NWO kick-off event for Big Data Logistics
24/01/2018
The DL4LD project
  ‣ Goals
  ‣ Deliverables
  ‣ Project structure
  ‣ Integration and Long Term Research

Alignment demand and functional requirements
  ‣ With Logistics Stakeholders
  ‣ With Compartment 2 Projects

The DL4LD ‘Logistics Trusted Data Hub’
  ‣ Typologies  => What?
  ‣ Architecture  => How?
  ‣ Long Term Research / PhD's  => How?
Data Logistics for Logistics Data (DL4LD) is an innovation project that aligns with the ambitions of the ‘Topsector Logistiek’ and ‘Commit2Data’.

The logistics companies will strive for an internationally leading position, amongst others as chain orchestrator, and will therefore have to share logistics data on a large scale.

To support this, a data sharing infrastructure is required as basis for essential logistics information services. The data sharing infrastructure must be secure and trusted.
Formal deliverables as stated in the project proposal

- A blueprint for data infrastructure for the logistics sector
- A roadmap for implementation of a secure data infrastructure and facilities in the logistics sector
- Open experimental facilities to support use cases and research projects
- Increase the awareness of the value of smart ICT and big data for logistics
THE DL4LD PROJECT
PROJECT STRUCTURE: WORK PACKAGES AND ROLES

Duration: 5 Years: Q1 – Q20

Two Phases
- Project Phase 1: Q1 – Q10:
  - WP2, WP3 and WP4
  - TNO and UvA
- Project Phase 2: Q2 – Q20:
  - WP2 and WP3 (Update Arch. Blueprint)
  - Mainly UvA

Interfacing with NWO

Prof. C. (Cees) de Laat (UvA)
Principal Investigator - Scientific

Prof. R.J. (Rob) Meijer (TNO, UvA)
Principal Investigator - Coordinating

Dr. H.J.M. (Harrie) Bastiaansen (TNO)
Project Leader

Interfacing Compartment 2 Projects
Technical Capabilities & Integration

- Architectural framework for logistics data hub, cf:
  - Industrial Data Space
  - Smart City Hub
  - Smart Dairy Farming
  - .....

Long Term Research through PhD’s

- Digital Market Place Automation
- Logistics Services Integration Methods
- Future Internet Generation
Four short term halfyear projects: Q3, Q5, Q7, Q9

1. Initial blueprint based on current smart logistics projects
2. Blueprint 2: Mainport Schiphol / KLM / Cargonaut
3. Blueprint 3: Port of Rotterdam & Amsterdam / Portbase
4. Blueprint 4: Greenport, agri-food sector. Truck transport (TLN)
To be discussed in the panel discussion

**ALIGNMENT**

**DEMAND**

**AND**

**FUNCTIONAL REQUIREMENTS**

WITH **COMPARTMENT 2 PROJECTS**

**P.J.M. Havinga**

*Datarel*

Big Data for Resilient Logistics

**T. Van Woensel**

*Data Driven Logistics Decision Making*

Real-Time Data for Products to Move

**M. Snelder**

*ToGRIP*

Grip on Freight Trips

**M.M.J. Stevens**

Secure scalable policy-enforced distributed data processing

**C. de Laat**

*DL4LD*

Data Logistics for Logistics Data

**G.J.J.A.N. van Houtum**

Real-time Data Driven Maintenance Logistics

**T. Van Woensel**

*Data Driven Logistics Decision Making*

Real-Time Data for Products to Move

**C. de Laat**

*DL4LD*

Data Logistics for Logistics Data
For its functionality of the Logistics Data Hub, various typologies are distinguished:

- **The inter-organizational governance typology**
  To ensure that individuals behave in line with the collective goals, conflicts between individuals are prevented or resolved, the effective and fair use of collective resources within the inter-organizational collaboration and the corresponding trust levels are being managed.
  
  Types: Market, Bazaar, Hierarchy, Network

- **The data value typology**
  The value of the data to be exchanged for the providing organizations.
  
  Types: Private Data, Shared Data, Public Data

- **The data exchange pattern typology**
  The commonly-used and generic methods/structures for exchanging logistics data between organizations.
  
  Types: Pub/Sub, Req/Resp, …
Cross-Sector: National Big Data Hub initiatives

- Smart Industry Data Hub
- Smart City Data Hub
- Smart Dairy Farming Data Hub

Within multiple logistics data sharing initiatives

- Community Service Initiatives (Port / Airport, …)
- NLIP iShare
- Multiple (private) logistics data sharing initiatives

Across the ‘Data Sharing Life-Cycle’

- Registration and Configuration
- Usage and Data Control
- Monitoring and Accountability

Multiple data sharing typologies

- Inter-organizational governance typology
- Data value typology
- Data exchange pattern typology

NWO Call Big Data Real-time ICT for Logistics:

- Compartment 1
- Compartment 2
Architectural principles:

- Service Enabling
- Data Sovereignty
- Federation
- Managed and Controlled
THE DL4LD ‘LOGISTICS TRUSTED DATA HUB
LONG TERM RESEARCH: 3 PHD’S

Rob and Cees
THANK YOU FOR YOUR ATTENTION