Application Note #6
Train test
Germany

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ICE 2.2 (ICE 3) performance test

Instrumentation for high-speed railway applications is a very specialized field. Particular demands such as a distributed measurement organization, high channel counts and real-time data evaluation are only a few among many.

A group of German and international train manufacturers have chosen imc technology to test the German high-speed train ICE 3.

An ICE3 near the river Rhein passing by

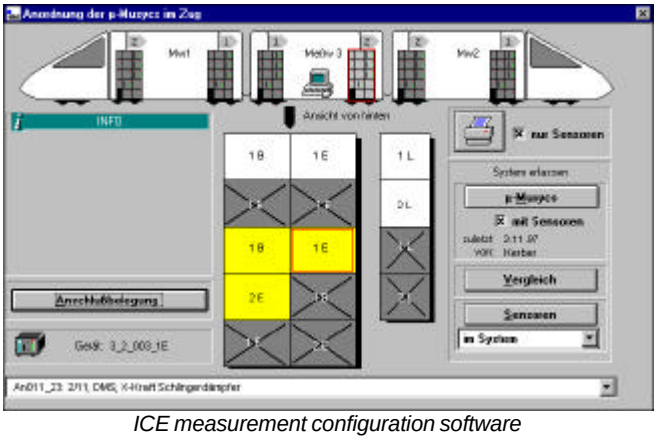
The measurement system is based on µ-MUSYCS, an Ethernet based networkable system. Apart from the standard characteristics of a state of the art measurement system µ-MUSYCS provides users with the following advanced features:

- Synchronized distributed hardware acts as one instrument
- Multi-monitoring
- Signal conditioner near sensors
- Automatic sensor detection
- Online data evaluation in accordance with European railway standards
- Multi-trigger concept

Inside the ICE test & measurement car

The ICE3

One of the most important requirements is always to provide an easy way to configure the over 500 channels of the 16 measurement systems within the train.
A special software application and the patented 'Automatic Sensor Detection' led to a unique solution.



ICE measurement configuration software

Finally, with the help of FAMOS, the imc off-line data evaluation program, development engineers can do data analysis and data interpretation. The integrated imc Report Generator allows creating certificates and expertises.

The entire turn-key solution was constructed from the following standard imc components:

- 16 µ-MUSYCS systems, Ethernet interface, synchronized
- DC / AC bridge amplifiers, with auto detection
- DC / AC voltage amplifiers incl. high voltage amplifiers
- DC / AC current amplifiers, with auto detection
- Temperature amplifiers, with auto detection
- FRAME program generator