



VATM



The Challenges & Opportunities for ATM Infrastructure

As travelers continue to soar in the future





Overview

01

Demand chain

02

Role & Organization
of ANSPs

03

ATM
Infrastructure

04

Challenges

05

Solutions



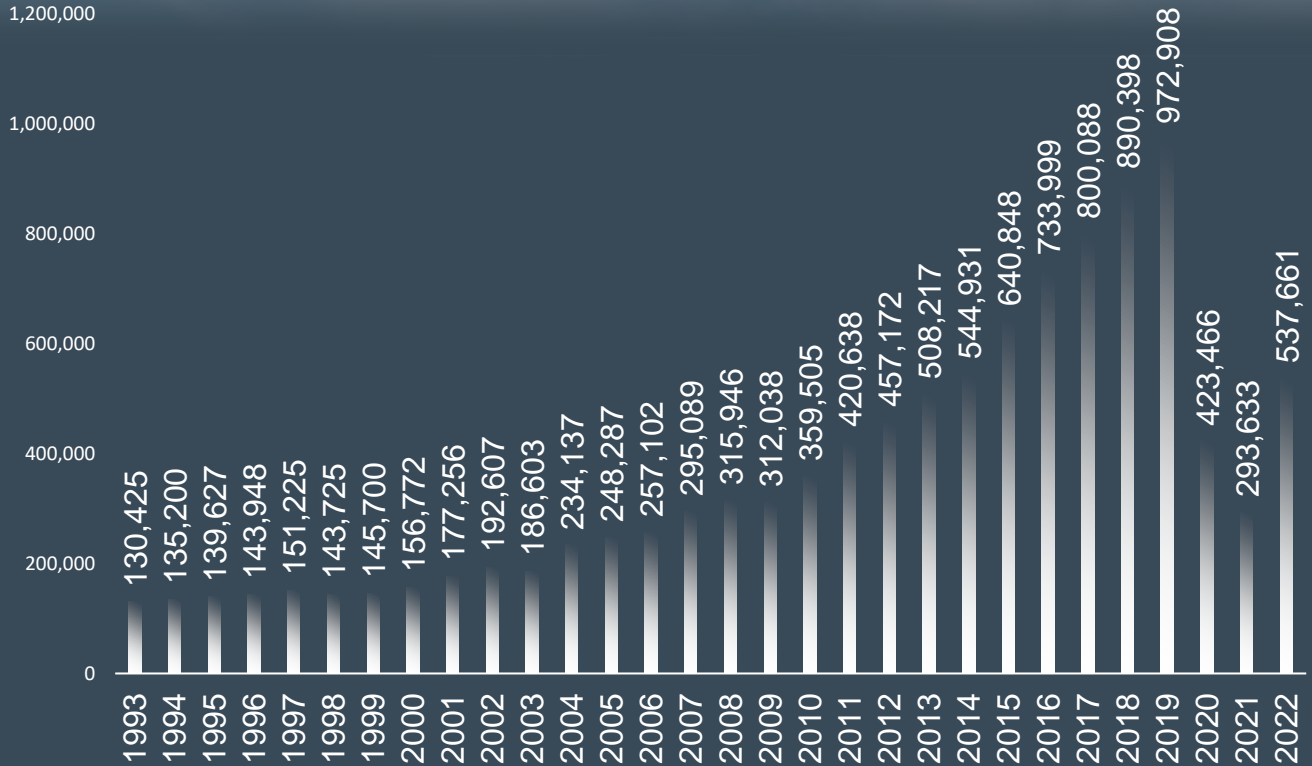


01

DEMAND CHAIN

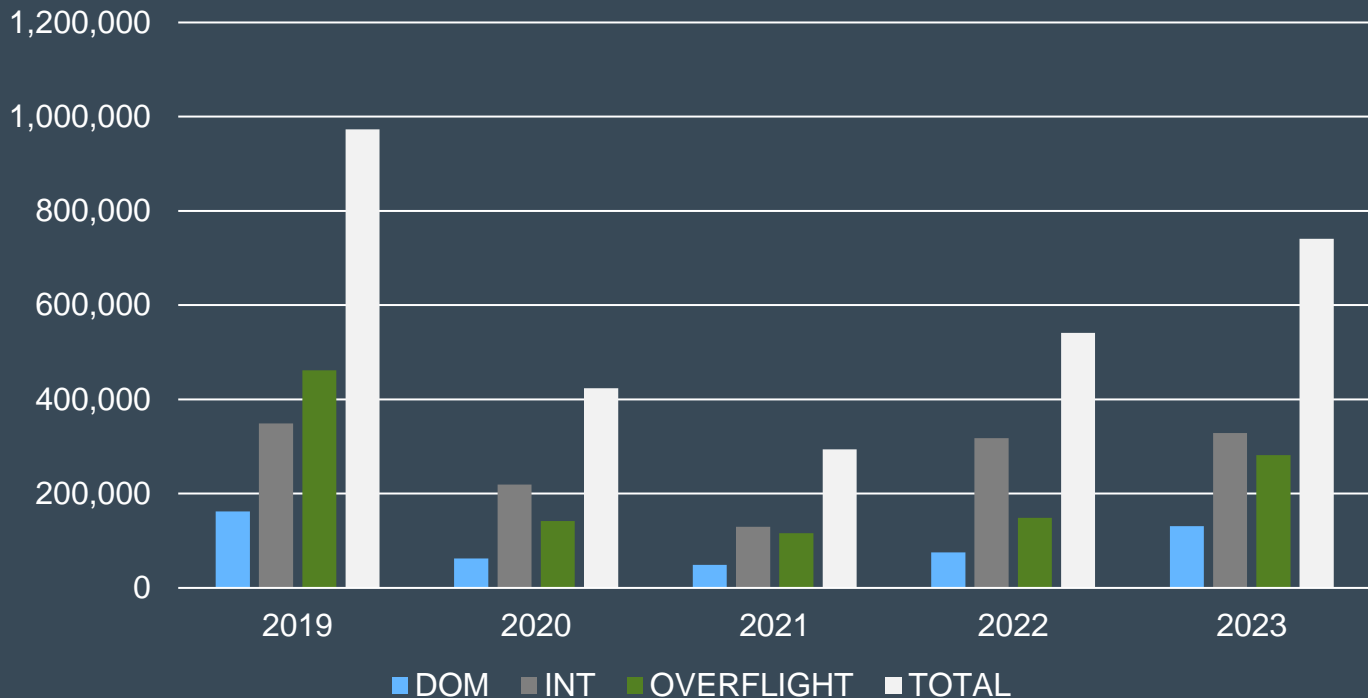
- Travel needs
- Aircraft movement
- Routes & Airspace organization
- CNS/ATM & Supporting facilities
- ATM Infrastructure

AIRCRAFT MOVEMENT OF VIET NAM (1993 - 2022)



COVID – 19 RECOVERY

AIRCRAFT MOVEMENT





02

Role & Organization of ANSPs

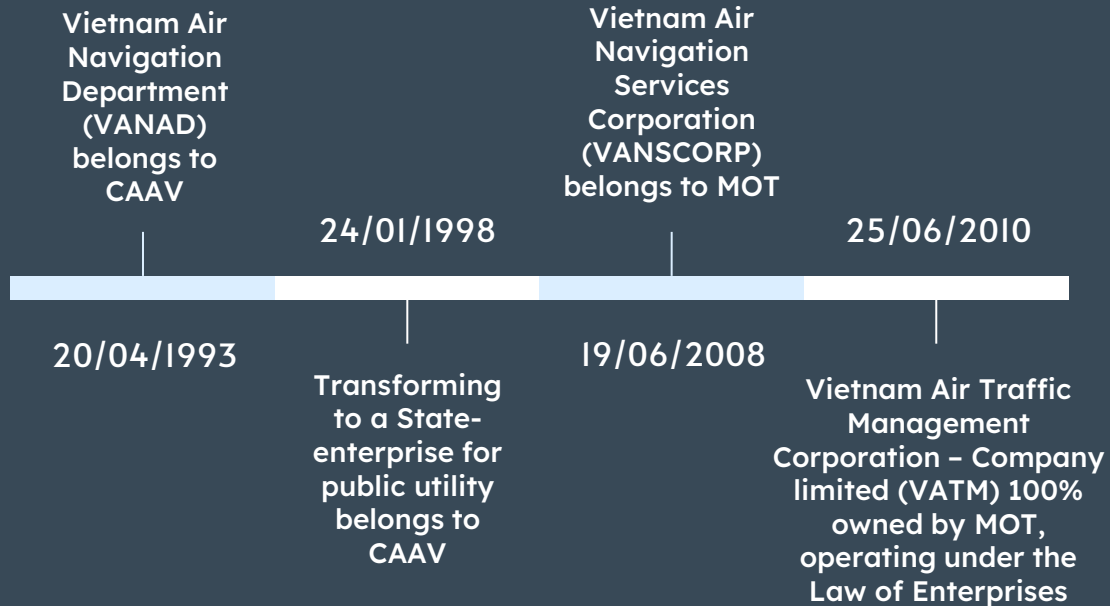
- Organizations running ATM systems that support aircraft from departure to destination – Air Navigation Service Providers (ANSP);
- ANSP: Government department, state-owned companies, or privatized organizations;
- Global airspace organized into about 308 FIRs, serving by about 89 ANSPs.



Note: In my speech I will use ANSP of Viet Nam (VATM) as a Illustration

DEVELOPMENT HISTORY

Fragmented in various parts of Department/General department of Civil Aviation (15/01/1956)



VATM – State-owned Corporation

MINISTRY OF TRANSPORT

Supervisor of
Owner (MOT)

MEMBERS' COUNCIL

Parent
company

Internal Supervision Dept.

DIRECTOR GENERAL

FUNCTIONAL DEPARTMENTS

1. Corporation Office
2. Office of Communist Party Committee
3. Human Resources Department
4. Finance Department
5. Planning and Investment Department
6. Air Traffic Services Department
7. Safety – Quality Department
8. Aviation Security Department
9. CNS Department
10. HCM ATCC PMU
11. LTIA Project Management Unit

MEMBER UNITS

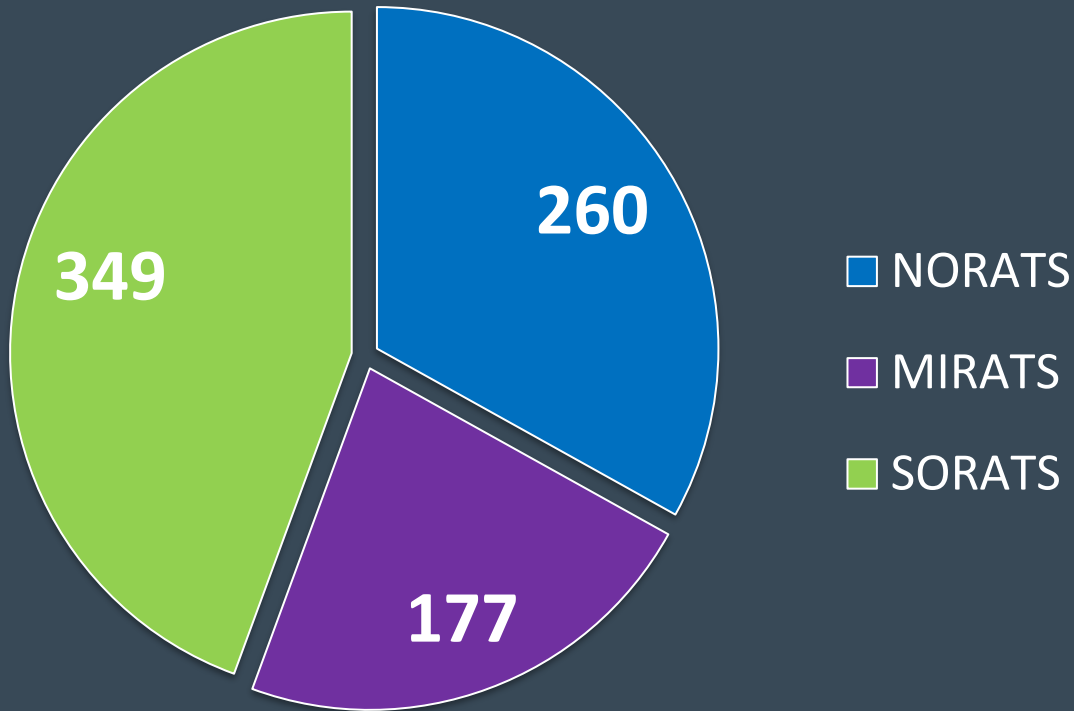
1. Northern Region ATS Company (NORATS)
2. Middle Region ATS Company (MIRATS)
3. Southern Region ATS Company (SORATS)
4. Air Traffic Flow Management Center (ATFMC)
5. Aeronautical Information Center (VNAIC)
6. Air Traffic Management Training Center (ATMTC)
7. Aviation Meteorological Center (AMC)
8. Search and Rescue Coordination Center (SRC)
9. Projects Management Unit

Daughter
Company

Air Traffic Technical Company Ltd. (ATTECH)



Total number of ATCOs: 786





03

ATM Infrastructure

- **SYSTEM** of systems
- **Airspace Organization & ATS Facilities**



SYSTEM of Systems



MERCURY

about 330 systems have
to be certified by CAA
(CNS, ATM, AIM, MET...);



VENUS

located spread over
31/63 provinces/central
cities of Viet Nam.





04

Challenges

- Congestion and delays
- Equipment
- Safety & Cyber security
- Seamless



CHALLENGES:

Congestion and delay

1. **Airspace organization**
2. **Airspace reservation**
3. **Aerodrome configuration**
4. **ATCOs (number & skills)**



CHALLENGES: Equipment

1. Renovation and upgrade
2. Digital transformation
3. System connections



CHALLENGES

Safety & Cyber security

1. Increased risk of accidents;
2. Increased risk of cyber attacks.



CHALLENGES:

Seamless

1. Regulations must be consistent and standardized;
2. Procedures must be harmonized;
3. Infrastructure/ Systems interoperable.





05

SOLUTION

- Invest in new technical infrastructure
- Optimize airspace to cope with the new aerodomes, traffic increase and application of advanced technology
- Apply fatigue management measures & improve ATCO skills
- Close collaboration with the other ANSPs
- Improve Civil/Military Collaboration