RESEARCH AND HIGH-SPEED-LINES EXPERT GROUP

1. Characteristics and Objectives of the Expert Group Professional Focus

1) Support the implementation of research and innovation strategies in the field of railway transport and coordination of activities within the '' Support Program TP to accelerate the construction of lines for fast connections and preparing their operation in the Czech Republic" including links to other programs TP - Transition to a single power supply 25 kV 50 Hz, Implementation of ERTMS on lines in the Czech Republic and Management of railway infrastructure maintenance.
2) Monitoring the possibilities of targeted use of railway research, development and testing capacities (professional and technological capacities, possibilities of verification of solution results, experimental verification, laboratory tests).
3) Ensuring and coordination of supported activities 3.1 of the VRT-B project in accordance with the "Feasibility Study":
   a) elaboration and updating of proposals for topics meeting the characteristics of industrial challenges and substantive focus of the interoperable European railway system,
   b) preparation and elaboration of the "Roadmap" of the procedure of introduction of modern technologies in the preparation and implementation of Fast connections (FC) resp. High-speed lines (HSL) in the Czech Republic.
4) Active support and involvement of TP members in the solution of projects within the Program of the Ministry of Transport and Technology Agency of the Czech Republic - “Transport 2020+” and the establishment of the National Competence Centre for High-Speed Rail.
5) Providing support for railway research through national and European programs - promoting the requirements of the Czech railway industry, universities and research institutes, dealing with railway research, development and testing, including ensuring the cooperation with national and international institutions and organizations (in particular the Ministry of Transport, Ministry of Industry and Trade, Czech Railway Infrastructure Manager, Technology Agency and Grant Agency of the Czech Republic, UIC, CER, TP ERRAC, Shift2Rail).
6) The application uses the current document and EU legislation in the area of the railway sector in the Czech Republic and in response to the needs of members of TP - 4th Railway package, Directive interoperable railway system, Technical Specifications for Interoperability.
7) Promoting a wider participation and active involvement of TP members and employees of Czech Ministry of Transport and Czech Railway Infrastructure Manager in training of students and postgraduate students in order to get them for work in railway companies.

2. Contents of Expert Group Activities

1) Active participation in the implementation of professional activities, activities and project proposals listed in the basic documents of the TP "Strategic Research Agenda" (SVA) and "Implementation Action Plan" (IAP) and in their ongoing updating.
2) Ensuring an effective forms of support and cooperation with all interested institutions and state administration bodies (Ministry of Transport, Ministry of Industry and Trade, Technology Agency and Grant Agency of the Czech Republic, Czech Railway Infrastructure Manager) and other partners and personalities in the Czech Republic and abroad that may influence positive development in preparation and implementation of HSL in the CR.
3) It will continue to strive for continued political support and cooperation with the Subcommittee on Transport and the Chamber of Deputies of the Parliament of the Czech Republic in implementing the “HSL and FC Program in the Czech Republic”.
4) Preparation and monitoring of the possibilities of involvement of TP and their members into projects and other activities of the Technology Agency of the Czech Republic – Transport Doprava 2020+ Programs, Horizon Europe, Shift2Rail, incl. participation in solving projects within these and other Programs.
5) Ensuring close cooperation with other expert groups and the Scientific Board of TP, as well as with all universities (CTU Prague, VUT Brno, ZČU Plzeň, DFJP University of Pardubice, TU Ostrava) and other members of the TP.
6) Promotion and application use of EU strategic documents, Strategic Railway Research and Innovation Program (SRRIA) of the ERRAC Committee (Vision and Priorities of ERRAC until 2050), national strategic documents, including National RIS 3 and others.
7) Ensuring or cooperation in the preparation and organization of professional conferences, seminars, international discussions and other TP activities in relation to the professional focus of the expert group.

3. Composition of the Expert Group

	Name	*Company/Institution*	*Expertise*
Manager	Ing. Jaroslav Grim, Ph.D,	TP IŽI	Control command systems, railway infrastructure diagnostics
Deputy of the Manager	Ing. Lukáš Hejzlar	VUZ, a.s.	Railway vehicles, brakes, noise, testing
Members	Ing. Antonín Blažek, Ph.D.	enteria, a.s.	Railway vehicles, testing

	Doc. Ing. Pavel Drábek, Ph.D.	ZČU Plzeň, FEL	Electric drives, EMC
	Ing. Jiří Jelének	VÚKV, a.s.	Railway vehicles
	Prof. Ing, Ondřej Jiroušek, Ph.D.	ČVUT, FD	Railway systems and technology
	Ing. Petr Kaván, Ph.D.	EUROSIGNAL, a.s.	Railway vehicles, testing
	Ing. Martin Kohout, Ph.D.	Univerzita Pardubice, DFJP	Railway vehicles, wheel - rail interaction
	Doc. Ing. Hana Krejčířiková, Ph.D.	ČVUT, FS	Railway infrastructure
	Ing. Tomáš Konopáč	Správa železnic, státní organizace	Control command system, ERTMS
	Ing. Danuše Marusičová	TP IŽI	Railway infrastructure
	Ing. Martin Pittermann, Ph.D.	ZČU Plzeň, KEV	Power electronics, electric drives
	Ing. Richard Svoboda, Ph.D.	VUT Brno, FS	Railway infrastructure
	Ing. Martin Švehlík	Správa železnic, státní organizace	Railway systems, HSL
	Mgr. Eva Tetíková	VUZ, a.s.	Project management
	Ing. Pavel Tikman		Design of transport structures
	Doc. Ing. Lukáš Týfa, Ph.D.	ČVUT, FD	Railway systems
Other Associates			

4. Specific Expert Group Collaboration with the other Members of TP IZI

Member of TP IŽI	*Content and Focus of Collaboration*
ČVUT FD, UPa DFJP, ZČU, VUT Brno, VUZ, a,s, VÚKV, a.s., SŽ,	Elaboration of the document "Roadmap"

5. Overview of Implemented Projects (*in the period from 2018 to the end of 2020*)

Project Title/ Acronym	**Innovative Monitoring and Predictive Maintenance Solutions on Lightweight Wagon / INNOWAG**
Project No	730863
Funded by	S2R-OC-IP5-03-2015
Implementation Period	11/2016 - 6/2019
Total Budget	-
Beneficiary/ Coordinator	Výzkumný Ústav Železniční, a.s. / member of consortium
Consortium	• University of Newcastle upon Tyne (UK) - project coordinator • Inertia Technology B.V. (Netherlands) • Havelländische Eisenbahn AG (Germany) • Lucchini RS SPA (Italy) • New Opera AISBL (Belgium) • Perpetuum Ltd. (Great Britain) • Politecnico di Milano (Italy) • Technical University of Berlin (Germany) • UNIFE (Belgium) • Societatea comerciala de intretinere si reparatii vagoane de calatori CFR - SIRV Brasov, SA (Romania) • VUZ, a.s. (CR)
Project Goal/ Project Benefits	The aim of the project was to develop new solutions in the field of intelligent monitoring of freight wagons and predictive maintenance, which in conjunction with the new light car concept can respond to current challenges in the field of competitiveness, attractiveness and sustainability of European rail freight.

Project Title/ Acronym	**Car Body Shells, Doors and Interiors / CARBODIN**
Project No	881814
Funded by	**S2R-OC-IP1-01-2019**
Implementation Period	12/2019 – 12/2021
Total Budget	-
Beneficiary/ Coordinator	Výzkumný Ústav Železniční, a.s. / member of consortium
Consortium	• EURECAT Foundation - Project Coordinator (ESP) • AIMEN (ESP) • Composites Aragon sl (ESP) • RWTH Aachen University (D), • EURNEX e. V. (D), • CG Rail GmbH (D), • Forster System - Montage - Technik SMT GmbH (D), • Masats S.A. (D), • UIC (F), • Polytechnic University of Hauts-de-France (F) • University of Rome for SAPIENZA (IT), • Research Institute of Railway, a.s. (CR), • Center for Research and Technology Hellas (GR)

	• DES ART Sp. z o.o. (PL)
Project Goal/ Project Benefits	The project is focused on the implementation of composite materials in railway vehicles and on improving the properties / conditions associated with driving and traveling by train. The outputs of the project will combine various production techniques, automation concepts, introduction of jointly cured and jointly bonded composite parts.

6. Overview of Implemented Expert Group Activities (in the period *from 2019 to the end of 2020)*

• "International Scientific Discussion" (October 4, 2018) • "Meeting of Deans of Technical Universities" - members of TP with representatives of Ministry of Transport CR, Ministry of Education, representatives of TA CR, GA CR and AV CR " in PS PCR (27.11.2018) • Discussion and acceptance of the draft TP - 152. Resolution of HV PS PCR of 21 February 2019 • Workshop - 4th Railway Package - 16.6.2020 • Coordination of the elaboration of the document "Roadmap" - during 2020 • Preparation of the draft "Memorandum of Cooperation between UIC and TP" - 2nd half of 2020 • Participation in meetings of the Interdepartmental Steering and Working Team of HSL od Ministry of Transport • Cooperation agreement between the Railway Administration and the Technology Platform

7. Representation of the Expert Group in National and European Institutions

National or European Institution	*Name*	*Work Place*
TNK 141 Railway	Ing. Lukáš Hejzlar	VUZ, a.s.
TNK 141 Railway	Doc. Ing. Hana Krejčiříková, Ph.D.	ČVUT, FS
TNK 141 Railway	Ing. Danuše Marusičová	TP IŽI
TNK 141 Railway	Doc. Ing. Lukáš Týfa, Ph.D.	ČVUT, FD
ERRAC	Mgr. Eva Tetíková	VUZ, a.s.