

## Preparation for eFTI implementation

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<p><b>Abstract</b></p> <p>The EU's eFTI regulation will become mandatory and active for member states in 2026. Therefore, it is essential for authorities and companies to effectively prepare for new risks related to digitalization and data transfer, as the regulation has a significant impact on practices related to the sharing of logistics data and cyber security between companies and authorities. In the preparation for eFTI implementation study, authorities and companies were comprehensively interviewed. The interviewees were not familiar with the eFTI regulation and its effects, but they considered it as a positive opportunity for the development of logistics rather than a threat to their operations.</p> <p>Important issues for preparation were identified during the project. First of all, it is important for companies to know the requirements of the regulation precisely and to ensure that their IT and information systems and data processing processes comply with the new regulations. At the same time, the authorities must offer clear and understandable instructions, guidance and resources to companies to achieve this.</p> <p>Cooperation and standardization in eFTI development are key issues for successful implementation. Both authorities and companies can benefit from uniform standards that facilitate data exchange and ensure compatibility between different systems. This reduces errors and increases efficiency. Common real-world pilots are also needed to ensure compatibility with existing operations.</p> <p>Cyber security is a key concern when sharing sensitive logistics data. Regular training for staff and sophisticated access control mechanisms are essential. Preparing for possible cyber-attacks is essential. Both authorities and companies must develop emergency and contingency plans and react quickly to possible data security attacks.</p> <p>Transparency and open communication are also essential in preparation. The authorities must share information about the exact requirements of the regulation and the expectations of private companies and service providers. On the other hand, companies must openly communicate about possible challenges and their needs.</p> <p>In summary, it can be stated that the eFTI regulation significantly changes the data sharing practices in logistics. Preparation requires cooperation, training, piloting, investments in cyber security and open communication. In this way, both authorities and companies can ensure that future changes are implemented <u>efficiently and safely</u>.</p>			
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## Executive summary

### Background

At the EU level, a general EU policy work and many different development projects are promoting the digitization of logistics and especially how to organize data exchange between stakeholders. New policy actions such as eMSW [1], ICS 2 [2] and eFTI (electronic Freight Transport Information) [3], among other issues will enhance, harmonize, protect and secure the market and create transparency in transport chains. What they all have in common, is digitization and a data-based approach, where the origin of the data and trusted data sharing are emphasized.

In Finland, in the field of administration of the Ministry of Transport and Communications, the aforementioned reforms have already started to be prepared for before their actual implementation and these have been taken into account in the national Logistics Digitalisation Strategy for example.

Regarding eFTI implementation, Finnish Transport and Communications Agency Traficom supervises and is responsible for the implementation of eFTI in Finland. Transport Management Company Fintraffic implements the national eFTI authority system, i.e. eFTI Gate, and the related interfaces for both competent authorities and economic operators.

To support national resourcing, Finland decided to apply for eFTI CEF funding together with eight other member countries in autumn 2022. The eFTI4EU project [4] application was submitted in January 2023 and in late spring the application was accepted by the EU's CINEA. In addition to Finland, the project includes Estonia, which acts as the project's coordinator, as well as Belgium, Italy, Austria, Lithuania, France, Portugal and Germany. In addition, Ireland, Holland and Spain are observer countries of the project.

From Finland, the project beneficiary is Traficom, which is responsible for the pilots and the joint development of the system in project level. The work done in the *Preparation for eFTI implementation* project is part of eFTI4EU project and is thus reported also for the larger CEF project. In the eFTI4EU project, 9 member states together collaborate and will co-develop an open source eFTI Gate reference implementation, which is targeted to boost uptake of interoperable eFTI exchange environment.

The primary goal of the *Preparation for eFTI implementation* project was to promote Finland's capabilities and preparedness regarding the implementation of the upcoming eFTI regulation. The second main goal of the project was to find out how different Finnish authorities have prepared for eFTI and how well economic operators are ready and willing to utilize the eFTI concept. In addition, the aim was to support the development of Finnish supply chain preparedness and the goals of Finnish National Emergency Supply Agency Logistics2030 program, by improving the preparedness and capabilities of main supply chain stakeholders.

The project analyzed functional and technical weaknesses and strengths of the eFTI system from the point of view of economic operators and authorities, and thus assessed the readiness of logistics' key stakeholders for the future digital transition. In addition, in order to test the technical functionality, a proof of concept (PoC) implementation of the eFTI system was created in the project by the project team.

The PoC was used as a test platform and at the same time it offered a practical demonstration about eFTI system for authorities as well as economic operators.

The sub-goal of the project was to start a dialogue with future eFTI stakeholders, which are the traffic control authorities, transport and logistics companies, system suppliers and transport customers. Via the dialogue, the aim was to gather understanding of how different stakeholders perceive the presented eFTI regulation and the related future operating model as well as the technical implementation. In parallel, the dialogue enabled first level information sharing and dissemination about the eFTI regulation. This dissemination task was emphasized during the project more than expected due to the unfamiliarity of eFTI.

### electronic Freight Transport Information – eFTI

The EU's eFTI Regulation entered into force on August 20<sup>th</sup> 2020, after which DTLF (Digital Transport and Logistics Forum) subgroup 3 [5] and the Commission have prepared documentation and legislative work related to the eFTI delegated regulation (Delegated act DA) and implementing act (Implementing act IA) (Figure 1). As a part of normal EU policy work the member states have had the opportunity to consult and comment the documentation. The regulation confirms the delivery of legally required information related to transport electronically between economic operators (EO) and competent authorities (CA) using the eFTI system. At the same time, the EU wants to accelerate the transition from paper to electronic transport documents. The preparation work of the regulation produced the first approved version of the implementing act (implementing act IA) in December 2023.

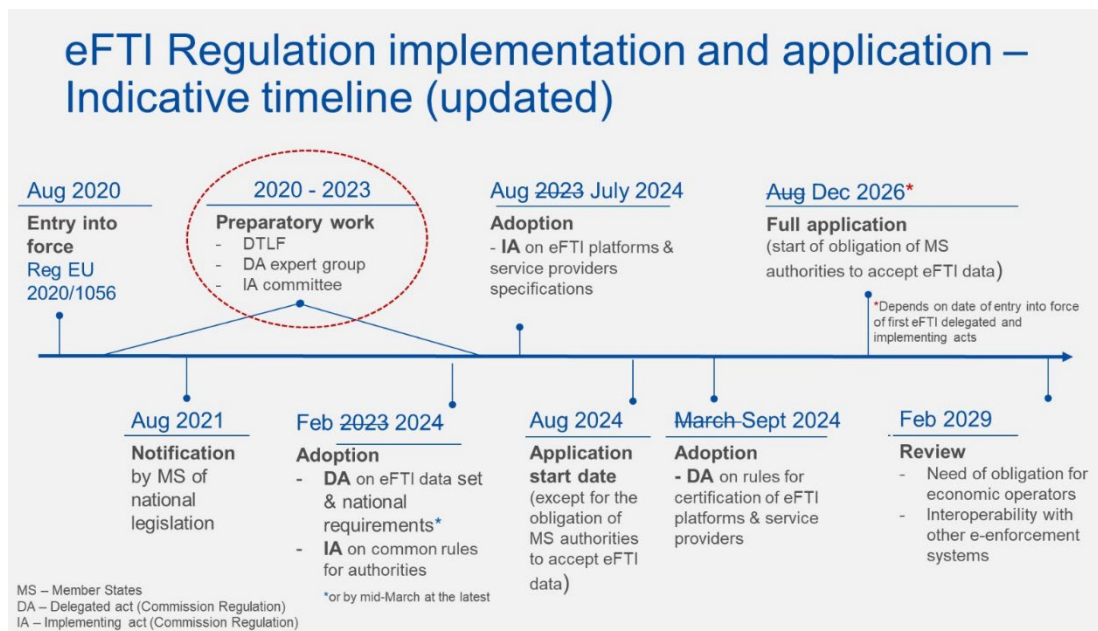


Figure 1. eFTI time by the EU in November 2023 [6].

At current state eFTI is intended for the exchange of electronic transport data between authorities and economic operators. From 2026 onwards eFTI applies to all forms of freight transport and it obliges authorities to be able to receive the electronic transport data (eFTI data sets) through the eFTI service channel. In the first phase, eFTI does not obligate economic operators to use electronic transport data, but the EU has informed that from the 2029 the regulation might be updated so that it could also be obligatory for economic operators. However, immediately after

implementation, the eFTI regulation enables the authorities to direct B2A freight data exchange to the eFTI. I.e. possible interface and data transmission solutions created with individual operators can be directed to the eFTI system.

The eFTI system consists of three main entities, which are integrated and which must also be linked between countries. From the authority point of view, the eFTI Gate (gateway) and the interfaces between the eFTI Gate and competent authority systems, which in the eFTI terminology are referred to as Authority Access Points (AAP) are the main public subsystems of eFTI. In addition, eFTI platforms, which are hosted by economic operators are core subsystems of eFTI system architecture. eFTI enables digital data exchange systems between economic operators and competent authorities, but it also connects national eFTI Gates between member states and hence eFTI creates EU wide freight data exchange environment.

In Finland, the national implementation project of the eFTI regulation started in 2023 and is budgeted for the coming years, covering the planning and development of the eFTI system. The maintenance of the future system will be determined later as a collaboration between Traficom and Fintraffic. Even before 2023, Finland has participated in the DTLF work, where the eFTI legislation has been prepared. In addition, the national steering group consisting of the authorities related on the eFTI implementation project has been doing national preparation work since 2021.

### **Project findings**

The project started at the beginning of April 2023 with the refinement of the project's goals and the updating of the project plan and schedule, which were reviewed with the steering group at the project's first steering group meeting on April 20, 2023. Before this, the members of the steering group had already met once to start the project without the project implementer (Vediafi). In the first steering group, it was also tentatively agreed which authorities must be interviewed in this project.

A total of 22 organizations (authorities, logistics customers, transport companies and ICT operators) were interviewed in the project, of which one or more people participated in the interviews. In addition to the general interview, a detailed technical discussion about eFTI and related technical requirements was held with few organizations. For such a technical and more profound discussions, Fintraffic's eFTI expert was also invited to give more technical clarifications and guidance. Interviews were divided so that at the beginning of the work in spring and early summer 2023, authorities were interviewed and in the fall the focus was on shifted to economic operators. In the autumn, the authority side was also supplemented by focusing on rescue operations.

In general, it can be stated that the interviewees had a positive attitude towards eFTI and that it was seen to have more benefits than threats. It was clear that the basic principle of eFTI utilizing pull approach instead of push mechanism (i.e. data/information is not primarily collected to a centralized system, but by default only identification IDs are published and used for data search on authority checks only), was considered good. However, it can be also stated that the interviewed parties' knowledge of eFTI was very limited at the time of the interviews. In particular, private sector knew very little about what eFTI is about, hence the interviews also worked as general dissemination activity, where general information about the eFTI regulation was shared.

In authority interviews, a positive attitude towards eFTI was emphasized and it was perceived to offer benefits and harmonize operations. At the same time, the authorities were aware that the final form of the regulation is still pending and further delays can be expected in the eFTI work.

Private sector had more doubts and questions about eFTI, when compared to authorities. In addition, it is clear that one solution does not fit for all, since there are so many different ways how logistics services can be organized and what is the level of outsourcing. Hence, also eFTI implementation must be flexible and agile. However, due to the ongoing digital revolution in logistics, there is a clear demand for process standardization and harmonization as well as for general information and training for the ongoing digitalization development. Interviews with logistics operators also emphasize that the commercial side of the eFTI system still requires a lot of configuration work and eFTI is completely unknown to the majority of actors.

One key observation from the interviews was that the term consignment note can mean different things to different actors in the industry, even though in principle it is clearly defined. For some operators, transport, order and delivery documents are more central in terms of operations, and therefore the term waybill/consignment note may also be used for them. In eFTI communication, the eFTI data model must be emphasized, which is different from the waybill, even though some of the information is consistent. In addition, one main finding was also that interviews confirmed the perception that eFTI's operating principle and data sharing model are acceptable for both companies and authorities.

The central observation of the work is also that there is a desire for more information and communication. Commercial actors are willing and interested in following the future reforms of public authorities, and in addition, several interviewed actors also expressed their willingness for joint pilots. Part of information and communication is also training, the planning and implementation of which requires an investment from the authorities.

Somewhat surprisingly, perhaps the biggest beneficiary of eFTI, i.e. the customer side of logistics, was not aware of eFTI and the possibilities related to it. Consigners and consignees felt the need to quickly correct their information gap, for example by developing their ERP solutions to be eFTI-compatible.

### **Cyber security**

In the interviews, there was a lot of discussion, especially about the IT capabilities and weaknesses of the eFTI system, of which the unanimous observation is that the eFTI system is not perceived as unique IT system, but is perceived to be similar to other international large IT systems, so that their functionality and risks must be organized in a proper way.

The interviews involved a lot of public and private actors who are involved in preparedness activities in some way and thus are familiar with the risks of digitalization. Despite this, the general optimism about eFTI's exchange of information between companies and authorities remained the main factor. Retrieving information from the source was considered a strength of eFTI. Instead, potential storage of information elsewhere and information falling into the wrong hands was perceived as a risk.

In a nutshell, preparedness can be divided into three categories: 1) preparation for availability and service interruption threats, 2) data leaks and 3) preparation for the challenges of information quality and information distortion. In these, it must be noted that in terms of information security and cyber security, the threat/attacker can be a state actor and/or a private entity, which can consist of one actor or a group of actors. It should also be noted that even a small actor can be part of a larger network, and a network can be a group of specialized smaller actors, i.e. part of a cybercrime ecosystem.

Based on interviews the need for preparation arises from the fact that the integrity of the data is preserved and the eFTI system must be constantly available. This may require implementing strong backup strategies and emergency procedures. Some of the operators raised the paper process as a precaution, and some believed that the paper process and its know-how will disappear quickly. That's why the contingency system should also be digital, especially if eFTI becomes mandatory for private sector as well and when paper documents are dispensed with.

The operational reliability and continuous availability of the systems sparked a lot of discussion, especially how to proceed in the field inspection if the eFTI system does not work. For such situations, clear action plans should be created in cooperation with the authorities working in the field and monitoring work. In addition, it must be communicated to the logistics operators, so that they are also aware of how to act during technical disturbances. In addition, a system diagram of official systems should be created, from which the effects of the future eFTI system on the supervising authorities' own systems in the event of disturbances can be determined.

### **Open issues**

Before achieving the operational phase of the eFTI system, the operating models must be clarified and created - among other things - for the following issues that were pointed out in the interviews and were open during the study:

- practices and operating models in the event of system disturbances, especially with regard to the backup system
- ensuring data quality and availability
- combinability and usability of data with other systems, taking into account both authorities and commercial operators
- ensuring digital traceability
- organizing support and helpdesk services
- monitoring and updating of eFTI legislation and related regulation (e.g. EU intermodal transport regulation)
- supervision and certification of eFTI platforms (note EU regulatory work in progress when the report is completed)

### **Proof of Concept**

Part of the project was also to create Proof of Concept (PoC) of eFTI system, which can be used to illustrate eFTI information sharing between economic

operators and authorities. For the planning and implementation of the PoC, the automatic border crossing system (Automatic Border Crossing, ABC) developed by Vedia during the FEDeRATED project [7] in cooperation with Finnish Customs was used. The ABC has been piloted at the Kivilompolo border station since 2020 and it consists main principles of eFTI systems.

In the PoC (figure 2 and 3), a graphical user interface was created for commercial operators (server 1), which could be used to create transport documents and enter the basic transport information. A server simulating the eFTI platform developed by Vedia (server 2) was used as a proxy in PoC, which collected data and linked the data created in server 1 into one transport. A dedicated graphical user interface (server 3) was developed for eFTI Gate/CA application, from which the user can make queries to the eFTI platform (server 2) using, for example, a register plate number or cargo ID.

This app generates eCMR documentation, which is accessible via Vedia's eFTI platform.

Create a new delivery

Vehicle ID

Transport type

Railway Road Air Inland waterway

Start address

Stop address

Dangerous goods

Yes No

Cabotage

Yes No

Parcel ID

Generate document!

Figure 2. PoC illustration

Search results for: "██████████"

Parcel ID: 5

Vehicle: ██████████

Transport type: Road

Contains dangerous goods: Yes

Cabotage: No

Get full information

Parcel ID: 6

Vehicle: ██████████

Transport type: Road

Contains dangerous goods: Yes

Cabotage: No

Get full information

New query

Figure 3. PoC Competent Authority application illustration.

## Conclusion

As a result of the work it can be summarized that the interviewed actors see many opportunities in eFTI and its basic ideas can be agreed with. At the same time actors are interested about actual benefits and final implementation of eFTI system.



However, the general concern of the logistics industry is also raised about how to get small transport companies involved in digitalization, without threatening their profitability with the development. Small companies represent a large share of the transport companies in Finland and are important for the functioning of Finnish logistics. The interviewed parties felt that with training and provision of easy-to-use solutions, even small companies can be helped to adopt digital solutions. However, they also believed that not all operators will be able to join the digitalization development.

In Finland the national readiness for the implementation of eFTI for the authorities is good, and Traficom and Fintraffic, who lead the national work, are well aware of the required implementation stages and possible challenges. Compared to the international level, Finland also has good resources for eFTI development work, which will certainly help the national implementation. However, in practice, the work mainly takes place between Traficom and Fintraffic, and more competent authorities should be involved as the development, integration and regulation of eFTI Gate progresses.

From the point of view of efficient implementation and operational activities, it is essential to also involve logistics customers and transport companies more actively into eFTI development. In the first phase, participation can take place through general informing, but when the test environments and national interfaces are clear, economic operators should be offered opportunities for easy and agile eFTI testing. It should also be ensured with commercial operators that the final eFTI system offers sufficient benefits for private sector to adopt eFTI. In order to spread public interest and awareness about eFTI development, it is good to inform nationally, in connection with related other regulation and by various authorities, especially via Customs.

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