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PUBLIC TRANSPORT - ROAD VEHICLE SCHEDULING AND CONTROL SYSTEMS - PART 1: WORLDFIP DEFINITION AND APPLICATION RULES FOR ONBOARD DATA TRANSMISSION

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FOREWORD

This European Prestandard has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics", the secretariat of which is held by NNI.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

INTRODUCTION

The present situation is the following:

- A large number of Vehicle Scheduling and Control Systems (VSCS) do not use a data bus, resulting in
    - point to point data links with an expensive cabling which cannot be preinstalled during the manufacturing of the vehicle, increasing the cost of the system
    - different proprietary transmission protocols which have to be implemented as and when required
    - difficulty to change the provider of a given type of equipment as no compatibility exists between different providers of the same type of equipment
- Some systems implement the VDV IBIS bus specification, but:
    - IBIS bus is very slow and does no more cover the needs for high speed data transmission between equipments
    - IBIS bus is not an open system and does not cover some of the necessary messages
    - practically every VSCS manufacturer has been obliged to implement a second high speed data bus which is proprietary, resulting in no possibility to interchange equipments with other manufacturers

The buses which are proposed by CEN/TC278 aim at avoiding the preceding difficulties with the following characteristics:

- high capacity and high speed data bus
- consistent workplan ensuring interoperability down to the message level
- low cost solution
- already standardised data bus
- large number of already existing and future applications outside the VSCS area, ensuring the existence of equipment on the market, the progressive decrease of the cost of the necessary chips and the timelessness of the solution
- existing chips and basic software up to and including the layer 7 of the ISO 7 layer communication model and existing developments tools, minimising the development costs

The buses proposed by CEN/TC 278 have been chosen among others through a progressive selection process. This work took into account a flexible approach to the range of applications, the potential traffic loading under different operating circumstances and the definition of objective criteria for a transmission bus. The candidate buses were evaluated against the criteria in terms of performance, cost, industrial support and the existence of maintained standards.