank you for your attention.

Questions?

Wout Hofman, senior research scientist (<u>wout.hofman@tno.nl</u>, +31 622499890)