

Antigua and Barbuda National PLAN



Air Traffic Services
Antigua & Barbuda



VISION:

To contribute regionally and nationally to an air transport system that consistently and uniformly operates at peak efficiency, providing optimum safety, security and sustainability.

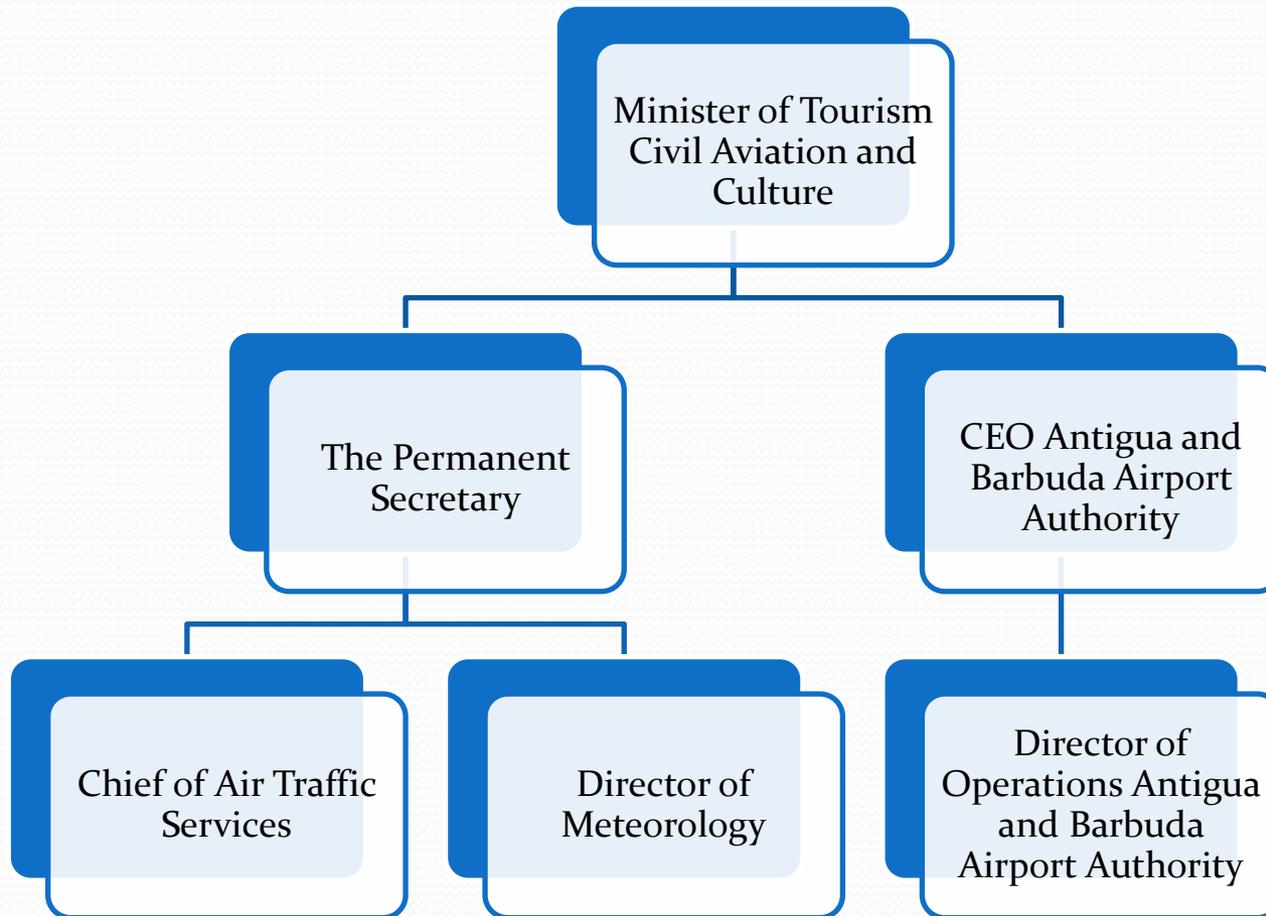
Organizational Structure

- Air Navigation Services are provided by the Government of Antigua and Barbuda through the Ministry of Tourism & Civil Aviation. The Antigua and Barbuda Airport Authority was established in 2006 and provides supporting service such as Aerodrome development and maintenance.

Organizational Structure Cont'd

The departments which provide air navigation service on behalf of the Government are Air Traffic Services and Meteorology

ANSP Organization Chart



Growth Indicator: Traffic-operations

Currently V.C. Bird handles on average 5,480 flights per month (180 per day). These figures include landings, departures and overflights with a mixture of IFR and VFR flights.

Traffic-operations

- **Aircraft Movement for 2013**

Commercial 27482 (-2.27%)

General Aviation 5442 (-24%)

Overflights 18,097 (+3%)

Other flights 248

- **Aircraft Movement for 2014**

Commercial 26,542 (-4%)

General Aviation 4,890 (-17%)

Overflights 19,630 (+7%)

Other flights 276



- **Aircraft Movement for 2015**

Commercial **25,993** (-7⁰%)

General Aviation **5,547** (+20⁰%)

Overflights **19,992** (-1⁰%)

Other Flights **228**

Operations Summary

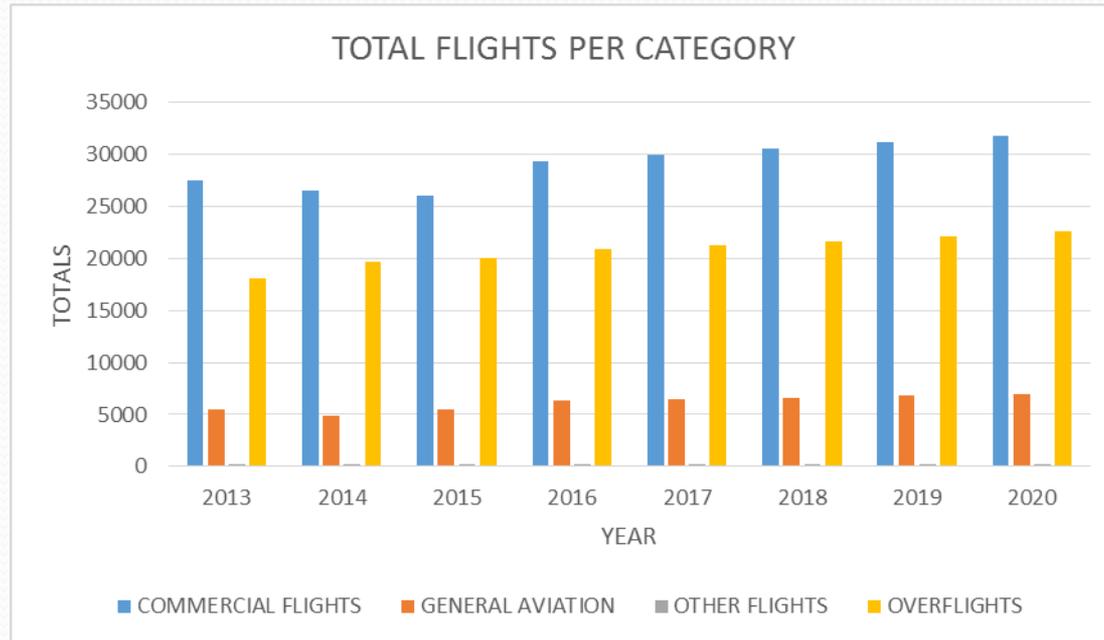
- While the figures indicate a drop in commercial flights there has been an increase in general aviation. In addition, there has been an increase in overflights (transiting flights below *FL240*) from 2013 to 2015 of 2.3%. Currently, there are no fees charged for overflights, however regulations have been put in place for a minimal Air Navigation Charge.



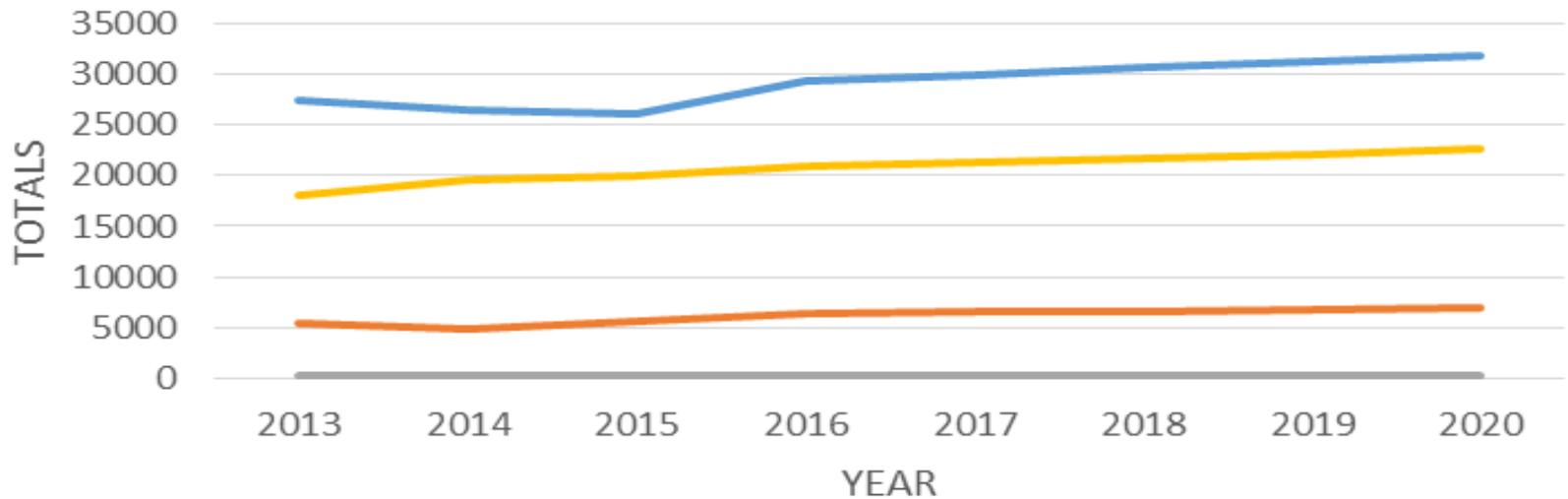
YEAR	COMMERCIAL	GEN AVIATION	O/FLIGHTS	OVERFLIGHTS	TOTALS
2013	27482	5442	248	18097	51269
2014	26542	4890	276	19630	51338
2015	25993	5547	228	19992	51760
2016	29406	6387	250	20855	56898
2017	29994	6515	255	21272	58036
2018	30594	6645	260	21698	59197
2019	31206	6778	265	22131	60380
2020	31830	6914	271	22574	61589



Past Movements & Projections



TOTAL NO. OF FLIGHTS PER CATEGORY PER YEAR



— COMMERCIAL FLIGHTS

— GENERAL AVIATION

— OTHER FLIGHTS

— OVERFLIGHTS

State's Air Navigation Infrastructure

TMA Structure

- V.C. Bird has a TMA that extends laterally 70 miles to the Northwest and the East, 52 miles to the North and 27 Miles to the South.
- Vertical limits from 3000 ft. to FL240.
- Control zone from surface to 3000ft.
- The TMA includes the islands of Barbuda, St. Kitts, Nevis, and Montserrat.

Aerodromes

- St. Kitts – Robert L. Bradshaw – small TMA with a vertical limit of FL65 and a lateral limit of approximately 15miles and includes Nevis
- Nevis – Vance Amory
- Montserrat – John A. Osbourne - operates from sunrise to sunset.
- Barbuda – has two uncontrolled airfields Codrington (state owned) and Coco Point (privately owned)

Air Navigation Services & Responsibilities

- Air Traffic Management
- Air Traffic Control Service
- Aeronautical Information Service
- Meteorological Services

Airlines and Operators

- Leeward Islands Air Transport – LIAT
- British Airways
- Virgin Atlantic
- American Airlines
- Air Canada
- Delta Airlines
- Jet Blue Airways
- WestJet

Airlines and Operators Cont'd

- Winair
- Island Waves
- Alitalia
- Signature Flight Support
- Air Caribes
- Caribbean Airlines
- PAWA Airlines
- Seaborne

CNS Infrastructure and Automation

- **Communications** – VHF radios for air ground communication coverage of 200mls
- Automatic Terminal Information Service (ATIS) which covers a range of 150 NM
- Regional digital network for inter-island controller to controller voice and data communication
- Inter-unit communications system for controller to controller communications
- **Navigation** – 4 ground radio NAV AIDS (1 VOR; 1 DME; 2 NDB's)

CNS Infrastructure and Automation

Cont'd

- **Surveillance** – Radar picture made available by Radar Data Sharing with Martinique, full coverage to be available by October 2018

Stakeholders needs and Requirements

- Less holding time in the air and on the ground to reduce fuel burn,
- More direct routes

Challenges

Operational

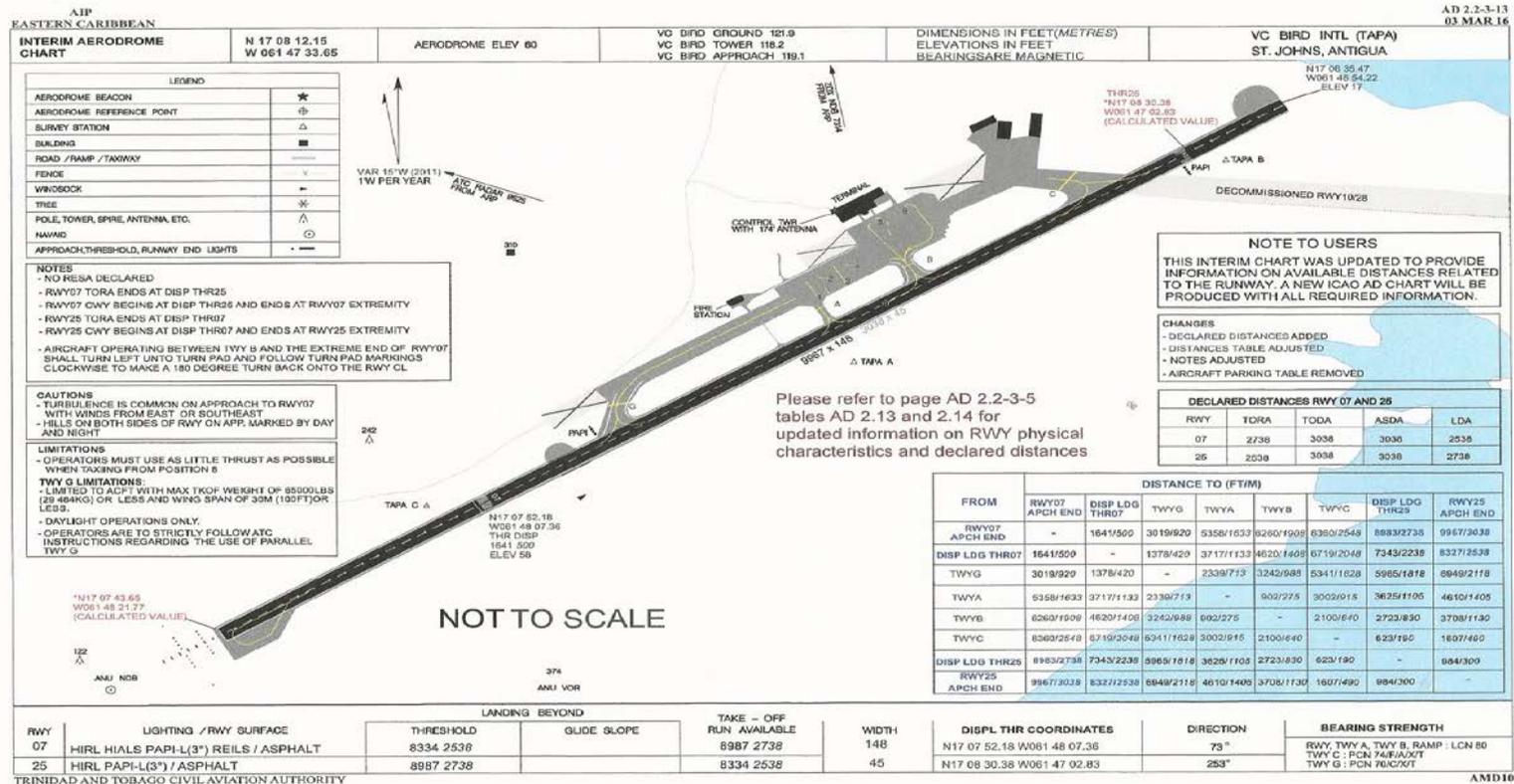
- Implementation of a seamless communication system. Upgrading and modernizing is necessary since the existing system in use at V.C. Bird has become outdated and is no longer supported with spare parts by the manufacturer.
- The unavailability of regional resources needed to support optimal industry development.
- The current VOR is old and needs to be replaced. Replacement scheduled by the end of 2018.

Challenges Cont'd

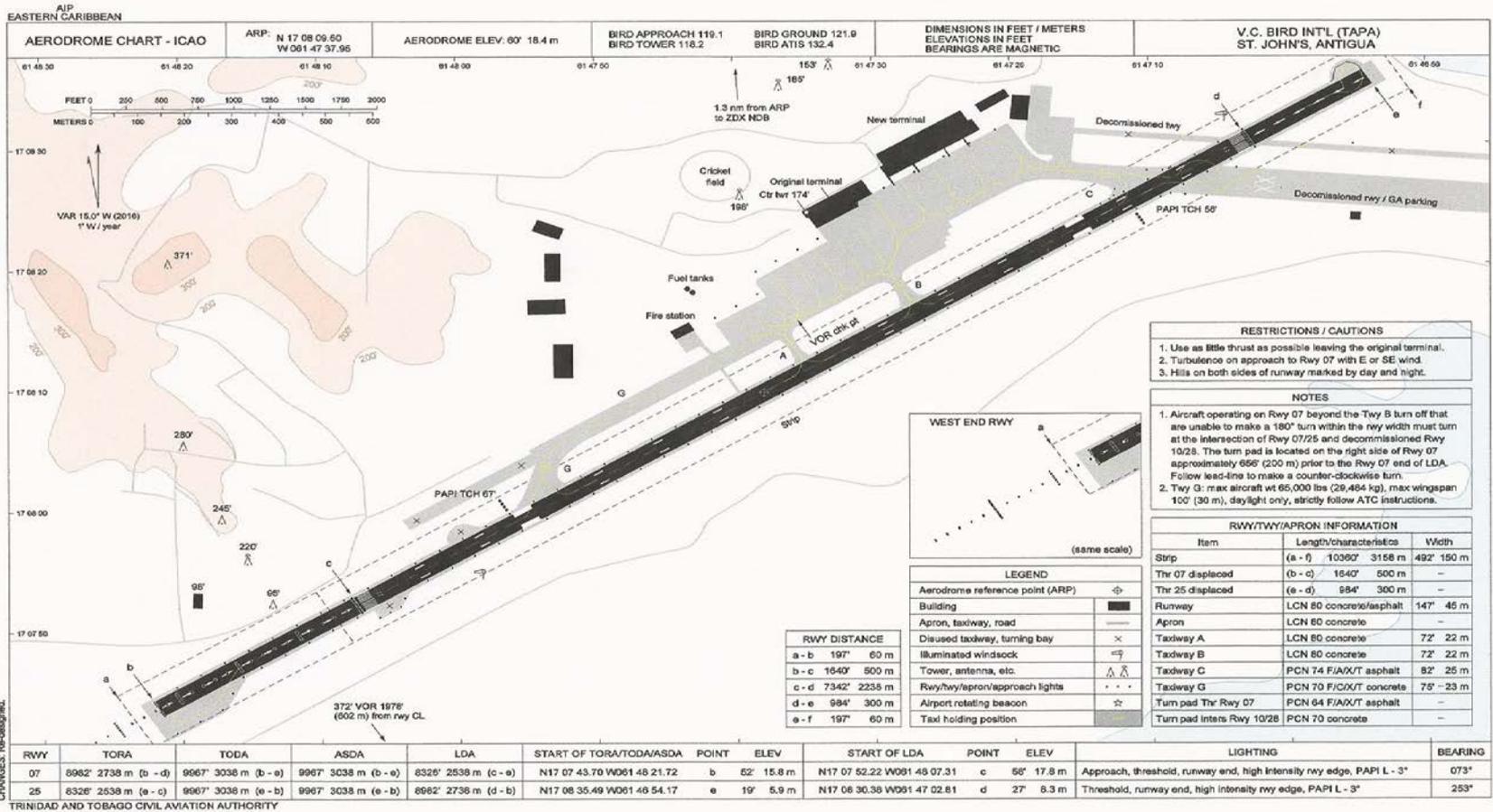
Economic

- Funding for continual training and development of human resource. Due to the economic downturn , it has been difficult to get the government to give a higher priority to Air Navigation Services.
- Investment into newer technologies. The upgrading process for the Radar has been slow. This should have been completed by the end of 2012, however it is now slated to be completed by the end of October, 2017.

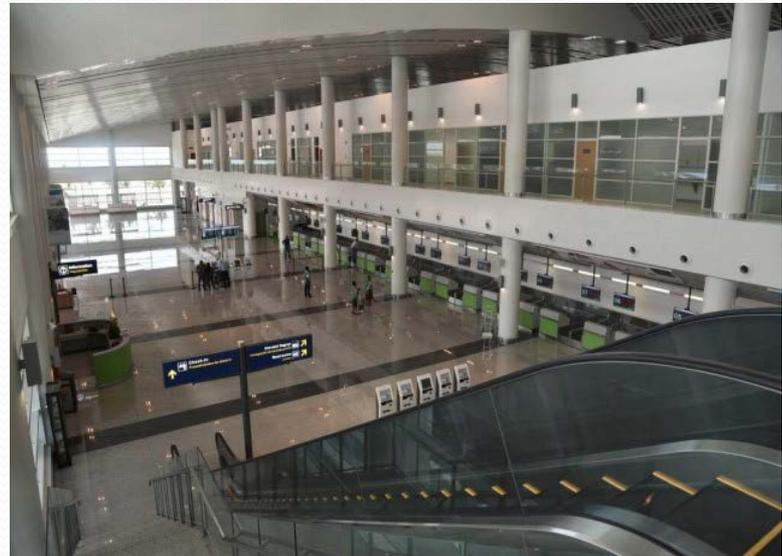
Old Aerodrome Layout



New Aerodrome Layout



NEW AIRPORT TERMINAL



Objectives and Goals

- Manage and harmonize ASBU Block Upgrades and regional Performance Based Navigation Implementation Plan.
- Improve the air navigation infrastructure.
- Comply with applicable national and international regulations.
- Optimize airspace capacity while supporting potential growth and promoting safety and efficiency.

Objectives and Goals Cont'd

- To improve collaborative decision making (CDM) which is already in place by promoting more interaction between ATS, AOC and the airlines especially during the peak seasons.
- Establish AIM as the core ATS support process which will serve as the provider of updated and quality aeronautical information

How to achieve Goals

- Training for ATS staff at all levels.
- Implementation of Quality Management Systems (QMS) and Safety Management Systems (SMS).
- Implementation of a new ATM database.
- Active participation in national and international working groups.
- Implementation of ASBU Block 0 modules according to national and regional priorities.

Performance thus far

- New airport terminal
- New Aerodrome layout - Ramp expansion has significantly reduced parking issues. It is still a single Runway operation with no high speed taxiway, however, the new taxiway C has become a suitable alternative.
- New RNAV approaches in place for Runway 07, however, those for Runway 25 are still awaiting ECCAA approval.
- Funding for new air-ground communication system has been approved and should be in place later this year.
- Successful Implementation of AIM.

Antigua & Barbuda Implementation Status of ASBU Block 0 Elements

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Airport CDM procedures		✓					✓	
	2. Airport CDM tools			✓					
	3. Collaborative departure queue management			✓					
APTA	1. PBN Approach Procedures with vertical guidance (LPV, LNAV/VNAV minima, using SBAS and Baro VNAV)			✓					
	2. PBN Approach Procedures without vertical guidance (LP, LNAV minima; using SBAS)		✓					✓	
	3. GBAS Landing System (GLS) Approach procedures			✓					

Antigua & Barbuda Implementation Status of ASBU Block 0 Elements

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS		✓						✓
	2. IAVW		✓					✓	
	3. TCAC forecasts		✓						✓
	4. Aerodrome warnings				✓				
	5. Wind shear warnings and alerts		✓				✓		
	6. SIGMET				✓				
	7. Other OPMET information (METAR, SPECI and/or TAF)		✓						✓
	8. QMS for MET		✓						✓
DATM	1. Aeronautical Information Exchange Model (AIXM)			✓		✓			
	2. eAIP		✓						✓
	3. Digital NOTAM		✓				✓		
	4. eTOD			✓					
	5. WGS-84		✓						✓
	6. QMS for AIM		✓					✓	

Antigua & Barbuda Implementation Status of ASBU Block 0 Elements

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)			✓			✓		
	2. Auto Pilot/Flight Director (AP.FD) TCAS				✓				
	3. TCAS Alert Prevention (TCAP)				✓				
ASUR	1. ADS-B			✓					
	2. Multilateration (MLAT)				✓				
FRTO	1. CDM incorporated into airspace planning			✓					
	2. Flexible Use of Airspace (FUA)	✓							
	3. Flexible route system				✓				
	4: CPDLC used to request and receive re-route clearances				✓				
NOPS	1. ATFM			✓		✓			
SNET	1. Short Term Conflict Alert implementation (STCA)			✓		✓			
	2. Area Proximity Warning (APW)			✓		✓			
	3. Minimum Safe Altitude Warning (MSAW)			✓		✓			
	4. Medium Term Conflict Alert (MTCA)			✓		✓			

Antigua & Barbuda Implementation Status of ASBU Block 0 Elements

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO		✓					✓	
	2. Route changes to facilitate CCO		✓					✓	
	3. PBN SIDs		✓					✓	
CDO	1. Procedure changes to facilitate CDO		✓					✓	
	2. Route changes to facilitate CDO		✓					✓	
	3. PBN STARs		✓					✓	

Conclusion

- V. C. Bird ATS will continue to work towards implementation of ICAO Global Initiatives both at the national and regional levels.