

**Twenty Sixth Meeting of the  
Informal South Pacific ATS Co-ordinating Group (ISPACG/26)**

**Nadi, Fiji, 1-2 March 2012**

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**Agenda Item 4: AI 21-5 Sharing of Operational Data**

**ASIA AND PACIFIC INITIATIVE TO REDUCE EMISSIONS (ASPIRE)**

**Presented by FAA**

**SUMMARY**

The ASPIRE Partnership was initiated in February 2008 and has achieved many milestones and successes since its inception. The ASPIRE Strategic Plan has been developed and is a living document that is driving ASPIRE Partners towards actual accomplishments and operational benefits. The ASPIRE Annual Report was first published in 2009 with versions published in September 2010 and September 2011. Since late 2009, the ASPIRE Partnership has welcomed three new members: the Civil Aviation Bureau, Japan (JCAB) on 11 October 2009, the Civil Aviation Authority of Singapore (CAAS) on 31 January 2010, and Aeronautical Radio of Thailand on 10 June 2011. The ASPIRE Partners have established the ASPIRE-Daily program to identify and promote city-pair routes where best practices with demonstrated and proven success in the reduction of greenhouse gasses are available on a daily basis.

**1. INTRODUCTION**

- 1.1 The Asia and Pacific Initiative to Reduce Emissions (ASPIRE) is a partnership of air navigation service providers focused on environmental stewardship in the region. The ASPIRE Partnership was initiated by the signing of the ASPIRE Joint Statement of Purpose by Airservices Australia, Airways New Zealand, and the Federal Aviation Administration at the Singapore Air Show on 18 February 2008. Unlike regional collaborations focused primarily on technology demonstration, the ASPIRE partnership is a comprehensive approach to environmental stewardship for the Pacific Rim. Under ASPIRE, current and future partners pledge to adopt and promote best practices that have demonstrated and proven success in the reduction of greenhouse gasses, as well as to the development of work programs to promote future gains for the environment.

## 2. DISCUSSION

- 2.1 The ASPIRE Partnership has expanded to focus on additional sub-regions within the Asia Pacific region. The Civil Aviation Bureau, Japan (JCAB) officially joined the ASPIRE Partnership on 11 October 2009. One day before, on 10 October 2009, JCAB conducted a flight demonstration (labeled ASPIRE 4) from Honolulu, Hawaii, to Kansai International Airport, using a Japan Airlines Boeing 747 aircraft. The demonstration outcome was very successful as it fully executed several ASPIRE operational procedures, including Dynamic Airborne Reroute Procedure (DARP). The JCAB and Japan Airlines also focused on achieving fuel efficiency by addressing the overall weight of the aircraft. Some of the steps taken to reduce aircraft weight were using fiberglass cargo containers and reducing cabin attendants' luggage.
- 2.2 The Civil Aviation Authority of Singapore (CAAS) officially joined the ASPIRE Partnership on 31 January 2010 in a signing ceremony conducted at the Singapore Air Show 2010. CAAS and Singapore Airlines conducted a flight demonstration (labelled ASPIRE 5) on 2 February 2010, from Los Angeles, California, to Singapore via Tokyo Narita International Airport, using a Singapore Airlines Boeing 747-400 aircraft. This was essentially the first multi-leg ASPIRE flight executed to date. In addition to completing planned airborne optimizations such as User Preferred Routes (UPRs) and DARPs, Singapore focused on airline procedures, advanced engine and airframe washing, and other efforts to make the overall flight as efficient and green as possible.
- 2.3 Aeronautical Radio of Thailand (AEROTHAI) officially joined the ASPIRE Partnership on 10 June 2011 in a signing ceremony in Bangkok, Thailand. AEROTHAI and Thai Airways conducted two ASPIRE demonstration flights in May 2011 between Bangkok and Auckland, New Zealand. This was the first ASPIRE demonstration flight to encompass the full roundtrip flight between two city pairs.
- 2.4 The ASPIRE Partners have conducted six gate-to-gate green flight demonstrations, using current technology and procedures, and removing controllable constraints wherever possible. In total, the six (6) ASPIRE demonstration flights have been an overwhelming success. The cumulative fuel savings of the ASPIRE flights is approximately 32,386 kilograms (kg), leading to an overall carbon dioxide (CO<sub>2</sub>) reduction of 101,986 kg. Extrapolating these benefits over multiple flights per day, every day for a year, the annual savings would be astounding.

ASPIRE One	Air New Zealand	B777	Auckland to SFO
ASPIRE Two	Qantas Airlines	A380	Los Angeles to Melbourne
ASPIRE Three	United Airlines	B744	Sydney to SFO
ASPIRE Four	Japan Airlines	B744	Honolulu to Osaka
ASPIRE Five	Singapore Airlines	B744	Los Angeles to Narita to Singapore
ASPIRE Six*	Thai Airways	B777	Bangkok to Auckland/Auckland to Bangkok

\*Results not yet included in fuel and emissions savings above.

- 2.5 With the addition of JCAB, CAAS and AEROTHAI to the ASPIRE Partnership, the focus of the strategic plan initiatives can now be expanded to the North Pacific and South East Asian corridors. Members of ASPIRE will be developing regional ASPIRE work programs that will focus attention of the region and airlines on the ASPIRE initiatives, and seek to gain benefits and savings through additional regional work led by these new entities.
- 2.6 The ASPIRE members met from 6-8 June 2011 in Singapore for the ASPIRE Annual Meeting. The meeting focused on the ASPIRE Work Program for 2011 and 2012, including updates from each ASPIRE member on progress and future planning. The members reviewed progress on the development of shared metrics for fuel and emissions to be published in the 2011 ASPIRE Annual Report. At the meeting, Mr. Takeshi Imagome from JCAB was elected serve a two-year term as the ASPIRE Chair, beginning in October 2011.
- 2.7 Following the Annual Meeting, there was a signing ceremony in Bangkok, Thailand to officially welcome AEROTHAI to the ASPIRE Partnership. A demonstration flight was conducted in conjunction with this event and the results were published in the 2011 Annual Report.
- 2.8 The ASPIRE Partners have established the ASPIRE Daily program to identify the most efficient city-pair routes in the region where best practices with demonstrated and proven success in the reduction of greenhouse gasses are available on a daily basis. Best practices for the first year of the ASPIRE Daily program include User Preferred Routes (UPRs), Dynamic Airborne Reroute Procedures (DARP), 30 NM lateral/30 NM longitudinal reduced oceanic separation, Time-Based Arrivals Management, Arrivals Optimization, Departure Optimization, and Surface Movement Optimization.
- 2.9 The partners have engaged the International Air Transport Association (IATA) to collaborate on the assessment and validation of the ASPIRE Daily best practices, city pair nominations and ratings. ASPIRE-Daily city pairs are certified with a star rating system based on the number of best-practice procedures available.

Number of Best Practices	Star Rating
3-4	3
5-6	4
7	5



- 2.10 The partners met on 25-27 January, 2011 to officially kick-off the ASPIRE-Daily program and have since validated and published the first four city pairs: Auckland, NZ – San Francisco, CA (four stars), Los Angeles, CA – Singapore (four stars), Los Angeles – Melbourne, AUS (three stars) and Sydney, AUS – San Francisco (four stars).

- 2.11 The 2011 ASPIRE Annual Report was published on 30 September 2011. The report includes updates from the ASPIRE Partners on work program activities, a section on shared metrics for fuel and emissions, as well as information on the ASPIRE demonstration flights conducted by AEROTHAI and Thai Airways. Also included is the ASPIRE Work Programme, which highlights various initiatives such as enhanced and expanded DARP, UPR expansion, and ADS-B ITP that will lead to future enhancements in the region. The FAA recently conducted an ADS-C Climb Decent Procedures trail at Oakland ARTCC in support of UPR expansion and trails of ADS-B ITP in the Oakland Oceanic FIR are currently under way.

### **3. ACTION BY THE MEETING**

- 3.1 The meeting is invited to:
- a) Recognize the progress, performance and program updates by the ASPIRE Partnership that are published on an annual basis in the ASPIRE Annual Report. The latest ASPIRE Annual Report was published by the ASPIRE coordinators in September 2011. The report is available on the ASPIRE website at <http://www.aspire-green.com/>; and
  - b) Note the information presented in this paper, especially the establishment of the ASPIRE-Daily program to identify city-pair routes where ASPIRE best practices are available on a daily basis.