

Webcast Technical Forum: ***Cyber Security in Railway Signal System***

Date: 28th January 2021, Thursday

Time: 18:15 hrs - 19:15 hrs

Venue: Video Conference (Link will be provided later)

Speaker: Mr. PANG Kwok Wai (Past IRSE(HK) Chairman)

All Members and MTR Staff are welcome

Abstract:

“Railway systems are becoming vulnerable to cyber-attack due to the move away from bespoke stand-alone systems to open-platform, standardized equipment built using Commercial Off The Shelf (COTS) components, and increasing use of networked control and automation systems that can be accessed remotely via public and private (communications) networks.”

Rail Cyber Security, Guidance to Industry,
Department for Transport, UK, February 2016

Digital transformation brings substantial benefits to railway safety, operational efficiency and reliability, as well as an enhanced passenger experience. Yet, increases the vulnerability to cyber-threats.

The growing trend for smart cities further integrates railway operation with other public utilities, making cyber-attack on any of these targets attractive to hackers as any success can create huge impact to the city. However, the other utilities which can give access to the railway systems might not have same level of security measures as railways. Therefore, cyber security for railway operating systems is vital in new railway design.

Cyber Attack on Railway Infrastructure is Real with the most famous known being the WannaCry ransomware which attacked targeted Russian Railways and the German rail operator Deutsche Bahn. Ironically, the Deutsche Bahn train information displayed the hackers' demands for money in return for unlocking the systems.



The speaker would like to share his experience on the known vulnerability in railway infrastructure, range of potential attackers and the major source of threat to railway Signal and Control System. With a study case on the Hong Kong Express Rail Link, we would discuss on how a cyber-security audit can be conducted trying to eliminate as much as possible the known vulnerability to the system.

Speaker:



Mr. PANG Kwok Wai has over 40 years' experience in the railway industry covering design, maintenance, management development and multi-discipline large scale projects. His last post in the Mass Transit Railway Corporation of Hong Kong was the Infrastructure Development & Engineering Asset Manager, who acts as the Asset Owner to coordinate with all infrastructure related Project Teams (including Civil, Power, Track, Signal, Control & Communications) on design, implementation, testing of all new Lines, Extensions and major asset replacements to assure that they comply with the operation, maintenance, safety and recovery requirements at the lowest Life Cycle Cost and minimal impact to existing services.

After leaving MTR, he was the Executive Vice President for the Hong Kong Nicaragua Development Group planning for construction of the Nicaragua Canal. At present, he is the Committee Member of the Institute of Railway Signal Engineers (Hong Kong Section), a Visiting Professor of the Beijing Jiatong University, Senior Consultant for China Railway Construction Corporation Hong Kong Limited, Project Director for contract 1142 of the Guangzhou-Shenzhen-Hong Kong High Speed Rail, Senior Consultant for the China Railway Signal & Communications Group focusing on Contract CP-203 in India, Chief Technical Officer for China Railway Signal & Communications Group (US Office) etc.

Fees: Free-of-charge

No. of Participants: 80

Registration Methods: **Prior registration is required.** Applications will be accepted on a first-come, first-served basis. Successful applicants will be notified by a separate e-mail with a link to access the on-line forum.



- (1) Members of IRSE(HK) can make registration via the [**Activity**] page of the IRSE(HK) website. The IRSE(HK) website will offer a service of record of CPD hours for members who make registration via the website and attend the activity as scheduled.

URL: <https://irse.org.hk/activity/>

- (2) Staff of MTR are invited to make registration by sending an e-mail with his/her FULL Name, Mobile No. and E-mail to **Mr. P Y CHEUNG** (E-mail: pycheung@mtr.com.hk).

**Closing Date of
Registration:**

22 January 2021 (Friday)

* * *

