



MANAGING THE CHANGES AS A STATE CASE STUDY

UAE Airspace Restructuring Project

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STATE SAFETY PROGRAMME

- SSP Manual
 - Sets out the methodology that the UAE aviation stakeholders will follow to administer the programme
 - Defines the major components and elements of the framework required to implement the programme
- SSP Review Board
 - Accountable Executive | Director General
 - Assistant Director General Safety Affairs
 - Chairman SSP Management Committee
 - Stakeholder (i.e. Safety Directors)





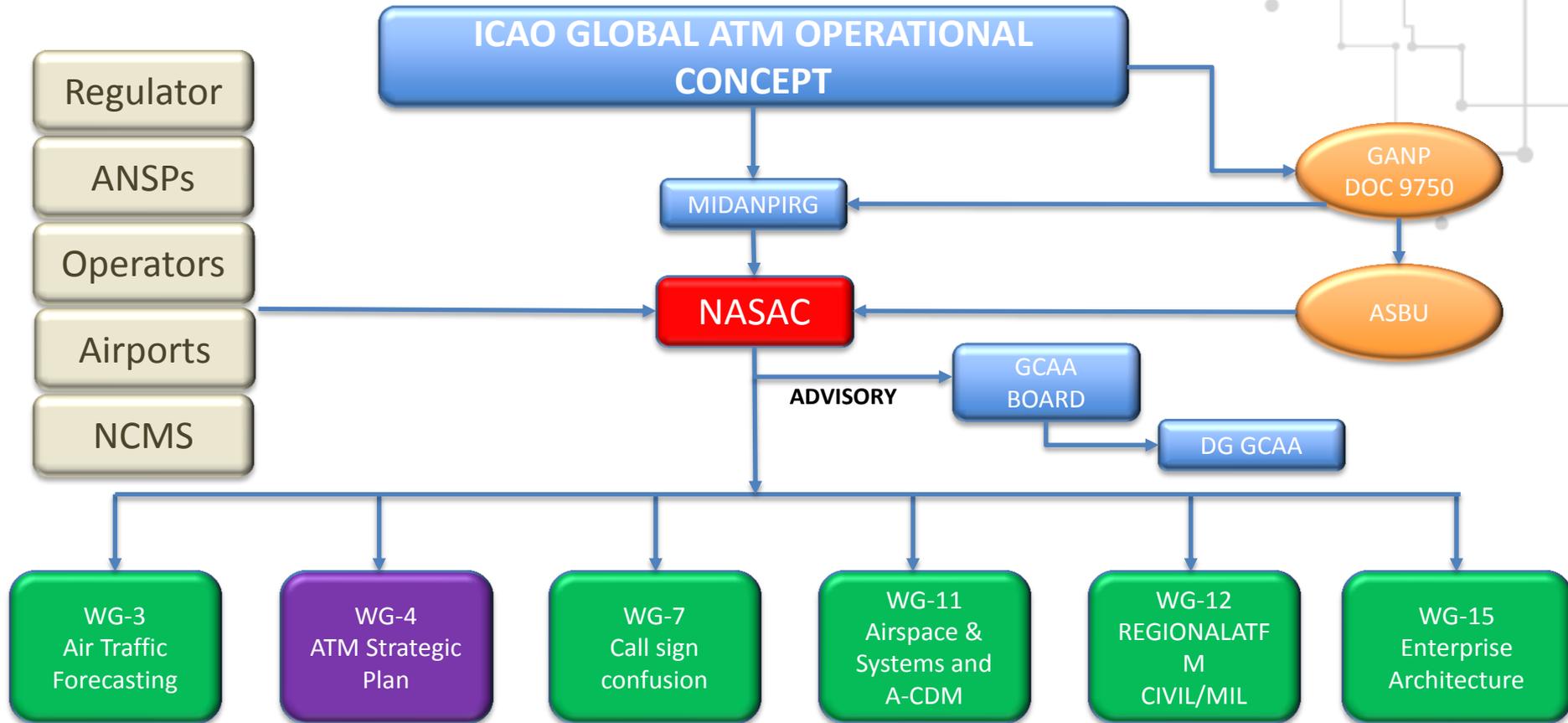
SSP MANAGEMENT COMMITTEE

- Responsible for oversight of initiatives essential to success of SSP
- On-going Stakeholder Communication facilitated through National Technical Committees
 - Aerodrome Operators
 - Air Traffic Controllers
 - Communication, Navigation & Surveillance Equipment Maintainers
 - Chief Fire Officers



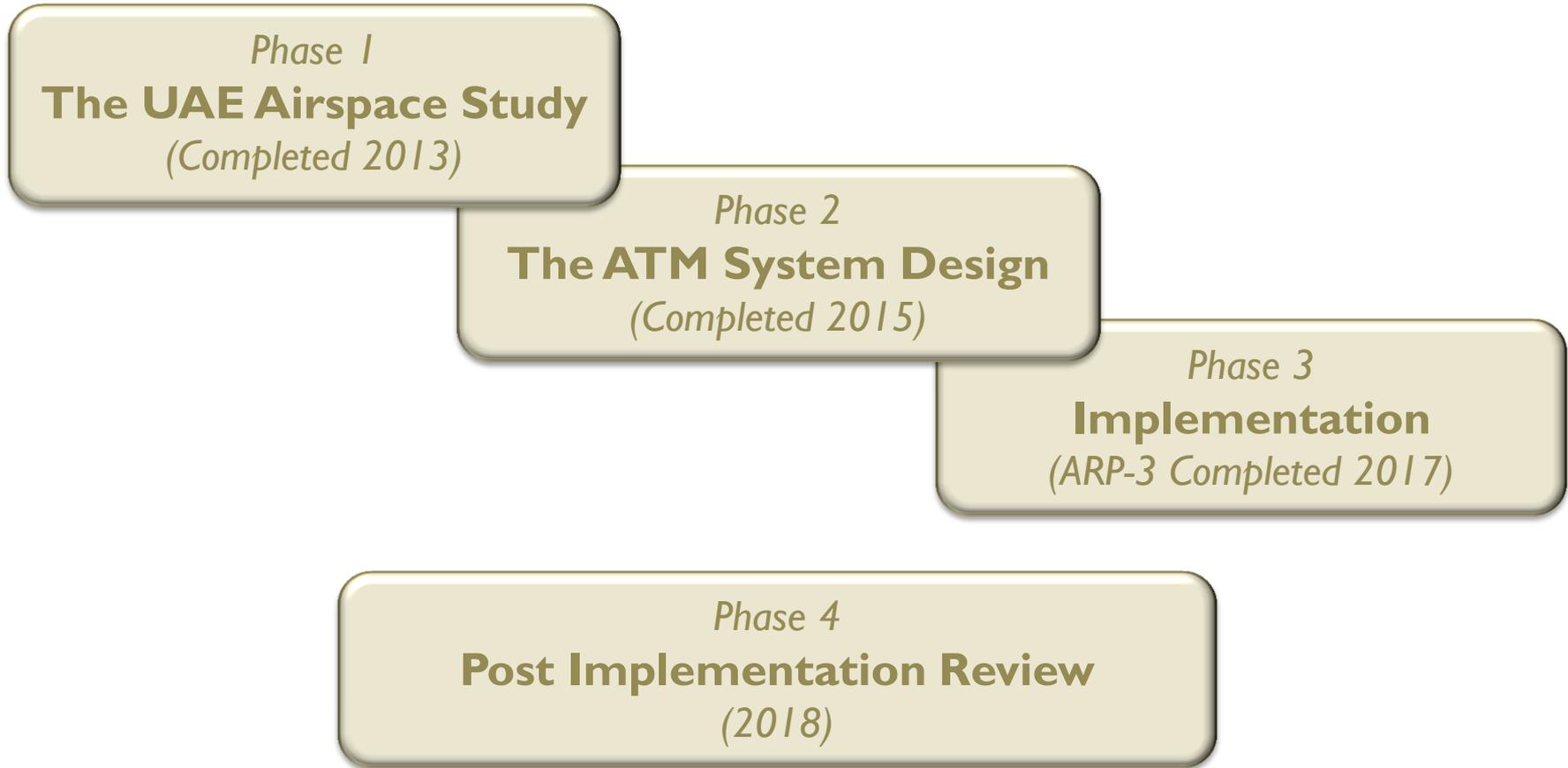


NATIONAL AIR SPACE ADVISORY COMMITTEE





PROGRAM PHASES





BACKGROUND

The ‘**Integration and Implementation**’ phase of the Airspace Restructuring Project enables an:

- Increase UAE Airspace capacity to meet the forecasted air traffic demand for 2020
- Increased access to all UAE airports
- Improved efficiency for both aviation system customers and Air Navigation Service Providers
- Reduction in the environmental impact of the increasing traffic, through the provision of more effective ATM operations

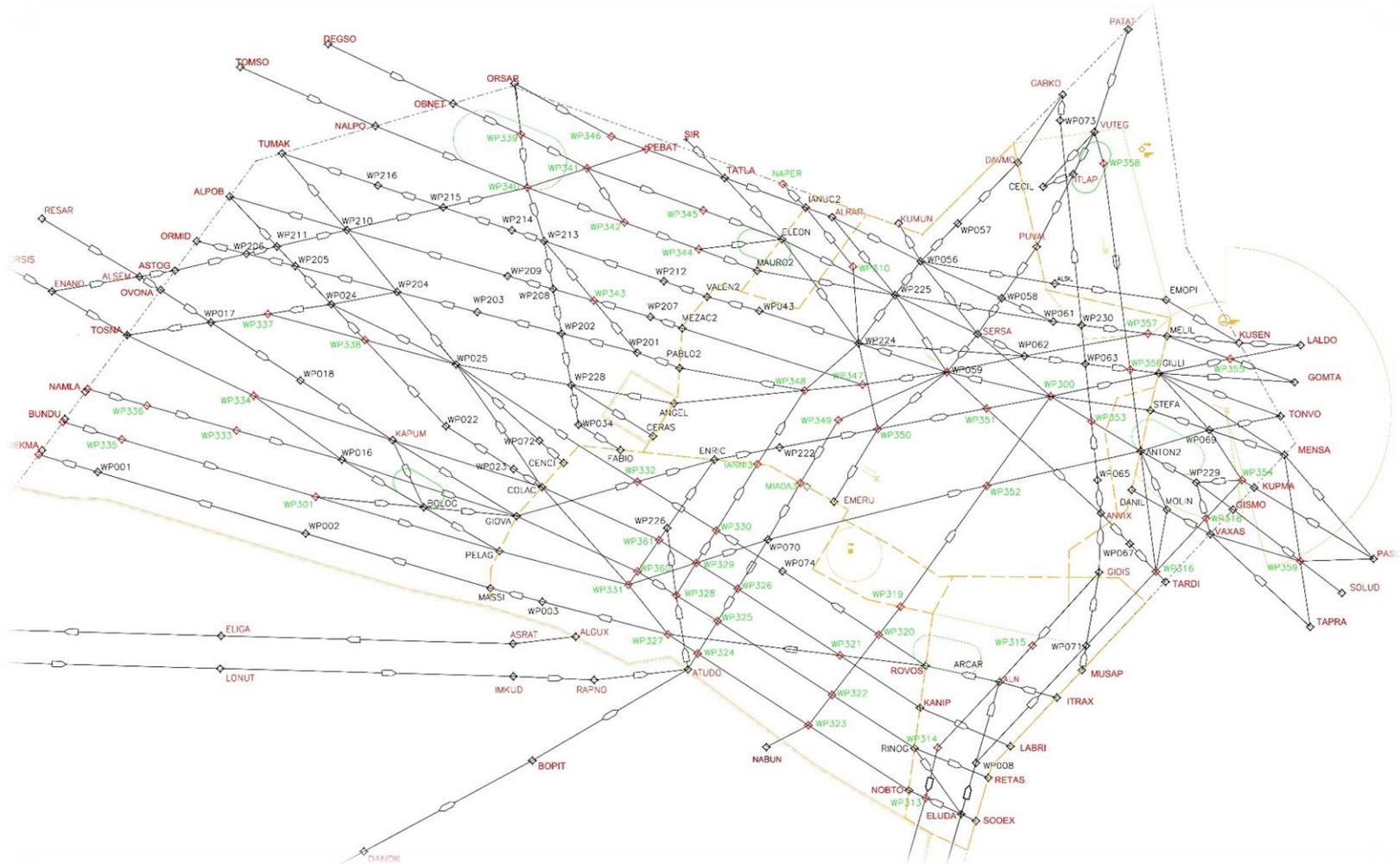


ANTICIPATED BENEFITS

- Capability to safely meet the capacity requirements for the forecasted 2020 traffic demand
- Increase access to all UAE airports
- Improve Airspace safety and efficiency
- Deliver environmental efficiency and fuel savings of over \$10m to the airlines customers within the first year after implementation.
- Annual fuel savings further translate to around 100,000 Mt of CO²



NEW EN-ROUTE NETWORK





Safety Planning and Requirements

- **Define**
 - Objective
 - Scope
 - Timeline

- **Analyze Reference Scenario**
 - Current Airspace
 - Phase 1 output
 - Phase 2 Output

- **Identify**
 - Safety requirement
 - Operational requirement
 - Enablers
 - Assumption

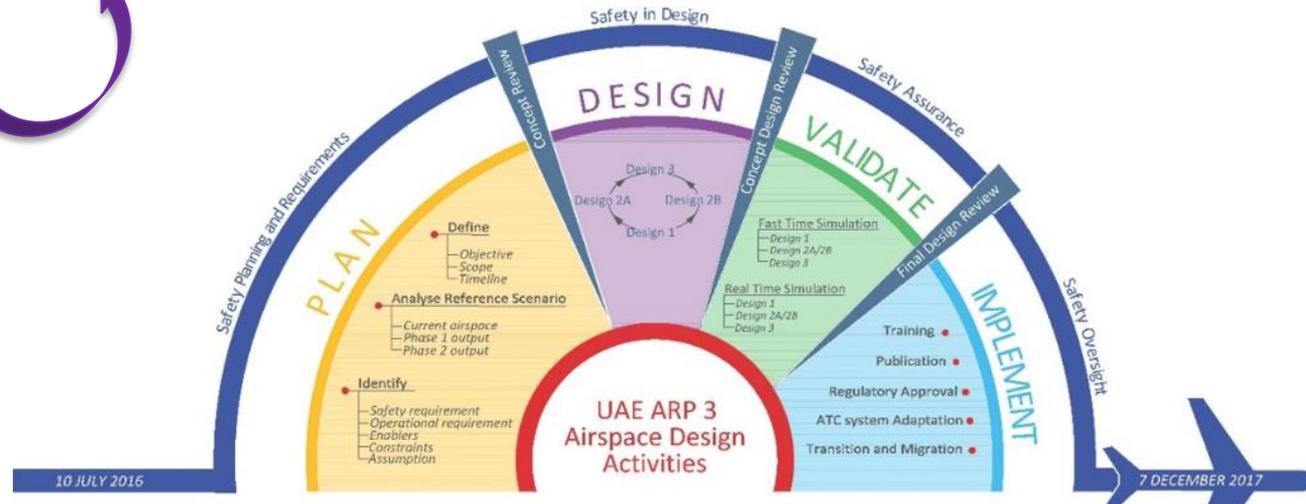
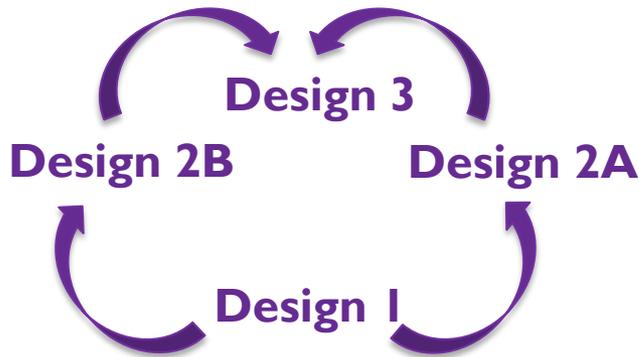
PLAN





Safety in Design

DESIGN

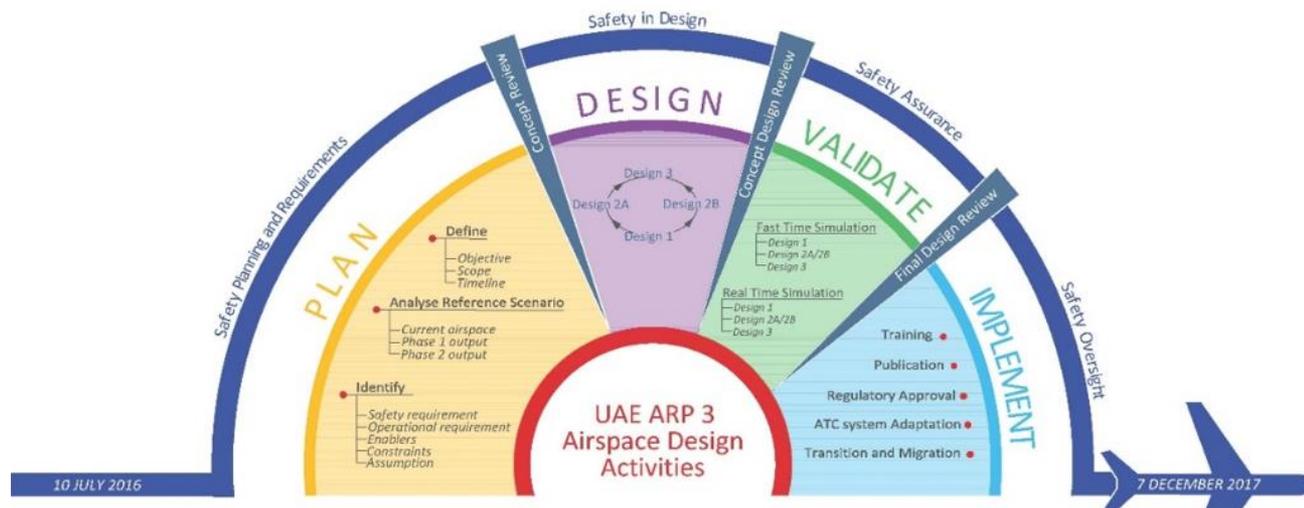




Safety Assurance

- **Fast Time Simulation**
 - Design 1
 - Design 2A/2B
 - Design 3
- **Real Time Simulation**
 - Design 1
 - Design 2A/2B
 - Design 3

VALIDATE

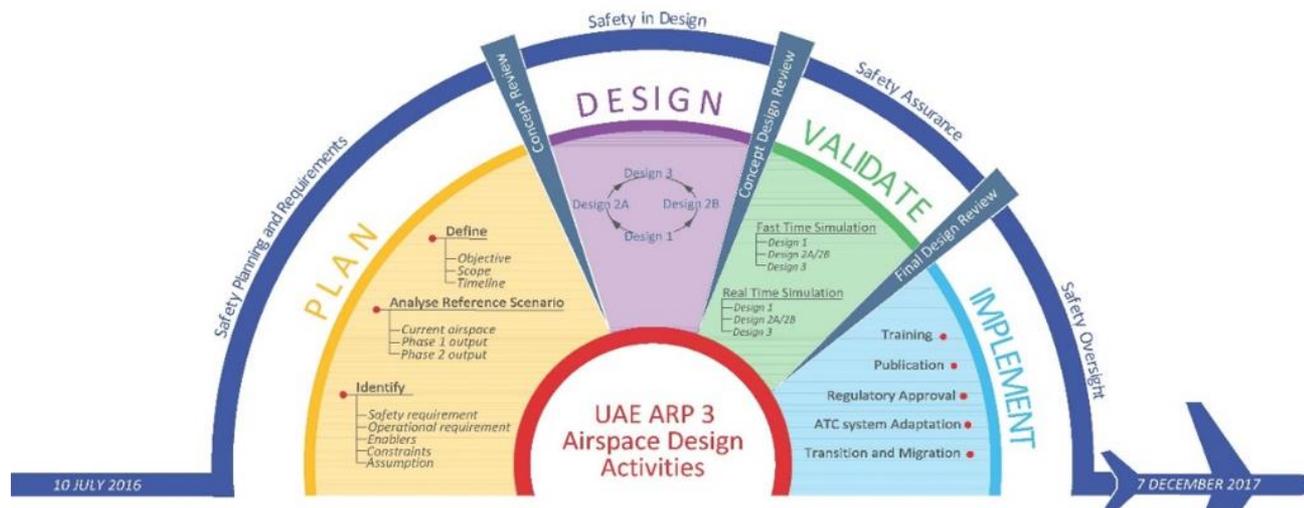




Safety Oversight

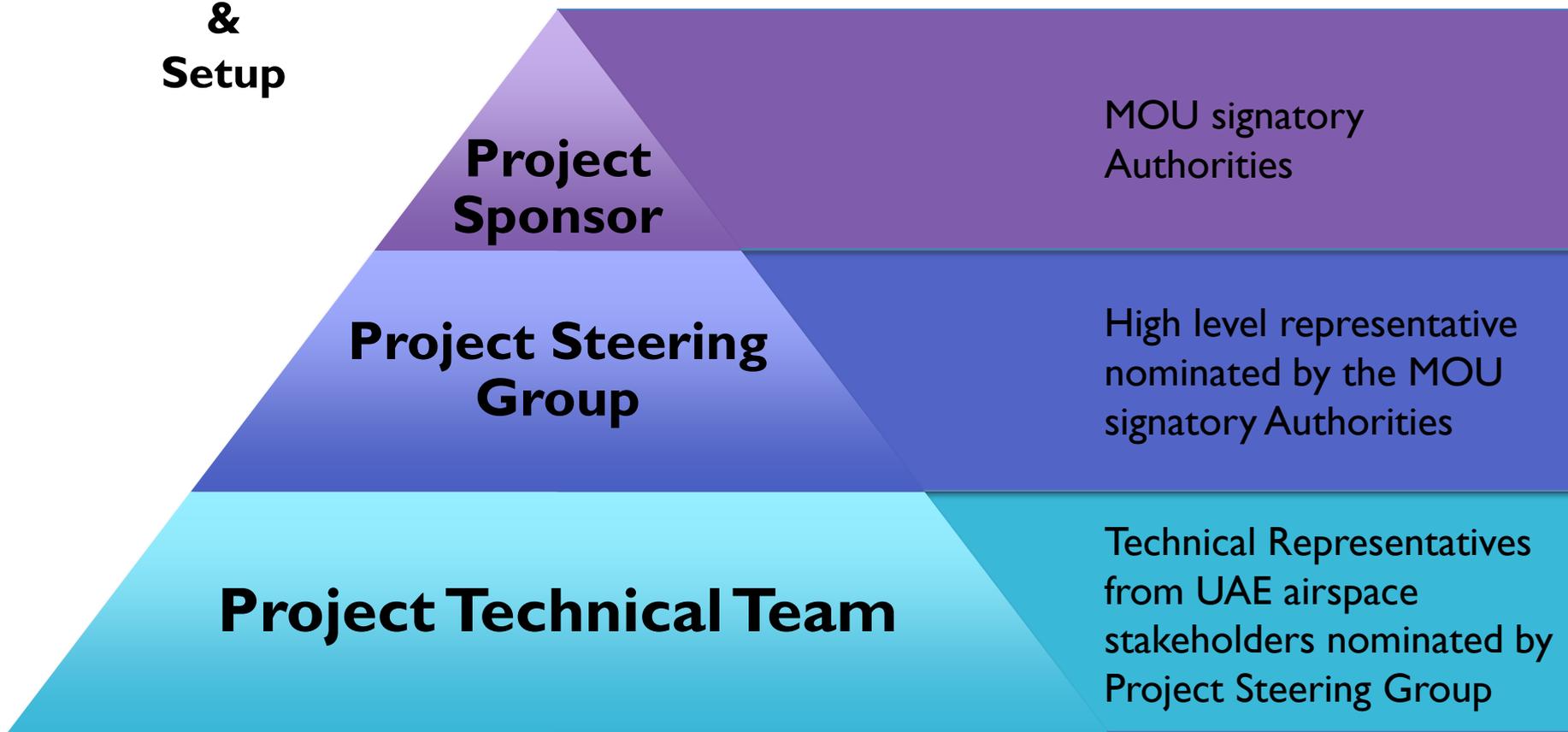
- Implement
 - Training
 - Publication
 - Regulatory Approval
 - ATC System Adaptation
 - Transition and Migration

IMPLEMENT





Project Committees & Setup





STATE CHANGE MANAGEMENT



SUMMARY OF RISK ASSESSMENT										
APPLICABILITY			HAZARD		RISK BEFORE MITIGATION			RISK AFTER MITIGATION		
Regulatio	ANSP	Ref HZ	Hazard	Severit	Probabili	Risk	Severit	Probabili	Risk	
CAAP25	DANS	HZ_DANS_FINAL_15	An aircraft flies a route or procedure that is not the one expected by the controller within Dubai CTA	E	3	3E Acceptable	-	-	-	
CAAP25	DANS	HZ_DANS_FINAL_16	An aircraft significantly diverts from its lateral trajectory within Dubai CTA	E	3	3E Acceptable	-	-	-	
CAAP25	DANS	HZ_DANS_FINAL_17	An aircraft does not comply with a published altitude restriction on SID or STAR procedure within Dubai CTA	C	3	3C Review	C	2	2C Review	
CAAP41	ADA	HZ_ADA_FINAL_01a	Hotspot in AAE sector within ATUDO area with 2017 traffic level <i>East and West configuration</i>	C	4	4C Review	C	3	3C Review	
CAAP41	ADA	HZ_ADA_FINAL_01b	Hotspot in AAE sector within ATUDO area with 2020 traffic level <i>East and West configuration</i>	B	4	4B Unacceptable	B	3	3B Review	
CAAP41	ADA	HZ_ADA_FINAL_02	Complex handover of OMAM and OMAA traffic in IANNI2 from ADAC to SZC <i>East configuration</i>	E	3	3E Acceptable	-	-	-	

Analyse the impact the Change at State Level

- ✓ Used existing SRM process
- ✓ Analyse, assess, mitigate
- ✓ Review/Monitor

LIST OF MITIGATION MEANS					
APPLICABILITY		MITIGATION MEANS			
Regulatio	ANSP	Ref	Mitigation Mean	Derived from haza	Type
CAAP25	DANS	MM_DANS_FINAL_20	ATCO to be familiarized with new waypoints, SID/STAR, altitude constraints, sectorisation, coordination procedure	HZ_DANS_FINAL_15 HZ_DANS_FINAL_16 HZ_DANS_FINAL_17	Training
CAAP41 & CAAP25	DANS	MM_DANS_FINAL_21	Published altitude restrictions to be defined in order to be flyable by the most type of aircraft (including low performance aircraft)	HZ_DANS_FINAL_17	Airspace design / network
CAAP41 & CAAP25	ADA	MM_ADA_FINAL_01	Al Dhafra traffic to be kept out of Abu Dhabi CTA during busy period (an update of the existing LoA is requested) <i>This mitigation means is linked to hazard HZ_ADA_FINAL_01 which was evaluated as "UNACCEPTABLE" with 2020 traffic level but "REVIEW" with 2017 traffic level. Consequently, this mitigation means is not necessarily required before implementation of the new airspace.</i>	HZ_ADA_FINAL_01 HZ_ADA_FINAL_11	Airspace design / ATC procedure
CAAP41	ADA	MM_ADA_FINAL_02	Complexity of ATUDO area to be reduced through published altitude restrictions in east and west configuration to ensure strategic separation between the flows in this area.	HZ_ADA_FINAL_01	Airspace design / network

Safety Requirements | Reference – Requirement – Derived from – Type – Responsibly – Expected Evident – Target Date

Applicability | Regulation - ANSP

Status of Implementation | Comments

Risk Assessment | As Shown

Tracking of Mitigations | As Shown



- ✓ **CNS Equipment Approval Process (E-Service)**
- ✓ **Operational Procedures & Letters of Approval (LOA)**
- ✓ **Safety & Hazard/Risk Management**
- ✓ **Unit Training Plans**
- ✓ **Regulatory Review & Approval at Authority Level**

OPERATIONAL

- ✓ **Airspace Approval Process (E-Service)**
- ✓ **Changes endorsed at each Unit Level**
- ✓ **Approval Applications at Project Level**
- ✓ **Regulatory Review & Approval at Authority Level (Concept & Designs)**

**AIRSPACE & FLIGHT
PROCEDURES/ROUTES/SID/STAR**

Note: Essential for regulatory involvement from the start

