



THIS PROJECT IS CO-FINANCED
BY THE EUROPEAN
REGIONAL DEVELOPMENT FUND

AEGIS *

The real-time infrared video transmission system for trains

- IR-based video image transmission from the station to the vehicle
- Optional bidirectional data transmission

The system parameters were defined in close coordination with main users, analysing user experience with the IR video transmission system STIVIS.

With the development of the infrared video transmission system AEGIS, there was pursued the objective to realize, by means of a modular design of all IR transmitting, receiving and optional functional components, a variable and economically optimized adjustment of the system structure to strongly diverging market requirements of railway operation, safety philosophy, railway approval and environmental classification.

Compared to alternative transmission methods (e.g. radio transmission in the GHz band or wireless LAN), infrared transmission offers some essential advantages:

- The infrared transmission method is resistant to external electromagnetic radiation sources in the near and wider environment and therefore is extremely interference- and manipulation-proof.
- Absolute real-timing - within the possible operating transmission distances, the signal delay is < 1 ms.
- The optical functional principle allows for an exact geometrical limitation of the transmission area by simple means. Therefore, there is no mutual interference between neighbouring transmission and reception areas.
- Transmission reliability and availability of the IR transmission in the required operating range of a transmitter of about 100 m correspond to the transmission quality of stationary transmission systems with > 99.9 %.

The bidirectional data transmission permits solutions for a train traffic-dependent triggering of platform-based passenger information systems. Separate presence sensors or interfaces for train-stop detection are superfluous. Additional information can be transmitted to the traction vehicle driver on the train, e.g. for requesting entry support for disabled persons.

Further additional functions provide for the realization of large transmission areas by means of a cascaded arrangement of several transmitters alongside the track.

Minimized dimensions of the vehicle-based components allow for easy retrofitting in existing railway systems.

Self-test routines running automatically in the vehicle and on the platform efficiently support the technical diagnosis and continuous technical monitoring of the system status.

The emitted transmission energy is so low that the requirements of Laser Class 1 according to DIN EN 60825-1 are met. Therefore, the transmission method does not cause any health risks.

For further information, in particulate consultation on concrete project applications, please do not hesitate to contact us.

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