

Traffic Data Ecosystem Overview

September 28, 2023 Janne Lautanala Chief Ecosystem and Technology Officer Fintraffic

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Fintraffic manages and controls traffic and traffic related data in all modes of traffic

Railway Traffic



- 500,000 trains per year
- 82 million passengers per year
- Rail network 6,000 km
- 470 professionals

Air Navigation Services



- Air traffic control services at 22 airports
- 280,000 aircraft movements per year (190,000 at Helsinki-Vantaa)
- 440 professionals



Road Traffic

- Roads carry 90% of passenger transport in Finland
- More than 120 million km driven in vehicles every day
- Road network 78,000 km
- 90 professionals

Vessel Traffic Services



- Shipping carries 90% of exports and 80% of imports
- 30,000 visits by foreign vessels per year
- 29 ports
- 100 professionals

We also deliver traffic data and digital services for operators and end users in the transport ecosystem



We offer a wide range of data and services

Key domains:

- Situational awareness on all traffic modes
- Logistics
- Public transport



Data sources:

- Fintraffic traffic management & control
- Finnish Transport Infrastructure Agency, Finnish Transport and Communications Agency
- Public Transport Authorities and Operators
- Logistics organizations
- 3rd party data providers (e.g. EV charging)
- Citizens



~10BAPICalls/Year

users include e.g. Google, HERE, Apple, PTAs etc.



WHY?



Digitalization of Traffic is an effective tool

for building sustainability and productivity



Growth forecast for Global traffic market by 2030*

is spent on logistic and traffic costs

of companies' and households' money of emission are caused by traffic. We need to cut the emissions to half by 2030

Digitalization offers a unique possibility to:

 create better and equal traffic and logistic services for customers

• build a more effective traffic system, cut down traffic related costs for companies and households and to cut down emissions

 create growth to the industry, to support Finland's competitivity

enhance international accessibility

*Source: Traffic Industry's Programme for Sustainable Growth 2021-2023

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WHAT?





HOW?



Traffic Data Ecosystem

- We are developing the future of traffic, where one major goal is to create a Finnish network of traffic operators making the most effective use of data, a network unique in the world.
- We have invited more than 170 leading mobility organizations (including operators, authorities, academia, service providers, cities, ports etc.) to create
 - Innovative, interoperable data-share and data-use solutions and a fair digital operating environment in order to reduce cost of utilization of data.
 - competitive and scalable traffic and mobility services for both Finnish and international markets
 - **Key domains:** Logistics, mobility data, traffic information (situational awareness)
 - Cost-efficient and scalable platforms and solutions that will enable safe, low-emission and user-oriented travel and transport chains that combine different modes of transport.
 - <u>fintraffic.fi/liikenteenekosysteemi</u> fintraffic.fi/en/trafficecosystem



The building blocks for traffic data ecosystem

Collaboration



- Shared vision and goals
- Coordination
- Joint development
- Joint investments



- Technical infrastructure
- Standard Data Models
- Standard APIs
- Shared services

Rulebook



- Fair Data economy rules & agreements
- Agreement templates
- Conventions



Source: Fintraffic stakeholder interviews, spring 2020

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Traffic Data Rulebook accelerates fair data economy within mobility services

- The rulebook aims to **free up more data** with or without fee with commonly agreed formats.
 - The rulebook is based on trust, sovereignity and voluntary approach.
 - The rulebook provides a many-to-many agreement framework and eases legal work required for data sharing.
- The rulebook defines the rules for data sharing, provision of data driven services and collaboration governance.
- The rulebook is based on Sitra's Fair Data Economy Playbook: <u>https://www.sitra.fi/en/publications/rulebook-for-a-fair-data-economy/</u>
- Traffic Data Rulebook can be downloaded from here:
 - <u>https://www.fintraffic.fi/en/rulebook</u>







Transport service ecosystem requires a comprehensive set of capabilities and data ("Digital Twin")

Transport service ecosystem is based on physical and digital elements. Service development and operations require support from public players to enable digital business.

DIGITAL B2C and B2B SERVICES What customers see and experience			
CUSTOMER TRIP AND DISPATCH DATA Statistical and up-to-date data from trips and dispatch actions	BOOKING, SALES, ORDER AND DELIVERY Functions needed to purchase trips & services	IDENTIFICATION AND AUTHORIZATION Functionalities for managing customer data (f.ex eligibilities)	PAYMENTS and TRANSACTIONS Functionalities for payments, transactions and clearing
SITUATIONAL DATA AND INFORMATION Real time concerning traffic and infrastructural conditions (road works, speed limits, maintenance status, traffic flows/jams)		ROUTE PLANNING Functionalities for planning trips/journeys (multimodal or not) in connection with transport services and situational data and information	
TRANSPORT SERVICES PTA's, TSP's, Public transport, micromobility			VALUE ADDING SERVICES POI's, shared data, Insurances
INFRASTRUCTURAL ASSETS Road, rail and water routers; Stops, stations, harbors, terminals and other relevant transport infrastructure points			

= Fintraffic main area of responsibilities

Sample Solution: Fintraffic Port Activity Application

Application for data sharing, enhanced collaboration, and common situational awareness based on opensource solution



- Virtual operation room for port operations. Replaces complicated and manual port flow processes with automated and digitalized processes that utilizes IoT, Machine-to-Machine communications and modern integration and AI technologies.
- Creates one centralized place for up-todate situational awareness data, offering full visibility over the whole port operation process and schedules
- Integrates existing systems and data sources, both public and private, and taking full advantage of the existing systems



Need more information?



• Please do not hesitate to contact us:

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https://www.fintraffic.fi/en/trafficecosystem



Appendix



How will we achieve our goals?

- 1. By inviting all parties to participate equally in the joint and open development of a traffic data ecosystem.
- 2. By working towards **common objectives and common action,** by sharing knowledge, and by engaging in codevelopment to increase the value of the traffic and logistics market.
- 3. By **making more data available** either with or without charge in a mutually agreed format.
- 4. By **making use of jointly developed rules** and clear working practices.
- 5. By making it easier for different operators to work together with the aid of things such as common data models, jointly defined technical interfaces, and international standards.

- 6. By **building cooperation networks** that can market, sell and supply interoperable solutions.
- 7. By **respecting current legislation** under all circumstances, and particularly with regard to privacy protection, trade secrets, competition law, data protection and data security.
- 8. By leveraging Fintraffic's unifying role between all modes of transport in the creation of the data ecosystem, particularly in the creation of market references and key market-based services that are difficult to launch, and primarily as an enabler rather than a creator of services for end users.
- 9. By actively communicating agreed measures, progress, and achievements; and by facilitating interaction between operators at all stages of the process.

