



**Economic and Social  
Council**

Distr. RESTRICTED

Informal Document No. 1  
31 January 2000  
ENGLISH, FRENCH  
and RUSSIAN

---

**ECONOMIC COMMISSION FOR EUROPE**

INLAND TRANSPORT COMMITTEE

Working Party on Customs Questions affecting Transport

(Ninety-fourth session, 21-25 February 2000,  
agenda item 7 (b) (ii))

**CUSTOMS CONVENTION ON THE INTERNATIONAL TRANSPORT OF GOODS  
UNDER COVER OF TIR CARNETS (TIR CONVENTION, 1975)**

**Revision of the Convention**

**Preparation of Phase III of the TIR revision process**

**Note by the UN/ECE and the TIR secretariats**

**MANDATE AND BACKGROUND**

1. The TIR Administrative Committee and the Working Party have discussed several times which elements could be considered under Phase III of the TIR revision process (TRANS/WP.30/AC.2/55, TRANS/WP.30/AC.2/53, TRANS/WP.30/186, TRANS/WP.30/184, TRANS/WP.30/182, TRANS/WP.30/180, Informal document No.5 (1997), TRANS/WP.30/R.176). In particular, the TIR Administrative Committee, at its twenty-sixth session, endorsed the decision taken earlier by the Working Party that Phase III should focus on the revision of the TIR Carnet and the possible computerization of the TIR procedure (TRANS/WP.30/AC.2/53, paras. 36-39).
2. In accordance with the above decisions, the Working Party, at its ninety-third session, agreed on the following concrete elements for inclusion into phase III of the TIR revision process:

- Increase in the number of places for loading and unloading under Customs seal;
- Revision of the TIR Carnet, including the insertion of additional data elements (ID number, HS code, value of goods, etc.);
- Use of new technologies in TIR operations also with a view to reducing the delay in notifications of non-discharge (TRANS/WP.30/186, paras. 42 and 43).

This view was endorsed by the TIR Administrative Committee at its twenty-seventh session (TRANS/WP.30/AC.2/55, paras. 38 and 39).

### **INCREASE IN THE NUMBER OF PLACES OF LOADING AND UNLOADING**

3. At the fourth session of the Ad hoc Group of Experts on Phase II of the TIR revision process (June 1999) the IRU put forward the proposal to allow up to 6 Customs offices of departure and destination for a TIR operation (Informal document No.1, 1999) in order to provide transport industry with more flexibility in the international road haulage.

4. At the same time some experts pointed out that such an increase in the number of Customs offices of departure and destination could weaken the Customs control over the TIR regime. It was decided to study this issue in more detail at a later stage (TRANS/WP.30/1999/7, para.44).

### **REVISION OF THE TIR CARNET**

5. While considering the revision of the TIR Carnet, two aspects should be distinguished:
- inclusion of additional information into the TIR Carnet;
  - modification of the layout of the TIR Carnet.

### **Inclusion of additional information into the TIR Carnet**

6. As indicated above, the following proposals for additional information to be included into the TIR Carnet have been made:

- unique identification number of the TIR Carnet holder as available in the International TIR Data Bank (ITDB) administered by the TIR secretariat (TRANS/WP.30/1999/5, proposal by the Russian Federation);
- HS Commodity Code, possibly with a 6 digit break-down (TRANS/WP.30/1999/5, proposal by the Russian Federation);
- commercial value of the goods (TRANS/WP.30/1999/5, proposal by the Russian Federation);
- allowance of up to 6 Customs offices of departure and destination (Informal document No.1 (1999), proposal by the IRU (see above));

- optional or mandatory data on successive transport operators (Informal document No.5 (1997) proposal by the IRU).
7. The inclusion of the unique identification number was generally advocated by the Ad hoc Group of Experts on Phase II of the TIR revision process at its fourth session (June 1999) as a useful tool to reduce misuse of the TIR Carnet and the TIR procedure (TRANS/WP.30/1999/7, para.44).
8. With regard to the inclusion of the commercial value of goods and the HS Commodity Code, it has been argued that such inclusion could facilitate Customs clearance procedures after the TIR operation has been terminated and could prevent possible infringements on that stage. On the other hand, some experts expressed their concern that this information could be abused for criminal purposes because, if included in the TIR Carnet, it would be available to many persons in several countries during the TIR operation.
9. With regard to successive transport operators, the UN/ECE and the TIR secretariats are of the view that this issue should be discussed together with the Draft Recommendation on the validity of multi-user transport operations (agenda item 7 (c) (ii)).

### **Modification of the layout of the TIR Carnet**

10. The Working Party may wish to recall that in 1997, at its ninetieth session, it considered briefly Informal document No.5 prepared jointly by the IRU and the secretariat on the revision of the TIR Carnet. The Working Party felt that any revised TIR Carnet should, as far as possible, be in line with the UN Lay-out key for trade documents, be of format A 4 and should allow processing in an electronic data interchange environment. Explanatory text in different languages could be removed from the vouchers of the TIR Carnet to a separate sheet as has been done in the case of the Single Administrative Document (SAD) (TRANS/WP.30/180, paras. 28 and 29).
11. The UN/ECE and the TIR secretariats, however, feel that under this point it could also be discussed whether the paper-based TIR Carnet may be replaced or supplemented with an EDI-based “document” containing the same or maybe even more information (see below).

### **COMPUTERISATION OF THE TIR PROCEDURE**

#### **Reasons for the introduction of up-to-date EDI technology**

12. It is generally considered that paper-based systems, such as the present TIR Carnet, are a very inefficient medium for data capture, particular in cases where the same or similar information is to be inserted several times and it is very insecure system in case of data authentication. Customs services are certainly affected greatly by this factor, taking account of the limitations of Customs manpower and

resources as well as permanent growth of international transactions and the increasingly sophisticated methods of Customs fraud and smuggling. International trade and transport industry also bear negative consequences as, nowadays, to move one piece of consignment, up to 50 parties in different countries may have to create, transmit, receive, process, check, correct and file more than 50 separate documents with an average of over 360 copies per shipment.

13. Some of the main drawbacks of the present paper-based TIR regime are:

- low level of protection of Customs stamps to be put on TIR Carnets;
- ease of falsification of TIR Carnets detection of which requires special equipment;
- complicated and error prone filling-in and processing of the TIR Carnet;
- repeated input of same or similar data contained in the TIR Carnet into Customs databases in the Customs offices of departure, destination and en route;
- insufficient link to the Customs procedures before and after a TIR operation.

14. The introduction of modern EDI technology could remove most of the above shortcomings and give to all parties participating in the TIR regime the following advantages:

- high level of protection from unauthorised access;
- easy detection and preventing of fraudulent activities as it will no longer be possible to use falsified TIR Carnets or fake stamps;
- better national and international control and better evidence in case of fraud and litigation;
- faster Customs control and treatment at the Customs offices of departure, destination and en route and, as a result, reduction in border delays and facilitation of Customs procedures after a TIR operation;
- higher Customs productivity and reduction in the number of Customs errors;
- reduction in the use of human and other resources;
- enhanced data collection.

15. The introduction of EDI technology would require expenditures on necessary equipment and communication links, training of the Customs personnel and change in national Customs regulations, if required.

### **Possible approaches in computerisation of the TIR procedure**

16. In principle, an EDI Customs transit system can be built up in two different ways. It could consist of:

- centralised system where all Customs offices participating are linked up to each other and to a central database;

- decentralised system where all Customs offices participating are independent, do not necessarily have to be linked up to each other and do not use a central database to store information of the whole transport operation.

17. An example of a centralised system is the New Computerised Transit System (NCTS). This system is being created within the European Community to replace the present paper-based systems, namely "Community Transit System" and "Common Transit System". The procedure within the system is based on EDI between Customs administrations using the Internet, giving full information about the specific transit operation to all Customs offices involved such as transit declaration and anticipated arrival record, arrival advice and control results at destination. All information are stored in a database operated by the European Commission.

18. Considering the TIR regime and its underlying principles one may conclude that a centralised EDI system seems to be unsuitable at present due to the following reasons:

- Contracting Parties have quite different level of technology, equipment and communication links used by Customs authorities;
- interconnection of all Customs offices dealing with the TIR procedures in more than 60 Contracting Parties would require immense investments and seems not to be possible in the foreseeable future;
- the TIR system is basically the chain of national Customs transit procedures only linked through the TIR Carnet as an universal transit and guarantee document.

19. The above consideration would therefore rather call for a decentralised computerised system which allows flexibility in choosing means of information exchange at the national level and where the TIR Carnet may be the only common link between different Contracting Parties. Under the presumption that the presents principles of the TIR regime are not modified, the most appropriate solution seems to emulate the existing paper TIR Carnet with an electronic portable file that can be read by all Customs administrations concerned. Such a possibility already exists in the form of the smart card technology.

### **Smart card technology**

20. Briefly, a smart card is an integrated circuit which contains a small processor managing the data exchange with an external system, memory and security mechanism. The most important feature of the security management is an algorithm processing capability for encoding and decoding messages. Due to this capability, a smart card is able to provide the security mechanisms such as authentication, data integrity, electronic signature and auditing. The memory of a smart card is divided in a highly flexible hierarchy of elementary files and each of the elementary file may be dedicated to different applications

and to different time periods in the card lifetime. Moreover, each elementary file may have different security levels attributed in order to preserve the security of keys, passwords, data, etc.

21. In the past few years the smart card technology has undergone an immense development resulting in drastic increase in the performance and reliability as well as drop in the smart card price. Smart cards are being used today by governments, banks, telecommunications and insurance companies to store, transmit and validate information. The smart card technology is considered to be the safest way to transfer money, secret information and even documents "signed" by electronic means. Experts predict further rapid growth of the smart card market.

### **Possible application of smart cards in the TIR procedure [TIR Card System]**

22. In the view of the above main features of the today's smart card technology it is felt that smart cards could be used within the TIR system:

- as a medium equipped with an advanced storage capacity to record the necessary data in the course of a TIR operation and to deliver this information between different Customs points;
- as a reliable, effective and rapid support for the input of data to and from heterogeneous EDI systems;
- as a secure module for personal identification and data security;
- as a confirmation of the proper guarantee and authorisation;
- as a key to the load compartment if an electronic lock is used.

All advantages of up-to-date EDI technology mentioned in para.14 are equally applicable to smart cards.

23. In principle the TIR Card System could function in the same way as the present paper based system. The TIR Card could be issued by an international organisation to an guaranteeing association, thereafter handed over to an authorized transport operator. The transport operator would fill in the "document", sign it using his card reader/writer and present the TIR Card at the Customs office of departure with the vehicle and the goods.

24. At the Customs office of departure the TIR Card could be validated in a card reader and all information could be stored in the data file. That would include also the information on e.g. affixed seals and electronic signature given by Customs authorities and stored on the card itself together with other observations made at the Customs office of departure. A similar procedure could take place at the Customs office of entry (en route).

25. At the Customs office of exit (en route) the TIR Card again could be put into a card reader/writer, validated, signed and stored together with possible observations. Information on the

termination of a TIR operation (voucher No.2) could be sent to the Customs office of departure either by EDI or, if not possible, by another system being used for that purpose.

26. At the Customs office of destination the same procedure as described above takes place and the termination could be reported to the SAFETIR system. The safety of the system and the ongoing validation of authorization of both transport operator and Customs could even lead to instant partially/complete discharge at destination.

27. Following the termination of a TIR operation the TIR Card should be returned to the international organisation via the guaranteeing association as it is the case with the present TIR Carnet. The international organisation inputs all data from the card into a central database where it is stored for a long time.

28. An important feature of the TIR Card System is that all parties involved (the international organisation, the guaranteeing association, the transport operator and Customs authorities) may have different levels of access to the smart card database starting from the "read only" mode (see para. 20). A part of the information can be even made unreadable for certain participants. For instance, the data on the commercial value of the goods, if included in the revised TIR Carnet, can be made readable for Customs authorities only.

29. Possible application of the smart card technology, as outlined above, should be regarded only as an overview reflecting the preliminary views of the UN/ECE and the TIR secretariats and certainly need to be elaborated further. Therefore, at this stage it would be a premature to get into technical, legal and administrative details which would need to be considered in order to make this system operational.

### **Implementation of the TIR Card System and its costs**

30. It worth note that implementation of the TIR Card procedure would require no change of the "basic" TIR procedure nor national Customs control procedures. For a rather long transition period it may be used as complimentary to the present paper-based system. The smart card technology flexibility provides for its compatibility with all automation systems used by Customs administrations for the time being.

31. As indicated above (para. 15), the possible costs for the introduction of EDI technology include expenditures on necessary equipment and communication links, training of the Customs personnel and change in national Customs regulations, if required. The most significant component may be expenses on communication links if they do not exist and have to be created (i.e. phone cable network, satellite links, etc.). In case of the smart card technology there is no need for installation of costly communications.

32. According to first estimations made by the UN/ECE and the TIR secretariats the TIR Card would need to have a capacity between 10 kilobytes and 30 kilobytes to contain the information of the present TIR Carnet (depending on the number of vouchers), including also new possible changes (see above). The price of a single TIR Card of such a capacity ranges now between \$6 and \$8, but it is expected that by the time of implementation of the TIR Card System the price will have gone below 2\$.

33. In order to manipulate TIR Cards Customs authorities would need equipment to read (write) data from (on) the TIR Card and give commands to it. A typical workstation could include an ordinary PC with the relevant software and the smart card reader/writer. The price of one smart card reader/writer starts from \$40 at present, depending on its functions, but is steadily decreasing and, furthermore, these readers/writers may be supplied with a great discount providing that a large amount of smart cards has been ordered from the same manufacturer.

34. In conclusion, the features of the smart card technology features, such as transaction speed, high capacity, security, low cost of operation, confidentiality, reliability, flexibility, very low error rate, connectivity to networks may improve greatly the application of the TIR procedure throughout all Contracting Parties, to the benefit of trade, transport industry and Customs authorities.

**Follow-up activities by the Working Party and other bodies**

35. The TIR Card project, once approved in principle by the Working Party, could be developed and implemented in accordance with the following programme:

<b>Activities</b>	<b>Responsible bodies</b>	<b>Time period</b>
Development of a detailed draft concept of the TIR Card System, including technical, legal and administrative requirements	Ad hoc Group of Experts (formal and informal) assisted by the UN/ECE and the TIR secretariats	March - October 2000
Approval and endorsement of the draft concept	WP.30 and the TIR Administrative Committee	October 2000
Implementation of a pilot project along one or several of the European transport corridors	Relevant countries assisted by the UN/ECE and the TIR secretariats	2001

<b>Activities</b>	<b>Responsible bodies</b>	<b>Time period</b>
Consideration of the results of the pilot project and revision of the draft concept, if necessary	WP.30	2002
Preparation of amendment proposals to the TIR Convention	WP.30 Ad hoc Group of Experts	2002
Approval of the amendment proposals and issuance of relevant depositary notification	TIR Administrative Committee UN Legal Office	2002
Training of personnel, providing with equipment and software	Contracting Parties assisted by the UN/ECE and the TIR secretariats International organisation(s) Guaranteeing associations Transport operators	2003-2004
Entry into force of the amendments	UN Legal Office	2004
Transition period (TIR Carnets and/or TIR Cards may be used)	Contracting Parties	2004- 2006/2010
Mandatory use of TIR Cards	Contracting Parties	2006/2010

36. The Working Party may wish to consider the above proposals with a view to preparing relevant work to be undertaken under Phase III of the TIR revision process.

---