ATM Challenges and Opportunities in the Asia Pacific Region – The ANSP and Stakeholders’ Perspectives

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Shaping Asia Pacific ATM - Global Vision, Regional Action

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CANSO ASIA PACIFIC CONFERENCE
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CANSO ASIA-PACIFIC CONFERENCE 2016
QUEENSTOWN – NEW ZEALAND
Airport & Aviation Services (Sri Lanka) Ltd.

- Provider of ANS within Colombo FIR
- Provider of airport services at all commercial airports in Sri Lanka
- Active member of CANSO since 2009
- CANSO APAC host 2014
- ICAO TRAINAIR Plus full member.
Colombo FIR

- Predominantly oceanic airspace
- Extent 518400 Sq NM
- Length 860 NM, width 720 NM
- SSR and ADS aided surveillance
- HF, VHF voice, and CPDLC communication
- High traffic density major trunk air routes interconnecting East, West, and South
- Excellent safety record (Currently ranked as 5th in ICAO USOAP APAC).
Growth of Air Traffic through Colombo FIR

- 2009: 52,964
- 2010: 61,637
- 2011: 73,160
- 2012: 76,151
- 2013: 81,905
- 2014: 88,611
- 2015: 94,450
- 2016: 102,392
- 2017: 109,258
- 2018: 116,267
- 2019: 123,439
- 2020: 130,796
Growth of Passenger movements at BIA

<table>
<thead>
<tr>
<th>Year</th>
<th>Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>4,242,362</td>
</tr>
<tr>
<td>2010</td>
<td>5,259,648</td>
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<tr>
<td>2011</td>
<td>6,145,532</td>
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<tr>
<td>2012</td>
<td>7,079,920</td>
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<tr>
<td>2013</td>
<td>7,312,582</td>
</tr>
<tr>
<td>2014</td>
<td>7,771,141</td>
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<tr>
<td>2015</td>
<td>8,508,346</td>
</tr>
<tr>
<td>2016</td>
<td>8,936,974</td>
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<tr>
<td>2017</td>
<td>9,528,736</td>
</tr>
<tr>
<td>2018</td>
<td>10,171,764</td>
</tr>
<tr>
<td>2019</td>
<td>10,869,507</td>
</tr>
</tbody>
</table>
Tourism profile for Sri Lanka

Total # of tourists arrive to Sri Lanka in 2015 1,798,380

Accommodation Capacity graded rooms 18,078
Tourist Arrivals by Top Ten Countries-2015

- India
- China
- U.K
- Germany
- France
- Maldives
- Russia
- Australia
- U.S.A
- Canada
Challenges

• Passenger handling is over capacity
• Surveillance to cover oceanic airspace
  – RADAR coverage is limited to 250 NM
• Navigation
  – VOR/DME coverage is limited to 150 NM
  – Demand for PBN
• Communication
  – VHF is used to cover up to 350 NM
  – Use of HF to relay beyond the VHF coverage
  – CPDLC aircraft equipage.
Capacity enhancement at ground

• Currently BIA handles over 8.5 million passengers per year

• Capacity is to be enhanced to handle 15 Million annually by Year 2019 to meet prevailing growth trends

• Runway and approach efficiency to be improved
  - Current movements: 27 /hr
  - Target: 35 /hr

• Currently has 29 parking bays which will be increased to 48 in Ph-II- Stg 2 of BIA Development Project

• New parking apron to be constructed.
• Ground validation  
  (ICAO–FPP)  
• Flight validation  
  (Aeronautical Radio of Thailand Ltd)  
  completed April 2016  
• Implementation  
  21st July and 18th August 2016  
• 2 RNAV and 2 RNP Approaches for RWY 22 and 04  
• 18 RNAV SIDs and 16 RNAV STARs for RWY 22 and 04.
ANS Capability enhancements

ICAO Global Targets

Regional Targets

CAA Recommendations

AASL Targets

- B0-APTA - Performance Based Navigation (PBN) - Terminal
- B0-NOPS - Air Traffic Flow Management/A-CDM
- B0-DATM - Aeronautical Information Management
- B0-FICE - ATS Inter-facility Data Communication (AIDC)
- B0-FRTO - Flexible Use of Airspace
- B0-ASUR – Surveillance (ADSB-B and Mode - S MSSR)
- B0-TBO - Data link (ADS-C and CPDLC)
ANS Capability enhancements (Ctd.)

- Implementation of Performance Based Navigation (PBN) in the Approach sector by August 2016
  - City Pairs between Colombo – Male and Colombo – Chennai to be introduced
- Enhancement of Surveillance coverage using ADS-B by the end of 2016
- Reduced Horizontal Separation minima (RHSM) on all RNP10 routes
- Planning for User Preferred Routes (UPR) within Colombo FIR
- Complete overhaul and redesign of Air Route structure in the Colombo FIR.
Steps taken to address safety concerns

- Implementation of ADS-B with coverage up to 350 NM and capability for sharing of ADS-B data with adjacent states
- Replacement of MSSR used for Area Control by MSSR with Mode-S capability
- Replacement of DVOR/DME at BIA for En-route and Terminal Operations
- Implementation of AMHS
- Procurement process has commenced for implementation of AIM.
Steps taken to address safety concerns (Ctd.)

• Installation of a new ATM with facilities such as ATFM, AIDC with Terminal and Oceanic area sectorization
• Procurement of a New ATM for BIA Approach Control is underway
• Replacement of HF Transmitter & Receiver equipment.
Economic Impact

- Improved ground capacity will eliminate congestion and simplify air traffic flow converging at BIA
- Enhanced CNS capabilities within the Colombo FIR will facilitate increased flow of air traffic both overflying and landing
- Together, these would create a ripple effect that would boost international trade, tourism, and overseas employment all of which would contribute positively to the economy.
THANK YOU