

**OTIF**



**ORGANISATION INTERGOUVERNEMENTALE POUR  
LES TRANSPORTS INTERNATIONAUX FERROVIAIRES**

**ZWISCHENSTAATLICHE ORGANISATION FÜR DEN  
INTERNATIONALEN EISENBAHNVERKEHR**

**INTERGOVERNMENTAL ORGANISATION FOR INTER-  
NATIONAL CARRIAGE BY RAIL**

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Joint Meeting of the RID Committee of Experts and the  
Working Party on the Transport of Dangerous Goods  
(Berne, 26 - 30 March 2007)

**Dangerous goods telematics in intermodal transport**

**Information and proposal transmitted by Germany**

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**SUMMARY**

***Executive summary:***

The aim of this information paper is to propose holding a discussion of principle on the introduction of European (international) dangerous goods telematics.

***Action to be taken:***

Discussion of principle and agreement on how to proceed.

***Related documents:***

Report of the last Joint Meeting OTIF/RID/RC/2006-B – ECE/TRANS/WP.15/AC.1/104, paragraphs 73 to 75 and European Commission document OTIF/RID/RC/2007/17– ECE/TRANS/WP.15/AC.1/2007/17.

For reasons of cost, only a limited number of copies of this document have been made. Delegates are asked to bring their own copies of documents to meetings. OTIF only has a small number of copies available.

## Introduction

### Initial status

Following a series of serious railway accidents in Germany in 1996 and 1997, the use of telematics systems in the dangerous goods area was considered more closely for the first time in both the German national working group on tank and vehicle technology and in its international equivalent.

The working group had given itself the task of assessing various measures to improve safety. At that time, the working group came to the following conclusions with regard to telematics:

- "the use of telematics is considered to constitute substantial technical progress with a view to improving the standard of safety in the carriage of goods by rail" and
- "it is assumed that in an analysis of the cost/benefit ratio, a favourable ratio would result in comparison with many other measures".

### Research project

As a result, the Federal Ministry of Transport, Building and Urban Affairs (BMVBS) commissioned various research projects in order to be able to evaluate the feasibility of particular technical solutions.

#### 1. "Information system for rail vehicles on a bus or telematics basis" (2001)

This was a feasibility study carried out by the Berlin Technical University (TU) on a telematics-based information system for detecting derailments and for load monitoring, including long-term trials in transport operations to Finland.

#### 2. "Telematics-based information systems for monitoring dangerous goods in intermodal transport chains" (2003)

In this research project, Dornier Consulting GmbH investigated the feasibility of transmitting information from the load to the driver. In so doing, particular account was to be taken of the conditions pertaining in combined transport. An investigation was carried out into how the driver in road, rail, inland waterway and maritime transport can be informed about critical load conditions and what has to be done once he has been informed.

In addition, since 1999, the Federal Ministry of Transport, Building and Urban Affairs has held regular workshops on telematics subjects during the "transport logistic" trade fairs. These are held in Munich every two years. At these workshops, reports were made on the research projects referred to above and on other developments.

Recently, various projects have also been carried out on behalf of the European Commission. One particular project should be mentioned in this regard, the MITRA Project, which the Chairman presented at the last Joint Meeting (see also OTIF/RID/RC/2006-B – ECE/TRANS/WP.15/AC.1/104, paragraphs 73 - 75 and OTIF/RID/RC/2007/17 – ECE/TRANS/WP.15/AC.1/2007/17).

### Discussions in the international bodies dealing with dangerous goods

These research projects have each been presented at the RID Committee of Experts, particularly in the working group on tank and vehicle technology, and at the Joint Meeting, with a view to following up the technical developments in this field.

## Current situation

At present, the law on dangerous goods permits telematics applications (“transport telemetry”) as an alternative in certain cases:

- Sub-section 1.10.3.3, Note (Security)
- Section 5.4.0, Note 2 (electronic transport document).

So far however, these alternatives have no practical significance.

Nevertheless, telematics-based information and communication systems relating to specific transport modes are currently being used and are becoming increasingly important. For example, forwarders and railways are increasingly using such systems to monitor transport operations and to manage their vehicle fleets. However, there are not yet any integrated and cross-modal telematics systems for monitoring and managing intermodal transport chains and for efficient emergency management, which are essential for the carriage of dangerous goods.

With the help of telematics, a high level of pre-emptive precaution can be achieved by the transmission of real-time information and by the individual recording of relevant load data (type of goods being carried, quantity, type of containment, etc.), load monitoring data (pressure, temperature, degree of filling, theft), transport data (starting point, route travelled so far, other routes planned, destination, etc.) and vehicle data (type of vehicle, maintenance intervals, etc.). Thus in future, telematics systems can create the conditions along the intermodal transport chain to improve the safety, quality and cost-effectiveness of the freight transport chain.

However, as telematics solutions only become properly effective if they can be applied in international and intermodal transport, the question arises as to whether further reaching legal guidelines should be included in the international dangerous goods regulations. In the past, this question has not been dealt with as a priority. In developing the provisions, it was assumed that the use of telematics would offer the user economic advantages, provided the technical effort and financial burden were kept within a limit. So in as much as telematics solutions for users are of sufficient interest, development of the requirements could be limited to creating the legal basis for the use of telematics in dangerous goods law so that such solutions can be used.

The role of the legislator should be limited to that of a door opener and guide. Implementation is a matter for the industry.

However, experience in recent years has shown that the industry, as indicated above, has indeed recognized the benefit of telematics solutions, but that so far, they have only been applied to individual areas where they are only used to achieve direct logistical benefits. Until there are some specific standards for such systems, it is too risky for the industry to invest in more comprehensive systems. Owing to technical developments in recent years, the number of potential users of such systems has increased (see also paragraph 4 of document -/2007/17). It is now technically possible to set off automatic emergency calls and to link them to the information paths of the national emergency services. Aspects such as this, and others, e.g. the data security aspect of such systems, provide reasons to consider not leaving the development of such systems exclusively to the industry, but to see their development at least partly as a task to be undertaken at State or European level.

## **Proposal 1: Discussion of principle**

Germany certainly welcomes the European Commission’s document -/2007/17 and also wishes to have an initial discussion of principle at the Joint Meeting on the use of telematics in the carriage of dangerous goods.

In the discussion, the issues in the European Commission's document that need clarifying should also be discussed, particularly those concerning the legal, technical, organisational and financial aspects, as well as the role of the EU (see paragraphs 5 to 7).

The sensitive subject of data protection in an overall system will also have to be considered, as both customer relations and transport relationships are precious commodities that must be well protected.

### **Proposal 2: Next steps**

The next steps are also addressed in the European Commission's document (see paragraph 6). In Germany's view, the next steps with regard to such a system, which would affect several transport modes and play an important role in the likely European GALILEO satellite navigation system, should be taken in the Joint Meeting and in the appropriate EU bodies. We therefore propose that "dangerous goods telematics" should be included on the Joint Meeting's agendas as a standing item. In addition, consideration should be given to whether the Joint Meeting should set up its own working group on this subject, as proposed by the European Commission.

The RID Committee of Experts' working group on tank and vehicle technology could then concentrate on rail-specific implementation.

At this point, it should also be mentioned that the BMVBS has commissioned Dornier Consulting GmbH, Telematica e.K. (also involved to some extent in the MITRA Project) and the Berlin Technical University to carry out another research project ("Dangerous Goods Telematics in Intermodal Transport"). The main aims of this research project are:

- to formulate an integrative complete system for dangerous goods telematics applications in intermodal transport (road, rail, inland waterway + maritime/aviation interfaces);
- to make contributions to the development of technical implementation standards and guidelines;
- to integrate existing single-mode telematics systems ("isolated applications");
- to investigate and describe the different structures and tasks of the authorities responsible for emergency services and disaster management in the different States, and
- to identify all the useful advantages and synergy effects for the user.

The complete system to be proposed should be capable of achieving international consensus and be suitable for inclusion in the regulations.

The preliminary results of this research project will be presented in a workshop during the "transport logistic 2007" trade fair on 16.06.2007 in Munich (simultaneous interpretation D → E) and will be discussed there and on the following day in the working group on tank and vehicle technology. A draft programme for the workshop is attached at annex.

Further guidelines for the future course of action and support in resolving the issues referred to above are expected to emerge from the results of this research project and the discussions in the workshop and working group.

## Workshop

"Telematics applications in the intermodal transport of dangerous goods"

on 14 June 2007 in Munich

A dangerous goods workshop organised by the Federal Ministry of Transport, Building and Urban Affairs (BMVBS) will be held on 14 June 2007 during the "transport logistic" trade fair in Munich.

**Venue:** Conference room A61/62

**Presentation:** Helmut Rein (BMVBS)

**Time:** 10.00 a.m.

10.00 – 10.15	Welcome	Helmut Rein (BMVBS, Bonn)
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### Topic 1: The detection of derailments in rail transport

10.15 – 11.10	Mechanical and electronic derailment detection:  -Report on the various systems' fitness for operation -Results of the operating trial with modified derailment detectors in cooperation with SBB	Gerd Buchmeier (Oerlikon-Knorr Eisenbahntechnik AG)
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### Topic 2: Monitoring the main brake pipe in rail transport

11.10 – 11.30	Brake system check/monitoring  Methods of resolution	Dr. Manfred Walter (Knorr-Bremse Group)
11.30 – 11.50	<b>Coffee break</b>	

### Topic 3: Telematics applications in the intermodal transport of dangerous goods

11.50 – 12.10	Using telematics in the carriage of dangerous goods and in the context of security for these transport operations –the European Commission’s objectives	Erkki Laakso (EU Comm.)
12.10 – 12.30	How the BMVBS awarded the research project on “dangerous goods telematics in intermodal transport”	Alfons Hoffmann (BMVBS)
12.30 – 13.30	<b>Lunch</b>	
13.30 – 13.50	“Dangerous goods telematics in intermodal transport” research project – presentation and status	Dr. Martin Both (Dornier Consulting)
13.50 – 14.30	Requirement specifications for intermodal dangerous goods transport	Hannes Rürger (Dornier Consulting)
14.30 – 15.00	Overview of selected telematics applications and development trends in intermodal transport	Hannes Rürger (Dornier Consulting)
15.00 – 15.30	<b>Coffee break</b>	
15.30 – 16.00	Presentation of existing telematics systems and the national Organisation of Emergency Control Centres	Dr. Wolfgang Lechner (Telematica e.K.)
16.00 – 17.00	Concept for an international and intermodal telematics-based complete system, and presentation of the planned demonstrator	Hannes Rürger / Wolfgang Zeller (Dornier Consulting), Dr. Wolfgang Lechner (Telematica e.K.)
17.00 – 17.15	Conclusion	Helmut Rein (BMVBS, Bonn)

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