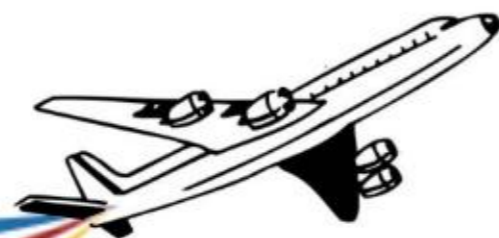




Central Airspace Management Unit

# **ATFM STATUS REPORT: SOUTH AFRICA**



Presented by: Sandile L Maphanga  
Manager: Central Airspace management Unit



# SCOPE

- ✈ **Company Profile**
- ✈ **Area of Responsibility**
- ✈ **South African Airspace Structure**
- ✈ **Central Airspace Management Unit (CAMU) Profile**
- ✈ **CAMU ATFM Techniques**
- ✈ **Data Exchange**
- ✈ **Airspace Management Tool (AMT)**
- ✈ **Airport Flow Tool (AFT)**
- ✈ **Central Airspace Management Unit Web Interface (CAMU Web)**
- ✈ **Questions and Answers**

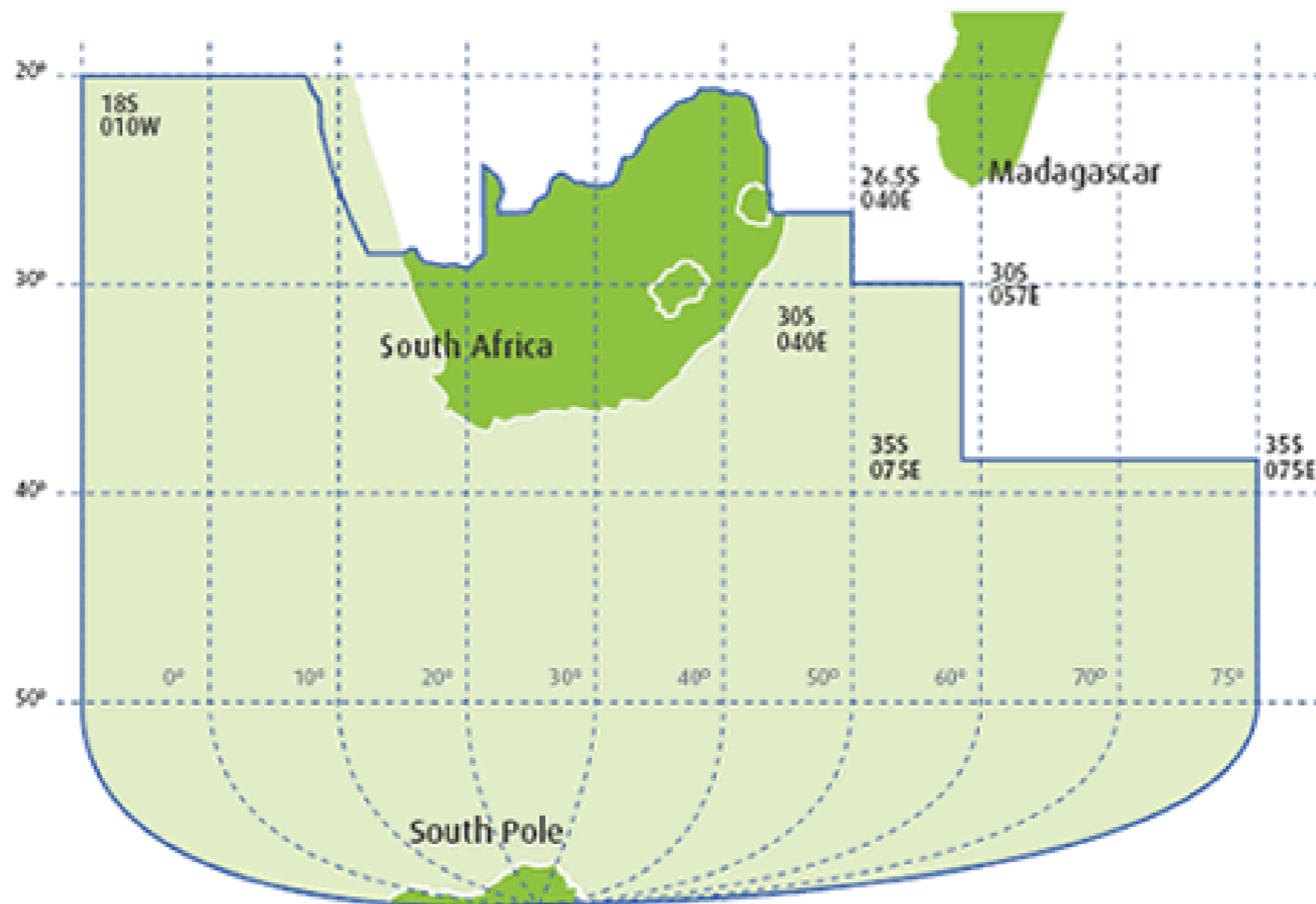


## **Air Traffic & Navigation Services Company's (ATNS) Profile**

- ❖ ATNS is the sole commercial **provider of air traffic, navigation**, and associated services in South Africa – responsible for air traffic control in approximately 10% of the world's airspace.
- ❖ It supports **21 aerodromes** around the country – including the O.R. Tambo, Cape Town, and King Shaka International Airports – that together see more **than half a million arrival and departure movements** annually.
- ❖ Its services extend beyond those of the typical air traffic control organization, providing vitally important aeronautical information used for all flight planning purposes as well as search and rescue coordination activities and the maintenance of a reliable navigation infrastructure.



# ATNS AREA OF RESPONSIBILITY







# CENTRAL AIRSPACE MANAGEMENT UNIT PROFILE

- ❖ The responsibility for the management of **air traffic flow and capacity management** within South African airspace resides with the Central Airspace Management Unit (CAMU).
- ❖ The unit's responsibilities include comprehensive **management of the airspace capacity, slot allocation program, flexible use of airspace (FUA)** and the re-routing of traffic affected by adverse weather or restricted airspace



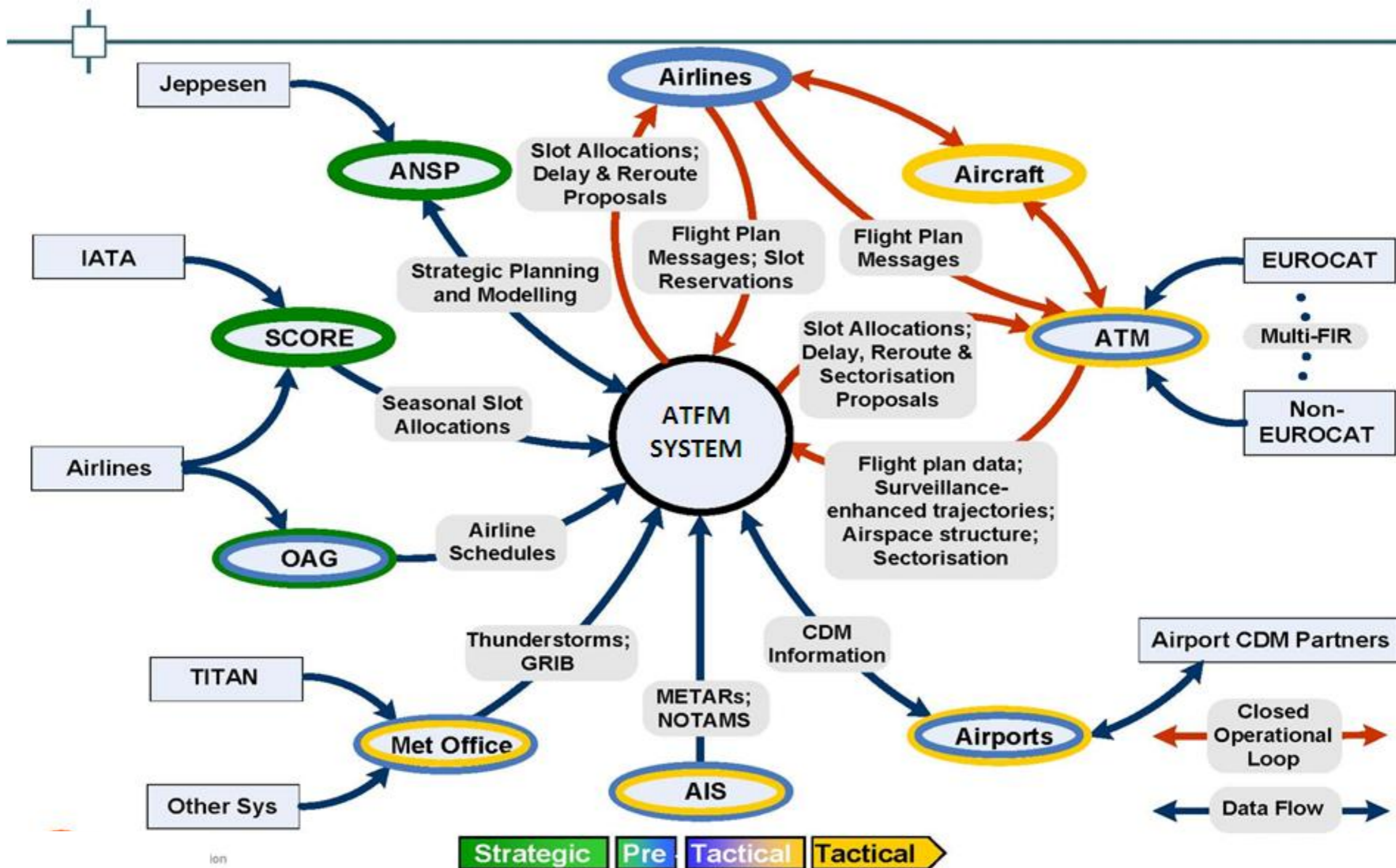


## CAMU ATFM TECHNIQUES

- ❖ **Ground Stops (GS)** may be declared at an aerodrome when adverse conditions or major ATC outages cause demand to exceed capacity to such a degree that gridlock occurs at an aerodrome.
- ❖ **Ground Delay Programs (GDP)** may be instituted to delay the flights on the ground due to capacity constraints at the arrival or departure aerodromes and avoid excessive airborne holding or re-routings.
- ❖ **Airspace Flow Programs (AFP)** may be instituted for an airspace constraint. When an AFP is declared, the area subject to the program will be identified by a Flow Constrained Area (FCA).

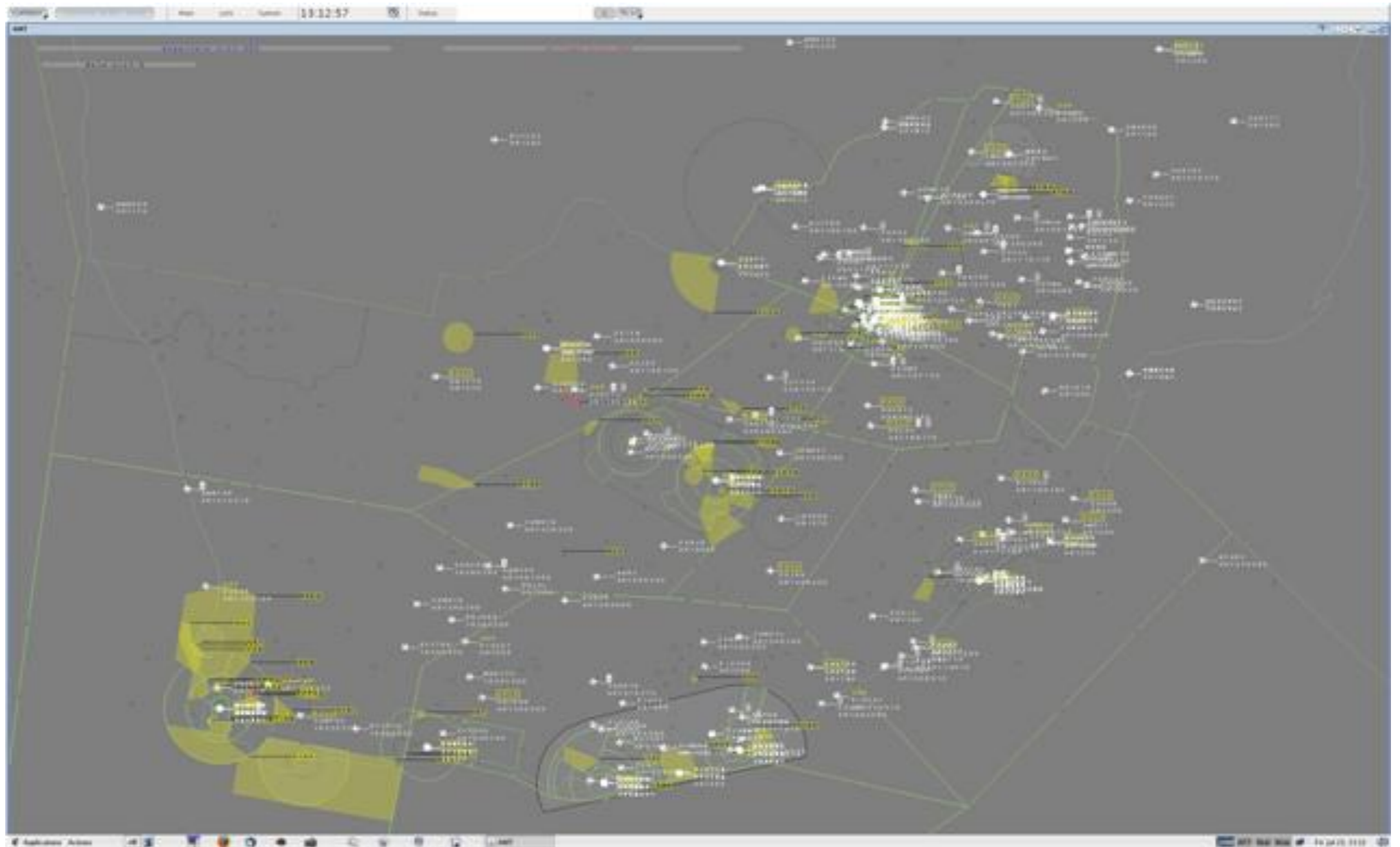


# DATA EXCHANGE





# AIRSPACE MANAGEMENT TOOL (AMT)





# AIRSPACE MANAGEMENT TOOL (AMT)

## Main Capabilities:

- ❖ Display of the current air situation wrt Flight Plan tracks, Graphical routes, Maps, Lists of flights, Weather data, Storm TSA
- ❖ Display of the future air situation (Strategic Mode)
- ❖ Graphic Tools Facilities include "What-if flights"
- ❖ Displaying of sector/position/TSA traffic load
- ❖ Quick Sorting/Filtering capabilities
- ❖ Alarms and Warnings and Loading Maps
- ❖ Transmission of AFTM rerouting messages





# AIRPORT FLOW TOOL (AFT)

## *What is it?*

- ❖ **AFT** is a **pre-tactical advanced** decision support tool used to **monitor system demand and capacity**, and **implement traffic management initiatives** to **efficiently resolve imbalances** within the South African Airspace.
- ❖ **AFT** provides CAMU with a **common situational awareness** through the use of Airport Demand List (ADL) data, a traffic schedule comprised of a combination of OAG schedule, IATA airport slots and flight data processor data.
- ❖ **AFT** presents **graphical and timeline** presentation of **aerodrome and airspace demand and capacity information**, and contains powerful utilities for **ground delay management** and analysis allowing CAMU air traffic flow specialists to react quickly to airspace constraints.



## AIRPORT FLOW TOOL (AFT)

### *How do the CAMU Air Traffic Flow Specialists use AFT for Traffic Management Decision Making?*

- ❖ **Monitor** aerodromes and Flow Constrained Areas (FCA) by viewing existing demand and constraints at those elements.
- ❖ **Model** the impacts of potential traffic management initiatives (TMIs) including Ground Delay Programs (GDPs), Airspace Flow Programs (AFPs) and Ground Stops (GS) to help decide which initiative is the best solution to the current constraints.
- ❖ **Implement** TMIs once a decision is made to reflect the changes in the ADL.



## AIRPORT FLOW TOOL (AFT)

***What are Calculated Take Off Times (CTOT) and what can Towers and Aircraft Operators do with them?***

- ❖ The CAMU uses **AFPs, GDPs and GS** to manage **the demand of traffic into these areas**, and then **distributes** Calculated Take Off Times (**CTOT**) for the affected flights to balance the demand with the capacity.
- ❖ CTOTs are based upon **arrival or departure slots**. For arrivals slots, filed en route times are subtracted from the arrival slot to generate the CTOT.



## AIRPORT FLOW TOOL (AFT)

***What are Calculated Take Off Times (CTOT) and what can Towers and Aircraft Operators do with them?***

- ❖ Once a **TMI is issued**, and when a **flight is included** (CTOT issued), the Towers and aircraft operators use the CAMU Web to view and modify their "slots" to manage daily operations.
- ❖ **Compliance** with the **CTOT is important** because it allows **system-wide demand to be managed** in an FCA or in a GDP. Depending on the severity of the constraint leading to the TMI, **delay may be incurred** for individual flights.



# CAMU WEB

<https://www.camu.co.za>

The screenshot shows the CAMU Web application interface. At the top, there is a navigation bar with 'Welcome to CAMU Web!' and 'Home' links. Below this is a 'Login' section with a blue background, containing fields for 'Username:' and 'Password:', and 'Login' and 'Reset' buttons. To the right of the login section is a main content area with the heading 'Welcome to CAMU Web!' and a paragraph of text. Below this is a section titled 'THE OBJECTIVES OF THE ENHANCED ATFM SERVICES ARE TO:' followed by a bulleted list of objectives. At the bottom left, there is a footer that reads 'Metron Aviation, Inc. CAMU Web - Build'.

Welcome to CAMU Web! Home

## Login

Username:

Password:

### Welcome to CAMU Web!

Air traffic flow and capacity management is a vital part of air traffic management in exploiting the full capacity of the air transport system without running the risk of infringing upon safety caused by overload situations. In future the management of ATC capacity will become equally important as managing the traffic flows.

The responsibility for the management of air traffic flow and capacity management within South African sovereign and delegated airspace resides with the Central Airspace Management Unit (CAMU) which is established at the Johannesburg ATC Centre. The unit's responsibility includes, apart from managing the functions of the slot allocation program, the management of the flexible use of airspace (FUA), facilitating military exercises and operations, special and unusual events and any other activity which might require the use of airspace for a particular time period. The unit is also responsible for the re-routing of traffic, affected by adverse weather and temporary restricted or special use airspace in consultation with the aviation community in a collaborative decision making (CDM) process. In addition they will balance demand against capacity using the ATFM system after CDM with the appropriate aviation community members.

#### THE OBJECTIVES OF THE ENHANCED ATFM SERVICES ARE TO:

- Reduce ground and en-route delays;
- Maximise capacity and optimise the flow of air traffic;
- Provide an informed choice between departure delay, re-routing and/or flight level selection;
- Alleviate unplanned in-flight rerouting;
- Assist ATS Units in planning for and managing future workload in the light of forecast increased traffic flows within South Africa;
- Assessing the impact of FUAs and TSAs on the air traffic control system;
- Provide improved solutions around predicted severe weather;
- Balance the demand against capacity of ATC sectors, air routes and aerodromes;
- Determine the necessity for an airspace/ground delay program and other traffic management initiatives (TMs) and to enact them, and;
- Enabling aircraft operators to operate as close to their preferred trajectories.

Metron Aviation, Inc. CAMU Web - Build



# CAMUWEB



## *What is it?*

- ❖ CAMU Web is a **web-based analysis** and **tactical slot management tool**.
  
- ❖ The **primary purpose** of CAMU Web is to:
  - Display **current TMIs** and associated parameters.
  - **Assess the performance** of Ground Stops (GS), Ground Delay Programs (GDP) and Airspace Flow Programs (AFP) in real-time.
  - Provide tactical slot management capabilities through Substitutions.



# QUESTIONS

