



الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



Second Meeting of the Air Navigation System Implementation Group (ANSIG/2)

Cairo, Egypt, 6-8 December 2016

The United Arab Emirates

Presented by
Hamad Al Belushi



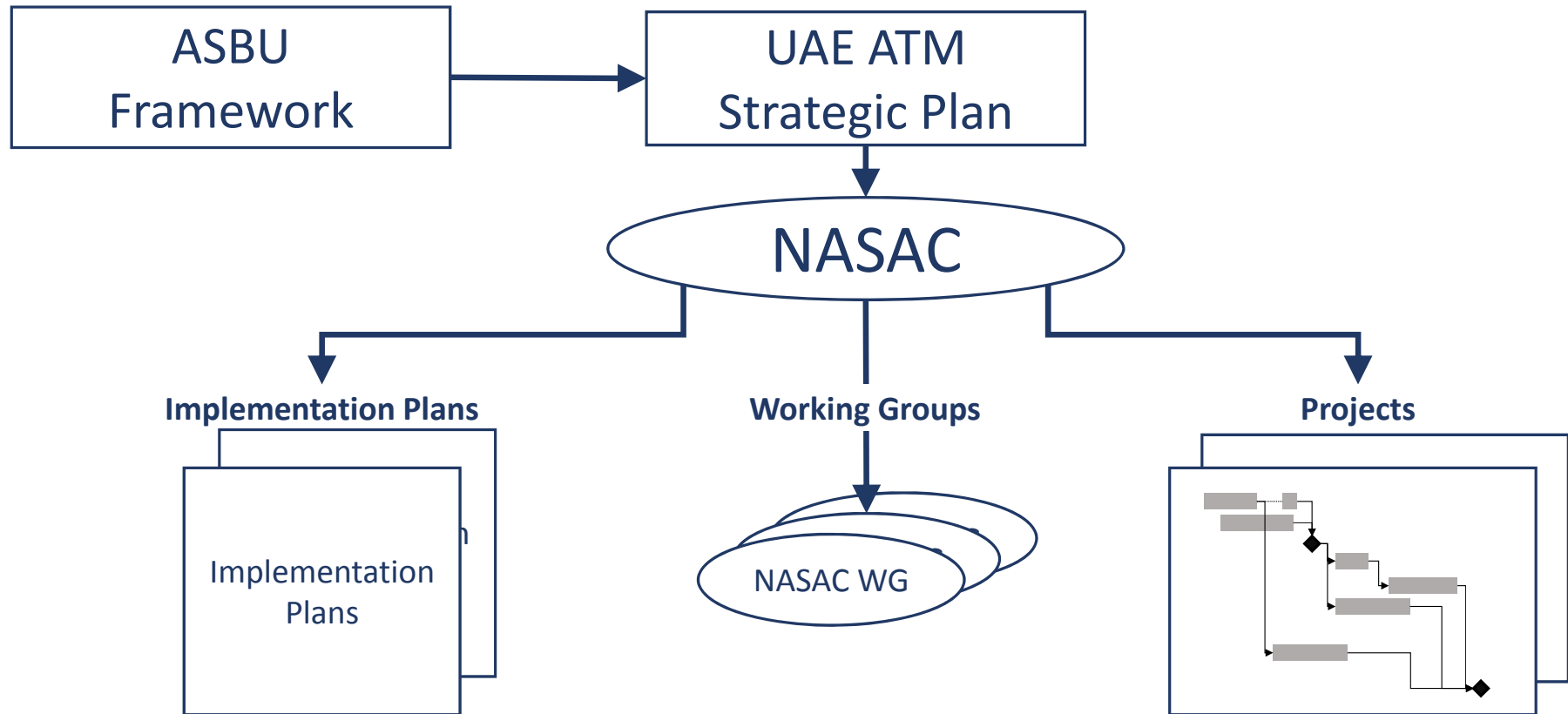
Outline



- Brief on the UAE National ASBU Implementation Plan
- Status of ASBU Implementation
- Lessons Learned
- Challenges
- Recommendations
- Outlook 2020



Brief on the UAE National ASBU Implementation Plan





Status of ASBU Implementation

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



B0 – APTA: Optimization of Approach Procedures including vertical guidance				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
States' PBN Implementation Plans	State	UAE PBN Implementation Plan is in place.		
LNAV	All RWYs Ends at International Aerodromes			
LNAV/VNAV	All RWYs Ends at International Aerodromes	OMAA YES OMAL YES OMAD YES OMDB YES OMDW YES OMFJ YES OMRK YES OMSJ YES		



Status of ASBU Implementation



B0-SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
A-SMGCS Level 1	As per the MID Air Navigation Strategy	OMAA YES OMDB YES OMDW YES		
A-SMGCS Level 2	As per the MID Air Navigation Strategy	OMAA YES OMDB YES	OMDW scheduled for 2018	



Status of ASBU Implementation



B0 – ACDM: Improved Airport Operations through Airport-CDM				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
A-CDM	As per the MID Air Navigation Strategy	<ul style="list-style-type: none"> NASAC WG 14 is tasked to develop a unified national Concept of Operations Abu Dhabi international airport is developing Procedures 	<ul style="list-style-type: none"> Implement A-CDM at major international airports in accordance with the Concept of Operations 	<ul style="list-style-type: none"> The uniform and timely implementation of A-CDM is coordinated through dedicated NASAC Working Group 14. The management of TTOT and CTOT is coordinated with the initiatives for a national operation centre (NOC) and ATFCM activities (NASAC Working Group 12)



Status of ASBU Implementation

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
AMHS capability	State	OMAE (ACC) YES OMAA YES OMAL NO OMAD NO OMDB YES OMDW YES OMFJ NO OMRK NO OMSJ NO		
AMHS Impl. /interconnection	State	OMAE (ACC) YES OMAA NO OMAL NO OMAD NO OMDB YES OMDW YES OMFJ NO OMRK NO OMSJ NO		International AMHS Connections to <ul style="list-style-type: none"> • Jeddah • Doha • Muscat • Amman Further connections depend on the readiness of partners



Status of ASBU Implementation

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration					
Elements	Applicability	Status	Action Plan/Timelines	Remarks	
Impl. of AIDC/OLDI between adjacent ACCs	ACC(s)	OMAE-OMAA	YES	OMAE-OMFJ under Test OMAE-OB BB under Test	All connection use OLDI Test with OOMM have been suspended until OOMM will declare readiness after their transition to new ACC.
		OMAE-OMAL	YES		
		OMAE-OMAD	YES		
		OMAE-OMDB	YES		
		OMAE-OMDW	YES		
		OMAE-OMFJ	NO		
		OMAE-OMRK	YES		
		OMAE-OMSJ	YES		
		OMAE-OTHH	YES		
		OMAE-OOMM	NO		
		OMAE-OB BB	NO		
		OMAE-OEJD	NO		
OMAE-OIIX	NO				



Status of ASBU Implementation



B0 – DATM: Service Improvement through Digital Aeronautical Information Management				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
National AIM Roadmap	State	Established and monitored by The Regulator		
AIXM	State	Completed		
eAIP	State	Completed		
QMS	State	Completed		
WGS-84	ENR AD TMA GUND	Completed		



Status of ASBU Implementation

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



B0 – DATM: Service Improvement through Digital Aeronautical Information Management				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
eTOD	Area 1 Terrain	Completed.		Recurrent Survey planned for 2017
eTOD	Area 1 Obstacle	Completed.		Recurrent Survey planned for 2017
eTOD	Area 4 Terrain	Completed.		
eTOD	Area 4 Obstacle	Completed.		



Status of ASBU Implementation

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



B0 – AMET: Meteorological information supporting enhanced operational efficiency and safety				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
SADIS 2G or Secure SADIS FTP	State	implemented		Data is collected and processed by National Center of Meteorology & Seismology (NCMS), section Aviation Meteorology.
QMS	State	implemented		Quality management is performed by NCMS. They are certified and regularly audited by GCAA Regulator.



Status of ASBU Implementation

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



B0 – FRT0: Improved Operations through Enhanced En-Route Trajectories				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
Flexible use of airspace (FUA)	State	ongoing	As per UAE Civil/Military Coordination Plan	
Flexible routing	State	ongoing	UAE Airspace Restructuring Project (ARP3) Target Date: December 2017	



Status of ASBU Implementation



<i>B0 – ACAS: ACAS Improvements</i>				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
State Regulation on carriage of ACAS (TCAS v7.1)	State	implemented		Civil Aviation Regulations (CARs) CAP OPS 1.398: Use of Airborne Collision Avoidance System CAR-OPS 1.668 Airborne Collision Avoidance System Also Published in AIP GEN 1.5.6



Status of ASBU Implementation



B0 – CDO: Improved Flexibility and Efficiency in Descent Profiles (CDO)				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
PBN STARS	As per the MID Air Navigation Strategy	RNAV 1 STARS for OMDB - Completed OMDW - Completed OMAA - Completed OMAD - Completed OMDL - Completed OMBS - Completed OMFJ – Completed OMAL – Completed		
International aerodromes/TMAs with CDO	As per the MID Air Navigation Strategy	ongoing	UAE Airspace Restructuring Project (ARP3) Target Date: December 2017	



Status of ASBU Implementation

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



B0 – CCO: Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)				
Elements	Applicability	Status	Action Plan/Timelines	Remarks
PBN SIDs	As per the MID Air Navigation Strategy	RNAV 1 SIDs for OMDB - Completed OMDW - Completed OMAA - Completed OMAD - Completed OMDL - Completed OMBS - Completed OMFJ – Completed OMAL – Completed	As per UAE PBN Implementation Plan	
International aerodromes/TMAs with CCO	As per the MID Air Navigation Strategy	ongoing	UAE Airspace Restructuring Project (ARP3) Target Date: December 2017	



Other ASBU Block 0 Modules (priority 2) Implemented by the State



Module	Module Title	Status		Remarks
		Yes	No	
BO-WAKE	Increased Runway Throughput through Optimized Wake Turbulence Separation		X	<ul style="list-style-type: none"> • Report on RECAT status for UAE – Q4 2016 • Regulations Completed • Trials/Simulations in progress at DXB • Safety Case in progress at DXB
BO-RSEQ	Improve Traffic flow through Runway Sequencing (AMAN/DMAN)	X		AMAN for OMDDB AMAN for OMAA first tests DMAN planned
BO-ASUR	Initial capability for ground surveillance	X		ADS-B used in En-route WAM planned
BO-ASEP	Air Traffic Situational Awareness (ATSA)		X	
BO-OPFL	Improved access to optimum flight levels through climb/descent procedures using ADS-B		X	Not applicable in UAE
BO-SNET	Increased Effectiveness of Ground-Based Safety Nets	X		
BO-TBO	Improved Safety and Efficiency through the initial application of Data Link En-Route		X	



Lessons Learned



- The implementation of an integrated plan for ASBUs to achieve the maximum benefits is complex and requires holistic planning.
- Implementation of Improvements need to be coordinated between all stakeholders.
- The implementation of working groups for different subjects has proven to be very useful and effective.



Challenges

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY



- Aviation is a complex system and value chain that depends on its various parts working together in a holistic manner with a clear understanding of the respective needs and requirements of the other parts.
- A major aspect for the implementation will be the discussion on regional, inter-regional and global, ATFM.



Recommendations



- Building future ATM Systems requires a holistic view and the involvement of all stakeholders.
- To assure this, all stakeholders should have a buy-in and are continuously involved in the loop.
 - The Regulator
 - ANSPs
 - Airports
 - Airspace Users



Outlook 2020

(Status of ASBU Block 0 Modules by 2020)



Module	Module Title	Status by 2020				Remarks
		FI	PI	NI	N/A	
B0-APTA	Optimization of Approach Procedures including vertical guidance	X				Part of the Airspace Restructuring Phase 3 Project Due date December 2017
B0-WAKE	Increased Runway Throughput through Optimized Wake Turbulence Separation	X				
B0-RSEQ	Improve Traffic flow through Runway Sequencing (AMAN/DMAN)		X			Existing AMAN will be enhanced as part of ATM Modernization. DMAN implementation for Abu Dhabi and Dubai International Airports
B0-SURF	Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)		X			Abu Dhabi and Dubai Airports will be ready. Other international airports will start implementations at later stages.
B0-ACDM	Improved Airport Operations through Airport-CDM		X			Plans for Abu Dhabi and Dubai International airports are currently in progress. Final Implementation and Full integration will require upgrades of all stakeholders' systems.
B0-FICE	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	X				



Outlook 2020

(Status of ASBU Block 0 Modules by 2020)



Module	Module Title	Status by 2020				Remarks
		FI	PI	NI	N/A	
B0-DATM	Service Improvement through Digital Aeronautical Information Management	X				
B0-AMET	Meteorological information supporting enhanced operational efficiency and safety	X				
B0-FRTO	Improved Operations through Enhanced En-Route Trajectories	X				
B0-NOPS	Improved Flow Performance through Planning based on a Network-Wide view		X			Airspace Capacities are defined, usage is monitored. On National Level the SWIM DB System will collect and consolidate all information from national and international sources to provide information sharing to the stakeholders.
B0-ASUR	Initial capability for ground surveillance	X				ADS-B Implemented, WAM will be used to complement existing radar coverage.
B0-ASEP	Air Traffic Situational Awareness (ATSA)					



Outlook 2020

(Status of ASBU Block 0 Modules by 2020)



Module	Module Title	Status by 2020				Remarks
		FI	PI	NI	N/A	
B0-OPFL	Improved access to optimum flight levels through climb/descent procedures using ADS-B				X	
B0-ACAS	ACAS Improvements	X				
B0-SNET	Increased Effectiveness of Ground-Based Safety Nets	X				
B0-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDO)	X				
B0-TBO	Improved Safety and Efficiency through the initial application of Data Link En-Route		X			Technical Readiness as part of ATM Modernization Project by 2019. Activation dependant on operational validation and approval
B0-CCO	Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)	X				



Thank you