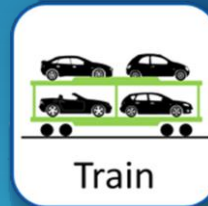




e-CMR

Guidance notes for operators

(ECG Digitalisation Working Group)



Version 2
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1. Background

The first cross border transportation using e-CMR took place in January 2017 between Spain and France. It was organized by IRU (the International Road Transport Union) and under control of the French association FNTR (*Fédération Nationale des Transports Routiers*) and the Spanish association ASTIC (*Asociación de Transporte Internacional por Carretera*). For the first time, technology such as this allows truly paperless deliveries. The main intention of this document is to present how e-CMR providers, like Dutch TransFollow or the Belgian Pionira work, what is needed to run these applications, their benefits and entailed costs.

ECG provides below the description of the services of TransFollow and Pionira without any financial interest in the companies. The purpose of this document is to give as much information to our members as possible on the digitalisation of the CMR documents.

2. TransFollow

Currently, TransFollow¹ is one of the first providers on the European market that offers a legally compliant electronic platform by means of which the e-CMR can be submitted, exchanged, tracked and signed. The platform gives shippers, carriers and receivers more control over the logistics process. TransFollow was created by Dutch associations, the Dutch Shippers' and Logistiek Organisation EVO² and the carriers' organisation, Transport en Logistiek Nederland (TLN).³ Now it is 100% owned by IRU.

a) TransFollow platform

TransFollow's platform allows shipper, carrier and receiver to use a single, uniform, standardised and secure interface to create, exchange, sign and track an electronic consignment note across those countries where the e-CMR protocol has been fully adopted.

The platform allows information about the consignment of goods to be sent electronically and in real time. This means that paper documents no longer need to be created, processed and/or scanned. The information is also immediately available. The shipper, carrier and receiver can track the entire process at all times, while using the tool.

The TransFollow platform is fully secured and centralised. It provides storage, distribution and archiving of consignment notes. It allows governance, distribution and storage of transactions.

b) How to use the TransFollow platform

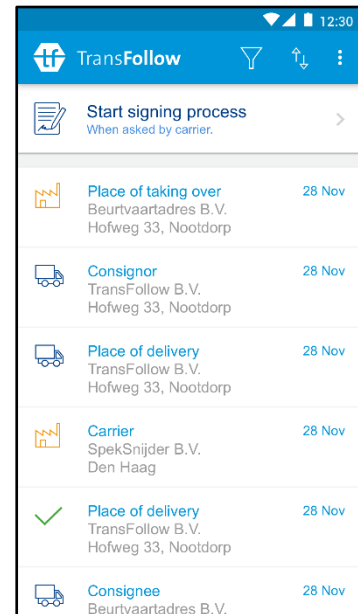
In order to use the TransFollow platform each party (shipper, carrier and receiver) needs to be connected to the TransFollow system. To do so, the parties need:

¹ www.transfollow.org

² www.evo.nl

³ www.tln.nl

1. To download a free of charge TransFollow app (designed for both Android and IOS), or Android application package (APK) for PC/Mac/Windows 7, 8, 10, then install it and register, by creating an account.
2. A shipper prepares the e-CMR by filling in the fields in the app or TransFollow programme. For larger users that need multiple e-CMR documents to be produced daily, TransFollow provides a public application programming interface (API) key to the company's IT provider in order to integrate their existing system into the TransFollow platform (see the entailed costs below).⁴ It allows them to use their own software system in order to create an e-CMR which is later transferred to the TransFollow platform.



TransFollow e-CMR app

3. The system assigns a number to the created e-CMR (e.g. NL333609).
4. If the recipient has a TransFollow account he receives a notification from the TransFollow platform on his installed app (and via e-mail notification) that the shipment is ready for transport.
5. The carrier receives the consignment note information in his transportation management system (TMS) or TransFollow app and schedules the shipment.
6. When the carrier receives the consignment note and confirms it, the shipper receives the alert on his computer or mobile device that the carrier is ready to collect the shipment.
7. The carrier collects the shipment from the shipper.
8. After loading, the carrier signs for receipt of the shipment using the standardised and secure TransFollow protocol with a unique code.
9. The shipper receives a digital copy.
10. The carrier transports the goods to the receiver.
11. The receiver obtains an alert on his app via the TransFollow platform, or management system that the shipment is under way.
12. The shipment is delivered to the receiver who signs for receipt and may add remarks and pictures about the condition of the goods. There are three ways for a receiver to sign for the delivery of goods (discussed below).
13. The shipper is informed about the delivery in real time. The carrier no longer needs to send the signed consignment note to the shipper in hard copy. Depending on the nature of any remarks, the sender can take follow-up actions with their customer.

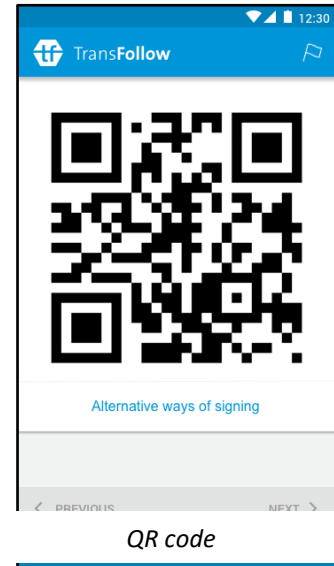
⁴ For larger users in order to be able to send consignment notes via TransFollow, a connection (integration) between a company IT system (i.e. WMS/ERP) and TransFollow platform is necessary. There are a large number of (logistical) software vendors with their software already connected to TransFollow or who have the TransFollow connection scheduled, i.e. Connected TMS (transport management software) suppliers, Connected FMS (fleet management software) suppliers and other ICT suppliers.

14. The transaction is then completed and the authenticated digital copy of the consignment note can be viewed and downloaded.

Please see **Video 1** (link at the end of the document) that explains how the TransFollow platform works.

c) Administration process

The TransFollow system allows shippers to transfer a shipment to a carrier. It also allows a receiver to take care of the administration involved in delivering of a shipment by a carrier. Once the shipper indicates on their app that the shipment has been transferred to a carrier, a unique code (series of figures or QR code) is displayed on their app. By scanning this code in their on-board computer, the carrier agrees to take receipt of the shipment. When it is delivered to the receiver, the receiver in turn obtains a unique code on their app to 'sign' for receipt on the carrier's on-board computer. This completes the administrative process.



d) TransFollow Show and Sign Component (TSSC)

In order to simplify the presentation of the consignment notes on a mobile device, and to ensure that they are signed in a legally binding manner, the TransFollow Show and Sign Component (TSSC) app has been developed. An electronic consignment note is created directly via the TransFollow app or in your own company system that is integrated into the TransFollow platform. Then this consignment note is sent to the TransFollow platform. TSSC is then connected to the app or on-board computer, allowing the newly created consignment note to be presented unambiguously and signed in a uniform manner.

Please see **Video 2** at the end of the document explaining about TSSC..

e) Signing e-CMR

In order to present and sign an electronic consignment note the carrier accesses the TSSC in the TransFollow app. (Note that internet access is not required in order to sign using the TSSC system.) Should there not be internet access when signing, the other parties are informed about signing or status changes as soon as internet access is resumed.

There are three ways available to sign for transfer of goods:

1. QR code

One option is when signing for collection and delivery of goods takes place using a uniquely generated QR code (two-dimensional barcode). The shipper or receiver checks the details on the transporter mobile device and scans the QR code, using the TransFollow app. The carrier then scans the unique QR code at the location of the shipper or receiver in order to determine immediately if it is correct. By means of this scan, the account information is checked and it is

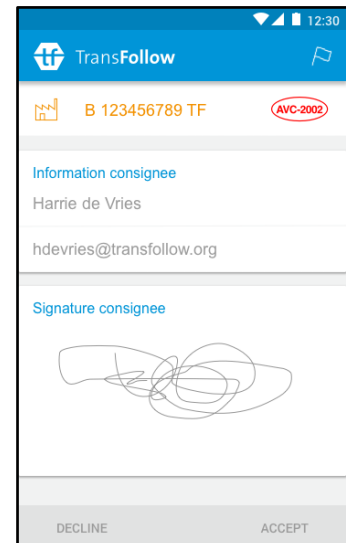
immediately determined whether the person signing for receipt is actually entitled to do so. TransFollow guarantees a safe and legally correct way of goods receipt.

2. Sign on Glass (SOG)

If the receiver is unknown in TransFollow platform or if they do not have the app, it is also possible to sign on glass (SOG) for delivery using the carrier's TransFollow app. The receiver then will be sent the copy of the consignment note by e-mail (alternatively the app can be downloaded and installed on the spot).

3. No signature

In some cases, delivery is not possible through exchange of the signature. The carrier can then indicate in the TSSC that he has delivered without agreement of the receiver. This means that all parties relevant to the consignment note will be informed that the delivery has taken place, provided that they are recognised in TransFollow, but no signature has been provided.



Sign on Glass

TSSC enables you to sign the consignment note electronically and in a legally binding manner.

f) Costs

The TransFollow app is free of charge. Scanning of the QR code or/and signing for delivery can be done directly on the mobile device using the TransFollow app that allows these functions.

TransFollow offers two options for connecting to the platform. For small and medium size users, a portal is provided that allows shippers and carriers to create and issue e-CMR documents. The party that will issue the e-CMR needs to first obtain credits at TransFollow. Credits cost on average €0.25. 1 e-CMR = 1 credit.

For larger users (with multiple e-CMR documents to be issued daily), TransFollow offers an application programming interface (API) key, that allows them to integrate and connect TransFollow to existing in-house proprietary software systems (i.e. WMS/ERP/TMS/FMS). API keys are charged at approx. €450 each and are subject to an annual service fee of €450. Integration into the proprietary software is estimated at 60-100 hours development time.

g) Whom to contact

Depending on the country of residence the best is contact the national transport association of which the company is a member of.

France

FNTR⁵ can be contacted:
Mr. Thierry Grumiaux
Thierry.grumiaux@fntr.fr

⁵ www.fntr.fr

Spain

SETIR⁶ can be contacted

Mr. Ramon Fernandez

rfernandez@setir.es

Mr. Guilermo Ortiz

guillermo.ortiz@setir.es

The Netherlands

The Dutch Association Beurtvaartadres⁷:

Mr. Patrick Huijgen

phuijgen@beurtvaartadres.nl.

The respective associations will support you with all information. For further information on how to start working with paperless documentation via the TransFollow e-CMR in all other countries you can contact:

TransFollow:

Mr. Hans Lip

hlip@transfollow.org

The respective associations will guide and support you with necessary documentation and instructions. The e-CMR can be generated and issued via a web-based portal as well as the information how to take part in the pilot projects.

h) Pilot projects

The pilot projects in 2017 are limited to a certain number of participants and with a limited duration. During the pilot project 1,000 credits will be distributed for free for trial purposes. After this, credits will need to be purchased at €0.25 per credit. Specific volume discounts and further steps can be discussed in due course. Other costs are not applicable, apart from the possible costs the transport operator needs to make for the purchase of mobile devices if needed.

More information about the pilot project you can obtain by either contacting your national transport Association or TransFollow directly.

⁶ www.setir.es

⁷ www.beurtvaartadres.nl

3. Pionira

The Belgian company Pionira was established in 2009. In collaboration with shippers, carriers and umbrella bodies such as OTM (*Organisatie van Traffic Managers*) the association of Shippers in Belgium and TLV (Transport and Logistics Flanders), Pionira developed a platform to optimise administrative processes and billing transactions.

a) Xynaps platform

Pionira's cloud application, called Xynaps could be described as a 'Transport & Logistics Social Enterprise Platform' since it functions as a data hub. It enables companies to share data with their trade partners. It is a social platform as it creates a many-to-many, not one-to-one data sharing and it can facilitate closed collaboration groups and connect all stakeholders in the process.

Each data must be put into the system just once then Xynaps uses it to feed other systems within the supply chain via the appropriate connector without having to re-input the data. In parallel, Xynaps can create the necessary documents. This reduction in manual inputs (up to 80%) is reflected in reduced administration, greater billing efficiency and a substantial reduction in errors. The platform also provides for signing of documents with legal digital signatures.

Pionira's core service is to take over activities such as the digitalisation and storage of data and documents. It can be used not only for e-CMR but also for POD, packing list, ADR, pictures, etc.

b) How to use?

To use the Xynaps platform each party (consignor, carrier and consignee) needs to be connected to the Xynaps system. This is mandatory as each party that should sign the e-CMR needs to be authenticated by an accredited software provider in order to sign the document by using a proper digital signature.



The Xynaps platforms offers a web application that allows for creating and managing e-CMR documents. However, the real benefit for larger organisations is the open API that Xynaps offers to integrate their ERP (Enterprise Resource Planning), TMS, WMS or bespoke transport management systems with Xynaps. Using the API, organisations can quickly set up an integration using standard protocols like SOAP and REST. If an organisation already has existing integrations in place, or has a proprietary or bespoke data exchange format, the Xynaps platform can be configured to transform these formats to the Xynaps internal canonical model of the e-CMR. As such, the Xynaps platform offers a flexible way to easily and quickly integrate existing systems.

The Xynaps platform is available from the DigiCMR app from any electronic device from smartphones to tablets and onboard computers. The existing system of the transport company can also be used.

The DigiCMR e-CMR process

1. Shippers or carriers can author the electronic consignment note by filling in the form in the web application, the DigiCMR App or via their own ERP, WMS or TMS systems if integrated with the Xynaps platform.
2. After creating the initial version of the e-CMR document, this version is in a concept or draft state. All involved parties mentioned in the document and connected to the Xynaps platform, are now notified of this new document.
3. While the document is in the draft state, involved parties can collaborate on the data in the document with regards to their role and rights to add or update data. Again, with each new version of the document, the Xynaps platform will manage to notify all involved parties.
4. Once a transport is planned or all necessary data is available, the document can be issued and will get an official number that correlates to the issuer (owner) of the document.
5. As soon as the document is issued, no updates to the document can be made by external systems or the web application. Only data and annotations made using the App during the transport will be added to the document.
6. The issuing of an e-CMR is modelled around the way we work with paper consignment notes and a convenient way to integrate the e-CMR flow in an existing CMR automation where issuing the document means printing the document. However, moving to e-CMR offers a more flexible way of working, where the moment of issuing can be postponed to the event where the carrier signs for picking up the goods. As such, a lot of information about goods, drivers and trailers can be updated and provided just before the pick-up of the goods.
7. Now that the document is issued, and assigned to a driver. The driver can use the DigiCMR or a Partner App to view his transport orders.
8. Once the driver has arrived at the pick-up place, he can select and consult the consignment note details. He then has the options to make reservations, take pictures of the goods and finally sign the consignment note.
9. After signing the consignment note, the driver is asked how the other party will sign the document. If the consignor or sender is present, and has the DigiCMR App, the driver can choose to transfer the signed e-CMR to the sender by showing a QR code that can be scanned by the sender using the DigiCMR App.
10. After scanning the QR code, the DigiCMR App will show the e-CMR on the device of the sender. The sender can now add reservations or remarks to the consignment note and finally sign the document.
11. As soon as the sender has signed the document, the consignment note will be in the state "signed for pickup", and the Xynaps platform shall notify all involved parties, even

the receiving party who will now know that the goods are loaded and that the transport is ready to continue its itinerary to the receiving party.

12. In the scenario where a sender or consignor is not present, for example when picking up a container or materials in construction areas, the driver can state that he has signed the document in the absence of the other party. This will be mentioned on the consignment note, and the state of the document will be changed, and all parties will be notified as aforementioned in step 11.

13. When the driver arrives at the receiver, a similar flow as described in steps 8 to 12 are repeated for both the driver and receiver role. Finally, the document will be in the state "Signed for Delivery". Once again, all parties will be notified by the Xynaps platform notification service.

*Please see **Video 3** at the end of the documents on how the Pionira system works.*

c) Authentication

As a requirement of the e-CMR, it is necessary for each party, and each employee who signs the document, to authenticate on the Xynaps platform. To authenticate on the platform a user needs to register for a Xynaps account and use their credentials to sign in.

To avoid having to register and to lower the barrier for adopting the system, Xynaps has existing integrations with known Identity Providers of Cloud solutions or Community Platforms. As such a company which is already registered on such community platforms can reuse their credentials to gain access to the Xynaps platform and the DigiCMR offering. Currently the following Identity Providers can be used to sign in:

- Office 365
- Azure Active Directory
- APCS - Antwerp Port Community System
- Belgian e-ID (in acceptance test)
- Nalian/Brucargo/Nxtport (in acceptance test)

Larger organisations can even integrate their own On-Premise Identity Provider, so their employees can sign in using their work accounts. Xynaps offers the following standards to integrate external Identity Providers:

- WS-Federation
- SAML-P
- OpenId Connect

Apart from the automatic provisioning of users and Single Sign On experience, this has the added benefit that roles and access can be managed centrally from the company's administrative tools. If employees leave the company or change to another division, changes in their access and rights are reflected automatically in the Xynaps platform. So, there are no additional administrative steps necessary in the Xynaps platform.

d) Signing in Xynaps

During the handover of the goods at the loading or delivery place, the following options are available to sign the document:

1. Digital signature. QR-code

As previously mentioned this is the preferred way to sign the digital consignment note, and is mandatory for the sending party and the carrier. This is initiated by the driver who signs the document and then shows a QR-code to the other party for scanning. After scanning the QR-code, the signed consignment note is transferred to the device of the other party, ready to be verified and signed.

2. Sign on glass

If the consignee is not connected to the Xynaps system, an easy solution is the sign on glass option. In this scenario the driver will offer the receiving party the possibility to enter their name and e-mail address, as well to provide a signature on the device of the driver. When the receiving party does so, they will receive an e-mail with their version of the consignment note. This flow is only admitted for the last party or consignee.

3. Signing in absence of consignor/consignee

When the sending or receiving party is not present, you can use this option to indicate the other party is not at the place for the handover of the goods. This will be indicated on the consignment note. All involved parties will be notified that pickup or delivery happened under these circumstances.

e) Costs

Pionira charges a monthly fee for the use of its product. This fee is based on annual consumption of transactions. There are no start-up costs (one off costs), nor is there a service agreement. All documents are filed into the digital archive, and can be consulted - free of charge – via the server for a period of 7 years.

What is a transaction? Any act of making, filling out, making changes, making reservations, signing, archiving and consulting the consignment note is considered to be part of one transaction. Adding pictures (e.g. of damages) or attachments (e.g. loading list or interchange) to this consignment note can also occur within this one transaction.

In case of consulting attachments or pictures afterwards (and not the consignment note itself), one transaction will be added per attachment, regardless of the number of consultations of this attachment.

Connecting your own TMS, WMS, ERP or IT-system to the platform is included in the subscription rate.

4. Supporting materials

Articles on TransFollow electronic platform for e-CMR:

“TransFollow e-CMR (digital consignment note) now available in Belgium”:

www.transfollow.org/en/ecmrbelgium

“First ever border crossing to use e-CMR electronic consignment note”:

www.transfollow.org/en/news/first-ever-border-crossing-use-e-cmr-electronic-consignment-note/20170119

Videos on TransFollow platform:

Video 1: www.youtube.com/watch?v=DgHFxf34R_k&t=4s

Video 2: www.youtube.com/watch?v=TEQhzrre4ac

Videos on the Xynaps platform:

Video 3: <http://www.pionira.be/>

5. Glossary and abbreviations

API – Application Programme Interface

Carrier (=transporter)– is any person or company who, in a contract of carriage, undertakes to perform or to procure the performance of transport by rail, road, air, sea, inland waterways or by combinations of such modes.

e-CMR – the electronic consignment note (see CMR).

CMR – the CMR Convention (full title Convention on the Contract for the International Carriage of Goods by Road) is a United Nations convention that was signed in Geneva on 19 May 1956. It relates to various legal issues concerning transportation of cargo by road. It has been ratified by the majority of European states. As of 2013, it has been ratified by 55 states.

ERP – Enterprise Resource Planning

QR code (quick response code) – a type of 2D bar code that is used to provide easy access to information through a smartphone.

Receiver (=consignee) – is the company or person named in a freight contract to whom the goods have been shipped, as stated on the Bill of Lading.

Shipper (=consignor) – a company or a person that ships cargo to the consignee.

TMS – Transport Management System

WMS – Warehouse Management System



ECG

BluePoint Brussels

Boulevard A. Reyers 80
1030 Brussels | Belgium

Tel: +32 2 706 82 80

info@ecgassociation.eu

www.ecgassociation.eu