

# ICAO APAC ATM Automation System Symposium

## Thailand ATM Automation System – External System Integration – Current and Future

*Chanyut Phrukkumwong*

AEROTHAI

Nanjing, China, 22-23 November 2018

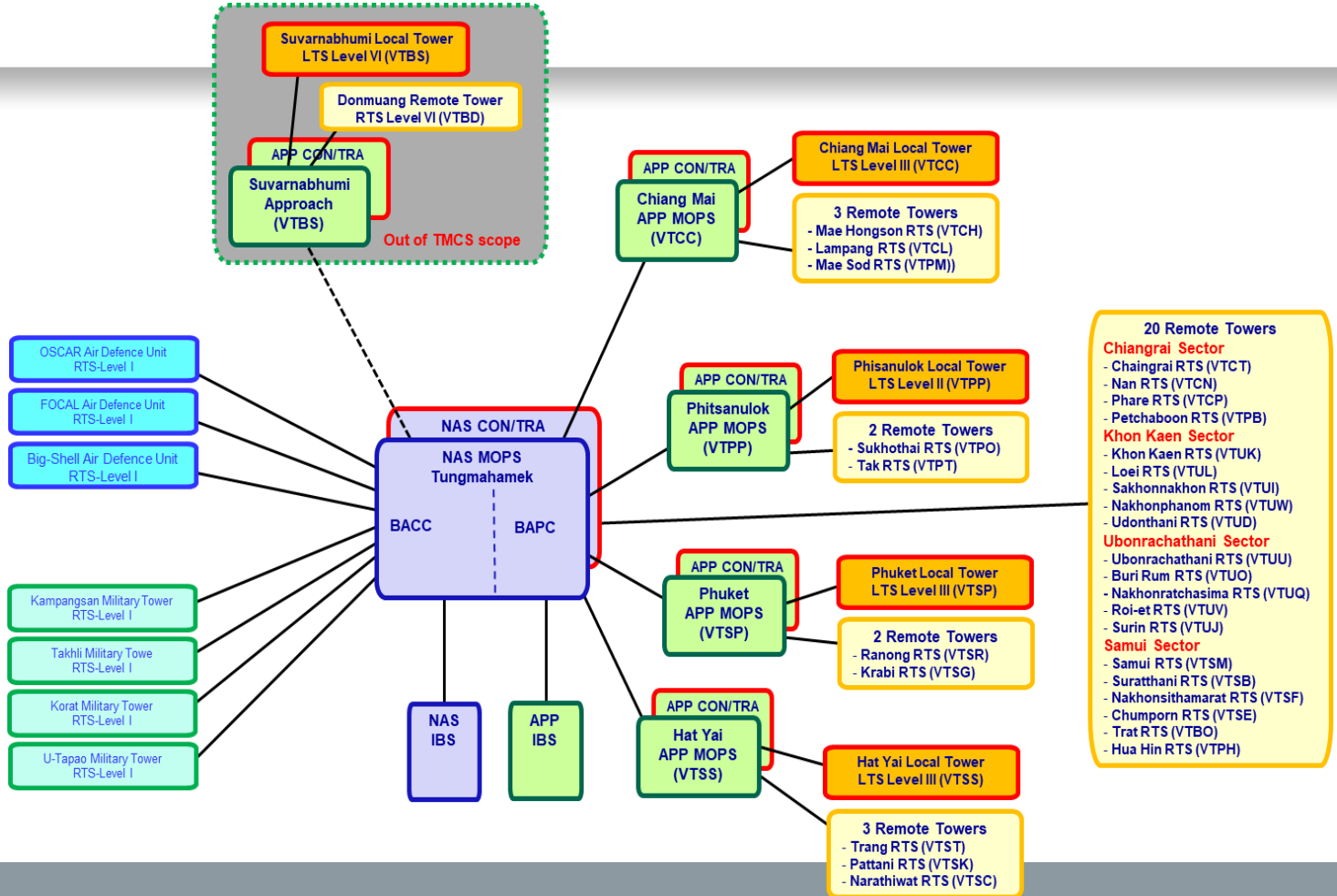


- Whole picture
- Current/Existing Interfaces
- Future Interfaces



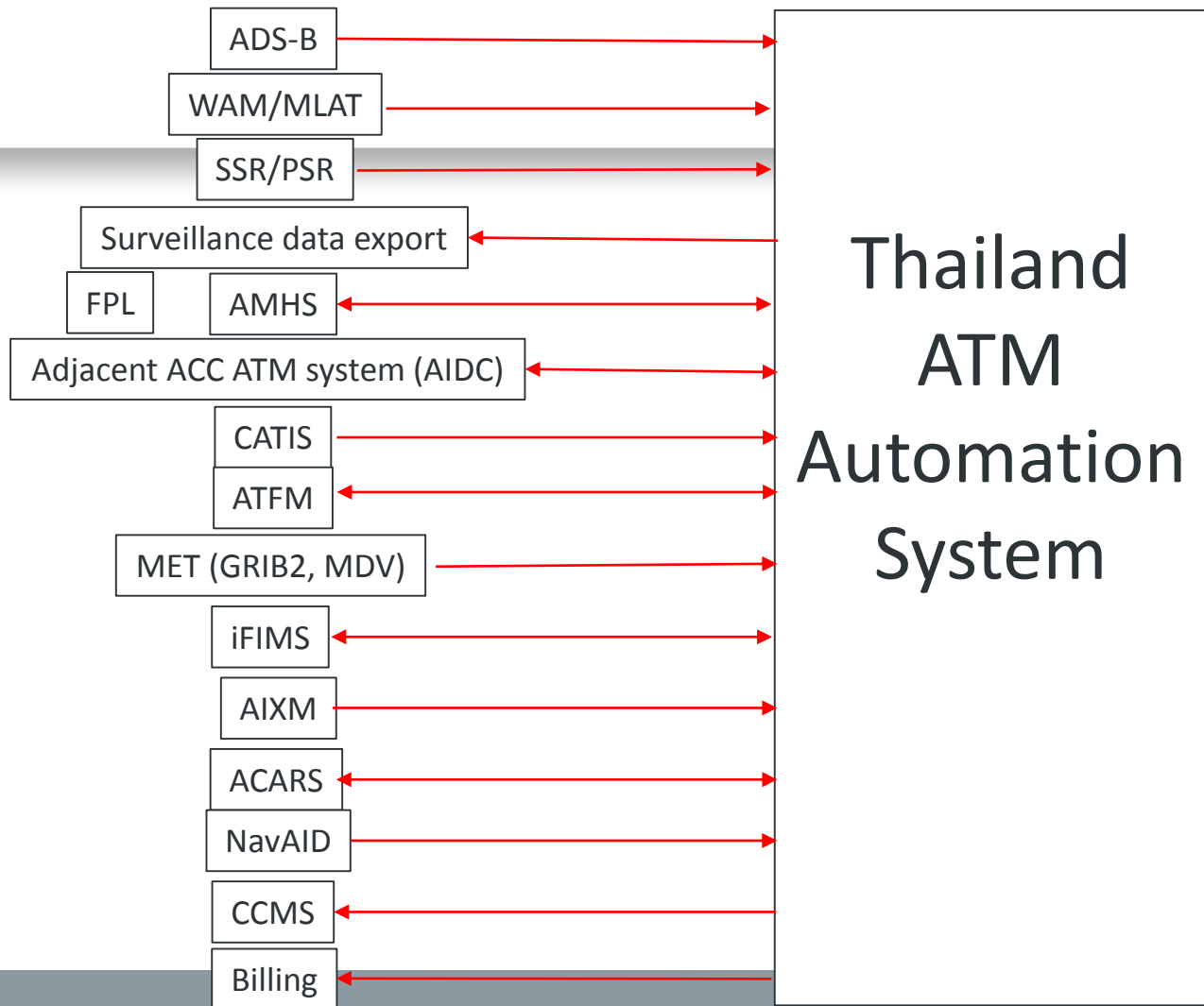
- Whole picture
- Current/Existing Interfaces
- Future Interfaces

# External Interfaces





ICAO





ICAO

ADS-B = Automatic Dependent Surveillance - Broadcast

WAM/MLAT = Wide Area Multilateration/Multilateration

SSR/PSR = Secondary Surveillance RADAR/Primary Surveillance RADAR

Surveillance data export

AMHS = ATS Message Handling System

Adjacent ACC ATM system (AIDC) = ATS Interfacility Data Communication

CATIS = Computerized Automatic Terminal Information System

ATFM = Air Traffic Flow Management

MET (GRIB2, MDV) = General Regularly-distributed information in Binary form, Meteorological Data Volume

iFIMS = Integrated Flight Information Management System

AIXM = Aeronautical Information Exchange Model

ACARS = Aircraft Communications Addressing and Reporting System

NavAID = Navigation Aid equipment

CCMS = Central Control and Monitoring System



| ICAO

# INTERFACE CONTROL DOCUMENT TopSky- ATC/ADS-B

Contract Number: TBA

CDRL Number: N/A

Prepared for:

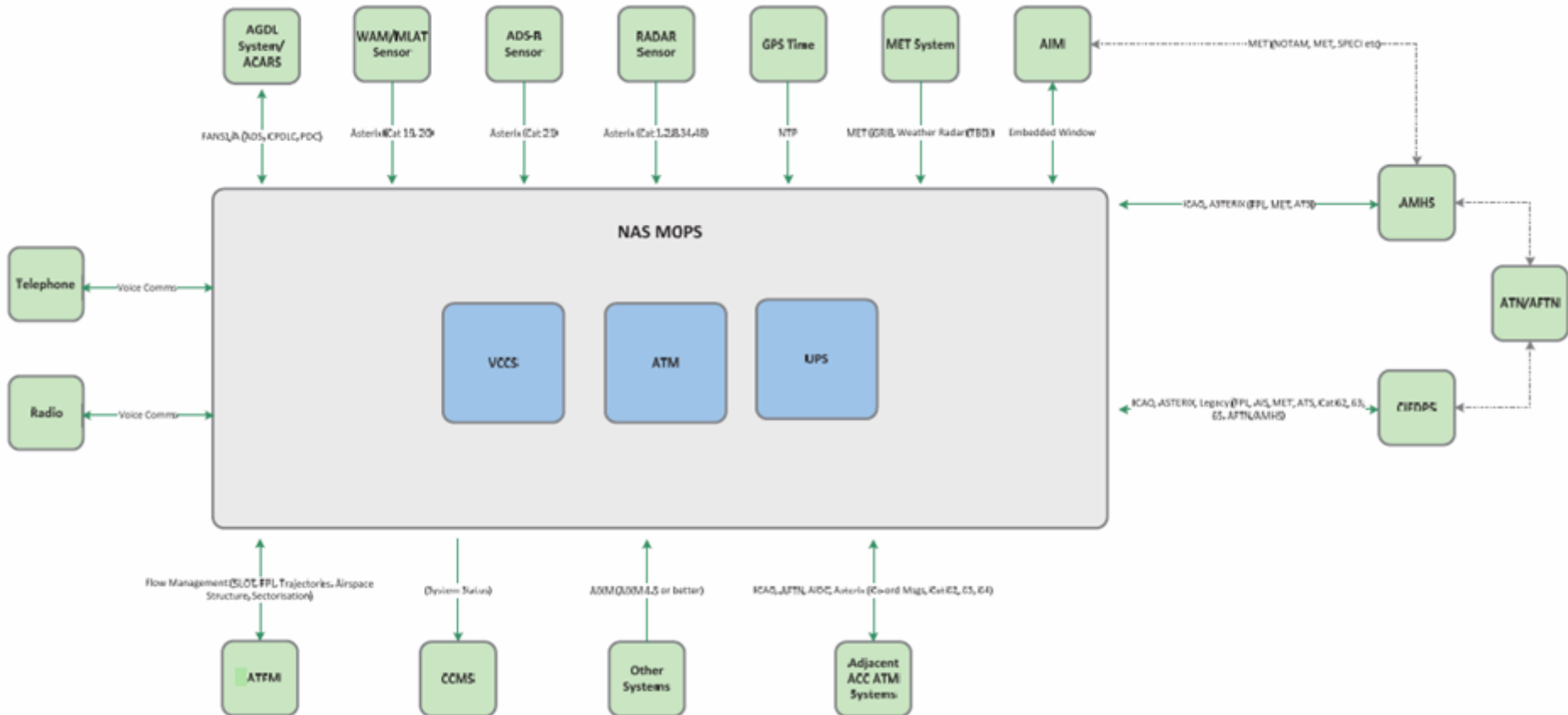
**Aeronautical Radio of Thailand Ltd.**

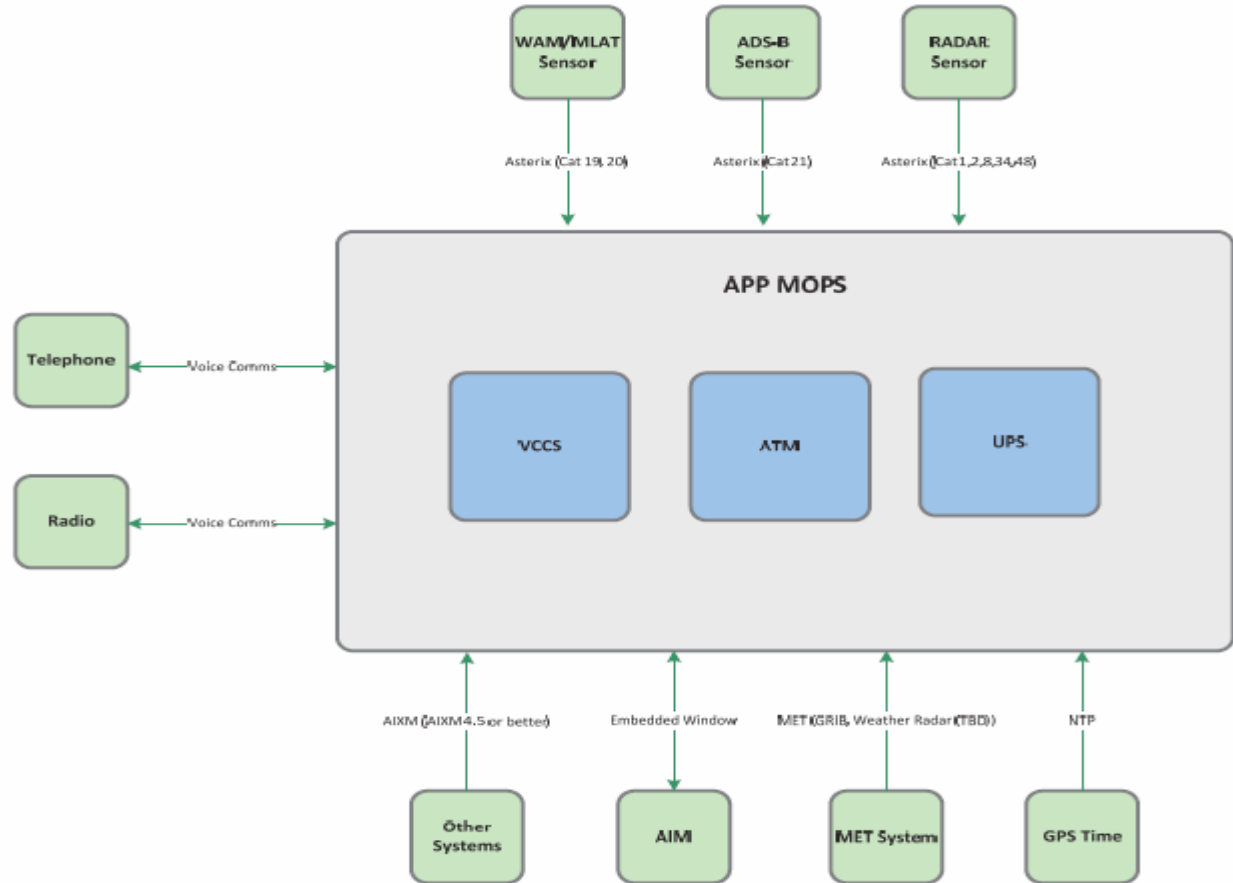
102 Sol Ngamduplee, Tungmahamek,  
Sathon, Bangkok, 10120  
THAILAND



- Whole picture
- **Current/Existing Interfaces**
- Future Interfaces

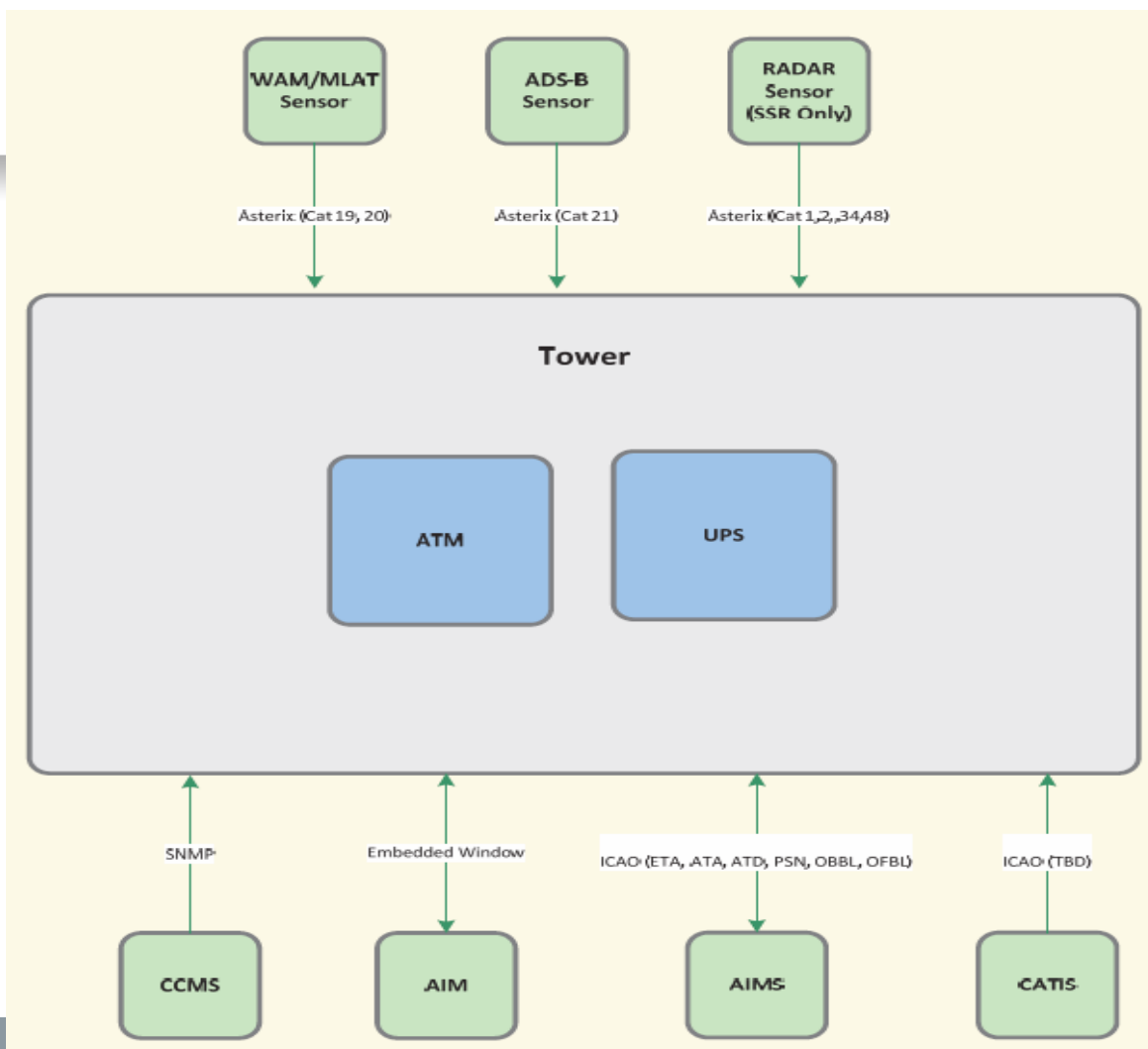








ICAO



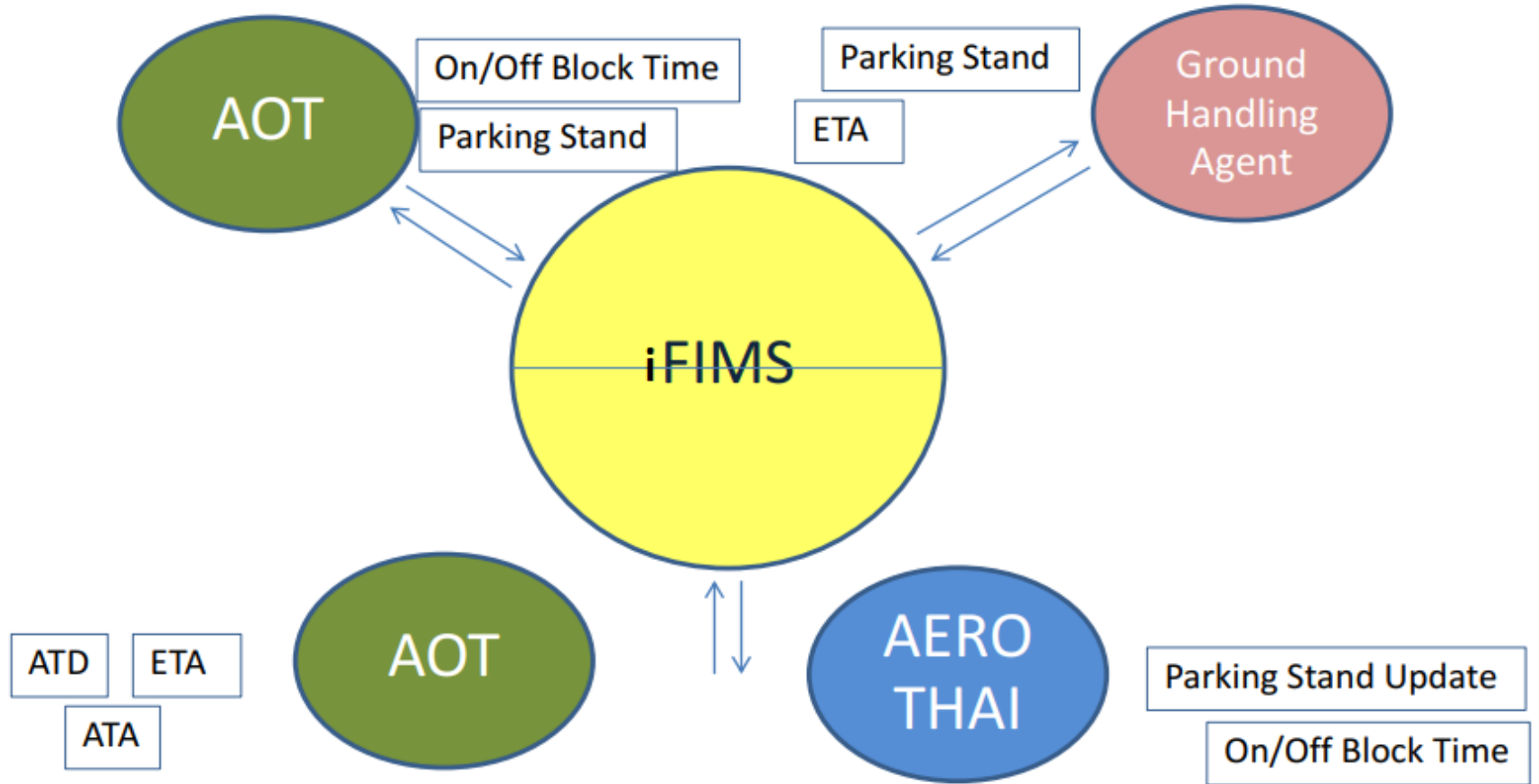


- Whole picture
- Current/Existing Interfaces
- **Future Interfaces**

## iFIMS - Integrated Flight Information Management System

### ASBU module – ACDM

- Block 0 – Data sharing between AOT (Airport Organization of Thailand) and AEROTHAI (ANSP) for 6 (out of 39) airports: VTBS, VTBD, VTSP, VTSS, VTCC, VTCT





# Message from iFIMS to ATC

## TopSky Tower

For each flight, TopSky-Tower will extract and process, from these messages, the following useful parameters:

- Aircraft Stand (PKST)
- On-Block Time update
- Off-Block Time update
- TOBT

## TopSky ATC

For each flight, TopSky-ATC will extract and process, from these messages, the following useful parameters:

- Unique Record Number
- Aircraft Stand (Gate in T-ATC)

# Messages from ATC to iFIMS

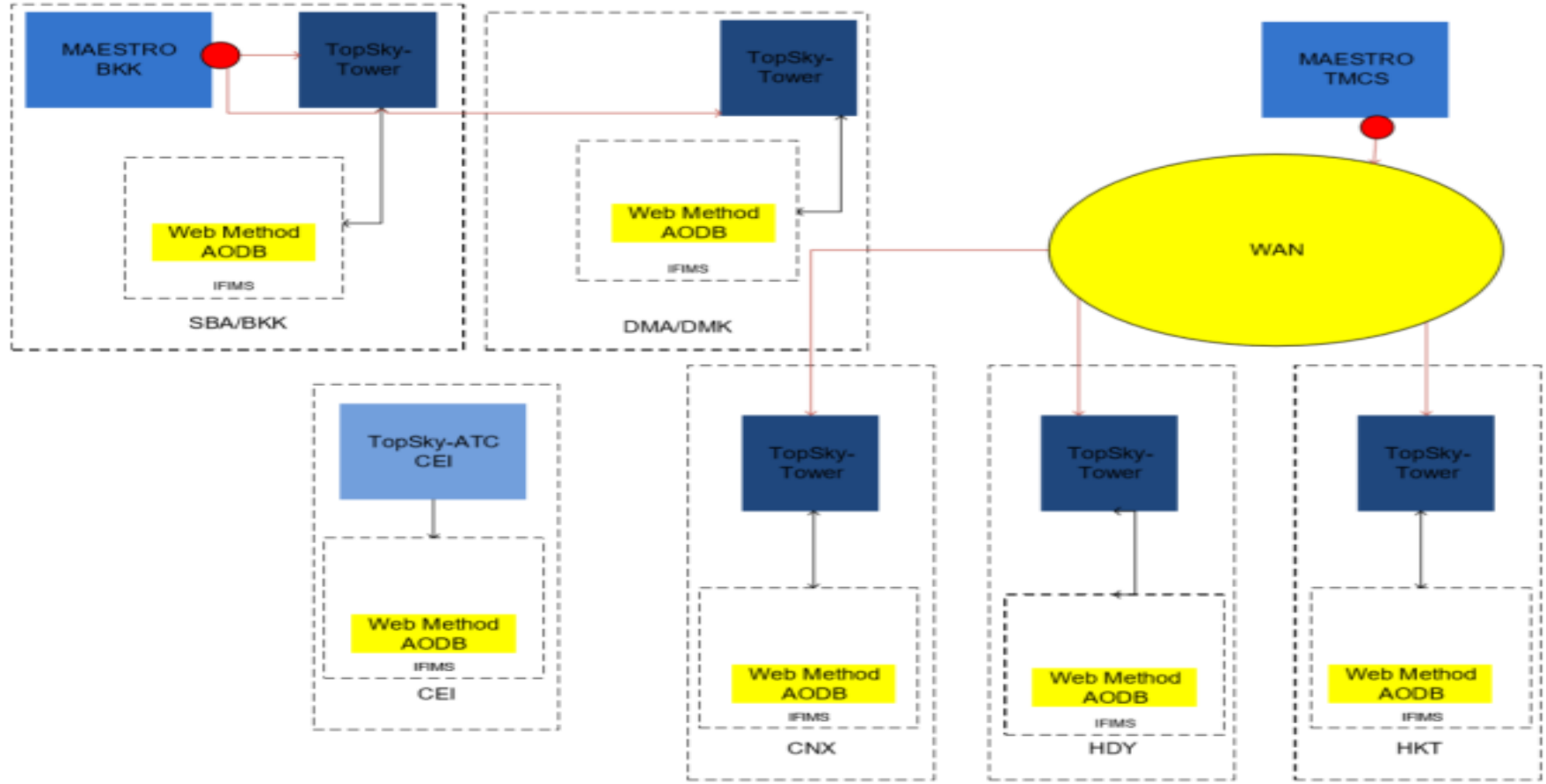
## TopSky Tower

- Unique record number
- Flight number
- Call sign
- Arrival-departure indicator
- EOBT/ETA
- Landing type (VFR/IFR FPL state)
- Runway update (RWYA/RWYD)
- ETA update
- Landing – Airborne update
- SID and STAR
- Flight status
- ASRT
- CTOT
- Target landing time
- Ten Miles Out update
- TSAT
- ASAT

## TopSky ATC

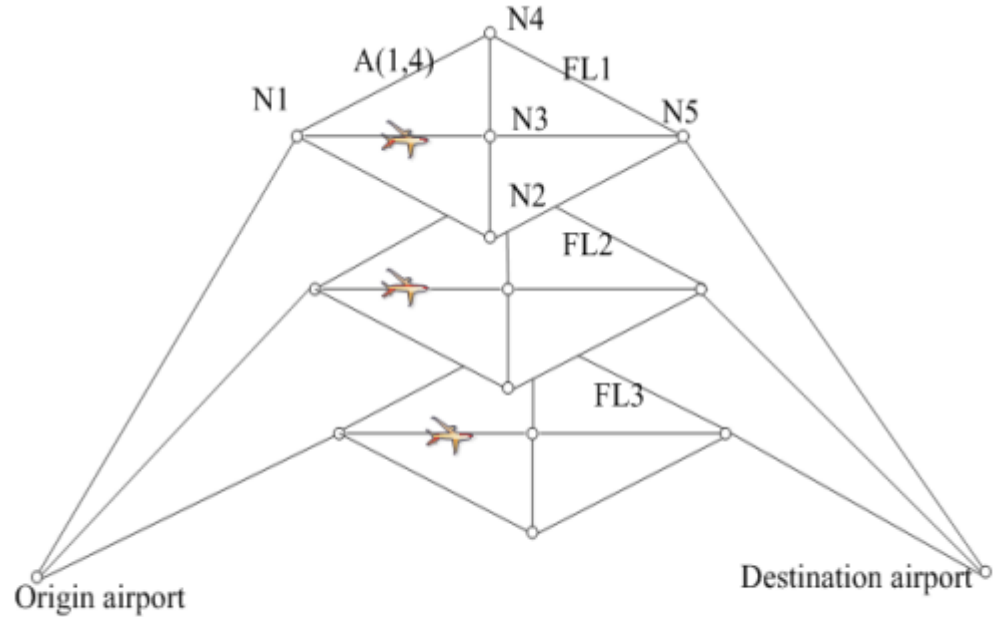
- Unique record number
- Flight number
- Call sign
- Arrival-departure indicator
- EOBT/ETA
- Landing type (VFR/IFR FPL state)
- Runway update (RWYA/RWYD)
- ETA update
- Landing – Airborne update
- SID and STAR
- Flight status
- ASRT
- CTOT





## Strategic ATFM

### ASBU module – TBO



Source: 34th Digital Avionics Systems Conference, IEEE, [An Evolutionary Multi-objective Approach for Network-wide Conflict-free Flight Trajectory Planning](#), Kai-quan Cai, et al., September 2015.



ICAO

UNITING AVIATION

NO COUNTRY LEFT BEHIND



ICAO

North American  
Central American  
and Caribbean  
[NACC] Office  
Mexico City

South American  
[SAM] Office  
Lima

ICAO  
Headquarters  
Montréal

Western and  
Central African  
[WACAF] Office  
Dakar

European and  
North Atlantic  
[EUR/NAT] Office  
Paris

Middle East  
[MID] Office  
Cairo

Eastern and  
Southern African  
[ESAF] Office  
Nairobi

Asia and Pacific  
[APAC] Sub-office  
Beijing

Asia and Pacific  
[APAC] Office  
Bangkok



THANK YOU