



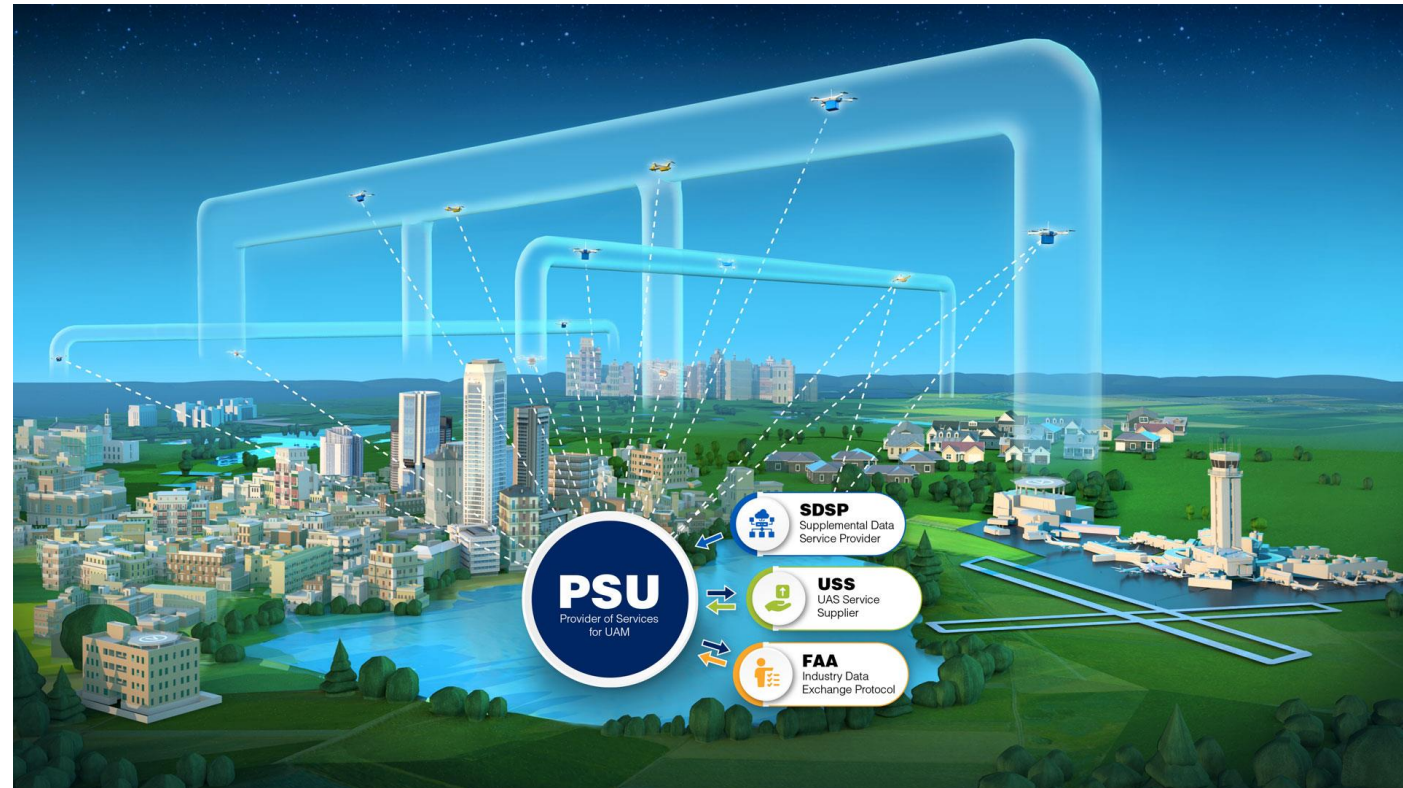
UAM Airspace Management Demonstration (UAMD)

Nouri Ghazavi

03/14/2023

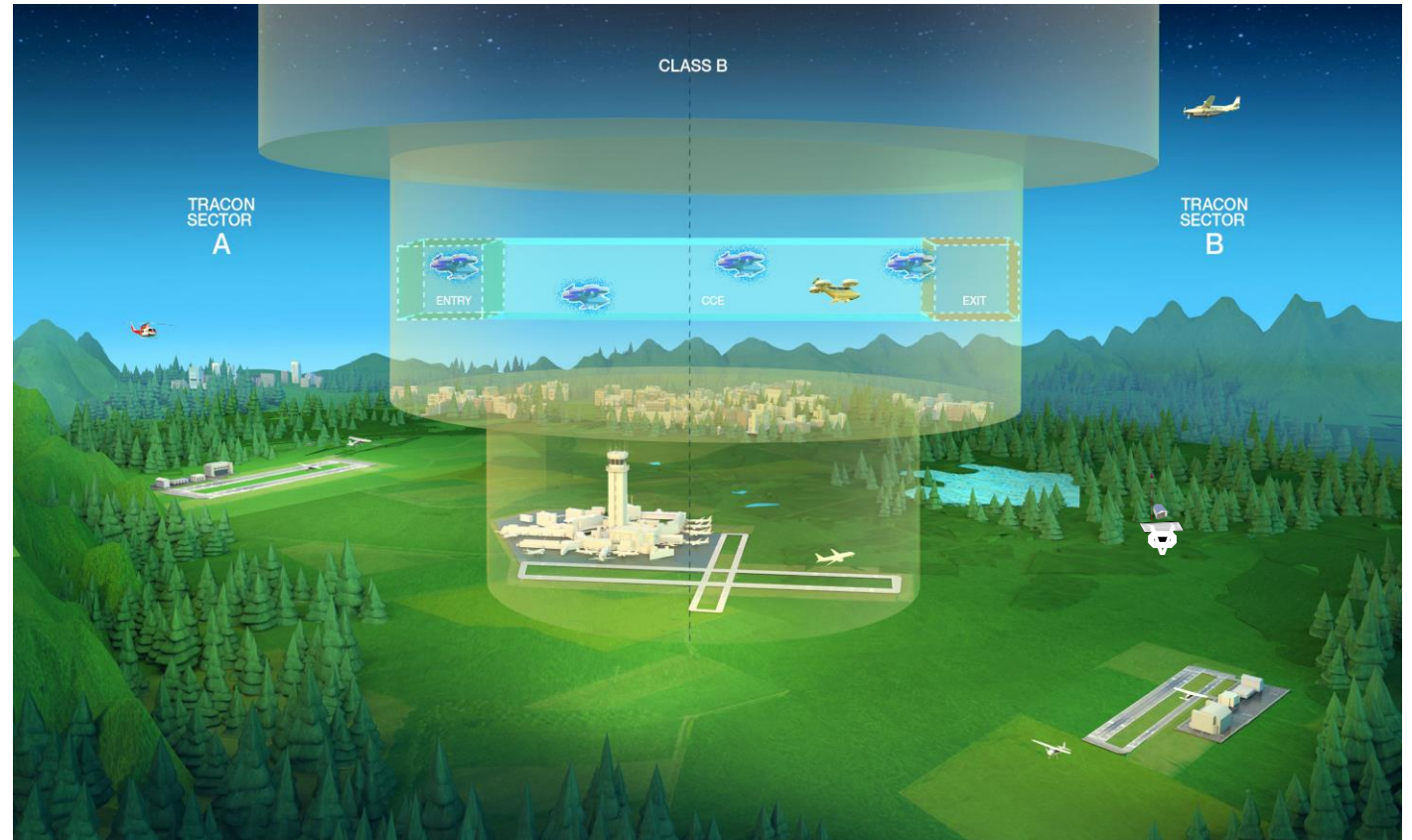
Project Overview

- The UAM Airspace Management Demonstration (UAMD) project will collaborate with industry pioneers and leaders to showcase the concepts described in the UAM vision document. This project will take an iterative approach to demonstrate UAM operations and Airspace Management elements with increasing complexity in measured and controlled steps.
- This project will present an opportunity to exhibit creation and management of notional UAM corridors and architecture components that support information exchanges in the ecosystem. Coordination will take place between FAA, UAM Operators, Provider of Services for UAM (PSU), and Public entities.



Demonstration Elements

- Airspace Management & Corridors
- Demo ATM / Federated Network
- Data Exchanges
- Procedures
- Performance

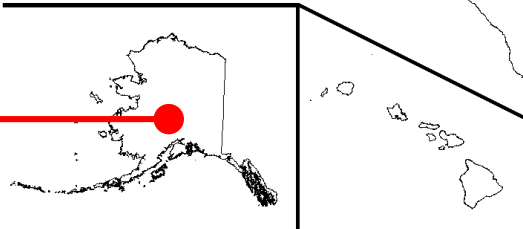


Demonstration Objectives

- Validate concepts element laid out in ConOps documents
- Demonstrate the establishment and dissemination of UAM corridors
- Demonstrate data exchanges and interactions across relevant stakeholders (e.g., PSU, ATC, TFM)
 - Highlight required information and data exchanges
 - Demonstrate interactions to support Cooperative Flow Management to Traffic Flow Management functions across the ATM and UAM Ecosystem
- Identify potential future procedures and COPs to support UAM operations in select NAS environments



UAM Project Team



FAA Test
Environment
FAA Headquarters





Framing the Demonstration

Items not a Focus of the Demonstration

- Navigation and Surveillance
- Enroute Operations
- Tower Operations
- Surface Movements
- Corridor Crossing
- Off-nominal operations

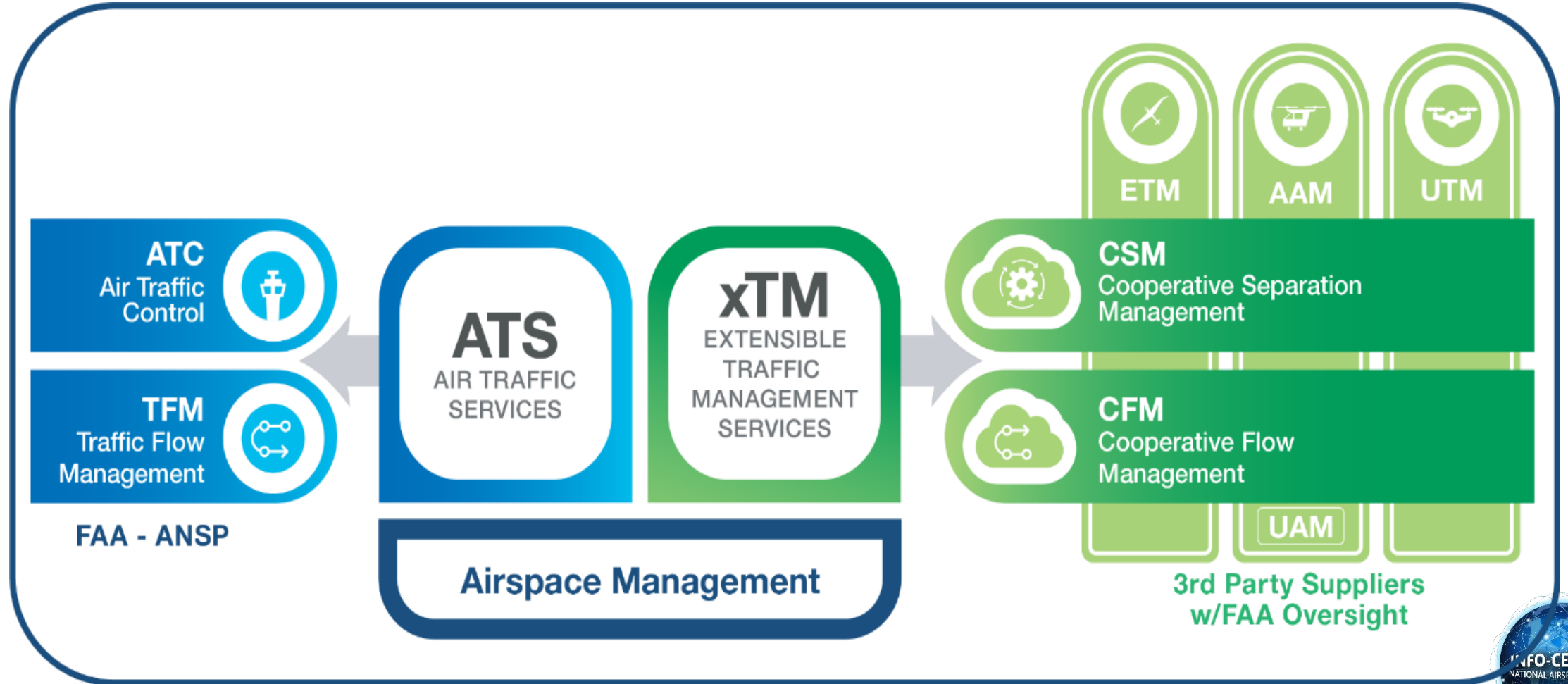
Framing the Demonstration

Focus & Foundational Elements

- Corridor Operations
- ATCE/CCE Transition Operations & Procedures
- Surface Operation interaction with airborne operations
- Terminal Operations
- Live and Simulated Traffic
- Crewed and Remote PICs
- Flight Planning/Flight Information & Data Exchanges
- Automated Features
- VOIP/G2G exchanges

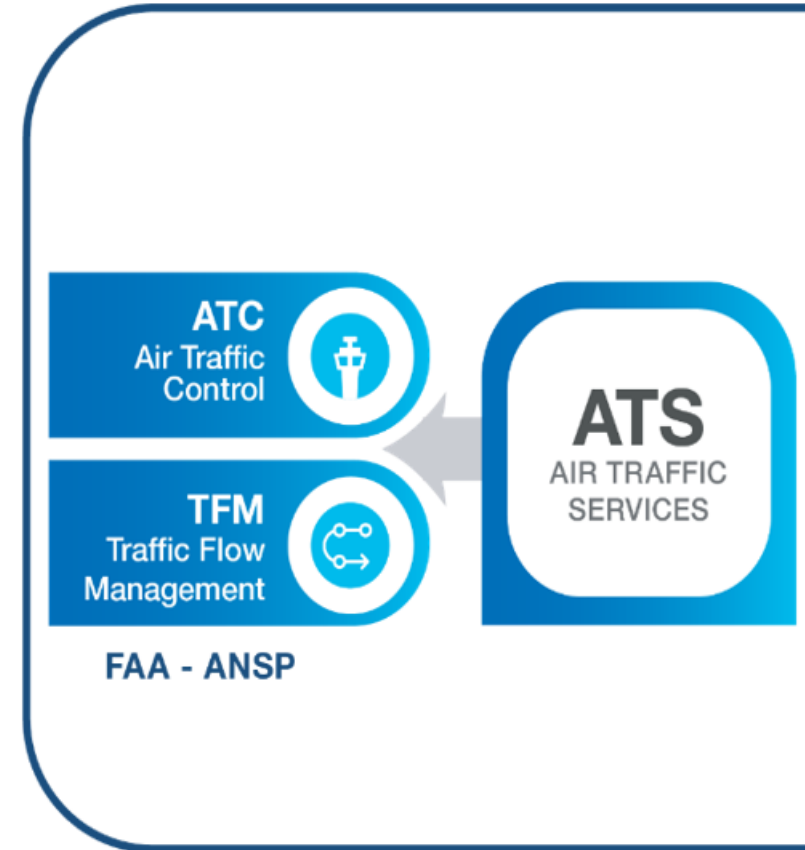


Complementary Service Environments

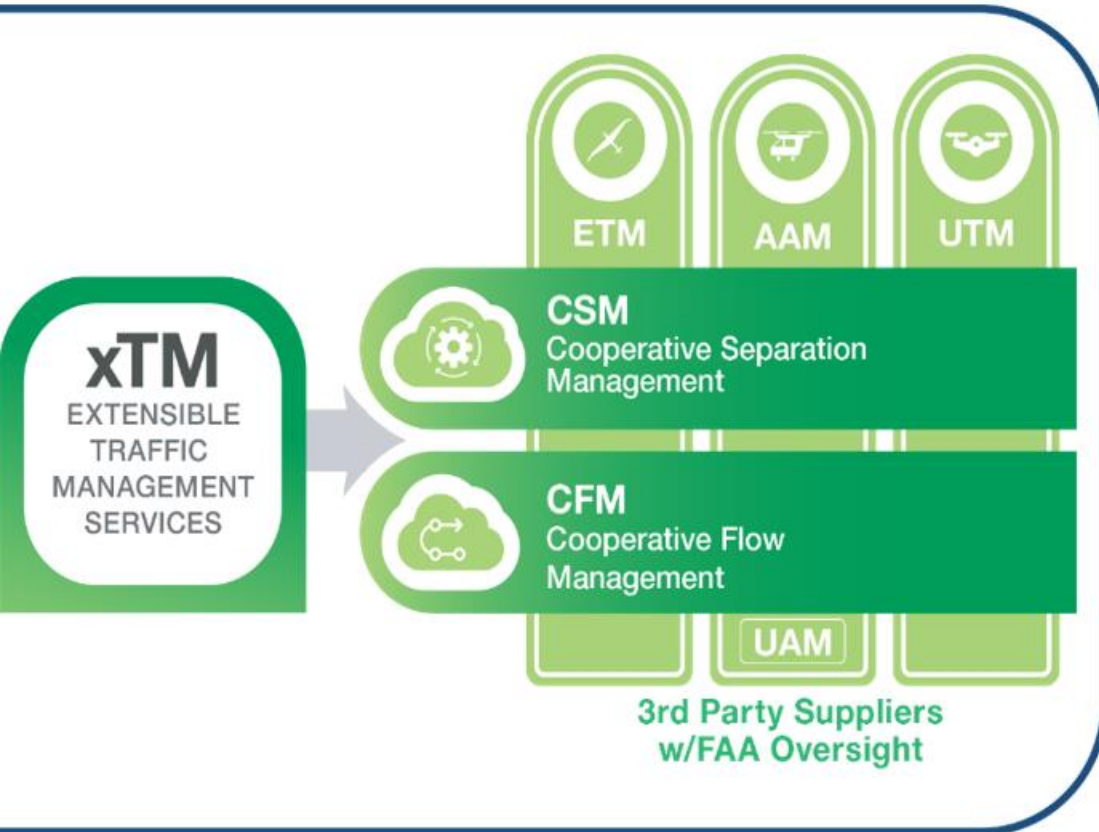


Traffic Flow Management (TFM)

- Air Traffic Flow Management (ATFM) is a service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.



Cooperative Flow Management (CFM)



As the xTM service analogous to TFM, it is a service established with the objective of contributing to a safe, orderly and expeditious flow of operations within cooperative airspace volumes by ensuring capacity is utilized to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate authority.



Overarching TFM/CFM Interactions

As complementary environments with interdependencies, ATS and xTM will need to exchange data/information regarding planned (projected) operations to support their respective flow management functions.

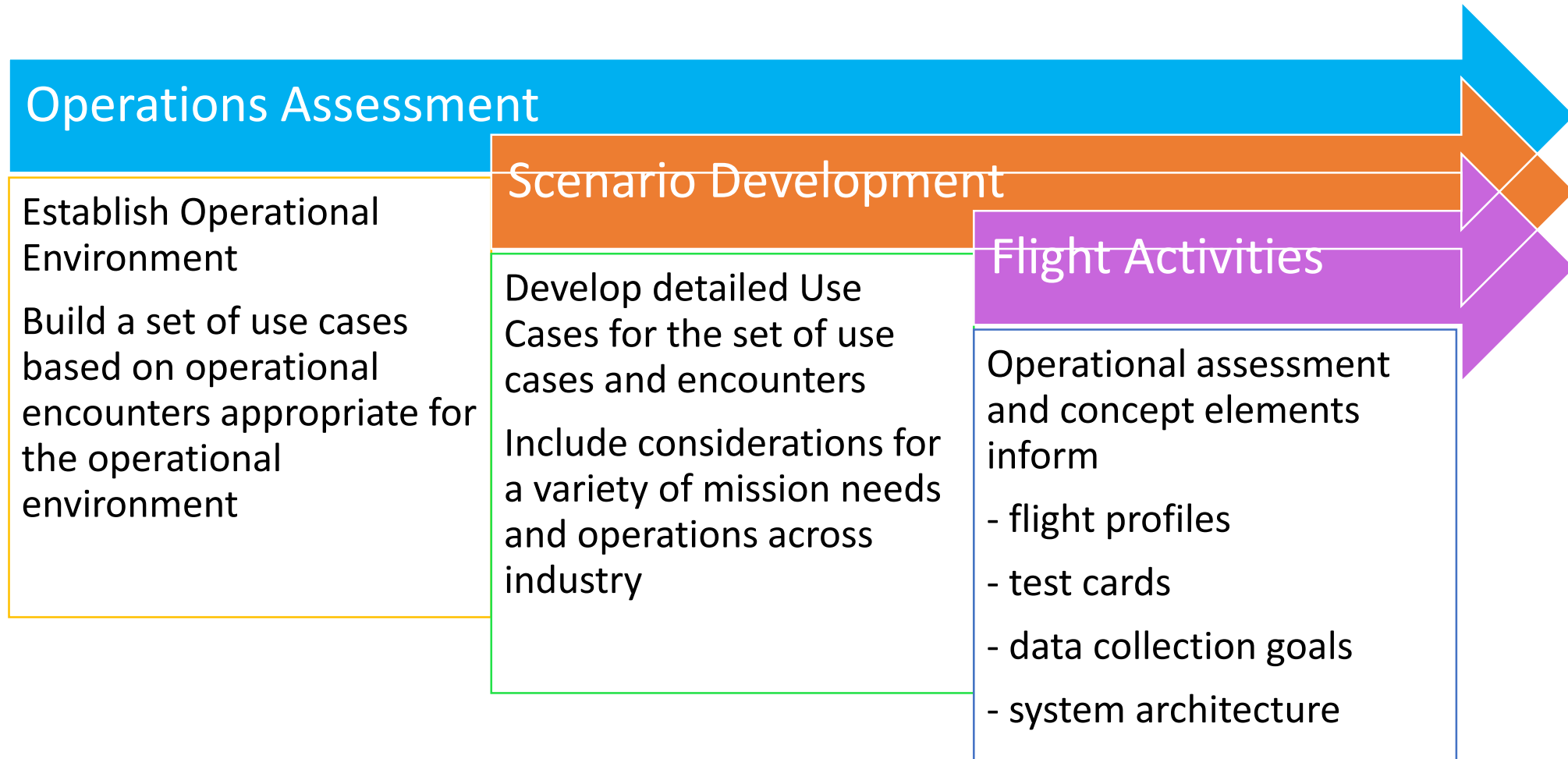
At a macro-level, each flow management function (TFM, CFM) will have a designed set of mechanisms (e.g., TMs) to reconcile demand/capacity imbalances within their respective service environment

NOTE: this response/redress capability is separate and distinct from the way the resolution is developed in each. However, there is a need for a common mechanism for constraints (restrictions) imposed across the serviced environments. For example, ATS/TFM may use miles-in-trail across the ATS environment but the xTM (CFM) environment may require constraints/restrictions all be time based.

The list of mechanisms (TMs, CDM, etc.) used by TFM, and developed over many years, are helpful as a starting point for discussions of those which may be applicable – specifically as they can be applied in the UAMD.



Approach to UAMD ConUse



Next Steps

- Begin the development of the prototype environment
- Integrate industry partner systems integration
- Conduct shakedown activities
- Conduct live flights and validation activities
- Capture lessons learned

