

Eurailspeed

Parallel Session B.2

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High performance Train Control and Communication System

Dan Otteborn, UNISIG chairman

Benefits of ETCS control/command system

Interoperability: A European and global technical challenge

- In the railway sector Interoperability is generally understood as trains being able to pass national boundaries without any technical or administrative hindrance. Rail transport should be able to compete with road or air transport on equal terms concerning boarder passing.
- In order to achieve this a number of conditions have to be fulfilled such as harmonised technical standards but also harmonised administrative rules and regulations.
- It is also necessary to specify technical parameters to a level of details enabling different manufacturers to compete at any time for any projects. Interoperability thus also means that products from different supplier must work together in an interoperability way.

Interoperability: A European and global technical challenge

- The very long history of national railway operation and a closed supplier market have created a none interoperable European railway network resting on a huge legacy investment.
- Creation of a European interoperable railway network needs to take this legacy investment into account, making the interoperability standardisation a very complex undertaking.
- As a matter of facts the real technical problems and the intellectual difficulties in creating a new interoperable standards almost entirely comes from the history. Without the need of taking this into consideration, practically no technical problem would have existed with the technology available for ETCS today.

Interoperability: A European and global technical challenge

- As for the existing legacy systems, not only are they are not interoperable. They are in most cases coming to the end of their life expectancy with severe problems on availability, safety, functionality, component and know-how obsolescence.
- On top of the above constrains it is also necessary to develop the interoperability standard in a way that they are open to incorporation of new technologies and to a certain extent, new functionality as well.
- Today after more than 10 years of work we have a set of technical specification for interoperability (TSI) which are demonstrating interoperability in field operations as well as in laboratory test to an increasingly degree of perfections.
- For the control command and signalling TSI's we are now in a face of taking benefits from the experience gained in pilot projects and CEDEX laboratory test this will lead to a consolidated version of the SRS 2.2.2 scheduled for publication in end of 2005.

Interoperability: A European and global technical challenge

- It is commonly accepted that this version will be sufficient for commercial operations of interoperable traffic during a number of years.
- Simultaneously as the consolidated version of SRS 2.2.2 are being completed work is ongoing in defining the new baseline SRS 3.0.0.
- The work in defining the new baseline is primarily split into two parts, one resting with the supply industry and one resting with the IM's and RU's. The IM's and RU's are responsible for producing harmonised operational requirements and the supply industry are responsible of turning those requirements into technical specifications and test specification needed for verification.

Interoperability: A European and global technical challenge

- It is foreseen that products complying to the new baseline 3.0.0 are reaching the market in 2009-2010.
- The technical challenge we have now in front of us is to make sure that the interoperability now achieved is not starting to drift apart. With the expansion of the European community and the expansion of the use of the interoperable products and systems many parties are now starting to ask for additional functions or interfaces.
- Harmonising operational requirements are essential in order for manufacturers to specify and develop interoperable products.
- All products being developed as a result of the TSI's needs to obtain a certificate of conformity from a Notified Body, all manufacturers products are therefore equal in terms of responding to interoperability requirements specified in the TSI.

Interoperability: A European and global technical challenge

- Product differentiation is only possible in areas outside the TSI specification such as for example size, (not for the balise) modularity, achievement of safety and availability targets, MTBF etc. inside the "Black-box" is company specific.
- As for all standardised products based on a stable standard and with free competition, prices will go down, but as many of the TSI products are subject to specific site engineering, field installation, testing, national approval etc. it is essential to concentrate effort in order to rationalise cost in this area. This cost is mostly higher than the actual product cost.