Parallel Session 6 – Mobility, Accessibility & Door-to-Door solutions

Latest Outlook of the ASEAN Rail Projects and its Way to Sustainable Urban Development

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UIC

ASEAN Representative

Tehran, Iran, 12th November 2019

Latest Outlook of the ASEAN Rail Projects and its Way to Sustainable Urban Development

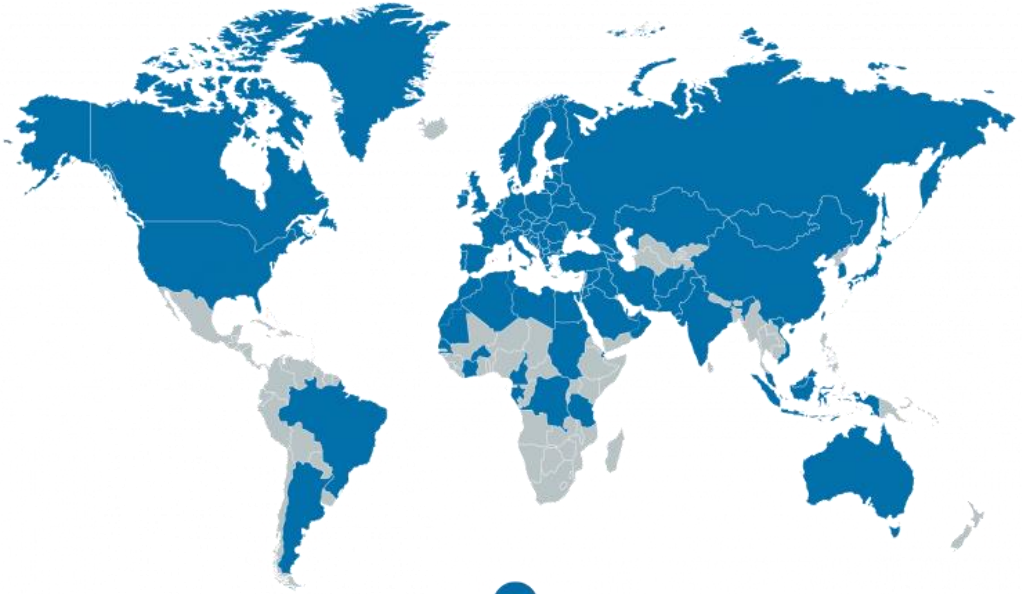
SUMMARY

1- UIC ASIA PACIFIC & UIC ASEAN : Introduction

2- ASEAN Railways Projects (2019)

3- Future Railway Stations of ASEAN : Example of Bang Sue Grand Station in Bangkok, Thailand

Introduction



UIC MEMBERS

245 in 2019

UIC ASIA PACIFIC : 44 Members
Including 9 in ASEAN


MYANMAR
VIETNAM
LAOS
THAILAND
CAMBODIA
PHILIPPINES
BRUNEI
MALAYSIA
INDONESIA
SINGAPORE
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UIC MEMBERS SITUATION in ASEAN (October 2019)

UIC Members :

KTM	MALAYSIA
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MyHSR CORP	MALAYSIA
VNR Đường sắt Việt Nam	VIETNAM
KERETA API	INDONESIA
	INDONESIA
	INDONESIA
	PHILIPPINES
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PWT	CAMBODIA, LAOS
HCMC METRO	PHILIPPINES, VIETNAM

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SMRT	SINGAPORE
	PHILIPPINES
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Bộ Giao thông Vận tải / TEDI SOUTH	VIETNAM
ROYAL RAILWAY / KURAIL	CAMBODIA, THAILAND

Etc…

ASEAN

October 2019

ASEAN RAILWAY PROJECTS 2019

CAMBODIA : Main lines rehabilitation and further follow up on closing the SKRL Cambodian missing links. Main challenge : missing link to go to Vietnam (257 km to be built).

INDONESIA : National Railway Master Plan. Sumatra and Jawa lines rehabilitation and modernization (double tracking and electrification), new lines in Sulawesi, Kalimantan and Papua, HSR lines in Jawa : Jakarta-Bandung under construction and Jakarta-Surabaya under PFS, new urban lines in Jakarta (MRT, Inner LRT and outer LRT) and major cities (Bandung, Surabaya, Medan, Palembang, Semarang, Makassar, etc.), as well as in Bali.

LAOS : China-Laos Railway line under construction (standard gauge, to link Kunming to Vientiane, 414 km from the Chinese border to the Lao capital city), expected to be in operation by 2022. Missing link from Thanaleng Station (near the Thailand border) to Vientiane of 8.5 km : once completed, it would become the first available railway route from Singapore to Kunming and Europe (but still with break of gauge).

MALAYSIA : Last double tracking and electrification project (from Gemas to Johor Bahru) to be completed by 2022, it would allow to use a rapid service (160km/h, meter gauge) from Singapore to the Thailand border. East Coast Rail Link project : reviewed and re-activated since April 2019. HSR line between Kuala Lumpur and Singapore to be re-considered by the end of May 2020. New by-pass line project (for freight, to Port Klang) has been budgeted in October 2019. MRT2 and LRT3 urban lines (Klang Valley) under construction. New urban lines in other cities (Penang, Kuching, Melaka, etc.).

ASEAN RAILWAY PROJECTS 2019

MYANMAR : Main lines rehabilitation (including Yangon-Mandalay and the Yangon Circular). Corridor-based development projects (list of 10 projects), and links to neighbour countries, such as China, Thailand and India.

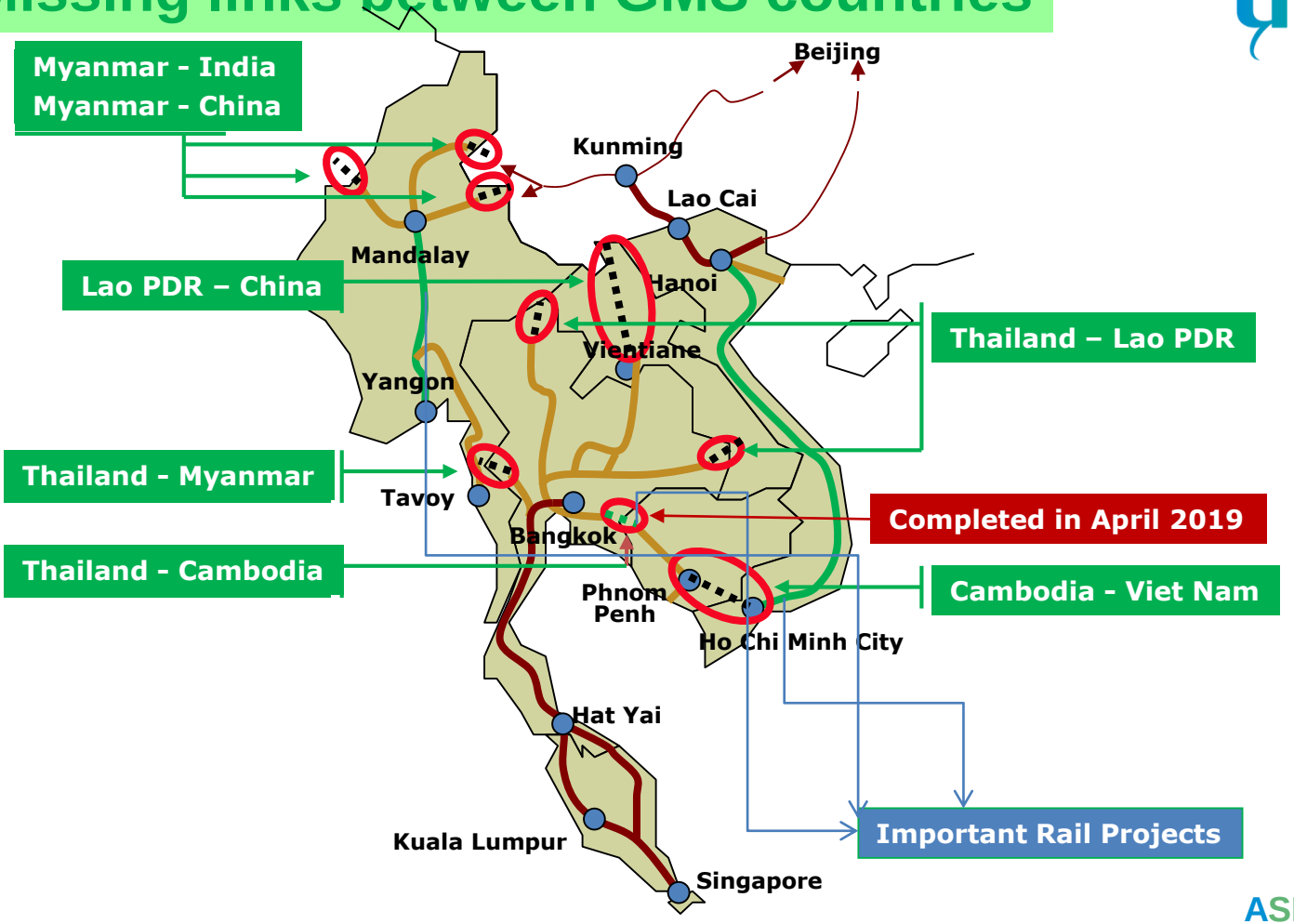
PHILIPPINES : Railway mode of transport given a priority place in the Build-Build-Build Plan of the Philippines. Rehabilitation projects on Luzon Island and new line from Manila (Malolos) to Clark Freeport Zone and Clark International Airport approved (part of the North-South Commuter Railway – NSCR project). Other potential projects in Cebu and Mindanao islands. Rehabilitation, development and extension of Manila urban lines.

SINGAPORE : HSR line between Singapore and Kuala Lumpur, pending on Malaysia's decision by the end of May 2020. New urban lines in preparation.

THAILAND : Vast programme of double and triple tracking of main existing lines (more than 2,000 km), as well as new lines (close to 700 km). HSR projects (4 corridors, with the EEC project to link the three airports around Bangkok, 221 km). Cross border projects with Myanmar, Laos, Cambodia and Malaysia, related to the SKRL Regional Project. Important development (extensions and new lines) for the Bangkok urban network.

VIETNAM : Long term cross border projects with China, Laos and Cambodia. Infrastructure rehabilitation projects as well (bridges, tunnels, etc.). HSR project for Hanoi-Ho Chi Minh City in two speed stages, by 2030, then 2050. Development of several urban lines in Hanoi and Ho Chi Minh City, now on track, after some years of delay.

Missing links between GMS countries



ASEAN RAILWAYS

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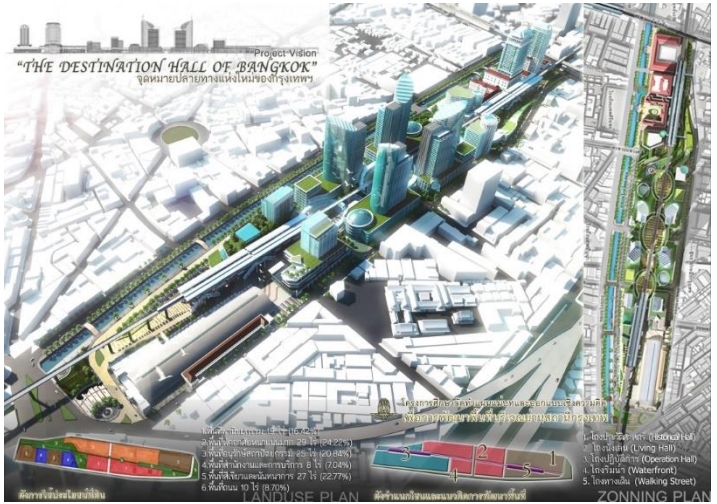
ASEAN

Future Railway Stations of ASEAN
Example of Bang Sue Grand Station
Bangkok, Thailand

Introduction

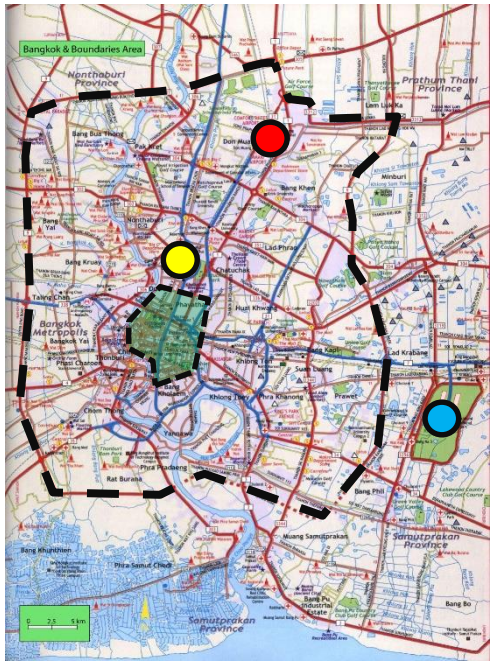
Bangkok Station (Hua Lamphong) at present



Bangkok Station (Bang Sue Grand) in the future

Future Railway Stations of ASEAN
Example of Bang Sue Grand Station
Bangkok, Thailand

Location of Bang Sue Grand Station



- Bang Sue Grand Station
- Don Muang Int. Airport
- Suvarnnabhumi Int. Airport
- Bangkok's CBD
- Bangkok Metropolitan Area

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Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Location of Bang Sue Grand Station

Aerial Image of Bang Sue Grand Station and Surroundings

Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Surrounding Attractions

Chatuchak Weekend Market
One of the world's largest weekend markets

Bangkok Bus Terminal (Chatuchak)
The largest intercity bus terminal in Bangkok

Central Plaza Lardprao
One of the most popular shopping malls in Bangkok

Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Surrounding Attractions

Or Tor Kor Market
The best fresh market in Bangkok

Wachirabenchathat Park (Rod Fai Park)
The largest green area in Bangkok

Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Landscape of Bang Sue Grand Station

Construction Progress (As of July 2019)

- Main building structures are completed.
- The progress of curtain wall and floor installation, interior work and piping is approximately 30%.
- The overall progress is approximately 80% and expected to be completed by **mid-2020**.

Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Rail Networks Connectivity

- **Bang Sue Grand Station** will be the most important and largest rail transport hub in Thailand, linking all inter-city rail systems to Bangkok Metropolitan Rapid Transit (MRT).
- The **five core** rail systems attached onto the station include:

1)	Long Distance Train (LD)	Inter-City Train
2)	High-Speed Rail (HSR)	Inter-City Train
3)	Airport Rail Link Extension (ARLX)	Inter-City Train
4)	Commuter Train Red Lines (CT)	Suburban Train
5)	Bangkok Metropolitan Rapid Transit (MRT)	Bangkok Metro Rail

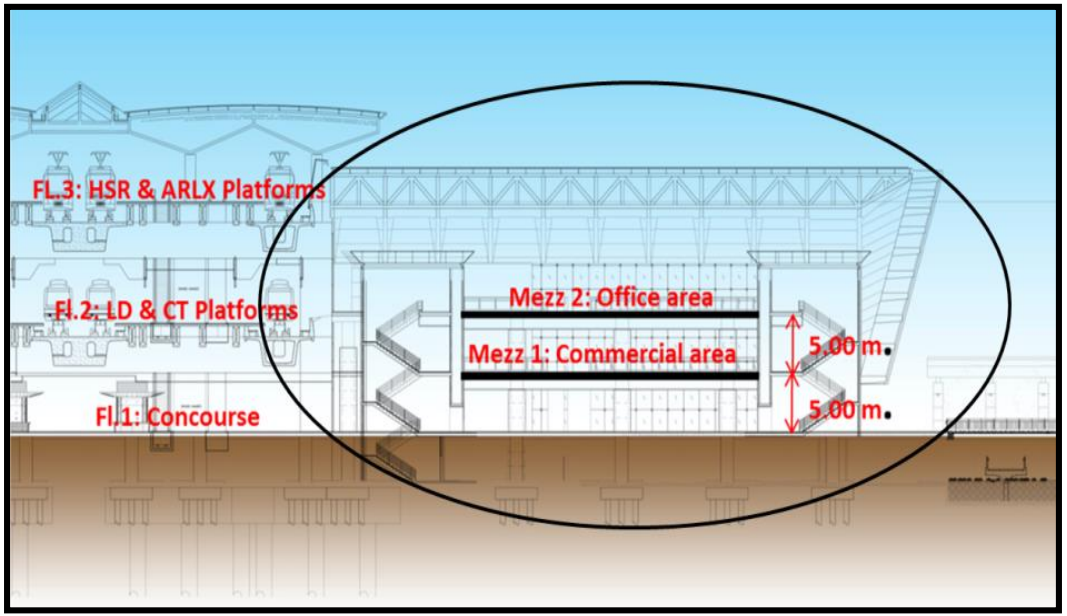
Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Floor and Space Configuration

The in-door gross floor area of the station is approximately **260,000** square-meters, including:

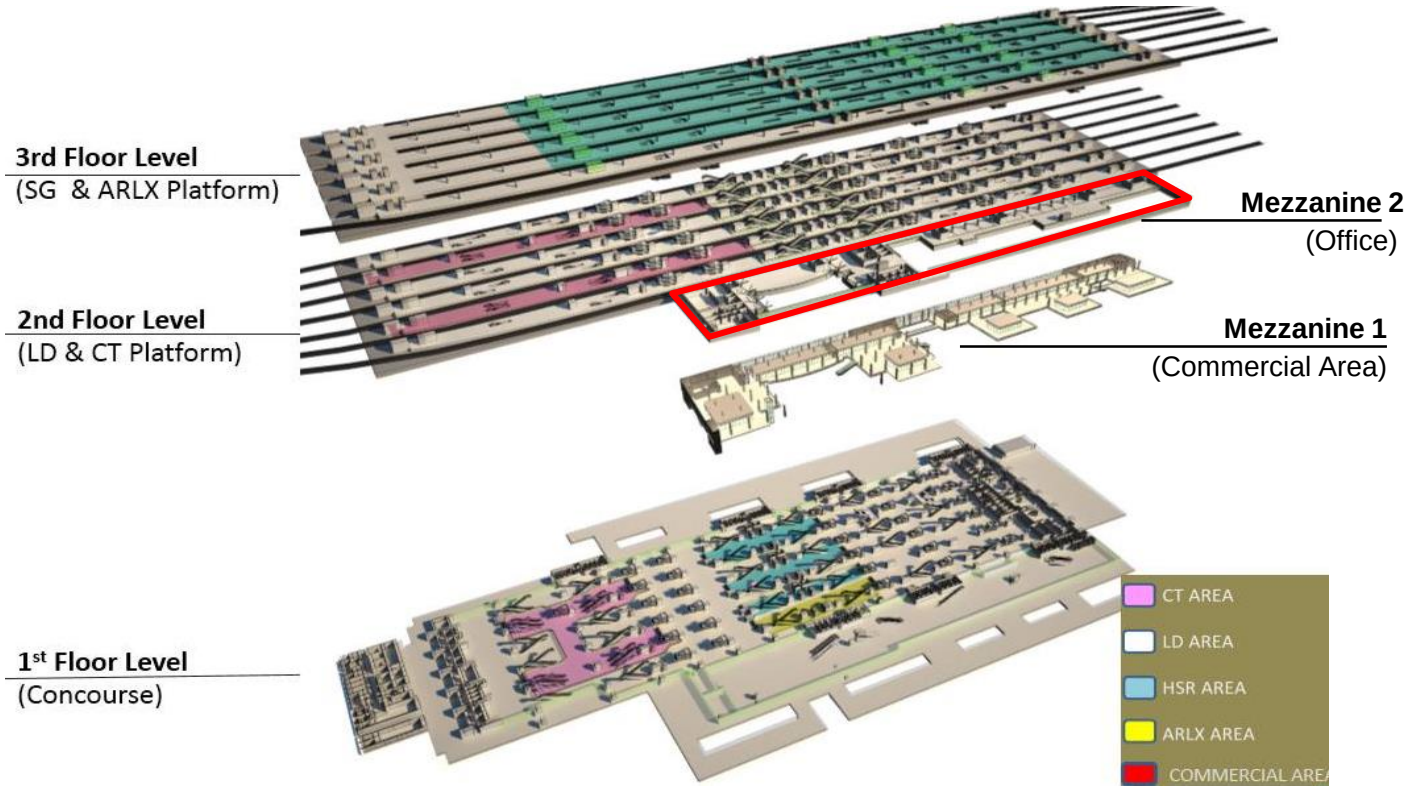
- Basement : Car Park 73,000 Sq.m.
- Concourse : Public Space & Service 87,000 Sq.m.
- Mezzanine 1 : Commercial Area 12,000 Sq.m.
- Mezzanine 2 : Office & Operations 9,000 Sq.m.
- Level 2 : LD & CT Platforms 43,000 Sq.m
- Level 3 : ARLX & HST Platforms 44,000 Sq.m



Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Floor and Space Configuration



Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Floor and Space Configuration

Concourse

Mezzanine 1

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Future Railway Stations of ASEAN

Example of Bang Sue Grand Station Bangkok, Thailand

Floor and Space Configuration

Mezzanine 2

Level 2 Platforms

Level 3 Platforms

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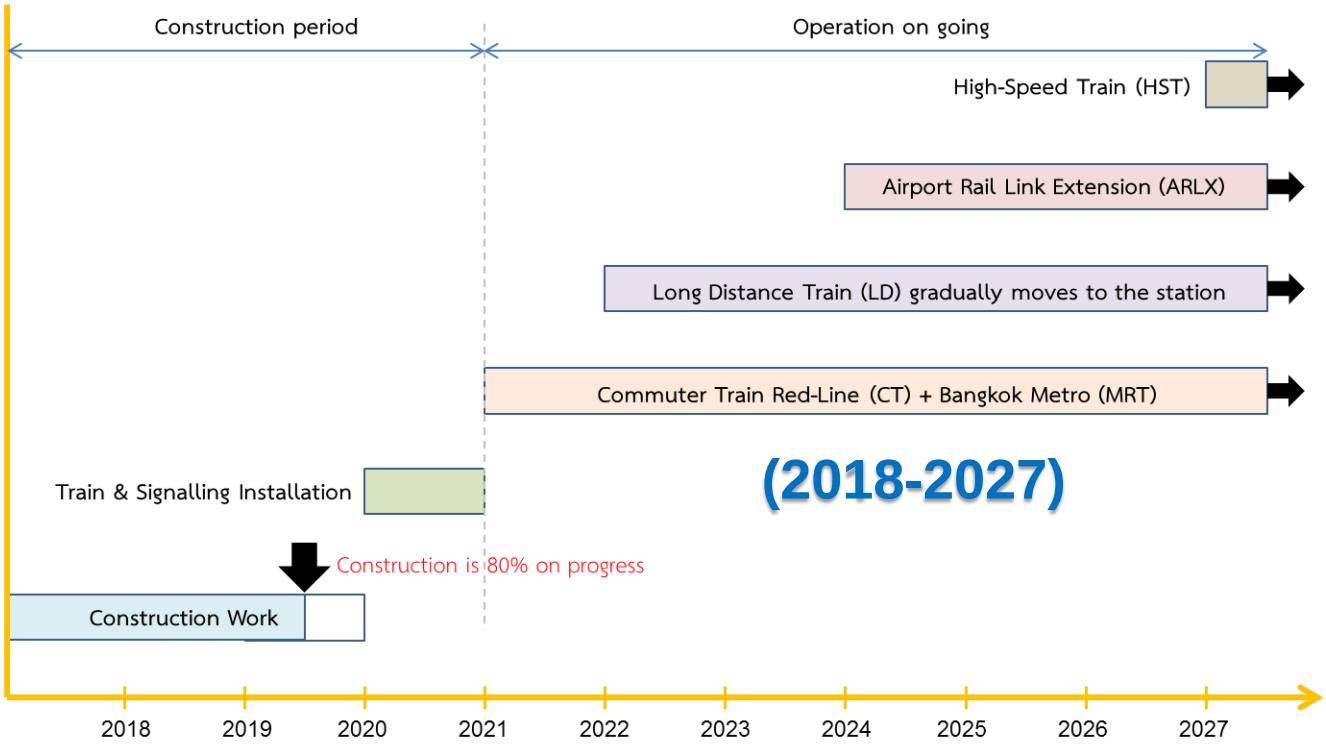
Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

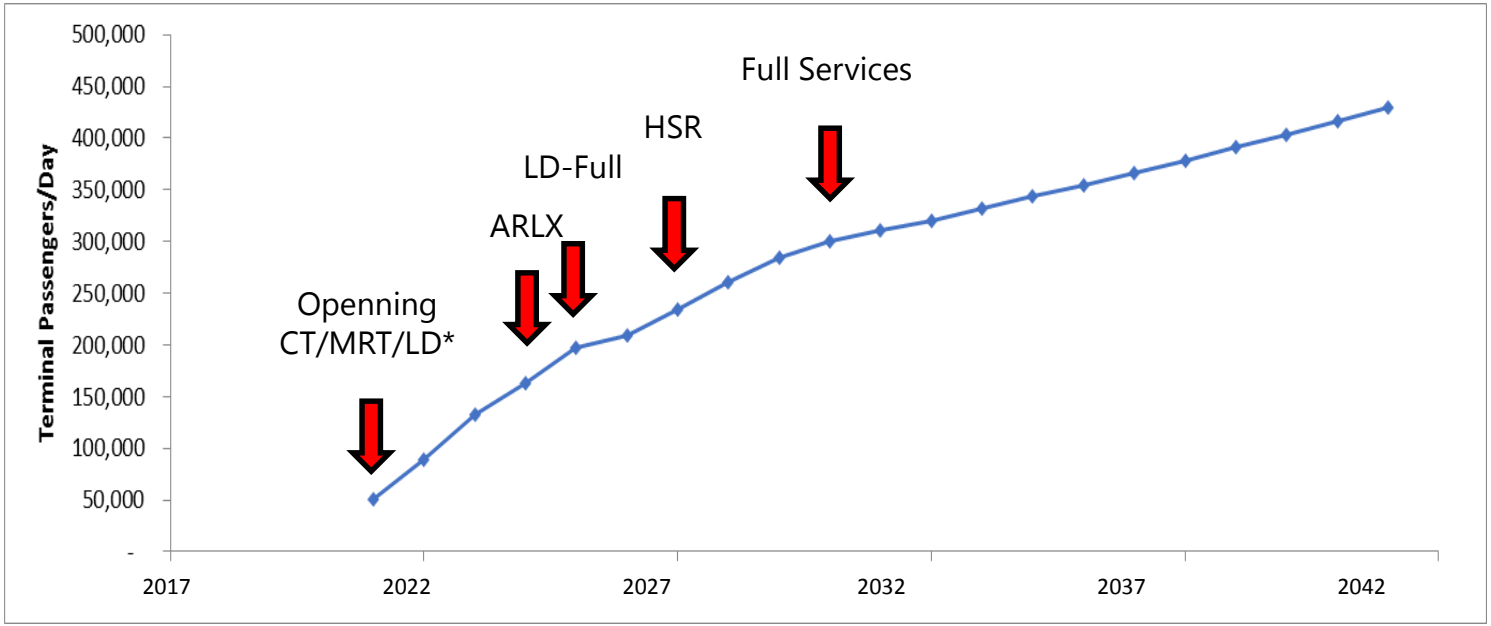
Timeline of Bang Sue Grand Station



Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Estimated Ridership per Day



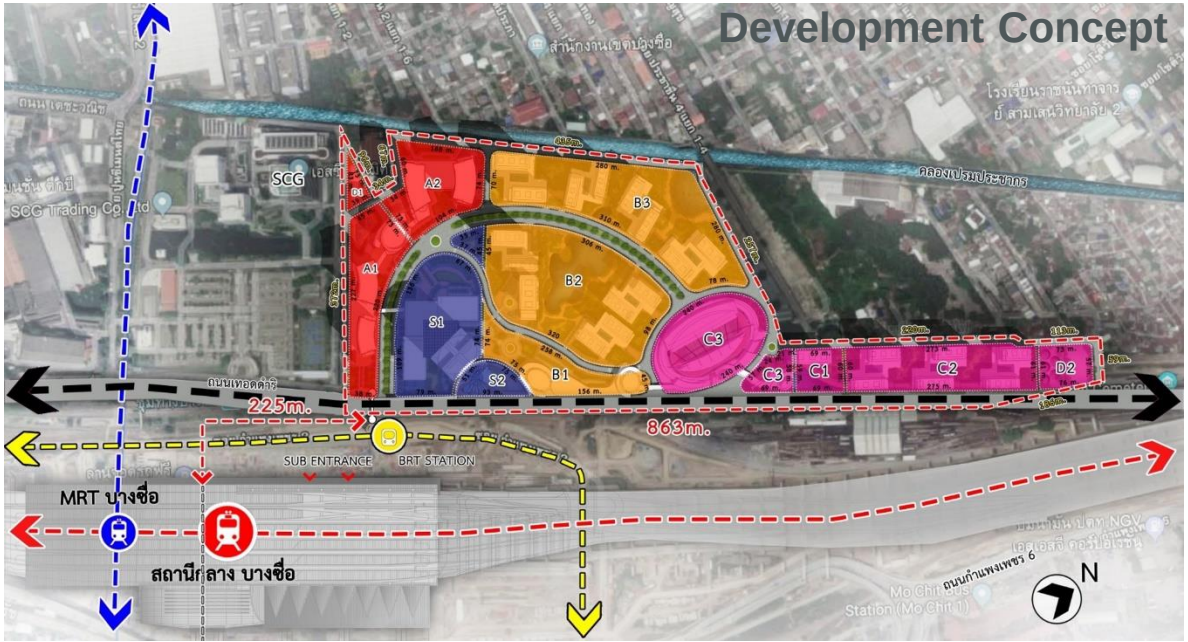
In the next 20 years

Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Management Concepts and Plan

- SRT aims at searching for potential private sectors to help operate Bang Sue Grand Station.
- SRT will act as a regulator and control the outputs of selected private sectors through performance assessment.



Development Zoning

Future Railway Stations of ASEAN

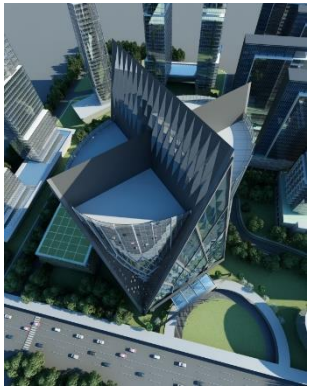
Example of Bang Sue Grand Station
Bangkok, Thailand

Development Concept

Development Model

Internal Road Plan

Model of SRT's New Headquarters



Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Development Concept

5.1 Smart Mobility

The contents are still under consideration and are subject to change.

Sky Deck Network

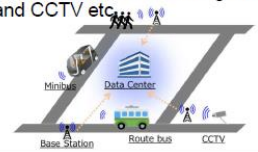
Formation of a Sky Deck Network that connects each zone and transport nodes in Bang Sue

Smart Public Transport: PRT

A regional transportation system introducing a PRT system that uses battery-run EV's that can meet demands flexibly and stay affordable/ easy to use

Transport Data Center

Introduction of a traffic data center that monitors/ manages intra-regional traffic information in a real time manner using 5G and CCTV etc.



Parking Planning

Developing a Smart parking lot in the fringes of Bang Sue area and managing the traffic inflow into the city

Transit mall with multiple transport modes

Securing attractive public spaces by limiting inflow of private vehicles into the area (formation of transit malls)

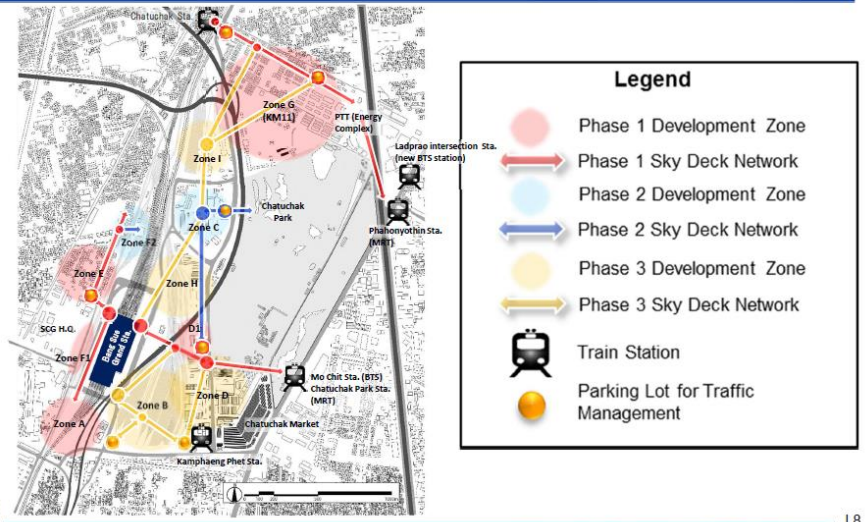
Real time traffic management

Introducing a real-time traffic management system that provides the regional traffic information to users in various ways

5.1 Smart Mobility

The contents are still under consideration and are subject to change.

Examination of the Smart Mobility Plan Corresponding to the Step-wise Development Plan(draft)



Smart Mobility Proposals

Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

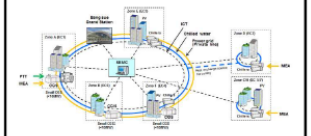
Development Concept

5.2 Smart Energy

The contents are still under consideration and are subject to change.

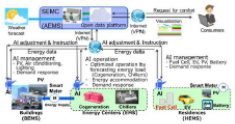
Smart Energy Network

Smart Energy Network is a next generation energy supply system, combining DCS (with CHP) and Micro-grid.



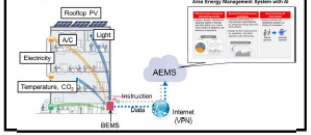
Area Energy Management System

Area Energy Management system (AEMS) manages all energy plants and BEMS/HEMS related to energy by utilizing AI systems and open data platform.



Smart home and smart building system (HEMS/BEMS)

Customizing EMS for residences and buildings by the effective utilization of PV and cogeneration system.



Renewable Energy

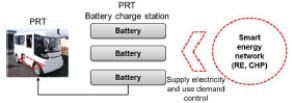
PV generators are assumed to be installed on a rooftop of each building, promoting use of renewable energy.

PV on rooftop

Solar street light

Energy Storage

Energy supply and demand is balanced through utilization of PRT's replaceable batteries and heat storage tank.



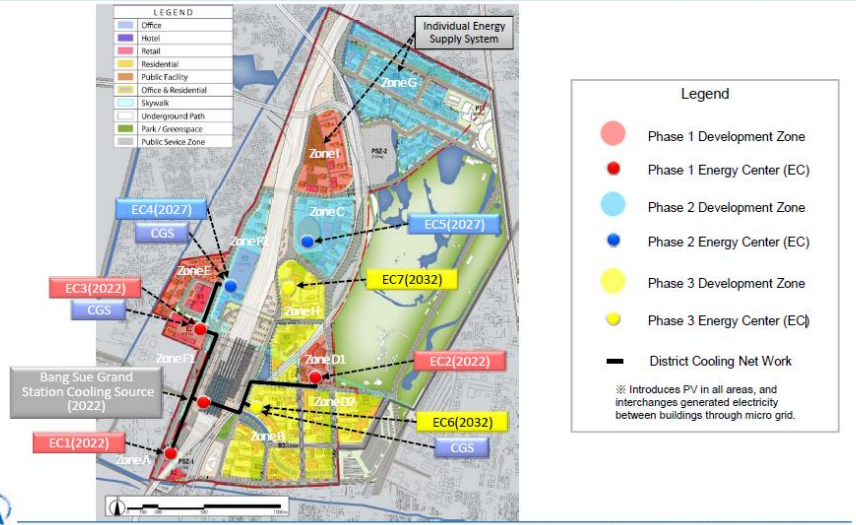
AMI + Open Date Platform + Visualization

Consumers can see and utilize their energy data, contributing to environmental preservation.

5.2 Smart Energy

The contents are still under consideration and are subject to change.

Examination of the Smart Energy Plan Corresponding to the Step-wise Development Plan (draft)



Smart Energy Proposals

Future Railway Stations of ASEAN

Example of Bang Sue Grand Station
Bangkok, Thailand

Project Investment & Timeline

- The construction cost of this project is approximately 47 billion Baht (or equiv. 1.6 billion USD).
- To compensate the new headquarters building cost, SRT decreases the leasehold rent for private sectors.

Timeline

Development project of Development plan on during the year 2020 to 2080 is as follows:

Year 2019	:	The Consultant present the study report and project analysis under the public private partnership year 2019 for State Railway of Thailand.
Year 2020	:	State Railway of Thailand present the project to board of directors for approval.
Year 2020	:	Procure investors by State Railway of Thailand.
Year 2021	:	The State Railway of Thailand select and sign the contract with the investor.
Year 2021-2023	:	The State Railway of Thailand begin the staff's housing construction.
Year 2021-2022	:	The investor prepare the detailed design for phase 1 project / EIA study / construction permit with government agency.
Year 2021-2024	:	The investor start phase 1 construction / Area development. (4 Years)
Year 2025	:	The investor open phase 1 project. (50 Years)
Year 2025 -2026	:	The investor prepare the detailed design for phase 2 project/ EIA study / construction permit with government agency.
Year 2027-2029	:	The investor start phase 1 construction / area development. (2-3 Years)
Year 2030-2080	:	The investor open phase 1 project. (50 Years)

UIC Organisation in Asia Pacific

INTERNATIONAL UNION OF RAILWAYS

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متشکرم

Thank you

for your kind attention

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