Recent Research and Innovation in Railway Infrastructure Systems Engineering Network (RISEN)

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ABSTRACT

Social and economic growth, security and sustainability in Europe are at risk of being compromised due to aging and failing railway infrastructure systems. This partly reflects a recognised skill shortage in railway infrastructure engineering. This project, RISEN, aims to enhance knowledge creation and transfer through the global network of research hubs and centres. RISEN aims to produce the next generation of engineers and scientists needed to meet the challenge of providing sustainable, smart and resilient railway infrastructure systems critical for maintaining European competitiveness. The emphasis will also be placed on the resilience and adaptation of railway and urban transport infrastructures using integrated smart systems. Such critical areas of the research theme will thus be synergised to improve response and resilience of rail infrastructure systems to climate change, extreme events from natural and human-made hazards, and future operational demands. In this presentation, the recent research discoveries and innovation in railway infrastructure systems engineering will be highlighted. Lessons learnt from rail infrastructure management will be shared to assure integrated and sustainable rail transport planning for future cities and communities.

ABOUT THE SPEAKER

Dr. Sakdirat (Zac) Kaewunruen is a Senior Lecturer in Railway and Civil Engineering at BCRRE. He holds a Ph.D. degree in Civil Engineering (Railway Infrastructure) from the University of Wollongong (Australia) and completed a Leadership program at John F Kennedy School of Government, Harvard University, USA. Prior to joining the academia, he has over 14 years of professional and industry experience in both public and private sectors in Australia, Thailand, Japan, Sweden, and USA. He is a Chartered Engineer in both Civil and Structural Colleges (CPEng). He held visiting appointments at various institutions, including Massachusetts Institute of Technology (MIT), Chalmers University of Technology’s Railway Mechanics Centre, Railway Technical Research Institute, and the University of Tokyo. He is the 2015 JSPS invitation fellow, has over 260 technical publications and evidence-based consultancy reports, and has served on the editorial boards of many international journals, including Structural Monitoring and Maintenance, Shock and Vibration, Journal of Structures, and International Conferences of Railway Technology and Rail Transportation. He is a member of ISO and BSI standard committees; is the coordinator (Executive Chair) of RISEN (www.risen2rail.eu) and is a Chief Editor of Frontiers in Transportation and Transit Systems.