

# CLARE

Cluster of Logistics  
and Rail Engineering

## Events

### Novel Approaches and Techniques in Rolling Stock Design Course

The second short course of the MetroExchange project took place at Mahidol University, Salaya campus on 25-26 November 2019. This course focused on rail vehicles and was delivered by Dr. Cristian Ulianov, our partner from Newcastle University.

Dr. Ulianov has a mechanical and industrial engineering background and is currently a Railway Technology Group Manager at Newcastle University.



### How to Automate a Train and Test it in the Lab

We were pleased to welcome Mr. Philipp Goetz, Founder and MD of "Rail Systems Engineering Sdn Bhd" on 17 January 2020. Mr. Philipp delivered a workshop on "How to automate a train and test it in the lab" at the Faculty of Engineering, Mahidol University.

The workshop included the topics:

- Part 1: What it needs to automate
- Part 2: What is a digital twin
- Part 3: Testing with the OpenTrack and the digital twin
- Part 4: Lessons learnt



### Innovative Smart Medical Supply Platform 2020 handover ceremony

Assoc.Prof Dr. Duangpun Kritchanai and Dr. Rawinkhan Srinon are part of the research team that developed Smart medical supply platform 2020 on 9 June 2020. When COVID-19 hit Thailand early this year, many hospitals faced shortage of surgical mask and appropriate COVID-19 protective equipment while some hospitals have surplus from donations. This research project received grant from National Research Council of Thailand to create an integrated platform to help manage distribution of COVID-19's medical supplies to where they're needed. This platform consists of six parts namely, product catalogue, donation page, virtual stock, order management, matching system, and tracking system. The platform would efficiently match surgical mask and COVID-19 protective equipment demands from healthcare facilities with supplies from both procurement and donation. Furthermore, the platform supports managing shipping process, tracking, and display necessary information for further planning. On June 9, 2020, Permanent Secretary of Ministry of Higher Education, Science, Research presented the platform to Permanent Secretary of Ministry of Public Health for the ministry to continue managing medical supply for frontline healthcare workforces.



## Newsletter



It has been a while since our previous update. We are happy to share a lot of our activities from the past few months. In this e-newsletter you will find news about our major events.

Vol.2/2020

# Events

## Visit APM Terminals Thailand, Suvarnabhumi Airport and RailLINKs Lab

Asst. Prof. Dr. Waessara Weerawat and Dr. Jirapan Liangrokapart, together with students and researchers, visited APM Terminal Thailand, Lat Krabang ICD Terminal 1 on 30 January 2020. The terminal is a hub of transport connectivity, which supports modal shift activities between road and rail transportation. Mr. Maarten Degryse, Managing Director and Mr. Hot Hanuthaikij, Operations Manager, also gave a special lecture at the site.

After visiting the APM terminal, the study tour also visited Suvarnabhumi Airport to view the construction site of the Automated People Mover (APM) between the existing terminal and the new passenger terminal. A lecture at the construction site was kindly given by Mr. Ditsapol Padungkul, President of the Thai Railway Engineering Association and S.C.P. Electric Co., Ltd.

Next, the study tour visited the RailLINKs Lab at King Mongkut's Institute of Technology, Ladkrabang. Prof. Dr. Vanvisa Chutchavong, Department of Computer Engineering, Faculty of Engineering, welcomed the tour and kindly gave information about the RailLINKs Lab, she presented a special lecture on "Software Development for Rail Vehicle Management and Control." The project simulates the Central Control Room (CCR) of the high-speed rail between Bangkok and Nakhon Ratchasima. The project aims to develop a platform that could be used at the State Railway of Thailand's training center in the future.



## Railway Signalling and Operations

Prof. Dr.-Ing. Jörn Pachi, TU Braunschweig, Germany delivered a special course to our students on 17-21 February 2020, at CLARE, Faculty of Engineering, Mahidol University. This course focused on railway signalling and operations.

The students learned about railway operations, dynamics of train movements, the theory of train separation, interlocking principles, traffic diagrams, traffic control with operations, centralized traffic control and automation technologies.

This gave students the opportunity to learn not just the theory but also from his experience.



## Application on Lean Applications in Hospital Health Care Logistics LEAN in practice: Road to success

The short course of "Application on Lean Applications in Hospital Health Care Logistics LEAN in practice: Road to success" by Assoc. Prof. Cherdchai Nopmaneejumruslers, Deputy Director of Siriraj Hospital took place at Mahidol University, Salaya campus on 1 March 2020. This course focused on understanding the application of Lean in Health Care Logistics in hospitals, including how to reduce the time for management and administration by using Lean Theory, and applying knowledge to business.





## Events

### International Collaboration Workshop on Train Car Design

We successfully conducted the 1st international collaboration workshop on Train Car Design on 6-8 March 2020. The challenge of the workshop was to re-design train cars that "make passengers scramble to nab a standing area".

The collaboration project was supported by CLARE which had invited the Interior Architecture department of Thammasat Design School (Thammasart University), Faculty of Engineering (Chulalongkorn University), S.R.T Electrified Train Company LTD, and a start-up on public transport information transformation, Mayday, to brainstorm new perspectives of metro journey experiences.



### Sustainable Urban Mobility TOD

On 12 March 2020. Associate Professor Dr. Pawinee Iamtrakul from the Faculty of Architecture and Planning, Thammasat University, visited our Transit-Oriented Development class. She shared her experiences about Sustainable Urban Mobility TOD and gave our students valuable information.

### Seminar for SEC project planning

Assistant Professor Dr. Noppanun Nankongnab, Department of Occupational Health and Safety, Faculty of Public Health, Mahidol University and Dr. Natchai Wongchavalidkul, the Cluster of Logistics and Rail Engineering (CLARE), Faculty of Engineering, Mahidol University gave a presentation on 29 January 2020, at the Seminar for the Safety Education Center (SEC) project planning (SEC team up and Kick Off 2020). The seminar was arranged by the SRT Training Center.



### Discussion about the Comprehensive Plan of the Medical Center

The Golden Jubilee Medical Center called the TOD Salaya team to discuss about the comprehensive plan of medical center with regards to the transit-oriented development (TOD) conceptual planning that was created by CLARE.

The discussion concerned specific problems on infrastructure development that affected both Mahidol Salaya campus and the Golden Jubilee Medical Center. CLARE is now deciding a future step to connect land use activity and transport circulation to achieve TOD development in Salaya town.

## Events

### Mahidolrail and DRT in kickoff meeting for Railway Standard Project

Dr. Phumin Kirawanich, Dr. Siradol Siridhara, and Mahidolrail technical team attended a kickoff meeting to discuss the work plan to prepare Thailand's railway electrification and signalling standards on 18 May at the Department of Rail Transport.

Mahidol University was appointed the consultant for Department of Rail Transport to undertake a study of railway electrification and signalling system standards. The scope of the first phase involved the nationwide mainline railway system. At the end of the 8-month project, the national standard for electrification and signalling system would be established to ensure interoperability and seamless transfer from diesel to electric-powered and advanced signaling technology.



### Signing ceremony of the project between MU and Chula

Assistant Professor Dr. Warakorn Charoensuk (Associate Dean of the Faculty of Engineering) and Dr. Natachai Wongchavalitkul (the Cluster of Logistics and Rail Engineering) from the faculty of engineering, Mahidol University together with the faculty team from Chulalongkorn's faculty of engineering and the Chulalongkorn University Academic Service Center attended the signing ceremony of the project "Evaluation of highway development for transportation system integration planning according to national strategy goals" on 10 June 2020 at Department of Highway.



### Welcoming CP Group at CLARE

The Division of the Railway Transportation System, Mahidol University welcomed Mr. Leo Mak Sek Man, Project Director and Dr. Anaphat Manovachirasan, Manager of Operations from Eastern High Speed Rail Linking Three Airports Co., Ltd. of CP Group on 8 May 2020 at Room 210, Building 1, Faculty of Engineering, Mahidol University, Salaya Campus.

Dr. Jackrit Suthakorn, Dean of the Faculty of Engineering and Dr. Waessara Weerawat presented CLARE's activities and research interests. The representatives of CP Group revealed three phases of the Eastern HSR development. The 1st phase involves improvement of the ARL before operating and maintenance service in October 2021. The second phase includes the construction of the line from Suvarnabhumi to Utapao Airport. Finally, the last phase comprises the development of the ARL extension to Don Muang Airport.

The CP Group representatives showed great interest in Mahidol's Master Program in Railway Engineering. Both parties discussed future collaborations in the form of research in the railway sector, and graduate employment. CLARE, on behalf of Mahidol University, was grateful for this visit and considered it a good sign for the future of Thailand's railway development.

