# ATFM implementation in ASECNA

**African ANSP meeting**
**Lomé, Togo, March 28th –April 01st 2022**

**Point 6 of the meeting agenda: Implementation of global and regional ICAO air traffic plans (GANP & AFI/ANP) and priority areas of cooperation between ANSPs.**

**Presented by ASECNA:**
**Name and quality of the speaker**

# SUMMARY

- CONTEXT
- ASECNA VISION 2032
- CONOP ASECNA AIR TRAFFIC FLOW MANAGEMENT
- ATFM EXPERIMENTATION IN ASECNA

# ATFM implementation in ASECNA

## CONTEXT

- ATFM has become a crucial activity to the agency due to the traffic growth and the research of fuel and CO2 savings in order to limit the impact of air transport on the environnent
- ATFM is a catalyst to the efficiency and efficacity of air traffic management. It contributes to the security, the efficacity, the rentability and the durability of ATM systems.
- The implementation of ATFM helps in building a unique sky as reminded during the APIRG 21 meeting ‘’Africa needs to implement an air traffic management mode without discontinuity in its airspace to insure the birth of a unique AFI sky”

# CONTEXT

- In 2018, the African CANSO conference decided to build an ATFM strategy for the AFI region. This plan is also known as as the "Mombasa CANSO ATFM roadmap"
- This roadmap was conceived to integrate the regional ATFM systems according to the ICAO 7 project of the AAO/SG 2 meeting regarding the aerodrome aspect and was endorsed by the APIRG/22 meeting, held in Accra, GHANA in 2019.
- The APIRG recommended a better awereness on the subject and to harmonise the roadmap with existing AFI regional programmes

# ASECNA VISION 2032

- Permanently improve our services as State members ANSP
- Work towards the implementation of an African unique sky
- Improve our governance through the optimisation of our ressources management

# ASECNA VISION 2032

- Improve our performance. Respond to the needs of air users. Implementation of innovative services and technologies in order to remain the ANSP leader on the continent.

- Creation of an airspace block (16 Millions Km2) that offers the same high level of performance and security to provide appropriate flights profiles and trajectories. Equipment and services update regarding the region's needs and the GANP orientations

- Human ressources and material management and seizing all the opportunities to mutualise internal and external ASECNA ressources

# ATFM ASECNA CONOPS

## ATFM PRINCIPLES

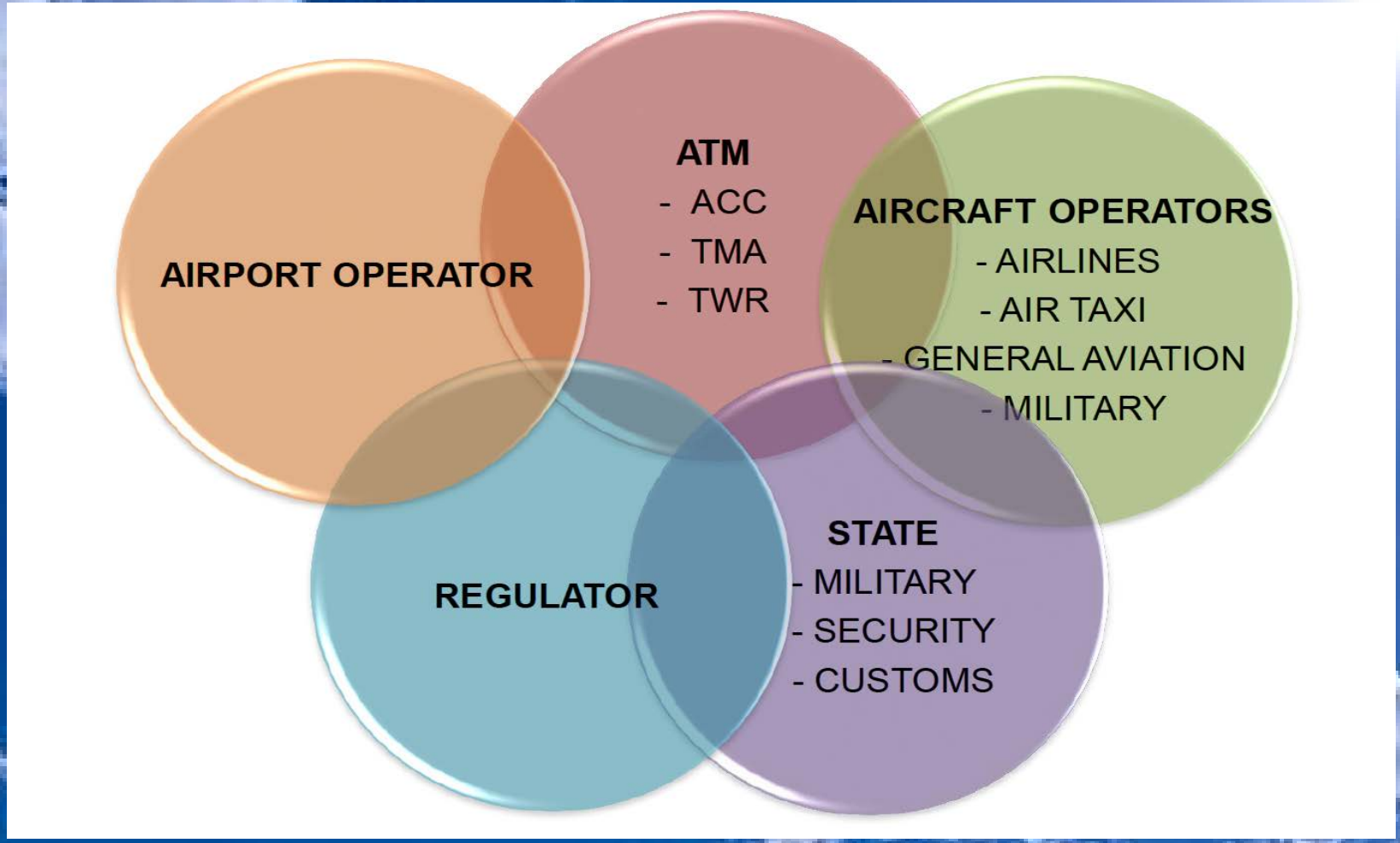
- ATFM contributes to making the air traffic flow quick and sure in ensuring that the ATC capacities are used to their maximum and that the traffic volume corresponds to the declared capacities by the ATS authorities
- Implementation of the traffic regulation through the concerned aerodromes departure slots following a coordination between users and regulation agents (FMU/FMP, CFMU)
- Possibility to implement solutions as route or altitude changes for some flights

# ATFM ASECNA CONOPS

ATFM GOALS

- Adapt the traffic flow to the capacity through the prevention of overloads and ensuring the traffic flow in safety
- Limit delays and constraints on the traffic
- Smoothing the traffic flow: this allows to reduce the ATC workload for them to ensure a better air safety
- Reduce delays and constraints: this service allows users to facilitate the flights planification, to reduce the operation costs

# ASECNA ATFM CONOPS
## The stakeholders (internal and external)



# AFTM ASECNA CONOPS

## ASECNA INTERNAL STAKEHOLDERS

### Central ATFM Unit (CATFMU)

- ATFM services implementation begin with the creation of a central air traffic flow management organism: In Dakar is the air traffic coordination center where a CATFMU is installed
- Its role is to centralise the ATFM service, supervise and coordinate the local ATFM centers (ACC and airports)
- It has the mission to internationally coordinate with the non ASECNA ATFM centers, to make the traffic projection in all the agency airspaces and to ensure the global ATFM efficiency

# ATFM ASECNA CONOPS

## ASECNA INTERNAL STAKEHOLDERS

### Regional and local ATFM Centers

- They are in charge of regional( ACC) or local (TWR/APP/ Airports ) ATFM activities. They exchange information with the CATFMU on the traffic situation and evolution.
- They gather information from users and relay them to the CATFMU
- They ensure the link between the CFMU, the ATS organisms and the users. They are the relay between the CFMU and the control centers

# ATFM ASECNA CONOPS

## ASECNA INTERNAL STAKEHOLDERS

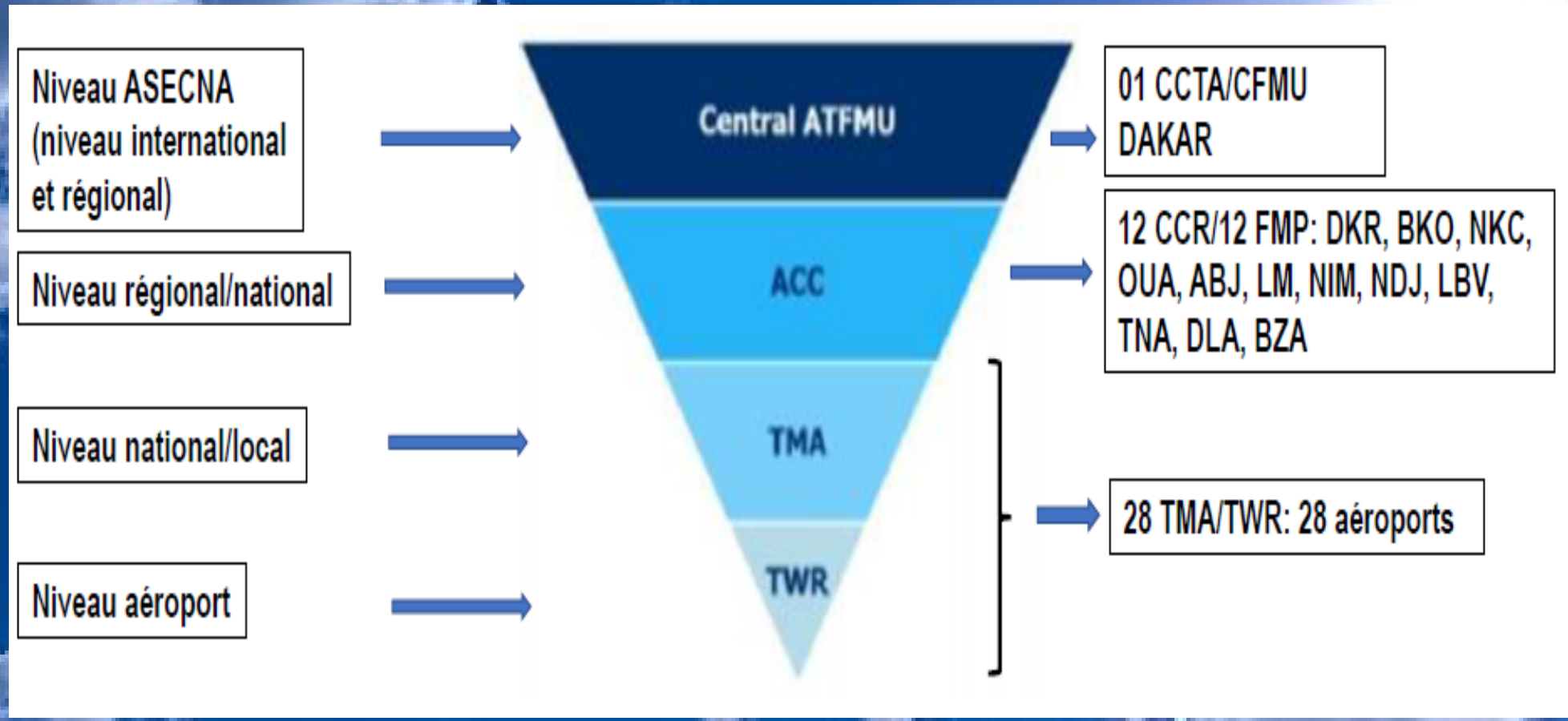
### Regional and local ATFM Centers

- ASECNA has put in place regulation units. ''Flow Management Unit or Position'' (FMU/FMP) in each of its 12 ACC, and in some approach centers regarding their airspace configuration. The 12 ACC are: Abidjan ; Antananarivo; Douala; Dakar ; Bamako; Brazzaville; Libreville; Lomé ; Ouagadougou ;Niamey; Ndjamena ;Nouakchott.

- The concerned approach centers are: Bangui ; Cotonou ;Malabo; Pointe-Noire; Port-Gentil Yaoundé

# Mise en œuvre de l'ATFM à l'ASECNA

## ASECNA INTERNAL STAKEHOLDERS



# ATFM EXPERIMENTATION IN ASECNA SCOPE

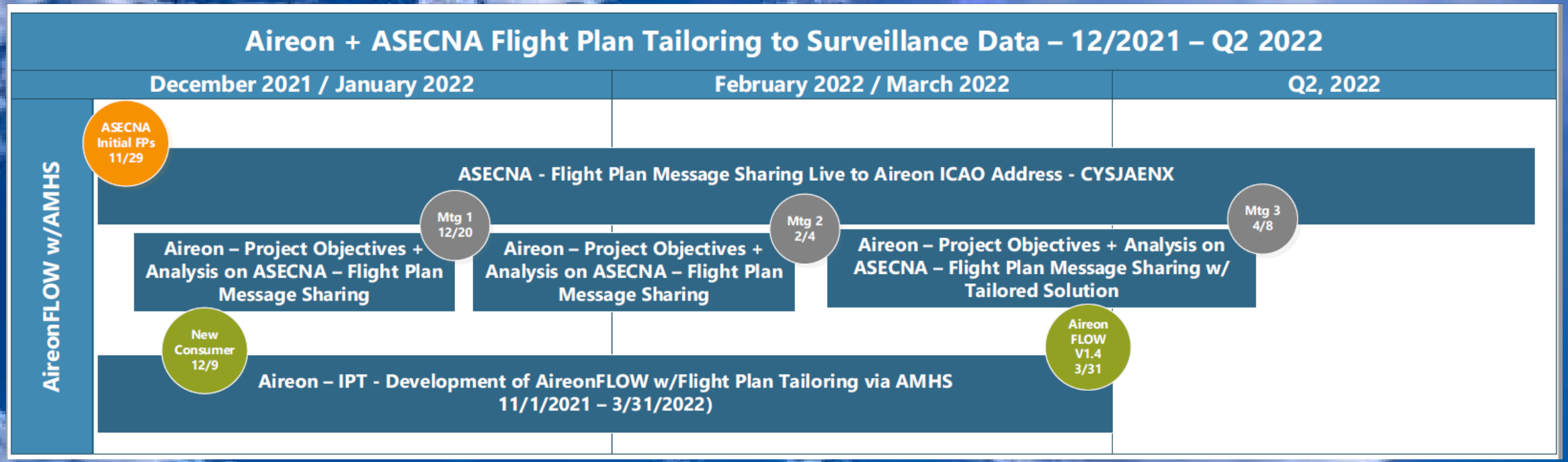
*ASECNA engages the ATFM project with some experimentations, mainly with the satellite data surveillance (ADS/B) provider: AIREON*

# Tailored Service for FP sharing

- Project Introduction:
  - ASECNA is sharing all flight plans via AMHS network via to Aireon's AEN address (CYSJAENX). We are receiving messages from all 17 ASECNA locations.
  - Build up of the AireonFLOW product (w/Tailored Results by Flight Plans shared via AMHS Network). Flight plans that fit the matched criteria (ADS-B equipped aircraft, etc.) are then tailored to Aireon's surveillance data based on the ACID match.
  - Aireon's project in Q1 2022 to build out this system and provide the streamed data back to ASECNA. In addition to the streamed data back to ASECNA, a qualitative analysis will be provided on the flight plan matching.

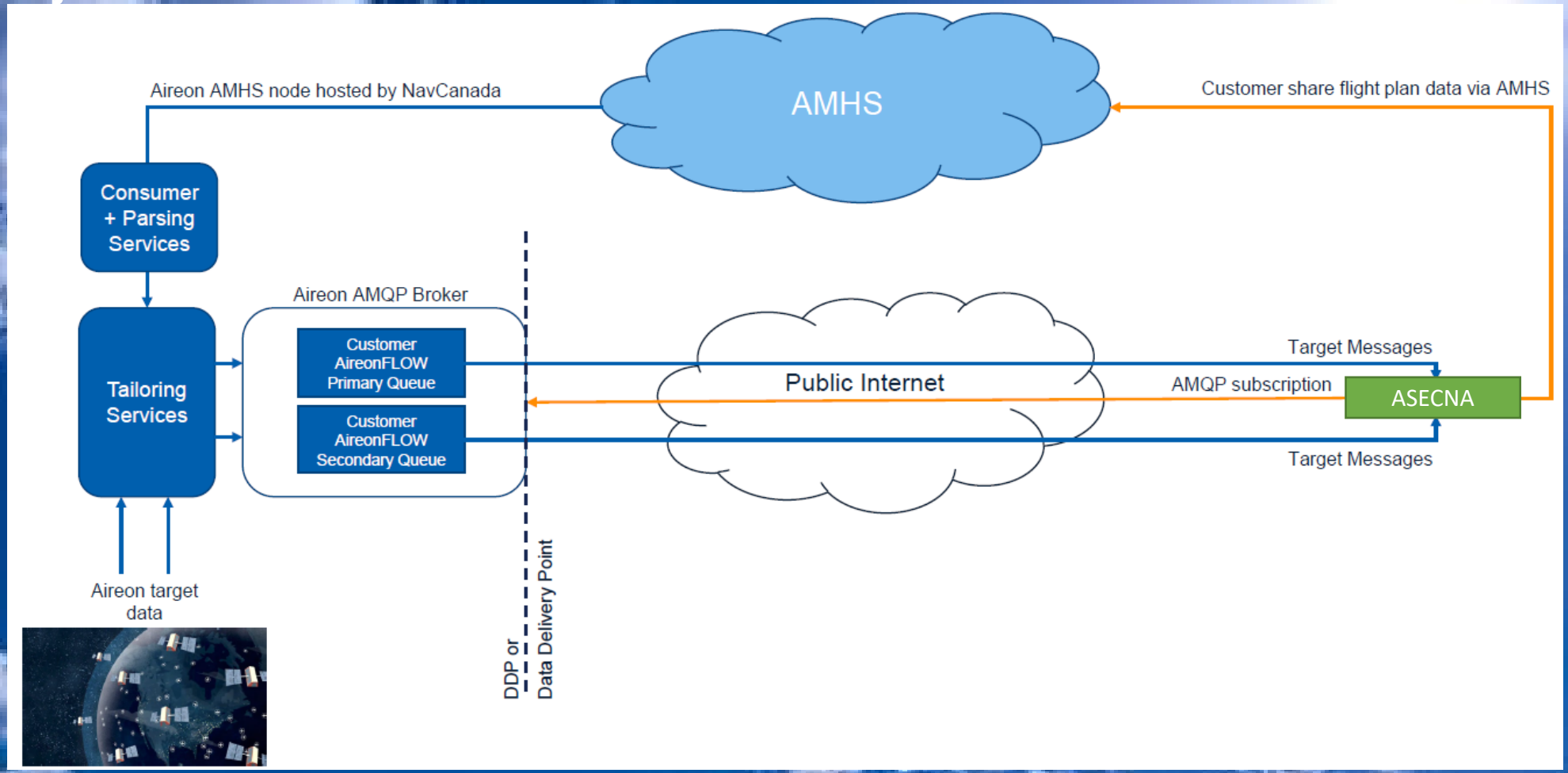
# Tailored Service for FP sharing

- Project roadmap:



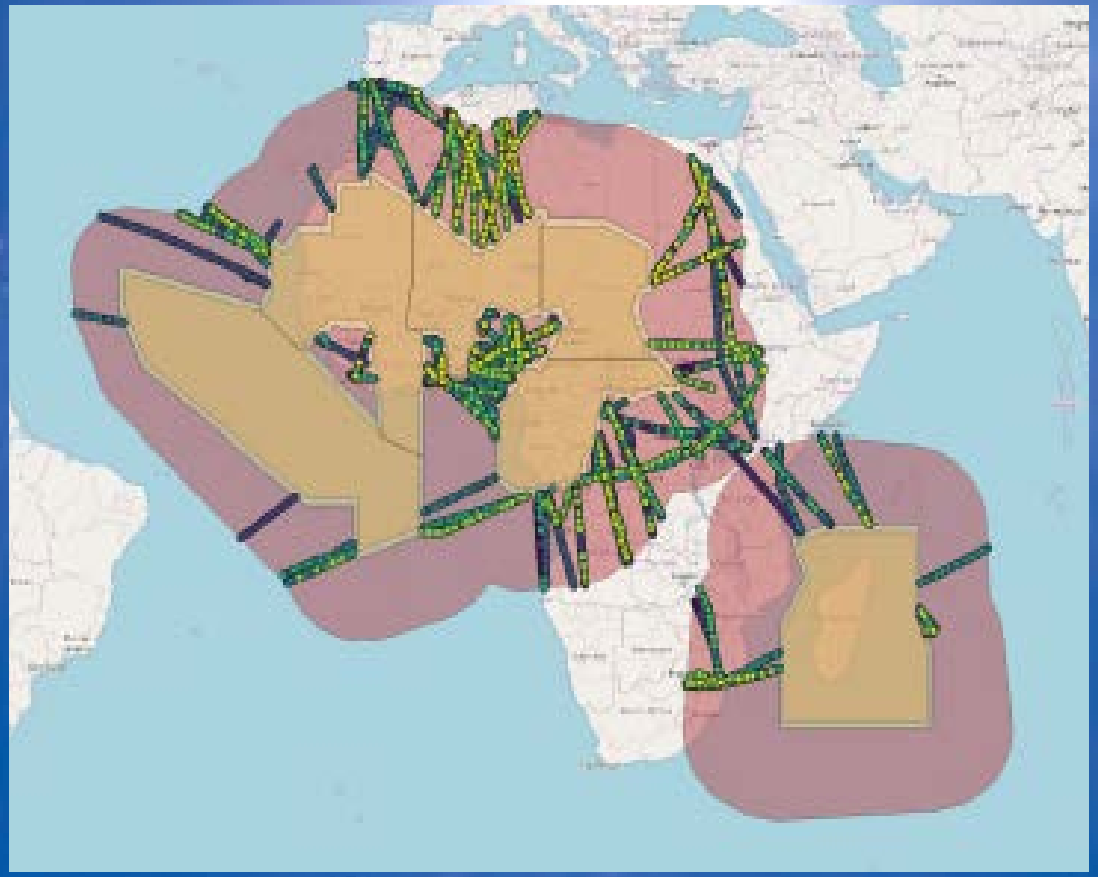
# Tailored Service for FP sharing

- Project Architecture:



# Implementation of ATFM in ASECNA

- Data Characteristics:
  - 600NM buffer (can be more) around Area of Interest (AoI)
  - The performance of the matched data within the buffer region AND from outside the ASECNA AoI :
    - Update Interval: 60s
    - Latency from satellite to delivery is up to < 5 seconds, 99%
    - Data is available from the ground to ceiling of FL600
  - High-fidelity, low latency surveillance-grade data



# Conclusions & Futures Actions

The meeting is invited to :

- Note the progress made by ASECNA in the implementation of ATFM
- Take into account the specificity of ASECNA, its mode of functionning, its multinational caracter in the AFI region;
- Recommend the acceleration of the A-CDM implementation to the actors, mainly the aerodrome managers for a global ATFM and A-CDM development


Thank you
Q & A