



## ***Rail Freight Research & Development***

### **UIC hands over to Faiveley Transport Italy an official certificate for the validation of “TrainDy”**

*“TrainDy” is a key building block in international freight traffic harmonisation, increasing international freight train performance whilst ensuring a high level of safety.*

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(Paris, 26 September 2008) Against a background of increasing trade, greater road congestion, high oil prices and growing concerns about environmental conservation, rail freight transport offers genuine advantages and is continuing to expand. In this context, the UIC has clearly identified the existence of substantial demand for international freight trains with an overall tonnage of more than 1200 tonnes.

*TrainDy* is a major step towards harmonisation of international freight traffic improving freight train performance and efficiency. *TrainDy* is a software tool which has been specially developed to simulate pneumatic effects and longitudinal forces which should lead to greater unification of international braking modes facilitating the operation of trains in international traffic. This means that the performance of freight trains is increased whilst ensuring that current levels of safety are maintained.

The new *TrainDy* system simulates all longitudinal force related parameters with a high level of accuracy, making it possible to calculate complex braking component interaction. The complete manoeuvre of a train can therefore easily be modelled by simply selecting locomotives and wagons from a database, defining track sections and movement conditions based on distance, speed or time. After the definition of all boundary and initial conditions the system then simulates the resulting pneumatic, speed and longitudinal forces etc. *TrainDy* allows the user to define the degrees of freedom of the vehicle components for the calculation (like longitudinal forces, vertical forces, roll and pitch).

This precise simulation offers railway operators the opportunity to calculate the level of safety in relation to longitudinal forces for individual trains. The aim is to define an internationally accepted risk analysis to guarantee that the actual levels of safety remain constant. This definition will be found by using the new *TrainDy* software and via negotiations to establish a procedure for the calculation of safety levels. Another of this tool's major advantages is that it reduces the number of test runs. New train designs with larger capacities, such as longer and heavier trains, require high cost test runs.

A UIC-approved version of the program, the *Graphical User Interface (GUI)*, will be available by the end of 2008.

*TrainDy* will make it possible to calculate longitudinal forces not only for the European market, but will also be adapted to stock used in other railway systems worldwide namely in Asia, North and South America, Africa and Oceania.

Over the long term it is expected that *TrainDy* will allow three dimensional modelling of rolling stock including catenary and wheel/rail interfaces. This should include studies on rail - wheel contact which should enable better understanding of the rail/wheel forces and the resulting behaviour of trains e.g. slipping in autumn. Additionally, it should in future also be possible to study vertical forces of wagons in order to predict unusual wear of components.

Active members and partners of the *TrainDy* Project are: Faiveley Transport Italy, German Railways (DB AG), French Railways (SNCF), Italian Railways/Operator (Trenitalia SpA), Slovakian Cargo Operator (ZSSK Cargo).

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