



ICAO

Sixth Meeting of the Surveillance Implementation Coordination Group (SURICG/6)

Video Teleconference, 24 – 27 August 2021

Agenda Item 8: Update on surveillance activities and explore potential cooperation opportunity

a) States/Administrations

UPDATE ON SURVEILLANCE ACTIVITIES IN THAILAND

(Presented by Thailand)

SUMMARY

This paper provides the information on surveillance activities in Thailand.

1. INTRODUCTION

1.1 To provide safe and efficient air traffic services, the surveillance sensor infrastructure has been implemented to provide coverage all over the Bangkok FIR. In addition, the new ATM automation system has recently replaced the legacy system to support long-term forecast traffic growth. By utilizing the new ATM automation system capabilities incorporate with the surveillance sensor data, the air traffic services will be able to increase capacity and efficiency, while maintaining safety. This paper provides a summary update on the surveillance sensors and ATM automation system implementation in Thailand.

2. SURVEILLANCE SENSORS

SSR Mode-S

2.1 The SSR (Secondary Surveillance Radar) Mode-S was initially implemented in Thailand in 2006. Thailand has installed and upgraded the SSR Mode-S with DAPs (Downlink Aircraft Parameters) capabilities since 2006. There are currently 12 SSR Mode-S stations with EHS capabilities, which are shown in the table.

No.	Location	Capability
1	Suvarnabhumi Airport (VTBS)	EHS
2	Surat Thani Airport (VTSB)	EHS
3	Ubon Ratchathani Airport (VTUU)	EHS
4	Phuket Airport (VTSP)	EHS
5	Chiangmai Airport (VTCC)	EHS
6	Hat Yai Airport (VTSS)	EHS
7	Don Mueang Airport (VTBD)	EHS
8	Udonthani Airport (VTUD)	EHS
9	Roi-Et Airport (VTUV)	EHS
10	Chiangrai Airport (VTCT)	EHS
11	Chumpon Airport (VTSE)	EHS
12	Pitsanulok Airport (VTPP)	EHS

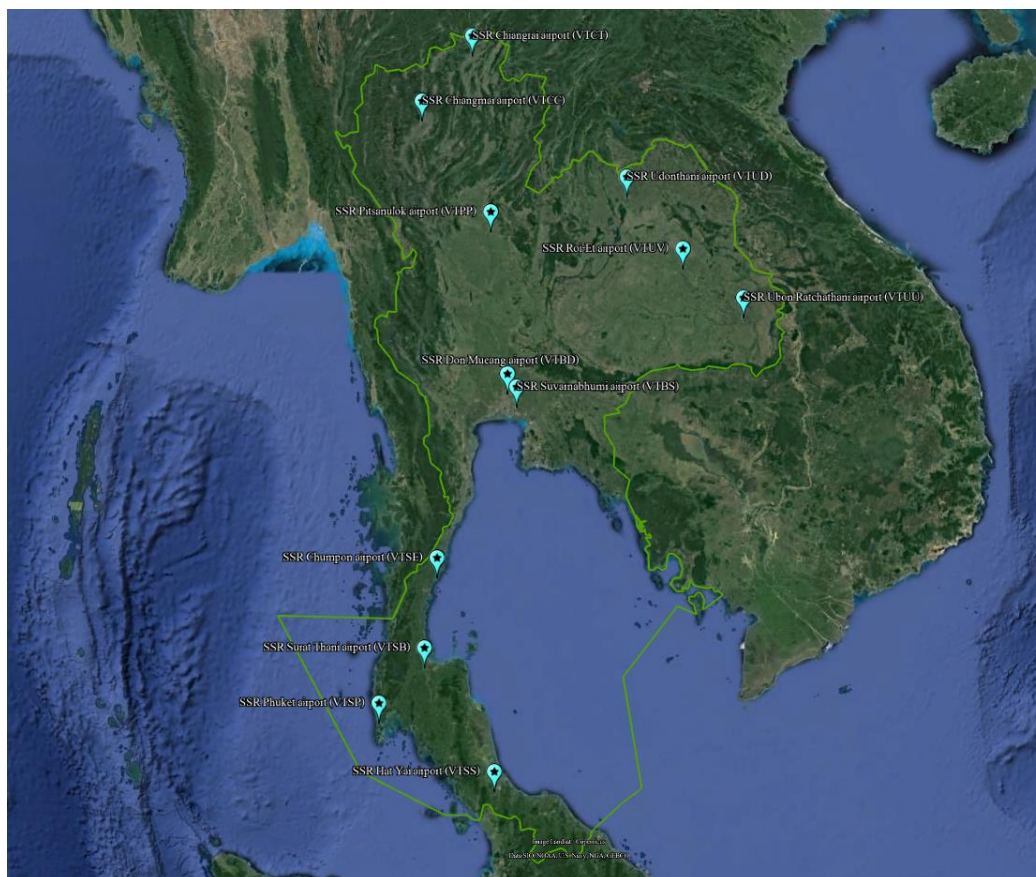


Fig 1. SSR Mode-S Stations in Thailand

2.2 A new SSR Mode-S have been planned for Huahin airport (VTPH). It is undergoing the beginning of the TOR preparation process and is expected to have the system ready in late 2023.

PSR

2.3 The PSR (Primary Surveillance Radar) has been implemented at the selected airports, there are only 3 stations located at Suvarnabhumi Airport (VTBS), Pitsanulok Airport (VTPP), and Huahin airport (VTPH). For the PSR at Pitsanulok and Huahin Airport, it has planned to be replaced with a new SSR Mode-S in the near future. The PSR will remain only at Suvarnabhumi airport.

2.4 The SMR (Surface Movement Radar) has been in operation at Suvarnabhumi airport since 2006.

MLAT

2.5 MLAT has been in operation at Suvarnabhumi Airport (VTBS) since 2006. Another MLAT installation was carried out at Don Mueang Airport (VTBD) in 2017 and operational in mid-2019 at the same time when the new ATM automation system, which is the system that receives and processes data, is to be implemented.

2.6 The new MLAT systems have planned to be implemented at Chiangmai Airport (VTCC) and Phuket Airport (VTSP). They are undergoing the beginning of the TOR preparation process and are expected to have the system ready in late 2022.

ADS-B

2.7 Five ADS-B ground stations (DO-260B and lower compliant) have been primarily installed for research and development purpose and are being undergone the approval process to be used for air traffic services with a target date by the end of 2021.

	Location	1090 Extended Squitter Compliance
1	AEROTHAI Headquater (Bangkok)	DO-260B and lower (Version 2)
2	Doi Inthanon (Chaingmai)	DO-260B and lower (Version 2)
3	Hatyai Airport (VTSS)	DO-260B and lower (Version 2)
4	Samui Airport (VTSM)	DO-260B and lower (Version 2)
5	Ubon Ratchathani Airport (VTUU)	DO-260B and lower (Version 2)

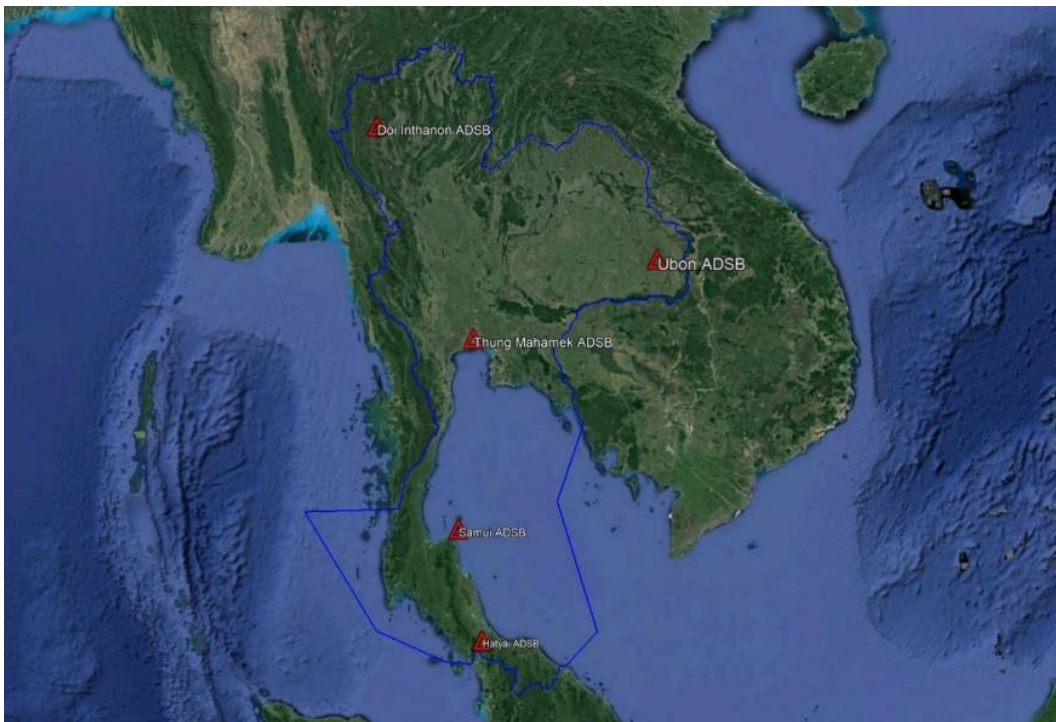


Fig 2. ADS-B ground station in Thailand

2.8 Thailand has recently established the national airspace and air navigation master plan (NANP) last year. The national technical working groups of key development areas (e.g. AOM, ATM, CNS, MET, IM, and AD) consists of experts from all stakeholders (both civil and military), will be established to develop the action plan and monitor the implementation progress in order to achieve the key objectives in the master plan.

2.9 For the airspace organization and management, the airspace re-structure and aircraft equipage mandate are planned to be studied in 2021 and are expected to be started implementation in 2022.

3. ATM AUTOMATION SYSTEM

3.1 Thailand initiated the Thailand Modernization CNS/ATM System (TMCS) project to replace the legacy ATM systems to enhance ATS efficiency, enhance ATM operations flexibility, and increase

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ATS capacity to support the forecast traffic growth in Bangkok FIR while maintaining a high level of safety.

3.2 The TMCS project scope includes the replacement of ATM automation systems nationwide along with associated supporting CNS systems. The transition towards full use of the new ATM automation system was completed successfully in Q1 2020.

3.3 In 2020, Thailand has successfully implemented AIDC communications with three adjacent ATSUs. The AIDC implementation dates of each ATSU are as following table.

Thailand	Adjacent ATSU	Implementation Date
Bangkok ACC	Kuala Lumpur ATCC (Malaysia)	14 th March 2020
Bangkok ACC	Vientiane ACC (Lao PDR)	14 th July 2020
Bangkok ACC	Phnom Penh ACC (Cambodia)	1 st October 2020

3.4 According to Thailand's AIDC implementation plan, Yangon ACC (Myanmar) was the last adjacent ATSU to be implemented. However, AIDC operational trial between Thailand and Myanmar needed to be suspended due to situations in Myanmar.

4. ACTION BY THE MEETING

4.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matter as appropriate
