



JTTRI-AIRO

Japan Transport and Tourism Research Institute
ASEAN-India Regional Office

**146th Transport Policy Colloquium
Bangkok Report
- Startup Series Part 2 –**

**Aviation NOW seen from ASEAN!
- World of Future Sky Beyond COVID-19 Pandemic -**

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Postscript

Outline of ASEAN Community (Association of Southeast Asian Nations)

1. Established: 1967

2. Member States 10

3. Purpose of establishment

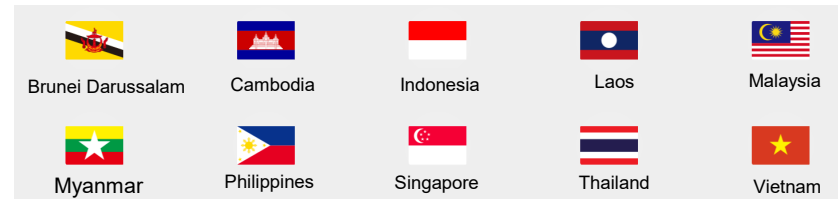
- Promote economic growth, social progress and cultural development in the region
- Ensure political and economical stability in the region
- Resolve regional issues

4. Population

661.8 million (2020)

5. Nominal GDP

About US\$ 3 trillion (2018)



Source: Ministry of Foreign Affairs (MOFA) of Japan website, [ASEAN \(Association of Southeast Asian Nations\) Overview \(mofa.go.jp\)](https://www.mofa.go.jp/asean/)

Source: ASEAN HP [Member States - ASEAN](https://asean.org/)

Introduction

Main Aviation-related Organizations in Thailand that Appear in the Materials



MOT Ministry of Transport of Thailand
Equivalent to Japan's Ministry of Land,
Infrastructure, Transport and Tourism



OTP

Office of Transport and Traffic
Policy and Planning

Responsible for planning all
transport policies



DOA

Department of Airports

Responsible for the establishment
of the aviation network and the
maintenance and management
and the like of regional airports



CAAT

Civil Aviation
Authority of
Thailand

Under the umbrella of Thailand's
Ministry of Transport and
Communications; responsible for
aviation regulations, business
licensing, and the like



AEROTHAI

Aeronautical Radio of Thailand Ltd.

State-owned enterprise operated under the
umbrella of Thailand's Ministry of Transport and
Communications, providing air traffic security
services



AOT Airports of Thailand PLC.

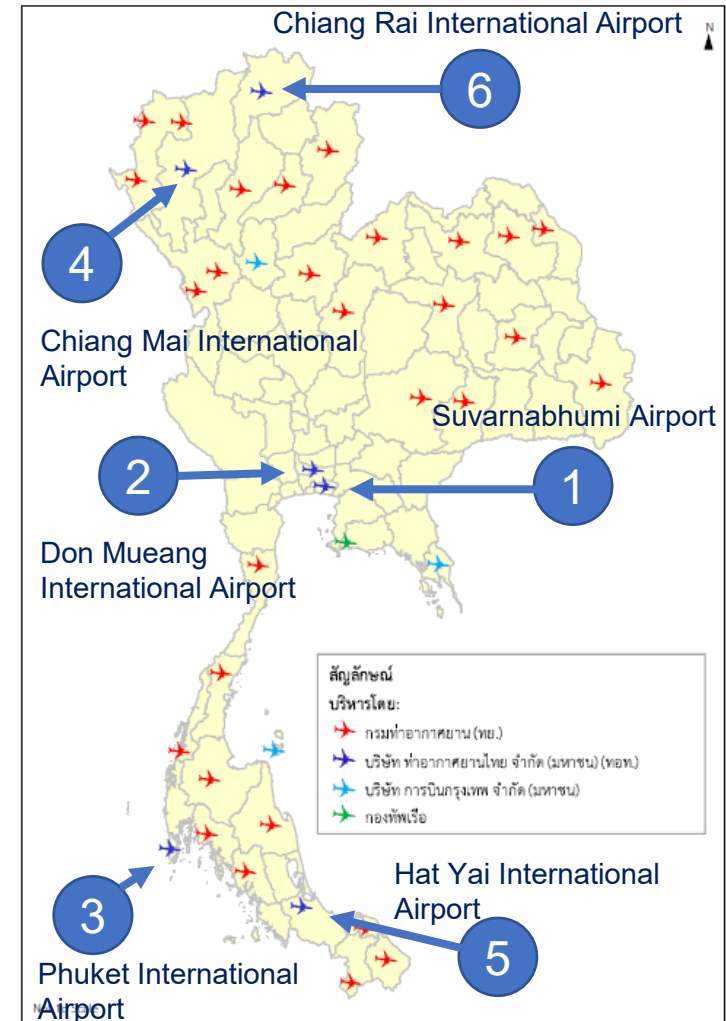
This is sometimes referred to as the Airports Authority of Thailand
because it was a state-owned enterprise operated under the umbrella
of Thailand's Ministry of Transport and Communications
The organization is currently held 70% shareholding by the Thai
Ministry of Finance

Introduction

Information of Six Airports Operated by AOT

○ Total number of private airports in Thailand: 39
 (As of September, 2020)

Operating Organization	Overview of the Organization	Number of Airports
Airports of Thailand PLC. (AOT)	Responsible for the operation of six airports with high demand Incorporated from a state-owned company in 2002 70% of the shares are held by the Ministry of Finance	6
Department of Airports (DOA)	Responsible for the operation of regional airports other than AOT operations Organizations within the Ministry of Transport	29
Bangkok Airways (BKP)	Responsible for the operation of three airports such as Samui Airport and others, which has been independently maintained by full-service carrier of Thailand founded in 1968	3
Royal Thai Navy (RTN)	Responsible for the maintenance and management of U-Tapao International Airport, a public and private airport The civilian portion is maintained and managed by U-Tapao International Airport's operating company	1



Source: THE TWELFTH NATIONAL ECONOMIC AND SOCIAL DEVELOPMENT PLAN (2017-2021)

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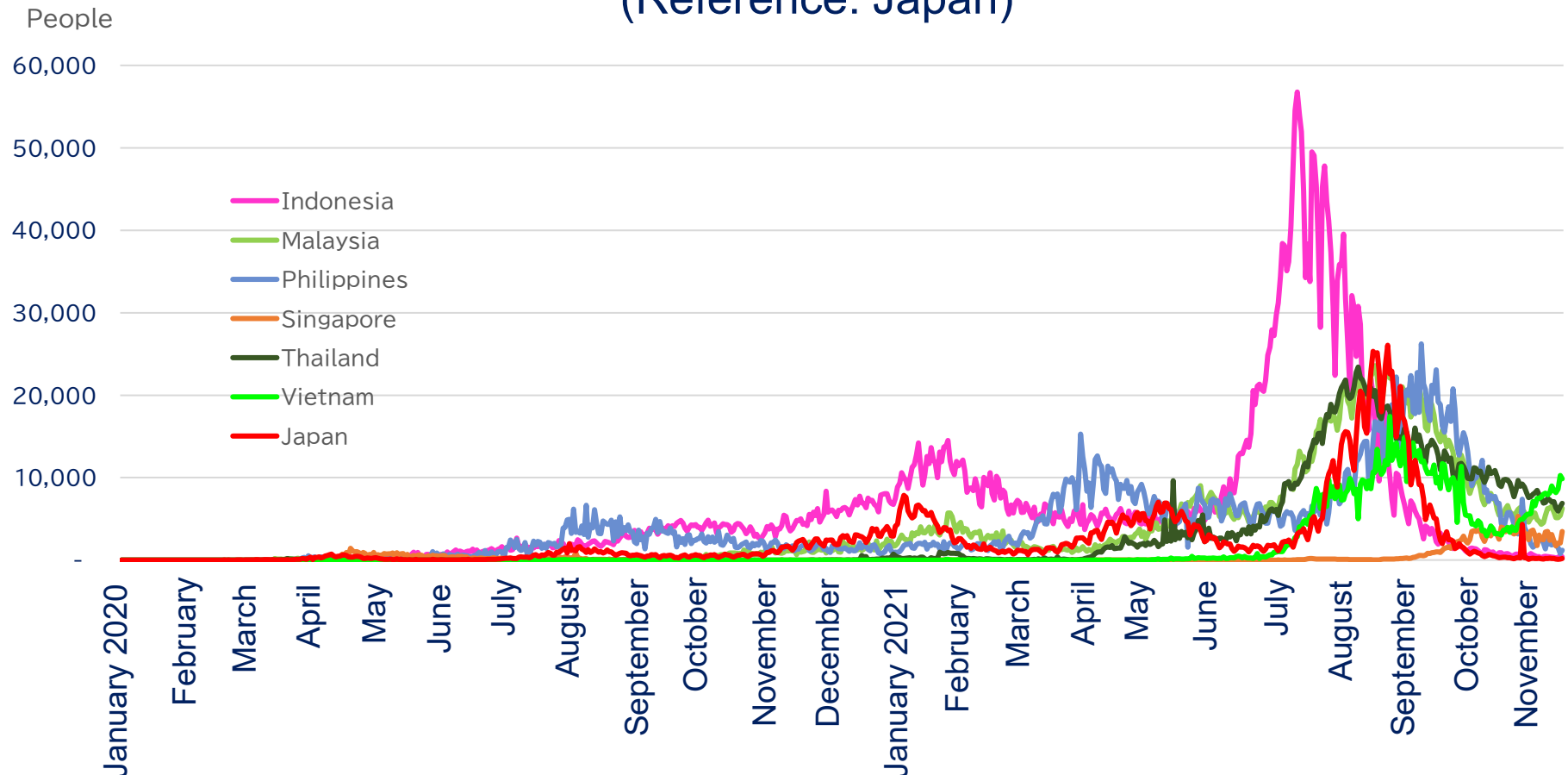
Chapter 1

Status of COVID-19 and Aviation Focusing on Thailand

Chapter 1 : Status of COVID-19 and Aviation Focusing on Thailand

1. Status of New COVID-19 Cases in Six Major ASEAN Countries

Number of New COVID-19 cases in Six Major ASEAN Countries (Reference: Japan)



Source: <https://covid19.who.int/WHO-COVID-19-global-data.csv>

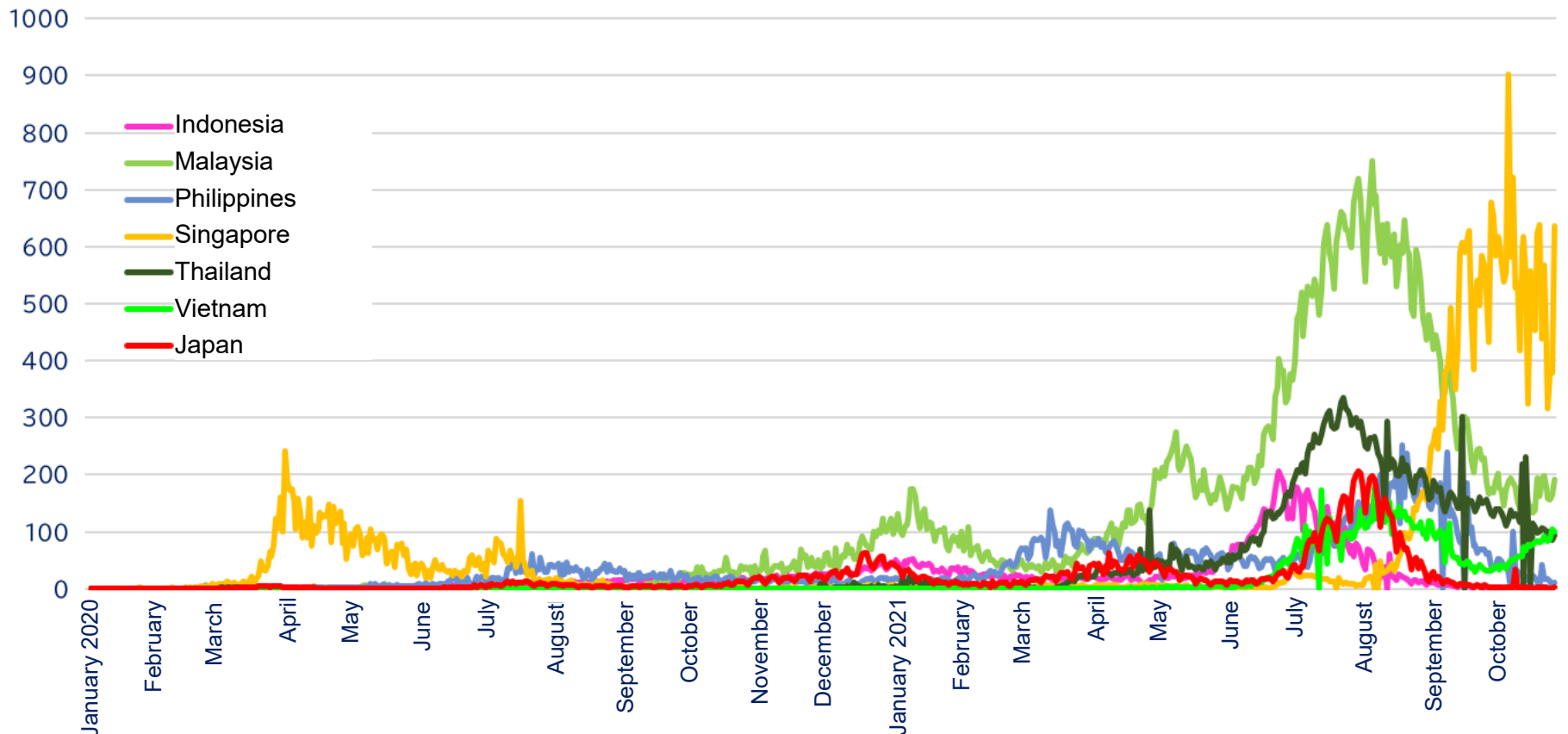
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Chapter 1 : Status of COVID-19 and Aviation Focusing on Thailand

2. Status of New COVID-19 Cases per Million of the Population in Six Major ASEAN Countries

New COVID-19 cases Per 1 Million of the Population in Six Major ASEAN Countries
 (Reference: Japan)

[People/1 million people]



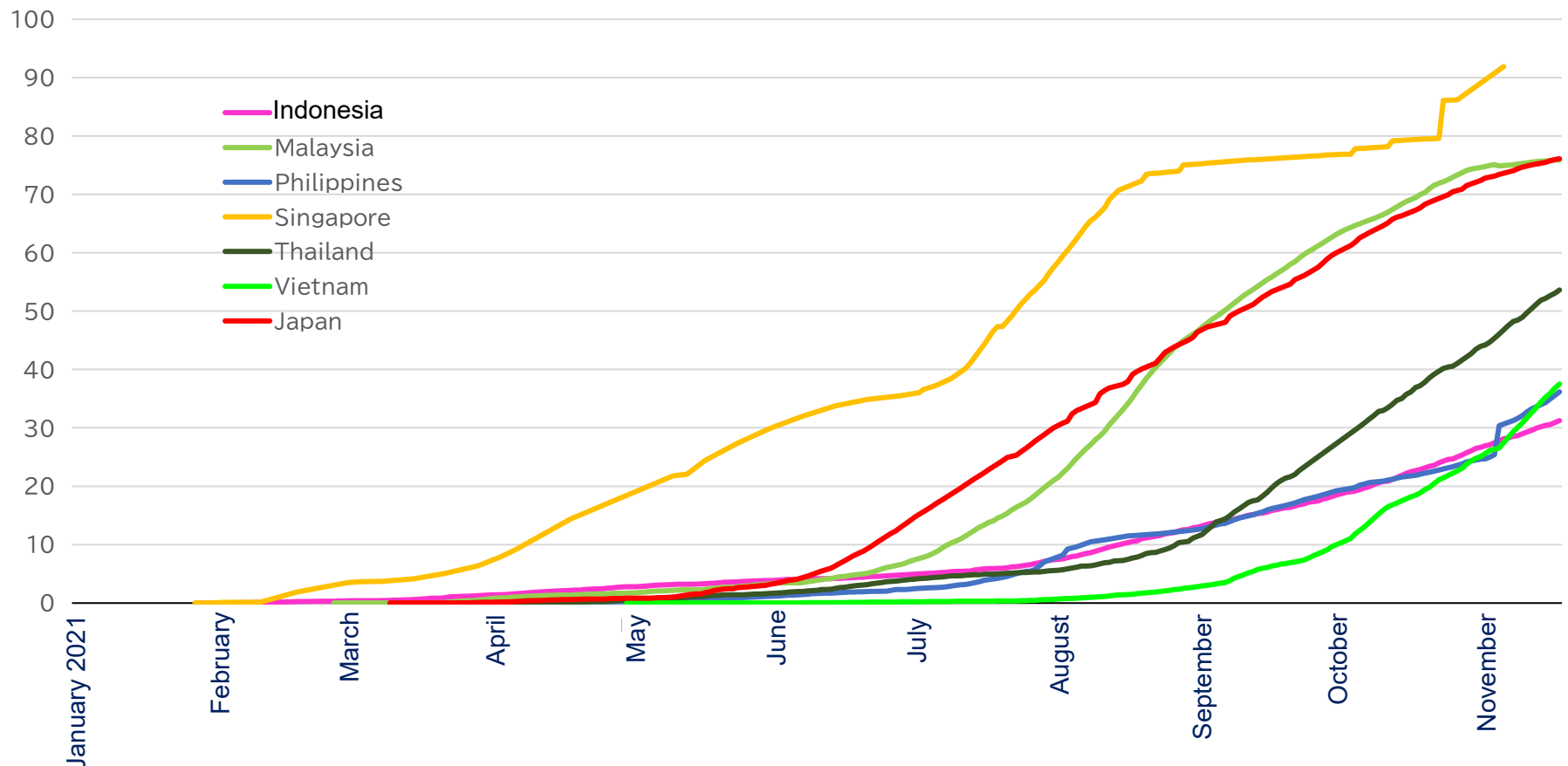
Source: <https://covid.ourworldindata.org/data/owid-covid-data.xlsx>

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Chapter 1 : Status of COVID-19 and Aviation Focusing on Thailand

3. Status of Vaccination Rates in Six Major ASEAN Countries

Vaccination Rate for Two Vaccines in Six Major ASEAN Countries



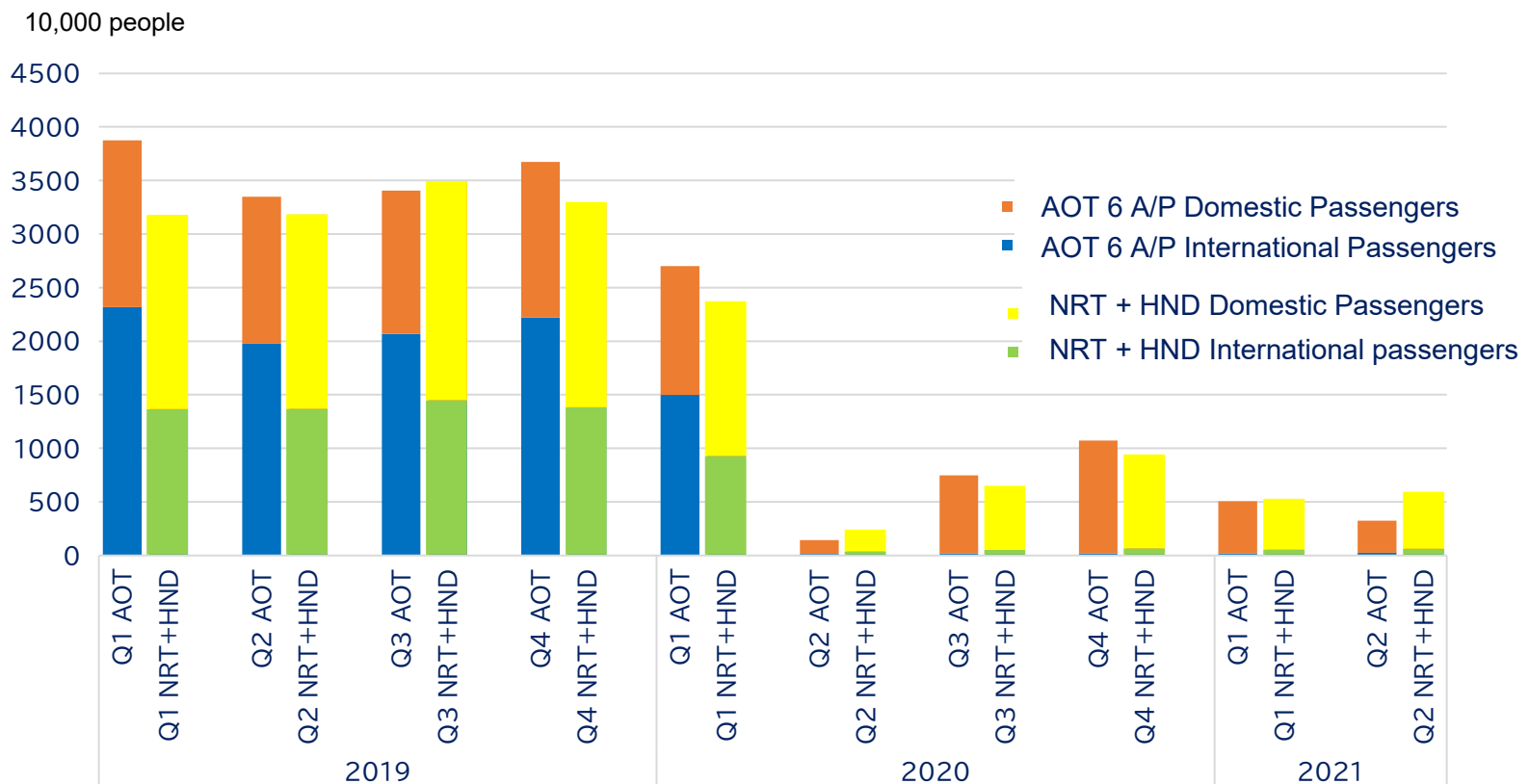
Source: <https://covid.ourworldindata.org/data/owid-covid-data.xlsx>

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Chapter 1 : Status of COVID-19 and Aviation with Focusing on Thailand

4. Status of Air Passengers at Six AOT-operated Airports in Thailand

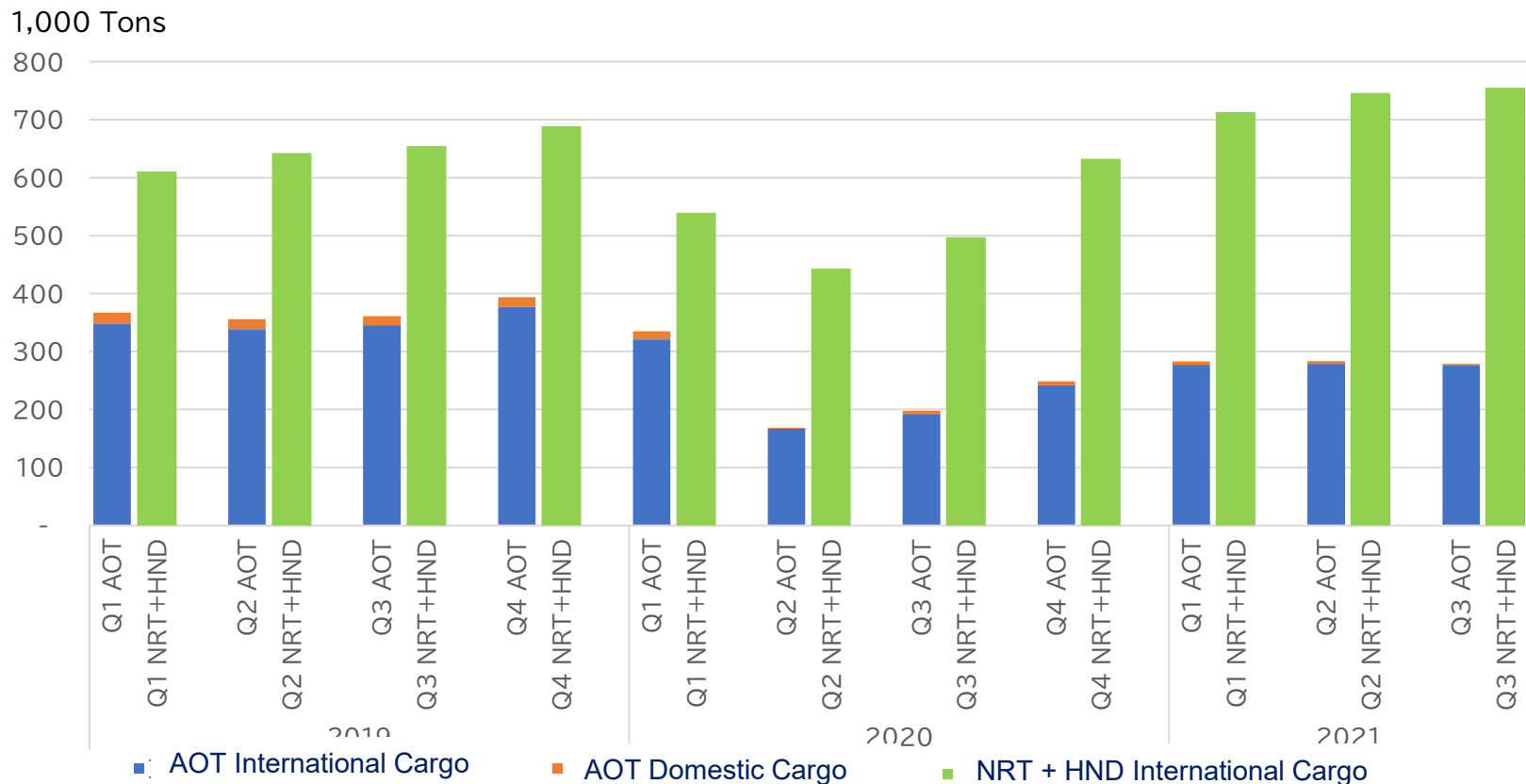
Passengers of AOT-operated 6 Airports (International and Domestic) in total
 (Reference: Passengers of Narita Airport and Haneda Airport (International and Domestic) in total)



Chapter 1 : Status of COVID-19 and Aviation with Focusing on Thailand

5. Status of Cargo at Six AOT-operated Airports in Thailand

Cargo Volume at Six AOT-operated Airports (International and Domestic) in total
 (Reference: Cargo Volume at Narita and Haneda Airports (International Only))



Chapter 1 : Status of COVID-19 and Aviation Focusing on Thailand

6. Support Measures for Airlines and the Like in the Thai Government, and the Like

Support measures for airlines by the Thai government and the like (Overview)

There is information that in addition to the following, they reduced immigration and departure taxes as of 2020, and deferred payments related to domestic fuel consumption tax.

	Support Items	Target	Support Period	Organization in Charge
1	50% reduction of landing fees and parking fees for each airline	All Thai and foreign airlines with routes to China, Japan, Korea, Singapore, Iran, Macau, Hong Kong, France, Germany, and Italy	April 2020 - March 2022	Airports of Thailand PLC./ Department of Airports
2	Exemption from air traffic control fees → 50% exemption for international flights → 20% exemption for domestic flights	Same as above	April 2020 - March 2022	AEROTHAI
3	Reduced airline office and lounge rent	Airline Companies which use the airport terminal building for their office	April 2020 - March 2022	Airports of Thailand PLC./ Department of Airports

Thai airlines formed the Airlines Association of Thailand (AAT) in January 2021 and have requested low-interest loans from the government, but that has not been implemented yet.

Chapter 1 : Status of COVID-19 and Aviation Focusing on Thailand

7. Recent Coverage of ASEAN Airline Companies

(Bangkok Post, NNA, Nikkei Business, CNA, and others)

○ Crisis and bankruptcy of management of airline companies

- Thai Airways International: De facto bankruptcy (May 2020)
- Nok Air: Bankruptcy (August, 2020)
- NokScoot Airlines: Liquidation (August, 2020)
- Vietnam Airlines: Announced transition to a supervised brand with the risk of delisting (November, 2020)
- Garuda Indonesia: \$6.1 billion debt reduction to avoid bankruptcy (November 2020)
: Plan to abolish 97 lines by 2022 (November 2020)
- Philippine Airlines: Filed for Section 11 of the U.S. Federal Aviation Bankruptcy Act (September, 2021)

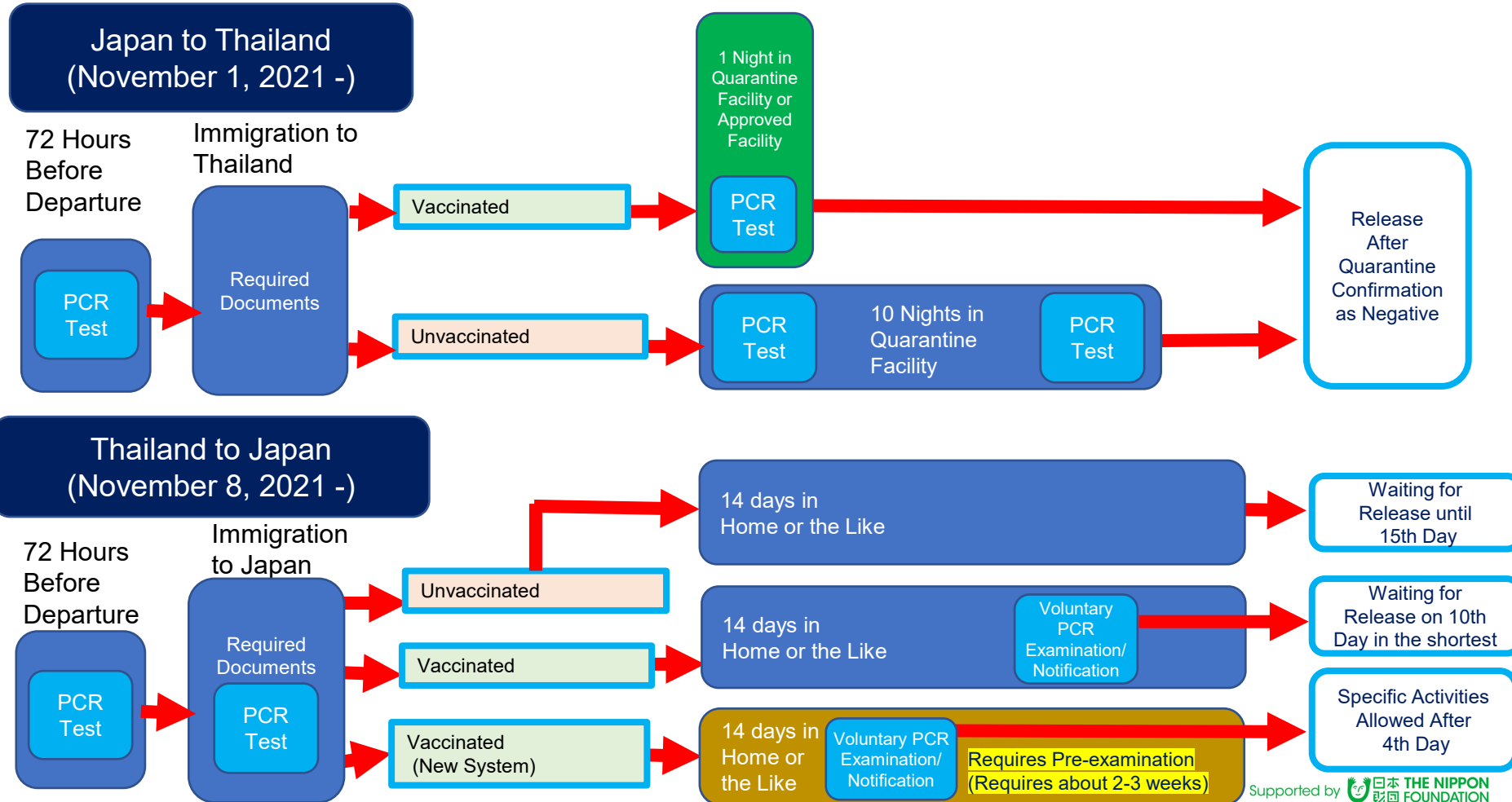
○ New Route Services and others

- Pelita Air Service (an aeronautical subsidiary of Indonesian state-owned petroleum company Pertamina): Scheduled to launch regular flights in 2022 (January-March) (October, 2021)
- Garuda Indonesia: Expansion of cargo transportation to 16 locations in Europe and the United States (October, 2021)
- **Bamboo Airways: To be designated as a US scheduled airline** (October, 2021)
: Opening of direct flights for Hanoi-London (November, 2021)
- **Vietnam Airlines: Regular direct flights to the United States will be launched on November 28** (November, 2021)
- Scoot: Airlines: Launch flights to London in December, 2021 (November, 2021)

Chapter 1 : Status of COVID-19 and Aviation Focusing on Thailand

8. Physical Burdens Such as Quarantine Isolation for Quarantine control in overseas Travel

Example of quarantine measures in travel between Japan and Thailand (Specific measures vary depending on the circumstance)



Chapter 1 : Status of COVID-19 and Aviation Focusing on Thailand

9. Physical Burdens Such as Procedures Required for Travel

Cases such as procedures and the like when traveling between Japan and Thailand
 (Specific responses vary depending on the circumstance)

Around August, 2021

Around November, 2021

Outbound

	Required Procedures, Required Documentation and the Like
Thailand Before Travel	<ul style="list-style-type: none"> ○ Immigration Permit (COE) Pre-Approval and Issuance • Enrollment in health insurance • Reservations for 14 nights in a quarantine facility
Immigration to Thailand	<ul style="list-style-type: none"> • COE • Proof of non-infection with the novel coronavirus • Proof of medical insurance • Health questionnaire
After Immigration to Thailand	<ul style="list-style-type: none"> • PCR Test • 14 night quarantine in a quarantine facility



	Required Procedures, Required Documentation and the Like
Thailand Before Travel	<ul style="list-style-type: none"> ○ Immigration Permit (Thailand Pass) Registration Application • Enrollment in health insurance • Reservations for 1 nights in a quarantine facility
Immigration to Thailand	<ul style="list-style-type: none"> • Thailand Pass • Proof of non-infection with the novel coronavirus
After Immigration to Thailand	<ul style="list-style-type: none"> • PCR Test • One night standby in a quarantine facility

* Those who have not received their full COVID-19 vaccinations must book 10 nights in a quarantine facility before traveling to Thailand and 10 days quarantine in a quarantine facility after entering Thailand

Return Trip

	Required Procedures, Required Documentation and the Like
Immigration to Japan	<ul style="list-style-type: none"> • Proof of non-infection with the novel coronavirus • Written oath • Questionnaire • Carrying a smartphone, register and use of the necessary apps
After Immigration to Japan	<ul style="list-style-type: none"> • PCR Test • Wait for 3 days at the accommodation secured by the quarantine station • Transfer to a standby home or the like (using anything other than public transport) • 11-day standby at home, or the like



	Required Procedures, Required Documentation and the Like
Immigration to Japan	<ul style="list-style-type: none"> • Proof of non-infection with the novel coronavirus • Written oath • Questionnaire • Carrying a smartphone, register and use of the necessary apps
After Immigration to Japan	<ul style="list-style-type: none"> • PCR Test • Transfer to a standby home or the like (using anything other than public transport) • 14-day standby at home, or the like

* Vaccination certificate holders are exempted from waiting at home for the remainder of the period by notifying their negative result in a voluntary PCR test or the like after the 10th day after entry into the country.

Chapter 1 : Status of COVID-19 and Aviation Focusing on Thailand

10. Trends of ASEAN Quarantine Isolation (Including Press Information)

In ASEAN, actions and discussions on imposing **no quarantine isolation** and **shortening the quarantine period** after immigration **have accelerated**.

Country	Action
Thailand (Quarantine period is being shortened)	<ul style="list-style-type: none"> • Unvaccinated people will be isolated in a quarantine facility for 10 days (from October 1, 2021) • Vaccinated people will be exempted from quarantine isolation if they are negative after one night stay in a quarantine facility or an approved facility (Thailand's quarantine exemption measure is limited to immigrants from 63 countries, including Japan; from November 1, 2021)
Vietnam (Considering shortening the quarantine period)	<ul style="list-style-type: none"> • 7 days of quarantine isolation for vaccinated people at designated hotels + 7 days of health observation /14 days of quarantine isolation for unvaccinated people + 14 days of health observation (from August 4, 2020) • Considering shortening the quarantine isolation to 3 days or exemption from quarantine isolation if negative after 1 day of quarantine (As of November 10, 2021)
Philippines (Considering no quarantine/shortened quarantine period for a limited time)	<ul style="list-style-type: none"> • 10 days of quarantine isolation for vaccinated people (6 days of which are in facility isolation) • 14 days of quarantine isolation for unvaccinated people (8 days of which are in facility isolation) • Vaccinated people no facility quarantine isolation/shorten facility quarantine isolation to 6 days for unvaccinated people (Limited to November 16, 2021 - November 30, 2021)
Singapore (no quarantine)	<ul style="list-style-type: none"> • No quarantine isolation for vaccinated people (vaccine travel lane) (September 8, 2021 - Started in Germany and Brunei, then expanded to 13 countries as of November 15)
Malaysia and Indonesia (adjusting for no isolation)	<ul style="list-style-type: none"> • Adjusting for no quarantine isolation for vaccinated people traveling by air between Kuala Lumpur and Jakarta (Targeted vaccine travel lane at the beginning of 2022)

Chapter 1 : Status of COVID-19 and Aviation Focusing on Thailand

11. Summary and Personal View of Chapter 1

- ✓ Compare the number of new infections and the number of new infections per 1 million people of the population, **each country has a different aspect on severity.**
- ✓ **Quarantine isolation, cumbersome procedures, and many documents are required** for current overseas travel, and they are **great physical burden.**
- ✓ There is issues that **different standards for documentation and requirements** are requested by each country.
- ✓ **No quarantine isolation and shortening the quarantine isolation period, or discussions to shorten quarantine isolation period are ongoing.**

- **Reducing physical burdens** such as quarantine isolation is **extremely important** for **aviation demand.** In particular, **relaxation of regulation by both** the visiting country and the home country is **important** when traveling to and from Japan.
- Japan should also devise ways to reduce the physical burden, **such as shortening the quarantine isolation period for people with a low potential for infection,** based on the status of infections.
- From the perspective of simplification of procedures, **efforts should also be made as soon as possible to improve vaccine passports and harmonize procedures and necessary documents.**
- According to the physical burden decreases, **it seems that business demand would recover ahead of schedule, and tourism demand would recover later.**

Chapter 2

Trends of the Development of Airports in Thailand and Other Countries

1. Development of Airports in the Transport Infrastructure Development Strategies of the Ministry of Transport Thailand

Thai Transport Infrastructure Development Strategies (2015 - 2022)

Plan 1 Intercity Rail Networks development

Plan 2 Improving public transport Networks and Services

Plan 3 Enhancing Connectivity between Key Domestic Production Bases and Neighboring Countries

Plan 4 Increasing Water Transport Network

Plan 5 Enhancing Air Transport Capability

5.1 Airport Capability Expansion

5.2 Enhancement in Air Traffic Management capability

5.3 Increased Fleet Utilization

5.4 Air Transport Industrial Park

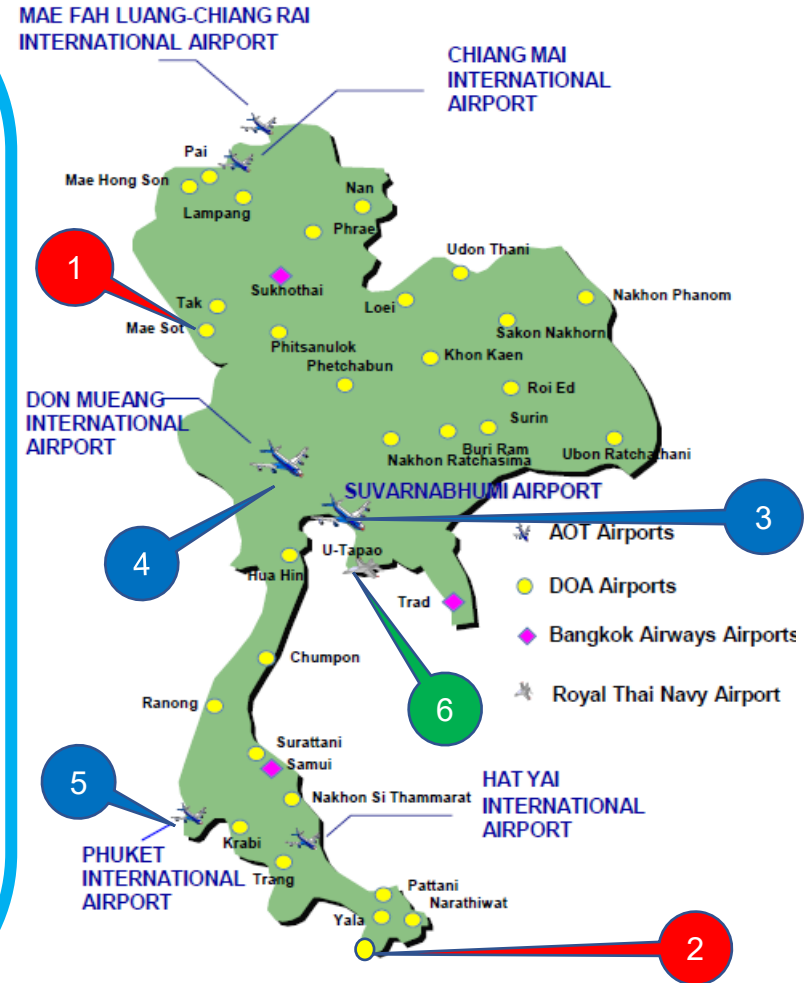
5.5 Human Resource Development

2. Development of Major Airports through the Thai Ministry of Transport Infrastructure Development Plan

Thai Transport Infrastructure Development Plan (2015 - 2022)

Airport development listed in the attached list

Airport	Overview of development
1 Mae Sot Airport	Airport Expansion Project
2 Betong Airport	Airport Development Project
3 Suvarnabhumi Airport	Airport Development Project Runway Development Construction of a Second Terminal Building
4 Don Mueang International Airport	Expansion of the Airport Building Airport Improvement Project
5 Phuket International Airport	Passenger Response project Public Service Response Project Airport Improvement Project
6 U-Tapao International Airport	Construction of the Airport Building New Apron development Project



3. Development of Suvarnabhumi International Airport

Located about 30 km east of central Bangkok, **Thailand's largest international airport**. Many international flights arrive at and depart from the airport. Improvement of the passenger terminal and two runways from 1996 to 2005 was progressed **by Japanese ODA**, including **yen loans and technical support**.

Runway 4000 m x 60 m (01R/19L)
3700 m x 60 m (01L/19R)

AOT Development Plan

Phase 2: Envisioning 2017-2021

- Satellite Terminal 1 (SAT-1)
- Automated people mover (APM) system
 - 45 million people/year → 60 million people/year

Phase 3: Envisioning 2017-2023

- Expansion of the existing north passenger terminal area
- 3rd Runway
 - 60 million people/year → 90 million people/year

Phase 4: Envisioning 2021-2026

- Satellite Terminal 2 (SAT-2)
 - 90 million people/year → 105 million people/year

Phase 5: Envisioning 2025-2030

- South Passenger Terminal
- 4th runway
 - 105 million people/year → 150 million people/year



Source: Created by AIRO based on AOT report 2020 and AOT website information

JICA 2nd Bangkok International Airport Construction Project https://www.jica.go.jp/60th/asia/tha_01.html

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4. Development of Don Mueang International Airport

Located about 20 km north of central Bangkok. **Formerly Thailand's largest international airport.** All airline companies were relocated to Suvarnabhumi Airport upon opening of Suvarnabhumi International Airport (2006). Thereafter, there were relocated to Don Mueang International Airport centering on LCC because of deficiencies of the new airport, and currently it is an airport focusing on LCC. Improvement of runways, passenger terminals, cargo terminals, and the like was carried out by **Japanese ODA** from 1979 - 82 with **yen loans.**

Runway

3,700 m x 60 m (03L/21R)

3,500 m x 45 m (03R/21L)

AOT Development Plan

Phase 3: 2020-2026

- Terminal 1 repairs
- Terminal 3 development
- Additional development of the infrastructure such as electricity and water supply to the southern district
 - → 40 million people/year



Source: Created by AIRO based on AOT report 2020 and AOT website information
Embassy of Japan in the Kingdom of Thailand "Economic Development and Cooperation between Japan and Thailand" <https://www.th.emb-japan.go.jp/files/000214147.pdf>

Chapter 2 : Trends of the Development of Airports in Thailand and Other Countries

5. Development of U-Tapao International Airport

U-Tapao International Airport, which was operated by the Navy, was **became a civil-military airport** in 1989. In 1996, a state-owned company for civilian part operation was setup. In 2005, it was reorganized into the **U-Tapao Airport Authority**.

Runway 3,500 m x 60 m (18/36)

U-Tapao Airport Authority Development Plan

Phase 1: 2015 - 2024

- Provisional opening of Terminal 2 (2017)
 - 17,000 people/year → 1.86 million people/year
- Full opening of Terminal 2 (Open in January 2019)
 - 1.86 million people/year → 3 million people/year
- Terminal 3 scheduled for completion in 2021
- 2nd runway development
 - 3 million people/year → 15.9 million people/year

Phase 2: 2025 - 2030

- New Terminal Development
- Automatic people mover (APM) system development
- Automatic pedestrian walkway development
 - 15.9 million people/year → 30 million people/year

Phase 3: Up to 2042

- Expansion of Terminal 2
- Expansion of aircraft spots
- APM system development

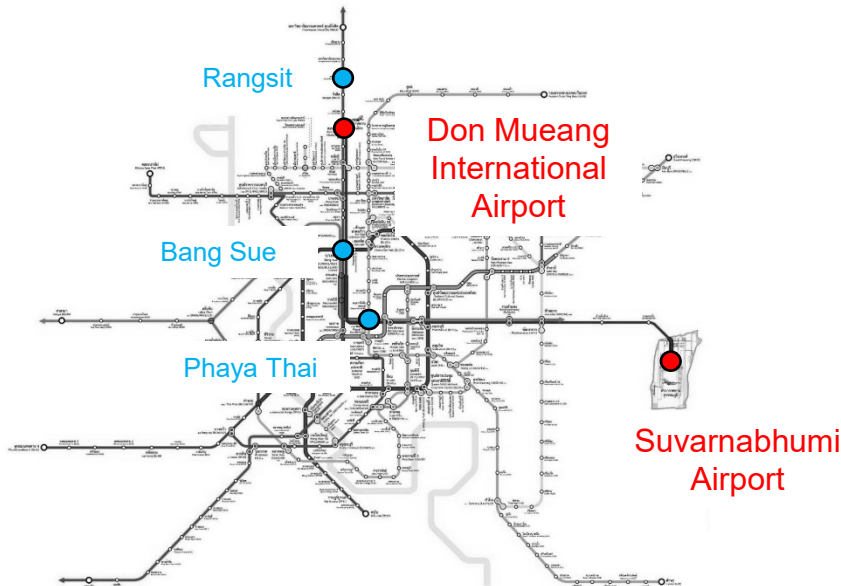


6. Airport and Railway Access in Thailand Metropolitan Area and 3 Airport-High Speed Railway Access Plan

3 railway lines connecting to airports in the Thai metropolitan area are operated (2lines) and planned (1line), excluding conventional lines operated by SRT (State Railway of Thailand).

- **Airport Rail Link (ARL)**
 - Opening: 2010
 - Service: Between **Suvarnabhumi** and Phaya Thai
 - Planned extension: Between Phayathai and **Don Mueang**
- **SRT Dark Red Line**
 - Opening: 2021 (Soft Opening)
 - Service: Between Bang Sue and Rangsit (via **Don Mueang**)

- **3 Airport-High Speed Railway Access Plan**
 - Opening: 2025
 - Planned service: Between **Don Mueang, Suvarnabhumi and U-Tapao**
 - Business Type: Public-Private Partnership (PPP) Project
 - Private Operators: Consortium company which is mainly consist of PC group



Source: Department of Railway Transport HP



Source: newsclip.be, <http://www.newsclip.be/article/2019/05/29/39852.html>

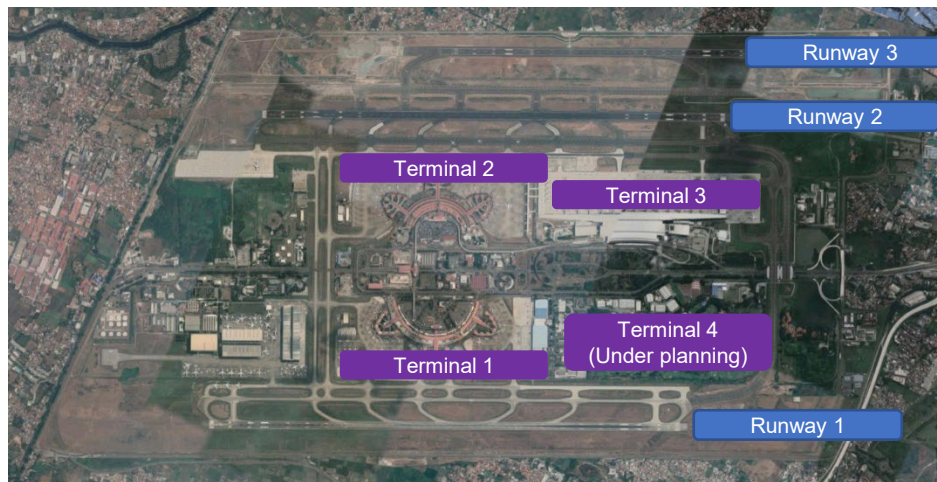
Picture: EEC Committee, <https://www.eeco.or.th/en/news-release/2019/05/29/39852.html> supported by THE NIPPON FOUNDATION

Chapter 2 : Trends of the Development of Airports in Thailand and Other Countries

7. Development of Airports in Indonesia (Part 1)

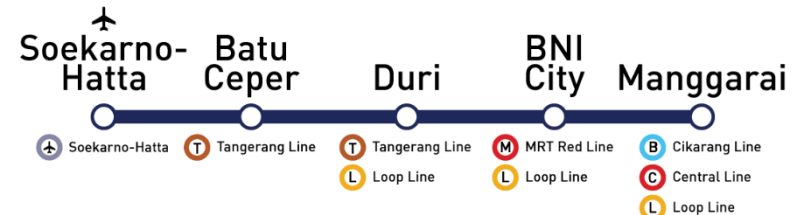
○ Soekarno-Hatta International Airport

In order to meet the increasing demand, PT Angkasa Pura II (Persero), a national airport company, **extended the 3rd runway** 500 m from 2,500 m to 3,000 m in 2016, and **began its operation** in August 2019, including the extension part. Implemented by the **technical cooperation** of the **Japanese ODA** from 2010 to 2012. Terminal 4 has been undergoing development since 2013 and will begin operation in 2024.



○ Railway Access to Soekarno-Hatta International Airport

Jakarta city to the airport's Terminal 1 and Terminal 2 are connected by **an airport railway access** operated by **PT Kereta Api Indonesia (KAI)**.



Source: [Angkasa Pura 2](https://angkasapura2.co.id/id/business_relation/our_airport/16-bandara-internasional-soekarno-hatta) https://angkasapura2.co.id/id/business_relation/our_airport/16-bandara-internasional-soekarno-hatta
<https://angkasapura2.co.id/en/news/event/pers/334-pesawat-komersial-mendarat-perdana-di-runway-3-bandara-internasional-soekarno-hatta>
<http://blog.malaysia-asia.my/2019/04/soekarno-hatta-terminal-2f-is-now-lcct.html>
 Railink | Schedule <https://www.railink.co.id/jadwal/en>, <https://www.railink.co.id/trainstation/en>

Chapter 2 : Trends of the Development of Airports in Thailand and Other Countries

8. Development of Airports in Indonesia (Part 2)

○ Development of Yogyakarta International Airport

PT Angkasa Pura I, a national airport company, began **development as a new airport** on the outskirts of Yogyakarta in January 2017, **because of the deterioration** of the Adisucipto International Airport in the center of Yogyakarta, and **inaugurated operations in March 2020**.
 In March 2020, AirAsia, Garuda Indonesia and Citylink relocated their routes from old airport to new airport.

○ Railway Access to Yogyakarta International Airport

Construction on railway access to the new airport began in December 2019. **Its operation is started** by the Indonesian National Railway (KAI) **in October 2021**.



Source: [PT Angkasa Pura I](https://ap1.co.id/id/about/airport-development-project/detail/proyek-pengembangan-bandara-internasional-yogyakarta) <https://ap1.co.id/id/about/airport-development-project/detail/proyek-pengembangan-bandara-internasional-yogyakarta>

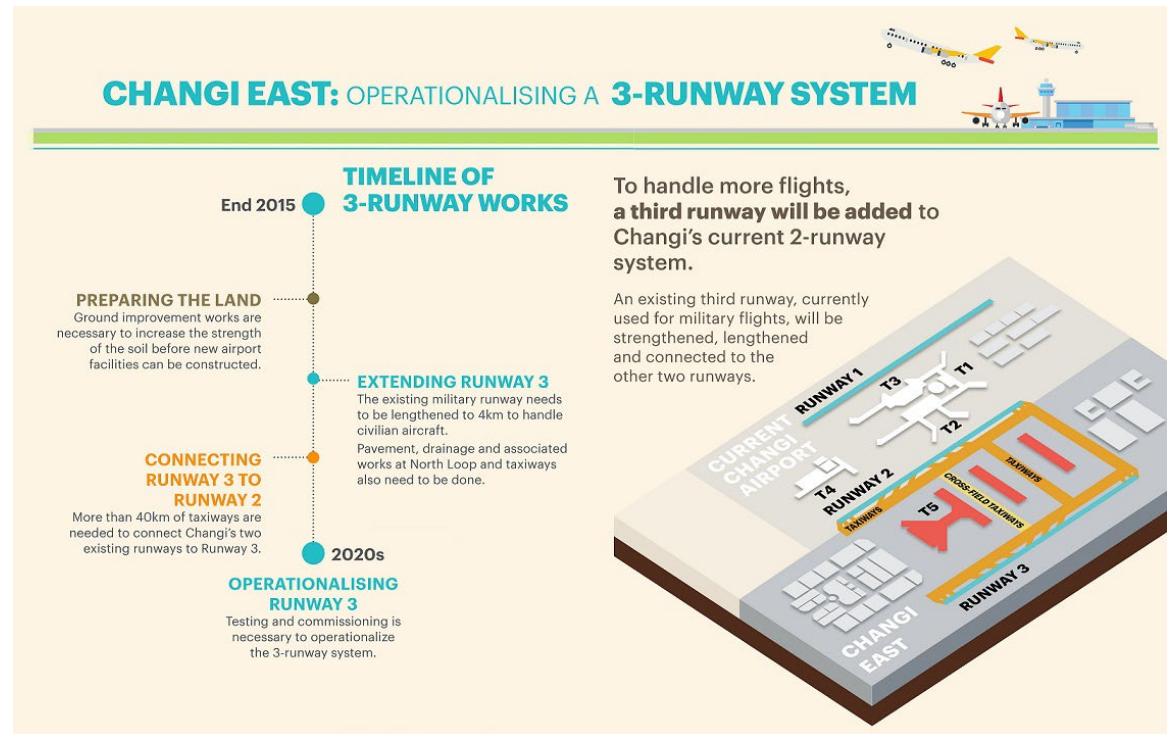
9. Development of Airport in Singapore

○ Changi Airport

○ Airport Expansion Plan Changi East Project

In addition to the two existing runways and four passenger terminals, a 3rd runway (02R/20L, 4000 m, for both military and civilian use) and a taxiway will be built in the adjacent area. A **5th passenger terminal (T5)**, the Changi East Project, has been underway from 2014.

Although there have been delays in maintenance as a result of the coronavirus pandemic, the company aims to put T5 into service in the second half of the 2020s, and **they expect the number of users to grow to 50 million people per year.**



In April 2019, a **new commercial facility, JEWEL**, was opened in the airport area.

9. Development of Airport in the Philippines

○ Development of the New Manila International Airport

In September 2019, the Philippine Department of Transportation signed a contract with San Miguel Corporation, a major conglomerate, for the **construction of New Manila International Airport**, with the goal of easing congestion at Ninoy Aquino International Airport.

Planned location: Approx. 35 km north of Manila (Province of Bulacan, Central Luzon)

Overview: 2,400 hectares of land; **4 runways; 8 taxiways; 3 passenger terminals**

(Estimated project cost: ¥541.4 billion)

Annual Users (Estimated): 100 Million People



Conceptual View of Completion of the New Airport by the San Miguel Corporation

10. Development of Airports in Vietnam

Vietnam Airport Network Development Plan

- Current number of airports:
 - 12 international airports
 - 10 domestic airports
- Current plan (Master Plan No. 365)
 - 28 airports by 2030 (14 international airports; 12 domestic airports)
- **Proposed Airport Development Plan**, which is being proposed by the Civil Aviation Authority of Vietnam (CAAV) to the Ministry of Transport of Vietnam
 - **26 airports by 2030** and 2 airports scheduled for development (Na San Airport and Lai Chau Airport are tentatively postponed until 2050)
 - Development of **30 airports by 2050** (15 international airports; 15 domestic airports)



Source: <https://vir.com.vn/foundation-set-by-airport-master-plan-83067.html>

11. Summary and Personal Views of Chapter 2

- ✓ **Transport Infrastructure Development Plan (2015-2022)** prepared by OTP of the Ministry of Transport of Thailand for the development of airports in Thailand
 - (1) Suvarnabhumi Airport, (2) Don Mueang International Airport, and (3) U-Tapao International Airport are undergoing **improvement and development to meet increasing demand**
- ✓ Three airports **high-speed access railway** connecting these three airports **are also being developed.**
- ✓ In Indonesia, Singapore, the Philippines, and Vietnam, airport development and **planning are underway** in response to **growth in demand for air travel** and **deterioration** of airports

- In Thai airport development, in addition to itself, **development of railway access to airports** is also progressing. **In other ASEAN countries**, airport development is expected to continue **in response to growth in demand for air travel and deterioration of airports.** In order to consider airport development, a wide range of **approaches are necessary, including railway access to airports, in addition to the development of the airport itself.**
- In Japan, while airports are already well-developed in a whole range of the country, the **know-how and technology of Japan's** development for airports and for around area of airports and the like can be utilized for **ASEAN airports and around area of airports.**

Chapter 3

Trends in Aviation as an Industry in Thailand

1. Position of the Aviation Industry in Thailand

In Thailand's 20-year national plan, it has incorporated the **idea of Thailand 4.0**, which expressed the **policy vision** of the Thai government, and focused on the **U-Tapao Airport Development (Aerotropolis) Project** and **human resource development** as priority projects for **aviation and logistics**.

Thailand's 20-Year National Strategy (2017 - 2036)

Thailand 4.0

10 Focus Areas to Improve Productivity and Improve Innovation Capability

- (1) Next-generation automotive
- (2) Smart Electronics
- (3) Affluent Medical and Wellness Tourism
- (4) Agriculture and Biotechnology
- (5) Food for Future
- (6) Automation and Robotics
- (7) **Aviation and Logistics**
- (8) Biofuels and Biochemical
- (9) Digital Economy
- (10) Medical Hub

Infrastructure development

Eastern Economic Corridor Development Plan
U-Tapao Airport Development (Aero City)
Project

Education and Human Resource Development

Improving Education and Human Resource Development for Aviation

2. Overview of the Development of the Eastern Economic Corridor

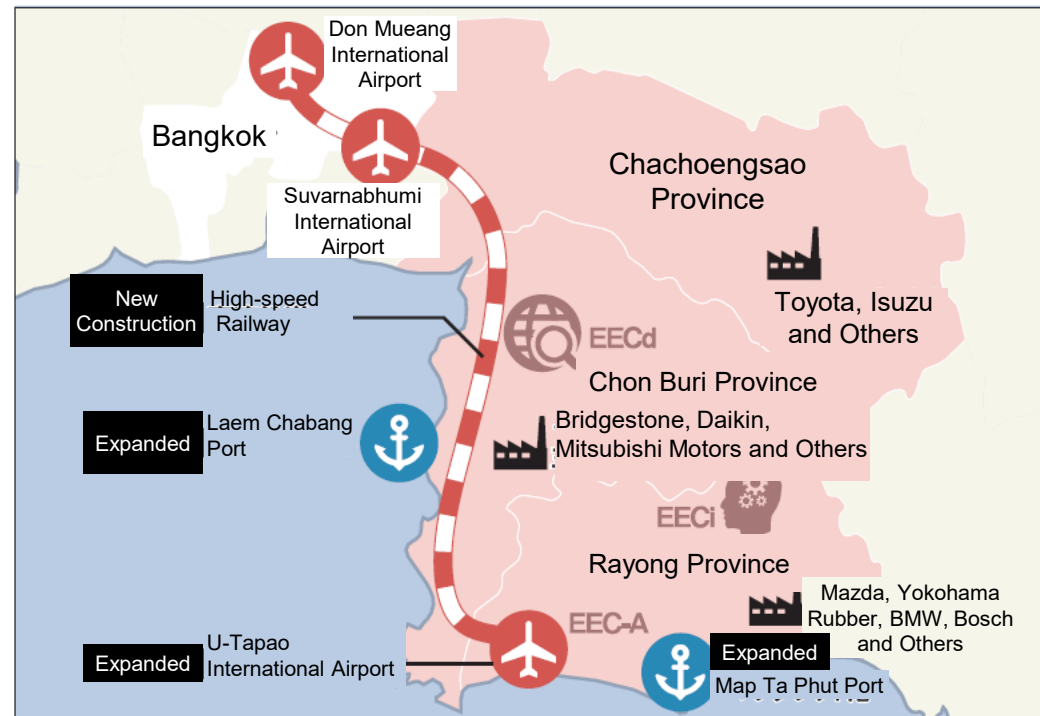
Eastern Economic Corridor (EEC) Development

EEC development is to **strengthen the development** of the **Eastern Offshore Industrial Zone** that has been developed over the past 30 years. It is a promising national development project to form the core of Thailand 4.0, which is Thailand's policy vision.

The Three Eastern Provinces for EEC Development



EEC Development Map



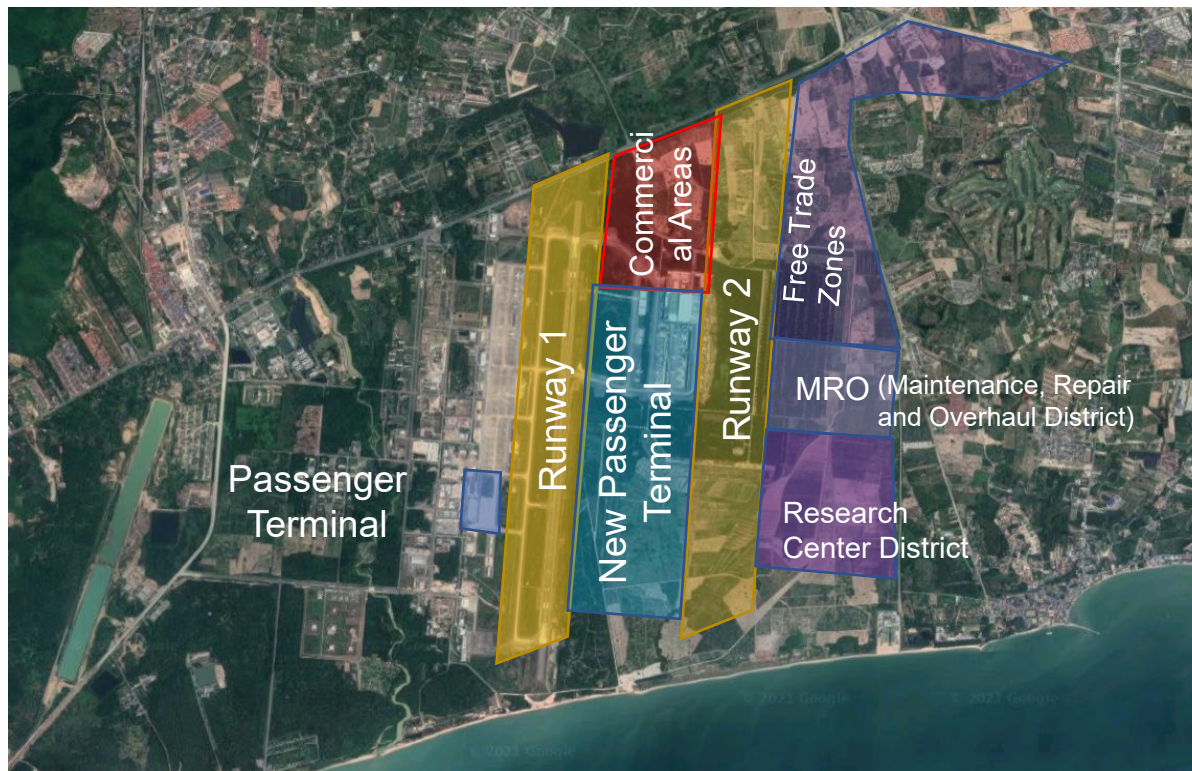
Source: Thailand Board of Investment Brochure

Supported by  THE NIPPON FOUNDATION

3. U-Tapao Airport (Aerotropolis) Development Project (1)

In addition to the development of U-Tapao International Airport, the plans expands aviation-related industries to surrounding regions.

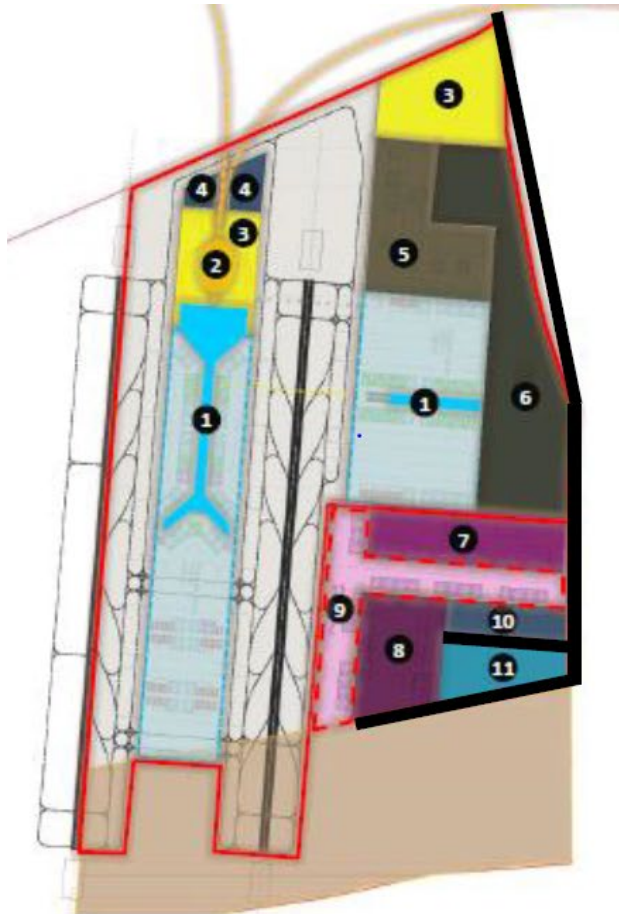
U-Tapao Airport (Aerotropolis) Development Project



Source: Created by AIRO based on the Thai Eastern Economic Corridor Bureau 2017 presentation materials

4. U-Tapao Airport (Aerotropolis) Development Project (2)

U-Tapao Airport (Aerotropolis) Development Project Facility Layout Plan



U-Tapao Airport Landscape		
Facilities	Hectares	Rai
1. Airport Terminal	124	775
2. Hi Speed Train	34.6	216
3. Commercial Gateway	42	312.5
4. Support Area	10	62.5
5. Cargo Terminals	42	312.5
6. Cargo Village	100	625
7. Other MRO Campus	40	250
8. TG MRO Campus	33.5	210
9. MRO Apron	57.3	358
10. CATC	16	100
11. Utilities	23.35	145

TG: Thai Airways International

CATC: Civil Aviation Training Center

Source: Thai Eastern Economic Corridor Bureau 2020 presentation materials

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Chapter 3 : Trends in Aviation as an Industry in Thailand

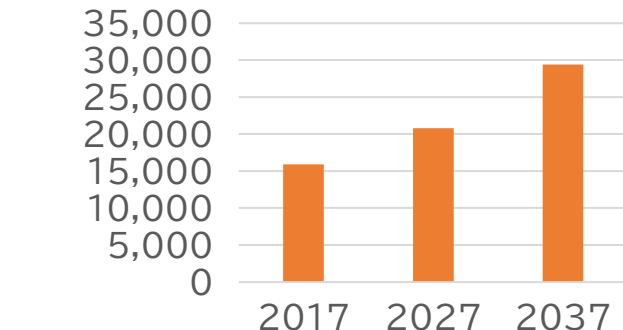
5. Human Resource Development in the Aviation Sector

In order to ensure high-quality human resources in the aviation sector, the **Civil Aviation Authority of Thailand** (CAAT) has established a system to certify training organizations at a certain level.

Human resource development certification classification in the aviation sector

1. **FTO**: Flying Training Organization
2. **ATCTO**: Air Traffic Control Training Organization
3. **TSP**: Aviation Language Testing Service Providers
4. **STD**: Air Traffic Synthetic Training Devices
5. **AME**: Aircraft Maintenance Engineer Training Organization
6. **FSTD**: Flight Synthetic Testing Devices

Number of Required Workers in the Aviation Sector



Example of Bangkok-based FTO

- Civil Aviation Training Center
- Bangkok Aviation Center Co. Ltd.
- Royal Sky Aviation Center Flying School
- Thai Flight Training Co. Ltd
- ASIA Aviation And Technology Co. Ltd.
- Thai Inter Flying Co. LTD
- Premium Airlines Co. LTD

Source: Created by AIRO based on a Thai Board of Investment (BOI) brochure

6. Human Resource Development in the Aviation Sector

Examples of Human Resource Development in Higher Education for Aviation, and the Like

King Mongkut's Institute of Technology Ladkrabang

International Academy of Aviation Industry



Established in 2016 to develop human resources in the aviation and logistics sectors in line with the philosophy of Thailand 4.0.

Two courses established.

- (1) **Aviation Engineering/Commercial Pilot Training Program**
(It corresponds to the pilot supply method from a private university in Japan)
- (2) Logistics management program



Source: Google Map Supported by  THE NIPPON FOUNDATION

Chapter 3 : Trends of as an Industry in Thailand Aviation

7. Summary and Personal Views of Chapter 3

- ✓ In Thailand, the **aviation industry** is prioritized as a **growing industry**.
 - ✓ **Implementing** area development based on an integrated **aeronautical city concept** for **U-Tapao International Airport and the surrounding regions** within the development of the Eastern Economic Corridor as a national project in the aviation sector.
 - ✓ In Thailand, the aviation industry is actively **calling for foreign investments**.
 - ✓ Conversely, a shortage of labor is a problem in Thailand which is an aging society; **aviation workers are in chronic shortage**.
 - ✓ **Focusing on human resource development and human resource acquisition** in the aviation sector for highly educated people with college degrees or higher education
-
- In Thailand, large-scale development such as the U-Tapao International Airport Development Project is underway. In the future, efforts to combine the **development of the airport and its surrounding regions are key in future airport development**.
 - Can **Japan reaffirm the importance of the role of the aviation industry in the country, not just aircraft manufacturing, and come up with a comprehensive vision of the aviation industry like Thailand?**
 - As the working population is declining in Japan as well, it **may be necessary to further consider securing and developing human resources in the aviation field**.

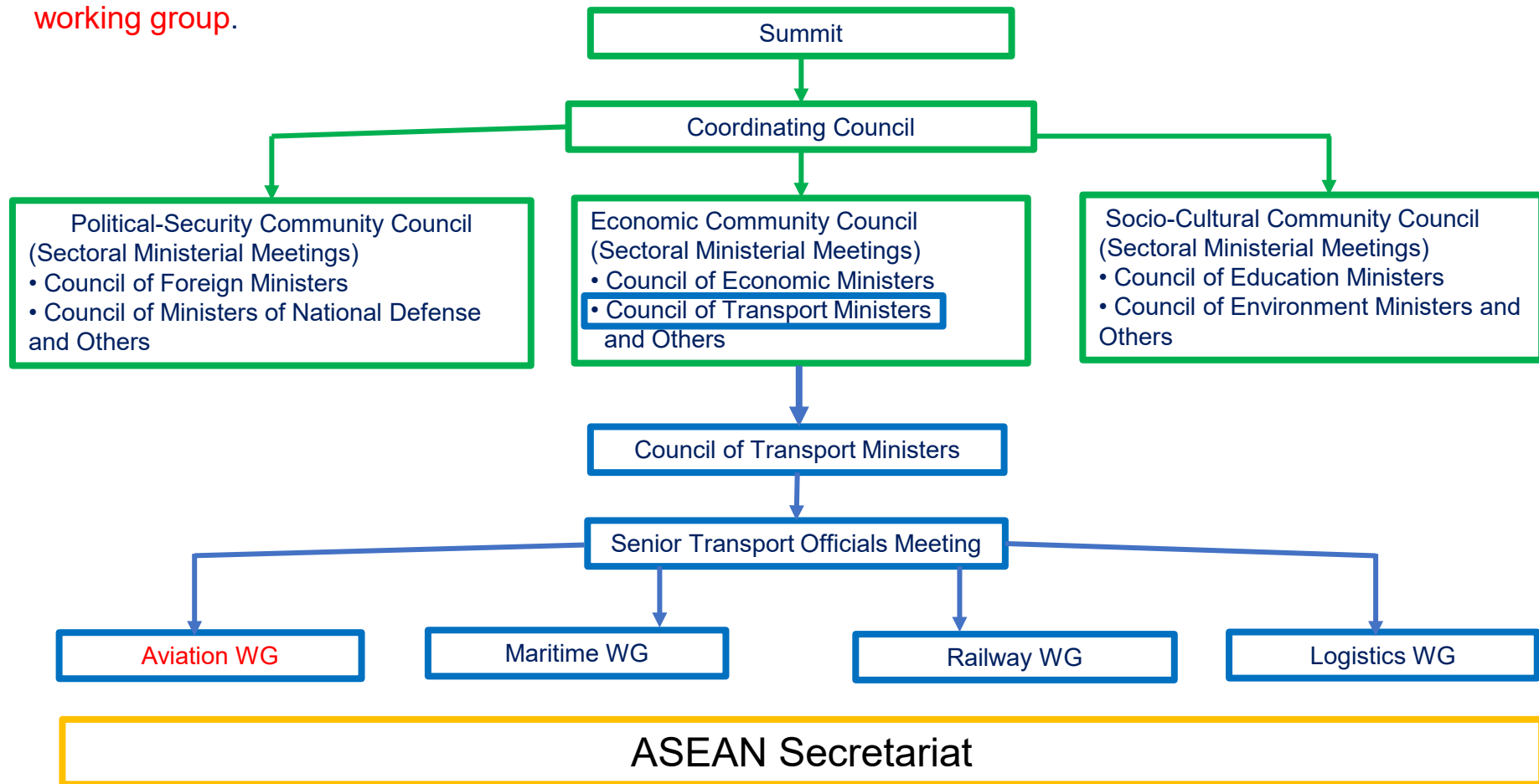
Chapter 4

Trends Relating to Aviation in the ASEAN Community

Chapter 4 : Trends Relating to Aviation in the ASEAN Community

1. Organization relate to Transport in the ASEAN Community

The ASEAN Community has established three community councils of the Summit. In the transportation sector, there are **four working groups** - aviation, maritime, railway and logistics - **under the Council of Transport Ministers** of the Economic Community Council. The **aviation sector** is headed by an **aviation working group**.



Chapter 4 : Trends Relating to Aviation in the ASEAN Community

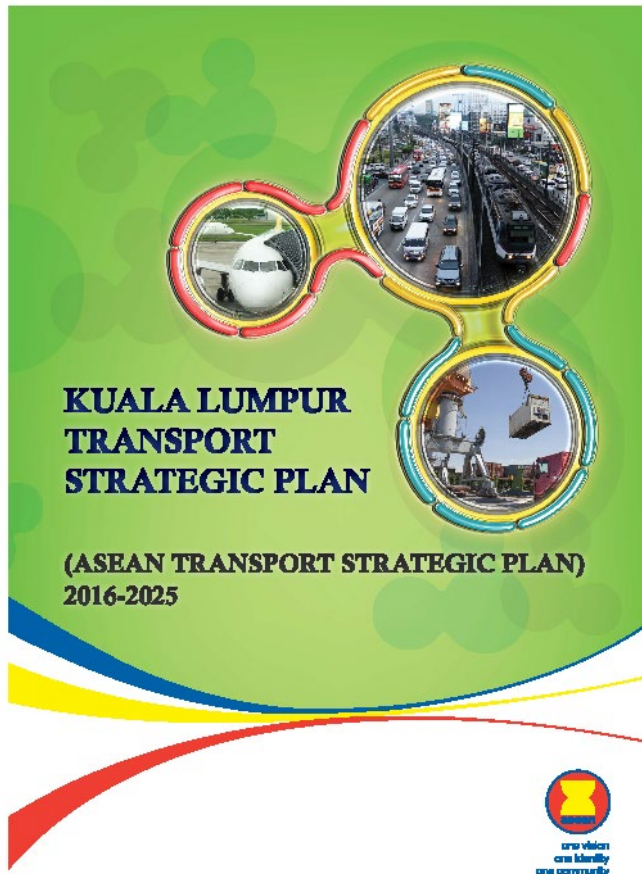
2. ASEAN Transportation Strategy Plan

The ASEAN Community's aviation initiatives are **based on the ASEAN Transport Strategy Plan**.

ASEAN Transport Strategy Plan 2016-2025 (Kuala Lumpur Transport Strategic Plan : KLTSP)

Strategic Objectives

- Air traffic:
 - AT-1 Work towards a more efficient and competitive air transport market and strengthen engagement with Dialogue Partners, thereby contributing to the economic growth, competitiveness and shared prosperity of ASEAN, while maintaining ASEAN Centrality
 - AT-2 Advance safe skies in ASEAN
 - AT-3 Enhance Aviation Security in ASEAN in accordance to ICAO Standards and Recommended Practices (SARPs)
 - AT-4 Enhance air traffic management efficiency and capacity through a seamless ASEAN sky
 - AT-5 Strengthen ASEAN Search and Rescue (SAR) cooperation to ensure effective and coordinated aeronautical and maritime SAR operations in the region
- Land traffic:
- Maritime traffic:
- Sustainable traffic:
- Smoother traffic:



Chapter 4 : Trends Relating to Aviation in the ASEAN Community

3. Major Themes of the ASEAN Community (1)

Three main themes relating to the ASEAN Community's aviation initiatives

1. ASEAN Single Aviation Market

Agreement Name	Abbreviation	Agreement and Signature
1. Multilateral Agreement Full Liberalization of Air Freight Service	MAFLAFS	2009
2. Multilateral Agreement on Air Service	MAAS	2009
3. Multilateral Agreement on the Full Liberalization of Passenger Air Service	MAFPAS	2010

2. Aviation Agreements in the ASEAN Community

○ Concluded Countries/Regions

- China: Concluded in 2010
- **EU: Concluded in 2021**

○ Negotiating Countries/Regions

- India, **Japan**, South Korea

3. ASEAN Air Traffic Security Services

ASEAN Air Traffic Management Master Plan
(Agreed, Signed: October, 2017)

Upgrade

ASEAN Air Traffic Security Master Plan
(1st Edition 2018) (**Created with EU support**)
(2nd Edition 2020)

Chapter 4 : Trends Relating to Aviation in the ASEAN Community

4. Major Themes of the ASEAN Community (2)

1. The Single Aviation Market in the ASEAN Community

○ Differences in the Single Aviation Market between ASEAN and the EU

	ASEAN	EU
Nine Freedoms	Targets up to the 5th Freedom	Targets all freedoms
Airline Response	To network enhancement by joint venture striving for interests exceeding the fifth freedom	LCC may increase through enjoining all freedoms

2. Aviation Agreements in the ASEAN Community

○ ASEAN-EU Aviation Agreement

- First aviation agreement between regional communities
- **Passenger flights: 14 flights per week are allowed at any airport.**
- **Cargo flights: 3rd country operation is possible through both regions without restrictions on the number of flights**

○ Japan-ASEAN Aviation Agreement Negotiation Status
 4th Japan-ASEAN Regional Aviation Agreement Negotiating Meeting (September, 2019)

3. ASEAN Air Traffic Security Services

○ Overview of the ASEAN Air Navigation Service Master Plan (2020 Version)

1. Goal : Seamless ASEAN Sky

2. Plan Period and Contents : 2018 - 2025 (considering the consistency with KLTSP)

(1) Phases I & II : 2018-2022

ASEAN-wide harmonization, implementation of priorities

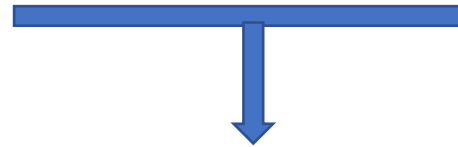
(2) Phase III : 2022-2025

Response to aviation information management services at high and low altitudes

Chapter 4 : Trends Relating to Aviation in the ASEAN Community

5. Information on Air Traffic Management in the ASEAN Community

Research Base for Air Traffic Management Study in ASEAN (Part 1)



○ **Academic Journal Article (Published Example)**

Implementation of a Long-range Air Traffic Flow Management for the Asia-Pacific Region

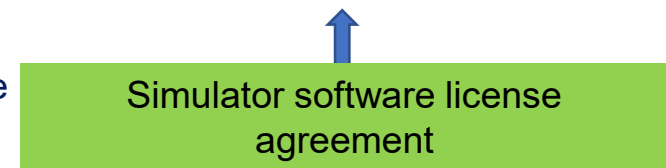
○ **Discussion Paper (Published Example)**

Pursuit of Techniques for Air-traffic Controllers Using Assumed Air-traffic Data

○ **Technical Report (Published Example)**

Setting a Free Path for Singapore Airspace V 2.0

Source: ATMRI Web site Information and Hearing



Chapter 4 : Trends Relating to Aviation in the ASEAN Community

6. Organization on Air Traffic Management in Thailand

Research Base for Air Traffic Management Study in ASEAN (Part 2)



AEROTHAI

Aeronautical Radio of Thailand Ltd.
 บริษัท วิทยุการบินแห่งประเทศไทย จำกัด

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1. Organization Name: Aeronautical Radio of Thailand Ltd.
2. Organizational Form: **State-owned enterprise** operated under the umbrella of Ministry of Transport Thailand
 (Airline established original organization in 1948, State-owned enterprise in 1963)
3. Operations: **Provides Air Traffic Control and Air Communications Services**
4. Objectives: Excellent air-navigation service provider with sustainable quality
5. Air-traffic Control Center (ATCC):
 Tungmahamek ATCC, Suvarnabhumi ATCC, Don Mueang ATCC and others;
 total of 11 ATCCs
6. No. of Employees: Total number of employees: 3057
 Of those, 871 are air-traffic controllers; 310 are trainees
 (As of November 22,2021)



Source: [Home | Aeronautical Radio of Thailand LTD. \(Aerothai.co.th\)](http://Home | Aeronautical Radio of Thailand LTD. (Aerothai.co.th)), and hearing

Chapter 4 ; Trends Relating to Aviation in the ASEAN Community

7. Summary and Personal Views of Chapter 4

- ✓ **ASEAN community aviation initiative** is progressing steadily in accordance with the **Kuala Lumpur Transport Strategic Plan**
- ✓ The **ASEAN single aviation market** has **completed** the 3rd, 4th and 5th liberalized markets for which it was aiming. To keep a **close eye** on whether it is going to **liberalize** further in the future
- ✓ **Japan-ASEAN Aviation negotiations** have already begun and there is an expectation for **negotiations to move forward**
- ✓ **Air Traffic Management (ATM)** is **being planned based** on the ASEAN Air Navigation Service Master Plan (ANMP) with the goal of harmonization in the ASEAN Community

- The ASEAN community single aviation market has been formed, and while **LCC increases in ASEAN**, FSCs are in a difficult business environment. Negotiations are also underway for an aviation agreement between the ASEAN Community and Japan. **Look forward to the advancement of academic research on the impact of the single aviation market and aviation agreements** in considering the future of Japanese aviation.
- The ASEAN community's **Air Navigation Service Master Plan** has been prepared with **EU support**, and efforts to implement the EU specifications are thought to be progressing. Shouldn't **Japan** provide more **active support, including support for next-generation air traffic management?**

Postscript

— As a Research Fellow Affiliated with AIRO —

- ❑ AIRO has a **wide range of aviation fields** to address
- ❑ Activities focusing on **fieldwork through** organizational and human **networks** in ASEAN with **diverse societies, cultures and systems**
- ❑ Through such activities, **provides** everyone with **seasonal information and research results that are "helpful" and "useful."**

Thank you For Listening

I would express my gratitude to everyone who helped to make this colloquium a success.