

Latest rail diagnostic inspections

Funding: National (Hungary)

Duration: Jan 2008 - Dec 2013

Status: Complete with results



Background & policy context:

The establishment of the entire background infrastructure, that is necessary for serving the radio system, should not truly be considered secondary as it involves almost the full renewal of the railway telecommunications networks.

In addition to the significant extension of our modern fibre optic telecommunication network, the new IP-MPLS telecommunication system also brings about an increase of capacity by orders of magnitude for the users - this can be noticed both by the associates and the passengers almost in every single specialised area of the railway.

Objectives:

The primary objective of the lifting of rail freight transport innovation has slowed down during the last decades, so the out-of-date rail services cannot provide appropriate answer to the challenges of logistic sector. It is more and more urgent to develop such a flexible rail freight system which fits the present infrastructure and can be a competitive system in this market. We intend to find out the solution of this problem that is why we have developed Aron-rcS system. ARON-RCS - as flexible, client orientated, environmentally friendly, multimodal freight system rolling system is supporting quickly and automatically the in- and off-loading of the motor vehicles of the train. It can operate fully automatically without the need of sidings, logistics bases and built loading infrastructure.

Methodology:

The main principle of design method of the Control System is that: the devices communicate with each other using a unique encrypted protocol via optical hard-wired network without any centralized control. The operation of the network is guaranteed on the required security level outdoors, even if any of the system elements are destroyed. The remaining system elements can still operate on the network.

Other funding sources: Ministry of National Development

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Key Results:

The introduced train system can move independently anywhere, does not need shunting and marshalling. Its size suits for the freight task; it can be easily managed, fast and comfortable due the modern information and communication system and cargo management system.

Its own loading system allows the loading and unloading at different terrain and even on track. This increases the efficiency and the number of economically performed freights. Economic operational area of ARON system on Europe's network is 500-1500 km. Stepping over the border of Europe, it is 1500-3500km even if there is a break-of-gauge, because this system can vary gauge.

Documents:

 [RailTransport.pdf.pdf](#)

STRIA Roadmaps: Network and traffic management systems, Infrastructure

Transport mode: Rail transport

Transport sectors: Passenger transport, Freight transport
Societal/Economic issues, Environmental/Emissions aspects,

Transport policies: Safety/Security