



*International Civil Aviation Organization*

**The First Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/1)**

Bangkok, Thailand, 19 – 23 September 2011

---

**Agenda Item 4: Implementation of New CNS/ATM Systems**

**INSPIRE and the Demonstration flights**

(Presented by India)

**Summary**

INSPIRE is an informal partnership of ANSPs in Indian Ocean and Arabian Sea area dedicated to reduce the environmental footprints of aviation by utilising technological advances and adopting best practices. The partners have developed a systematic approach to achieve, demonstrate and report short term medium term and long term goals. Airport Authority of India is one of the founder members of this partnership.

**1. Introduction**

**Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE)** is a collaborative network of partners and peer organisations across the Arabian Sea and Indian Ocean region dedicated to improving the efficiency and sustainability of aviation.

INSPIRE is aimed at supporting operations in three distinct regions:

- Arabian Gulf – Australia
- Southern Africa – Australia / South East Asia
- South-West Indian Ocean – Arabian Gulf

Presently the INSPIRE partners are,

- Airports Authority of India (AAI)
- Airservices Australia
- Air Traffic and Navigation Services South Africa (ATNS)

The INSPIRE partners are committed to work closely with airlines and other stakeholders in the region in order to:

- accelerate the development and implementation of operational procedures to reduce the environmental footprint for all phases of flight on an operation by operation basis, from gate to gate;
- facilitate world-wide interoperability of environmentally friendly procedures and standards;
- capitalise on existing technology and best practices;
- develop shared performance metrics to measure improvements in the environmental performance of the air transport system;

- provide a systematic approach to ensure appropriate mitigation actions with short, medium and long-term results; and
- communicate and publicise INSPIRE environmental initiatives, goals, progress and performance to the global aviation community, the press and the general public.

The INSPIRE partners will ensure that INSPIRE is in support of the **ICAO Strategic Objectives 2011 – 2012 – 2013, and** is consistent with environmental planning under Civil Air Navigation Services Organisation (CANSO) **Environmental Work Group**

## **2. Discussion**

### **2.1 INSPIRE strategic plan.**

The INSPIRE partners have developed a strategic plan in collaboration with peer organisations. The INSPIRE Strategic Plan outlines recommended procedures, applications and technologies that support the stated goals of the INSPIRE partnership. The INSPIRE strategic plan activities will aim to reduce fuel burn and greenhouse gas emissions, thus reducing aviation's impact on the environment. The INSPIRE partners have compiled a series of recommended procedures, practices and services that have been demonstrated or have shown the potential to provide efficiencies in fuel and emissions reduction management.

The INSPIRE partnership recognises that the measurement of success through the credible tracking of the reduction of emissions as a result of initiatives in the INSPIRE program is essential to establishing and maintaining the credibility of the partnership. For each initiative in the work program the partners with the direct support of the Airline partners will establish the current fuel burn/emissions for the part of trajectory that will be affected by the initiative. At the completion of the initiative or at the end of specific stages of the related works the airline partner will report the new fuel burn/emissions. The savings associated with the success of each initiative will be reported.

Progress, performance and program updates will be reported by the INSPIRE partners on an annual basis via the publication of the INSPIRE Annual Report. The Annual Report will be developed by the INSPIRE coordinators in the second quarter of each calendar year to provide status updates on work program initiatives and demonstrations, performance measurements and future plans for the INSPIRE partnership.

### **2.2. INSPIRE Work Program**

The work program consists of a series of initiatives which, as they're completed, will allow the INSPIRE partnership to progress towards their goal of improving the efficiency and sustainability of aviation.

For each initiative one INSPIRE partner is identified as the lead. It is the leads responsibility to track the progress of the initiative and coordinate and facilitate the other stakeholders to encourage success of the initiative.

### 2.2.1 INSPIRE demonstration flights.

One of the important initiative that INSPIRE partners had planned was the four demonstration flights in the month of July. The best practices for reduction in fuel consumption and carbon emissions were employed for these flights by the INSPIRE partners, the partner airlines and peer organisations to demonstrate the benefits of these practices.

The details of the four flights are as follows,

SN	Flight No.	Date	City Pair	Fuel savings Kg	Fuel savings litre (1.25/Kg)	Reduction in Emissions (3.15/Kg)
1	UAE425	16/07/2011	Perth/Dubai	2046	2558	6444
2	UAE434	16/07/2011	Dubai/Brisbane	3503	4379	11035
3	ETD450	16/07/2011	AbuDhabi/Sydney	4800	6000	15120
4	VAU30	22/07/2011	AbuDhabi/Sydney	2733	3416	8609
Total				13082Kg	16353 Litre	<b>41208 Kg</b>

The User Preferred routes to take advantage of wind conditions were employed first time in Indian FIRs for the flights on 16<sup>th</sup> July 2011. The successful use of UPRs was carefully planned and practiced wherein Paper trials for the UPRs were conducted for two weeks prior to 16<sup>th</sup> July in coordination with Emirates Airline and IATA.

### 2.2.2. India Initiatives

The Airports Authority of India has launched following initiatives that will form part of the INSPIRE work program.

**Integration of National Radar Coverage:** Airports Authority of India is implementing new automated ground systems which will allow the integration of radars across India. This will provide Air Traffic Controllers with improved surveillance of their airspace and shared surveillance picture between ATC units. Radar separation standards will become available across the domestic airspace. This change will support implementation of reduced separation minima through use of radar across entire CTA (India) to facilitate airspace users with improved access to preferred cruise level and direct routings wherever possible, reducing emissions.

**Reduction of longitudinal separation to 50NM:** Airports Authority of India is participating in ICAO regional plan of reduced longitudinal separation of 50 NM on RNP10 routes. In the first phase the RHS was successfully implemented on ATS routes N571 and P628. In the later Phases, RHS minima will be introduced on all other RNP10 routes. Reduced separation minima available as a result of these changes will allow airspace users better access to their preferred trajectory resulting in more efficient operations and reduced emissions.

**Mumbai FIR Connector Routes:** New routes will be introduced across the southern portion of the Mumbai FIR to provide shorter flight paths to traffic from Africa to East Asia. To establish connector routes UT383 and UT387 as proposed by IATA in Mumbai FIR. The airlines will be able to utilize any of the connector routes for shortening flight paths.

**Connector Routes to FLEX tracks:** New routes will be introduced across the southern portion of the Mumbai FIR to allow crossing traffic to transit from points on the boundary of the Muscat FIR to a wider range of waypoints on the Male FIR to join the Flex Tracks. The Partner Airlines will be able to utilize any of the connector routes for shortening flight paths.

**PBN-RNAV 1 SIDs and STARS RNP approaches:** PBN-RNAV 1 SIDs and STARS are already in vogue at Mumbai, Delhi, Hyderabad, Chennai and Ahmedabad. PBN-RNAV 1 SIDs and STARS are also being developed for Bangalore and Trivandrum and RNP approach for Cochin. The PBN-RNAV 1 SIDs and STARS and RNP approach will provide for fuel efficient flight profiles, shorter paths and approaches resulting in reduced emissions.

**Flexible use of restricted airspace:** Procedures are being further developed for flexible use of restricted airspace to provide for shorter ATS routes within continental airspace. Optimum utilisation of airspace, shorter flight paths resulting in reduced emissions. Airports Authority of India is also working on departure/arrival optimisation by developing processes like Air Traffic Flow Management, Collaborative Decision Making and Continuous Descent Approaches.

### 2.2.3 List of Initiatives by INSPIRE partners.

#### List of current initiatives

Initiative A-1.	FUA - Australian Military Airspace & flight planning .....
Initiative A-2.	FUA - Improved military coordination (NASAC).....
Initiative A-3.	Integration of National Radar Coverage - India.....
Initiative A-4.	RNP-AR Abu Dhabi .....
Initiative A-5.	RNP-AR Australia.....
Initiative A-6.	SIDS & STARS review – Abu Dhabi .....
Initiative A-7.	SIDS & STARS review – Dubai.....
Initiative A-8.	RNAV Visual Arrivals Trial - Dubai.....
Initiative A-9.	Updated Automation System (incl. CPDLC/ADS-C) - Colombo.....
Initiative A-10.	Reduction of longitudinal separation to 50NM.....
Initiative A-11.	Amendment of the IORRA (expansion and increased flexibility) .....
Initiative A-12.	User Preferred Routes – South East Asia & South Africa .....
Initiative A-13.	INSPIRE Daily (Perth Johannesburg) .....
Initiative A-14.	UAE Airspace Review (proposed) .....
Initiative A-15.	CDM improvements at Australian Capital city airports.....
Initiative A-16.	Colombo, Male, Melbourne boundary waypoints .....
Initiative A-17.	Mumbai Connector Routes.....
Initiative A-18.	UAE Flow Management Capability .....

### **3. Action by the meeting**

The meeting is invited to note the efforts by INSPIRE partners and the information regarding best practices for reducing emissions.

.....