

LL #19 Data Exchange Facility Logistics (DEFlog)

FACTSHEET

10 MARCH 2022

A. GENERAL (BUSINESS CASE)

1.Objectives

- Transport tracking
- Data sharing platform
- Kick-start a practical data sharing platform to enable initiatives to show how data sharing can achieve better planning and execution of road transport operations and connected law enforcement activities and traffic management.
- Asset and infrastructure use optimization (traffic management)
- Supply chain visibility

2. Main emphasis

Developing a data sharing platform for traffic management purposes, incorporating a PCS with semi public administrations for incident management and city access.

Development of API's access. This should lead to the:

- Integrated use of actual and reliable mobility data in TMS and FMS of LSP's, leading to more efficient and effective road transport operations.
- Faster traffic management by automated use of actual and reliable load data, leading to faster clearance of the roads and less costs due to delays.

Within the FEDeRATED framework two start-up use cases on data sharing have been developed and partly executed

- Roadworks and road blocks data are provided by NDW to IT service providers through DEFlog to be incorporated in planning tools via DEFlog - OTM by default. Data is provided event-driven: only notification if something changes

- Truck Incident Management and Truck flow management FMS data from a haulier are delivered through DEFLog to public authority (RWS)

3. Challenges

- Interoperable data sharing platform facility based on current PCS architecture extended to the logistics domain applying DTLF data sharing building blocks
- Application data at source
- Data transition based on current standards
- Set of arrangements – governance

4. Transport mode

Road

5. EU Map Focus

- North Sea-Baltic Corridor (Finland–Estonia–Latvia–Lithuania–Poland–Germany–Netherlands/Belgium);
- Rhine-Alpine Corridor (Netherlands/Belgium–Germany–Switzerland–Italy).

6. Geographical coverage

The Netherlands.

7. Actors/SMs

- Rijkswaterstaat
- Road Traffic Data (NDW),
- TLN,
- DALTI,
- SUTC
- evofenedex,
- iSHARE,
- Jan de Rijk
- Port of Rotterdam and
- Port of Amsterdam
- Portbase
- Local and regional governments, i.e. Zwolle, Apeldoorn, Utrecht, Metropoolregio Den Haag Rotterdam, Zuid-Holland, Zeeland, Eindhoven, Helmond, ...

8. Forecast scaling outside LL

DEFLog in its current form is scalable to regional governments and logistic service providers. The publish and subscribe approach and FEDeRATED semantic model were not applied. Federated approaches as to keep the data at source were difficult to manage. Much interest was shown in the market, but market parties were not easily convinced to join the work further developing the DEFlog data sharing platform. The result being that just a few business cases, including data, could be engineered and shared through DEFlog. The applied Open Trip Model (OTM) showed some vulnerability requiring much effort and cost realising data transition

B. TECHNICAL SETTING

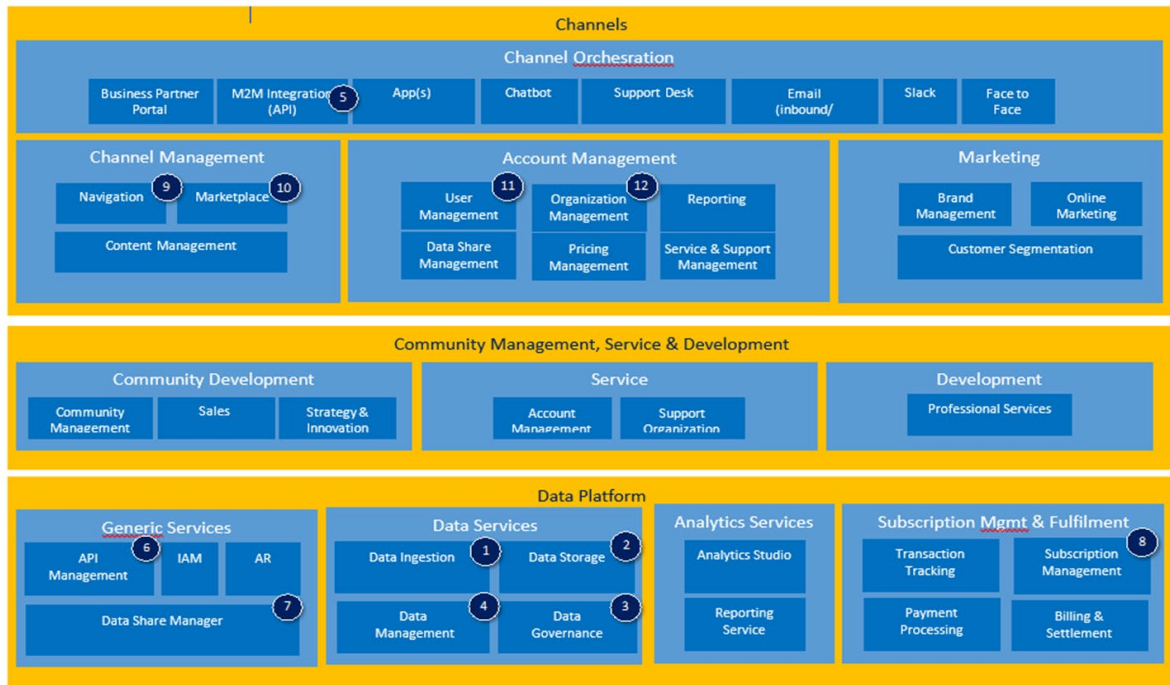
9. ICT vs physical

The functional design provides participants real time feeds and event processing of raw and curated data. Connections are established through API's. API data and user authorisation is facilitated by a Registry.

The technical design of DEFlog runs on AWS Cloud technology. Data user and holders are provided with a token to access a "data lake" through a Public Key. Data users and holders are provided transaction logs, monitoring alerts and ingestion and subscription services.

Each data holder and – user has to comply with the architectural setting. This refers to the following components and interfaces:

- API node – each data holder and – user has its own API node that needs to integrate with the (identical) APIs of all relevant nodes.
- Data transformation – DEFlog enables for every data holder or -user transforming data through the Open Trip Model (OTM)
- Data quality – a data holder is responsible for the data quality according to the data set that they are able to provide.



The living lab is finished concerning FEDeRATED participation. In real life the DEFlog project continues to execute use cases. This Living Lab deals with the following FEDeRATED global features:

- Language (Open Trip Model)
- Access
- Identity

10. DTLF implementation option

B. Single Platform

C. ORGANISATIONAL ISSUES

11. Success factors

- Improving digital information flow (data sharing) between government (municipalities, road managers, province, government) and logistics service providers (carriers, shippers, terminals and depots).
- Strengthening the information position of these actors.
- Enhanced supply chain visibility
- Better service from road managers to business.
- Compliance with BDI architecture (LL#20).

12. Risks

- Difficult migration of the Dutch Open Trip Model (OTM, data model) towards FEDeRATED semantic model.
- Knowledge and resources at participating companies and suppliers.
- Low digital maturity of relevant participants.
- Insufficient number of data holders and users
- Insufficient interaction and commitment

13. Timing

LL#19	2019				2020				2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Preparations	■																			
Planning and scoping	■	■	■																	
Stakeholder engagement	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LL infrastructure development			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Testing & piloting			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Iteration & process analysis	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Operational trials			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Feedback & scaling					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

The contribution of FEDeRATED ended at the end of 2021. In 2022 and 2023 the DEFlog project continues to execute use cases and integrates in terms of architecture and 'tooling' in LLE20.

14. Contact

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