

November 22, 2017

ATFM Systems: The Backbone

John Kefaliotis
President
Metron Aviation

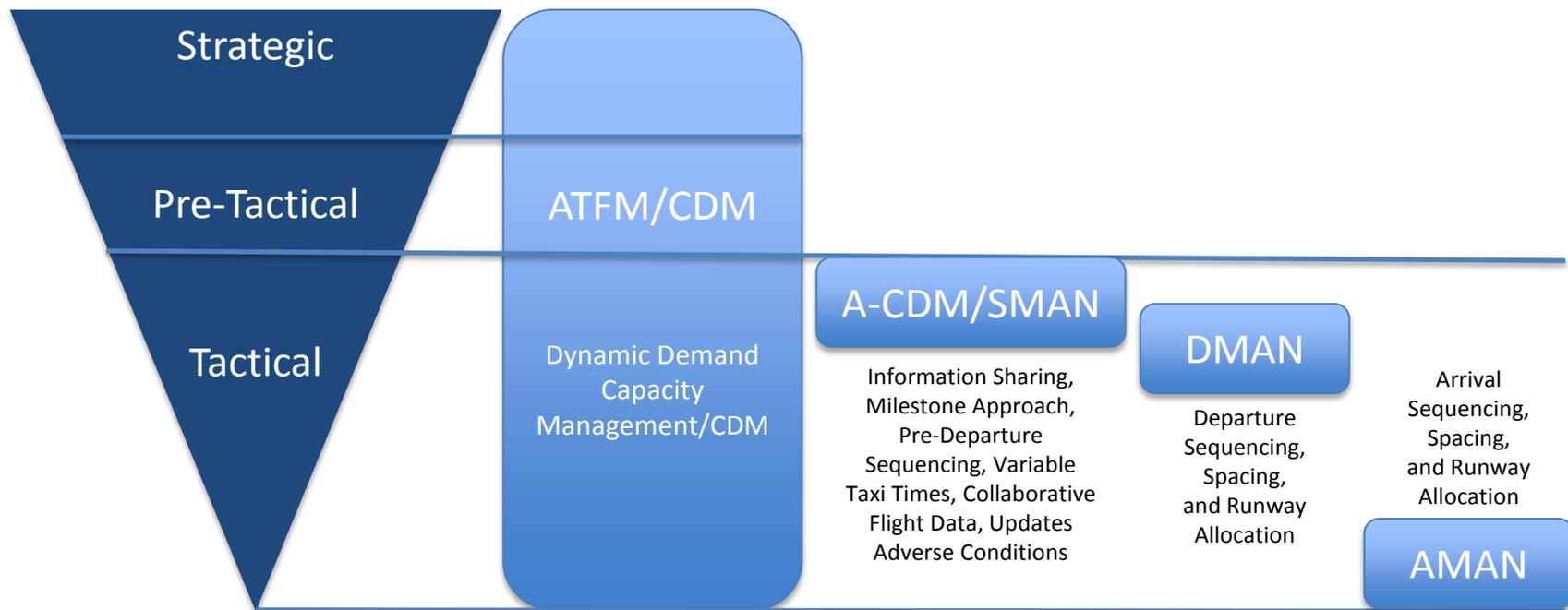


The Panoply of Systems Engaged in Flow Management

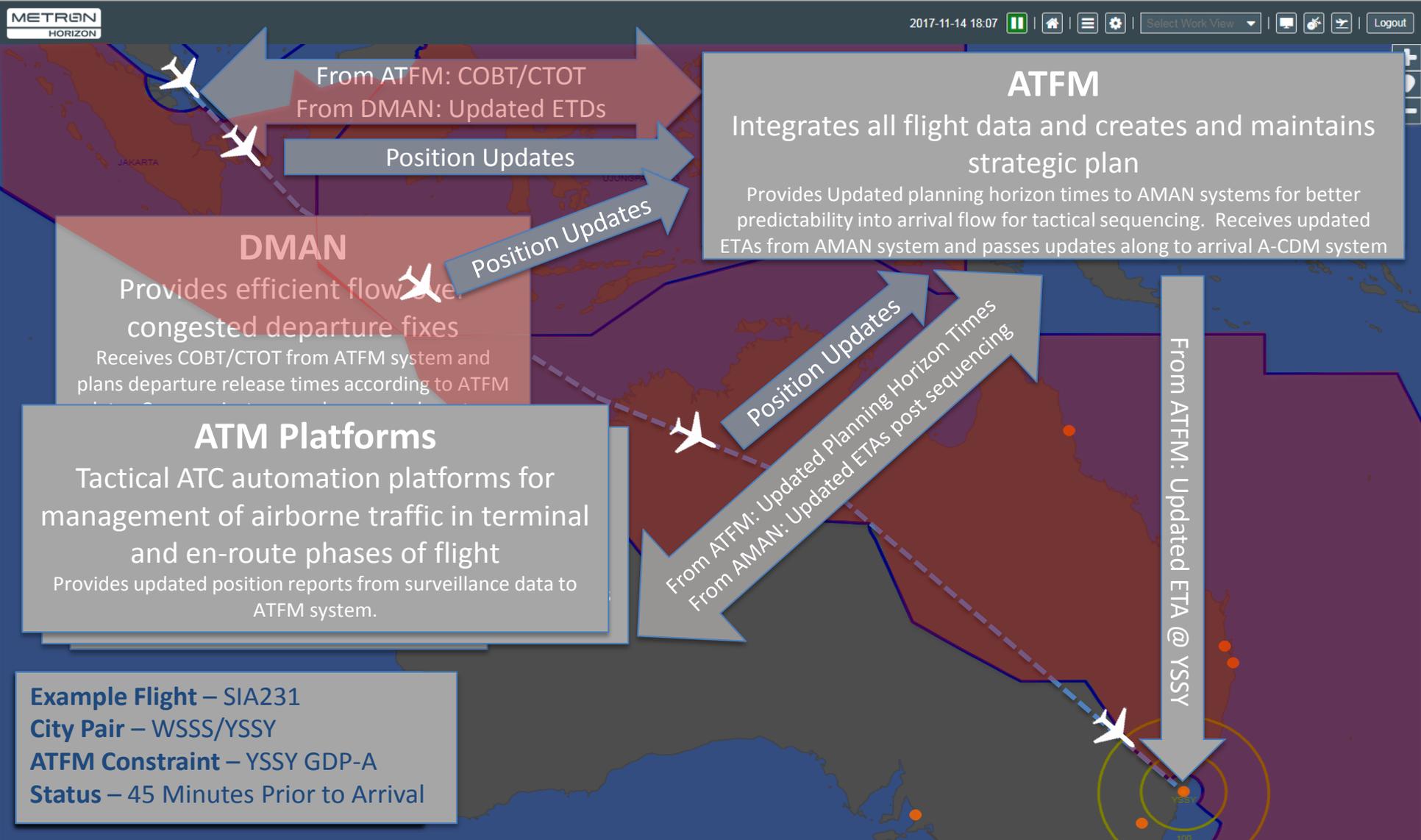
Tool Name	Brief Description	Comment
Airport – Collaborative Decision Making (A-CDM)	Concept and system focused on Airport efficiency	Concept has milestones that allow networking of airports. SMAN (see below) functionality a part of the concept.
Arrival Manager (AMAN)	Delivers a smoothed and optimized traffic flow to the TMA	Nominally an ACC-based system with TMA displays. Currently not interfaced to the ATFM solution.
Departure Manager (DMAN)	Provides efficient flow over congested departure fixes	Coordinates multiple departure airports delivering to a common fix – nominally ACC- or TMA-based.
Surface Manager (SMAN)	Manages aerodrome surface queues	Controls startup/push back on an airport surface – nominally a tower cab system.
Air Traffic Flow Management (ATFM) Platform (e.g. Metron Harmony)	Manages airspace and aerodrome loading and provides fuel efficient absorption of necessary delay	Functions in the pre-tactical and tactical timeframes – network management center based.
Related Systems		
Tower Cab Automation	Integrates displays and controls for efficient tower cab functioning	Tower cab centric system – tower cab interface to GDP/AFP/SMAN/DMAN function.
TMA ATM Platform	Provides terminal area tactical control automation	TMA facility-based – generally no flow management functions.
ACC ATM Platform	Provides ACC tactical control automation	ACC-based – Can provide CHI for AMAN advisories.

Integration of Flow Management Tools

- Maximizing the use of airspace and aerodrome resources and providing for fuel efficient delay absorption requires integration of these capabilities.
- The ATFM platform is the right location for the integration functions:
 - ATFM operates over the full spectrum of operational time phases.
 - ATFM Dynamic Demand/Capacity Balancing operates with the best available information.
 - As the day and hour of the operation approaches, the accuracy of flight data improves.
 - Tactical Decision Support Tools (e.g., A-CDM, DMAN, AMAN) operate in smaller time horizon on the day of operation and with only localized information.



Integration of Flow Management Data



Summary

- Maximizing the use of airspace and aerodrome resources and providing for fuel efficient delay absorption requires integration of Traffic Flow Management capabilities.
- The ATFM platform provides a vehicle for achieving this integration.