



Ing. Miroslav Šídlo

**Stručný úvod do managementu rizik
Short introduction to risk management**

The paper explains in a short, simple and comprehensible way the basic principles of a relatively new discipline – risk engineering, focused on optimizing or minimizing risks.

RNDr. David Žák, Ph.D.

**Komunikační systém ICOM architektury InteGRail a národní projekt železniční
bezdrátové přenosové sítě
Communication system ICOM of the InteGRail architecture and the national
project of the railway wireless communication network**

The article deals with the description of the communication system ICOM which is a part of the InteGRail system architecture. The InteGRail project had as objective developing a comprehensive information system for increased efficiency, average speed, safety and capacity of the railway network and introducing new intelligent operation control of the railway. The conclusion of the paper contains an analysis of the relationship between the national project of the railway wireless communication network and the ICOM system.

RNDr. Ladislav Sommer

**Datové schránky
Data Boxes**

Data communication through data boxes and data messages pursuant to Act No. 300/2008 Coll., on electronic communication and authorized conversion of documents is a modern tool for effective administration. Since 10 October 2009, when the first customized data message has been transmitted on to CD through the national ISDS system, the data box has become a permanent means of daily communication with public authorities. The introduction of this system is the basis for further computerization of documents and especially for the implementation of electronic administration file service.



Ing. Tomáš Vicherek

**Navádění vlaků do bezkonfliktních tras
Real-time Rescheduling in Railway Operation**

This article describes the function which studies railway operation in real time, anticipates possible conflicts between trains, creates an optimal schedule that is distributed to trains, interlocking and staff for ensuring knock-on delay reduction, lower energy consumption and reduction of occupation time of critical elements (Rescheduling). Features of the proposed function were simulated in the environment developed by the author according to data from real operation on 21 April 2010.

Ing. Radim Brejcha

**Priorita vlaků
Priority of trains**

The article deals with priority ranking of trains and train order at various stages of planning, including the issue of determining priorities for the simulation of railway operation. The last chapter is devoted to testing the input of priority trains.

Ing. Marek Jonáš

**Možnosti využití systémů EGNOS a Galileo v železniční zabezpečovací
technice
Possibilities of utilizing EGNOS and Galileo systems in railway safety-
related applications**

The article contains a description of problems related to using the satellite navigation systems EGNOS and Galileo in safety-related railway applications. The main part of the article contains a description of the measurement which was accomplished by means of the SBAS receiver, a description of the EGNOS parameters and an analysis of the results.

Ing. Jaromír Bittner - Ing. Jaroslav Ježek

**Limity plynných emisí dráhových motorů a způsoby jejich snižování
Limits of diesel engine emissions of rail rolling stock and their reduction**

The article describes legislative restrictions of diesel engine emissions of rail rolling stock. Technical solutions for emission reduction and their influence on build-up areas in vehicle design are described. ČD activities in this area are mentioned too.



Ing. Vladimír Tomandl – Ing. Petr Felgr – Ing. Ivan Vukušič
– Ing. Václav Souček

**Zkušenosti s uplatňováním požadavků TSI PRM v subsystému Infrastruktura
Experience from applying TSI PRM requirements in the Infrastructure
subsystem**

The technical specifications for interoperability relating to persons with reduced mobility and orientation in the trans-European conventional and high-speed rail system set out general requirements on Infrastructure and Rolling Stock subsystems. This paper deals with possible issues which may occur during implementation of selected requirements for the Infrastructure subsystem both during design stage and during assembly stage. The paper is based on authors' knowledge gained by several-year experience in the field of conformity assessment as well as from active participation in international meetings of notified bodies NB-Rail.

Ing. Petr Jasanský – Ing. Václav Michajluk

**Využití vybraných výstupů z projektu INNOTRACK
Using selected outputs of the INNOTRACK project**

The article deals with selected results and outputs of the INNOTRACK project, which are being further developed and used in SZDC conditions. It describes in detail applications from real test sections in the frame of new technical solutions operational verification of the subgrade embankment construction area as well as rail defects issues.

doc. Ing. Karel Hlava, CSc. – Ing. Jaromír Hrubý

**Elektrická trakční energie
Electrical energy for traction**

The paper deals with the determination of traction energy consumption for 3 kV DC and 25 kV, 50 Hz AC systems. Three methods are described, namely the simplest process based on average values of Wh/tkm, the computing process based on SW SENA and the direct energy consumption measurement method on motive power. Premises, advantages and disadvantages of these three methods are evaluated too.



Ing. Jiří Šimánek, Ph.D. - Ing. Vladimír Kudyn, Ph.D. – Ing. Luboš Krátký

**Bezpečná funkce pevných trakčních zařízení při rekuperaci elektrických
hnacích vozidel**
**Safe operation of fixed traction installations during motive power regenerative
braking**

The paper deals with main conditions which have to be complied with to ensure safe operation of fixed electrical installations during motive power regenerative braking. It is necessary to ensure a correct functioning of substation protection and protection of motive power. DC supply system and AC supply system are described separately due to specific conditions of both supply systems.

Ing. Petr Chlum

**Výkonové parametry modernizované trakční napájecí stanice a trakčního
vedení velkého zkušební okruhu Zkušební centra Velim Výzkumného
Ústavu Železničního, a.s.**
**Output parameters of the modernized power supply station and contact line
of the Large test circuit at the Test Centre Velim of Railway Research Institute
(VUZ)**

The paper introduces briefly the main reasons for modernizing the power supply station of the Test Centre VUZ Velim and the contact line of the Large test circuit, modernization data and measuring power values of this system after modernization.

Ing. Jiří Janšta

**Implementace systému KAPO pro kalkulaci poplatků za užití železniční
dopravní cesty v ČR**
**Implementing the system KAPO for calculating the railway infrastructure
access fees in the Czech Republic**

This paper describes in detail the information system KAPO which facilitates calculating the railway infrastructure access fees in the milieu of the liberalized railway transport market. Namely it describes all data inputs from the source information systems obtained during individual stages of the train lifecycle, the consistency checks of individual parameters and train objects, the algorithms for calculating the railway infrastructure access fee as such, the process of confirming data between the infrastructure manager (IM) and the railway undertaking (RU) including summary data used for invoicing. This information is affected by relevant legislation as described in the paper.



doc. Ing. Jaromír Zelenka, CSc. – Ing. Jakub Vágner – Ing. Aleš Hába, Ph.D.

**Experimentální ověření možností stanovení příčné tuhosti flexi-coil pružin
Experimental verification of possibilities of assessing lateral stiffness of flexi-coil springs**

This contribution takes up the paper published in The Scientific and Technological Anthology No. 30/2010 entitled "Possibilities of assessing lateral stiffness of flexi-coil springs". In terms of this paper the FEM model of the spring is put more exactly by including the influence of end coils. All obtained results of the lateral stiffness calculation are compared with results of the experiment carried out at the testing machine in laboratories of Jan Perner Transport Faculty in Pardubice.