



AERONAUTICAL
RADIO
OF
THAILAND

ANNUAL REPORT

วิทยุการบินแห่งประเทศไทย

2021

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Despite experiencing such crisis,
the Company has continuously
committed to its Vision
A Sustainable Quality Excellent
Air Navigation Services Provider

”

Kulaya TTE

(Dr. Kulaya Tantitemit)
Vice Chairman of the Board





Message from Vice Chairman of the Board

The new wave of COVID-19 outbreaks in 2021 has had a detrimental impact on the global economy. Many countries adopted Lock-Down measures or even shut down to prevent the spread, which inevitably and severely affects the airline business. Aeronautical Radio of Thailand Limited has experienced a crisis that we would never before imagine; a total flight in 2021 was reduced by 50% compared to the previous year, affecting the revenue and financial liquidity of the Company.

Despite experiencing such crisis, the Company has continuously committed to its Vision

“A Sustainable Quality Excellent Air Navigation Services Provider” by developing its capabilities in air traffic control services and enhancing its air navigation efficiency to deliver safe and stable services that meet the standards, as well as to upgrade itself to become a high-performance organization. The Company has continuously developed its personnel and systematically managed its human resources, developed good management quality in the entire organization along with emphasized on the social and environmental responsibilities, created innovations based on knowledge management and digital technology, managed finance and costs in an efficient and balanced manner in order to deliver fair and transparent services to all groups of stakeholders and customers, along with adding values to the aviation industry and national interests in accordance with the assigned mission.

Amidst such challenges, the Board of Directors, executives, and employees have joined hands to mitigate the impact of lower revenues by reducing operating costs and slowing down the investments that will not affect the tasks of air navigation services. Moreover, the Company has strictly controlled budgetary expenditures by saving as necessary, adjusting the management framework and work processes to be in line with the situations and to increase its performance.

The Board of Directors has adhered to supervise and drive the Company to operate successfully under the policy framework, strategies, and plans as assigned by the Mission, to meet the policies and guidelines of good governance for the benefit of all shareholders and groups of stakeholders.

On behalf of the Board of Directors, I would like to express my gratitude to all shareholders, customers, stakeholders, management, and employees for cooperating with the Company in all aspects. I truly believe that the power of our cooperation, commitment, dedication to duties shall enable the Company to go through this crisis, and together create valuable contributions that shall result in the sustainable prosperity of the national and regional aviation industry.





“ On behalf of the management and all employees, I would like to express my appreciation to all shareholders and stakeholders for continuously giving trusts ”

(Mr. Tinnagorn Choowong)

Executive Vice President

Acting President



Message from the Acting President

In the fiscal year 2021, the number of air traffic in the Bangkok Flight Information Region (or Bangkok FIR) was 308,056 flights in total, continuously declining by 50% compared to the previous year, where the international flights have declined by 74% resulted from the COVID-19 situation that all countries have been facing during the past two years.

Aeronautical Radio of Thailand Limited has adapted to cope with crisis and challenges by reviewing work processes to enhance the efficiency, strictly reducing expenditures, delaying projects that did not affect the safety tasks, empowering employees, and expanding the cooperation with partners to generate additional revenues from related services. All executives and employees have jointly dedicated and sacrificed while adhering to the management and operations according to the corporate vision in delivering services, based on the highest safety standards, to all customers and responding the needs of all stakeholders.

During the COVID-19 situation, the Company has announced measures to prevent and control the spread of COVID-19 covering all operational areas nationwide. The measures follow strictly the guidelines set by the Ministry of Public Health so that the Company's system can continue to operate efficiently and without affecting the services.

In the fiscal year 2021, there were satisfactory major progressive and implementations as follows:

1. The Company has continuously developed its air navigation services to enhance the efficiency in Airspace Management services within the Bangkok FIR for utilizing the country's limited air traffic areas, Air Traffic Flow Management to enable flights to safely operate in limited airspace/airports, and Air Traffic Service to allow the aircraft to safely and orderly fly.
2. The Company has achieved the implementation of projects under the Corporate Plan B.E. 2564-2568 (2021-2025) as schedules to develop an air navigation communication system, air navigation aid system, and aircraft tracking system to support efficient air traffic management service.
3. The Company has developed the corporate digital technology to support the information system for air navigation (Communication, Navigation and Surveillance/Air Traffic Management: CNS/ATM) and information system for administrative tasks (Back-Office) in accordance with the government policy, as well as other relative practices, to promote the use of digital technology in developing AEROTHAI to become a digital organization sustainably providing air navigation services with the highest quality.



4. The Company has upgraded the quality of human resources management system by improving the long-term manpower plan focusing on the improvement of efficiency in personnel cost management, continuity of personnel planning, including reviewing the tasks, organizational restructure, and manpower to cope with the dynamic situations. Besides, the Company has prepared the Human Resources Master Plan for the years 2021 - 2026 (AEROTHAI HR Master Plan) demonstrating directions and guidelines for Human Resources Departments, with the Vision “Effectively building professionals to meet the needs of stakeholders.”
5. The Company has oversight of the risk management system and internal control, including supporting the implementation of good corporate governance, risk management, and policies compliance. Moreover, the Company has emphasized the approaches of public concern for risk management throughout the organization to create desirable behaviors and to support the achievement of goals by integrating the strategies with operations to continuously create values for the Company.
6. TRIS Rating Company Limited (TRIS Rating) has maintained the Company’s corporate rating at “AAA”, which reflects the status of the Company as a government-related entity (GRE), and its important role to the government where it is highly possible that the Company will receive special support from the government in a sufficient and timely manner if the company facing financial problems. The rating tendency is maintained at “Stable,” reflecting TRIS Rating’s expectation that the Company will maintain its status as a government-related organization, with the highest level of relationship with the government, and will play an important role to the government sector as the main air navigation service provider in Thailand.
7. In terms of the disbursement of the investment budget, the result showed the disbursement of the accumulated investment budget in 2021 was in line with the government policy target requiring state enterprises to disburse their investment budget at least 95% of the investment scheme.
8. The Company has continued to proactively expand the market for related services by focusing on business development through digital marketing, integrating cooperation with overseas service partners, and increasing technology capabilities, to generate additional revenue and promote the potential of personnel.

On behalf of the management and all employees, I would like to express my appreciation to all shareholders and stakeholders for continuously giving trusts and good supports to the Company’s operations. I promise that the Company will create benefits for the country’s aviation industry and all groups of stakeholders in a sustainable manner.



Corporate Information



Company's Background

After the First World War, the Post and Telegraph Department had been assigned by the Royal Thai Government to assume responsibility of providing Air Traffic Control and Aeronautical Communications to international aircraft passing over and landing in Thailand. These ceased with the expansion of the Second World War to Asia which prevented commercial aircraft taking to the sky. When the Second World War ended, international civil aviation resumed. On 15 April 1948, Aeronautical Radio Inc. (ARINC) of the United States of America, International Aeradio Ltd. (IAL) of the United Kingdom and various airlines operating services to Thailand jointly founded Aeronautical Radio of Siam Limited. (AEROSIAM) with the consent of the Royal Thai Government to provide Air Traffic Control services and Aeronautical Communications services in accordance with ICAO's standards and recommended practices. Later the Thai Government recognized its capability and the importance of the Company's responsibility concerning national security and aviation development. Therefore, the Government acquired a majority of the share capital from the founding airlines and changed its name to Aeronautical Radio of Thailand Limited (AEROTHAI) on 1 November 1963. International airlines operating services to Thailand were also welcomed as shareholders. The Company's status has since become a state enterprise under the Ministry of Transport, operating as a limited company. The Company operates on behalf of the Government as a non-profit organization to provide safety services which are Air Traffic Control and Aeronautical Telecommunications services in the Bangkok Flight Information Region (FIR) with the network linking with other countries. In addition, there is a business sector which provides aviation related services, both domestic and overseas.

The Company has operated its business with a commitment to maintain the quality of air navigation services to be efficient based on international standards, developed technologies and developed human resources, as well as closely cooperated with domestic and international aviation organizations to further expand its capabilities and develop the country's aviation.



Vision

“A Sustainable Quality Excellent Air Navigation Service Provider”

(Vision for AEROTHAI development and operation in the strategic framework 2021-2025.)

Mission

“To be the national air navigation service provider that meets users’ requirements in safety, standards, and efficiency while realizing the responsibilities to all stakeholders and national interests.”

Role and Responsibilities

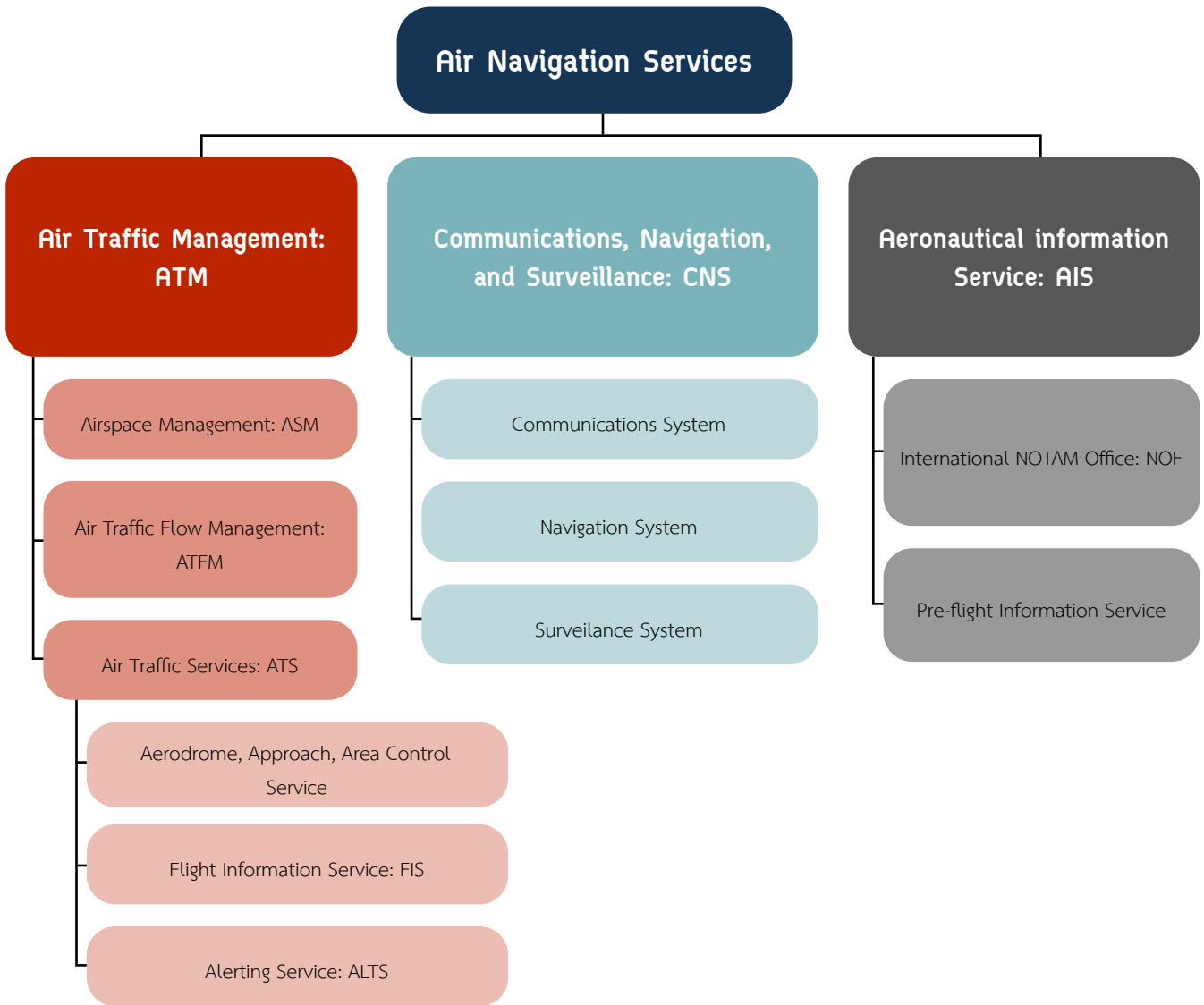
Generally, the scope of Air Navigation Services is consisting of

- ✈ Air Traffic Management: ATM
- ✈ Communications, Navigation, and Surveillance: CNS
- ✈ Aeronautical Information Service: AIS
- ✈ Meteorological Service : MET
- ✈ Search and Rescue : SAR

Currently, AEROTHAI, assigned by Thai Government, is responsible for ATM, CNS, and IFPD (Instrumental Flight Procedure Design). Moreover, we provide some parts of AIS (particularly NOTAM Office), business-related services and tasks in accordance with the government’s policies. While, Thai Meteorological Department, Ministry of Digital Economy and Society, and Ministry of Transport are in charge of MET and SAR, respectively.



Air Navigation Services under AEROTHAI's Responsibility.



Airspace Usage Proportion between Civil Sector and Military Sector (shown in red) within Bangkok FIR.

Air Traffic Management (ATM)

To support flight operations within Thailand’s area of responsibility, AEROTHAI provides the following Air Traffic Management (ATM) services.

a. Airspace Management (ASM)

Considering the current circumstance where airspace within Bangkok Flight Information Region (Bangkok FIR) is divided for use of civil and military at around 50% each, AEROTHAI puts Airspace Management (ASM) service in its operation with the objective to utilize airspace, a limited resource, to the greatest extent possible, so that the missions of both civil airspace users and the military sector can be efficiently achieved. In this regards, the classification of airspace specified for military missions, which may pose potential hazards to other flight operations, is also adopted for a safety reason.

b. Air Traffic Flow Management (ATFM)

Apart from ASM service, AEROTHAI also provides the Air Traffic Flow Management (ATFM) service to balance foreseen air traffic demand and available capacity in the case where the air traffic flow under various restrictions in both airspace and airports inside Bangkok FIR. In order to allow flights to safely and efficiently operate in airspaces/airports with restrictions, especially in terms of the predictive capability of the flight operations.

c. Air Traffic Services (ATS)

With the ultimate goal to ensure the safe operations of aircraft and expedite as well as maintain an orderly flow of air traffic within Bangkok FIR, AEROTHAI has been offering Air Traffic Services (ATS), our major services, for decades, with the scope as follows.

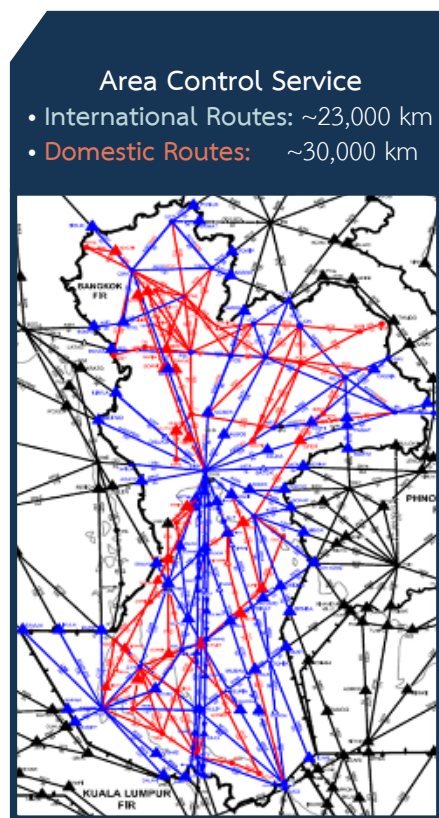
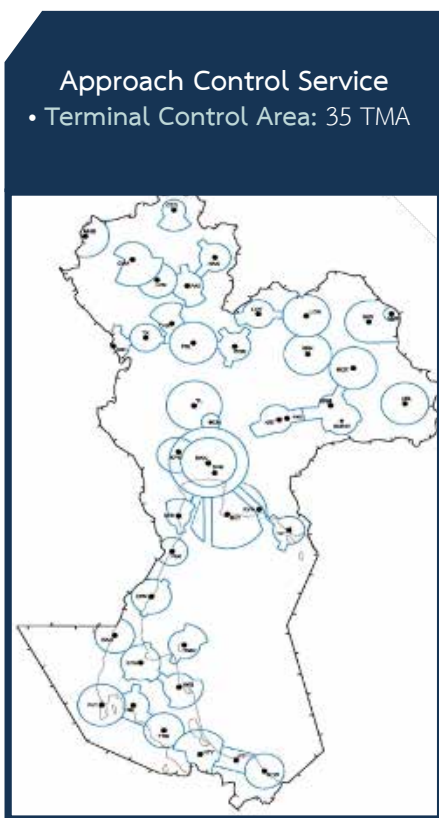
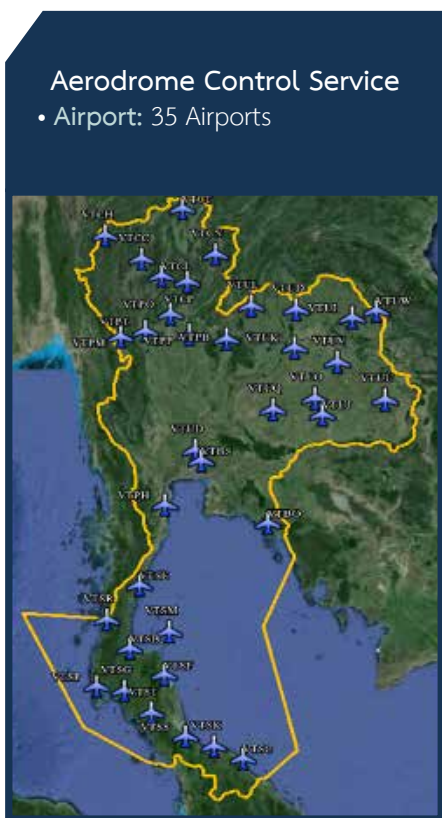
(1) Air Traffic Control Service (ATCS)

ATCS, which is provided by AEROTHAI and covers the whole Bangkok FIR, is divided by service scopes into three parts, namely,

- Aerodrome Control Service: an ATCS provided to flights arriving to/departing from the aerodrome and operating within about 5 NM around the aerodrome;
- Approach Control Service: an ATCS provided to flights approaching to/departing from the aerodrome and operating within about 50 NM around the aerodrome; and
- Area Control Service: an ATCS provided to flights operating in controlled areas and on ATS routes within Bangkok FIR.

(2) Flight Information Service (FIS)

(3) Alerting Services (ALTS)



Air Traffic Control Services provided by AEROTHAI.

Communications, Navigation, and Surveillance (CNS)

To enable the safe and efficient ATM service provision, AEROTHAI delivers Communications, Navigation, and Surveillance (CNS) technologies within Bangkok FIR as well. Particularly, the capabilities for air traffic controller to communicate with airspace user and for both parties to determine the position and direction of the aircraft under control are provided. The short summary of CNS services provided is as follows.

a. Communications System

The Communications System which is a system providing the air traffic controllers with communication services with related parties. Presently, the Company's communications system can be divided into 2 parts as follows:

- ground-ground communication
It is the communication between air traffic controllers and domestic and overseas related parties.
- air-ground communication
It is the communication between air traffic controllers and airspace users

However, the communications system provided by AEROTHAI covers all the controlled areas and on ATS routes within Bangkok FIR.

b. Navigation System

Besides communications systems, AEROTHAI has also provided navigation services to support airspace user in determining the accurate position of the aircraft operating within Bangkok FIR. Considering the crucial role navigation systems plays in flight safety and efficiency, not only ground-based navigation systems have been implemented but also satellite-based ones.

c. Surveillance System

Looking from the perspective of air traffic controller, similar to navigation system in the view of airspace user, various surveillance systems have been deployed by AEROTHAI to provide the capability for air traffic controller to track the aircraft under control. Taking into account the different operational requirements of the different service areas, AEROTHAI currently offers surveillance services using various surveillance technologies, including (i) Primary Surveillance Radar (PSR), (ii) Secondary Surveillance Radar (SSR), (iii) Multilateration (MLAT), and (iv) Surface Movement Radar (SMR)

Furthermore, with the continuous traffic growth requiring more sophisticated ATM support system, AEROTHAI has put the state-of-the-art ATM automation system into operation to help not only ensure but also improve the level of safety and efficiency. Examples of ATM support tools implemented are Flight Data Processing System, ground-based safety net, etc.

Aeronautical Information Service (AIS)

At present, AEROTHAI provides Aeronautical Information Service (AIS) as the International Notice to Airmen (NOTAM) Office (NOF) mainly to support the safe and efficient operation of aviation and air traffic management inside the Bangkok FIR and internationally. In addition to being NOF, upon request, AEROTHAI also offers Pre-flight Information Service to airspace users to help them in their flight preparation.

Under the information management domain, but at the regional level, AEROTHAI is assigned by ICAO to be the Regional OPMET Center (ROC) and the Regional OPMET Data Bank (RODB) for Asia/Pacific.

Other related services

Starting with an effort to in-house develop spare parts, equipment, and systems to reduce the maintenance and acquisition cost, AEROTHAI has expanded its products and services to a wider group of transport-related customers, thanks to technical knowledge and firsthand experience gained while researching and developing our own solutions. Products and services offered by AEROTHAI include aeronautical communication services, flight validation service, marine traffic management system, to name a few.



Corporate Plan

Under the vision “A Sustainable Quality Excellent Air Navigation Service Provider” which focus on maintaining standard and improving quality of services to be comparable to the best in class., AEROTHAI’s strategic issue and objective in the period from 2021-2025 are as follows:

Strategic Issue	Strategic Objective
1. Safe and Efficient Air Navigation Services	<ol style="list-style-type: none"> 1. To provide safe and secured services in all phases of flights. 2. To increase capacity and efficiency in air navigation services.
2. Human Resource Development	<ol style="list-style-type: none"> 3. To improve employee competency and human resource management in order to achieve company’s vision and sustainable growth. 4. To improve workplace environment and increase employee engagement.
3. Becoming High Performance Organization (HPO)	<ol style="list-style-type: none"> 5. To improve corporate performance through Total Quality Management (TQM) along with change management and increase customers and stakeholders’ satisfaction. 6. To enhance Good Corporate Governance and Corporate Social and Environmental Responsibility according to international standards. 7. To be an organization of innovation with the foundation of knowledge management and digital technology. 8. To maintain air navigation charges that is fair, transparent, and competitive through efficient management of organizational budget and finance.
4. Improving National Competitiveness and Creating Value for the Aviation Industry	<ol style="list-style-type: none"> 9. To increase value creation for the aviation industry. 10. To improve air navigation services infrastructure in order to support the growth of Thai aviation industry.





Company's Services

AEROTHAI is a state enterprise under the Ministry of Transport. The Ministry of Transport assigned AEROTHAI to provide air navigation services including air traffic control service, aeronautical communication service, and other related service. AEROTHAI provides safe and efficient services according to Standard and Recommended Practices (SARPs) recommended by the International Civil Aviation Organization (ICAO). Under the assignment, the Company agreed to serve all users without making profit, and receive the service fees through the air navigation service charges paid by the users in a fair manner.

Location and Website

Head Office

Address: 102 Soi Ngamduplee,
Thung Maha Mek Sub-district, Sathon District,
Bangkok 10120
Telephone : 0 2287 3531-41 Fax: 0 2287 3131
Website: www.aerothai.co.th

Hat Yai Air Traffic Control Center

Address: 100 Moo 3, Sanarmbin Road,
Khlung La Sub-district, Khlung Hoi Khong District,
Songkhla Province 90115
Telephone : 0 7425 1051-60 Fax: 0 7425 1339

Phuket Air Traffic Control Center

Address: 200 Khlo Bo Sai,
Mai Khao Sub-district, Thalang District,
Phuket Province 83110
Telephone : 0 7632 7251-5 Fax: 0 7632 7258-9

Surat Thani Air Traffic Control Center

Address: Hua Toei Sub-district,
Phunphin District, Surat Thani Province 84130
Telephone : 0 7744 1132 Fax: 0 7744 1133

Chiang Mai Air Traffic Control Center

Address: 60 Sanarmbin Road,
Sutep Sub-district, Mueang District,
Chiang Mai Province 50200
Telephone : 0 5327 0624-32 Fax: 0 5327 7600

Pitsanulok Air Traffic Control Center

Address: Sanarmbin Road,
Aranyik Sub-district, Mueang District,
Phitsanulok Province 65000
Telephone : 0 5530 1422 Fax: 0 5530 1450

Nakhon Ratchasima Air Traffic Services Engineering and Operating Center

Address: Ban Phiman, Tha Chang Sub-district,
Chaloem Phra Kiat District,
Nakhon Ratchasima Province 30230
Telephone : 0 4425 7670 Fax: 0 4425 6576

Udon Thani Air Traffic Control Center

Address: Mak Khaeng Sub-district,
Mueang District, Udon Thani Province 41000
Telephone : 0 4224 6803 Fax: 0 4224 9734

Ubon Ratchathani Air Traffic Control Center

Address: Thepyothi Road, Nai Mueang Sub-district,
Mueang District, Ubon Ratchathani Province 34000
Telephone : 0 4524 0798 Fax: 0 4525 0798

Hua Hin Air Traffic Control Center

Location: Bo Fai Village, Hua Hin Sub-district,
Hua Hin District, Prachuap Khiri Khan Province 77110
Telephone : 0 3252 0831 Fax: 0 3252 0833





Operating Performance (Baht :Million)^{1/}

	2021	2020	2019
Operating Performance (Baht :Million)^{1/}			
Total Income	3,162.74	7,391.95	13,368.78
Total Expenditure	6,787.79	10,863.33	12,477.70
Overcollection to be refunded to Member Airlines	(3,625.05)	(3,471.38)	891.08

Remark ^{1/} Separated Financial Statements

Financial Status (Baht :Million)^{2/}

Total Assets	10,440.82	13,674.49	17,395.72
Total Liabilities	6,901.66	6,387.80	6,637.65
Total Shareholders' Equity	3,539.16	7,286.69	10,758.07

Financial Ratio

Debt-to-Equity Ratio (times)	1.95	0.88	0.62
Debt-to-Equity Ratio (times) (Not including accumulated Overcollection)			
Fix Charge Coverage Ratio (times)	11.75	9.77	8.74

Remark ^{1/} AEROTHAI has adhered to the Group Financial Reporting Standards, Financial Instruments, and Thai Financial Reporting Standard 16 regarding Leases (IFRS 16) for the first time since October 1, 2020, and retroactively restated the financial statements regarding the recognition of pending service charges which are paid back to member airlines.

^{2/} The financial statements for the years 2020 and 2019 are re-classified of transactions to comply with the presentation of the annual financial statements for the year 2021 due to the adoption of new financial reporting standards.

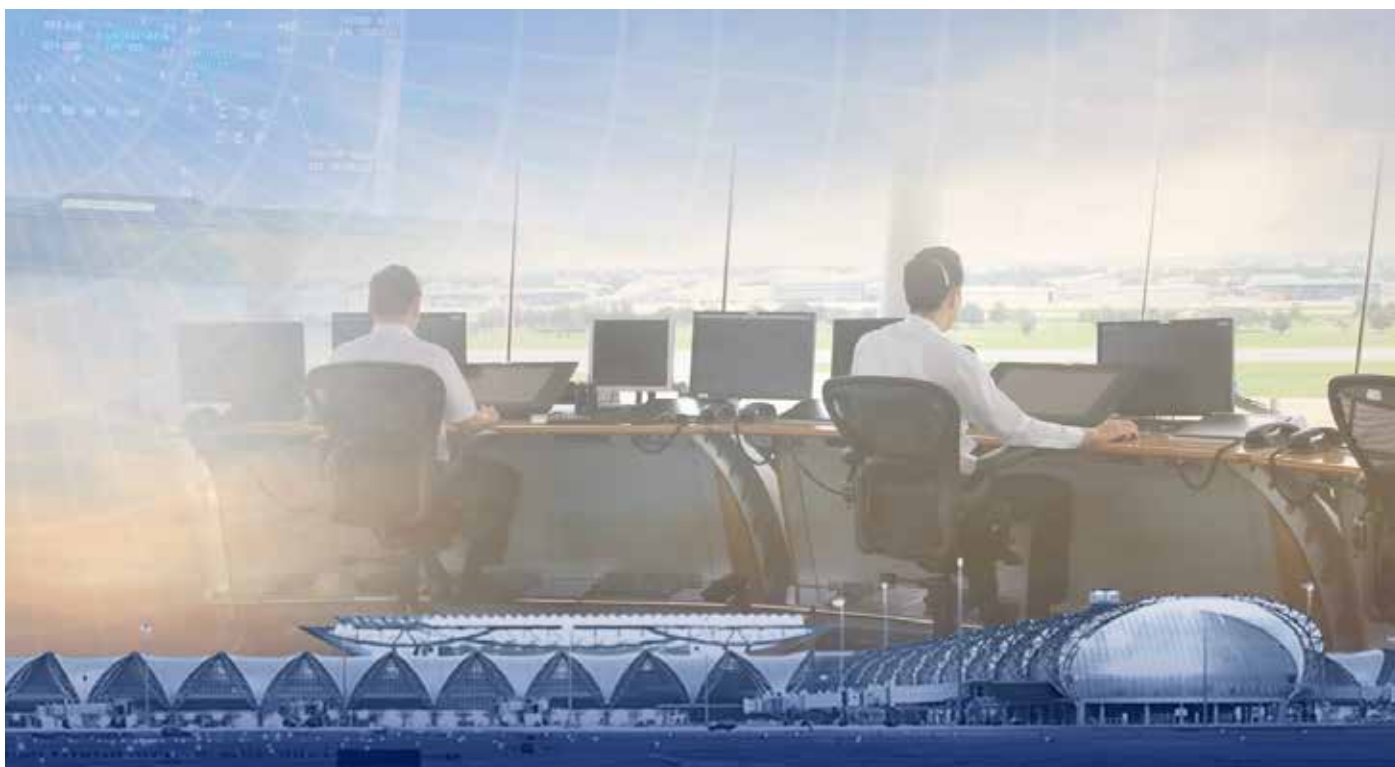
Factor Impacting Performance

ICAO Global and Regional Air Navigation Plans

The 40th Session of the ICAO Assembly in 2019 adopted the sixth edition of Global Air Navigation Plan (GANP) as a strategic direction for global air navigation system development. In this edition, Aviation System Block Upgrades (ASBUs), the stepwise implementation strategy identifying current and emerging technologies and operational procedures required, subject to operational needs, to enhance air navigation system, is still the major component. Moving towards the adoption of performance-based approach, compared to the previous editions, Key Performance Indicators (KPIs) for measuring the performance obtained by the implementation of the specified ASBUs elements are also provided in this edition to assist aviation stakeholders in assessing and analyzing the performance gap between their current air navigation systems and the air navigation systems where technologies and operational procedures identified in ASBUs are implemented. With such evidence-based performance measurement framework, the involved stakeholders will be able to not only better prioritize their initiative deployment but also achieve the better resource management.

At the regional level, also in 2019, the 30th Meeting of ICAO Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/30) adopted the Asia/Pacific Seamless Air Navigation Service (ANS) Plan, Version 3.0 as the regional strategic objectives to achieve the seamless air navigation service in Asia/Pacific region. In this Plan, technologies and operational procedures stated in ASBUs which are considered necessary for the enhancement of Asia/Pacific-specific operational environment are identified together with their corresponding implementation priorities. Moreover, to further improve the seamless Air Traffic Management (ATM) operations, performance objectives in terms of Preferred Aerodrome/Airspace and Route Specifications (PARS) and Preferred ATM Service Levels (PASL) are also defined, including human performance as well as civil/military cooperation. Besides, compared to the previous versions, the new initiatives are added in this version and the target implementation date previously specified is extended to also include the newly introduced implementation phase covering until 2022.

Taking into account the importance of aforementioned global and regional plans, AEROTHAI has set its strategic objectives and strategies in accordance with those plans and continuously ensured that the required developments are in place in a timely manner.





Outlook of Aviation Industry and Trends in Air Traffic

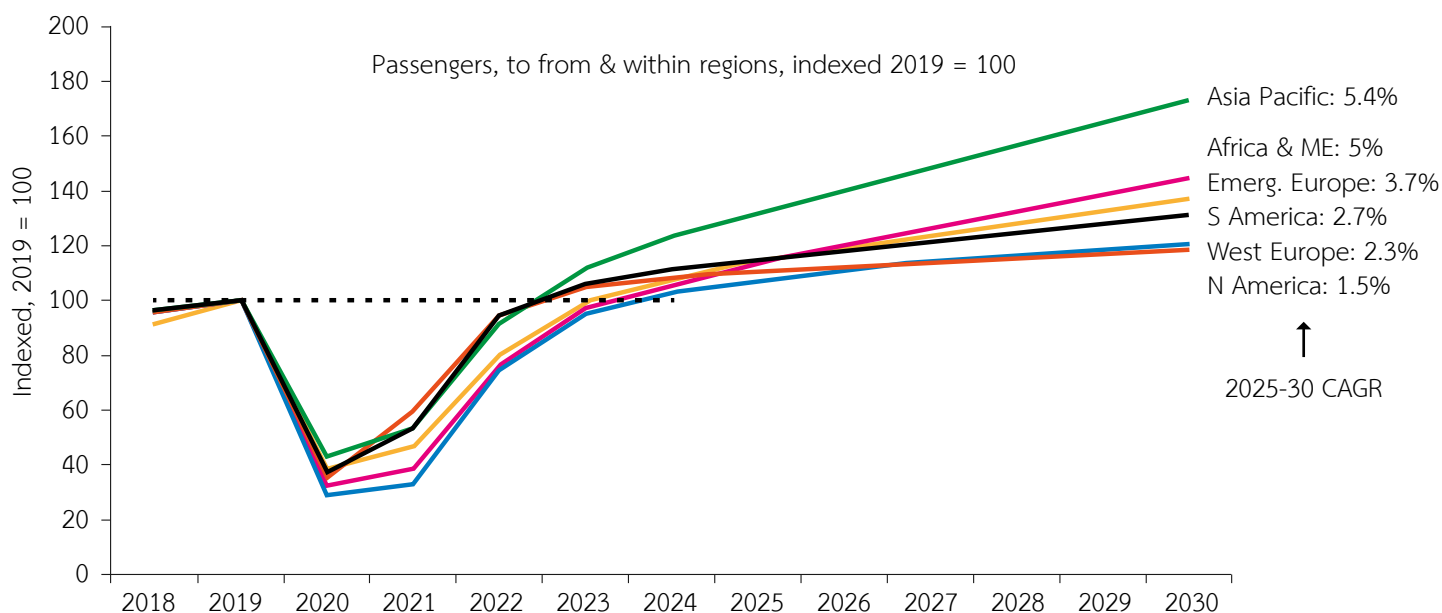
Prior to the outbreak of COVID-19, the aviation business was one of industries with continuous growth and higher values. In the past, the outlook of aviation industry showed bright future trends in air traffic with increasing growth.

The COVID-19 pandemic has adversely impacted the economy on a global scale, with many countries around the world having to enforce lockdowns of varying degrees. The ongoing pandemic has resulted in a full-scale global transportation crisis. Air transport has remained one of the hardest-hit global industries since the very beginning of the crisis. In Thailand, international flight volume has dramatically declined since March 2020 to the present

The impact of this outbreak has been unprecedented and more catastrophic than any other past events, including SARS (2003), Avian Influenza (H7N9) (2013) and MERS Flu (2015), due to its wide effect geographically across the globe for an extended period of time. The International Air Transport Association (IATA) evaluated the impact of COVID-19 on global aviation business (as of 26 May 2021) and estimated that it will take several years to recover. Air traffic is expected to be able to return to its pre-COVID-19 epidemic level after 2024.

Regions with large domestic markets recover first

European, Africa & Middle East regions lags due to international markets



Source: IATA Economics using data from Tourism Economic/IATA Air Passenger Forecasts' April 2021

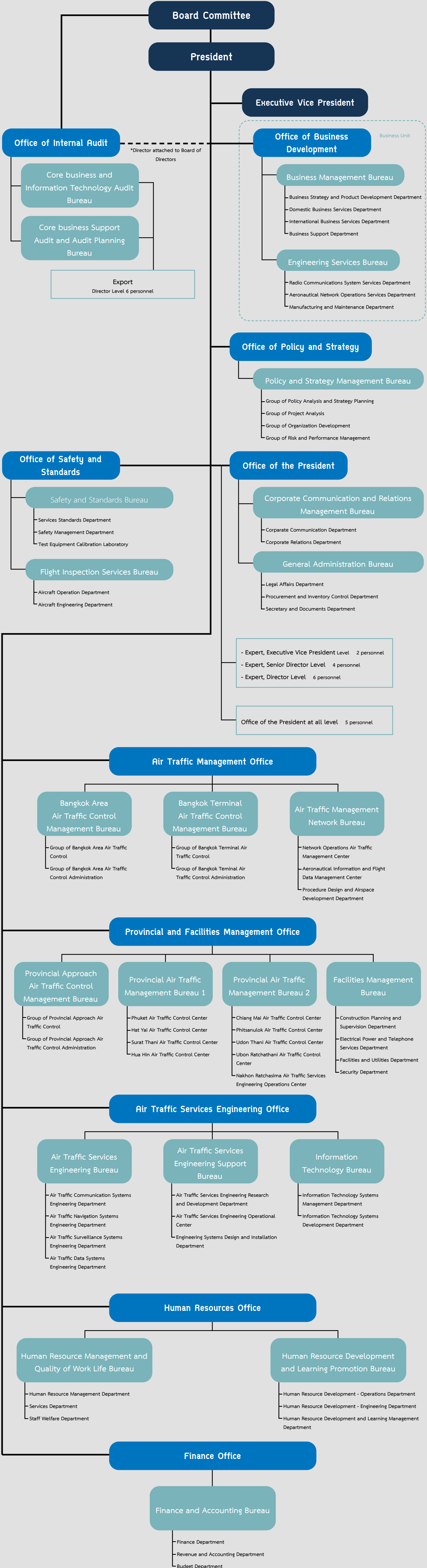
In 2021, air traffic volume within Bangkok FIR declined 50% from the previous year, resulting in the total volume of 0.31 million flights. It is forecasted that the impact will prolong into the next year, with some improvement that could be expected as a result of government aids and stimulating initiatives.

Company's Structure



Organization Chart

- Expert, Executive Vice President Level
 - Expert, Senior Director Level
 - Expert, Director Level
- Office of the President at all level 5 personnel





The Committees

There are Committees as follows:

- The Board of Directors
- The Executive Committee
- The Risk Management Committee
- The Corporate Governance and Corporate Social Responsibility Committee
- The Legal Committee
- The Innovation Management Committee
- The Independent Directors
- The Labour Relations Committee

The composition of the Board of Directors at the end of fiscal year 2021 was as follows: (names and details of Directors and the changes during the year in accordance with Section 2)

1.	Dr. Kulaya	Tantitemit	Vice Chairman of the Board
2.	Mr. Puttipong	Prasarttong-Osoth	Director
3.	Mrs. Jantira	Buruspat	Director
4.	Mr. Pathom	Chaloeywares	Director
5.	Mrs. Phongsaward	Guyaroonsuith	Director
6.	Professor Dr. Amorn	Pimanmas	Director
7.	Mr. Rapee	Phongbupakicha	Director
8.	Dr. Piang-or	Loahavilai	Director



The Board of Directors



Dr. Kulaya Tantitemit

Vice Chairman of the Board



Mr. Puttipong Prasarttong-Osoth

Director



Mrs. Jantira Buruspat

Director

The Board of Directors



Mr. Pathom Chaloevares
Director



Mrs. Phongsaward Guyaroonsuith
Director



Professor Dr. Amorn Pimanmas
Director



Mr. Rapee Phongbupakicha
Director



Dr. Piang-or Loahavilai
Director



Mr. Tinnagorn Choowong

Executive Vice President (Operations)
Acting President



Miss Duangta Samitsuwan

Executive Vice President
(Administration)



Mr. Sukluer Chiawarcheep

Executive Vice President
(Policy & Human Resources)

Company's Senior Management



Mrs. Sirikes Niemloy
Vice President
(Air Traffic Management)



Miss Tipaporn Nippakakorn
Vice President
(Office of Policy and Strategy)



Mr. Channarong Chuacharoen
Vice President
(Air Traffic Services
Engineering)



Mr. Chumnun Ruechai
Vice President
(Provincial and Facilities
Administration)



Mr. Teekayu Muratha
Vice President
(Office of Internal Audit)



Miss Voraporn Rhodyoo
Expert
Vice President Level



Mrs. Thaniya Suntharasantic
Vice President
(Office of President)



Mr. Surachai Nuprom
Vice President
(Office of Business
Development)



Mr. Chana Tadtasai
Vice President
(Human Resources)



Mr. Paisan Praneetpongtrang
Expert
Vice President Level

Company's Senior Management

1. Mr. Tinnagorn Choowong

Present Position:	Executive Vice President (Operations)								
Date of Birth:	19 September 1962								
Age:	59								
Starting Work at AEROTHAI:	1 July 1986								
Education:	<ul style="list-style-type: none">• Diploma in Aviation Communication, Civil Aviation Training Center (Thailand)• Bachelor of Arts in Political Science, Ramkhamhaeng University								
Additional Education Qualifications:	<ul style="list-style-type: none">• Diploma, Air War College (Class of 47 in 2013), the Royal Thai Air Force Academy• Leadership Succession Program (LSP), Institute of Research and Development for Public Enterprises (IRDP) (Class of 3 in 2015)								
Work Experiences:	<table><tr><td>Year 2021</td><td>Acting President</td></tr><tr><td>Years 2018-2019</td><td>Executive Vice President (Operations)</td></tr><tr><td>Years 2015-2018</td><td>Executive Vice President</td></tr><tr><td>Years 2012-2015</td><td>Vice President (Air Traffic Management)</td></tr></table>	Year 2021	Acting President	Years 2018-2019	Executive Vice President (Operations)	Years 2015-2018	Executive Vice President	Years 2012-2015	Vice President (Air Traffic Management)
Year 2021	Acting President								
Years 2018-2019	Executive Vice President (Operations)								
Years 2015-2018	Executive Vice President								
Years 2012-2015	Vice President (Air Traffic Management)								

2. Ms. Duangta Samitsuwan

Present Position:	Executive Vice President (Administration)				
Date of Birth:	14 November 1963				
Age:	57				
Starting Work at AEROTHAI:	1 January 1995				
Education:	<ul style="list-style-type: none">• Bachelor of Laws, Ramkhamhaeng University• Master of Arts Program in Political Science (Public Administration), Thammasat University				
Additional Education Qualifications:	<ul style="list-style-type: none">• Advanced Certificate Course in Public Economics Management for Executives, King Prajadhipok's Institute (Class of 11 in 2013)• Leadership Succession Program (LSP), IRDP (Class of 2 in 2014)				
Work Experiences:	<table><tr><td>Years 2018-2021</td><td>Executive Vice President (Administration)</td></tr><tr><td>Years 2016-2018</td><td>Vice President (Office of Internal Audit)</td></tr></table>	Years 2018-2021	Executive Vice President (Administration)	Years 2016-2018	Vice President (Office of Internal Audit)
Years 2018-2021	Executive Vice President (Administration)				
Years 2016-2018	Vice President (Office of Internal Audit)				

3. Mr. Sukluer Chiawarcheep

Present Position:	Executive Vice President (Policy and Human Resources)				
Date of Birth:	10 March 1963				
Age:	58				
Starting Work at AEROTHAI:	1 July 1986				
Education:	<ul style="list-style-type: none">• Bachelor of Engineering (Electrical Engineering), Kasetsart University• Master of Business Administration (Business Administration), Kasetsart University				
Additional Education Qualifications:	<ul style="list-style-type: none">• Leadership Succession Program (LSP), IRDP (Class of 5 in 2015)• Air War College (Class of 40 in 2006)				
Work Experiences:	<table><tr><td>Year 2019-2021</td><td>Executive Vice President (Policy and Human Resources)</td></tr><tr><td>Years 2017-2019</td><td>Expert, Executive Vice President Level</td></tr></table>	Year 2019-2021	Executive Vice President (Policy and Human Resources)	Years 2017-2019	Expert, Executive Vice President Level
Year 2019-2021	Executive Vice President (Policy and Human Resources)				
Years 2017-2019	Expert, Executive Vice President Level				





Human Resource and Organization Development

At the end of the fiscal year 2021 (30 September 2021), the total number of staff employed by AEROTHAI was 3,203 distributed as follows:

Head Office	1,931
Suvarnabhumi Airport	430
Don Mueang International Airport	46
Phuket Air Traffic Control Centre	148
Hat Yai Air Traffic Control Centre	120
Surat Thani Air Traffic Control Centre	88
Hua Hin Air Control Centre	44
Chiang Mai Air Traffic Control Centre	140
Phitsanulok Air Traffic Control Centre	101
Udon Thani Air Traffic Control Centre	79
Ubon Ratchathani Air Traffic Control Centre	41
Nakhon Ratchasima Air Traffic Services Engineering	35
Total	3,203

Total of Number of Contracted Employees

As at 30 September 2021, the total number of contracted employees employed by AEROTHAI was 33 distributed as follows:

Male	10
Female	23
Total	33

Total Staff and Contracted Employees Expenditure

Unit: Baht Million

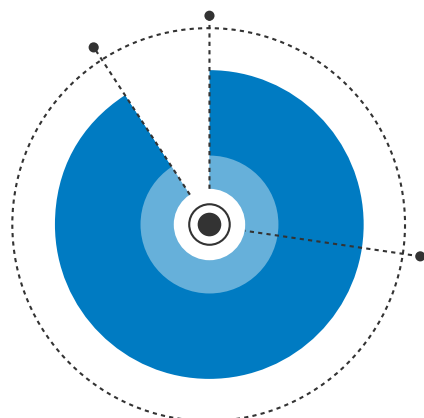
Description	2021	2020	2019
Staff's Expenditures and Benefits	4,034.15	7,989.01	9,612.41
Temporary Employees Expenditures	5.87	11.32	10.85

- Note**
- On August 25, 2021, the Board of Directors' meeting resolved to approve the refrain from paying the special prizes for the years 2020 and 2021, the special reward transaction is reversed into the statement of comprehensive income and expenses for the year ended September 30, 2021, in the amount of Baht 1,285.03 million, which consists of a special reward for employees amounting Baht 1,282.50 million (the said transaction is reversed into the expenses of employee benefits) and a special reward for temporary employees amounting Baht 2.53 million (such transaction is reversed into other expenses).
 - In 2021, AEROTHAI adjusted the accounting transactions for expenses of contribution to welfare fund in which AEROTHAI has allocated 9% of employee salary as the income of welfare fund to be the employee welfare budget due to the change in presentation style for comprehensive income and expenses. Therefore, the said contribution to welfare fund is a connected transaction between AEROTHAI and the welfare fund, it is not classified as an expense of the Company or an income of the welfare fund. AEROTHAI has adjusted the amount of expenses for employee benefits and temporary employee expenses in 2020 and 2019 to be consistent with the year 2021 by cutting such contribution from the expenses payment of the Company and the income of the welfare fund.

Share Capital and Shareholders Structure

Airlines Shareholders 92 (as at 1 August 2021)

Airlines 600,000 shares at
Baht 60 million



Government 6,000,000 shares at
Baht 600 million

In the fiscal year 2021, the A Shareholders and B Shareholders were as follows:

The A Shareholders	Number of shares
The Ministry of Finance	6,000,000

The B Shareholders (Airlines) and the Top 10 Highest Number of Shares

No.	B Shareholders	No. of Shares
1	THAI AIRASIA COMPANY LIMITED	43,484
2	BANGKOK AIRWAYS PUBLIC COMPANY LIMITED	39,363
3	NOK AIRLINES PUBLIC COMPANY LIMITED	34,489
4	THAI VIETJET AIR JOINT STOCK CO.,LTD	32,615
5	SINGAPORE AIRLINES LTD	31,490
6	THAI LION MENTARI COMPANY LIMITED	29,991
7	CATHAY PACIFIC AIRWAYS	28,866
8	THAI SMILE AIRWAYS COMPANY LIMITED	19,869
9	JEJU AIR	18,369
10	VIETNAM AIRLINES JSC	18,369
11	Other 82 airlines	303,095
Total B Shareholders		600,000

Remark: Names of Shareholders allocated shares on 1 August 2021.

State Enterprise's Loans

State Enterprise's Loans

Unit: Baht Million

Bank	Credit Limit	Balance as at 30 September			Type of Guarantee
		2021	2020	2019	
Government Savings	1,650.00	190.19	317.13	444.07	None
Krung Thai Bank Pcl.	2,678.40	695.82	-	-	None
Total	4,328.40	886.01	317.13	444.07	

Short Term Loan

Unit: Baht Million

ธนาคาร	Type of Credit	Credit Limit	Balance as at 30 September			Type of Guarantee
			2021	2020	2019	
Krung Thai Bank Pcl.	O/D	30.00	-	-	-	None
Government Savings	O/D	30.00	-	-	-	None
Krung Thai Bank Pcl.	P/N	260.00	-	-	-	None
Krung Thai Bank Pcl.	P/N	1,020.00	540.00	-	-	None
Government Savings	P/N	300.00	-	-	-	None
Bank of Ayudhya Pcl.	P/N	160.00	160.00	-	-	None
Total		1,800.00	700.00	-	-	



Major Plans and Projects

Plans and Projects Completed in 2021

1. Acquisition and Installation of AERODROME SIMULATOR system at Don Mueang and Suvarnabhumi Airports and Chiang Mai, Phitsanulok, Udon Thani, Ubon Ratchathani, Suratthani, Phuket, Hat Yai, and Hua Hin Air Traffic Control Centres

(Implementing Years 2019-2021 with investment budget of Baht 322.83 million)

In order to support air traffic controllers in the airport area (AERODROME CONTROL) to train faster and support HUMAN MACHINE INTERFACE (HMI) training to develop air traffic controllers' familiarity with new systems/equipment according to Air Navigation Service Infrastructure Development Project that opened in 2020. And to practice troubleshooting while working in order to reduce problems, limitations, and obstacles that may occur in the actual implementation process, AEROTHAI procured and installed the AERODROME SIMULATOR system for Don Mueang and Suvarnabhumi airports and Chiang Mai, Phitsanulok, Udon Thani, Ubon Ratchathani, Suratthani, Phuket, Hat Yai, and Hua Hin Air Traffic Control Centres, totaling 10 locations. In 2019, an equipment and system supply contract has been signed and the system installation and testing have completed in 2021.

2. Strategic Work to Support ATM Activities under ASEAN Single Aviation Market Establishment Plan and Seamless ASEAN Sky Concept

(Implementing Years 2016-2021)

As the work on ASEAN Single Aviation Market (ASAM) and Air Traffic Management (ATM) were prioritized as one of the top technical works, AEROTHAI has continuously participated in ASEAN Air Transportation Working Group (ATWG) meetings since 2009 as Thailand delegation's supporting representatives, who have played important roles in considering/proposing/executing in ATWG to support the work under the ASAM Roadmap. In 2018, AEROTHAI together with ASEAN Member States finished developing an ASEAN ATM Master Plan as part of the key activity under the ASEAN Transport Strategic Plan (ATSP) 2016-2025. Since 2018, AEROTHAI has taken proactive actions to support other important activities under ASEAN ATM Master Plan by attending meetings of ASEAN Air Transport Technical Cooperation Sub-Working Group (ATTC), ATM Strategic Planning Group (ATM SPG) and participating in ASEAN collaboration activities such as Enhanced ASEAN Regional Integration Support from the European Union (ARISE Plus) project. AEROTHAI will also send representatives to observe meetings of high-level ASEAN as appropriate and continue to implement and/or support work of the Civil Aviation Authority of Thailand under the ASEAN Air Traffic Management Plan. In 2020, the Plan was revised and changed its name to ASEAN Air Navigation Service (ANS) Master Plan to keep its content and scope up to date with regional and global plans. In this regard, Thailand plays an important role in improving Chapter 3 (Current Situation) and Chapter 5 (Development Programme) of the plan. Consequently, the plan was adopted at the 50th ASEAN Senior Transport Officials Meeting (STOM) Forum and the 16th ASEAN Transport Ministers Meeting (ATM) in November 2020. ASEAN Member States are committed to implementing the initiatives as indicated in the Plan and track AMSs' implementation status twice a year in order to foster the development of the aspired ASEAN Single Aviation Market.



Plans and Projects Being Implemented

1. Develop the Multilateration (MLAT) Systems at Chiang Mai and Phuket Airports

(Implementing Years 2021-2024 with investment budget of Baht 238.24 million)

In order to increase safety in the ground surveillance efficiency, the Company has chosen to implement the Multilateration System (MLAT) at high density regional airports. The MLAT System utilizes new technology to provide surveillance data that includes aircraft and vehicles identification as well as highly accurate positioning to gain ground surveillance on runways, taxiways, and gate areas, as well as an ability to better detect runway incursions.

In 2021, the operational area was reviewed to suit the development plans of the two airports, which have already gained areas from the airports. Currently, the details and technical specifications of the equipment have been completed. It will proceed to procure and sign an equipment supply contract in 2022 and complete the installation/testing of the system in 2024.

2. Acquisition and Installation of Network Equipment to Support Multilateration (MLAT) Systems at Chiang Mai and Phuket Airports

(Implementing Years 2021-2024 with investment budget of Baht 38.40 million)

MLAT system is implemented to provide ground surveillance as required for high density traffic movements at Phuket and Chiang Mai Airports. Such MLAT installation requires an appropriate communication network infrastructure in order to support an efficient air traffic service. Suitable MLAT coverage areas were evaluated in accordance with airport development plans for these 2 Airports. Currently, it is in the process of purchasing a Multilateration (MLAT) systems in order to procure and install a network equipment to support Multilateration (MLAT) systems accordingly. It is expected to be completed in 2024.

3. Acquisition and Installation of Aeronautical Information Management (AIM)

(Implementing Years 2019-2022 with investment budget of Baht 46.75 million)

The Project is implemented to increase the efficiency in Aeronautical Information Management (AIM) from modern technology standards that focus on the use of electronic technology in accordance with Roadmap for the Transition from AIS (aeronautical information services) to AIM by the ICAO. In 2019, the contract has been signed and the installation of the equipment was completed in 2021. It is expected that the system testing will be completed in 2022.

4. Acquisition of Doppler Very High Frequency Omni-directional Range/Distance Measuring Equipment (DVOR/DME) at Lampang, Narathiwat, Phetchabun, Roi Et, Nakhon Si Thammarat, and Surat Thani Airports

(Implementing Years 2020-2023 with investment budget of Baht 147.47 million)

DVOR/DME systems that have exceeded 15 years of usage are showing signs of degraded performance and need for additional emergency corrective maintenance. AEROTHAI needs to acquire new DVOR/DME systems at Lampang, Narathiwat, Phetchabun, Roi Et, Nakhon Si Thammarat, and Surat Thani Airports in order to replace the existing aged systems. In 2018-2019, the procurement process has begun but there was no candidate who met the technical criteria. In the past year, AEROTHAI has been procuring but no company has passed the technical qualification. Currently, a new procurement process has been started. The contract is expected to be signed by 2022 and the installation/testing of the equipment will be completed in 2023.

5. Construction of a New Office Building (AEROTHAI Complex) at Headquarters, Tung Mahamek

(Implementing Years 2020-2025 with investment budget of Baht 1,097.41 million)

Due to the limitation of working space within the headquarters, Tung Mahamek, as well as the Company's future policy to increase the country's competitiveness and capability both in personnel and innovation, the Company has planned to establish an ATM Professional Centre. This place will have spaces, equipment, and systems supporting the development of aviation personnel and research to meet international standards and to solve the Company's problems as well as developing working systems for the future. A new office building at Headquarters is needed to provide additional working space for the Company's staff. When the new Air Traffic Management Centre (ATMC) is in operation, working space has to be suitably allocated and rearranged according to international security standards and the Company's policy. In September 2020, AEROTHAI has procured contractor for the design of AEROTHAI Complex Building at Tung Mahamek Headquarters. The



design work was completed in 2021. In the construction of the building, AEROTHAI has reviewed the operation in accordance with the Company's financial status and the situation of the aviation business, by canceling the investment budget during the review of the investment budget during the year 2022. If the financial situation in the future improves, AEROTHAI will consider implementing this project again.

6. Improve the efficiency of the Aeronautical Surveillance System to support Area and Approach Control Services at Phuket, Surat Thani and Ubon Ratchathani Airports.

(Implementing Years 2019-2022 with investment budget of Baht 144.10 million)

To replace some obsolete equipment and its overall performance is reduced which cannot provide replacement original spare parts therefore affecting maintenance and maintaining the condition that the system can work continuously. AEROTHAI needs to supply some equipment to replace and improve the efficiency and safety of the Secondary Surveillance Radar (SSR) system at the SSR station of Phuket, Surat Thani, and Ubon Ratchathani Airports.

In the year 2020-2021, the contract has been signed and the replacement of some equipment has been completed at all 3 SSR stations. And the system testing at Ubon Ratchathani airport completed. It is expected to complete the system testing at the SSR station at Phuket and Surat Thani Airports in 2022.

Important Investment Projects for the Next 3 Years

1. Construction of the second Air Traffic Management Centre

(Implementing Years 2021-2027 with investment budget of Baht - million)

According to the Business Continuity Management (BCM) policy by the government is to enable the organization to operate its business continuously when affected by risks or threats from inside and outside the company. AEROTHAI, an Air Navigation Service of Thailand, recognizes the importance and necessity of investing in systems/equipment for the air traffic control service with safety and efficiency even in times of threat or crisis. Therefore, AEROTHAI needs to consider establishing a secondary air traffic management facility independent of the current air traffic management facility under the infrastructure Air Navigation Service to be the second air traffic management center consisting of:

1. Bangkok Area Control and Bangkok Approach Control
2. Bangkok Approach
3. Terminal Air Traffic Control at Suvarnabhumi and Don Mueang airports.

In 2021, it is in the process of reviewing the feasibility and cost-effectiveness studies of the Construction of the second Air Traffic Management Centre to be in line with the current environment. It is expected to produce the report on the results of the feasibility and cost-effectiveness of the project's investment by early 2022 and to complete the project in 2027.

2. The Air navigation services at U-Tapao Airport

(Implementing Years 2020-2026 with investment budget of Baht 1,256.00 million)

According to the Cabinet approved the Development Project of U-Tapao Airport and Eastern Aviation City on October 30, 2018 (the 8th/2018), to develop U-Tapao airport to be the third major commercial international airport in Bangkok. AEROTHAI has been assigned as an Air Navigation Service Unit at U-Tapao Airport. Therefore, AEROTHAI has to carry out a project to prepare air navigation services at U-Tapao Airport aiming to open-air navigation and related services in 2025. AEROTHAI is in the process of reviewing a project details preparation for air navigation services at U-Tapao Airport to present the Board of Directors, the Ministry of Transport and Office of the National Economic and Social Development Council in 2022 then present the Cabinet for budget approval the project.



Important Role in the Global, Regional Forum and others

Roles of Aeronautical Radio of Thailand (AEROTHAI)

Among International Forum – Regional and Other Annual Events in 2021.

1. Thales User Group (TUG) 2021 Meeting or Thales Better Skies Together Symposium
2. The Signing of Memorandum of Understandings (MoUs)

1. Thales User Group (TUG) 2021 Meeting

AEROTHAI has joined Thales in co-hosting the Thales User Group (TUG) 2021 Meeting or, which is later named, Thales Better Skies Together Symposium. Due to COVID-19 restrictions, it was held virtually on 10th June 2021. Mr. Somnuk Rongthong, AEROTHAI then President was invited to give his opening remarks.

Progress/Achievements

AEROTHAI was given the world-stage opportunity to present the company's Thailand Modernization CNS/ATM Systems: TMCS project. A presentation was given on the overall TMCS operations which aim to increase capacity in order to support more flights, improve air navigation service efficiency and safety, including increasing air navigation service systems with competitive capacity based on current global standards and changes in aviation technology.

2. Signing Memorandum of Agreement between the Royal Thai Navy and AEROTHAI

The objective of this Memorandum of Agreement (MOA) is to promote, support and create mutual benefits between the Royal Thai Navy and AEROTHAI in the implementation of U-Tapao International Airport and Eastern Airport City Development Projects in order to achieve successfully. This MOA is effective from 2021 to 2024 or until the opening of U-Tapao International Airport.



Admiral Chatchai Sriworakan, Commander-in-Chief of the Royal Thai Navy and Mr. Tinnagorn Choowong, Acting President of AEROTHAI signed the Memorandum of Agreement on 28 September 2021 at Royal Thai Navy Headquarters.

Company Operating Performance



Air Navigation Services

Air Traffic Service within Bangkok FIR

Traffic Movement (Fiscal Year)	2020		2021		Increase (+) Decrease (-)
	Total	Average per day	Total	Average per day	
Type of Flight					
Domestic	252,760	691	67,063	184	(74)
International	301,708	824	210,705	577	(30)
Overfly	62,437	171	30,288	83	(52)
Type of Flight					
Schedule	47,8612	1,321	201,372	552	(58)
Non-Schedule	20,464	56	19,623	54	(4)
Private	53,352	146	35,089	96	(34)
Military	41,747	114	36,777	101	(12)
Others	17,730	48	15,195	42	(14)
Total	616,905	1,686	308,056	844	(50)

Traffic volume in Bangkok FIR in 2021 totaled at 308,056 flights, decrease of 50% from the previous year, which is decrease of 308,849 flights, equivalent to an average of 846 flights per day.

ปริมาณเที่ยวบินขึ้น/ลง ณ สนามบิน (ที่มีปริมาณเที่ยวบินเฉลี่ยต่อวันมากที่สุด 4 อันดับแรก)

No. of departure/ arrival flights at Airport	2020		2021		Increase/Decrease	
	Total	Average per day	Total	Average per day	+(-)	%
Chiang Mai	51,159	140	24,867	68	(26,292)	(51)
Phuket	60,501	165	19,096	52	(41,405)	(68)
Hat Yai	19,945	54	15,190	42	(4,755)	(24)
Phitsanulok	14,988	41	13,514	37	(1,474)	(10)
Nakhon Si Thammarat	15,131	41	13,472	37	(1,659)	(11)
Udon Thani	17,252	47	11,308	31	(5,944)	(34)
Surat Thani	13,625	37	9,551	26	(4,074)	(30)
Khon Kaen	14,464	40	8,903	24	(5,561)	(38)
Ubon Ratchathani	11,313	31	8,264	23	(3,049)	(27)
Chiang Rai	13,765	38	8,037	22	(5,728)	(42)
Hua Hin	17,067	47	7,951	22	(9,116)	(53)
U-Tapao	15,308	42	6,746	18	(8,562)	(56)

No. of departure/ arrival flights at Airport	2020		2021		Increase/Decrease	
	Total	Average per day	Total	Average per day	+[-]	%
Sukhothai	1,925	5	6,114	17	4,189	218
Chumphon	7,803	21	5,851	16	(1,952)	(25)
Krabi	13,541	37	5,634	15	(7,907)	(58)
Samui	15,668	43	5,029	14	(10,639)	(68)
Nakhon Ratchasima	8,630	24	4,628	13	(4,002)	(46)
Roi Et	4,685	13	3,815	10	(870)	(19)
Buriram	5,708	16	3,144	9	(2,564)	(45)
Trang	3,976	11	2,679	7	(1,297)	(33)
Nan	2,372	6	2,674	7	302	13
Lampang	3,767	10	2,525	7	(1,242)	(33)
Sakon Nakhon	4,875	13	2,329	6	(2,546)	(52)
Nakhon Phanom	5,779	16	2,128	6	(3,651)	(63)
Narathiwat	2,304	6	1,711	5	(593)	(26)
Loei	2,154	6	1,596	4	(558)	(26)
Pattani	1,481	4	1,407	4	(74)	(5)
Ranong	1,913	5	1,024	3	(889)	(46)
Mae Sot	2,438	7	899	2	(1,539)	(63)
Phrae	1,205	3	889	2	(316)	(26)
Surin	1,146	3	756	2	(390)	(34)
Tak	709	2	749	2	40	6
Mae Hong Son	660	2	426	1	(234)	(35)
Trat	1,400	4	402	1	(998)	(71)
Phetchabun	423	1	160	0	(263)	(62)

Note: The data is sorted by the highest number of flights to the lowest number of flights for the fiscal year 2021.



Number of Approach Control Service

Sectors	No. of flights (monthly)											
	Oct 2020	Nov	Dec	Jan 2021	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
CTR	1,051	1,117	1,594	695	608	1,073	892	259	300	128	27	239
NAN	265	371	648	278	129	353	294	62	90	46	20	45
PAE	106	120	121	85	50	85	80	35	54	47	96	221
PCB	81	66	70	36	35	57	13	28	18	36	25	27
CTR SEC	1,503	1,674	2,433	1,094	822	1,568	1,279	384	462	257	168	532
BRM	343	306	468	222	273	479	286	173	245	218	156	214
NKR	258	140	213	268	511	596	136	93	384	266	57	300
ROT	272	227	420	313	246	371	273	185	167	133	204	273
UBL	953	779	1,233	644	534	953	822	353	455	274	150	337
UBL SEC	1,826	1,452	2,334	1,447	1,564	2,399	1,517	804	1,251	891	567	1,124
CPN	496	465	685	217	867	997	305	395	393	166	47	61
SMU	687	481	776	383	375	440	671	128	149	223	163	377
STN	1,109	877	1,431	608	688	1,192	905	380	498	327	247	390
NKS	1,666	1,523	2,170	1,031	992	1,645	1,326	625	669	599	486	678
TRT	152	224	338	159	227	361	248	142	125	111	7	149
SMU SEC	4,110	3,570	5,400	2,398	3,149	4,635	3,455	1,670	1,834	1,426	950	1,655
KKN	1,123	937	1,367	661	603	1,076	843	308	479	388	170	488
LOY	198	226	349	188	76	173	162	55	46	51	21	49
NKP	140	68	147	65	90	85	58	17	10	18	6	36
SKN	509	393	504	246	246	434	363	116	132	116	50	147
UDN	1,430	1,244	1,821	891	825	1,192	1,091	410	483	297	282	423
KKN SEC	3,400	2,868	4,188	2,051	1,840	2,960	2,517	906	1,150	870	529	1,143
Total	10,839	9,564	14,355	6,990	7,375	11,562	8,768	3,764	4,697	3,444	2,214	4,454

Number of flights in each responsible area for each month is in accordance with the number of flights in overall BKK FIR based on the impact of COVID-19 outbreak.





Number of Area Control Service

Sectors	Capacity to Support per Hour	No. of flights (hour)											
		Oct 2020	Nov	Dec	Jan 2021	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
6N	38	17	19	19	16	16	18	18	14	18	16	14	17
3N	38	26	29	35	27	15	21	25	13	15	10	8	11
4N	33	8	10	10	11	9	10	10	12	13	9	11	8
2N	42	14	16	13	12	9	9	11	7	7	5	6	7
1N	48	26	24	28	21	15	18	23	9	14	9	7	12
5N	45	14	23	15	14	12	16	16	15	13	12	13	16
1S	43	32	34	36	32	25	29	35	14	17	14	10	15
2S	48	28	29	33	30	22	25	33	14	17	14	7	13
5S	38	9	9	9	9	9	10	10	9	10	9	9	11
3S	48	20	22	27	20	16	18	23	9	11	11	6	8
4S	30	6	5	6	5	6	4	4	4	4	6	5	4
6S	48	19	18	21	18	16	19	17	10	11	10	8	14

Due to the COVID-19 pandemic, the highest number of flights per hour for each Sector in the fiscal year 2021 was lower than the capacity to support per hour for all Sectors.

Air Traffic Flow Management Service (ATFM Service)

Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU) provides Air Traffic Flow Management (ATFM) service for domestic and international flights operating into constraint/congested airports and airspace in Thailand and the Distributed Multi-Nodal ATFM Network (Southeast Asia, Southern China, Hong Kong and Macau).

In addition, Bangkok ATFMU provides ATFM service on behalf of Air Navigation Service Providers (ANSPs) involved for all flights planning to enter the Afghanistan airspace westbound during the busy night time period from South/Southeast Asia to Europe or from South Asia to North America using the Bay of Bengal Cooperative ATFM System (BOBCAT). ATFM service is provided using systems developed internally by AEROTHAI, with operations reported to ICAO Asia-Pacific ATFM Steering Group.



From the spread of the COVID-19 epidemic all over the world. The need for ATFM measures has decreased, but the need for exchanging the air traffic situation (ATM / ATFM Status Update) has increased due to measures in the COVID-19 situation and the continually changing situation. ATM / ATFM Status Updates are compiled every two weeks for the ICAO to be published on the website relating to measures in the COVID-19 pandemic.





Aeronautical Communication Services

1. AEROTHAI provides aeronautical fixed services with automatic message switching capability for the exchange of messages among domestic and international aeronautical communication centres. The service is available 24 hours a day 7 days a week.

Bangkok Aeronautical Communication Centre is the main Aeronautical Communication Centre in Asia/Pacific Region for receiving, transmitting, and distributing aeronautical messages to all parties involved in Aeronautical Fixed Telecommunication Network (AFTN) and/or Aeronautical Telecommunication Network (ATN) followed ICAO Annex 10 Volume II

2. The international circuits are directly connected through submarine cables, satellite and internet (through VPN service). Presently, AEROTHAI operates with direct circuit connections with 12 international aeronautical communication centres as follows:

Item	Circuit	Network	Signaling speed
1	Bangkok/Singapore	Submarine cable	64 Kbps
2	Bangkok/Hong Kong	Submarine cable	64 Kbps
3	Bangkok/Mumbai	Submarine cable	64 Kbps
4	Bangkok/Rome	Submarine cable	64 Kbps
5	Bangkok/Beijing	Submarine cable	2 Kbps
6	Bangkok/Kuala Lumpur	Satellite	32 Kbps
7	Bangkok/Phnom Penh	Satellite	64 Kbps
8	Bangkok/Yangon	Satellite	64 Kbps
9	Bangkok/Ho Chi Minh	Satellite	19.2 Kbps
10	Bangkok/Dhaka	Satellite	32 Kbps
11	Bangkok/Vientiane	Satellite	32 Kbps
12	Bangkok/Bhutan	Internet VPN	-

3. In 2021, Traffic volume 182,803,088 messages were handled by Bangkok Aeronautical Communication Centre. A total decrease of 42,559,820 messages or 18.88% in comparison to the last fiscal year.



Aeronautical Information Services (AIS)

AEROTHAI is responsible for the flow of information necessary for safety, regularity and the efficiency of international air navigation to entities involved in that information. This responsibility includes providing Notices to Airmen (NOTAM) and En-route Charts as well as other related aeronautical information to aircraft flying on domestic and international routes.

1. Notice to Airmen (NOTAM)
 - 1.1 NOTAMs are issued by AEROTHAI as the International NOTAM Office and are distributed through AFTN and/or ATN network according to ICAO Annex 15. NOTAM database provides NOTAM information through automatic request and reply service.
 - 1.2 During the fiscal year 2021, AEROTHAI processed a total of 13,675 NOTAMs which is a decrease of 2,790 NOTAMs or 16.95 % in comparison to the last Fiscal Year.
2. Flight Plan and Air Traffic Service Messages
 - 2.1 AEROTHAI main responsibility includes the management of flight plan and air traffic service messages according to ICAO Document 4444
 - 2.2 During the fiscal year 2021, AEROTHAI processed a total of 568,981 messages which is a decrease of 920,540 messages or 61.80 % in comparison to the last Fiscal Year.
3. Operational Meteorological (OPMET) Data Services

AEROTHAI is a designated Regional OPMET Centre (ROC) as well as Regional OPMET Data Bank (RODB) according to ICAO Annex 3 and ROBEX Handbook.



Business Related Service

The change of doing business under the pandemic of COVID-19 leads to the dramatic growth of the digital economy. Digital media on the internet affects customer behavior therefore, the new normal of doing business needs to utilize digital technology. For example, publishing the updated news/activities, increasing the marketing channels, and creating the easy to read information, such as an infographic or motion graphics/ video clip, are the aspects of catching up the customer's interest via digital media in order that the customer is able to get the information of product/ service. Besides the digital media, innovation has been applied to keep up with the current and seek business opportunities. Office of Business Development is a business unit providing the related services concerning the air navigation service of AEROTHAI. It is responsible for providing the design, development, manufacture, maintenance, training, and consultancy of air navigation and related services.

For the fiscal year of 2021, AEROTHAI has operated business, not limited to the previous aspect, under the new normal circumstance by emphasizing the expansion of the market, increasing the potential of technology, focusing on digital marketing as well as using the easy-to-access and easy-to-understand content to attract the customers/ users' interest and bring them to AEROTHAI. AEROTHAI has published the products/ services information, especially Automatic Portable Signal Light Gun (APSLG), via the AEROTHAI website. More than 35 countries, such as UK, USA, Spain, Canada, Japan, Kenya, and Zimbabwe, are interested in this product. Finally, AEROTHAI has delivered the 10 sets of APSLG to Shear Gold Ltd., the UK in August 2021. This year, AEROTHAI has also developed applications, such as Job Tracking and Telematics & Fleet Management System, operated via Digital Trunked Radio System, to be used inside the airports.

More than two decades of providing the related services of air navigation service, the Office of Business Development has supported the AEROTHAI's main mission in being the digital air navigation service provider, the cooperation between AEROTHAI and Collins Aerospace Inc., USA and Government policy as well as the pandemic of COVID-19. AEROTHAI has initiated many projects followed the business strategy to continuously seek the opportunity in the aviation, energy, and fuel, and related business as follow:

1. Airport Solutions

According to the Eastern Economic Area Development Plan of the Thai Government to expand the U-Tapao International Airport to be the 3rd Commercial Airport mentioned in the air transport plan, the Government has jointly invested with the private sector to develop and operate this airport for 60 years. Also, the Department of Airports has a plan to transform domestic airports into digital airports to support the increase of passengers and reduce the operating cost by using digital technology. Moreover, the cooperation between AEROTHAI and Collins Aerospace Inc. focuses on developing the new service to keep up with the trend of being a digital airline. AEROTHAI has the ability to provide real-time information, such as real-time flight data. Recently, the data linkage among aviation organizations has some difficulties to transfer the data among their databases, especially the Airport Operation Database: AODB and Flight Data Processing Data: FDP Data. The limitations are the data hacking protection and the data linking complexity even they use the similar format.

AEROTHAI has foreseen the business opportunity in providing the Seamless Data Integration. Hence, it has developed information system and AODB to connect with FDP Database or Air Traffic Management System (ATM). This system will engender the digital technology airport in the region and shall be operated at U-Tapao International Airport and domestic airports which is for facilitating the passengers and airport operators. AEROTHAI, collaborating with Collins Aerospace to develop this service, is ready to promote the service and plan to penetrate the market outside Thailand.

2. Advance Passenger Processing system

Currently, AEROTHAI with Collins Aerospace Inc., which developed the Advance Passenger Processing system: APPS in USA, has offered the APPS service for using at airports and related organizations to pre-screening the passenger travelling in/out Thailand. In order to enhance the national security, this system is able to screen out the passenger who may affect the national security before departing from the originated country. Also, it will identify and notify those who involve in the enforcement or execution and shall be prosecuted in Thailand prior their arrival.



3. Digital Data Center and aviation services in Thailand

AEROTHAI has set the Thai SkyHub project to increase the value-added of its aviation data/ information. It also provides that information to many groups of users. This project objective is to transfer the data/ information to aviation or related business, such as the tourist and transportation industries. The data/ information transferring, which developed via cloud services, is not only for airports use, but also leading AEROTHAI to be the aviation data center called “Marketplace Hub” as well as the information centre for the public.

4. Fit to Fly

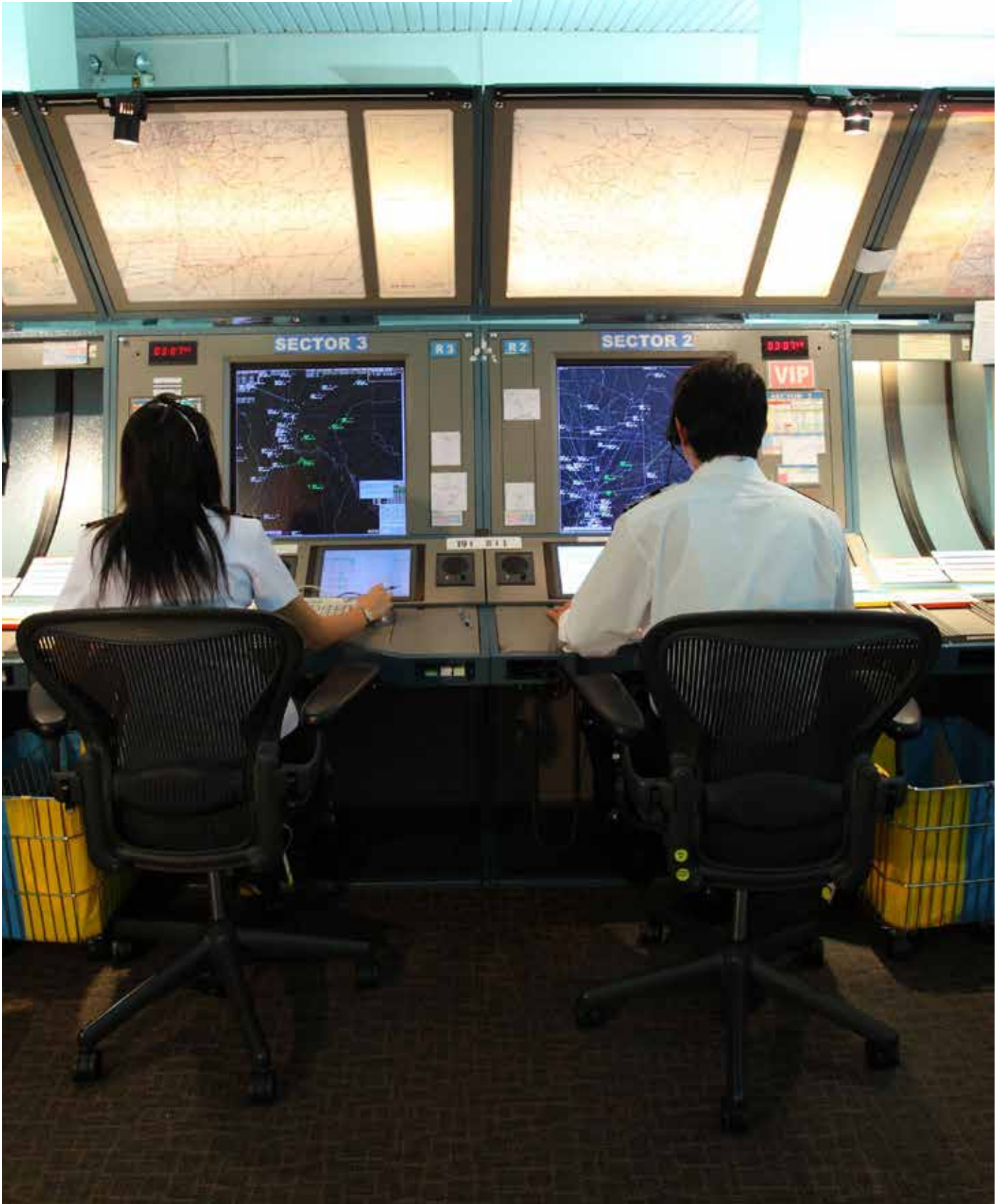
During the COVID-19 pandemic, AEROTHAI and Collins Aerospace Inc., USA. have arranged the workshop to figure out the solutions for airlines and the aviation industry in various countries to able to operate their businesses. Later, we came up with the idea of developing a system linking the health care database that records the COVID-19 laboratory test results with the airline departure control system: DCS. This system is for screening passengers’ health before boarding the aircraft, decreasing the time for boarding pass process, and reducing the touch points during the traveling period.

5. Cloud Simulator

The spread of the COVID-19 virus has forced people to reduce congestion in confined areas and affects AEROTHAI air traffic controllers’ training courses, especially using the RADAR simulator: 360-degree aerodrome simulator. Training with the simulator in the limited area has caused the risk of contaminating the virus. To set up the teleconference, which is the way to prevent the virus contamination in a new normal style, AEROTHAI has designed and developed the Cloud Simulator (Cloud Sim) to improve the training course relating to the air navigation service. The online or cloud training system has the potential to penetrate the ANSP market throughout the world. The Cloud Simulator service, the new dimension of air traffic controllers’ training services, can be charged by the frequency of access. This service is promoted easily via digital marketing platforms, and much easier to provide to the users because the Cloud Simulator has less investment and maintenance cost than the simulator system.



Human Resource Management



Human Resource Management and Quality of Work Life

In the year of 2021, AEROTHAI faced challenges from all directions. While AEROTHAI needed to improve our operation to be in compliance with ICAO recommendations and the Civil Aviation Authority of Thailand (CAAT) regulations, we also had to cope with COVID-19 negative effects mainly from a sudden drop in our flight volume, 'New Normal' way of work-life, technology disruption during our work-from-home, and the growth in our employee costs.

AEROTHAI, therefore, had to adjust to preserve our sustainable growth in the long run. The Company continued to place high emphasis on strengthening our human capital's capabilities, so that our staff will have high agility in adapting themselves to work at their best in all conditions for AEROTHAI's benefits.



In attempt to upgrade our human management system according to State Enterprise Assessment Model (SE-AM), AEROTHAI needed to transform our working processes and enable our HR staff to be proactive HR professionals. This year we developed AEROTHAI HR Master Plan for the year of 2022-2026, which helps indicate a clear direction for our HR units going forward. The HR vision is to "Enhance our staff" capabilities to be professional in efficiently serving our stakeholders' needs as well as driving our organization to become the first-choice employer for those ethical talents who are interested in providing highest quality of air navigation services in a sustainable manner. AEROTHAI HR Master Plan for the year of 2022-2026 is designed to be closely integrated with the Company's Enterprise Plan and other important master plans, including Corporate Governance, Digital, Knowledge Management, Innovation Management and Risk-Management & Internal Control.

In addition, AEROTHAI developed the Human Resource Action Plan for the Year 2022, consisting of all the necessary details for our 10 HR Strategic Projects, which will be executed in 2022. In this plan, clear objectives, key performance indicators, outputs, outcomes, timeframe, and responsible parties are stated for each of the project. This will help in the HR monitoring and evaluation processes to ensure all the important projects are carried out as planned.

AEROTHAI reached several critical human capital management milestones in 2021 as follows: 1) we designed our 5-year manpower plan (2022-2024) with the focus on increasing efficiency in managing our staff costs, short-term, medium-term and long-term as well as ensuring the knowledge/ skills transfer from retired staff to current workforce; 2) we conducted the company-wide workshop with each of our 63 department director to discuss on how to make proper changes to job descriptions, department structures and manpower planning, so that they will be aligned with our current situation, present responsibilities, aviation development trends, with this attempt, we aim to further increase our work efficiency, controlling our staff costs to be at appropriate level and helping AEROTHAI to strive forward to sustainability; 3) AEROTHAI released the Leave Without Pay announcement, which promotes another way for our staff to indicate their attention to help the Company financially during the cash flow crisis due to the widespread of Covid-19. Over the past few years, AEROTHAI had also taken into the consideration of Air Navigation Services Standards and Human Factors while carrying out our HR initiatives to ensure continuous improvements, especially in those safety-related tasks, such as manpower planning and selection processes for our air traffic controllers.





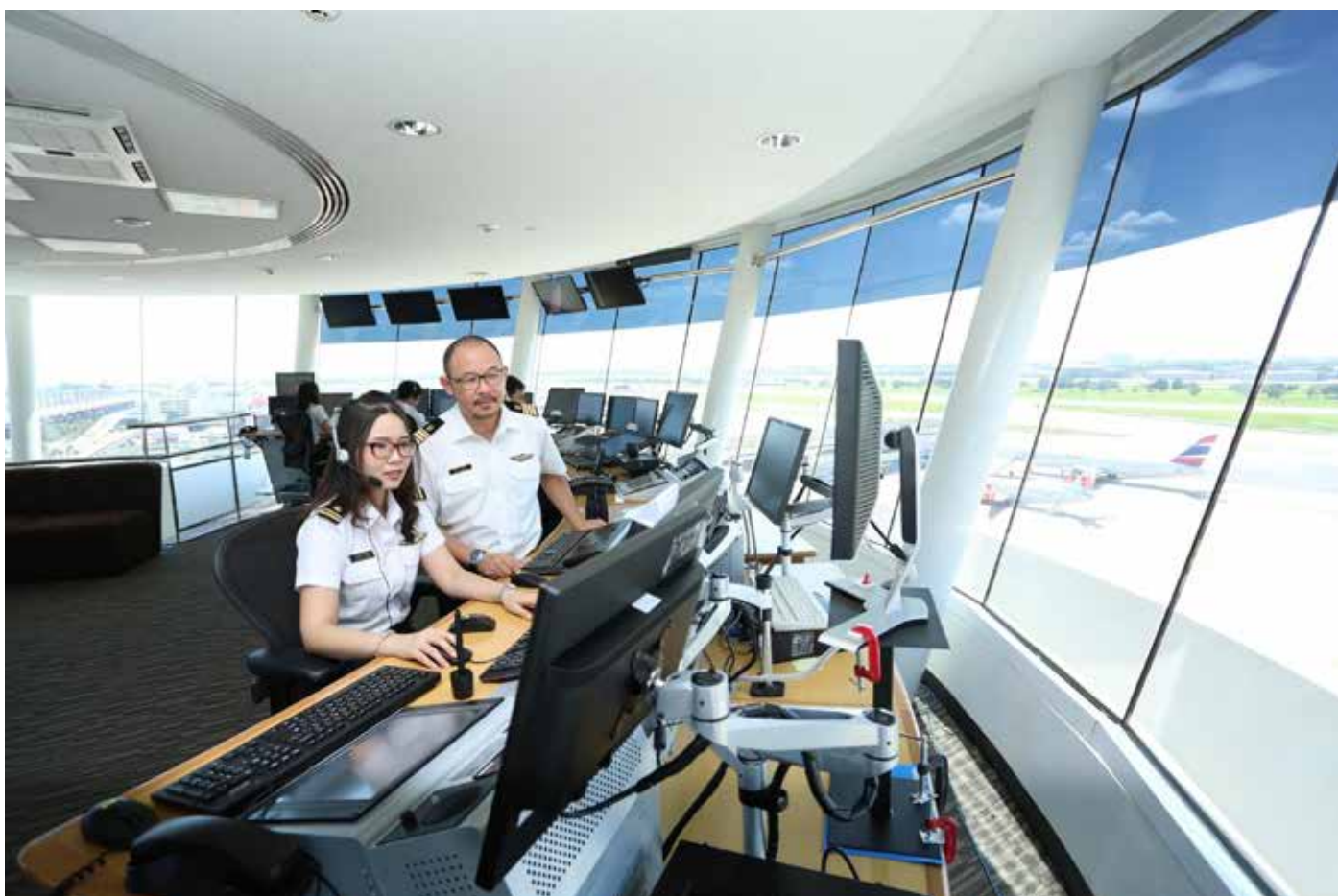
In terms of the quality of life of our people, due to COVID-19, AEROTHAI had to cut cost company-wide and reduced most of activities that required social gatherings. Nevertheless, the Company continued to highly emphasize on the importance of our staff's quality of life as follows: 1) AEROTHAI planned to not increase our manpower, by not recruiting any more new staff and not substituting staff who retired during 2021-2022; 2) the Company encouraged our staff to exercise regularly for their well-being, through the free-of-cost 'MOVE ON DIARY' program, in which participants can keep online recording of their walking/ running statistics and benchmark themselves with others in the 90-days period.

Learning development and promotion

AEROTHAI has managed in learning development and promoting for its personnel in terms of air navigation services, engineering and support, to provide personnel with knowledge and competences according to the standards, to develop the potential of experts in professional field as required by the Company, and to develop and promote the organization to become the learning and innovative organization. AEROTHAI operated its business in accordance with the Enterprise Plan for the years 2021 – 2025 in order to achieve its Vision “A Sustainable Quality Excellent Air Navigation Service Provider”, two of four strategies that are important to human capital development are Strategy No. 2: Building professional personnel by adjusting the AEROTHAI's human capital development system to enhance the quality of work in a concrete and standardized manner; and Strategy No. 3: Development towards a high-performance organization with plans to promote/develop knowledge management (KM), research and innovation, and development plans for applying knowledge and innovation works. Followings are summary of operations:

Human Capital Development

On designing the learning system and human resource development, AEROTHAI has studied relevant inputs such as important work plans of AEROTHAI/CAAT's regulations/government policies, etc. and the target groups are classified into 3 groups including: leaders, employees, and workers. The guideline on human resource development has been also established in line with the Next Generation of Aviation Professionals (NGAP), which studies the development of global air traffic operations technology and technological changes. In addition, the guideline for personnel development has been studied to be consistent with their abilities (Competency-based Training) of ICAO. AEROTHAI has established the guideline for human resource development in the form of CBT&A, for both engineering operations and supports, and in compliance with the development guideline based on 70:20:10 Learning Model, the development evaluation process consists of Classroom Training, Virtual Training, Coach & Mentor, and assignments. This is to ensure that the executives and employees are ready to perform their tasks assigned based on their current and future position levels, and also ready to be appointed for any position in a higher level.



AEROTHAI’s personnel development is divided into 2 areas: leadership development and employee development as following details:

1. Leadership Development: 3 levels

Development Level	Position Level	External Training	In-house Training	How to develop in-house training courses
Top Leader	Executive Vice President/equivalent	-	1. “People Management and changes under TMCS system.” 2. “Communication”	Experience Sharing / internal science
	Vice President/ equivalent			
Middle Leader	Division Director/ equivalent	Air War College (AWC)’s Courses	3. “True Leader based On True Story”	
Junior Leader	Sub-division/equivalent	-	4. How to write a letter	

2. Employee Development: 3 target groups consisting of operation, engineering and support

2.1 Development of Operational Personnel

The Air Traffic Operations Personnel Development Group has reviewed the inputs affecting the personnel development in previous year and in 2021, both internally and externally, such as ICAO Annex, ICAO Documents and the notifications of the Civil Aviation Authority of Thailand. It was found that it was related to the Notification of the Civil Aviation Board regarding the National Airspaces and Air Navigation Master Plan, B.E. 2563 (2020), Regulations of Civil Aviation Authority of Thailand on the Manual of Air Navigation Services for Air Traffic Management, in terms of Airspace Management, B.E. 2563 (2020), Regulations of the Civil Aviation Authority of Thailand on the Manual of Air Navigation Service Standard for Aviation Meteorology B.E. 2563 (2020), Regulations of the Civil Aviation Authority of Thailand on the Appointment of Assessors, B.E. 2563 (2020), Regulations of the Civil Aviation Authority of Thailand on the Training Guidelines of Aviation Training Institutes during the COVID-19 Pandemic Situation B.E. 2564 (2021), and Notification of the Civil Aviation Authority of Thailand regarding the Exemption of Measures or Actions for Supervision on Licensees in the Situation of COVID-19, B.E. 2564 (2021).

In addition to applying the above regulations and announcements as information for planning the development of operational personnel, many systems have been improved and developed in accordance with the rules of the regulators, and keep up with various situations, especially facing the COVID-19 outbreak. Since 2020 until present, the method of personnel training/development has been adjusted through information technology system in order to maintain the quality and standards for the development of operational personnel and in line with the direction of CAAT, the results are as follows:

Preparation/Revision of Handbooks/Courses/ Renewal with CAAT in 2021

1. Preparation of ATS Instructor Training (Classroom Instructor) courses, revision and improvement of courses based on CAAT's recommendations
2. Preparation of Working Manual for the Approved Training Organization (ATO) certification.
3. Preparation of ATCOs Personnel Licensing Guidelines to apply to licensees such as air traffic controllers, on-the-Job Training Instructor (OJTI), Assessor, Instructor in accordance with CAAT guidelines.
4. Improvement of ATC Training manual and Unit Training Plan (UTP) in all 11 centers to be in line with laws, rules and regulations
5. Preparation of Aviation English E-learning courses through the Learning Management Systems (LMS) Phrase 1
6. Renewal of Air Traffic Control Training Machines in 10 Areas

The above-mentioned proceedings are guidelines for AEROTHAI to aim on and develop operational personnel with directions and leading to the personnel development on air navigation services according to the standards (Manual of Standards) specified by CAAT. AEROTHAI's five training courses have been approved by CAAT as follows:

Training Course	No. of Trainees (persons)
1. Aerodrome Control Rating	92
2. Approach Control Procedural Rating	15
3. Approach Control Surveillance Rating	15
4. Area Control Procedural Rating	9
5. Area Control Surveillance Rating	9



The operation personnel passing this year's course must participate in the process of personnel development to be competent in air traffic control standards (Manual of Standards). The target of those who have passed the training and approved of license (approved of internal standards and CAAT until getting rating) accounted for 100% of all trainees. The details for the past 3 years (2019-2021) could be summarized as follows:

Type/Year	2019	2020	2021
Air Traffic Control Center in Regional Airports	13	18	14
Air Traffic Control Center for Bangkok Routes	15	17	16
Air Traffic Control Center in Bangkok Airport	-	14	40
Number of employees taking examinations	28	49	70
Number of employees approved	28	49	70
Percentage of Achievement	100	100	100

The situation of COVID-19 outbreak have changed the personnel development policies and tools from leaning in classroom to leaning from information systems. AEROTHAI has applied online learning system, and also applied the LMS (Learning Machine System) to support the development of operational personnel, so that they are able to maintain the operational standards of air traffic controllers of all units in accordance with the newly revised edition of Unit Training Plan (UTP) Manual. The training was organized as follows:

Initial Training

Course	No. of Trainees (persons)
1. Air Traffic Control Basic	62

Unit Training

Course/Activity	No. of Trainees (persons)
1. Aviation English Class	219
2. General English Class for BA	35
3. Conversation Class	56
4. Grammar Focus Class	37
5. Test Preparation Class	9

Continuation Training

Course	No. of Trainees (persons)
1. Competency Based Review Course (Classroom)	1,129

In addition, the personnel of aviation security has been developed in accordance with the notifications of CAAT regarding the National Civil Aviation Security Training Programme (NCASTP). After our personnel passed and approved of trainer license (Specialized Training for ATS) in previous year, 3 more personnel licensed, therefore we have totally 19 licensees from previously 16 licensees. Therefore, we could manage the knowledge refreshing for operational personnel nationwide this year as follows:



Course	No. of Trainees (persons)
1. Specialized Training	
• Air Traffic Control Center for Bangkok Routes	330
• Air Traffic Control Center in Bangkok Airport	355
• Air Traffic Control Center in Regional Airports	85
• 8 Regional Air Traffic Control Centres	339

In addition to updating the manual, regulations and development of personnel mentioned above, AEROTHAI has also undertaken the application for the Approved Training Organization (ATO) certification in order to establish the standards and quality of the operational personnel development, which CAAT is currently in the audit process with air traffic control centers to certify the Approved Training Organization (ATO). In this year, the audits on air traffic controllers training standards and quality were carried out, both internally and externally, as follows:

Quality Audits	
1. External Audit - CAAT	
1) Air Traffic Control Training Assessment	- Air Traffic Control Centre for Bangkok Routes - Air Traffic Control Centre in Regional Airports - Air Traffic Control Centre in Bangkok Airport
2) Audit on the requirements for Approved Training Organization (ATO) certification.	- Air Traffic Control Centre for Bangkok Routes
2. Internal Audit -- Quality Assurance Team	
3) Audit on the requirements for Approved Training Organization (ATO) certification.	- Air Traffic Control Centre for Bangkok Routes - Hua Hin Air Traffic Control Centre

2.2 Development of Engineering Personnel

Since in 2021, the outbreak of COVID-19 has been continued around the world and for complying with the Manual of Standards Communication, Navigation and Surveillance of the CAAT, Issue 03, Revision 0, 18 September, 2020, and the guideline for the development of engineering personnel as prescribed by the International Civil Aviation Organization in the ICAO Doc 7192 Part E2, AEROTHAI has established a process of assessment on the competence and issued a certificate for CNS/ATM engineering staff or ATSEP staff by applying the Learning Management System (LMS) and the Zoom Conference Application system in training and competency assessing the surveillance engineer. At present, there are 449 staff passing such competency assessment.

2.3 Development of Support Personnel

AEROTHAI has a guideline for personnel development in both Employee Core Competency and Functional Competency by analyzing the core competencies required to conduct businesses, at present and in the future, accommodating the changes in digital technology. The Company has applied the concept of Value Chain as a tool for management, established the procedures and operating processes for all functions to drive the Company's operations. Employees are required to have appropriate knowledge and skills to perform their tasks based on position level. Therefore, the standard courses have been established to provide employees with a clearer framework for development and encourage them to further grow in their career path.

However, the new wave of COVID-19 epidemic situation has caused AEROTHAI experiencing a severe financial crisis; therefore, the cost control measure in Phase 2 has been taken by reducing the budget of all training and development that do not affect the safety of air navigation services and maintaining only important courses that



comply with rules, regulations, standard requirements and policies, and reviewing the development method without costs. AEROTHAI has adopted the human resources development approach using digital technology of Virtual Training and linking employee learning with Knowledge Management that focuses on using experts in each area in the organization as in-house speakers. Therefore, the Core Competency which is the knowledge and specialized skills has been transferred by in-house speakers who could support the development of employees in all groups through knowledge transfer by means of Zoom system with 12 training courses as follows:

No.	Courses	No. of trainees (persons)
1	Orientation for new employees	35
2	How to write AEROTHAI-styled official	45
3	Knowledge and skills in Procurement	116
4	Knowledge and skills in Correspondence Management	2
5	Risk Management and Internal Control	85
6	Quality Management	98
7	Risk Assessment and Internal Control	107
8	Consultation	60
9	Analysis and Determination of Risk Control Measures	75
10	KPI-based Project Management	60
11	Post-training Seminar (for Retirees)	47
12	Successor Development Program	7

In addition, the Company has also developed the digital technology that supports the personnel learning and development system by creating the AEROTHAI Learning Management System (AEROTHAI LMS). At present, there are 107 courses in total.

Promotion of knowledge management

AEROTHAI has applied the knowledge management (KM) tools into the operation. Presently, it follows the State Enterprise Assessment Model (SE-AM) Part 7: Knowledge Management and Innovation, with the objective to develop a work system that creates values for the organization, and establishes the standards and best practices in knowledge management to enable the organization to develop and become the excellent and sustainable organization and create added value for stakeholders.

In 2021, AEROTHAI has prepared the Knowledge Management Master Plan for the years 2021 – 2018, and also established the knowledge management structure including roles and responsibilities that focus on the involvement of personnel at all levels as a framework for the implementation of the Company’s knowledge management process. The results can be summarized as follows:

1. **The knowledge management tools have been applied to develop the organization** such as the lessons learned from the implementation of the Air Navigation Services System (TMCS) Infrastructure Development Project are applied to support the Transition of Hua Hin Air Command Tower, and the knowledge management tools are used as a primary tool for personnel competency development.
2. **Knowledge Management of Executives:** 3 areas including
 - 2.1 Transfer of knowledge and experience regarding “Communication”
 - 2.2 Transfer of knowledge and experience regarding the Management Tools and Management Requirements for Successor Development Program (SDP).
 - 2.3 Transfer of knowledge and experience in the knowledge management operations of functions through KM Success Story Activity.



3. **The important knowledge of 43 functions** are identified and managing based on the process, and the knowledge is stored in the function's website and the Company's KM website.

In addition, AEROTHAI has also organized the communication activities and developed the personnel competency in knowledge management through the Zoom Meeting system, there are 4 projects/courses and 2 activities implemented as follows:

1. The 1st Knowledge Management Seminar for Administration Department to communicate action plans, roles and responsibilities in knowledge management.
2. The 2nd Knowledge Management Seminar for Administration Department and knowledge administrator to create the participation by planning the preparation of knowledge management plans at the organizational level.
3. Training Course on basic knowledge management for newly appointed Knowledge Administrator (KF).
4. Training course on knowledge mapping with Mindmaster program for newly appointed knowledge administrator and knowledge administrator who are interested in.
5. KM Clinic Activity to provide advices and support the knowledge management to achieve specified goals.
6. KM Show and Share Activity to present the results of knowledge management for the year 2021.

Promotion on Innovations

AEROTHAI has continuously prioritized the promotion on innovations in the organization. In 2021, the Innovation Management Master Plan for the years 2021–2025 has been conducted with the main activities to promote creative and innovative ideas, such as online innovation dialogue under the title of D2 Transformation, in which the participants learned the design thinking process and how to use online tools for the benefit of collecting creative ideas and creating prototypes; and finally, there are 4 innovative concepts obtained from this dialogue event for further development, as follows:

1. NE.SE. Online Form
2. DATCO: Data of Air Traffic Control Officer
3. UAV Flight Check for NAVAids
4. GSAD (Ground Situational Awareness Display)

In addition, AEROTHAI also surveyed the pain points and primary solutions from various functions to gather useful creative ideas and prepare preliminary screening criteria, and discussed with relevant functions for further innovation expansion.

AEROTHAI has presented the innovative works selected from in-house contest to join in the National Research Award: Invention Award for the fiscal year 2021, and our 2 works could win the honorary award in Information Technology and Communication Arts from the National Research Council of Thailand:

- 1) Intelligent Departure Enhancement Program (iDEP) at Suvarnabhumi Airport
- 2) Minimal Commands for TopSky-ATC



Information Technology Development

AEROTHAI has developed digital technology by focusing on creating value added to the mission of the organization in terms of supporting Digital technology for air navigation (Communication, Navigation and Surveillance/Air Traffic Management : CNS/ATM), and the development of Digital technology for administrative tasks (Back-Office) by using digital technology corresponding to government policies and practices. Moreover, to support the criterias in State Enterprise Assessment Model (SE-AM) by State Enterprise Office (SEPO) by defining digital policies and the preparation of digital action plans that can lead to concrete practice through various projects/tasks combined with knowledge ability and cooperation in the operation of personnel in all sectors and all relevant levels. As well as set a policy to promote the use of digital technology to set guideline for Aerothai to become a digital organization that provides sustainable air navigation services with the highest quality.

The implementation of Academic Affairs in the area of digital technology development in the year 2021 consists of 7 major topics are as follows :

1. **Digital Governance:** provide for supervision and preparation of standards, guidelines or rules for the use of digital technology in appropriately way. Including the preparation of digital action plans and annual action plans in accordance with the Thailand 4.0, government policy and other relevant laws for example :
 - 1.1 Develop a prototype of the elements of SWIM infrastructure according to the resolution of the APANPIRG meeting.
 - 1.2 Develop a website to support good corporate governance.
 - 1.3 Establish/review the structure and processes of data governance and management of corporate and personal data.
2. **Digital Transformation:** provide the adoption of digital technology to be applied to all parts of the organization for reduce the workload and take advantage of system automation as well as project management and quality management for effective digital technology operations such as :
 - 2.1 Install the Aerodrome Simulator system at Suvarnabhumi Airport, Don Mueang Airport and other 8 regional flight control centers.
 - 2.2 Install an air traffic control system in a remote airport area at Hat Yai Airport.
 - 2.3 Study the guidelines for the arrangement of the aircraft's arrival/departure sequence system (AMAN/DMAN) at international airports.
 - 2.4 Develop an integrated airspace management approach between the THAI-CMAC system and the service system (Bum-Pen system).
 - 2.5 Develop a Multi-FIR ATFM system in Phase 2.
 - 2.6 Set up procedures for ATC Clearance in a digital format (Digital Departure Clearance) at Suvarnabhumi Airport and Don Mueang Airport.
 - 2.7 Develop SWIM-Enabled Application(s) that integrate weather/forecast data to support air traffic mobility management.
 - 2.8 Develop Aviation English E-Learning Curriculum.
 - 2.9 Develop a quality management system throughout the organization which increase the quality of service to stakeholders.
 - 2.10 Develop a complaint management system to improve processes and deal with dissatisfaction systematic complaints.
 - 2.11 Develop a digital customer listening system to manage quality and build engagement.
 - 2.12 Develop an electronic schedule design system (E-Schedule : Electronic Schedule Design).
 - 2.13 Develop information systems to support human resources management (HRIS).
 - 2.14 Develop a system to manage the maintenance of computer equipment and others to support the services provided by the agencies in the Apostolic Administration to be convenient and quick.
 - 2.15 Install a digital archive system for paperless document delivery and support the use of notification signing via portable devices.
 - 2.16 Develop a system for maintenance of engineering work. (E-Maintenance : Electronic Engineering Maintenance)



- 2.17 Management of the operating environment of the application system.
 - 2.18 Develop an electronic personal information management system for air traffic control trainees. (E-Information : Electronic ATC Apprentice Information).
 - 2.19 Develop a system to monitor the situation of business procurement.
 - 2.20 Develop an electronic welfare rights certificate system (E-Welfare rights Certificate).
 - 2.21 Develop a system for transferring funds to outsiders via the Internet of Krung Thai Bank (E-Payment).
 - 2.22 Develop an intelligent car call system.
 - 2.23 Develop Smart Transportation System.
 - 2.24 Develop a management system for regional center housing services.
 - 2.25 Develop a maintenance management system for the building and premises of the Treasury Department.
 - 2.26 Prepare/review the Company's information and communication asset management process.
 - 2.27 Prepare/review Enterprise Architecture with framework/guidelines for applying corporate architecture and digital infrastructure.
 - 2.28 Study on the development of an audit system for accounting records.
 - 2.29 Establish an information system to support financial management.
 - 2.30 Prepare a plan to bring broadband technology to service in conjunction with the Digital Trunked radio communication system under the scope of the telecommunications business license throughout the country.
- 3. Digital Integration:** provide data link Integration Management and a link between all stakeholders to combine the operation in a complete platform such as :
- 3.1 Procurement of an Integrated Flight Information Management System (IFIMS) for the exchange of flight information between Aerothai and Airports of Thailand PCL (AOT).
 - 3.2 Develop guidelines/practices for integrating A-CDM with AFTM.
 - 3.3 Develop air traffic management through the IDEP (Intelligent Departure Enhancement Program) system under the A-CDM concept at Phuket Airport.
 - 3.4 Develop guidelines for integration between ASM, ATFM and A-CDM (ASM/ATFM/A-CDM Integration).
 - 3.5 Develop a system for exchanging weather information on the SWIM (Weather Information Exchange Service) infrastructure.
 - 3.6 Develop an aircraft tracking information exchange service system on the SWIM (Surveillance Information Exchange Service) infrastructure.
 - 3.7 Procurement and installation of a central database service system and a data warehouse system (Master Data Service and Data Warehouse) to manage central data for every work system and support data for decision making.
 - 3.8 Prepare/review plans for integration of data linkage and joint operations between agencies.
 - 3.9 Develop cooperation in managing and connecting air traffic liquidity management with the ATFM Platform system with ANSP in Asian Region.
- 4. Digital Data Governance and Big Data Management:** Arrange for data management and use of Big Data in accordance with the Data Governance and Personal Data Protection framework for the objective of acquisition and use of information by the agency have more accurately, currently, quality, efficiency, and security such as :
- 4.1 Develop a management information system for safety standards.
 - 4.2 Develop information system in IWXXM format, version 3.0.
 - 4.3 Develop an aviation information service system.
 - 4.4 Improve the database system used to store corporate data.
 - 4.5 Create a Search Engine system for the organization.
 - 4.6 Prepare/review important information and information of the organization to be in digital format that include the types of open data which organizations must disclose in duties and responsibilities on digital formats and prepare/review rights.

- 4.7 Review the analysis of costs and expenses of the organization.
- 4.8 Update the Data Set for the TopSky Tower system at Suvarnabhumi Airport on development plan phase 2 and support the Runway 3.
5. **Digital Information and Cyber Security:** Arrange for the management of information security and cyber security in accordance with international standards. In line with the national plan and related laws such as :
 - 5.1 Install Network Infrastructure and Network Security Operation Center for surveillance of threats and attacks through communication network systems.
 - 5.2 Develop additional access control systems at central and regional offices
 - 5.3 Develop a model for the management of electronic licenses of persons and vehicles for accessing specific controlled and controlled areas at central offices.
 - 5.4 Install Dynamic Host Configuration Protocol system (DHCP) for ICT work at Thungmahamek Head Office, Suvarnabhumi Airport, Don Mueang Airport and other 9 regional flight control centers.
 - 5.5 Install ICT Network Security for wired and wireless networks in order to cover the entire corporate office space.
 - 5.6 Develop Code and Security Management System of Source Code.
 - 5.7 Prepare security standards part 10 on procurement, procurement and development of information systems. (ISO/IEC27001) Version 2013.
 - 5.8 Prepare/review guidelines and practices for maintaining information security.
 - 5.9 Prepare/review processes and plans for information security management.
 - 5.10 Prepare/review processes and plans for information security risk management. including the criteria for assessing information security risks.
 - 5.11 Follow up and evaluate the results of the implementation of the policy. Guidelines and practices for maintaining information security.
6. **Digital Continuity Management:** Provide for the development of digital technology infrastructure. To be able to support the operation of the mission continuously by make or improve business continuity plan which including risk management plans and emergency incident management in digital technology and align with the organization's BCM (Business Continuity Management) plan such as :
 - 6.1 Improve the Modern Network Infrastructure for Connecting various systems/equipment at 4 regional flight control centers
 - 6.2 Improve the Network Monitor and Management system.
7. **Digital Resource Optimization Management:** provide manage the use of digital technology resources in terms of both personnel process and technology for maximum benefit Cost-effective and environmentally friendly including developing personnel at all levels to achieve Readiness and being able to use digital technology knowledgeably in accordance with government policies such as :
 - 7.1 Develop/improve computers and peripherals.
 - 7.2 Prepare/review information technology and communication standards and procedures related to digital systems. Including measures to manage the selection of environmentally friendly technology, and mid-price criteria and basic features of corporate computer equipment.
 - 7.3 Prepare/review guidelines for evaluating the effectiveness/cost-effectiveness of applying digital technology to all parts of the organization.
 - 7.4 Procurement of computer equipment to replace the expired equipment and improve the Information Rental Communication Service (iRCS).
 - 7.5 Establish a research/development and innovation center, develop personnel to have expertise, focus on developing advanced knowledge and skills.
 - 7.6 Develop knowledge exchange with digital technology Developing personnel with Cyber Security/Data Analytics and Big data/Data Privacy and Data Governance capabilities, also the digital literacy assessments and cyberthreats response drills for up-to-date and properly deal with cyber threats.





Performance on Investment Expenditure

Since the Government has a policy for the state enterprises to set the target for investment expenditure at more than 95% of the approved budget. In 2021, AEROTHAI’s accumulated investment expenditure is expected to have accumulated disbursement amounting to Bath 763.89 million which was 100% compared to the approved budget in 2021 that has been revised in the amount of Bath 763.89 million.

Performance Appraisal

AEROTHAI performance appraisal is carried out annually in accordance with an annual performance agreement of state enterprise’s operation between the Ministry of Finance and AEROTHAI, with the State Enterprise Policy Office (SEPO) as a regulatory body. The Government emphasizes the importance of State Enterprises becoming more efficient, thereby increasing their competitive edge and creating more added value to the country’s assets to support sustainable growth. The State Enterprise Assessment Model (SE-AM), created by the Government as a tool to assess State Enterprises, consists of 3 main evaluating areas: (1) Strategic Mission (2) Results of the Enterprise’s operations and (3) Performance in the 8 Core Business Enablers (Corporate Governance & Leadership, Strategic Planning, Risk Management & Internal Control, Stakeholder & Customer, Digital Technology, Human Capital Management, Knowledge Management & Innovation Management, and Internal Audit). AEROTHAI achieved an overall performance appraisal score as follows.

SE-AM’s Performance Appraisal	Fiscal Year 2020		
	Strategic Mission	Result	Core Business Enablers
Weight	14	46	40
Weighted Score	4.7143	3.8097	3.8528
Total Score		3.9536	



Company's Credit Rating

In the fiscal year 2021, TRIS Rating Company Limited (TRIS Rating) affirmed the company rating on AEROTHAI at “AAA” with a “Stable” outlook. The rating reflects TRIS Rating’s assessment of AEROTHAI’s status as a government-related entity (GRE), integrally linked to the government, and our view of the almost certain likelihood that AEROTHAI would receive timely and sufficient support from the Thai government in times of stress. TRIS Rating view that AEROTHAI plays a critical role in the Thai aviation industry and to the Government as a main air navigation service provider in Thailand with the good safety performance.

The “stable” outlook reflects TRIS Rating’s expectation that AEROTHAI will maintain its status as a GRE, integrally linked to the Government, and continue its important role to the Government as the main provider of air navigation services in the country. A rating downgrade could occur if AEROTHAI’s linkage to the government or its importance to the government changes, to the degree that it alters our view concerning the likelihood of the government providing timely and sufficient support to the Company in times of stress.



The Surveys on Satisfaction, Dissatisfaction, Needs and Expectations of Key Stakeholders

The Surveys on Satisfaction, Dissatisfaction, Needs and Expectations of Key Stakeholders under the Assessment Programme on Satisfaction, Dissatisfaction, Needs and Expectations of Key Stakeholders of Aeronautical Radio of Thailand Limited for the year 2021, was conducted to both domestic and overseas stakeholders. The key stakeholders to be surveyed were classified into 4 groups based on relationship levels, consisting of (1) Group 1: Manage Closely; (2) Group 2: Meet Their Need; (3) Group 3: Keep Into Account; (4) Group 4: Keep Informed, please see details in the figure.



Classification of key stakeholder group of AEROTHAI based on relationship levels.

The overall results of the survey on satisfactions of these 4 groups of key stakeholders showed that the average total score was 4.16 , or in “Most satisfied” leve, the good coordination and assistance in working with the Company’s staff according to the plans/projects/co-working obtained the highest score of 4.41 or in “Most satisfied” level, and being invited by the Company to participate in all activities that are always related to your organization obtained the lowest score of 3.77, or still in “Very satisfied” level. The details of satisfaction level of each point are showed in Table 1.

Table 1: Mean of satisfaction level for each survey point for domestic organization s

Survey Point	Score
1) Listening to opinions and/or needs from you/your organization and appropriately implementing according to opinions/needs for mutual benefits	4.11
2) You/your organization are always invited by the Company to participate in all activities related to your organization.	3.77
3) In joining the operations/activities of the Company, the administration allows you/your organization to participate at an appropriate level.	4.04
4) You/your organization receives the cooperation from the Company in participating in the operations/ activities of your organization as requested at an appropriate level.	4.34
5) You/your organization are well coordinated and assisted in working with the Company's staff under the plan/project/work we have together.	4.41
6) You/your organization can operate according to the plan/project having with the Company and achieve the results as set in the goals.	4.21
7) The plan/project/work with the Company is beneficial to your organization.	4.36
8) You/your organization receives complete, accurate and up-to-date news and information that is necessary for the collaboration between your organization and the Company.	4.06
9) The Company's communication channels are diverse and convenient for communication and/or contact	4.06
10) The level of collaborative relationship between your organization and the Company is appropriate and allows the work to achieve its goals.	4.26
11) You/your organization receives the problem/difficulty solution in working with the Company in a timely manner.	4.21
Average satisfaction score	4.16



For the satisfaction survey of overseas stakeholders, Group 1: Manage Closely and Group 2: Meet Their Need related to ANS such as AMNAC, AIDC, CRV, SWIM and FF-ICE during the past 1 year covering 8 survey points had an average score of satisfaction level at 4.32, or in the “Most Satisfied” level. The detail of satisfaction level in each survey point are shown in Table 2.

Table 2: Mean of satisfaction level for each survey point from overseas organizations

Survey Point	Score
1) AEROTHAI’s overall performance level in the ANS related projects mentioned above	4.27
2) AEROTHAI’s collaboration level in achieving a mutual goal in the projects mentioned above	4.35
3) AEROTHAI’s contribution towards the projects mentioned above	4.65
4) AEROTHAI’s willingness to share/exchange information and knowledge with you/your organization by the point of contact/key person	4.24
5) AEROTHAI’s ability to share/exchange information on the projects mentioned above	4.24
6) AEROTHAI’s timely response, or at all, to your requests regarding the projects mentioned above	4.24
7) AEROTHAI’s operational capabilities towards the projects mentioned above	4.33
8) Your confidence in AEROTHAI’s operational services standards	4.27
Average satisfaction score	4.32

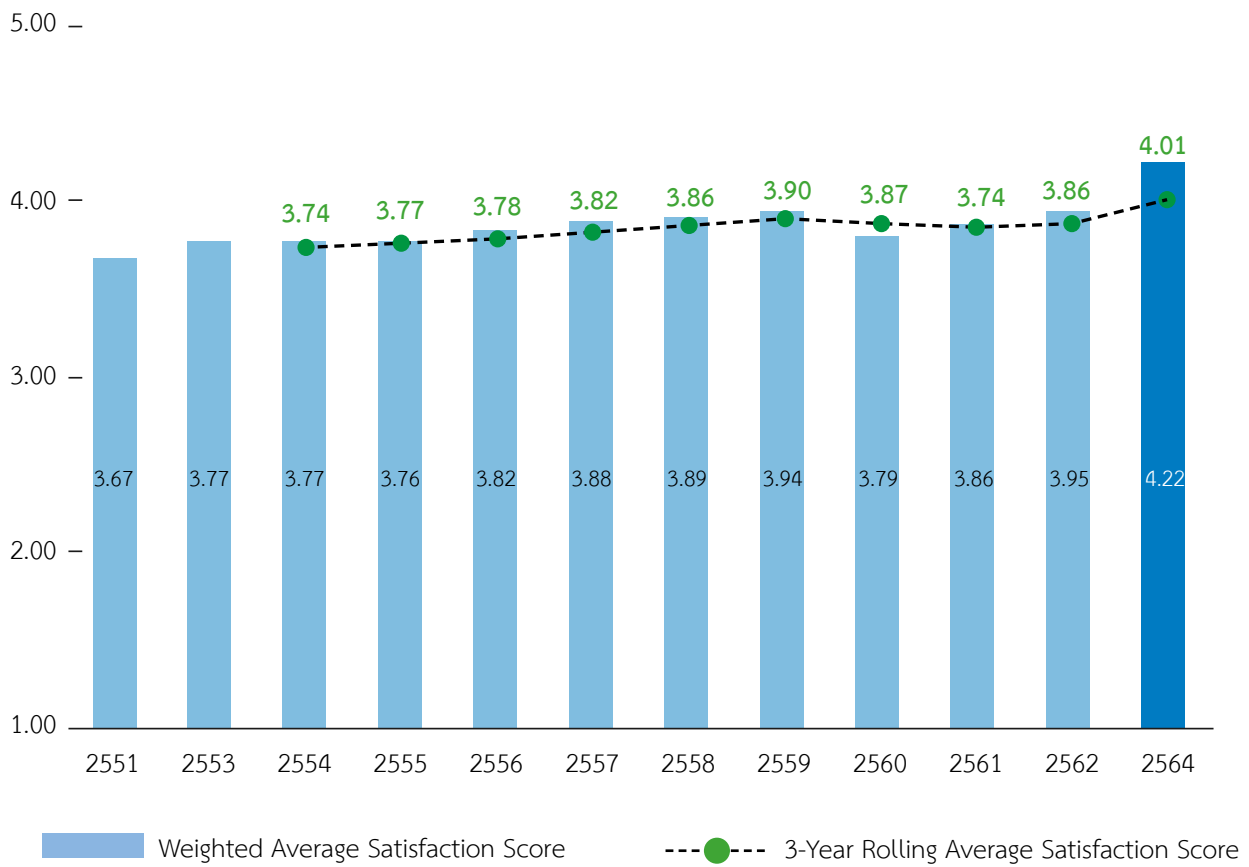
The Surveys on Satisfaction, Dissatisfaction, Needs and Expectations of Customers

The Surveys on Satisfaction, Dissatisfaction, Needs and Expectations of Customers under the Assessment Programme on Satisfaction, Dissatisfaction, Needs and Expectations of Customers was conducted by covering 3 services including: (1) Air Navigation Services (ANS); (2) Aeronautical Information Service (AIS/Aeronautical Chart); and (3) Rental Service of Communication Devices such as Trunked Radio, Air to Ground Radio, and AFTN Terminal. The survey data was collected by Questionnaires and In-depth interviews.

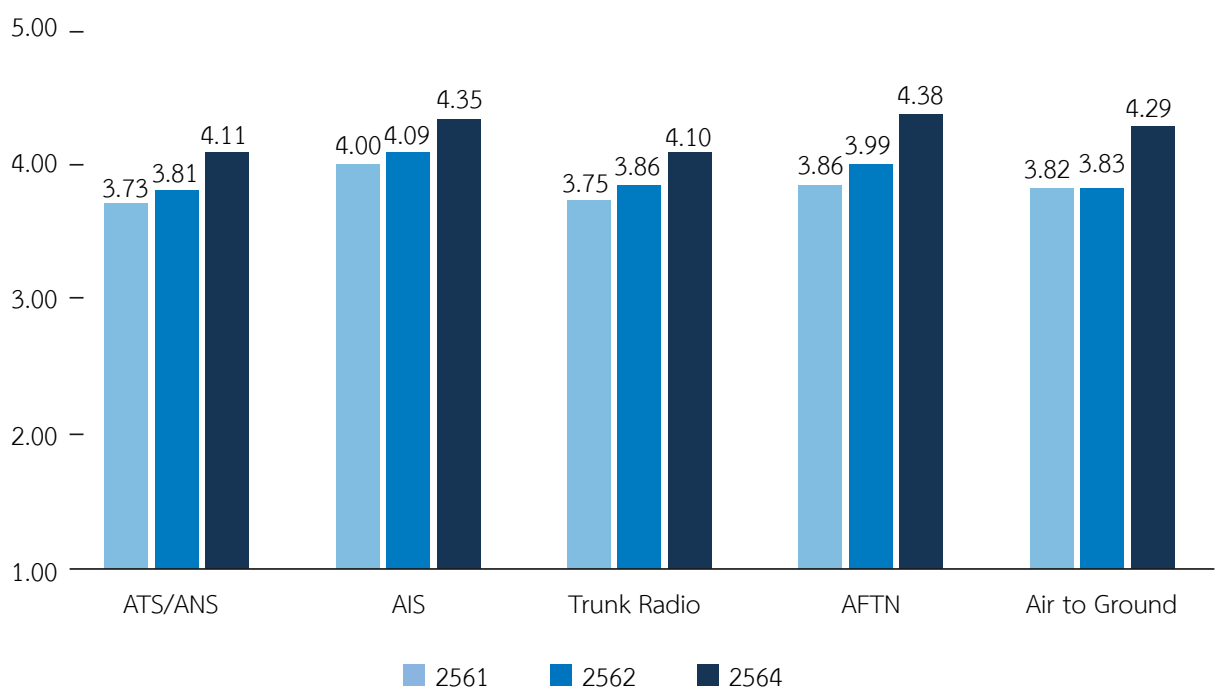
Totally 1,265 sets of questionnaire were return, higher than the target at 1,190 sets to be returned, representing 97.19% of confidence in the representation of the population. A summary of satisfaction level scores of each service is as follows:

- (1) Air Navigation Services (ANS): obtaining score of satisfaction level at 4.11, increasing 0.30 point compared to year 2019.
- (2) Aeronautical Information Service (AIS/Aeronautical Chart): obtaining score of satisfaction level at 4.35, increasing 0.26 point compared to year 2019.
- (3) Rental Service of Communication Devices such as Trunked Radio: obtaining score of satisfaction level at 4.10, increasing 0.24 point compared to year 2019; Air to Ground Radio: obtaining score of satisfaction level at 4.29, increasing 0.46 point compared to year 2019; and AFTN Terminal: obtaining score of satisfaction level at 4.83, increasing 0.39 point compared to year 2019. When assessing the overall satisfaction of clients by means of weighted average score, the score is 4.22 which is 0.27 points higher than the average score in year 2019 with 3.95.

ค่าเฉลี่ยระดับความพึงพอใจวงน้ำหนักรายปี เปรียบเทียบปี พ.ศ. 2551 – 2564



ค่าเฉลี่ยระดับความพึงพอใจของแต่ละบริการ เปรียบเทียบปี พ.ศ. 2561 2562 และ 2564



In addition, the in-depth interview was also made with customer groups for Aeronautical Information Service and device rental service with the conclusions on following key points: For Aeronautical Information Service. The accuracy, completeness and up-to-date of data, speed, channels of information acquisition are important areas of service quality, the impression from services includes the speed in solving problems and continuous improvement of services even if they are not the owner of such information. In terms of problems and disruptions in the transmission/receiving of the Flight plan between FDMC and Briefing, the use of SID/STAR at Don Mueang does not comply with the ICAO, the acknowledgment of flight plans is quite slow, especially in case of revisions and the service mind of some FDMC staff. In terms of system development, it is expected to have more automation capabilities, develop a platform to support work from home, and continuously hold meetings to build relationships between staff at work.

The rental service of communication devices was found that the clear communication signal covering areas, durable devices, the good working condition of system and equipment, easy contact and fast troubleshooting are the important areas of quality in using the service. The customers are impressed by the stability of the network system, fast response and follow-up after troubleshooting, willingness to give serves, flexible services according to customer needs and troubleshooting. The customers also expect the improvement of some parts in devices where are not durable and should be continually developed to reduce signal interference and dead spots. In the Aeronautical Information Service and device rental service, the customers continue to be confident in the services provided by AEROTHAI, and also expect to have more options of services and continuous development of services.

Highlighted Activities

AEROTHAI has played an important role in continually co-developing both global and regional air navigation systems in the Asia/Pacific region, such as

1. Cross-border Air Traffic Flow Management (Cross-border ATFM)

AEROTHAI has actively supported International Civil Aviation Organization (ICAO) at both global and regional levels. Particularly, AEROTHAI is a member of ICAO Air Traffic Management Operations Panel (ATMOPSP) which is the global body responsible for developing the global ATFM standards and related guidance materials. At the regional level, aiming at continuously pushing forward ATFM implementation in the Asia/Pacific region, under the umbrella of ICAO Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG), AEROTHAI keeps contributing to ATFM Steering Group (ATFM SG), especially in developing and maintaining the Asia/Pacific Framework for Collaborative ATFM. Additionally, AEROTHAI plays an important role in Asia/Pacific ATFM Information Requirement Small Working Group (ATFM-IR SWG) tasked to develop both operational and technical specifications with the objective to realize the harmonization of ATFM services and support systems across the ATFM implementation groups in the Asia/Pacific region.

Furthermore, AEROTHAI plays the leading role in the Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC) which involves Air Navigation Service Providers (ANSPs) of another 10 States/Administrations in Asia/Pacific region, i.e. Singapore, China, Hong Kong China, Australia, Cambodia, Malaysia, Myanmar, Indonesia, Vietnam, the Philippines, and Lao PDR, as well as airlines and international organizations. This project is one of the collaborative ATFM projects participated by the highest number of aviation stakeholders in the region. Since 2018, AEROTHAI together with participating ANSPs have made a number of achievements, including the operational service provision in various events affecting airport capacity and airspace capacity. Moreover, with the need for a single-point of information access enabling by the effective information sharing platform among stakeholders, Technical Sub-Group of the project has been thus established and tasked to develop an Interface Control Document (ICD) that will define the ATFM system-to-system information linkage, while keeping in view the requirements from airspace users and future development towards System-Wide Information Management (SWIM) framework. In 2019, the ICD, which was developed by Technical Sub-Group to provide the technical specifications for cross-border ATFM data exchange using Aeronautical Fixed Telecommunication Network/Air Traffic Service Message Handling System (AFTN/AMHS), so-called the AFTN/AMHS-based ICD, was adopted by the bodies under the APANPIRG and published on the ICAO Asia/Pacific Regional Office website as a technical guidance material for Asia/Pacific States/Administrations in the implementation of cross-border ATFM communication.



Amidst the COVID-19 pandemic in 2020, AEROTHAI together with AMNAC members decided to build on their existing coordination platform to facilitate the sharing of COVID-19 impact information related to Air Traffic Management (ATM)/ATFM around the region. The information exchange was not limited to only AMNAC members but has been opened to other Asia/Pacific States/Administrations as well. Besides, AEROTHAI plays an important part in collating the information shared through the coordination platform aforementioned into a region-wide ATM/ATFM Status Update document, a regularly updated one-stop guide to the regional circumstances, for publishing on the ICAO Asia/Pacific regional COVID-19 information sharing webpage for easy reference and access by the aviation community.

2. System-Wide Information Management (SWIM)

AEROTHAI is the active member of ICAO Asia/Pacific SWIM Task Force (SWIM TF) which is tasked by the APANPIRG to develop SWIM implementation plan and related requirements for the Asia/Pacific region. In 2019, the SWIM implementation framework developed by AEROTHAI, Civil Aviation Authority of Singapore (CAAS), and Federal Aviation Administration (FAA) was adopted by the bodies under the APANPIRG to be Philosophy and Roadmap for Asia/Pacific SWIM Implementation. Furthermore, the Flight Information Exchange Model (FIXM) version 4.1 Extension developed by AEROTHAI to support the ATFM information exchange for cross-border ATFM operations and ATFM/A-CDM (Airport-Collaborative Decision Making) integration in SWIM environment was adopted by the APANPIRG to be the Asia/Pacific FIXM version 4.1 Extension for use by Asia/Pacific States/Administrations and was uploaded to the ICAO Asia/Pacific Regional Office website. Moreover, the Asia/Pacific FIXM Extension was forwarded to the FIXM Change Control Board (CCB) for review and it was published on the FIXM official website for use by other stakeholders as well.

For 2020 and 2021, AEROTHAI has been still playing a leading role in regional SWIM development. In particular, several SWIM-related components have been further enhanced and the progress has been reported to SWIM TF for deliberation and possible adoption, e.g. the testing of security services in accordance with International Aviation Trust Framework (IATF) being developed by ICAO, the update of the Asia/Pacific FIXM Extension to FIXM version 4.2, the latest FIXM version released in 2021, to support, in addition to cross-border ATFM operations and ATFM/A-CDM integration, traffic synchronization, Flight and Flow Information for a Collaborative Environment (FF-ICE), and Trajectory-Based Operation (TBO).

3. Modernization towards Performance-Based Air Navigation

- Flight and Flow Information for a Collaborative Environment (FF-ICE)
Aiming at ensuring the harmonized implementation across ASEAN, in 2020, AEROTHAI successfully encouraged ASEAN to include FF-ICE related initiatives in the latest version of ASEAN Air Navigation Service Master Plan, version 2.0. Additionally, in an effort to put together components required to support TBO, the FF-ICE Release 1 (FF-ICE/R1) technical trial between AEROTHAI and CAAS was conducted in 2021 to test the FF-ICE/R1 services utilizing the SWIM-based information exchange. It was planned that this technical trial would also be executed in 2022 to try out all FF-ICE/R1 services.
- Trajectory-Based Operation (TBO)
AEROTHAI, FAA, CAAS, Japan Civil Aviation Bureau (JCAB), and NAV CANADA have put together the collaborative effort to conduct Multi-Regional TBO Demonstration in 2020-2022 to validate and demonstrate the TBO concept. The main objectives of this demonstration also include (i) to explore the impacts of TBO within the context of modernization initiatives and (ii) to support the development of information exchange standards and related ICAO materials. As the intermediate step, technical exercise was successfully conducted in 2021 to provide an opportunity for the project partners to exercise their initial TBO capabilities, e.g. use of FIXM version 4.2 to support FF-ICE operations and AIDC (ATS Inter-facility Data Communication) boundary coordination, clearance delivery over air-ground SWIM, to name a few.

4. ICAO Global Air Navigation Plan Development

AEROTHAI has been an active member of the ICAO ASBU (Aviation System Block Upgrade) Panel Project Team, a body responsible for drafting ASBU as part of the ICAO Global Air Navigation Plan (GANP), since 2017. The sixth edition of the plan, which is the current edition in use, was adopted by the 40th Session of the ICAO Assembly in 2019. With the formation of the GANP Study Group, a group of experts in charge of developing and maintaining the future editions of the GANP, in 2020, AEROTHAI has extended her support to ICAO by being a member of this group as well.



Organizational Management



Risk Management and Internal Control

AEROTHAI has implemented Enterprise Risk Management (ERM) and Internal Control (IC) in accordance with the Standards and Guidelines for Internal Control of Government's Agencies, B.E. 2561 (2018), and the Standards and Guidelines for Risk Management of Government's Agencies, B.E. 2562 (2019), both established by the Ministry of Finance, and the principles/guidelines on Risk Management and Internal Control B.E. 2555 (2012) of the State Enterprise Policy Office (SEPO). AEROTHAI has also developed risk management system and working processes by following guidelines stated in the State Enterprise Assessment Model (SE-AM). The guidelines and procedures in these documents are based on the concept developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Under AEROTHAI's Risk Management Structure, the Risk Management Committee (RC) and the Risk Management Sub-committee are given the responsibility to oversee risk management and internal control within the organization. Important ongoing work includes a plan to establish an integrated Good Governance, Risk management and Compliance (GRC) policy, and a plan to promote AEROTHAI Risk Culture Framework into real practice in order to make risk management a real part of day-to-day operations and decision-making in all levels.



The enterprise risk management has been integrated with the formulation of strategies and linked with the operations to extend and create values for the Company under the acceptable level of risk (or Risk Appetite), which is a decision-making tool to reasonably achieve goals.

In 2021, the Company has monitored the results of risk management and internal control on significant trends and effects that may affect the achievement of the Company's objectives and goals as set out in the Risk Management and Internal Control Master Plan for the year 2021, which can be summarized as follows:

1. Strategic Risk:

AEROTHAI manages risks in several areas related to the organization strategic positions. Strategic risks include AEROTHAI's issues in the area of air navigation service provider safety and standard, AEROTHAI's role in supporting an important government policy/project, AEROTHAI's aim to become an innovative organization. All risks are managed in order to achieve target within an acceptable timeframe.

2. Operational Risk:

In terms of operational risks, AEROTHAI focuses on managing risks associated with providing safe and efficient air navigation services, continuous and reliable CNS services, as well as obtaining/maintaining capable and sufficient manpower. Overall, all identified operational risks are managed to be within an acceptable level. Risk management measures are regularly monitored and reviewed in order to keep operational risk performance under control.

3. Financial Risk:

AEROTHAI carefully monitors financial risks arising from external factors affecting air traffic demand and income. In the fiscal year 2021, air traffic volume has decreased dramatically due to the effect of the COVID-19 pandemic. AEROTHAI's revenue has been gravely affected particularly by outbreaks in 2021. As a result of sharp fall in revenue, a large deficit was accumulated and the impact is forecasted to last into the years 2021-2023. AEROTHAI has taken serious action to cut costs in all possible areas that do not affect the safety aspect of our operations, as well as take all necessary measures to create financial liquidity into the future.

4. Compliance Risk:

AEROTHAI follows a good governance concept and complies with all relevant legislations/laws. Emphasis is given to establishing adequate level of control and appropriate mitigation to manage any potential compliance risk and minimize its potential harmful impact.

Business Continuity Management (BCM)

AEROTHAI has implemented Business Continuity Management (BCM) in accordance with the ISO 22301 standard since 2019. In 2021, AEROTHAI continued to maintain BCM system covering all 12 geographical areas (Tung Mahamek, Don Mueang, Suvarnabhumi and 9 regional centers) for Air Traffic Services (ATS) and Aeronautical Information Services (AIS).





Board of Directors and Responsibilities

Article 33 of the Company's Articles of Association stipulates that the Company's Board of Directors consists of not less than three (3) Directors and the nomination of Directors must follow Article 39 of the Company's Articles of Association as follows:

- (1) The Thai Government shall be entitled to nominate Directors of the Company and the Thai Government's nominees shall be appointed Directors. One of these Directors, as nominated by the Thai Government, shall be the Chairman of the Board of Directors of the Company.
- (2) The holders of B shares shall be entitled to nominate two Directors and these nominees shall be appointed Directors.

At the ordinary general meeting in every subsequent year, one third of the Directors must retire from the office. A retiring Director is eligible for re-election. A Director can be appointed only by a general meeting. If a vacancy occurs in the Board of Directors otherwise than by rotation, it may be filled by the remaining Directors, but any person so appointed shall retain his office during such time only as the vacating Director was entitled to retain the same.

THE BOARD OF DIRECTORS IN THE FISCAL YEAR 2021

As of 30 September in the fiscal year 2021, the Board of Directors consisted of the following eight (8) Directors:

1. Dr. Kulaya Tantitemit

Vice Chairman of the Board

(Appointed as the Director on 22 January 2021 and appointed as Vice Chairman on 31 March 2021)

Age: 48

Position: Director General, Fiscal Policy Office, Ministry of Finance

Education:

- Bachelor of Economics, Thammasat University (First-Class Honors)
- Master of Arts (MA) in Economics, Boston University, USA
- Master of Science (MS) in Economics, Brandeis University, USA
- PhD in International Economics and Finance, Brandeis University, USA

Work Experiences:

- Inspector General of Ministry of Finance
- Executive Director, World Bank Group
- Advisor on Policy and Strategy, Ministry of Finance

Training:

- Advanced Insurance Science Course (OIC)
- Board Matters and Trends (BMT 5/2018) Thai Institute of Directors (IOD)
- Director Certification Program (DCP239/2017) Thai Institute of Directors (IOD)
- Ethical Leadership Program (ELP 7/2017) Thai Institute of Directors (IOD)

Fields of Competence:

- Economics



Other Positions:

- Director, Bangchak Corporation Public Company Limited
- Director, Bank of Thailand Board
- Chairman of the Board, Deposit Protection Agency
- Qualified Director, Life Insurance Fund Management Committee
- Director, Government Pension Fund Committee
- Director, Capital Market Supervisory Board
- Name listed in the Directors' Pool of State Owned Enterprise, Ministry of Finance, in Financial Economics and Finance (Economics and International Economics)

2. Mr. Puttipong Prasarttong-Osoth

Director

(Appointed on 17 March 2018, resigned on 22 January 2021, and reappointed on 24 February 2021)

Age: 56

Position: Vice Chairman of the Board of Directors/Chief Executive Officer (CEO) and President, Bangkok Airways Public Company Limited

Education:

- Bachelor of Commerce and Accountancy, Chulalongkorn University

Work Experiences:

- Senior Vice President Operations, Bangkok Airways Company Limited
- Vice President Operations, Bangkok Airways Company Limited

Training:

- SASIN Senior Executive Program, SASIN Graduate Institute of Business Administration of Chulalongkorn University
- Diploma, Joint State - Private Sector Course (Class of 24), National Defence Studies Institute (Class of 54)
- The Program for Senior Executives on Justice Administration (Batch 13), Judicial Training Institute
- Certificate of Commercial Pilot Licence
- Director Accreditation Program (DAP) (Class of 100), Thai Institute of Directors Association
- Director Certification Program (DCP) (Class of 241), Thai Institute of Directors Association
- Boards That Make a Difference (BMD) (Class of 9), Thai Institute of Directors Association

Fields of Competence:

- Organizational Management
- Transportation and Air Transport

Other Positions:

- Chairman of Bangkok Air Catering Company Limited
- Chairman of Bangkok Air Catering Samui Company Limited
- Chairman of Bangkok Air Catering Phuket Company Limited
- Chairman of Bangkok Air Catering Chiang Mai Company Limited
- Chairman of BAC Gourmet House Company Limited
- Chairman of Gourmet Primo Company Limited
- Chairman of Worldwide Flight Services Bangkok Air Ground Handling Company Limited
- Chairman of Bangkok Airways Ground Services Company Limited
- Chairman of Bangkok Dusit Medical Services Public Company Limited
- Director of WFS-PG Cargo Company Limited
- Director of Sahakol Estate Company Limited
- Director of Bangkok Media and Broadcasting Company Limited

- Director of Fuel Pipeline Transportation Company Limited
- Director of Bangkok Airways Holding Company Limited
- Director of More Than Free Company Limited
- Director of Bangkok Aviation Fuel Services Public Company Limited
- 1st Pilot of Airbus 319/320 fleet, Bangkok Airways Public Company Limited
- Advisor, Bangkok Christian College Alumni Association
- Senior Advisor, Nakorn Ratchasima's Municipality

3. Mrs. Jantira Buruspat

Director

(Appointed on 30 June 2021)

Age: 57

Position: Inspector General, Ministry of Transport

Education:

- Bachelor of Science Program in Agricultural Economics, Chiang Mai University
- Master of Arts in Social Sciences for Development, Chandrakasem Rajabhat University

Work Experiences:

- Deputy Director-General, Department of Land Transport
- Director of the Bangkok Land Transport Office Area 5
- Inspector General, Department of Land Transport

Training:

- National Defense Course, Class 62, Thailand National Defence College, National Defence Studies Institute
- Senior Executives Program (Class of 9), Office of the Civil Service Commission (OCSC)
- Politics and Governance in Democratic Systems for Executives (Class of 19), King Prajadhipok's Institute

Fields of Competence:

- Organizational Management

Other Positions:

- Director of Civil Aviation Training Center
- Director, Department of Land Transport Sport-Club Association

4. Mr. Pathom Chaloeuwares

Director

(Appointed on 15 July 2021)

Age: 59

Position: Director-General of the Department of Rural Roads, Ministry of Transport

Education:

- Bachelor of Engineering Program in Civil Engineering, Prince of Songkla University
- Master of Engineering in Civil Engineering, Chulalongkorn University
- Master of Public Administration (Honors), National Institute of Development Administration (NIDA)

Work Experiences:

- Deputy Director-General, Department of Rural Roads
- Director, Bureau of Bridge Construction, Department of Rural Roads
- Expert on Civil Engineering (Bridge Construction), Bureau of Bridge Construction, Department of Rural Roads
- Professional Engineer 9 (Civil Engineering), Bureau of Bridge Construction, Department of Rural Roads

Training:

- Volunteer Mind Course 904, Regular Course, Class 2/2018, "Be a Good Role Model"



- National Defense Course, Class 54, Thailand National Defence College, National Defence Studies Institute
- Senior Administrator Course, Class 56, Damrong Rajanubhab Institute

Fields of Competence:

- Organizational Management
- Engineering

Other Positions:

- Director, Mass Rapid Transit Authority of Thailand

5. Mrs. Phongsaward Guyaroonsuith

Director

(Appointed on 31 October 2016, resigned and reappointed on 23 January 2019)

Age: 54

Position

- Deputy Secretary-General of the Council of State, Office of the Council of State
- Councillor of State of the 2nd Committee

Education:

- Bachelor of Laws, Thammasat University

Work Experiences:

- Permanent Law Councillor
- Director, Bureau of Administrative Law

Training:

- Executive Program in Public Sector Law, Class 55, Office of the Council of State
- Executive Development Program (EDP 1) (Class of 82), Office of the Civil Service Commission
- Ministry Spokesman Course, Office of the Prime Minister
- Advanced Budget Management Program (Class of 6), Budget Bureau

Fields of Competence:

- Laws

Other Positions:

- Director of Expressway Authority of Thailand
- Name listed in the Directors' Pool of State Owned Enterprise in Politics and Governance (Governance), Laws (Administrative Law) and Security (Security Laws and Government Administration)

6. Professor Dr. Amorn Pimanmas

Director

(Appointed on 23 January 2018)

Age: 48

Position: Professor of Department of Civil Engineering, Faculty of Engineering, Kasetsart University

Education:

- Bachelor of Civil Engineering (First-Class Honors), Chulalongkorn University
- Master of Civil Engineering, University of Tokyo, Japan
- Master of Management, College of Management, Mahidol University
- Doctor of Civil Engineering, University of Tokyo, Japan

Work Experiences:

- President of Thai Structural Engineers Association
- President of Thai Building Information Modeling Association
- Director of Thai Technical Volunteer Foundation
- Member of Academic Council, Rajamangala University of Technology Phra Nakhon

Training:

- Director Certification Program (DCP) (Class of 276), Thai Institute of Directors Association
- Risk Management Program for Corporate Leaders (RCL) (Class of 16), Thai Institute of Directors Association
- Strategic Board Master Class (SBM) (Class of 6), Thai Institute of Directors Association
- Financial Statement for Directors (FSD) (Class of 39), Thai Institute of Directors Association
- Advanced Audit Committee Program (AACP) (Class of 34), Thai Institute of Directors Association
- IT Governance and Cyber Resilience Program (ITG) (Class of 13), Thai Institute of Directors Association

Fields of Competence:

- Organizational Management
- Civil Engineering
- Data Analysis

Other Positions:

- Qualified Director, Mass Rapid Transit Authority of Thailand
- Name listed in the Directors' Pool of State Owned Enterprise in Transport and Transportation, Engineering and Information technology

7. Mr. Rapee Phongbupakicha

Director

(Appointed on 15 July 2021)

Age: 61

Position: Retired Officer, Office of the Permanent Secretary for Interior

Education:

- Bachelor of Arts in Political Science, Thammasat University
- Master of Public Administration Program, National Institute of Development Administration (NIDA)

Work Experiences:

- Governor of Chachoengsao Province
- Inspector General, Ministry of Interior
- Governor of Nakhon Sawan Province
- Governor of Phitsanulok Province
- Governor of Nong Bua Lamphu Province

Fields of Competence:

- Organizational management
- Laws
- Transportation and Air transport
- Engineering

Other Positions:

- Chairman, S.R.T Electrified Train Co., Ltd. (SRTET)
- 2nd Public Sector Anti-Corruption Screening Subcommission (PACC)
- Name listed in the Directors' Pool of State Owned Enterprise in Organizational Management

8. Dr. Piang-or Loahavilai

Director

(Appointed on 15 July 2021)

Age: 57

Position: Full-time Lecturer, International College of Digital Innovation, Chiang Mai University



Education:

- Bachelor of Arts in Political Science, Thammasat University
- Master of Business Administration (International Business), Seoul National University, Seoul, Republic of Korea
- Ph.D in Knowledge Management) Chiang Mai University

Work Experiences:

- Director of Sister Cities Research Center and Cross Border E-Commerce (China and Korea Project) International College of Digital Innovation, Chiang Mai University
- Advisor in Management, KEC (Thailand) Company Limited, Northern Industrial Estate, Lamphun Province
- Writer of “Korea Insider” Column, Post Today newspaper.

Training:

- Director Certification Program (DCP) Class 307, Thai Institute of Directors Association (IOD)

Fields of Competence:

- Organizational Management

Other Positions:

- Director, The Transport Company Limited
- Director, General Hospital Products Public Company Limited

Changing of Director During The Fiscal Year 2021

1. Air Chief Marshal Siwakiat Jayema

Chairman

(Appointed as the Director and Vice Chairman on 30 April 2017, appointed as Chairman on 24 January 2018 and retired on 25 June 2021)

Age: 64

Position: Retired Officer, Ministry of Defence

Education:

- Armed Forces Academies Preparatory School (Class of 16)
- Royal Thai Air Force Academy School (Class of 23)
- Air Force Staff School (Class of 35)
- Joint War College (Class of 38)
- Master of Business Administration, Kasetsart University

Work Experiences:

- Director of Thai Airways International Public Company Limited
- Acting President, Thai Airways International Public Company Limited
- Deputy Permanent Secretary for Defence
- Assistant Air Command of Staff
- Deputy Chief of Air Staff
- Assistant Chief of Air Staff

Training:

- Diploma, National Defence College (Class of 51), The National Defence Course
- Diploma, Joint State - Private Sector Course (Class of 21), National Defence Studies Institute
- Director Certification Program (DCP) (Class of 227), Thai Institute of Directors Association
- Executive Course (Class of 24), Capital Market Academy
- Political course of government in the monarchy for senior executives (Class of 21)
- Role of the Chairman Program (RCP) (Class of 41), Thai Institute of Directors Association

- Corporate Governance in Digital Era Course, Fiscal Policy Research Institute Foundation
- Corporate Governance for Directors and Senior Executives of Regulator (Class of 19), State Enterprises and Public Organizations of Public Director Institute
- The Executive Program in Energy Literacy for a Sustainable Future (Class of 13), Thailand Energy Academy

Fields of Competence:

- Organizational Management
- Transportation and Air Transport
- Security

Other Positions:

- Advisor, Defence Technology Institute

2. Mr. Lavaron Sangsnit

Vice Chairman

(Appointed as the Director on 1 December 2018 and appointed as Vice Chairman on 1 July 2019, and retired on 22 January 2021)

Age: 54

Position: Director General, Fiscal Policy office, Ministry of Finance

Education:

- Bachelor of Economics, Chulalongkorn University
- Master of Economics (Policy and Planning), Northeastern University, USA

Work Experiences:

- Director, Fiscal Policy Office
- Inspector General, Ministry of Finance
- Financial Policy Advisor, Fiscal Policy Office
- Deputy Director-General, Fiscal Policy Office

Training:

- Diploma, National Defence College (Class of 58), The National Defence Course
- Top Executive Program (Class of 25), Capital Market Academy (CMA)
- The Executive Program in Energy Literacy for a Sustainable Future (Class of 12), Thailand Energy Academy

Fields of Competence:

- Organizational Management
- Economics and Finance

Other Positions:

- Name listed in the Directors' Pool of State Owned Enterprise in Economics, Finance (Financial and Budget)

3. Mr. Somnuk Rongthong

Director

(Appointed on 26 September 2018, resigned and reappointed on 23 January 2019, and retired on 7 July 2021)

Age: 60

Position: President, Aeronautical Radio of Thailand Limited

Education:

- Bachelor of Electrical Engineering, Kasetsart University

Work Experiences:

- Executive Vice President, Aeronautical Radio of Thailand Limited
- Vice President (Air Traffic Services Engineering), Aeronautical Radio of Thailand Limited

Training:

- Diploma, Joint State - Private Sector Course (Class of 26), National Defence Studies Institute (Class of 56)
- Air War College (Class of 36)
- Advanced Management Program, Wharton School, University of Pennsylvania, USA

Fields of Competence:

- Organizational Management
- Engineering
- Information Technology

Other Positions:

- Name listed in the Directors' Pool of State Owned Enterprise in Information technology, Organization Management and Engineering

Connected Transactions of the Board of Directors with the Company

In fiscal year 2021, the Board of Directors had no connected transactions. In addition, they did not hold any shares or held not more than 10 percent of all voting shares of the Company.

As for the procurement/hiring contracts with the Company at the amount of Baht 100 million or higher, there were no contractors that were associated with the Board of Directors either as the Management or shareholders.

Roles and Responsibilities of the Board of Directors

The Board of Directors set the policies and oversaw the Company's operations. They also played an important part to set up the strategic plan for organization development in accordance with State Enterprise's practices and the Company's vision stated that "A Sustainable Quality Excellent Air Navigation Service Provider". The Board of Directors appointed knowledgeable and experienced Directors to Sub-Committees for screening any necessary matters as follows:

1. The Executive Committee
2. The Audit Committee
3. The Risk Management Committee
4. The Remuneration Committee
5. The Corporate Governance and Corporate Social Responsibility Committee
6. The Legal Committee
7. Innovation Management Committee

Also, there are 3 independent directors to be announced.

The Company scheduled the Board of Directors' meetings in advance throughout the year. The meeting was held at least once a month to oversee and monitor the Company's operations. Extra meetings would be called for if necessary as shown in the Annual Report so that the Directors would carry out their duties appropriately. The meeting invitation letters and agenda in the form of document and information systems of the Boards of Directors were provided to the Board of Directors 7 days prior to the meeting.

The minutes of the meetings were recorded in writing and kept available for Directors and relevant persons to inspect. In addition, the minutes of the Board of Directors' Meetings were submitted to A Shareholders (the Ministry of Finance and the Ministry of Transport) and summary of the minutes distributed to B Shareholders (Member Airlines) for acknowledgement and also available on website for shareholders.



The Self-Evaluation of Board of Directors

To be in line with the Good Corporate Governance practice, the Board of Directors did their evaluation to monitor themselves for better performing their duties. This evaluation also assisted them in setting the Company’s direction and supervising the management properly. The evaluation was conducted every six months and in the fiscal year 2021, the evaluation form of the committee has been improved to be suitable for the current performance of the Board of Directors and to have guidelines in line with the New State Enterprise Performance Assessment Manual for the year 2021 of the State Enterprise Policy Office. There are 2 forms:

1. The Self Assessment according to Best Practices principle has given importance to the six assessment criteria: 1) outstanding in knowledge and ability; 2) independence; 3) mission preparedness; 4) attention to duties and responsibilities; 5) performance of duties in the committee; and 6) vision of creating added value to the business in the long run in which the assessment results are at an excellent level.
2. The Board Evaluation consists of six topics: 1) Structure and qualifications of the committee; 2) Roles, duties and responsibilities of the committee; 3) Committee practice; 4) Committee communication; 5) Committee relationship with the management; and 6) preparation and conduct of meetings, which the assessment results are at an excellent level as following summary:

Category of Evaluation	First Evaluation (October 2020 – March 2021)		Second Evaluation (April – September 2021)	
	Point	Level	Point	Level
Self Assessment	146.60	Excellent	133.42	Good
Board Evaluation	178.30	Excellent	165.14	Excellent

The Board of Directors’ Knowledge and Skills Development

The Company realized the importance of the development and enhancement for the potential of the Board of Directors. The plan is determined to enhance the efficiency of the directors’ corporate governance, in order to make the performance of directors’ duties more complete. As a result, the operations of the Company have achieved the vision and goals set with efficiency and effectiveness, and in accordance with the State Enterprise Assessment Model (SE-AM) and corporate governance principles.

Since the crisis of the COVID-19 outbreak situation has severely affected the management and expense management of the Company; therefore, in fiscal year 2021, the Company has postponed training courses/seminars related to the roles and duties of the Board of Directors, including the participation in many activities of the Company such as traveling to participate in corporate social responsibility (CSR) activities, inspection trips, actual site visits at the Regional Aviation Control Centers and the flight control towers to create knowledge and understanding of the Company’s mission, and the overseas study tours related aviation affairs were also postponed.

The Orientation for the New Directors

The Company organized an orientation for the Company’s newly appointed directors, presented the corporate information and lectured the Company’s main missions through electronic systems that are beneficial to the performance of directors’ duties. The information presented to the directors is as follows:

1. AEROTHAI’s information consisting of the booklet of the memorandum of association, general information (Company’s background and status, shareholders, policies, vision, values, responsibilities in air navigation services and business units), organization chart, personnel, air transport situation and the Company’s performance and financial statements, Corporate Plan, significant projects.
2. The Board of Directors’ handbook consisting of the names of the Board of Directors and its composition, their authorization and duties, terms, Board meeting and its allowances, Sub-Committee and their authorization and duties,

information of independent directors, the evaluation, the application to be member airlines, agreement between the Ministry of Transport and the Company, the asset account submission under the Organic Act on Anti-Corruption B.E. 2561 and relevant laws, regulations and the Acts including a booklet of information system application for the Board of Directors.

3. The Board of Directors and Sub-Committee appointment letters.

Authorized Directors

In the fiscal year 2020, the Authorized Directors of the Company have been changed during the year.

- Between 1 October 2020 – 21 January 2021, the Authorized Directors of the Company included 4 Authorized Directors, two out of the following four Authorized Directors could co-sign and affix the Company seal to bind the Company as follows:
 1. Air Chief Marshal Siwakiat Jayema
 2. Mr. Lavaron Sangsnit
 3. Mr. Puttipong Prasarttong-Osoth
 4. Mr. Somnuk Rongthong
- Between 21 January 2021 – 14 July 2021, the Authorized Directors of the Company included 4 Authorized Directors, two out of the four Authorized Directors could co-sign and affix the Company seal to bind the Company under the condition that Mr. Puttipong Prasarttong-Osoth must be approved by State Enterprise Policy Committee. The Chairman of the State Enterprise Policy Committee authorized by the State Enterprise Policy Committee resolved to approve Mr. Puttipong Prasarttong-Osoth being a Director of the Company, effective from 24 February 2021. Therefore, 4 Authorized Directors are as follows:
 1. Air Chief Marshal Siwakiat Jayema
 2. Miss Kulaya Tantitemit
 3. Mr. Puttipong Prasarttong-Osoth
 4. Mr. Somnuk Rongthong
- Between 15 July 2021 – 30 September 2021, the Authorized Directors of the Company included 3 Authorized Directors, two out of the following three Authorized Directors could co-sign and affix the Company seal to bind the Company as follows:
 1. Miss Kulaya Tantitemit
 2. Mr. Puttipong Prasarttong-Osoth
 3. Mrs. Jantira Buruspat



The Secretary to the Board of Directors

In the fiscal year 2021, members of the Secretary to Board of Directors are as follows:

1. Mr. Somnuk Rongthong^{1/}, Secretary President
2. Mr. Tinnagorn Choowong, Assistant Secretary Executive Vice President (Operations)
3. Mr. Sukluer Chiawarcheep, Assistant Secretary Executive Vice President (Policy and Human Resources)
4. Mrs. Thaniya Suntharasantic, Assistant Secretary Vice President (Office of the President)

Note ^{1/}retired on 7 July 2021.

The Board of Directors' Attendance

In the fiscal year 2021, the Board of Directors held 154 meetings with attendance details as follows:

	Name	Number of Attendances
Air Chief Marshal Siwakiat	Jayema ^{1/}	10/10
Mr. Lavaron	Sangsnit ^{2/}	2/4
Dr. Kulaya	Tantitemit ^{3/}	8/11
Mr. Puttipong	Prasarttong-Osoth ^{4/}	12/15
Mrs. Jantira	Buruspat ^{5/}	5/5
Mr. Pathom	Chaloeywares ^{6/}	2/4
Mrs. Phongsaward	Guyaroonsuith ^{7/}	13/15
Professor Dr. Amorn	Pimanmas ^{8/}	15/15
Mr. Rapee	Phongbupakicha ^{9/}	4/4
Dr. Piang-or	Loahavilai ^{10/}	4/4
Mr. Somnuk	Rongthong ^{11/}	11/11

(The absent attendants were due to other engagement)

Note:

^{1/} Appointed as the Director on 30 April 2017, appointed as Chairman on 24 January 2018 and retired on 25 June 2021.

^{2/} Appointed as the Director on 1 December 2018 and appointed as Vice Chairman on 1 July 2019, and retired on 22 January 2021.

^{3/} Appointed as the Director on 22 January 2021 and appointed as Vice Chairman on 31 March 2021

^{4/} Appointed on 17 March 2018, resigned on 22 January 2021, and reappointed on 24 February 2021

^{5/} Appointed on 30 June 2021

^{6/} Appointed on 15 July 2021

^{7/} Appointed on 31 October 2016, resigned and reappointed on 23 January 2019

^{8/} Appointed on 23 January 2018

^{9/} Appointed on 15 July 2021

^{10/} Appointed on 15 July 2021

^{11/} Appointed on 26 September 2018, resigned and reappointed on 23 January 2019, and retired on 7 July 2021



The Executive Committee

The Executive Committee consisted of not less than three members and not more than five members. In the fiscal year 2021, there were changes in the Executive Committee during the year as follows:

- Between 1 October 2020 – 22 January 2021 consisting of
 1. Mr. Lavaron Sangsnit Chairman
 2. Mr. Puttipong Prasarttong-Osoth Member
 3. Mrs. Phongsaward Guyaroonsuith Member
 4. Mr. Somnuk Rongthong Member and Secretary
 5. Mr. Tinnagorn Choowong Assistant Secretary
 6. Mr. Sukluer Chiawarcheep Assistant Secretary
 7. Mrs. Thaniya Suntharasantic Assistant Secretary
- Between 22 January 2021 – 23 February 2021 consisting of
 1. Dr. Kulaya Tantitemit Chairman
 2. Mr. Puttipong Prasarttong-Osoth^{1/} Qualified person
 3. Mrs. Phongsaward Guyaroonsuith Member
 4. Mr. Somnuk Rongthong Member and Secretary
 5. Mr. Tinnagorn Choowong Assistant Secretary
 6. Mr. Sukluer Chiawarcheep Assistant Secretary
 7. Mrs. Thaniya Suntharasantic Assistant Secretary

Note ^{1/}Appointed as qualified person until becoming effective as a director when the State Enterprise Policy Committee (SEPC) approved the name list.

- Between 24 February 2021 – 20 September 2021 consisting of
 1. Dr. Kulaya Tantitemit Chairman
 2. Mr. Puttipong Prasarttong-Osoth^{1/} Member
 3. Mrs. Phongsaward Guyaroonsuith Member
 4. Mr. Somnuk Rongthong^{2/} Member and Secretary
 5. Mr. Tinnagorn Choowong Assistant Secretary
 6. Mr. Sukluer Chiawarcheep Assistant Secretary
 7. Mrs. Thaniya Suntharasantic Assistant Secretary

Note ^{1/}Approved by the State Enterprise Policy Committee (SEPC) to be a director, effective from 24 February 2021.

^{2/}Retired on 7 July 2021.

The Executive Committee was appointed according to the fourth paragraph under Article 42 of the Company's Articles of Association stipulating that

“In order to facilitate and expedite the conduct of the Company and to supervise the management of the Company more closely the Board of Directors shall set up an Executive Committee of not less than three nor more than five persons”



The Executive Committee's Attendance

In the fiscal year 2021, the Executive Committee held 12 meetings with attendance details as follows:

	Name	Number of Attendances
Mr. Lavaron	Sangsnit ^{1/}	4/4
Dr. Kulaya	Tantitemit ^{2/}	8/8
Mr. Puttipong	Prasarttong-Osoth ^{3/}	10/12
Mrs. Phongsaward	Guyaroonsuith ^{4/}	9/12
Mr. Somnuk	Rongthong ^{5/}	9/9

(The absent attendants were due to other engagement)

Note:

^{1/} Appointed as the Director on 1 December 2018 and appointed as Vice Chairman on 1 July 2019, and retired on 22 January 2021.

^{2/} Appointed as the Director on 22 January 2021 and appointed as Vice Chairman on 31 March 2021

^{3/} Appointed on 17 March 2018, resigned on 22 January 2021, and reappointed on 24 February 2021

^{4/} Appointed on 31 October 2016, resigned and reappointed on 23 January 2019

^{5/} Appointed on 26 September 2018, resigned and reappointed on 23 January 2019, and retired on 7 July 2021

The Risk Management Committee

In the fiscal year 2021, the Risk Management Committee consisted of:

1. Mr. Pathom Chaloeywaes Chairman
2. Mr. Puttipong Prasarttong-Osoth Member
3. Mrs. Jantira Buruspat Member
4. Vice President (Office of Policy and Strategy) Secretary
5. Senior Director, Policy and Strategy Management Bureau Assistant Secretary

Responsibilities

The responsibilities assigned by the Board of Directors to the Risk Management Committee is to consider all aspects or situations that might pose risk to or otherwise affect the Company's performance in all related areas. The Committee has to evaluate such situations and determine policy to protect, eliminate and/or reduce the risk. The Management and staff then have to follow such policy.

The Corporate Governance and Corporate Social Responsibility Committee

In the fiscal year 2021, there were changes in the Corporate Governance and Corporate Social Responsibility Committee during the year as follows:

- Between 1 October 2020 – 22 January 2021 consisting of
 1. Air Chief Marshal Siwakiat Jayema Chairman
 2. Mr. Lavaron Sangsnit Member
 3. Mr. Puttipong Prasarttong-Osoth Member
 4. Mrs. Phongsaward Guyaroonsuith Member
 5. Professor Dr. Amorn Pimanmas Member
 6. Mr. Somnuk Rongthong Member
 7. Vice President (Office of the President) Secretary
 8. Mr. Marnoch Sawatdee Assistant Secretary

- Between 22 January 2021 – 29 June 2021 consisting of

1.	Air Chief Marshal Siwakiat	Jayema ^{1/}	Chairman
2.	Dr. Kulaya	Tantitemit	Member
3.	Mr. Puttipong	Prasarttong-Osoth	Member
4.	Mrs. Phongsaward	Guyaroonsuith	Member
5.	Professor Dr. Amorn	Pimanmas	Member
6.	Mr. Somnuk	Rongthong	Member
7.	Vice President (Office of the President)		Secretary
8.	Mr. Marnoch	Sawatdee	Assistant Secretary

Note ^{1/}Retired on 25 June 2021
- Between 30 June 2021 – 14 July 2021 consisting of

1.	Dr. Kulaya	Tantitemit	Member
2.	Mr. Puttipong	Prasarttong-Osoth	Member
3.	Mrs. Jantira	Buruspat	Member
4.	Mrs. Phongsaward	Guyaroonsuith	Member
5.	Professor Dr. Amorn	Pimanmas	Member
6.	Mr. Somnuk	Rongthong ^{1/}	Member
7.	Vice President (Office of the President)		Secretary
8.	Mr. Marnoch	Sawatdee	Assistant Secretary

Note ^{1/}Retired on 7 July 2021
- Between 15 July 2021 – 20 September 2021 consisting of

1.	Dr. Kulaya	Tantitemit	Member
2.	Mr. Puttipong	Prasarttong-Osoth	Member
3.	Mrs. Jantira	Buruspat	Member
4.	Mr. Pathom	Chaloeywares	Member
5.	Mrs. Phongsaward	Guyaroonsuith	Member
6.	Professor Dr. Amorn	Pimanmas	Member
7.	Mr. Rapee	Phongbupakicha	Member
8.	Dr. Piang-or	Loahavilai	Member
9.	Vice President (Office of the President)		Secretary
10.	Mr. Marnoch	Sawatdee	Assistant Secretary

Responsibilities

- To set the Corporate Governance and Corporate Social Responsibility policy and practices.
- To pre-consider, give the suggestion and review the compliance with the Corporate Governance and Corporate Social Responsibility Plan.
- To monitor and evaluate the Corporate Governance and Corporate Social Responsibility practices.

The Legal Committee

In fiscal year 2021, the legal Committee consisted of:

- | | | | |
|----|------------------|--------------------|---------------|
| 1. | Mrs. Phongsaward | Guyaroonsuith | Chairman |
| 2. | Miss Chunhachit | Sungmai | Member |
| 3. | Miss Nathsinee | Yuttidhammadamrong | Member |
| 4. | Mr. Somnuk | Rongthong | Member |
| 5. | Dr. Abhijai | Chandrasen | Legal Advisor |



- | | |
|---|---------------------|
| 6. Vice President (Office of the President) | Secretary |
| 7. Senior Director, General Administration Bureau | Assistant Secretary |

Responsibilities

The Legal Committee has power and responsibilities as assigned by the Board of Directors are to consider and give suggestion regarding laws, regulations, noifications and contract as requested by the Company or assigned by the Board of Directors.

The Innovation Management Committee

In the fiscal year 2021, the Board of Directors has resolved to appoint the Innovation Management Committee as follows:

- | | | |
|---|---------------------|---------------------|
| 1. Dr. Piang-or | Loahavilai | Chairman |
| 2. Dr. Wiparat | De-ong | Member |
| 3. Dr. Suthee | Phoojaruenchanachai | Member |
| 4. Vice President (Human Resources) | | Secretary |
| 5. Senior Director, Learning Development and Promotion Bureau | | Assistant Secretary |

Responsibilities

1. To establish the Company's policy on the promotion of creativity and innovation management.
2. To approve the Company's innovation management master plan
3. To approve manuals and documents as guidelines for the Company's innovation management.
4. To promote, support, give advices, and make suggestions for creating an atmosphere, culture of creativity and innovation management of the Company for the benefits on the operations and upgrading the level of innovation management to develop and expand the utilization inside the Company and for commerce.
5. To supervise and monitor the implementation of the Company's innovation management policy and master plan, to report the progress of innovation operations to the Board of Directors every quarter.
6. To appoint sub-committees and working groups to assist as appropriate.

In the fiscal year 2021, there was no appointment Audit Committee, and Remuneration Committee as the number of appointment for the Company's Directors is not achieved a total of 11 Directors, the number of qualified members is insufficient. Therefore, such committee could not be appointed.

The Independent Directors

In the fiscal year 2021, the independent directors consisted of:

- | | |
|------------------------|----------------|
| 1. Mr. Rapee | Phongbupakicha |
| 2. Professor Dr. Amorn | Pimanmas |
| 3. Dr. Piang-or | Loahavilai |

The Independent Directors have performed their duties in line with a principle of "Independence" which is defined as "a key to foster the Directors' responsibilities. A certain number of the Independent Directors should be comprised of the Board of Directors and they can make suggestions or reports with consideration of their duties and responsibilities independently and justly without direct or indirect benefits or advantages in that case and without considering any benefits relating to properties or positions. In addition, the Independent Directors are not under any influence from people, groups or situations that would result in the Company and shareholders incurring damage or loss of appropriate benefits due to act or omission of act."



Remuneration Rate for the Board of Directors and Committees

The Company is a state enterprise that has to abide by the Cabinet's resolution regarding the remuneration of the Board of Directors, which includes a fixed amount of remuneration, meeting remuneration, etc. as set by the Ministry of Finance.

The 2020 Annual General Meeting held on 27 January 2020 resolved to approve the remuneration and meeting allowances of the Company's directors as follows:

1. Remuneration for the Directors

- 1.1 The monthly remuneration is Baht 10,000.- per person, the Chairman receives two times the remuneration of the Directors. If being a director during the month, the calculation shall be made in proportion to that month.
- 1.2 The meeting allowance per attendance is 20,000.- Baht per person, the Chairman or the Chairman of the meeting receives an additional 25% of meeting allowance, the meeting allowance will be paid once a month. However, in the event that there is a reasonable cause, it may consider paying the meeting allowance more than 1 time per month, but not more than 15 times per year.

2. The remuneration of Sub-committees

2.1 The Audit Committee

2.1.1 The monthly remuneration is 10,000.- baht per person, if there is no meeting held in any month, the monthly remuneration will be also paid, If being a director during the month, the calculation shall be made in proportion to that month.

2.1.2 The Chairman of the Audit Committee receives an additional 25% of remuneration.

2.2 Directors appointed by the Board of Directors, a sub-committee or those who work in the Board of Directors, subcommittee or other sub-working groups.

2.2.1 The meeting allowance per attendance is 10,000.- Baht per person.

2.2.2 The Chairman of the meeting receives an additional 25% of meeting allowance.

2.3 The meeting allowance for sub-committees

2.3.1 The meeting allowances for sub-committees to be paid to only directors attending the meeting must not over 2 sub-committees, and not more than once per month for each sub-committee.

2.3.2 The monthly allowance for the Audit Committee shall be counted as the payment of meeting allowances for sub-committees as well.

The Company shall not provide any other privileges for directors in addition to the above remunerations.

Remuneration Rate for the Board of Directors and Committees Divided into Groups in the fiscal year 2021

No.	Committee	Amount (Baht)
1	The Board of Directors	2,035,000.00
2	The Executive Committee	550,000.00
3	The Risk Management Committee	55,000.00
4	The Innovation Management Committee	32,500.00
5	The Legal Committee	357,500.00
6	The Corporate Governance and Corporate Social Responsibility	550,000.00
Total		3,580,000.00

Remuneration Rate for the Board of Directors and Committees Divided individually in the fiscal year 2021

No.	Committee		Amount (Baht)
1	Air Chief Marshal Siwakiat	Jayema	526,000.00
2	Mr. Lavaron	Sangsnit	136,774.00
3	Mr. Rapee	Phongbupakicha	150,483.87
4	Dr. Kulaya	Tantitemit	423,226.00
5	Mr. Puttipong	Prasarttong-Osoth	560,887.00
6	Mrs. Phongsaward	Guyaroonsuith	617,500.00
7	Professor Dr. Amorn	Pimanmas	540,000.00
8	Mrs. Jantira	Buruspat	170,333.33
9	Dr. Piang-or	Loahavilai ¹	137,983.87
10	Mr. Pathom	Chaloeywares	87,983.87
11	Mr. Somnuk	Rongthong	471,935.48
12	Dr. Abhijai	Chandrasen	440,000.00
13	Miss Nathsinee	Yuttidhammadamrong	80,000.00
14	Miss Chunchachit	Sungmai	70,000.00
15	Dr. Wiparat	De-ong	10,000.00
16	Dr. Suthee	Phoojaruenchanachai	10,000.00
Total			4,433,107.42

The Labour Relations Committee

In the fiscal year 2021, (October 2020 - September 2021), there were 12 meetings with attendance details as follows:

			No. of attendance
1	Mr. Puttipong Prasarttong-Osoth	Chairman	2
2	Mr. Somnuk Rongthong	Chairman	10
3	Mr. Tinnagorn Choowong	Member (Employer)	9
4	Miss Duangta Samitsuwan	Member (Employer)	3
5	Mr. Sukluer Chiawarcheep	Member (Employer)	8
6	Mrs. Sirikes Niemloy	Member (Employer)	12
7	Mr. Channarong Chuacharoen	Member (Employer)	12
8	Mr. Chamnan Ruechai	Member (Employer)	11
9	Mrs. Thaniya Suntharasantic	Member (Employer)	10
10	Mr. Chana Tadtasai	Member (Employer)	12
11	Mrs. Wanthiya Hengtrakul	Member (Employer)	9
12	Mrs. Kleawthong Lapthananon	Member (Employer)	11

			No. of attendance
13	Mr. Niwat Lekdee	Member (Employer)	1
14	Mrs. Pornwalai Visalteerakorn	Member and Secretary	12
15	Mr. Matee Khamhaeng	Member (Employee)	12
16	Mr. Nirut Puttstit	Member (Employee)	12
17	Mr. Kant Teekanuntaporn	Member (Employee)	3
18	Mr. Ulan Siribunyarit	Member (Employee)	9
19	FS1 Chaiyant Changrangkarn	Member (Employee)	11
20	Mr. Akasak Phothong	Member (Employee)	1
21	Mr. Sudkhate Wiengsri	Member (Employee)	1
22	Mr. Sangsit Prasomtong	Member (Employee)	2
23	Acting 2 nd Lieutenant Chai Chinapairot	Member (Employee)	10
24	Mr. Rattanyu Klinpikul	Member (Employee)	10
25	Mr. Jirasak Prasompong	Member (Employee)	10
26	Ms. Orisa Cheawkasem	Member (Employee)	10
27	Mr. Sapol Singhadara	Member (Employee)	12

Remark:

1. No. 1 The Chairman of the Board has been newly appointed, effective from July 27, 2021.
2. AEROTHAI side has changed the new representatives from No. 4 and No. 5 to No. 3 and No. 11, effective from December 16, 2020; from No. 13 to No. 12, effective on August 1, 2021.
3. The Employees have changed their representative from No. 17 to No. 18, effective from February 24, 2021.
4. No. 23-26 has been re-appointed, effective from December 16, 2020.

Remuneration for Senior Executives

Year	Persons	Salary & Other remunerations (Millon Baht)
2019	6	44.62
2020	6	39.98
2021	4	16.36

As of September 30, 2021

Remarks

- 1) Other remunerations for senior executives of AEROTHAI include position allowance, license fee, lump sum of remuneration for company car and special award.
- 2) In 2020 and 2021, special award is refrained to pay.



Internal Audit

The internal audit activities for the year 2021 are conducted with independence, objectivity, ethic and proficiency in accordance with the standards internal audit practices as clearly defined in the office of internal audit charter. In the past year, the Office of Internal Audit focused on enhancing the performance of the auditing unit for higher achievement in line with the company's objectives. From internal audit's activities and process by conforming to the law, regulation and required standards, we provided the valuable recommendations for bringing a systematic and improving risk management, control and governance processes to the audited units as well as the company. For creating our professionalism and confidence to the stakeholder, we encouraged our internal auditors to extend the expertise both knowledge and skill in their auditing areas and supporting them to obtain certificates of professional practice from the professional association both domestic and international.

Internal Audit Plan

In the year 2021, the office of internal audit had reviewed the audit plan in order to meet the environment meanwhile we had developed the 5 years strategic risk based audit plan (fiscal years 2022 – 2026) and the audit plan for the fiscal year 2022 with highlight on the company's objectives and strategies. By gathering the important information such as State Enterprise Performance Assessment Report on Core Business Enablers (Baseline), risk assessment and internal control report of the company as well as stakeholder and top management's expectation, the strategic auditing plan and the 2022 auditing plan have been developed. Therefore, we can ensure that the auditing plan of the office of Internal Audit is met the company's policies, goals and operational objectives.

Internal Audit Execution

For internal audit execution, the office provides the assurance and consulting services as the result of our auditing execution, our stakeholder can ensure that the company are complied with laws, regulation and company’s policy, as well as the reliability of financial information and the work that impacts on the goals of the company are identified and being properly mitigated. Moreover, we also provide the report for the suitability maintaining of the company’s assets and the report of assessment of the efficiency and cost effectiveness for the use of resources to operate the company business.

For the auditing engagement activities, the auditing plan in detail has been evolved by means of collecting the information and reviewed risk factors, internal controls and other significant abnormalities then apply them to set up auditing objectives, execution framework and the auditing program. The auditing report including recommendations is propose to the audited units and executives for their further actions.

In 2021, the Office of Internal Audit has fully completed its auditing program as well as the other auditing activities assigned by management which cover the following issues; risks and corruption indication. For the use of digital technology, the internal audit management system has been successfully implemented. The internal audit management system can increase the efficiency and productivity of the internal audit process. Including In 2021, the Office of Internal Audit has developed a development plan the Office of Internal Audit to enhance the performance of the Office of Internal Audit

Development of Auditors’ Competencies

Competency is the one of our code of ethic that internal auditors apply their knowledge, skill and experience in their internal audit services. Therefore, the Office of Internal Audit promotes knowledge, skill and professionalism for our internal auditors. So that the internal auditors perform their services with proficiency and carefulness in accordance with the standards and code of ethic for the professional internal audit of Thailand and internal the Institute of Internal Auditors’ (IIA) International Professional Practices Framework (IPPF) that can assure audited units of our services.

Internal auditors are continuously developed and trained both internal and external including other skills necessary to perform their job efficiently. The office of Internal Audit also promote and encourage auditors to acquire the various certificates in internal audit and other certificates necessary for their works. Currently, 13 of internal auditors (52%) are certified as professional auditors.



Financial Report

Report of the Board of Directors' Responsibility to the Financial Statements

AEROTHAI's Financial Report was arranged under the approval of the Company's Board of Directors to present the Company's annual financial and operating performance in accordance with generally accepted accounting standards.

The Company's Board of Directors was aware of the duties and responsibilities to prepare financial statements in compliance with generally accepted accounting standards as well as financial information presented in the 2021 Annual Report. Therefore, the Company applied appropriate accounting principles on a consistent basis with due consideration of optimal estimation in preparing the Company's financial statements. All important information was sufficiently disclosed in the notes on the Company's Financial Statements for the benefits of the Company's shareholders and stakeholders.

In addition, The Company's Board of Directors has deployed and maintained the effective systems of risk management and internal controls which provided reasonable assurance that the Company's accounting records were accurate, complete and sufficient to protect the assets of the Company as well as prevent fraud or other material irregular activities.

The Company's Board of Directors monitored the preparation of financial reports by appointing the Audit Committee to oversee the quality of the Company's financial reports and internal control systems. The Audit Committee's opinion regarding such matters was disclosed under the Audit Committee's Report in this Annual Report.

In the Board of Directors' opinion, the Company's internal control systems were satisfactory and could assure the reliability of the Company's financial statements in compliance with generally accepted accounting standards, legal requirements and other associated regulations.

1. The Company's Operation Analysis

In the fiscal year 2021, the Company has an income lower than expenditure at Baht 3,625.05 million.

Items	2021 (Million Baht)	2020 (Million Baht)	Increase (Decrease)	
			Million Baht	%
Income				
Air Navigation Services	2,664.35	6,437.32	(3,772.67)	(59)
Other Related Services	404.46	776.52	(372.06)	(48)
Welfare Fund	6.81	15.50	(8.69)	(56)
Other Services	87.12	162.61	(75.49)	(46)
Total Income	3,162.74	7,391.95	(4,229.21)	(57)
Expenditure				
Operating Expenditure	6,505.36	10,542.02	(4,036.66)	(38)
Welfare Fund Expenditure	269.55	315.43	(45.88)	(15)
Finance Costs	12.88	5.88	7.00	119
Total Expenditure	6,787.79	10,863.33	(4,075.54)	(38)
Income higher(lower) than expenditure for the year	(3,625.05)	(3,471.38)	(153.67)	(4)

1.1 Income

The Company's total income in the fiscal year 2021 was Baht 3,162.74 million. This was derived mainly from income from air navigation services of Baht 2,664.35 million or 84% of total income along with income from other related services including rental and maintenance of equipment, aeronautical telecommunications services (AOC), and work orders accounting for 13% of total income or Baht 404.46 million. In addition, income from other services was Baht 87.12 million or 3%.

Actual income from air navigation services was Baht 2,664.35 million with a decrease of Baht 3,772.97 million or 59% from the previous year due to the effect of COVID-19 pandemic which led to a continuous decline in air traffic volume. In 2021, the income of air traffic services was declined due to the decreasing number of flights by 55% compared to previous year and the compliance with the Civil Aviation Board's resolution by giving discounts on Air Navigation Service Charges Income of Baht 404.46 million from other related services decreased by 48% or Baht 372.06 million from the previous year mainly due to a fall in income from rental and maintenance of equipment and the Aeronautical Information Service based on the declining number of flights. The other income of Baht 87.12million decreased by 46% or Baht 75.49 million from the previous year, mainly due to the decreasing interest rates on bank deposits. The welfare fund income was decrease from the previous year by Baht 8.69 million or 56%, this derived from the decrease in nutrition related income due to the preventive measures against the spread of coronavirus 2019 (COVID-19) and the fall of income from interest of bank deposits.

1.2 Expenditure

The Company's total expenditure in the fiscal year 2021 was Baht 6,787.79 million, of which Baht 4,034.15 million was accounted for employee benefits, Baht 2,471.21 million was other operating expenditure, Baht 269.55 million was the welfare fund expenditure, and the remaining Baht 12.88 million was the finance costs. In 2021, the Company could reduce the expenditure of Baht 4,613.68 million or 40%, consisting of 87% personnel expenditure and 13% other operating expenditure.

2. Analysis of Financial Status

2.1 Assets

The Company's total assets as of 30 September 2021 were Baht 10,440.82 million, comprised of 22% current assets and 78% non-current assets, with the following details:

Items	2021 (Million Baht)	2020 (Million Baht)	Increase (Decrease)	
			Million Baht	%
Current Assets	2,303.05	5,760.18	(3,457.13)	(60)
Non-current Assets				
- Other Formal Non-current Assets	12.41	71.70	(59.29)	(83)
Assets				
- Long-Term Loans	10.77	8.56	2.21	26
- Building & Equipment	7,169.69	7,600.05	(430.36)	(6)
- Right-of-use assets	748.64	-	748.64	100
- Intangible Assets	73.26	111.00	(37.74)	(34)
- Non-current assets pledged as collateral	123.00	123.00	-	-
Total	10,440.82	13,674.49	(3,233.67)	(24)

In the fiscal year 2021, total assets decreased by 24% or Baht 3,233.67 million from the previous year due to a decrease in current assets by 60% or Baht 3,457.13 million, mainly derived from a decrease in other current assets, cash and cash equivalents disbursed to strengthen the financial liquidity, and receivables. The decrease in receivables was due to an allowance for expected credit losses in accordance with the Financial Reporting Standards for Financial Instruments by considering the loss over the life of the financial instruments, in which the Company originally estimated the allowance for doubtful accounts based on the analysis of payment records and the forecast on the future debt payment of customers. During the year, one of significant customers has entered the business rehabilitation process, in which the Company considers to record the allowance for credit losses that may occur for such receivable in full amount.

In addition, the non-current assets were increased by Baht 223.46 million, or 3%, mainly due to the right-of-use assets because the Company has adopted the Thai Financial Reporting Standard 16 regarding Leases (TFRS 16) for the first time since October 1, 2020, it has affected the lease contract of buildings and land. Upon the principles of the said financial reporting standard, it stipulates the Company to recognize the transaction of the right-of-use assets and lease liability for lease contract, which the Company has originally recognized the expenditure under the operating leases as expenses by means of linear over the term of the contract. As a result, the nature of expenses related to the lease is converted to depreciation of the right-of-use assets and interest expense on the lease liability.

2.2 Liabilities

The Company's total liabilities as of 30 September 2021 were Baht 6,901.66 million, comprised of 23% current liabilities and 77% non-current liabilities with the following details:

Items	2021 (Million Baht)	2020 (Million Baht)	Increase (Decrease)	
			Million Baht	%
Current Liabilities				
- Short-term Loans from Financial Institutions	700.00	-	700.00	100
- Portion of long-term liabilities with financial institutions due within one year	126.94	126.94	-	-
- Other current liabilities	729.82	2,065.39	(1,335.57)	(65)
Non-current Liabilities				
- Long-Term Loans from Financial Institutions	759.07	190.19	568.88	299
- Lease liabilities	711.67	-	711.67	100
- Estimated liabilities for employee benefits	3,863.03	3,986.52	(123.49)	(3)
- Estimated long-term liabilities	11.13	18.65	(7.52)	(40)
- Other non-current Liabilities	-	0.11	(0.11)	(100)
Total	6,901.66	6,387.80	513.86	8

In 2021, total liabilities increased by 8% or Baht 513.86 million from the previous year, it mainly due to the short-term loans from financial institutions. In 2021, the accrued expenditure was decreased because the Board of Directors Meeting No. 10/21, held on August 25, 2021, resolved to refrain from paying special awards for the years 2020 and 2021.

Most of non-current liabilities consisted of the estimated liabilities for employee benefits and long-term loans from financial institutions to be spent for the investments in various projects.

2.3 Shareholders' Equity

The Company's shareholders' equity as of 30 September 2021 was Baht 3,539.16 million with the following details:

Items	2021 (Million Baht)	2020 (Million Baht)	Increase (Decrease)	
			Million Baht	%
Registered Ordinary Share Capital	660.00	660.00	-	-
Staff Welfare Fund	335.27	337.85	(2.58)	(1)
Income higher than expenditure (accumulated)	2,543.89	6,288.84	(3,744.95)	(60)
Total	3,539.16	7,286.69	(3,747.53)	(51)

The capital structure as of 30 September 2021 comprised of total liabilities of Baht 6,901.66million or 66% and shareholders' equity of Baht 3,539.16 million or 34%.

3. Cash Flow Analysis

In the fiscal year 2021, the Company's ending balance of cash and cash equivalents as of 30 September 2021 was Baht 1,452.08 million, which decreased from the beginning balance by Baht 420.08 million. The net cash provided by the investment activities was mainly from temporary investment, the net cash received from the financing activities was mainly the loans from financial institutions. Additionally, the net cash used in operational activities was mainly the income lower than the expenditure for the year.

Items	2021 (Million Baht)	2020 (Million Baht)	Increase (Decrease) (Million Baht)
Cash Flow from Operating Activities	(3,549.09)	(2,137.08)	(1,412.01)
Cash Flow from Investing Activities	1,912.13	2,349.12	(436.99)
Cash Flow from Financing Activities	1,217.38	(135.04)	1,352.42
Gain (Loss) on Exchange Rate	(0.50)	1.55	(2.05)
Cash and Cash Equivalents - At the end of the period	1,452.08	1,872.16	(420.08)

4. Financial Ratio

In the fiscal year 2021, the Company's debt-to-equity ratio increased from the previous year due to accumulated income-over-expenditure. Additionally, the Debt Service Coverage Ratio (an ability to pay principal and interests) derived from net cash flows from operating activities which was mainly from the higher depreciation and amortization of the completed projects.

Items	2021 (Million Baht)	2020 (Million Baht)	Increase (Decrease)
Debt-to-Equity Ratio (times)	1.95	0.88	1.07
Debt Service Coverage Ratio (times)	11.75	9.77	1.98

The Company operates its business on a Cost Recovery Basis, the Company's funds for various investments are financed by the income-over-expenditure that the Company retains according to the resolution of the Ordinary General Meeting and long-term loans from financial institutions. The ability to repayment loans depends mainly on depreciation which is already included in Air Navigation Services Charges (ANS Charges) to be collected from Airlines.



Financial Trend

1. Financial trend in 2022

The Company expects a slow recovery in flight volume as Thailand will reopen to international travel after the Corona Virus Disease 2019 (COVID-19) pandemic is resolved in 2022. Due to an uncertainty of the COVID-19 situation, however, the recovery of flight volume may postpone from the forecasted level. Thus, the Company has been revised the trend of flight volume and forecasted a 35% increase in flight volume from 2021. At present, the Company still maintains the unit rate of ANS charges for En Route at Baht 3,500 per unit and Terminal at Baht 500 per unit.

As a result, the Company projects to have an under-recovery amount of Baht 5,000-6,000 million in 2022. To mitigate the effect of under-recovery and improve our liquidity, in 2022, the Company keeps on strictly implementing overall cost reduction measures including personal and other operating expenditures. The Company has managed to reduce any expenditures that have no impact on the provision of air navigation services by tightly controlling budget spending and adjusting method of operation/work procedures to be in line with the situation.

Since the COVID-19 has considerably affected the financial status of the Company, the Company has set the Capital Expenditure Budget of 2022 to be accordance with investment measures of current situation by postponing all non-safety related investments to fiscal year 2023 onwards. The ceiling of the Capital Expenditure Budget in 2022 that was approved by the Cabinet on 21 September 2021 is at Baht 700.00 million.

2. Financial Trend in 5-year period (2022-2026)

5-year Financial Forecast (2022-2026): The COVID-19 Outbreak has greatly impacted the aviation industry. Thus, the air traffic volume has substantially declined and led to a fall in the Company's income since main income of the Company is from Air Navigation Services. The Company projects that international air traffic volume will start to recover in 2022 and resume to pre-pandemic level in 2024 which in line with IATA projection on aviation Industry trend. Moreover, the recovery of domestic and short haul travel will be faster than long haul travel. However, there is still a risk on air travel recovery due to the potential for new variants of the COVID-19 virus to emerge which cause an international travel restriction. Accordingly, The Company projects a continuously under-recovery until 2023.

5-year Investment Plan and Source of Financing: According to the 5-year investment plan (2022-2026) which is consistent with the Company's Corporate Plan for 2022-2026, the limit of investment budget is expected at approximately Baht 8,800 million. The major investment includes U-Tapao International Airport air navigation services provision project. Besides that, the investment will be mainly used in improvement and development of modern systems and equipment to ensure the continuity of safety services and enhance competitiveness and capacity to serve air transport of the Country. The sources of investment include long-term loan and other remaining working capital.



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Independent Auditor's Report

To the shareholders of Aeronautical Radio of Thailand Ltd.

Opinion

I have audited the financial statements of Aeronautical Radio of Thailand Ltd. (the "Company"), which comprise the statements of financial position as at 30 September 2021, the statements of comprehensive income over (under) expenses, changes in equity and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

In my opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Company as at 30 September 2021 and its financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Basis for Opinion

I conducted my audit in accordance with the State Audit Standards (SASs) and Thai Standards on Auditing (TSAs). My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Company in accordance with the SASs as determined by the State Audit Commission and the Code of Ethics for Professional Accountants issued by the Federation of Accounting Professions that is relevant to my audit of the financial statements, and I have fulfilled my other ethical responsibilities in accordance with the SASs and these ethical requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Emphasis of Matter

I draw attention to note 3 to the financial statements describing the effect of the Company's adoption from 1 October 2020 of certain new accounting policies and the retrospective adjustment of overcollection to member airlines recognition. The corresponding figures presented are based on the audited financial statements as at and for the year ended 30 September 2020, which were audited by another auditor who expressed an unmodified opinion with Emphasis of Matter paragraph highlighting the significant impact of COVID-19 pandemic on those statements on 4 December 2020, after making the adjustments described in note 3. My opinion is not modified in respect of this matter.

In addition, I draw attention to note 5 to the financial statements describing the impact of COVID-19 pandemic to the Company's operation and the management's mitigation. My opinion is not modified in respect of this matter.

KPMG Phoomchai Audit Ltd., a Thai limited liability company and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.



Other Matters

The SASs as mentioned in the *Basis for Opinion* section and the *Auditor's Responsibilities for the Audit of the Financial Statements* section is relevant to the particular section of those SASs applicable to the audit of financial reporting by independent auditor.

Other Information

Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the financial statements and my auditor's report thereon. The annual report is expected to be made available to me after the date of this auditor's report.

My opinion on the financial statements does not cover the other information and I will not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

When I read the annual report, if I conclude that there is a material misstatement therein, I am required to communicate the matter to management and request that the correction be made.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with TFRSs, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the SASs and TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the SASs and TSAs, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.





- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with management regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

(Banthit Tangpakong)
Certified Public Accountant
Registration No. 8509

KPMG Phoomchai Audit Ltd.
Bangkok
13 December 2021

Aeronautical Radio of Thailand Ltd.

Statement of financial position

Assets	Note	30 September		1 October 2019
		2021	2020 (Restated) (Baht)	(Restated)
Current assets				
Cash and cash equivalents	7	1,452,081,525	1,872,162,505	1,793,614,880
Trade and other accounts receivable	17, 22	632,549,627	1,097,349,649	1,370,390,778
Short-term loans	17	17,298,084	15,673,873	12,826,471
Supplies	8	76,424,513	68,999,338	72,730,885
Other current financial assets (2020: Current investments)	3, 17	120,293,526	2,695,763,105	5,838,545,982
Other current assets		4,398,879	10,235,949	74,927,532
Total current assets		2,303,046,154	5,760,184,419	9,163,036,528
Non-current assets				
Other non-current financial assets				
(2020: Other long-term investments)	3, 17	12,408,419	71,700,000	71,700,000
Long-term loans	17	10,774,874	8,563,033	4,243,856
Buildings and equipment	9, 22	7,169,688,417	7,600,049,019	7,911,731,899
Right-of-use assets	3, 10	748,644,598	-	-
Intangible assets	11	73,256,210	110,996,794	122,005,958
Non-current financial assets pledged as collateral				
(2020: Restricted bank deposits at financial institutions)	3, 17	123,000,000	123,000,000	123,000,000
Total non-current assets		8,137,772,518	7,914,308,846	8,232,681,713
Total assets		10,440,818,672	13,674,493,265	17,395,718,241

The accompanying notes form an integral part of the financial statements.



Aeronautical Radio of Thailand Ltd.

Statement of financial position

Liabilities and equity	Note	30 September		
		2021	2020 (Restated) (Baht)	1 October 2019 (Restated)
Current liabilities				
Trade and other accounts payable	22	431,043,540	462,762,287	701,146,294
Short-term loans from financial institutions	6, 12	700,000,000	-	-
Current portion of long-term loans from financial institutions	6, 12	126,940,000	126,940,000	126,940,000
Current portion of lease liabilities	3, 10	36,416,640	-	-
Accrued expenses		76,411,504	1,371,568,515	1,306,978,871
Deposits	22	133,478,970	166,098,931	169,294,915
Other current liabilities	22	<u>52,471,576</u>	<u>64,955,941</u>	<u>118,602,638</u>
Total current liabilities		<u>1,556,762,230</u>	<u>2,192,325,674</u>	<u>2,422,962,718</u>
Non-current liabilities				
Long-term loans from financial institutions	6, 12	759,070,000	190,190,000	317,130,000
Lease liabilities	3, 12	711,673,055	-	-
Provisions for employee benefits	13	3,863,026,328	3,986,523,834	3,897,441,969
Non-current provisions		11,123,232	18,653,535	-
Other non-current liabilities		<u>-</u>	<u>111,457</u>	<u>110,248</u>
Total non-current liabilities		<u>5,344,892,615</u>	<u>4,195,478,826</u>	<u>4,214,682,217</u>
Total liabilities		<u>6,901,654,845</u>	<u>6,387,804,500</u>	<u>6,637,644,935</u>
Equity				
Share capital:				
Authorised share capital (6,600,000 ordinary shares, par value at Baht 100 per share)		<u>660,000,000</u>	<u>660,000,000</u>	<u>660,000,000</u>
Issued and paid-up share capital (6,600,000 ordinary shares, par value at Baht 100 per share)		660,000,000	660,000,000	660,000,000
Retained income over expenses				
Appropriated				
Staff welfare fund	18	335,270,893	337,847,676	382,703,183
Unappropriated	3	<u>2,543,892,934</u>	<u>6,288,841,089</u>	<u>9,715,370,123</u>
Total equity		<u>3,539,163,827</u>	<u>7,286,688,765</u>	<u>10,758,073,306</u>
Total liabilities and equity		<u>10,440,818,672</u>	<u>13,674,493,265</u>	<u>17,395,718,241</u>

The accompanying notes form an integral part of the financial statements.

Aeronautical Radio of Thailand Ltd.
Statement of comprehensive income and expenses

	Note	Year ended 30 September	
		2021	2020
		<i>(Baht)</i>	
Income			
Income from air navigation service charges		2,664,347,064	6,437,322,222
Equipment rental, maintenance and NOC income		360,277,051	492,097,515
Income from work orders		44,178,036	284,423,055
Income of staff welfare fund	18	6,808,301	15,501,642
Other income		87,124,765	162,605,861
Total income		3,162,735,217	7,391,950,295
Expenses			
Costs of production		43,031,460	226,264,920
Supplies used		15,779,032	28,265,754
Employee benefit expenses	14	5,316,656,056	7,733,931,735
Depreciation and amortisation expenses		1,270,785,433	1,221,561,062
Repair and maintenance expenses		277,617,194	281,813,448
Rental expenses and property tax		173,728,631	228,945,243
Utilities and communication expenses		154,267,209	168,170,862
Expenses of staff welfare fund	18	269,546,722	315,433,171
Other expenses		538,528,656	653,072,420
Reversal of special rewards	14	(1,285,034,968)	-
Finance costs		12,879,815	5,876,221
Total expenses		6,787,785,240	10,863,334,836
Income under expenses for the year		(3,625,050,023)	(3,471,384,541)

The accompanying notes form an integral part of the financial statements.



Aeronautical Radio of Thailand Ltd.
Statement of comprehensive income and expenses

	Note	Year ended 30 September	
		2021	2020
		(Baht)	
<i>Other comprehensive income over (under) expenses</i>			
<i>Items that will not be reclassified to income over (under) expenses</i>			
Gain on remeasurements of defined benefit plans	13	237,972,532	-
Total items that will not be reclassified to income over (under) expenses		237,972,532	-
Comprehensive income over (under) expenses for the year		237,972,532	-
Total comprehensive income under expenses for the year	15	<u>(3,387,077,491)</u>	<u>(3,471,384,541)</u>
Income under expenses for the year			
The Company		(3,362,311,602)	(3,171,453,012)
Staff welfare fund	18	(262,738,421)	(299,931,529)
		<u>(3,625,050,023)</u>	<u>(3,471,384,541)</u>
Comprehensive income under expenses for the year			
The Company		(3,124,339,070)	(3,171,453,012)
Staff welfare fund	18	(262,738,421)	(299,931,529)
		<u>(3,387,077,491)</u>	<u>(3,471,384,541)</u>
Basic income under expenses per share		<u>(549.25)</u>	<u>(525.97)</u>

The accompanying notes form an integral part of the financial statements.



Aeronautical Radio of Thailand Ltd.
Statement of changes in equity

	Note	Retained income over expenses			Total equity
		Issued and paid-up share capital	Staff welfare fund	Unappropriated	
Year ended 30 September 2020					
Balance at 1 October 2019 - as reported		660,000,000	382,703,183	-	1,042,703,183
Impact of retrospective adjustment		-	-	9,715,370,123	9,715,370,123
Balance at 1 October 2019 - restated	3(c)	660,000,000	382,703,183	9,715,370,123	10,758,073,306
Comprehensive income over (under) expenses for the year					
Income under expenses		-	(299,931,529)	(3,171,453,012)	(3,471,384,541)
Other comprehensive income over (under) expenses		-	-	-	-
Total comprehensive income over (under) expenses for the year		-	(299,931,529)	(3,171,453,012)	(3,471,384,541)
Transfer to staff welfare fund	18	-	255,076,022	(255,076,022)	-
Balance at 30 September 2020		660,000,000	337,847,676	6,288,841,089	7,286,688,765

The accompanying notes form an integral part of the financial statements.

Aeronautical Radio of Thailand Ltd.
Statement of changes in equity

	Note	Retained income over expenses			Total equity
		Issued and paid-up share capital	Staff welfare fund	Unappropriated	
Year ended 30 September 2021					
Balance at 30 September 2020 - as reported		660,000,000	337,847,676	-	997,847,676
Impact of retrospective adjustment	3(c)	-	-	6,288,841,089	6,288,841,089
Balance at 30 September 2020 - restated		660,000,000	337,847,676	6,288,841,089	7,286,688,765
Impact of changes in accounting policies	3(a)	-	-	(360,447,447)	(360,447,447)
Balance at 1 October 2020		660,000,000	337,847,676	5,928,393,642	6,926,241,318
Comprehensive income over (under) expenses for the year					
Income under expenses		-	(262,738,421)	(3,362,311,602)	(3,625,050,023)
Other comprehensive income over expenses		-	-	237,972,532	237,972,532
Total comprehensive income over (under) expenses for the year		-	(262,738,421)	(3,124,339,070)	(3,387,077,491)
Transfer to staff welfare fund	18	-	260,161,638	(260,161,638)	-
Balance at 30 September 2021		660,000,000	335,270,893	2,543,892,934	3,539,163,827

The accompanying notes form an integral part of the financial statements.

Aeronautical Radio of Thailand Ltd.

Statement of cash flows

	Year ended 30 September	
	2021	2020
	<i>(Baht)</i>	
<i>Cash flows from operating activities</i>		
Income under expenses for the year	(3,625,050,023)	(3,471,384,541)
<i>Adjustments to reconcile income over (under) expenses to cash receipts (payments)</i>		
Unrealised gain on foreign exchange	(406,320)	(3,457,643)
Expected credit losses (2020: Bad debt and doubtful debt expenses)	258,759,334	96,368,756
Depreciation and amortisation	1,271,064,717	1,221,827,801
Gain on disposal of buildings and equipment	(419,447)	(867,719)
Loss on written-off of assets	1,706,574	768,972
Dividend income	(545,072)	(55,581)
Interest income	(59,898,501)	(107,393,558)
Finance costs	12,879,815	5,876,221
Provisions for employee benefits	248,871,109	190,636,676
(Reversal of) provisions	(7,963,073)	19,166,305
Reversal of special rewards	<u>(1,285,034,968)</u>	<u>-</u>
	(3,186,035,855)	(2,048,514,311)
<i>Changes in operating assets and liabilities</i>		
Trade and other accounts receivable	(137,265,611)	179,351,232
Supplies	(7,425,175)	3,731,547
Other current assets	5,837,070	64,691,583
Trade and other accounts payable	(32,671,300)	(238,317,044)
Accrued expenses	(10,122,043)	66,816,582
Deposits	(32,619,960)	(3,195,984)
Other current liabilities	(14,388,925)	(60,089,828)
Employee benefits paid	<u>(134,396,083)</u>	<u>(101,554,811)</u>
Net cash used in operating activities	<u>(3,549,087,882)</u>	<u>(2,137,081,034)</u>

The accompanying notes form an integral part of the financial statements.

Aeronautical Radio of Thailand Ltd.

Statement of cash flows

	Year ended 30 September	
	2021	2020
	<i>(Baht)</i>	
<i>Cash flows from investing activities</i>		
Proceeds from other financial assets		
<i>(2020: Current and other long-term investments)</i>	2,634,761,160	3,142,782,878
Dividends received	545,072	55,581
Loans	(37,359,724)	(33,569,047)
Proceeds from repayment of loans	33,523,672	26,402,468
Acquisition of equipment, assets under construction and intangible assets	(764,411,736)	(894,561,923)
Proceeds from disposal of equipment	1,240,388	1,456,482
Interest received	43,829,644	106,556,563
Net cash from investing activities	1,912,128,476	2,349,123,002
<i>Cash flows from financing activities</i>		
Proceeds from short-term loans from financial institutions	700,000,000	-
Proceeds from long-term loans from financial institutions	695,820,000	-
Repayment of long-term loans from financial institutions	(126,940,000)	(126,940,000)
Interest on long-term loans from financial institutions paid	(4,110,463)	(8,103,159)
Payment of lease liabilities	(39,408,341)	-
Interest on lease liabilities paid	(7,983,797)	-
Net cash from (used in) financing activities	1,217,377,399	(135,043,159)
Net increase (decrease) in cash and cash equivalents, before effect of exchange rate changes	(419,582,007)	76,998,809
Effect of exchange rate changes on cash and cash equivalents	(498,973)	1,548,816
Net increase (decrease) in cash and cash equivalents	(420,080,980)	78,547,625
Cash and cash equivalents at 1 October	1,872,162,505	1,793,614,880
Cash and cash equivalents at 30 September	1,452,081,525	1,872,162,505
<i>Non-cash transactions</i>		
Acquisition of right-of-use assets under lease contracts	787,498,036	-

The accompanying notes form an integral part of the financial statements.

Aeronautical Radio of Thailand Ltd.
Notes to the financial statements
For the year ended 30 September 2021

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Aeronautical Radio of Thailand Ltd.
Notes to the financial statements
For the year ended 30 September 2021

These notes form an integral part of the financial statements.

The financial statements issued for Thai statutory and regulatory reporting purposes are prepared in the Thai language. These English language financial statements have been prepared from the Thai language statutory financial statements, and were approved and authorised for issue by the Directors on 13 December 2021.

1 General information

Aeronautical Radio of Thailand Ltd., the “Company”, is a state enterprise under the Ministry of Transport. The Company’s role and responsibilities are providing air traffic management and related services for the Civil Aviation Authority of Thailand in 3 areas including Air Traffic Management (ATM), Aeronautical Communications, Navigation, and Surveillance (CNS) System/Services, and Aeronautical Information Services (AIS) and Aeronautical Charts under the Air Navigation Act 1954 and its amendments by allowing the Civil Aviation Authority of Thailand (CAAT) to supervise the Company’s services which is in accordance with the resolution of the Cabinet at the meeting on 15 December 2020.

2 Basis of preparation of the financial statements

(a) Statement of compliance

The financial statements are prepared in accordance with Thai Financial Reporting Standards (“TFRS”), and guidelines promulgated by the Federation of Accounting Professions.

New and revised TFRS are effective for annual accounting periods beginning on or after 1 January 2020. The initial application of these new and revised TFRS has resulted in changes in certain of the Company’s accounting policies.

The Company has initially applied TFRS - Financial instruments standards which comprise TFRS 9 *Financial Instruments* and relevant standards and interpretations and TFRS 16 *Leases* and disclosed impact from changes in accounting policies in note 3.

(b) Functional and presentation currency

The financial statements are presented in Thai Baht, which is the Company’s functional currency.

(c) Use of judgements and estimates

The preparation of financial statements in conformity with TFRS requires management to make judgements, estimates and assumptions that affect the application of the Company’s accounting policies. Actual results may differ from these estimates. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively. Relevant information is included in the following notes:

- 4(h) and 10 Whether an arrangement contains a lease; reasonably certain to exercise extension or termination options; sub-lease; determining the incremental borrowing rate;
- 13 Key actuarial assumptions;
- 20 Recognition and measurement of provisions and contingencies: key assumptions about the likelihood and magnitude of an outflow of resources; and
- 17 Measurement of ECL allowance for trade receivables and contract assets: key assumptions in determining the weighted-average loss rate.



Aeronautical Radio of Thailand Ltd.
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3 Changes in accounting policy and retrospective adjustment

The Company has initially applied TFRS - Financial instruments standards and TFRS 16 from 1 October 2021 and and retrospectively adjusted the financial statements relating to overcollection to member airlines.

<i>Impact on changes in accounting policy and retrospective adjustment</i>	<i>Note</i>	<i>Retained income over expenses (in million Baht)</i>
At 30 September 2020 - as reported		-
<i>Increase (decrease) due to:</i>		
Adjustment of overcollection to member airlines	(c)	<u>6,289</u>
At 30 September 2020 - restated		6,289
Adoption of TFRS - Financial instruments standards		
Classification of financial instruments	(a.1)	-
Impairment losses on financial assets	(a.2)	(361)
Adoption of TFRS 16 - net of tax	(b)	<u>-</u>
At 1 October 2020 - restated		<u>5,928</u>
<i>Impact on retrospective adjustment</i>	<i>Note</i>	<i>Retained income over expenses (in million Baht)</i>
At 30 September 2019 - as reported		-
<i>Increase (decrease) due to:</i>		
Adjustment of overcollection to member airlines	(c)	<u>9,715</u>
At 1 October 2019 - restated		<u>9,715</u>

(a) TFRS - Financial instruments standards

The Company has adopted TFRS - Financial instruments standards by adjusting the cumulative effects to retained income over (under) expenses as at 1 October 2020. Therefore, the Company did not adjust the information presented for 2020.

These TFRS - Financial instruments standards establish requirements related to definition, recognition, measurement, impairment and derecognition of financial assets and financial liabilities, including accounting for derivatives and hedge accounting. Financial instruments standards are as follows:

(a.1) Classification and measurement of financial assets and financial liabilities

TFRS 9 contains three principal classification categories for financial assets: measured at amortised cost, fair value through other comprehensive income (FVOCI) and fair value through income over (under) expenses (FVTPL). The classification is based on the cash flow characteristics of the financial asset and the business model in which they are managed. However, the Company may, at initial recognition, irrevocably designate a financial asset as measured at FVTPL. TFRS 9 eliminates the previous classification of held-to-maturity debt securities, available-for-sale securities, trading securities and general investment as specified by TAS 105.

Under TFRS 9, interest income and interest expenses recognised from all financial assets and financial liabilities measured at amortised cost shall be calculated using effective interest rate method. Previously, the Company recognised interest income and interest expenses at the rate specified in the contract.



Aeronautical Radio of Thailand Ltd.
Notes to the financial statements
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The following table shows classification and measurement categories under TAS 105 and TFRS 9.

Classification under TAS 105 at 30 September 2020	Carrying amounts	Classification under TFRS 9 at 1 October 2020		
		FVTPL	Amortised cost - net	Total
<i>(in million Baht)</i>				
Financial assets				
Current investments				
Fixed deposits at financial institutions	2,696	-	2,696	2,696
	<u>2,696</u>	<u>-</u>	<u>2,696</u>	<u>2,696</u>
Other long-term investments				
Restricted bank deposits at financial institutions	123	-	123	123
Fixed deposits at financial institutions	62	-	62	62
Debt securities	10	10	-	10
	<u>195</u>	<u>10</u>	<u>185</u>	<u>195</u>

(a.2) Impairment - Financial assets and contract assets

TFRS 9 introduces the 'expected credit loss' (ECL) model whereas previously the Company estimated the allowance for doubtful account by analysing payment histories and future expectation of customer payment. TFRS 9 requires considerable judgement about how changes in economic factors affect ECLs, which are determined on a probability-weighted basis. The new impairment model applies to financial assets measured at amortised cost, contract assets, lease receivables and debt investments measured at FVOCI, except for investments in equity instruments.

The Company has determined that the application of TFRS 9's impairment requirements at 1 October 2020 results in an additional allowance for impairment loss as follows:

	<i>(in million Baht)</i>
Allowance for doubtful debts at 30 September 2020	
- Trade and other accounts receivable	<u>381</u>
	381
<i>Expected credit losses recognised at 1 October 2020 on:</i>	
- Trade and other accounts receivable	<u>361</u>
Expected credit losses at 1 October 2020	<u>742</u>

The Company has opted to recognise the increase of impairment loss as an adjustment to retained income over expenses as at 1 October 2020.

(b) TFRS 16 Leases

From 1 January 2020, the Company has initially adopted TFRS 16 on contracts previously identified as leases according to TAS 17 *Leases* and TFRIC 4 *Determining whether an arrangement contains a lease* using the modified retrospective approach.

Previously, the Company, as a lessee, recognised payments made under operating leases and relevant lease incentives in profit or loss on a straight-line basis over the term of the lease. Under TFRS 16, the Company assesses whether a contract is, or contains, a lease. If a contract contains lease and non-lease components, the Company allocates the consideration in the contract based on stand-alone selling price (transaction price). As at 1 October 2020, the the Company recognised right-of-use assets and lease liabilities, as a result, the nature of expenses related to those leases was changed because the Company recognised depreciation of right-of-use assets and interest expense on lease liabilities.

Aeronautical Radio of Thailand Ltd.
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On transition, the Company also elected to use the following practical expedients:

- do not recognise right-of-use assets and lease liabilities for leases with less than 12 months of lease term;
- use hindsight when determining the lease term;
- apply a single discount rate to a portfolio of leases with similar characteristics;
- rely on previous assessments whether leases are onerous as an alternative to performing an impairment review; and
- exclude initial direct costs from measuring the right-of-use asset.

Impact from the adoption of TFRS 16

(in million Baht)

At 1 October 2020

Increase in right-of-use assets	758
Increase in lease liabilities	(758)

Measurement of lease liabilities

(in million Baht)

Operating lease commitment as disclosed at 30 September 2020	4
Recognition exemption for short-term leases	(4)
Extension and termination options reasonably certain to be exercised	845
	<u>845</u>
Present value of remaining lease payments, discounted using the incremental borrowing rate at 1 October 2020	758
Finance lease liabilities recognised as at 30 September 2020	-
Lease liabilities recognised at 1 October 2020	<u><u>758</u></u>
Weighted-average incremental borrowing rate (% per annum)	<u>1.08</u>

(c) Overcollection to member airlines

The Company previously interpreted that it may have to pay overcollection to the member airlines and have the right to charge additional fees from the member airlines in the event of income under expenses. The Company therefore recorded the income over expenses as “Accumulated overcollection”. However, in March 2021, the Board of Directors approved the issuance of the Company's Regulation on Revenue Management B.E. 2564 (2021), which has been reviewed by the Legal Committee. And it can be concluded that income over (under) expenses belongs to the Company. The Company may use its discretion in considering the actions as stipulated in the Company's regulations and the Company has no obligation to pay back to member airlines as it will be The Company's working capital and future investment. As a result, the Company retrospectively adjusted the accumulated overcollection to member airlines which previously, the Company recorded income over expenses as “Accumulated overcollection” which is part of the liabilities and adjust to “Retained income over expenses” which is part of shareholders' equity as follows:

Impact from adjustment of overcollection to member airlines

(in million Baht)

At 30 September 2020

Decrease in accumulated overcollection	(6,289)
Increase in retained income over expenses	6,289

At 30 September 2019

Decrease in accumulated overcollection	(9,715)
Increase in retained income over expenses	9,715



Aeronautical Radio of Thailand Ltd.
Notes to the financial statements
For the year ended 30 September 2021

4 Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these financial statements except as explained in note 3.

(a) Foreign currencies

Foreign currency transactions

Transactions in foreign currencies are translated to the functional currency at exchange rates at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies are translated to the functional currency at the exchange rate at the reporting date.

Non-monetary assets and liabilities measured at cost in foreign currencies are translated to the functional currency at the exchange rates at the dates of the transactions.

(b) Financial instruments

Accounting policies applicable from 1 October 2020

(b.1) Recognition and initial measurement

Trade accounts receivable, debt securities issued and trade accounts payable are initially recognised when they are originated. All other financial assets and financial liabilities are initially recognised when the Company becomes a party to the contractual provisions of the instrument.

A financial asset and financial liability (unless it is a trade receivable without a significant financing component or measured at FVTPL) is initially measured at fair value plus transaction costs that are directly attributable to its acquisition or issue. A trade receivable without a significant financing component is initially measured at the transaction price. A financial asset and a financial liability measured at FVTPL are initially recognised at fair value.

(b.2) Classification and subsequent measurement

Financial assets – classification

On initial recognition, a financial asset is classified as measured at: amortised cost; fair value to other comprehensive income (FVOCI); or fair value to profit or loss (FVTPL).

Financial assets are not reclassified subsequent to their initial recognition unless the Company changes its business model for managing financial assets, in which case all affected financial assets are reclassified prospectively from the reclassification date.

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cashflows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.



Aeronautical Radio of Thailand Ltd.
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On initial recognition of an equity investment that is not held for trading, the Company may irrevocably elect to present subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortised cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets. On initial recognition, the Company may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortised cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

Financial assets – business model assessment

The Company makes an assessment of the objective of a business model in which a financial asset is held at a portfolio level because this best reflects the way the business is managed and information is provided to management. The information considered includes:

- the stated policies and objectives for the portfolio and the operation of those policies in practice. These include whether management's strategy focuses on earning contractual interest income, maintaining a particular interest rate profile, matching the duration of the financial assets to the duration of any related liabilities or expected cash outflows or realising cash flows through the sale of the assets;
- how the performance of the portfolio is evaluated and reported to the Company's management;
- the risks that affect the performance of the business model (and the financial assets held within that business model) and how those risks are managed;
- how managers of the business are compensated - e.g. whether compensation is based on the fair value of the assets managed or the contractual cash flows collected; and
- the frequency, volume and timing of sales of financial assets in prior periods, the reasons for such sales and expectations about future sales activity.

Transfers of financial assets to third parties in transactions that do not qualify for derecognition are not considered sales for this purpose, consistent with the Company's continuing recognition of the assets.

Financial assets that are held for trading or are managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

Financial assets - assessment whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment,

'principal' is defined as the fair value of the financial asset on initial recognition.

'Interest' is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs (e.g. liquidity risk and administrative costs), as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Company considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Company considers:

- contingent events that would change the amount or timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable-rate features; and
- terms that limit the Company's claim to cash flows from specified assets (e.g. non-recourse features).

Financial assets – subsequent measurement and income over (under) expenses

Financial assets at FVTPL These assets are subsequently measured at fair value. Net income over (under) expenses, including any interest or dividend income, are recognised in income over (under) expenses.

Financial assets at amortised cost These assets are subsequently measured at amortised cost using the effective interest method. The amortised cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognised in income over (under) expenses. Any gain or loss on derecognition is recognised in income over (under) expenses



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Financial liabilities – classification, subsequent measurement and gains and losses

Financial liabilities are classified as measured at amortised cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognised in income over (under) expenses. Other financial liabilities are subsequently measured at amortised cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognised in income over (under) expenses. Any gain or loss on derecognition is also recognised in income over (under) expenses.

(b.3) Derecognition

Financial assets

The Company derecognises a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the Company neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

The Company enters into transactions whereby it transfers assets recognised in its statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognised.

Financial liabilities

The Company derecognises a financial liability when its contractual obligations are discharged or cancelled, or expire. The Company also derecognises a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognised at fair value.

On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognised in income over (under) expenses.

(b.4) Offsetting

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Company currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

Accounting policies applicable before 1 October 2020

Investments in other debt and equity securities

Debt securities and marketable equity securities held for trading are classified as current assets and are stated at fair value, with any resultant gain or loss recognised in income over (under) expenses.

Debt securities that the Company has the positive intent and ability to hold to maturity are classified as held-to-maturity investments. Held-to-maturity investments are stated at amortised cost, less any impairment losses. The difference between the acquisition cost and redemption value of such debt securities is amortised using the effective interest rate method over the period to maturity.

Debt securities and marketable equity securities, other than those securities held for trading or intended to be held to maturity, are classified as available-for-sale investments. Available-for-sale investments are, subsequent to initial recognition, stated at fair value, and changes therein, other than impairment losses and foreign currency differences on available-for-sale monetary items, are recognised directly in equity. Impairment losses and foreign exchange differences are recognised in income over (under) expenses. When these investments are derecognised, the cumulative income over (under) expenses previously recognised directly in equity is recognised in income



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over (under) expenses. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in income over (under) expenses.

Equity securities which are not marketable are stated at cost less any impairment losses.

The fair value of financial instruments classified as held-for-trading and available-for-sale is determined as the quoted bid price at the reporting date.

Disposal of investments

On disposal of an investment, the difference between net disposal proceeds and the carrying amount together with the associated cumulative income over (under) expenses that was reported in equity is recognised in income over (under) expenses.

If the Company disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the weighted average method applied to the carrying value of the total holding of the investment.

(c) Cash and cash equivalents

Cash and cash equivalents in the statements of cash flows comprise cash balances, call deposits and highly liquid short-term investments. Bank overdrafts that are repayable on demand are a component of cash and cash equivalents for the purpose of the statement of cash flows.

(d) Trade and other accounts receivable and contract assets

A receivable is recognised when the Company has an unconditional right to receive consideration. If revenue has been recognised before the Company has an unconditional right to receive consideration, the amount is presented as a contract asset.

A receivable is measured at transaction price less allowance for expected credit loss (*2020: allowance for doubtful accounts*) which is determined based on an analysis of payment histories and future expectations of customer payments. Bad debts are written off when incurred.

(e) Supplies

Supplies, which comprise of spare parts, are measured at the lower of cost and net realisable value.

Cost of supplies is calculated using the weighted average cost principle, and comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs to complete and to make the sale.

(f) Buildings and equipment

Recognition and measurement

Owned assets

Buildings and equipment are measured at cost less accumulated depreciation and impairment.

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the assets to a working condition for their intended use, the costs of dismantling and removing the items and restoring the site on which they are located, and capitalised borrowing costs. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of buildings and equipment have different useful lives, they are accounted for as separate items (major components) of buildings and equipment.



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Any gains and losses on disposal of item of buildings and equipment are determined by comparing the proceeds from disposal with the carrying amount of buildings and equipment, and are recognised in income over (under) expenses.

Subsequent costs

The cost of replacing a part of an item of buildings and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Company, and its cost can be measured reliably. The carrying amount of the replaced part is derecognised. The costs of the day-to-day servicing of buildings and equipment are recognised in income over (under) expenses as incurred.

Depreciation

Depreciation is calculated based on the depreciable amount, which is the cost of an asset, or other amount substituted for cost, less its residual value.

Depreciation is charged to income over (under) expenses on a straight-line basis over the estimated useful lives of each component of an item of buildings and equipment. The estimated useful lives are as follows:

Buildings and building improvements	7 - 20 years
Utility systems	5 - 20 years
Radar and communication equipment	7 - 15 years
Power generators	6, 20 years
Other equipment and teleprinters	7 - 20 years
Furniture and office equipment	5 - 7 years
Vehicles	5 years
Aircrafts	5 - 25 years
Assets from donations	5 - 25 years
Musical instruments and sports equipment	7 years

No depreciation is provided on assets under construction.

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

(g) Intangible assets

Other intangible assets

Other intangible assets that are acquired by the Company and have finite useful lives are measured at cost less accumulated amortisation and accumulated impairment losses.

Subsequent expenditure

Subsequent expenditure is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognised in income over (under) expenses as incurred.

Amortisation

Amortisation is based on the cost of the asset, or other amount substituted for cost, less its residual value.

Amortisation is recognised in income over (under) expenses on a straight-line basis over the estimated useful lives of intangible assets, other than goodwill, from the date that they are available for use, since this most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset. The estimated useful lives are as follows:

Software licences	5 years
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Amortisation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

(h) Leases

Accounting policies applicable from 1 October 2020

At inception of a contract, the Company assesses whether a contract is, or contains, a lease. To assess whether a contract conveys the right to control the use of an identified asset, the Company uses the definition of a lease in TFRS 16.

As a lessee

At commencement or on modification of a contract that contains a lease component, the Company allocates the consideration in the contract to each lease component on the basis of its relative stand-alone prices. However, for the leases of property the Company has elected not to separate non-lease components and account for the lease and non-lease components as a single lease component.

The Company recognises a right-of-use asset and a lease liability at the lease commencement date, except for leases of low-value assets and short-term leases which is recognised as an expense on a straight-line basis over the lease term.

Right-of-use asset is measured at cost, less any accumulated depreciation and impairment loss, and adjusted for any remeasurements of lease liability. The cost of right-of-use asset includes the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of restoration costs, less any lease incentives received. Depreciation is charged to income over (under) expenses on a straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Company by the end of the lease term or the cost of the right-of-use asset reflects that the Company will exercise a purchase option. In that case the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Company's incremental borrowing rate. The lease payments included fixed payments less any lease incentive receivable, amount under purchase, extension or termination option if the Company is reasonably certain to exercise option. Variable lease payments that do not depend on index or a rate are recognised as expenses in the accounting period in which they are incurred.

The Company determines its incremental borrowing rate by obtaining interest rates from various external financing sources and makes certain adjustments to reflect the terms of the lease and type of the asset leased.

The lease liability is measured at amortised cost using the effective interest method. It is remeasured when there is a change in lease term, change in lease payments, change in the estimate of the amount expected to be payable under a residual value guarantee, or a change in the assessment of purchase, extension or termination options. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in income over (under) expenses if the carrying amount of the right-of-use asset has been reduced to zero.

As a lessor

At inception or on modification of a contract that contains a lease component and one or more additional lease or non-lease components, the Company allocates the consideration in the contract to each component on the basis of their relative standalone prices.

When the Company acts as a lessor, it determines at lease inception whether the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. If this is the case, then the lease is a finance lease; if not, then it is an operating lease.



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When the Company is an intermediate lessor, it accounts for its interests in the head lease and the sub-lease separately. It assesses the lease classification of a sub-lease with reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset. If a head lease is a short-term lease to which the Company applies the exemption, then it classifies the sub-lease as an operating lease.

The Company recognises lease payments received under operating leases as rental income on a straight-line basis over the lease term as part of 'rental income.' Initial direct costs incurred in arranging an operating lease are added to the carrying amount of the leased asset and recognised over the lease term on the same basis as rental income. Contingent rents are recognised as rental income in the accounting period in which they are earned.

The Company recognises finance lease receivables at the amount of the Company's net investment in the lease, which comprises the present value of the lease payments and any unguaranteed residual value, discounted using the interest rate implicit in the lease. Finance lease income is allocated to accounting periods so as to reflect a constant periodic rate of return on the Company's net investment outstanding in respect of the leases.

The Company applies the derecognition and impairment requirements in TFRS 9 to the net investment in the lease (See note 4(i)). The Company further regularly reviews estimated unguaranteed residual values used in calculating the gross investment in the lease.

Accounting policies applicable before 1 October 2020

As a lessee, leases in terms of which the Company substantially assumes all the risk and rewards of ownership are classified as finance leases. Property, plant and equipment acquired by way of finance leases is capitalised at the lower of its fair value and the present value of the minimum lease payments at the inception of the lease, less accumulated depreciation and impairment losses. Lease payments are apportioned between the finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are charged directly to the income over (under) expenses.

Assets held under other leases were classified as operating leases and lease payments are recognised in income over (under) expenses on a straight-line basis over the term of the lease.

As a lessor, rental income from investment property is recognised in income over (under) expenses on a straight-line basis over the term of the lease. Lease incentives granted are recognised as an integral part of the total rental income.

Determining whether an arrangement contains a lease

At inception of an arrangement, the Company determines whether such an arrangement is or contains a lease. A specific asset is the subject of a lease if fulfilment of the arrangement is dependent on the use of that specified asset. An arrangement conveys the right to use the asset if the arrangement conveys to the Company the right to control the use of the underlying asset.

At inception or upon reassessment of the arrangement, the Company separates payments and other consideration required by such an arrangement into those for the lease and those for other elements on the basis of their relative fair values. If the Company concludes for a finance lease that it is impracticable to separate the payments reliably, an asset and a liability are recognised at an amount equal to the fair value of the underlying asset. Subsequently the liability is reduced as payments are made and an imputed finance charge on the liability is recognised using the Company's incremental borrowing rate.

(i) *Impairment of financial assets*

Accounting policies applicable from 1 October 2020

The Company recognises allowances for expected credit losses (ECLs) on financial assets measured at amortised cost (including cash and cash equivalents, trade receivables and other receivables, loans to others and related parties), debt investments measured at FVOCI, contract assets, lease receivables, and loan commitments issued which are not measured at FVTPL.



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Measurement of ECLs

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Company expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

ECLs are measured on either of the following bases:

- 12-month ECLs: these are losses that are expected to result from possible default events within the 12 months after the reporting date; or
- lifetime ECLs: these are losses that are expected to result from all possible default events over the expected lives of a financial instrument.

Loss allowances for trade receivables, lease receivables and contract assets are always measured at an amount equal to lifetime ECLs. ECLs on these financial assets are estimated using a provision matrix based on the group's historical credit loss experience, adjusted for factors that are specific to the debtors and an assessment of both current and forecast general economic conditions at the reporting date.

Loss allowances for all other financial instruments, the Company recognises ECLs equal to 12-month ECLs unless there has been a significant increase in credit risk of the financial instrument since initial recognition or credit-impaired financial assets, in which case the loss allowance is measured at an amount equal to lifetime ECLs.

The maximum period considered when estimating ECLs is the maximum contractual period over which the Company is exposed to credit risk.

The Company assumes that the credit risk on a financial asset has increased significantly if it is more than 90 days past due, significant deterioration in financial instruments's credit rating, significant deterioration in the operating results of the debtor and existing or forecast changes in the technological, market, economic or legal environment that have a significant adverse effect on the debtor's ability to meet its obligation to the Company.

The Company considers a financial asset to be in default when:

- the debtor is unlikely to pay its credit obligations to the Company in full, without recourse by the Company to actions such as realising security (if any is held); or
- the financial asset is more than 180 days past due.

Depending on the nature of the financial instruments, the assessment of a significant increase in credit risk is performed on either an individual basis or a collective basis. When the assessment is performed on a collective basis, the financial instruments are grouped based on shared credit risk characteristics, such as past due status and credit risk ratings.

ECLs are remeasured at each reporting date to reflect changes in the financial instrument's credit risk since initial recognition. Increased in loss allowance is recognised as an impairment loss in income over (under) expenses. Loss allowances for financial assets measured at amortised cost are deducted from the gross carrying amount of the assets. For debt securities at FVOCI, the Company recognises an impairment loss in income over (under) expenses with the corresponding entry in other comprehensive income over (under) expenses.

Credit-impaired financial assets

At each reporting date, the Company assesses whether financial assets carried at amortised cost and debt securities at FVOCI are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. Evidence of credit-impairment includes significant financial difficulty, a breach of contract such as more than 180 days past due, probable the debtor will enter bankruptcy.

Write-off

The gross carrying amount of a financial asset is written off when the Company has no reasonable expectations of recovering. Subsequent recoveries of an asset that was previously written off, are recognised as a reversal of impairment in income over (under) expenses in the period in which the recovery occurs.



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Accounting policies applicable before 1 October 2020

The carrying amounts of the Company's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated.

An impairment loss is recognised if the carrying amount of an asset exceeds its recoverable amount. The impairment loss is recognised in income over (under) expenses.

When a decline in the fair value of an available-for-sale financial asset has been recognised directly in equity and there is objective evidence that the value of the asset is impaired, the cumulative loss that had been recognised directly in equity is recognised in income over (under) expenses even though the financial asset has not been derecognised. The amount of the cumulative loss that is recognised in income over (under) expenses is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in income over (under) expenses.

Calculation of recoverable amount

The recoverable amount of held-to-maturity securities carried at amortised cost is calculated as the present value of the estimated future cash flows discounted at the original effective interest rate.

The recoverable amount of available-for-sale financial assets is calculated by reference to the fair value.

Reversal of impairment

An impairment loss in respect of a financial asset is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised in income over (under) expenses. For financial assets carried at amortised cost and available-for-sale financial assets that are debt securities, the reversal is recognised in income over (under) expenses. For available-for-sale financial assets that are equity securities, the reversal is recognised in other comprehensive income over (under) expenses.

(j) Impairment of non-financial assets

The carrying amounts of the Company's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated. For goodwill and intangible assets that have indefinite useful lives or are not yet available for use, the recoverable amount is estimated each year at the same time.

An impairment loss is recognised if the carrying amount of an asset exceeds its recoverable amount. The impairment loss is recognised in income over (under) expenses unless it reverses a previous revaluation credited to equity, in which case it is charged to equity.

Calculation of recoverable amount

The recoverable amount of a non-financial asset is the greater of the asset's value in use and fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversal of impairment

Impairment losses recognised in prior periods in respect of non-financial assets are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.



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(k) Employee benefits

Defined contribution plan

Obligations for contributions to defined contribution plans are expensed in income over (under) expenses as the related service is provided.

Defined benefit plans

The Company's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount.

The calculation of defined benefit obligations is performed in accordance with actuarial principles using the projected unit credit method.

Remeasurements of the net defined benefit liability, actuarial gain or loss are recognised immediately in OCI. The Company determines the interest expense on the net defined benefit liability for the period by applying the discount rate used to measure the defined benefit obligation at the ending of the annual period, taking into account any changes in the net defined benefit liability during the period as a result of contributions and benefit payments. Net interest expense and other expenses related to defined benefit plans are recognised in income over (under) expenses.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognised immediately in profit or loss. The Company recognises gains and losses on the settlement of a defined benefit plan when the settlement occurs.

Other long-term employee benefits

The Company's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. That benefit is discounted to determine its present value. Remeasurements are recognised in income over (under) expenses in the period in which they arise.

Termination benefits

Termination benefits are expensed at the earlier of when the Company can no longer withdraw the offer of those benefits and when the Company recognizes costs for a restructuring. If benefits are not expected to be settled wholly within 12 months of the end of the reporting period, then they are discounted.

Short-term employee benefits

Short-term employee benefits are expensed as the related service is provided. A liability is recognised for the amount expected to be paid if the Company has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

(l) Provisions

A provision is recognised if, as a result of a past event, the Company has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as a finance cost.



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Warranties

A provision for warranties is recognised when the underlying products or services are sold. The provision is based on historical warranty data and a weighting of all possible outcomes against their associated probabilities.

Restructuring costs

A provision for restructuring is recognised when the Company has approved a detailed and formal restructuring plan, and the restructuring either has commenced or has been announced publicly. Future operating losses are not provided for.

Onerous contracts

A provision for onerous contracts is recognised when the expected benefits to be derived by the Company from a contract are lower than the unavoidable cost of meeting the Company's obligations under the contract. The provision is measured at the present value of the lower of the expected cost of terminating the contract and the expected net cost of continuing with the contract. Before a provision is established, the Company recognises any impairment loss on the assets associated with that contract.

(m) Fair value measurement

'Fair value' is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date in the principal or, in its absence, the most advantageous market to which the Company has access at that date. The fair value of a liability reflects its non-performance risk.

A number of the Company's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities.

When one is available, the Company measures the fair value of an instrument using the quoted price in an active market for that instrument. A market is regarded as 'active' if transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.

If there is no quoted price in an active market, then the Company uses valuation techniques that maximise the use of relevant observable inputs and minimise the use of unobservable inputs. The chosen valuation technique incorporates all of the factors that market participants would take into account in pricing a transaction.

If an asset or a liability measured at fair value has a bid price and an ask price, then the Company measures assets and long positions at a bid price and liabilities and short positions at an ask price.

The best evidence of the fair value of a financial instrument on initial recognition is normally the transaction price – i.e. the fair value of the consideration given or received. If the Company determines that the fair value on initial recognition differs from the transaction price and the fair value is evidenced neither by a quoted price in an active market for an identical asset or liability nor based on a valuation technique for which any unobservable inputs are judged to be insignificant in relation to the measurement, then the financial instrument is initially measured at fair value, adjusted to defer the difference between the fair value on initial recognition and the transaction price. Subsequently, that difference is recognised in profit or loss on an appropriate basis over the life of the instrument but no later than when the valuation is wholly supported by observable market data or the transaction is closed out.

Fair values are categorised into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- Level 1: quoted prices in active markets for identical assets or liabilities.
- Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3: inputs for the asset or liability that are based on unobservable input.

If the inputs used to measure the fair value of an asset or liability might be categorised in different levels of the fair value hierarchy, then the fair value measurement is categorised in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.



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The Company recognises transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

(n) Revenue

Revenue is recognised when a customer obtains control of the goods or services in an amount that reflects the consideration to which the Company expects to be entitled, excluding those amounts collected on behalf of third parties and value added tax.

Sale of goods and services

Revenue from sales of goods is recognised when a customer obtains control of the goods, generally on delivery of the goods to the customers. Revenue from rendering of services is recognised as services are provided.

(o) Other income

Other income comprises dividend, interest income and others. Dividend income is recognised in income over (under) expenses on the date on which the Company's right to receive payment is established.

(p) Interest

Accounting policies applicable from 1 October 2020

Effective Interest Rate (EIR)

Interest income or expense is recognised in income over (under) expenses using the effective interest method. The EIR is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to:

- the gross carrying amount of the financial asset; or
- the amortised cost of the financial liability.

In calculating interest income and expense, the effective interest rate is applied to the gross carrying amount of the asset (when the asset is not credit-impaired) or to the amortised cost of the liability. However, for financial assets that have become credit-impaired subsequent to initial recognition, interest income is calculated by applying the effective interest rate to the amortised cost of the financial asset. If the asset is no longer credit-impaired, then the calculation of interest income reverts to the gross basis.

Accounting policies applicable before 1 October 2020

Interest income is recognised in income over (under) expenses at the rate specified in the contract.

Interest expenses and similar costs are charged to income over (under) expenses for the period in which they are incurred, except to the extent that they are capitalised as being directly attributable to the acquisition, construction or production of an asset which necessarily takes a substantial periods of time to be prepared for its intended use or sale.

(q) Income tax

Income tax expense for the year comprises current and deferred tax. Current and deferred tax are recognised in profit or loss except to the extent that they relate to a business combination, or items recognised directly in equity or in other comprehensive income over (under) expenses.

Current tax is the expected tax payable or receivable on the taxable income over (under) expenses for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.



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Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes.

The measurement of deferred tax reflects the tax consequences that would follow the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date.

In determining the amount of current and deferred tax, the Company takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Company believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Company to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the period that such a determination is made.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. Future taxable profits are determined based on the reversal of relevant taxable temporary differences. If the amount of taxable temporary differences is insufficient to recognise a deferred tax asset in full, then future taxable profits, adjusted for reversals of existing temporary differences, are considered, based on the business plans. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realised.

(r) Income over (under) expenses per share

The Company presents basic income over (under) expenses per share (EPS) data for its ordinary shares. Basic EPS is calculated by dividing the income over (under) expenses attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares outstanding during the period, adjusted for own shares held.

(s) Related parties

A related party is a person or entity that has direct or indirect control or has significant influence over the financial and managerial decision-making of the Company; a person or entity that are under common control or under the same significant influence as the Company; or the Company has direct or indirect control or has significant influence over the financial and managerial decision-making of a person or entity.

5 Impact of COVID-19 pandemic

The COVID-19 pandemic is an ongoing global pandemic of coronavirus disease 2019 which has been significantly impacted the global aviation industry during 2020 – 2021. The airlines all over the world has been facing a financial liquidity problem. The Civil Aviation Authority of Thailand (CAAT) announced a ban on passenger flights in the dark red area starting 21 July 2021 to 31 August 2021, then has a great impact on decreasing domestic flights. After Thai government relaxed the measure and allow people to travel out of the restricted red area, CAAT announced the measure to reopen domestic flights starting 1 September 2021, then the number of flights decreased 55% from the previous year and caused the high decreased in The Company's income. Also the Company had to comply with the meeting resolution of Civil Aviation Board to give the remedial measures for airlines due to the COVID-19. The Company assigned the discount on Air Navigation Service charges by 50% discount for all domestic flights and 20% discount for international flights charges for the period of flight operations from 1 April 2020 to 31 December 2020. Then the Company's income had been lost around Baht 500 million. Furthermore, the Company provided further remedial measure to extend the credit terms on invoices of



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50% of Air Navigation Service charge for all airlines in 6 invoicing periods during the operation from January to June 2021, leading to the less of operating liquidity for the whole 2021 to the Company.

In 2021, the Company had income under expenses at Baht 3,625 million, continuing declined from the previous year. Therefore the Company raised the cost control working team to set up the measures to control and save costs in order to relieve the effect from the Company's declining income and increase the financial liquidity. Thus the Company could save the operating expenses at 40% or Baht 4,614 million in 2021, mainly 87% saving on staff cost and 13% saving on other operating expenses. Also a short term loan was drawing to support the operating liquidity.

The rehabilitation of aviation industry has been projected from 2022 to normal situation in 2024, which in line with the estimation of the International Air Transport Association (IATA). Short distance travelling might get back to normal faster than long distance travelling. However there might be an unstable situation happen from mutation and new pandemic of COVID-19 holding the aviation rehabilitation later than projected.

The Company also prepare for the ongoing of COVID-19 pandemic that may occur in 2022 and effect on the late recovery of the number of traffic. The Company will strictly maintain the measure on cost saving both on staff cost and other operating cost whichever not affecting core business on air navigation services. Moreover, the Company have the additional plan to raise funding from short term loans to increase the financial liquidity as well.

6 Related parties

Related parties that the Company had significant transactions with during the year were as follows:

Name of entities	Country of incorporation/ Nationality	Nature of relationships
Member airlines	Thailand	The Company's shareholders, jointly hold 10% shareholding in the Company, and having a representative as a director of the Company
State-owned financial institutions	Thailand	Common shareholders
Key management personnel	Thai	Persons having authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of the Company.

Significant transactions for the years ended 30 September with related parties were as follows:

	2021	2020
	<i>(in million Baht)</i>	
<i>Member airlines</i>		
Income from air navigation service charges	2,382	5,690
Equipment rental, maintenance and NOC income	74	112
<i>State-owned financial institutions</i>		
Finance costs	5	6
<i>Key management personnel</i>		
Directors and committee' remuneration (consist of board of directors, executive committee, risk management committee, corporate governance and corporate social responsibility, legal committee, and innovation management committee)	3	3
Remuneration for state enterprise directors	1	1

Aeronautical Radio of Thailand Ltd.
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Balances as at 30 September with related parties were as follows:

<i>Trade accounts receivable</i>	2021	2020
	<i>(in million Baht)</i>	
Member airlines	1,005	782
	<u>1,005</u>	<u>782</u>
<i>Less allowance for expected credit loss</i> <i>(2020: allowance for doubtful accounts)</i>	(583)	(24)
Net	<u>422</u>	<u>758</u>
<i>Loans from finance institutions</i>	2021	2020
	<i>(in million Baht)</i>	
State-owned financial institutions	1,426	317
Total	<u>1,426</u>	<u>317</u>
Current	667	127
Non-current	759	190
Total	<u>1,426</u>	<u>317</u>

Significant agreements with related parties

Member airlines agreements

As at 30 September 2021, the Company entered into agreement with 92 member airlines (2020: 113 member airlines) to agree on terms and conditions of the service fee, financial support to the Company and the distribution of the Company's shares among all member airlines totaling 10% of the Company's total shares.

Loans from state-owned financial institutions

Short-term loans

On 23 July 2021, the Company issued a promissory note to a state-owned financial institution in amount of Baht 90 million. The payment is scheduled on 20 October 2021 with an interest at the agreed rate.

On 26 August 2021, the Company issued a promissory note to a state-owned financial institution in amount of Baht 200 million. The payment is scheduled on 23 November 2021 with an interest at the agreed rate.

On 27 September 2021, the Company issued a promissory note to a state-owned financial institution in amount of Baht 250 million. The payment is scheduled on 24 December 2021 with an interest at the agreed rate.

Long-term loans

On 3 September 2007, the Company entered into a long-term loan agreement with a state-owned financial institution in amount of Baht 1,650 million. The loan agreement has a term of 15 years with a grace period of 2 years from the date that the Company draws up the first loan. The principal repayment is due every 6 months from the end of the grace period by repaying the 1st - 25th installments in amount of Baht 63.47 million and the 26th installment of Baht 63.25 million. The loan bears an interest rate as agreed in the contract and the interest is due every 6 months from the date that the Company draws up the first loan. The loan is unsecured.

On 22 March 2021, the Company entered into a long-term loan agreement with a state-owned financial institution in amount of Baht 2,678.40 million. The principal repayment and last interest payment are due within 3 years and 6 months from the date that the Company draws up the first loan. The loan bears an interest rate as agreed in the contract and the interest is due every 6 months from the date that the Company draws up the first loan. The loan is unsecured.



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7 Cash and cash equivalents

	2021	2020
	<i>(in million Baht)</i>	
Cash on hand	2	3
Cash at banks – current accounts	7	6
Cash at banks – savings accounts	1,443	1,563
Highly liquid short-term investments	-	300
Cash and cash equivalents in the statement of financial position	<u>1,452</u>	<u>1,872</u>

8 Supplies

	2021	2020
	<i>(in million Baht)</i>	
Spare parts for aircrafts	27	21
Spare parts for navigation aids	27	11
Spare parts for radar	14	31
Spare parts for radio equipment	4	2
Office supplies	4	4
Total	<u>76</u>	<u>69</u>



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9 Buildings and equipment

	Buildings and building improvements	Utility systems	Radar and communication equipment	Power generators	Other equipment and teleprinters	Furniture and office equipment (in million Baht)	Vehicles	Aircrafts	Assets from donations	Music instruments and sports equipment	Assets under construction and installation	Total
Cost												
At 1 October 2019	2,994	1,544	9,430	650	1,563	1,325	6	901	89	4	699	19,205
Additions	-	-	-	-	-	-	-	-	-	-	895	895
Transfers	2	117	311	51	61	76	-	-	6	-	(649)	(25)
Disposal	-	(18)	(100)	(2)	(4)	(19)	-	-	(3)	-	-	(146)
At 30 September 2020 and 1 October 2020	2,996	1,643	9,641	699	1,620	1,382	6	901	92	4	945	19,929
Additions	-	-	-	-	-	-	-	-	-	-	763	763
Transfers	95	62	250	11	56	55	-	-	2	-	(532)	(1)
Disposal	-	(6)	(40)	(7)	(40)	(15)	-	-	-	-	-	(108)
At 30 September 2021	3,091	1,699	9,851	703	1,636	1,422	6	901	94	4	1,176	20,583
Depreciation												
At 1 October 2019	2,048	952	5,633	349	1,055	937	4	229	83	3	-	11,293
Depreciation charge for the year	113	102	605	58	120	141	1	37	3	-	-	1,180
Disposal	-	(18)	(99)	(2)	4	(19)	-	-	(2)	-	-	(144)
At 30 September 2020 and 1 October 2020	2,161	1,036	6,139	405	1,171	1,059	5	266	84	3	-	12,329
Depreciation charge for the year	118	104	611	56	126	135	-	37	5	-	-	1,192
Disposal	-	(6)	(40)	(7)	(40)	(15)	-	-	-	-	-	(108)
At 30 September 2021	2,279	1,134	6,710	454	1,257	1,179	5	303	89	3	-	13,413
Net book value												
At 30 September 2020	835	607	3,502	294	449	323	1	635	8	1	945	7,600
Owned assets	835	607	3,502	294	449	323	1	635	8	1	945	7,600
At 30 September 2021	812	565	3,141	249	379	243	1	598	5	1	1,176	7,170
Owned assets	812	565	3,141	249	379	243	1	598	5	1	1,176	7,170

The gross amount of the Company's fully depreciated plant and equipment that was still in use as at 30 September 2021 amounted to Baht 6,925 million (2020: Baht 6,543 million).

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10 Leases

As a lessee

Right-of-use assets at 30 September 2021

(in million Baht)

Land and buildings	787
Total	787

In 2021, additions to the right-of-use assets of the Company was Baht 787 million.

The Company leases a number of land and buildings with government agency for 3 years, with extension options at the end of lease term. The rental is payable either monthly or yearly as specified in the contract.

Extension options

The Company has extension options on land and building leases exercisable by the Company up to one year before the end of the non-cancellable contract period. Where practicable, the Company seeks to include extension options in new leases to provide operational flexibility. The extension options held are exercisable only by the Company and not by the lessors. The Company assesses at lease commencement date whether it is reasonably certain to exercise the extension options. The Company reassesses whether it is reasonably certain to exercise the options if there is a significant event or significant changes in circumstances within its control.

For the years ended 30 September

2021 2020
(in million Baht)

Amounts recognised in income over (under) expenses

Depreciation of right-of-use assets - Buildings	39	-
Interest on lease liabilities	8	-
Expenses relating to short-term leases	14	21
Expenses relating to leases of low-value assets	2	2
Lease expense	149	200

In 2021, total cash outflow for leases of the Company were Baht 204 million.

11 Intangible assets

Software licences
(in million Baht)

Cost

At 1 October 2019	211
Additions	31
At 30 September 2020 and 1 October 2020	242
Additions	3
At 30 September 2021	245

Amortisation and impairment losses

At 1 October 2019	89
Amortisation for the year	42
At 30 September 2020 and 1 October 2020	131
Amortisation for the year	41
At 30 September 2021	172

Net book value

At 30 September 2020	111
At 30 September 2021	73



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12 Interest-bearing liabilities

	2021		Total (in million Baht)	2020		Total
	Secured	Unsecured		Secured	Unsecured	
Short-term loans from financial institutions	-	700	700	-	-	-
Long-term loans from financial institutions	-	886	886	-	317	317
Lease liabilities	-	748	748	-	-	-
Total interest-bearing liabilities	-	2,334	2,334	-	317	317

As at 30 September 2021, the Company had unutilised credit facilities totalling Baht 3,082.58 million (2020: Baht 1,800.00 million).

	2021			2020		
	Minimum lease payments	Interest	Present value of minimum lease payments (in million Baht)	Minimum lease payments	Interest	Present value of minimum lease payments
Finance lease liabilities						
Within 1 year	44	8	36	-	-	-
1 - 5 years	216	33	183	-	-	-
After 5 years	567	38	529	-	-	-
Total	827	79	748	-	-	-

13 Provisions for employee benefits

	2021	2020
	(in million Baht)	
Post-employment benefits	49	49
Defined benefit plan	3,666	3,799
Other long-term employee benefits	148	139
Total	3,863	3,987

Defined benefit plan

The Company operate a defined benefit plan based on the requirement of the State Enterprise Labor Relations Board Announcement (No. 4) B.E. 2562 (2019) to provide retirement benefits to employees based on pensionable remuneration and length of service. The defined benefit plans expose the Company to actuarial risks, such as longevity risk and interest rate risk.

	2021	2020
	(in million Baht)	
Present value of the defined benefit obligations		
At 1 October	3,799	3,714
Include in income over (under) expenses:		
Current service cost	163	163
Interest on obligation	74	16
	237	179
Included in other comprehensive income over (under) expenses		
Actuarial gain	(238)	-
- Financial assumptions	3,798	3,893
Benefit paid	(132)	(94)
At 30 September	3,666	3,799

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<i>Principal actuarial assumptions</i>	2021	2020
	(%)	
Discount rate	2.44	1.72
Future salary growth	7.5	7.5
Employee turnover	0	0

Assumptions regarding future mortality have been based on published statistics and mortality tables.

At 30 September 2021, the weighted-average duration of the defined benefit obligation was 16 years (2020:16 years).

Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below.

<i>Effect to the defined benefit obligation At 30 September</i>	1% increase in assumption		1% decrease in assumption	
	2021	2020	2021	2020
	(in million Baht)			
Discount rate	(289)	(330)	331	380
Future salary growth	3	3	(1)	(4)

14 Employee benefit expenses

	2021	2020
	(in million Baht)	
Personnel expenses	4,700	6,995
Defined benefit plans	237	179
Provident fund contributions	367	548
Increase in liabilities for long-service awards	10	9
Others	3	3
Total	5,317	7,734

Provident fund contributions

The provident fund established by the Company for its employees on a voluntary basis for being membership. The Contributions are made by monthly from the employees at rates ranging from 2% to 15% of their basic salaries and from the Company at rates ranging from 8.5% to 15% of the employees' basic salaries. The provident funds are registered with the Ministry of Finance as juristic entities and are managed by licensed Fund Manager.

The Company refrained from contributing to the provident fund for 4 months from March to June 2021, which complied with the Ministry of Finance Notification (No. 2) B.E. 2563 and remitted to the provident fund at the rate 2% for 6 months from October 2021 to March 2022, by the order of the resolution at the Extraordinary General Meeting of the Provident Fund No. 1/2021, held on 17 September 2021.

Refrain from special rewards payment for the year 2020 and 2021

On 25 August 2021, the Board of Directors of the Company approved the refrain from special rewards payment for the year 2020 and 2021. The Company recognised the reversal of the special rewards in the statement of comprehensive income and expenses for the year ended 30 September 2021 amounting to Baht 1,285 million.

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15 Income tax

On 15 December 2020, the Cabinet resolution approved the country's civil aviation policy regarding the assignment of the Company, a state enterprise, to acting as an agency providing air traffic management and related air navigation services for the Civil Aviation Authority of Thailand in 3 areas as follows:

- (1) Air Traffic Management (ATM);
- (2) Aeronautical Communications, Navigation, and Surveillance (CNS) System/Services; and
- (3) Aeronautical Information Services (AIS) and Aeronautical Charts.

The Civil Aviation Authority of Thailand shall supervise the Company's services to be in accordance with the standards prescribed under the Air Navigation Act B.E. 2497 (1954) and its amendments.

The company is exempt from income tax under the Royal Decree on Tax Exemption (No. 170) B.E. 2529 (1986) which stated that:

“There shall be exempted from income tax on income derived from charges collected for radio communication services in connection with international aviation between surface and surface stations or between air and surface stations, radio communication in connection with meteorological services, and other relating services, paid to the juristic company or partnership assigned by the government with the execution of responsibilities under the Convention on International Civil Aviation, but only on the portion collected from aviation companies.”

16 Basic income over (under) expenses per share

	2021	2020
	<i>(in million Baht / in thousand shares)</i>	
<i>Income over (under) expenses attributable to ordinary shareholders for the year ended 30 September</i>		
Income under expenses attributable to ordinary shareholders of the Company	<u>(3,625)</u>	<u>(3,471)</u>
<i>Ordinary shares outstanding</i>		
Number of ordinary shares outstanding (basic) at 30 September	<u>6,600</u>	<u>6,600</u>
Income under expenses per share (basic) (in Baht)	<u>(549.25)</u>	<u>(525.97)</u>

17 Financial instruments

(a) Carrying amounts and fair values

The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy. It does not include fair value information for financial assets and financial liabilities measured at amortised cost if the carrying amount is a reasonable approximation of fair value.

	Carrying amount		Fair value				
	Financial instruments measured at FVTPL	Financial instruments measured at amortised cost	Total	Level 1	Level 2	Level 3	Total
<i>At 30 September 2021</i>	<i>(in million Baht)</i>						
Financial assets							
Loans	-	28	28	-	-	28	28
Other financial assets:							
Deposits at financial institutions	-	120	120				
Debt instruments	<u>12</u>	<u>-</u>	<u>12</u>	-	12	-	12
Total other financial assets	<u>12</u>	<u>120</u>	<u>132</u>				
Financial assets pledged as collateral	-	123	123				
Financial liabilities							
Loans from financial institutions	-	(1,586)	(1,586)	-	(1,586)	-	(1,586)



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At 30 September 2020	Carrying amount	Fair value			Total
		Level 1	Level 2 (in million Baht)	Level 3	
Debt instruments	10	-	10	-	10

Financial instruments measured at fair value

Type	Valuation technique
Investments in marketable unit trusts classified as financial assets measured at FVTPL	The net asset value as of the reporting date

Financial instruments not measured at fair value

Type	Valuation technique
Debt securities and other financial liabilities	Discounted cash flows

(b) Financial risk management policies

(b.1) Credit risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Company's receivables from customers and investments in debt securities.

(b.1.1) Trade accounts receivable

The Company's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, management also considers the factors that may influence the credit risk of its customer base, including the default risk associated with the industry and country in which customers operate.

The Company limits its exposure to credit risk from trade accounts receivable by establishing a maximum payment period of six months.

The following table provides information about the exposure to credit risk and ECLs for trade accounts receivable.

Trade and other accounts receivable	2021	2020
	<i>(in million Baht)</i>	
Trade accounts receivable		
Cheque on hand	11	2
Airlines receivables	1,436	1,176
Domestic receivables	57	71
Oversea receivables	22	98
Accrued income	30	43
	1,556	1,390
Less allowance for expected credit loss (2020: allowance for doubtful accounts)	(1,001)	(381)
	555	1,009
Other accounts receivable		
Interest receivables	2	6
Penalty to contractors	18	27
Prepaid expenses	27	28
Advances	31	27
	78	88
Net	633	1,097

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<i>At 30 September 2021</i>	Airlines receivables	Domestic and oversea receivables	Total trade accounts receivable	Allowance for expected credit loss
		<i>(in million Baht)</i>		
Less than 1 month	241	31	272	6
1-3 months	96	8	104	18
3-6 months	320	10	330	186
6-12 months	250	8	258	242
More than 12 months	529	22	551	549
Total	1,436	79	1,515	1,001
Less allowance for expected credit loss	(963)	(38)	(1,001)	
Net	473	41	514	

Loss rates are based on actual credit loss experience over the past three years. These rates are multiplied by scalar factors to reflect differences between economic conditions during the period over which the historical data has been collected, current conditions and the Company's view of economic conditions over the expected lives of the receivables.

<i>Trade accounts receivable</i>	Airlines receivables	Domestic and oversea receivables	Total trade accounts receivable
		<i>(in million Baht)</i>	
<i>At 30 September 2020</i>			
Less than 1 month	363	28	391
1-3 months	164	16	180
3-6 months	139	81	220
6-12 months	138	11	149
More than 12 months	372	33	405
	1,176	169	1,345
Less allowance for doubtful accounts	(343)	(38)	(381)
Net	833	131	964

The normal credit term granted by the Company are as follow:

Air navigation service charges

Member airlines	Invoices are issued on the 7 th with a credit term of 15 days from the invoice date with due on 22 th .
Non-member airlines	Invoices are issued on the 7 th with due within invoiced month (payment is due on the last day of the invoiced month).

Equipment rental and maintenance income

Member airlines	Invoices are issued on the 7 th with a credit term of 30 days from the invoice date with due on 6 th or 7 th of the next month.
Non-member airlines	Invoices are issued on the 7 th with due within invoiced month (payment is due on the last day of the invoiced month).

Movement of allowance for expected credit loss of trade accounts receivable

	Note	<i>(in million Baht)</i>
At 1 October 2020 – restated	3(a)(2)	742
Addition		259
At 30 September 2021		1,001

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(b.1.2) Investment in debt securities

The Company has an investment in Vayupak Fund 1, amounting to Baht 10 million, according to the resolution of the Board of Directors meeting held on 31 October 2013. Such investment is from the consideration of the State Enterprise Policy Office (SAO) that the Company was a potential state enterprises with quite high flexibility in management and can invest in investment units of Vayupak Fund 1 after conversion without contrary to regulations of the Ministry of Finance regarding accounting and finance of state owned enterprise B.E. 2548 (2005). Therefore, the Company is proposed to consider joining in supporting the investment in the fund after converting to type B investment units, as well as total of 34 other potential state enterprises in order to support the Ministry of Finance's policy in managing securities held by the state for maximum benefit.

At 30 September 2021, Vayupak Fund 1 holds approximately 94% of equity securities and approximately 6% in debt securities/deposit.

The Company's exposure to credit risk arising from investment in debt securities is limited because the counterparties are state-owned financial institutions for which the Company considers to have low credit risk.

(b.1.3) Cash and cash equivalents

The Company's exposure to credit risk arising from cash and cash equivalents is limited because the counterparties are state-owned financial institutions for which the Company considers to have low credit risk.

(c.2) Liquidity risk

The Company monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Company's operations.

The following table are the remaining contractual maturities of financial liabilities at the reporting date. The amounts are gross and undiscounted and include contractual interest payments and exclude the impact of netting agreements.

At 30 September 2021	Carrying amount	Contractual cash flows			Total
		1 year or less	More than 1 year but less than 5 years	More than 5 years	
<i>(in million Baht)</i>					
Non-derivative financial liabilities					
Trade and other accounts payable	431	431	-	-	431
Accrued expenses	76	76	-	-	76
Loans from financial institutions	1,586	827	759	-	1,586
Lease liabilities	748	44	216	567	827
	2,841	1,378	975	567	2,920

(c.3) Market risk

The Company has loan agreements with floating interest rates. The loan interest rates are referenced to various rates, such as the 6-month fixed deposit interest rate announced by commercial banks (FIX6MONTH), the Bangkok Interbank Offered Rate (BIBOR) announced by the Bank of Thailand, and interest rates according to market conditions (Money Market Rate).

However, in managing source of funds in the past, the Company has discussed with representatives of the Public Debt Management Office, Ministry of Finance in analysing and defining financial instruments with period and interest rate suitable for the Company's requirement. This causes the Company to have low finance costs and able to manage the risk of interest expense within the budget according to the Company's financial plan without using any derivatives or interest rate swap contracts.

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18 Staff welfare fund

The Company contributes 9% of the basic salary to the staff welfare fund as a budget for staff welfare. The Welfare Management Committee is responsible for managing the fund.

Details of staff welfare fund were as follow:

	2021	2020
	<i>(in million Baht)</i>	
Assets		
Cash and cash equivalents	166	55
Other accounts receivable	30	27
Short-term loans	28	24
Other current financial assets	120	178
Other non-current financial assets	-	62
Equipment	1	1
Total assets	<u>345</u>	<u>347</u>
Liabilities		
Other accounts payable	3	2
Accrued expenses	7	7
Total liabilities	<u>10</u>	<u>9</u>
Staff welfare fund		
Beginning balance	338	383
Contributions during the year	260	255
Income under expenses	(263)	(300)
Total staff welfare fund	<u>335</u>	<u>338</u>
Total liabilities and staff welfare fund	<u>345</u>	<u>347</u>

Refrain from contributions to staff welfare fund

The Board of Directors at the meeting held on 24 June 2020 approved the refrain from contributions to the staff welfare fund for 6 months from July to December 2020.

19 Commitments with non-related parties

	2021	2020
	<i>(in million Baht)</i>	
Capital commitments	305	63
Other commitments <i>(Short-term lease and services commitments and purchase orders for goods and supplies)</i>	602	152
Total	<u>907</u>	<u>215</u>

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20 Contingent liabilities

(a) Issues regarding fines and surcharges of VAT

The Company provides air navigation services and related services according to the agreement with the Ministry of Transport which falls in an exemption for Value Added Tax (VAT) according to the Royal Decree under the Revenue Code Regarding Value Added Tax Exemption (No. 239), B.E. 2534 (1991) as amended by the Royal Decree Issued under the Revenue Code Regarding Value Added Tax Exemption (No. 254), B.E. 2535 (1992) section 4. Then, the Revenue Department examined the Company in overall aspects between fiscal years 2003–2011 with no issues or observations about VAT on all of the Company's income. However, in November 2013, the Revenue Department's officer examined the Company's income for fiscal year 2012 and sent an official letter of the examination results later in March 2014 that there is an issue about VAT relating to the Company's income from work orders to non-airlines customers in accounting period 2012. After continuously monitored and coordinated with the Revenue Department officer about the issue, the Company found that the Company has tax payable relating to VAT from October 2011 to June 2018 at a total amount of Baht 234.77 million which consists of VAT at the amount of Baht 112.11 million with penalty and surcharge at the amount of Baht 122.66 Million.

However, the Company had already made a VAT payment at the amount of Baht 112.11 million to the Revenue Department on 8 August 2018. For penalty and surcharge at the amount of Baht 122.66 million, the Company sent a letter Ref. ART 1228/2561 dated 1 August 2018 to the Ministry of Finance requesting for an extension in submitting the VAT from the due date to get the exemption on penalty and surcharge. Now, The Company has already opened a Fixed Deposit Account-12 months at Krung Thai Bank PCL at the amount of Baht 123 million as a collateral of guarantee to Revenue Department in order to postpone the penalty and surcharge payment.

(b) Judgment of the Supreme Administrative Court

The Company has entered into a contract value of Baht 80 million with a domestic vendor ("the defendant") for sales and purchase agreement of an aviation data exchange and air navigation service system with installation. The Company has filed a lawsuit against the defendant to the Administrative Court to claim a fine of Baht 27.91 million (net of accrued installment of Baht 40 million), due to the late delivery. The Administrative Court of First Instance dismissed the lawsuit against the Company and order the Company to refund the installment deducted as a fine at Baht 31.45 million to the defendant within 60 days from the date that the case is final. Subsequently, the Company appealed to the Supreme Administrative Court and on 14 January 2021, the court made an appointment to read the judgment of the Supreme Administrative Court. The Supreme Administrative Court ruled to amend the judgment of the Administrative Court of First Instance by ordering the Company to refund the installment deducted as a fine of Baht 19.45 million to the defendant within 60 days from the date that the case is final. And in March 2021, the Company paid back such installment deducted as a fine to the defendant in full.

21 Events after the reporting period

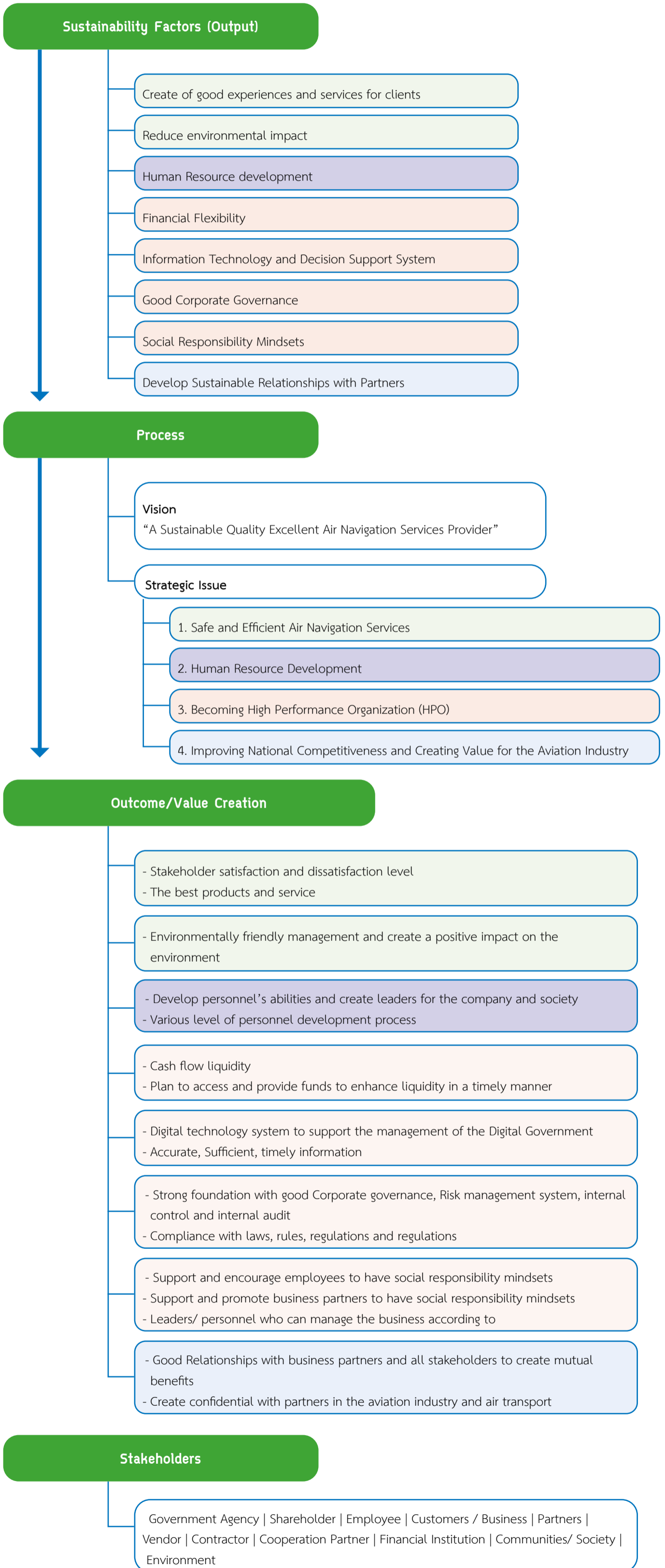
On 5 November 2021, the Board of Directors approved the Company to enter into an unsecured short-term loan agreement with a state-owned financial institution in amount of Baht 1,800 million.



Sustainability Report

The Company aims to become “A Sustainable Quality Excellent Air Navigation Service Provider” by focusing on providing the highest safety, standardized and efficient air navigation services, in order to create values for the aviation system and the national interests in accordance with its mission. Therefore, the organization has driven itself by mainly emphasizing the importance of safety and operating under the international standards on air navigation services, standards, and best practices to lead the organization towards the sustainability covering Environmental, Social, and Governance (ESG) framework to meet the needs and expectations of all groups of stakeholders.

Conceptual Framework for Strategic Sustainable Development



Good Corporate Governance year 2021

The Company has operated its business based on the “Good Governance” principles, focusing on transparency, risk management, strictly operating in accordance with relevant laws and regulations. Moreover, the Company has raised awareness of operations throughout the organization under the GRC (Governance, Risk Management, and Compliance) principles for efficiency and stability in sustainable business operations, such as the announcement of risk management and anti-corruption measures in procurement, the establishment of complaint system, encouraging executives and employees to work with an awareness on the importance of risk management in all aspects of the work process, and establishment of internal measures for anti-corruption, etc.

Good Corporate Governance for Sustainable Development

The Corporate Governance and Corporate Social Responsibility Committee is responsible for implementing the good governance practices for developing the Company to achieve the sustainability, and formulating the policies on corporate governance and social responsibility, together with providing advices on operations to drive its management based on the SEPO’s Principles and Guidelines on Corporate for State-owned Enterprises B.E. 2562 (2019) and the Company’s strategy on the development of corporate governance under the Corporate Governance Master Plan for the years 2021–2025.

The Corporate Governance and Corporate Social Responsibility Committee

The Corporate Governance and Corporate Social Responsibility Committee has the power to determine the policies and guidelines for promoting the corporate governance, to demonstrate the social responsibility, and to consider, scrutinize, suggest, and review the corporate governance plan and social responsibility master plan, as well as to monitor and evaluate the results of corporate governance and social responsibility performance.



The Corporate Governance and Social Responsibility Policies

- The Corporate Governance and Corporate Social Responsibility Committee Policies of Aeronautical Radio of Thailand Limited

Aeronautical Radio of Thailand Limited is committed to operate its business under the principles of good governance in accordance with international standards to create values for sustainable air navigation service, aviation system, and national interests.



- Policies and Guidelines for Social and Environmental Responsibility**

The Company had prepared the policies and guidelines for social and environmental responsibility, approved by the Board of Directors on July 8, 2020.

Aeronautical Radio of Thailand Limited commits to provide air navigation services with social and environmental responsibility under the social responsibility standard ISO 26000 to ensure the fairness for all involved stakeholders, and to strengthen major communities, leading to business development with sustainable achievement.

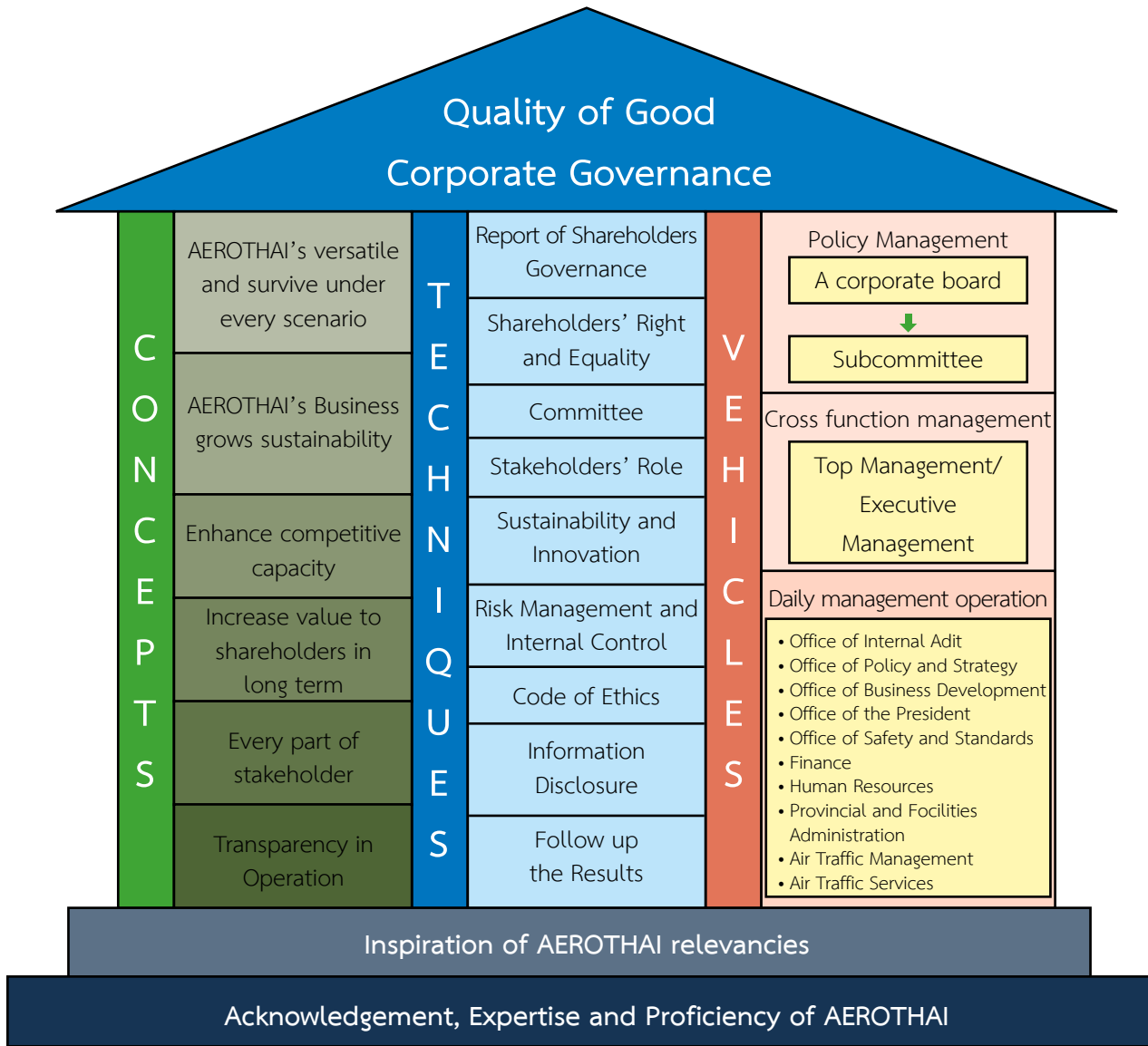


The Structure of Good Governance for Sustainable Development of the Company

The Company has adhered to good governance guidelines in accordance with the SEPO's Principles and Guidelines on Corporate for State-owned Enterprises B.E. 2562 (2019), a qualitative structure of corporate governance was established as a guideline for operations.

Governance Outcome

1. Competitiveness and performance with long-term perspective
2. Ethical and responsible business
3. Good corporate citizenship
4. Corporate resilience



The Company's Corporate Governance Structure is consistent with the concept of corporate governance of the State Enterprise Policy Office (SEPO) B.E. 2562 (2019), i.e., having qualitative structure of corporate governance where the Board of Directors and sub-committees are at the top of the structure to perform the duties in providing the policies and directions of operations. The Top Management/Executive Management (TM/EM) has the role to perform cross-functional management by Top Management/Executive Management (TM/EM), implementing the corporate governance policy and reporting the results to the Board. The day-to-day tasks are managed by various units including the Office of Internal Audit, Office of Policy and Strategy, Office of Business Development, Office of the President, Office of Safety and Standards, Finance, Human Resources, Provincial and Facilities Administration, Air Traffic Management and Air Traffic Services Engineering conducting the measures and practices related to good governance and organizational leadership, coordinating with related units/division/centre/or equivalent to operate in accordance with the Company's Corporate Governance Master Plan and Corporate Social Responsibility. Furthermore, the outcome is integrated to increase corporate operation transparently with long-term value increasing to shareholders dependent on every sector of stakeholders through competitive capacity and sustainable development with agility.

AEROTHAI's Anti-Corruption

The Company has established an action plan on anti-corruption and misconduct prevention in compliance with the National Anti-Corruption Strategy and has set up internal measures for corruption prevention, as follows:

1. Measure for publicize the information
2. Measure for stakeholder engagement in operations
3. Measure for procurement transparency promotion
4. Measure for corruption-related complaint management
5. Measure for anti-bribery
6. Measure for conflict-of-interest prevention
7. Measure for discretionary verification
8. Measure for internal and external communication promotion

The Company has encouraged and cultivated its employees on awareness of moral ethics and integrity, as well as enhanced working atmosphere by focusing on corporate values to establish Moral Promotion Centre. Moreover, the Company also enhanced the coordination and cooperation in prevention of corruption and misconduct with external agencies such as the Office of the National Anti-Corruption Commission, the Office of Public Sector Anti-Corruption Commission, the State Enterprise Policy Office, Ministry of Transport, state enterprises and other private organizations through participation in various activities, such as the Transport Role Model Competition of the Year 2021, the Anti-Corruption Day of the Year 2021, the Moral Organization of the Year 2021, and the Ministry of Transport Volunteer for the Year 2021.



Risk Management and Anti-corruption Measures in Procurement

In terms of transparent procurement and anti-corruption & misconduct prevention, the Company's Board of Directors has prepared the risk management plan for procurement and anti-corruption measures in procurement process at the meeting No. 3/2021 (649) dated 31 March 2021, for plan acknowledgement to allow relevant parties to acknowledge and comply with the measures in procurement with the Company.

Integrity and Transparency Assessment (ITA) of AEROTHAI's Operations

The integrity and transparency of the Company is assessed by the Office of the National Anti-Corruption Commission with excellent score level for the past 7 years and has developed an integrity and transparency operation for sustainable conveyance. In 2014 AEROTHAI improved handling complaints systematically. In 2015 the knowledge transfer of anti-corruption was set throughout the corporate. In 2016 AEROTHAI supported integrity in Human Resource Management. In 2017 it constructed the procedure of check and balance for independent agencies. In 2018 AEROTHAI increased the channel of communications and public promotion in integrity and transparency throughout every target. In 2019 it established the system of integrity and transparency management by assigning ITA Ambassador to communicate Integrity and Transparency Assessment with every stakeholder. ITA Administration functioned as the monitor of the whole ITA Assessment completely. In 2020, the Company established the system of integrity and transparency publication on internal and external AEROTHAI website completely. In 2021, the Company still continued to promote the integrity and transparency internally and externally on the Company's website, to develop and drive Integrity and Transparency operation sustainably.



The Acceleration of AEROTHAI's Moral Organization Sustainably

AEROTHAI set guidelines of accelerating moral organization throughout the corporate under the acceleration plan of Integrity Promotion conforming with Ministry of Culture's framework in promoting and improving of moral organization.

It is the use of cultural dimension of the organization to become a moral state enterprise to create social value and increase economic value for the country. The Company has driven the moral organization under the promotion and development plan to become a role model of moral organization based on the concept of Ministry of Culture, by including the project in the Enterprise Plan B.E.2563 – 2568 (2021 – 2025), using the framework for promotion and development of moral organization under the first National Moral Promotion Master Plan (2016-2022) as a guideline for its operations, and formulating a plan to drive to become a moral organization, which is divided into 3 phases: Phase 1 in 2020 implementing to become a Moral Promotion Organization, Phase 2 in 2021 implementing to become a Moral Organization, and Phase 3 in 2022 implementing to become a sustainable role model of moral organization.

- Dharma practice activity to promote ethics and corporate culture



Mr. Somnuk Rongthong, then President, together with management and staff, participated in the dharma practice activity to enhance ethics and culture of AEROTHAI.

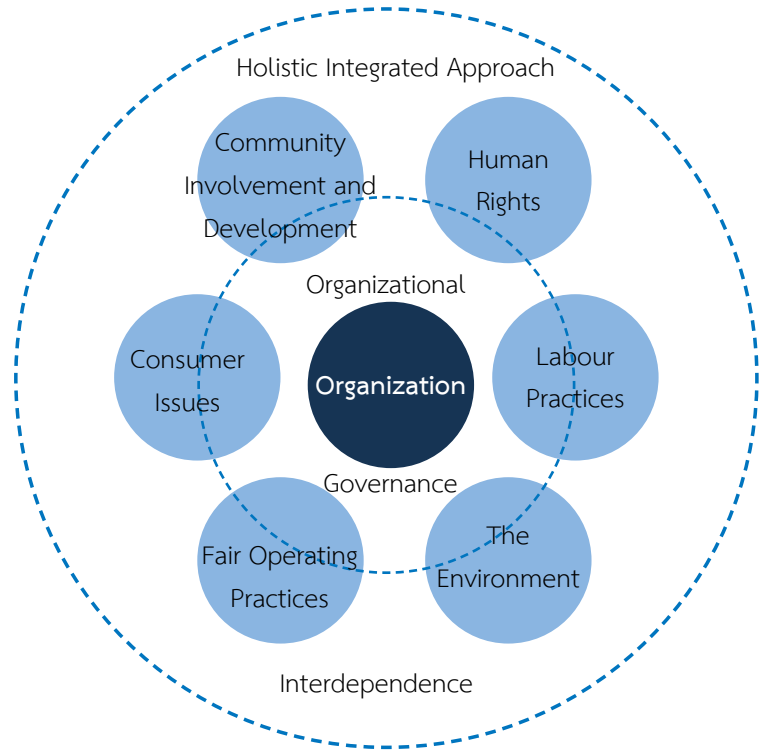
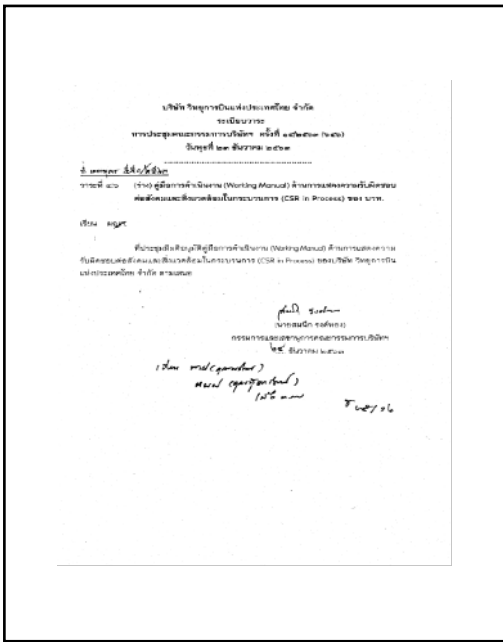


Driving organization in a sustainable way with social and environmental responsibility

- A manual of CSR in Process

Manual of operations on corporate social and environmental responsibility approved by the Board of Directors on 23 December 2020.

CSR in Process according to ISO 26000 standard
Holistic Approach



- Social and Environmental Responsibility Master Plan

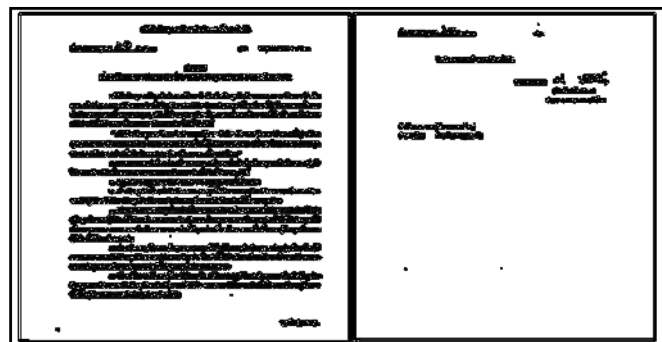
In 2021, the Company prepared the Master Plan on Social and Environmental Responsibility B.E. 2565-2569 (2022-2026) aiming on air navigation services with social and environmental responsibility under social responsibility standard ISO26000 to become a Sustainable Business Development Organization approved by the Board of Directors on 24 August 2021.



Accelerate the organization to achieve strategic sustainability

- AEROTHAI's Sustainable Development Policy

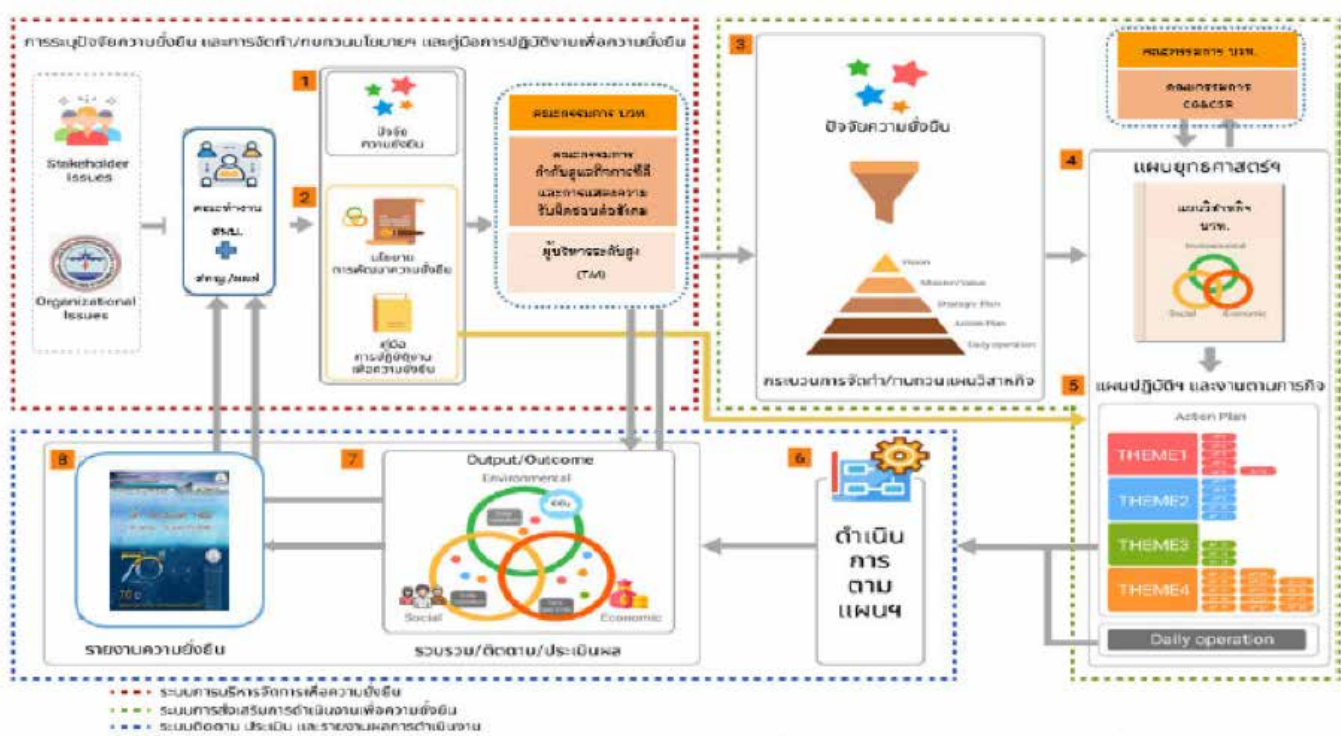
The management of AEROTHAI has aimed to create quality air navigation services and other assigned services to induce the balance of sustainable development in terms of economy, society, and environment.



- Operational Guideline to Achieve Strategic Sustainability

The Company has driven the organization to achieve strategic sustainability in compliance with the United Nations (UN) standards and comparable to the World Benchmarking Alliance to SDGs Mapping.

Linking the Sustainable Development with the Organizational Strategic Planning Process



The Company has referred the United Nations (UN)'s Sustainable Development Goals (SDGs) on its 17 major goals. The Company's mission has been classified in the transportation group, having the Sustainable Development Goals (SDGs) based on the UN framework related to some of the goals as follows: Goal 3: Ensure healthy lives and promote well-being for all at all ages, Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all, Goal 8: Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all, Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation, Goal 11: Make cities and human settlements inclusive, safe, resilient, and sustainable, and Goal 13: Take urgent action to combat climate change and its impacts.

OUR IMPACT FOCUS

PAT :: SDG MAPPING

WORLD BENCHMARKING ALLIANCE TO SDG MAPPING



Source: World Benchmarking Alliance Industry to SDG Mapping

- **Evaluation on major issues of organization in terms of economy, society, and environment**

The Company has applied the principles/guidelines for sustainable development and main processes in driving the organization towards sustainability based on international standard principles. The first process in driving the organization towards sustainability is the analysis/establishment of sustainability factors of the organization by taking into account the organizational context, environment, and expectations of key stakeholders in response to the Sustainable Development Goals (or SDGs) under the guidelines of the United Nations (UN)) for a period of 15 years (2015-2030), associating with the Key Performance Area (KPA) for converting into the formulation of strategic objectives, using in the preparation of the Enterprise Plan B.E. 2564-2569 (2022-2026), and reviewing the sustainability development areas in the Company's Sustainability Development Report of previous year. The Company has placed its focus on the 17 Sustainable Development Goals (SDGs), which can be divided in accordance with three dimensions of sustainability development, including economic factor, social factor, and environmental factor. The Sustainable Development guidelines of the Office of the National Economics and Social Development Council (NESDC) is referred in the development that meet the needs of current generation without compromising the ability to meet the needs of future generations (Brundtland Report, 1987) to achieve 3 components of sustainable development as follows:

1. Economic Growth: aiming to create balanced values for all customers, employees, and stakeholders with the ultimate goal of creating mutual benefits, leading to the efficient economic development, resulting in a qualitative and balanced economic expansion.
2. Social Inclusion: aiming to create society and improve the quality of life of the communities nearby the business operation places with the expectation that the industry can happily coexist with the communities while the employees are encouraged to participate in social activities, and
3. Environmental Protection: being committed to protect the environment and conserving natural resources to achieve a sustainable ecological balance, by covering the entire supply chain and referring the main processes in driving the business towards the corporate sustainability in the Stock Exchange of Thailand (SET).



Economic Factor



1. Quality of air navigation service: The service of air navigation shall be safe, standardized, and support the growth of aviation business, at present and in the future, in line with the ATM User Expectation such as Safety, Security, Capacity, Flexibility, Efficiency, Predictability, Cost-Effectiveness, Global Interoperability, Participation by ATM Community, and Access and Equity factors, resulting in the increase of competitiveness for the country in terms of the quality of air transportation system, creation of values for the aviation business and supporting the enhancement for the country's air navigation service and overall competitiveness in a sustainable manner.
2. Client Satisfaction: Emphasize the satisfaction and the needs/expectations of clients and focus on the continuous development and enhancement of service quality, with a good governance system and transparent corporate management so that the Company will be able to meet the expectations of clients, allowing the organization to sustainably carry out their missions.
3. Innovation and Digital Technology Development and Management: Innovation and Digital Technology are considered as the key element for productivity, cost reduction for services/operations, increase of revenue-seeking channels, adding values to drive the organization for sustainable growth.

Social Factor



1. Corporate Social Responsibility (CSR) : The Company has performed the social responsibility, participated in creating society and improve the quality of life in communities surrounding the Company's offices in central zone and flight control centers nationwide, by working with society/community in creating values, promoting and supporting social activities in many areas, as well as communicating to society/community to raise awareness on the activities, traditions, and cultures that affect the country's aviation safety so that the organization can coexist with the communities and carry out its mission in a sustainable manner.
2. Employee Engagement: The Company has created and elevated the employee engagement and positive motivation for employees by focusing on the enhancement of quality of life, employee experience, and employee capability development, to drive the organization to achieve its goals and sustainable growth.

Environmental Factor



1. Management of Environmental Impact from Air Navigation Services: The Company has accelerated/driven the environmental impact management of the aviation industry including air and noise pollutions through efficient management of air navigation/flight practices, resulting in the efficiency of an environmentally friendly aviation system and sustainable air transportation.

The Operations on Sustainable Development to Achieve the Goals Based on 3 Dimensions Strategy

Operation on Sustainable Development in Economic Dimension

- Development of air navigation service infrastructure

The Company is a state enterprise under the Ministry of Transport, which has been assigned as an agency providing air navigation services of the country with following duties and responsibilities:

1. Service on Air Traffic Management (ATM) including Air Traffic Service (ATS), Airspace Management (ASM) and Air Traffic Management Flow Management (ATFM) within Bangkok FIR.
2. Communications, Navigation and Surveillance (CNS) Services
3. Service of Instrument Flight Procedure Design (IFPD) including Aeronautical Information Service (AIS) in the function of the International Notice to Airmen (NOTAM) office (NOF), and part of Pre-Flight Information Service and associated services and tasks under the government policy.

The Company has continued to develop the infrastructure of air navigation services to increase the efficiency and stability of services to meet the satisfactions, needs and expectations of customers.

• AEROTHAI's Development on Innovation and Digital Technology

The Company has prioritized the development on innovation and digital technology. In 2021, the Company had prepared the master plan on innovation management and the plan on enhancement of values and innovative culture, to foster innovation culture, aiming to encourage everyone to think, to act, to express themselves, and be ready for failure, look for something better than the past and what will benefit the organization in the future; and reviewed the organization's management structure and innovation processes to be systematic and international.



Vision

To be an organization that uses innovation to gain the highest quality sustainable air navigation services.

Innovation Policies

1. Raise awareness on the importance of promoting and developing innovation with management and employees at all levels.
2. Develop personnel to have knowledge and skills in creativity and innovation management
3. Foster innovation culture, aiming to encourage everyone to think, to act, to express themselves, and be ready for failure, look for something better than the past and what will benefit the organization in the future
4. Review the organization's management structure and innovation processes to be systematic and international
5. Support resources in various dimensions to accelerate innovation in the organization



Under the innovation management plan for the years 2012 – 2016, the Company has established short-term, medium-term, and long-term goals as follows:

Short-term goal: in 2022 having an important element in creating systematic and universal innovation management under the Enabler criteria.

Medium-term goal: In 2024, employees shall be able to develop their innovation skills, generating portfolio on innovating products, services and processes that meet the needs of stakeholders, be able to reduce expenses, gain more revenue for the Company, and be able to apply the information technology to support the development of innovations.

Long-term goal: in 2026, the employees shall have innovation culture behavior with continuous improvement in behavior assessment results and shall be able to develop digital-based innovations. The plan will be ended in 2026 and three outcomes are expected as follows: 1) 70% of employees have their behaviors in accordance with the values and innovation culture (Behavior evaluation is based on corporate culture); 2) 55% of employees present creative ideas into the system (all channels); and 3) 30% of units (sub-division/centre/office) have innovations (innovation works and process innovation).

The Company's personnel expertise in specified fields with working experience in both air traffic control and air traffic engineering, and competency in research and development in the innovation of supporting systems for air navigation services within the organization, which is one of the organization's core competencies. The Company has continuously encouraged its personnel to use their knowledge and competency in research, development and innovation, in which the personnel is divided into 3 groups:

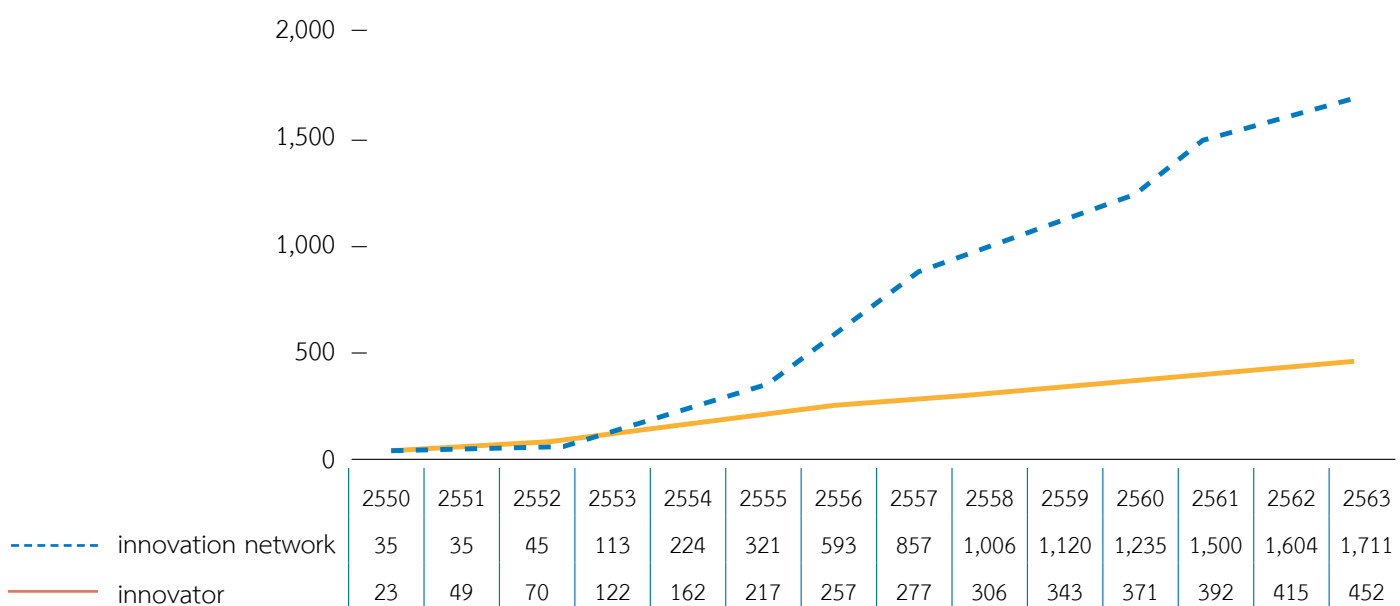
Group 1: Personnel performing research and development based on the scope of routine works;

Group 2: Personnel provided of research, development and innovation funding from AEROTHAI (based on the criteria for submitting research, development and innovation requests);

Group 3: Personnel performing research and development with their own funding and time, this group are personnel who submit their own works to the annual innovation and creativity competition.

The Company has organized the said activity since 2008 by providing the regulations on awarding the outstanding research, development and innovation works, clear announcement of awarding criteria, and an award ceremony for innovation works and creative ideas to honor and recognition on the success of personnel who create innovative works as they play an important role in providing innovations to the organization. The promotion on innovation, therefore, emphasizes to support and encourage the innovators as the key person in providing advice and attracting others to pay attention on innovations through network expansion activities such as Innovation Talk event, D2 TRANSFORMATIONS event, etc.

Graph showing the number of innovation networks and innovators



หมายเหตุ

1. Innovator refers to personnel who produce research, development, and innovation work (showing the number of innovators accumulated between 2007 and 2021, only those whose status is employee).
2. Innovation network refers to personnel who participate in activities of innovation promotion but have not yet created any innovative work.
3. Personnel can possess only one status.
4. The graph displays the results in Arabic numerals to reduce discrepancies in reading.

Year 2021 Number of innovators : 452 (14.03% of all employees) Number of personnel in the innovation network : 1,711 (53.10% of all employees)

AEROTHAI put emphasis on the development of innovations in all aspects to improve the air navigation services (core business) and related services as well as organization management. It assigned specific units to take responsibility of the research and development in the organization structure. In 2021, the Company reviewed its structure, roles & duties, and responsibilities of executives and innovation units. The innovation management committee has been established with the following members: the Board of Directors, external innovation specialists and the President. At the same time, the internal sub-committee of the Company was appointed as Innovation Management sub-committee to advice the policy on utilization of creativity and innovation management while acting as a role model, such as promoting, supporting, developing, and enhancing behaviors and values in relation to the innovation, and then communicating to employees to adhere to the innovation management policy in the same direction for the entire organization.

The Company has promoted the innovation and creativity through Innovation Seminar D 2 Transformation event by applying technology for online training (Virtual Training) that implements the design thinking process through the process of creativity and knowledge expansion to achieve the development of innovations that add values for the organization. With commitment, the Company will place its goal to reach the sustainable innovation management.

Regarding the innovation competition, the Company selected certain innovations to enter competitions in the organization and at national levels, such as the National Research Awards: Invention Award for the fiscal year of 2021. Our two-innovative works have been awarded of the Honorary Award in the field of Information Technology and Communication Arts, including:

AEROTHAI INNOVATION

โครงการ
พัฒนาเมืองธรรม
ธรรมสาร (AEROTHAI INNOVATION)
ปี 2563-2564

โปรแกรมจัดการจราจรทางออก ท่าอากาศยานสุวรรณภูมิ และท่าอากาศยานดอนเมือง Intelligent Departure Enhancement Program (iDEP)

เป็นต้นแบบการบูรณาการ
จากหน่วยงานในสังกัดกรมการขนส่งทางอากาศ

วิสัยทัศน์โครงการ

ท่าอากาศยานสุวรรณภูมิและท่าอากาศยานดอนเมืองเป็นประตูสู่ประเทศไทยและเป็นประตูสู่ประเทศไทย (The Gateway to Thailand) ที่มีประสิทธิภาพและปลอดภัยสูงที่สุด โดยมุ่งเน้นการให้บริการแก่ผู้โดยสารและผู้ประกอบการท่าอากาศยานอย่างมีประสิทธิภาพสูงสุด โดยมุ่งเน้นการให้บริการแก่ผู้โดยสารและผู้ประกอบการท่าอากาศยานอย่างมีประสิทธิภาพสูงสุด โดยมุ่งเน้นการให้บริการแก่ผู้โดยสารและผู้ประกอบการท่าอากาศยานอย่างมีประสิทธิภาพสูงสุด

วัตถุประสงค์ในการดำเนินงาน

- พัฒนาคุณภาพการบริการท่าอากาศยานให้มีความปลอดภัยและความสะดวกสบาย
- พัฒนาคุณภาพการบริการท่าอากาศยานให้มีความปลอดภัยและความสะดวกสบาย
- พัฒนาคุณภาพการบริการท่าอากาศยานให้มีความปลอดภัยและความสะดวกสบาย

ประโยชน์ของโครงการ

- ลดความแออัดของท่าอากาศยานและเพิ่มประสิทธิภาพการดำเนินงาน
- ลดความแออัดของท่าอากาศยานและเพิ่มประสิทธิภาพการดำเนินงาน
- ลดความแออัดของท่าอากาศยานและเพิ่มประสิทธิภาพการดำเนินงาน



ทีมงาน

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ภาพรวมโครงการ

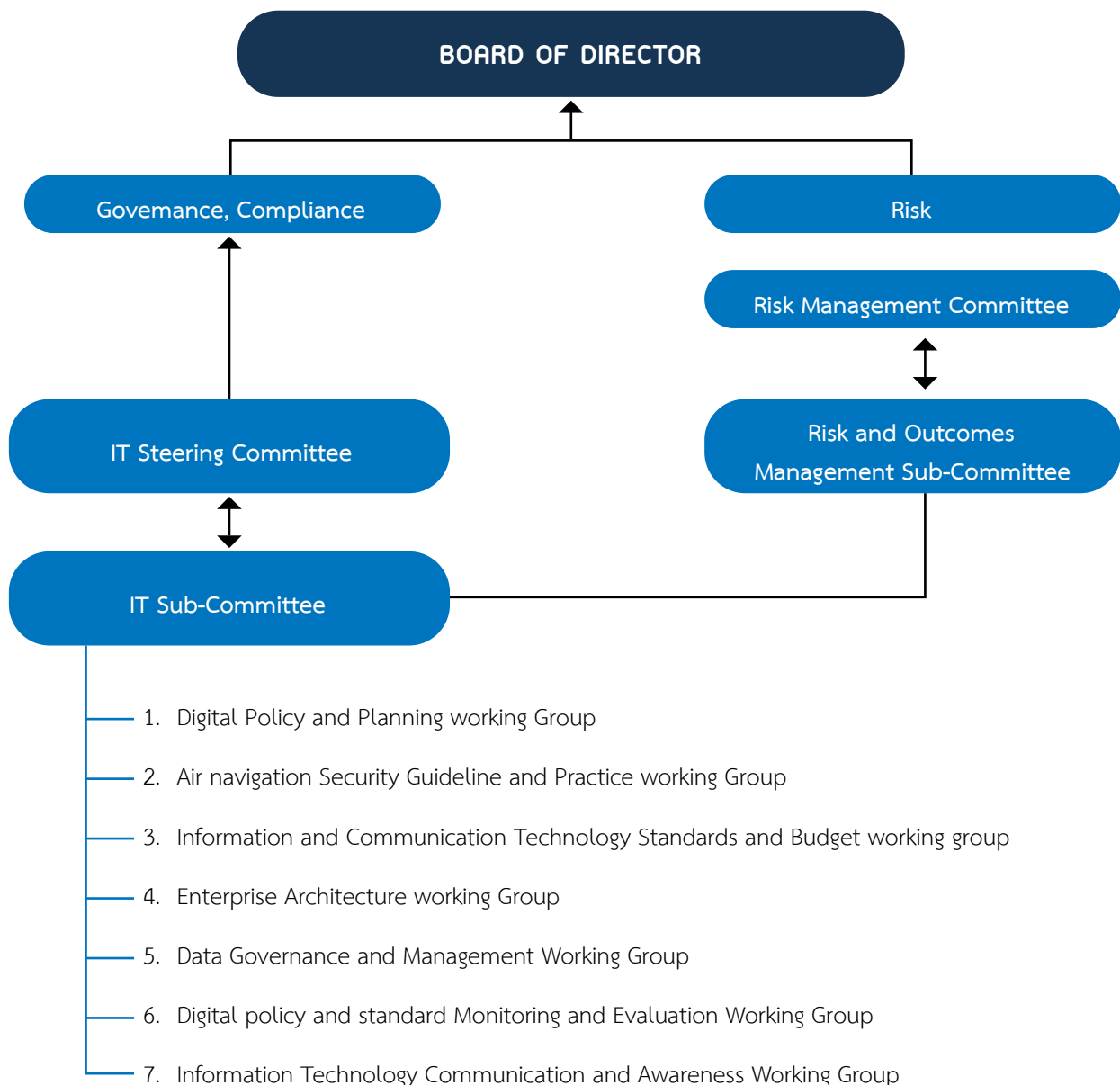


goodinnovation
BETTER LIFE, BEST FUTURE



• **Development of Digital Technology for Sustainability**

AEROTHAI has emphasized the development of digital technology to be compliance with the guidelines under the NESDC’s evaluation criteria on the performance of state enterprises, the direction of the modern world, and the government’s national policy framework which highlights the systematic evaluation on the digital technology development of state enterprise. This is in line with the international standards and best practices in response to the changes in the modern world in which the digital technology is applied to improve the operations in many areas and as a tool to drive organizational development, personnel development in terms of attitude towards the digital age, digital literacy, digital skills, and corporate culture on digital. The Company has placed the importance on the development of digital technology covering 3 services which are air navigation service (Safety Zone), administration and support service, and associated service, including the security system of each service, in order to drive the digital development and to push forward the implementation of big data management based on the government policies and strategies. In addition, the Company has also focused on the technology development to support organizational changes and created working processes with value addition to the economy of future business; the development of infrastructure is included in the organizational development in terms of main services, supporting services and associated services. Furthermore, the Company’s working style has been also adjusted under New Normal concept that everyone in the present era has to change in a challenging manner.



In Fiscal Year of 2021, the Board of Directors approved the policy and an action plan on digital in the development of digital technology framework within 5 years (2022-2016). The plan was prepared to comply with the NESDC’s criteria for performance evaluation of state enterprises, with the Digital Vision of “A Sustainable Quality Excellent Air Navigation Service Provider with Digital Technology” where:



Digital Vision
A Sustainable Quality Excellent Air Navigation Service
Provider with Digital Technology

- Digital Policies**
1. Digital Governance
 2. Digital Transformation
 3. Digital Integration
 4. Digital Data Governance and Big Data Management
 5. Digital Information and Cyber Security
 6. Digital Continuity Management
 7. Digital Resource Optimization Management

The digital action plan for the years 2012 - 2016 sets 4 goals as follows: 1) providing air navigation services with leading-edge quality technology; 2) building professional personnel to possess digital competence; 3) developing the organization to become a high-performance organization by applying digital technology; and 4) providing the country with the competitiveness and creating values for air navigation services with digital technology.



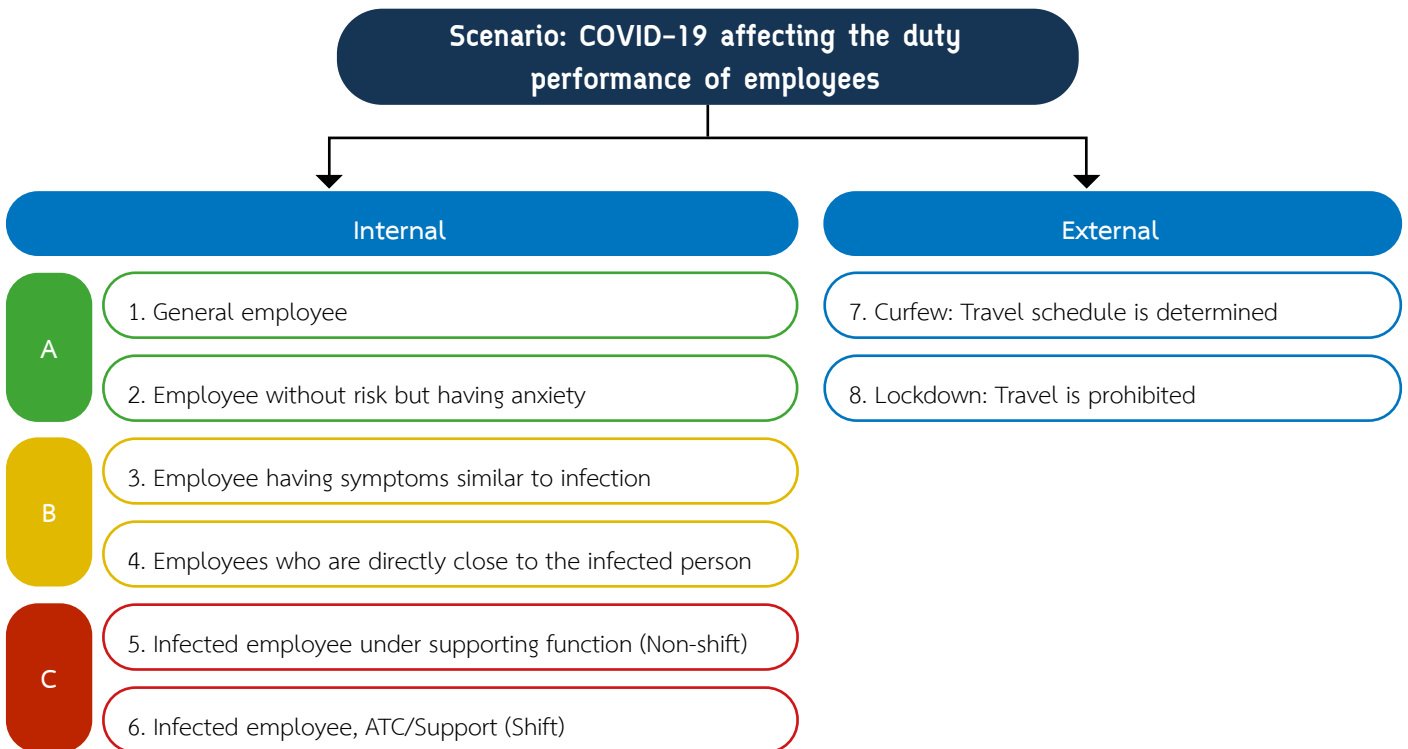
Value Creation for Society and Communities for Sustainability

Value creation for society is another dimension to be prioritized by the Company to thoroughly meet the needs and expectations of all stakeholders.

- **AEROTHAI joining hands to fight against COVID-19**

Under the crisis arising from the outbreak of Coronavirus Disease 2019 or COVID-19, the Company has internally established and implemented the measures, plans, and guidelines and cooperated with the government and international agencies to support society and communities to fight against COVID-19.

The establishment of measures, plans, and guidelines to prevent the spread of Coronavirus Disease 2019 (COVID-19) for the Company’s employees



Note: Case A and B include employees who work in shift and non-shift.

Note: The Plan covers only the epidemic situation that affects the employees’ duty performance at present, does not include any other long-term impacts such as long-term finance, personnel management.

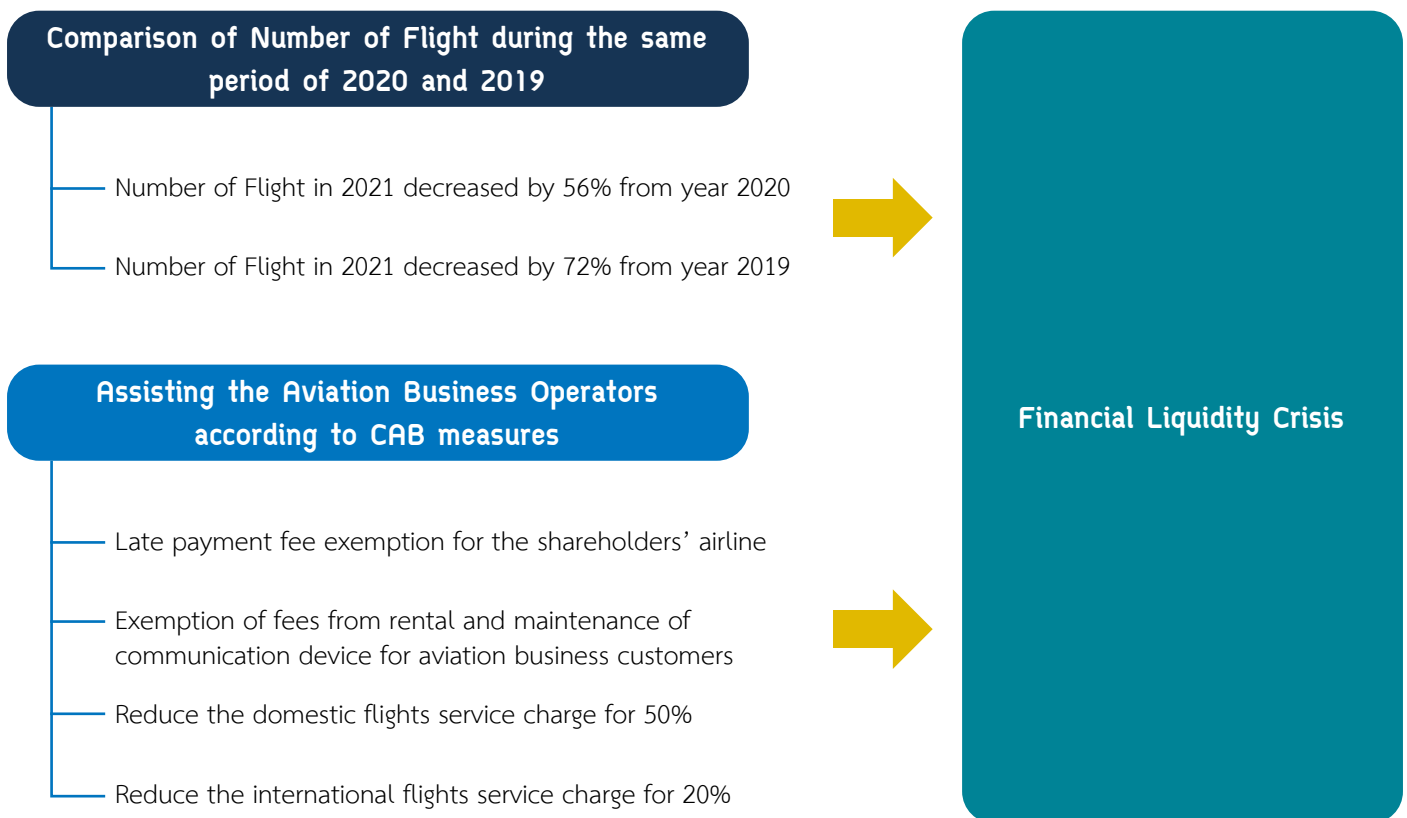


During 2020 – 2021, the outbreak of COVID-19, the Company has implemented the plans, measures, and guidelines to strictly prevent the spreading in line with government measures. The Company has continuously communicated with the employees regarding the guidelines of practice in line with the measures stipulated by the government at each period. For example, the Risk Management Committee has assigned the employees to work from home, refrained from traveling based on the strictness level of government measures, and continuously managed risks on various issues to identify risk factors, solve problems, and control the spread through monthly meetings.

- **Cooperate with the government in helping airlines during the COVID-19 situation**

Due to the travel restriction measures of the government to control the spread of the COVID-19, number of passengers and domestic & international flights has been greatly reduced, resulting in financial crisis of the aviation business operators and domestic aviation businesses. Under the said situation, since March 2020, the Company has cooperated with the government in accordance with the resolution of the Civil Aviation Board (CAB).

Impact on financial liquidity due to the COVID-19 crisis



- AEROTHAI 's ways of coping with the COVID-19 situation

Lifestyle of the world populations have changed due to the COVID-19 outbreak, organizations must adjust their working styles to cope with such changes, and in order to be able to operate their businesses, they need to adjust their working systems.

AEROTHAI has considered applying the digital technology media in managing and improving working style for business continuity, for example, the use of LINE application for communication, and the use of electronic correspondence system and E-mail, through the portal system created by the Company, in order to allow the employees to perform the tasks and use the personnel data, the financial data, and the supporting documents for meetings, and reports. Moreover, the meetings and seminars of executives and employees are done via Zoom Meeting application, etc.

To change from old working style into the new one is called New Normal Transformation. The digital technology has played important role in business operation and working from home strategy, which helped reducing the risk of infection, improving the work efficiency. Moreover, such transformation had helped reducing the cost of office space management, staff expenses, office expenses that are necessary, and increasing the work-life balance for employees. Not only that this transformation had reduced employee travels, but it also helped reducing carbon emissions. The technology system adopted allows the work process to become a system with high information security, which facilitated the communication and determination of the proportion of employees who worked from home and worked on-site.

For new working style in 2020-2021 and the cost reduction, the Company's top management continuously communicated and facilitated the understanding about the prevention measures on the spread of the COVID-19, motivated them in helping and minimizing the Company's expenses such as the employee's acceptance of freezing salary and other forms of compensations while continuing to carry out activities and achieve the determined goals.



The outbreak of COVID-19 has greatly affected the Company's revenue due to the decreasing number of flights, impacting on the financial liquidity and affecting the development and operation of the organization in all aspects. In order to build morale and create cooperation among employees at all levels, top management has communicated with employees at all levels to overcome the crisis together.

This new working style will be a scheme for adjusting the working process of the organization, and employees need to adapt themselves to this new lifestyle. Moreover, the Company can adapt this 'new normal' as a model of resource management to be more efficiency in the future.

- **Fight against COVID-19 Activity for Society and Community**

During the COVID-19 crisis, the Company’s executives and employees have joined hands to aid society and communities surrounding its offices in central zone and regional zone including general society and communities affected by the COVID-19 outbreak by continuously organizing various activities between October 2020 and September 2021.



Helping the communities around the offices in central zone and regional zone during the COVID-19 crisis

On 7 June 2021, the Company and employees had supported communities around the head office, Thung Maha Mek Sub-district, Bangkok, affected by COVID-19, with food, drinking water, consumer products and donated money to the community located in front of Thammasat Association compound during the 14-days quarantine period.



On 10 April 2021, the Company donated 34,600 Baht, which were supported by the management and employees to Ms. Bussakorn Srisawad, President of the Thai Army Wives Association, to support the purchase of 100 cartons of Chitralada milk and other fresh milk under the Royal Initiative Project. Those purchased milk were donated to the field hospitals under the Ministry of Defense and Bangkok Metropolitan Administration for COVID-19 patients.



On 9 July 2021, the Director General of Phitsanulok Air Traffic Control Centre, and the Company’s delegate team attended the teleconference meeting with agencies under the Ministry of Transport at the meeting room of the Phitsanulok Provincial Land Transport Office to follow up on the report of COVID-19 vaccination for transportation personnel.



On 15 February 2021, 904 volunteers as the Company’s’ representatives had participated in the “We Do Good Deeds for the Nation, Religion, and King” activity presided by Mr. Pansak Charoensuk, Sathorn District Director, opening ceremony of volunteer activity for cleaning to prevent COVID-19 at Lum Charoen Sattha Temple. The activity had included wiping, rubbing, cleaning staircase handrail and frequent touch points in surrounding areas of the temple, spraying disinfectants in sermon hall in a monastery, as well as sweeping and improving the landscape to control and prevent COVID-19 disease. There were 50 volunteers who are members of the district management team, officials, and volunteers also joined the activity as well.



On 19 February 2021, at the multipurpose open space of Ban Mankong Community, the representatives from the Company and the Nan Fah Thai Foundation together with the Sathorn District Office donated consumables to the surrounding communities of the Company’s head office, such as Baan Mankong Suan Plu Community, Baan Ua-Athorn Suan Phlu Pattana Community, Community in front of Thammasat Association. The head of each community was the representative to receive these consumables to further provide to vulnerable groups and people who were suffering from the outbreak of COVID-19.



On 16 July 2021, Mr. Tinnagorn Choowong as the representative of AEROTHAI, gave lunch and dinner meals together with drinking water to Mr. Sorapong Paitoonphong, Deputy Permanent Secretary, the Thai Ministry of Transport, to facilitate volunteers, medical personnel working at the Vaccination Centre at Bang Sue Grand Station. This activity aims to follow the royal inspiration on “ We do Good Deeds with the Heart “ for public benefits.



“AEROTHAI’s Volunteers” activity, participated by executives and employees, facilitated people who had come for COVID-19 vaccination at the Vaccination Centre at Bang Sue Grand Station on 11-20 August 2021, and Mr. Tinnagorn Choowong had visited on 12 August 2021 for encouragement.

- Flight Hazards Factors free with AEROTHAI



In 2020-2021, due to the COVID-19 crisis, the number of flights has been greatly reduced, thus the sky lanterns launching or other community activities that were flight hazards factors had gradually reduced. However, the Company and Geo-Informatics and Space Technology Development Agency (Public Organization) (GISTDA) has expressed their intention on cooperation to develop the Thai Airspace Management Cell (THAI-CMAC) System to help manage fireball and sky lanterns activities for safety in air transportation (Bampen System). To expand the scope of airspace management system development to support the system implementation in management for reducing the impact from fireballs, sky lanterns and unmanned aerial vehicles in the normal flight situation to be more effective, the Company and GISTDA had, therefore, expressed their intentions to develop the integrated airspace management system, especially to develop the air traffic management for unmanned aerial vehicles to support the expansion of users, in which the air traffic in the airspace of Thailand will be greatly affected in the future.



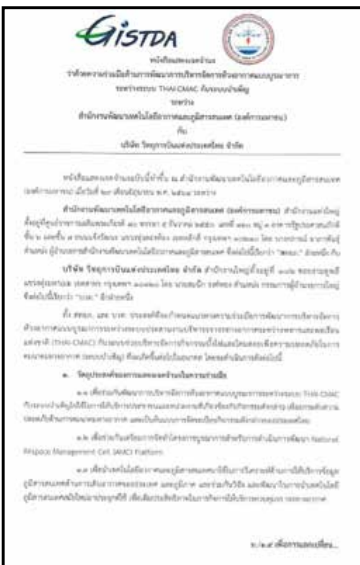
Unmanned Aircraft System Traffic Management: UTM

Currently, the number of unmanned aerial vehicles (UAV) has tended to increase and likely to continue to grow. The International Civil Aviation Organization (ICAO) has included air traffic management for UAV as a part of the Aviation System Block Upgrades (ASBUs) strategic plan under the Global Air Navigation Plan (GANP) to allow States parties to plan and provide developments that are ready to support the operating conditions of aviation within the air navigation system. The ICAO has also documented the UTM Development Framework (UTM Framework) to be consistently used by States parties as a guideline for the development of UTM.

Currently, the use of unmanned aerial vehicles (UAV) has tended to increase and likely to continue to grow.

If the management is not systematic, it will become the dangerous factor against the traditional air navigation. Therefore, to reduce dangerous factors and support the development of airspace management system for supporting the unmanned aerial vehicle in terms of economic benefit will be beneficial to the country.

AEROTHAI and GISTDA have jointly formulated the conceptual framework in line with the international principles and guidelines. The USOAR Application system was co-developed with GISTDA to manage the UAV users, which was developed to facilitate the users of both public and private in obtaining permission to fly unmanned aerial vehicles from regulatory agencies. The application was also used for considering the rules, regulations, in granting of an unmanned aerial vehicle.



- **Company's volunteer activities**

The Company has continuously supported “volunteer spirit” activities by allowing executives and employees of the central and provincial areas to participate with external agencies.



On 14 October 2020, the Surat Thani Air Traffic Control Centre joined the “ Volunteer activity to improve the water quality by removing hyacinth removal in Pak Bang Tha Kham canal” on the occasion of the Anniversary of the Passing of His Majesty King Bhumibol Adulyadej at Khlong Pak Bang Tha Kham, Surat Thani.



On 16 October 2020, the Surat Thani Air Traffic Control Centre joined the “Volunteer activity to improve the water quality around the temple” in Remembrance of His Majesty King Rama IV at the temples around Surat Thani Province.





On 11 November 2020, the Company’s representatives attended the press conference on the opening ceremony of the “Developing the Khlong Chong Nonsi Public Park “ project, presided over the ceremony by the Bangkok Governor, Pol. General Aswin Kwanmuang, and with the executives from the Bangkok Metropolitan, Department of Public Work, Sathorn District, Yan Nawa District, Bang Rak District, government agencies, private sectors and related parties participating at the Activity Area of Chong Nonsi Skywalk, Bangkok Metropolitan.



On 4 December 2020, the Company participated in volunteer activity “Providing social benefits on Father’s Day” organized by the General Staff Division, Immigration Bureau at the Chaloem Phrakiat Park 80th Anniversary Park, Suan Phlu, Sathorn.



The Company sent volunteer representatives to attend the meeting and participate in activities organized by district offices including Sathorn District, Pom Prap Sattru Phai District, Vadhana District, Bang Kapi District, and Phra Khanong District. The meetings were, for example, to discuss the operational guidelines to prepare for follow-up and assistance to those who had received the training in the “Kok Nong Na of Kindness and Hope, Department of Corrections,” Volunteer Activity for developing Sri Suriyothai Community on the Memorial Day of His Majesty the King Rama II: King Buddha Loetla Nabhalai, etc.



- **Community Strengthening Activity**

To encourage the participation in the development of state enterprises and do not take any action violating the rights of stakeholders based on the principles and guidelines of good corporate governance in state enterprises. The Company has emphasized the strengthening of key communities in the surrounding areas, in the central and regional flight control centers, to reduce the conflicts from mission operations with key communities, so that the Company’s business operations and the communities can coexisting in a sustainable manner.

In terms of strengthening important communities for long-term sustainability in business operations, in 2021, the Company has prepared policies and manual for strengthening the key communities according to their special abilities to serve as principles and guidelines for selecting and identifying key communities, and ways to access or connect with key communities.

In 2020-2021, the spread of COVID-19 virus had been a major obstacle against the strengthening for key communities. The Company had, thus, carried out in the form of monitoring, expanding the benefits of community innovation, and provided them assistance regarding the impact of the COVID-19 situation and various disasters.





AEROTHAI has seen the benefit of the Blue Swimming Crabs Bank, so this project was, therefore, extended for the maximum benefit of the community by proposing “Solar Cell Blue Swimming Crabs Bank” with the following concepts:

- To support the Government’s Policy according to the Cabinet’s resolution on 6 March 2018 on the expansion of Blue Swimming Crabs Bank to “return the blue swimming crabs to the Thai sea”.
- To propose new way to make contribution to community by increasing the number of Blue Swimming Crabs, create sustainable career and income to community. It also built cooperation between the community and AEROTHAI.

The innovators of the Surat Thani Air Traffic Control Centre together worked with the Phum Riang Bay Conservation Group as these innovations can be known and utilized in a wide range. The location of Laem Pho Community, Phum Riang Sub-district, Chaiya District, Surat Thani Province was used as a learning centre for students and lecturers from universities across the country. It has also been extended to other community areas in Surat Thani, Ranong, Chumphon, Trang and Phetchaburi provinces. The highlights of the project in addition to renewable energy include the establishment of “The Satja Group Releasing Blue Crabs back to Thai Seas” with the objective of raise awareness of conservation, ensure the sustainability of blue crab bank activity to increase the number of blue crabs in the sea (as the blue crabs have a higher chance of survival). The Company has joined hands with the community in developing a project to continuously develop careers and strengthen the fishery community. In 2021, the Director of Surat Thani Air Traffic Control Centre as the Company’s representative, participated in the activity with the Department of Fisheries and Surat Thani Technical College, in the ceremony of giving fishing equipment, repair equipment and tools, and fishing boats in the “Project of Occupational Development and Strengthening of Fisheries Communities” to local fishing community organizations, the Satja Group Releasing Blue Crabs back to Thai Seas, Bandon Bay, Phum Riang Sub-district, Chaiya District, Surat Thani Province on 4 March 2021.

On 5 March 2021, the Director of Surat Thani Air Traffic Control Centre, along with staff as the Company’s representatives to deliver 200 sets of rice and dry food to flood victims at the community office and visit the elderly and patients of Baan Thong Kongkang Community, Baan Khaek, Pak Phanang District, Nakhon Si Thammarat Province under the project “Helping Flood Victims”.



- **Nan Fah Thai Foundation’s Activities**

Nan Fah Thai Foundation Scholarships for underprivileged children across the country

The Nan Fah Thai Foundation was established with the objectives to provide opportunities and promote the education to children with disabilities. The continuous support will be beneficial for their careers in the future, promoting life experiences in many aspects for children with disabilities. It also supported the joint activities between disabled and normal children to create a positive attitude towards society and respond to the government’s policy aiming to increase the potential of the disabled as equal to normal people. In 2021, the Nan Fah Thai Foundation had awarded 173 scholarships for disabled children (81 scholarships for central zone and 90 scholarships for provincial zones) through educational institutions where children with disabilities and the underprivileged are selected so that they can utilize the scholarship funds to support themselves in their daily lives, to apply knowledge from education to be useful in future careers. All scholarships were completely granted in June 2021.

Na Fah Thai Foundation donating bicycles to “World Smile Project”

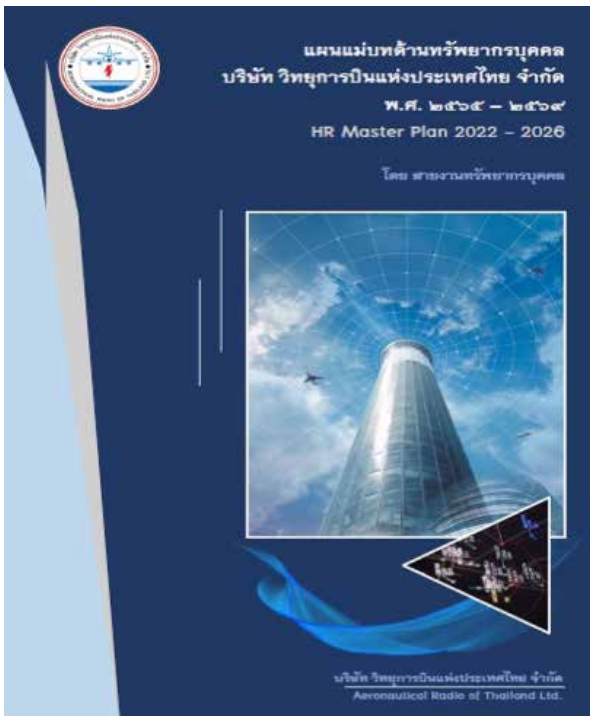


On 21 June 2021, the Nan Fah Thai Foundation in cooperation with the Company donated 35 bicycles to the Kindness Sharing Group consisting of children and youths in Songkhla Province so that they can use to travel to school. The Director of Hat Yai Air Traffic Control Centre and staffs were the Company’s representatives to donate to the “World Smile Project” at the office of the Kindness Sharing Group, Ko Yo Sub-district, Mueang District, Songkhla Province.

Human Resources Development

- **Human Resources Management of AEROTHAI**

Under the Company’s Vision, the Company has given importance to “Building professional personnel” to effectively respond to the needs and expectations of the stakeholders, the Company has therefore focused on the development and management of human capital. In 2021, the Company prepared the master plan on human resources for the years 2012 - 2016 by setting the vision “Empowering personnel to be good people, having potential, employee engagement for sustainable air navigation services with the highest quality,” and formulating human resources policy to drive achievements as stipulated by the Vision.



Visions

Empowering personnel to be good people, having potential, employee engagement for sustainable air navigation services with the highest quality

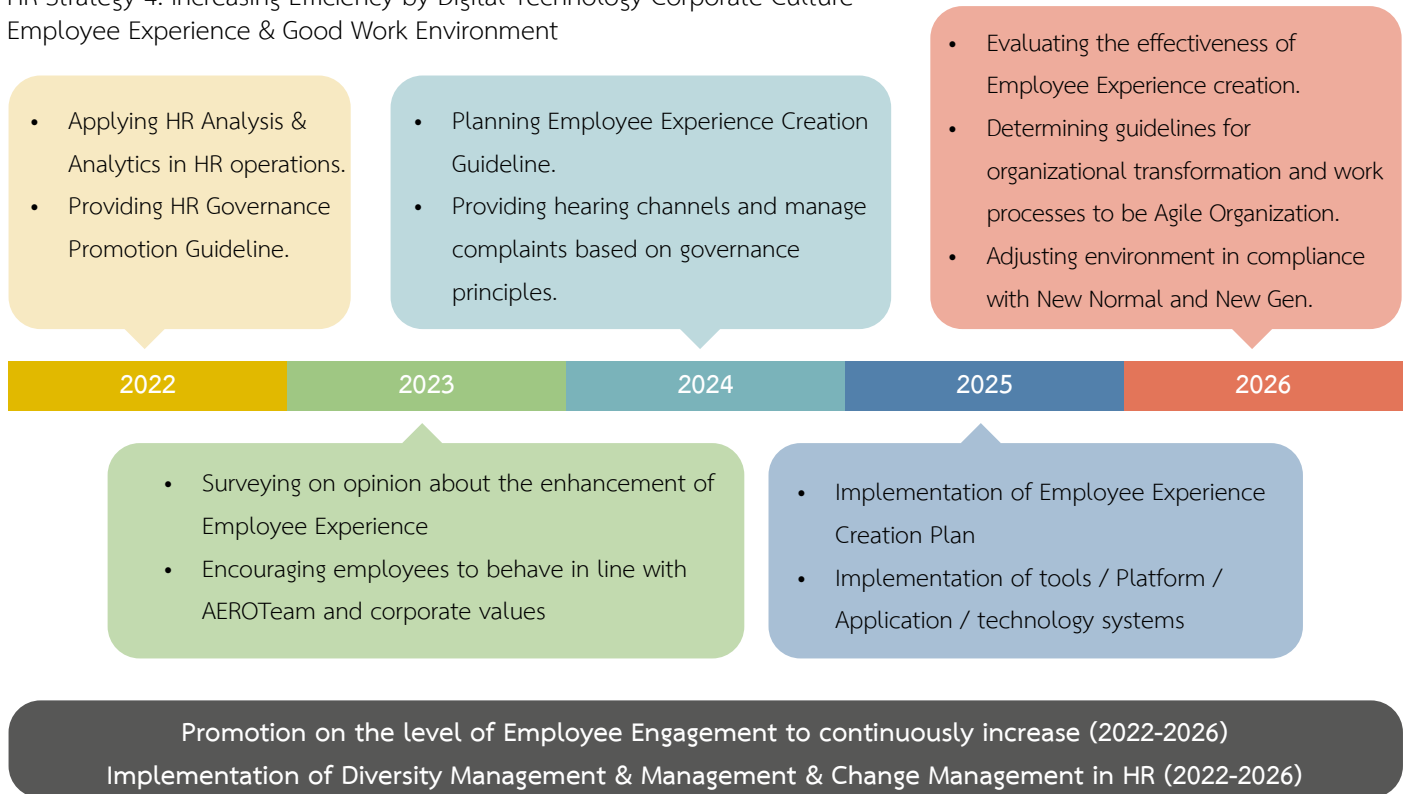
- Human Resources Policies**
1. Policy on structure management and manpower
 2. Policy on recruitment and selection of personnel
 3. Policy on remuneration and benefits management
 4. Policy on performance management
 5. Policy on learning and development
 6. Policy on environment management
 7. Policy on human resources information technology management

• **Human Resource Roadmap (HR Roadmap)**

The company has set the direction of human resource development based on the goal of vision “Building professional personnel” to drive the achievement of goals according to the Company’s Vision for the sustainability in many areas within 5 years (2022-2026). In this master plan, the directions are as follows:

AEROTHAI HR Roadmap

HR Strategy 4: Increasing Efficiency by Digital Technology Corporate Culture Employee Experience & Good Work Environment



- **Occupational Safety and Work Environment**

AEROTHAI realized the importance of the improvement/maintenance of all working buildings around the Country and applied the assessment criteria to participate in the competition for best establishment on occupational safety and work environment at the national level. The assessment criteria were set according to the regulations and laws on safety by the Department of Labour Protection and Welfare. In 2021, AEROTHAI has continued to carry out occupational safety and work environment implementation by implanting it in routine operations and completely following guidelines and laws in 3 parts which caused AEROTHAI to receive national awards from the selection of outstanding enterprise on occupational safety and work environment every year.

Outstanding Role Model Establishment on Occupational Safety and Work Environment Award

Before 2021		
Type of Awards	Workplace that Received Awards	Years of being awarded
National Outstanding Enterprise for over 10 years, consecutively	1. Suvarnabhumi Airport	12
	2. Nakhon Ratchasima Air Traffic Service Engineering and Operating Centre	14

Before 2021		
Type of Awards	Workplace that Received Awards	Years of being awarded
National Outstanding Enterprise for over 15 years, consecutively	Head Office, Tungmahamek	15

Note: Due to the Covid-19 outbreak situation,

- In 2020, only 2 establishments had participated in the award competition for the Establishment with Outstanding Role Model.
- In 2021, only 1 establishment had participated in the award competition for the Establishment with Outstanding Role Model.

Based on the implementation of plans, projects, and routine tasks, for the preparation of policies and operating manuals on Occupational Safety and Work Environment of the Company, many activities related to Occupational Safety and Work Environment have been organized every year. In 2020 – 2021, the following activities were organized:

1. Firefighting and fire evacuation drill
2. Measurement of light intensity, noise level and air quality in workplace
3. Activity of competitions of outstanding enterprise on occupational safety and work environment
4. Daily measurement of small dust particles in the air
5. Preparation of measures to prevent the spread of the Covid-19



Publicizing information on Occupational Safety and Work Environment



Policy on Occupational Safety and Work Environment



Documentation on air pollution: small dust particles in the air



AEROTHAI's communication Channel on safety issues



Publicizing of information on the outbreak of COVID-19

Measures to prevent the Spread of COVID-19



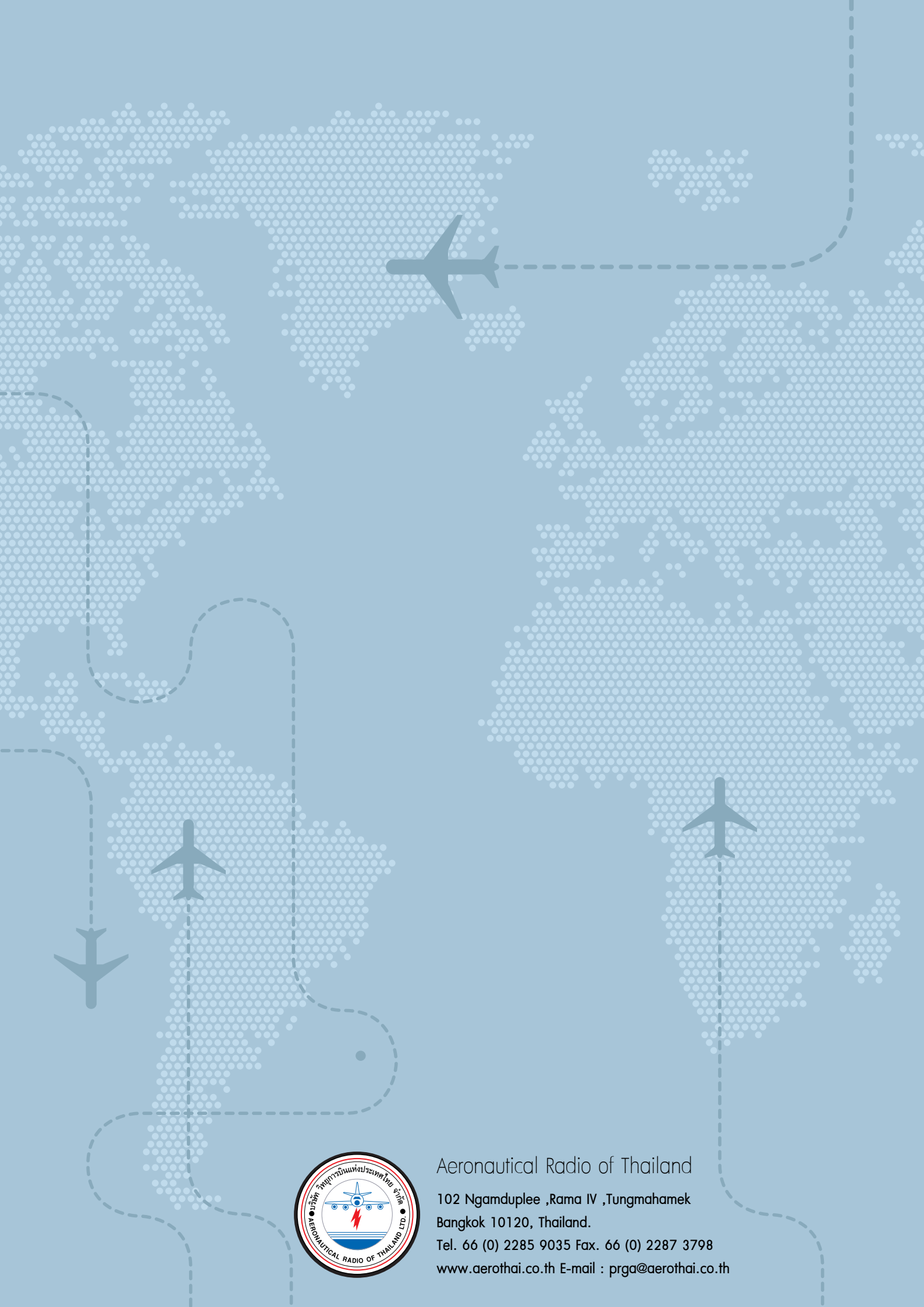
The Company has installed alcohol dispensers, continuously cleaned the places and spraying disinfectants to prevent the spread of COVID-19

For occupational safety, indicator was set at zero for accidents from work and environment for 2017-2021 as follows:

Record of Accident from Work and Environment Indication

(Target: 0 accident)

Accident Location	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021
Head Office	0	0	0	0	0
(Tungmahamek)	0	0	0	0	0
Don Mueang Airport Office	0	0	0	0	0
Suvarnabhumi Airport Office	0	0	0	0	0
Flight Test Department	0	0	0	0	0
Chiang Mai Air Traffic Control Centre	0	0	0	0	0
Phitsanulok Air Traffic Control Centre	0	0	0	0	0
Udon Thani Air Traffic Control Centre	0	0	0	0	0
Ubon Ratchathani Air Traffic Control Centre	0	0	0	0	0
Nakhon Ratchasima Air Traffic Service	0	0	0	0	0
Engineering and Operating Centre					
Phuket Air Traffic Control Centre	0	0	0	0	0
Hat Yai Air Traffic Control Centre	0	0	0	0	0
Surat Thani Air Traffic Control Centre	1	0	0	0	0
Hua Hin Air Traffic Control Centre					



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