

SUMMARIES

ARTICLES

Renata Barcikowska: Polish Network of Transport Research Institutes – POLTRIN as Example of Science and Industry Synergy

The aim of the article is to present the functioning of the Polish Network of Transport Research Institutes – POLTRIN, which is one of the models of connecting research institutes in Poland. The author has made an attempt to analyse the network activity, emphasising the advantages of network relations in cooperation with the economy. A cognitive analysis of source materials, a case study and a comparative method were used as research methods.

Keywords: research and development institutes, science network, economy, European Union, innovations

Janusz Poliński: BIM Methodology – What It Is and for Whom

The paper presents the problem of Building Information Modeling (BIM). The application of this technology leads to an increase in the efficiency and quality of the investment process and a reduction in operating costs. The history of designing with the use of the developing technology of digital information about an object is described. The forms of objects, basic models used in BIM, as well as their use in public procurement are presented. A road map of BIM implementation in Poland and the legal status in this field are described. Examples of the use of BIM in railway construction in Poland, Europe and China are outlined. The construction of the Beijing – Zhangjiakou high-speed railway line section illustrated the full possibilities of using BIM in the railway line object design. Despite the benefits of this technology, there are many factors which may make its implementation in Poland difficult and lengthy.

Keywords: designing, Building Information Modeling (BIM), infrastructure investments

Marek Sumiła: Development of Technical Assets' Standards for the CPK Railway Component

The article presents the results of work carried out on the development of harmonised railway standards in the field of telecommunication technology for the Centralny Port Komunikacyjny company (CPK). In the following parts of the article the meaning of the term telecommunication is explained, reference is made to the existing standards, the essential areas of application and the special features taken into account during the development of the standards are discussed.

Keywords: technical assets, standards, CPK

Eliza Wawrzyn: Railway Research Institute's Activity in Horizon 2020

The European Union's 8th Framework Programme "Horizon 2020" is coming to an end, with the largest budget so far for financing research and innovation. The article describes the participation of the Railway Research Institute in three EU projects carried out in the passing financial perspective: Innovative Solutions in Future Stations, Energy Metering and Power Supply (IN2STEMPO), Ignition of the European Hyperloop Ecosystem (HYPENEX) and Extending the Attractiveness of Transport for End User (EXTENSIVE) as part of the Shift2Rail Joint Undertaking. Assumptions regarding the new framework programme "Horizon Europe" and the involvement of the Railway Research Institute in the establishment of a new European railway partnership called "Europe's Rail" are also presented.

Keywords: Shift2Rail Joint Undertaking, Horizon 2020, Research Programmes of the European Union, railway stations, hyperloop

RESEARCH INFORMATION

Piotr Chyliński: Completion of "Innovative and Standardized Development Model for the Purchase of Passenger Railway Rolling Stock – INNORAIL" Project

Short series and a large variety of passenger rolling stock make operation and maintenance difficult. The INNORAIL project is a response to the need to simplify and standardize the process of acquiring modern passenger rolling stock by railway operators and transport organizers. As part of the project, an analysis of good practices in the field of construction, operation, maintenance and procurement process of rolling stock was carried out, on the basis of which manuals for manufacturers and units ordering rolling stock were prepared. The INNORAIL project, on the one hand, aims to improve the quality and functionality of the rolling stock used in Poland, and on the other, to develop standards enabling the optimization of the costs of its purchase and operation.

Keywords: rolling stock, rail passenger transport, public procurement

Szymon Klemba: Development of the Polish Railway Network by 2050

The aim of this paper was to analyse the Polish railway network in terms of identifying problems related to the possibility of smooth and efficient railway operations and to indicate the directions of possible measures to be taken by 2050, which would improve the capacity of the network

and adapt it to the expected transport needs. On the basis of strategic documents analysis, surveys conducted in railway undertakings and data on the present shape of the railway network, groups of problems occurring on Polish railway lines and having a negative impact on railway operation were classified and examples of those problems were given. The result of the study is an indication of investment activities to be undertaken, an outline of a methodology for shaping optimal infrastructure solutions and an indication of directions for further development work in this field.

Keywords: railway network, capacity, railway traffic and operations

Iwona Wróbel: Regulations Delegated to Directive 2010/40/EU

The information outlines the Railway Research Institute's participation in the implementation of statutory tasks supporting state authorities in the scope of national and European law requirements, performed in cooperation with the Polish Network of Transport Research Institutes POLTRIN. The importance of Intelligent Transport Systems (ITS) in increasing the provision of innovative services related to various modes of transport and traffic management, as well as European acts regulating the implementation of ITS in the field of transport are emphasised. The requirements for the provision of EU-wide multimodal travel information services contained in Delegated Regulation 2017/1926 are included.

Keywords: EU legislation, Intelligent Transport Systems (ITS), research institutes

RECENT EVENTS

Andrzej Kowalski: Railway Research Institute Notified to Directive (EU) 2016/797 of The European Parliament and of the Council

The information concerns the notification of the Railway Research Institute with regard to Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on rail interoperability in the European Union. The formal and substantive basis of the notification is indicated and the offer of the Railway Research Institute, resulting from the Notified Body No. 1467 status, is characterised.

Keywords: conformity assessment body, notified body, authorization, notification

Jarosław Moczarski: Young Talent's Symposium SYMTA 2021

On 19-20 May 2021, the Symposium of IK Young Talents – SYMTA 2021 was organised at the headquarters of the Railway Research Institute. Young workers of the Institute, employed in scientific, research, technical and engineering positions, presented the latest scientific and professional achievements. Twenty-two papers were presented in seven thematic sessions. The aim of the symposium was to prepare young employees for independent scientific and research work, to exchange information on projects carried out in various IK units, and to improve methods of presenting their achievements to the public.

Keywords: rail transport, young scientists, symposium

Janusz Poliński: International Railway Fair PRO // Motion. Expo, Shcherbinka, Russia

The biannual "Railway Fair EXPO 1520" (2021) – in the last edition named "PRO // Motion. Expo", is a conference and exhibition event dedicated to rail transport of railways with 1520 mm track gauge. As in previous years, the fair was organised on 26-28 August on the area of the Experimental Railway Loop in Shcherbinka near Moscow. The main organisers of the fair were RZD Railways and the JSC Research Institute of Railway Transport (JSC VNIIZhT). During the conference, speakers from 25 countries delivered 100 papers. The exhibition part was presented on an area of 20,000 m² by 154 exhibitors.

Keywords: railway transport, Railway Fair EXPO 1520

Janusz Poliński: Rail-Road Tunnel between Denmark and Germany

Denmark and Germany are pursuing a project to build a tunnel immersed under the Belt Fehmarn Strait. The completion is expected in 2029. The tunnel will provide efficient road and rail transport between the German island of Fehmarn and the Danish island of Lolland, resulting in significantly reduced travel times between Scandinavia and Germany. The innovation will be to build parts of it on the shore and then move it to a permanent foundation site, thus excluding the need for the much more expensive drilling method. Significant explanations of the design and construction technology are given in the information.

Keywords: new transport solutions, rail-road tunnel