



International Civil Aviation Organization

North American, Central American and Caribbean Office (NACC)

**Seventh Central American Air Navigation Experts Working Group Meeting  
(CA/ANE/WG/7)**

**Ninth Central Caribbean Working Group Meeting (C/CAR/WG/9)**

ICAO NACC Regional Office, Mexico City, Mexico, 5 to 9 March 2012

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**Agenda Item 3**

**Air Navigation Matters**

**3.3 Specific Developments in Air Navigation**

- **ATM**

**IMPLEMENTATION OF THE ICAO FUEL SAVINGS ESTIMATION TOOL –IFSET**

(Presented by the Secretariat)

<b>SUMMARY</b>	
One of the results of the ongoing PBN implementation is the reduction in fuel consumption by aircraft capable of using the new procedures, concepts of operations or technologies. This paper addresses the ICAO Fuel Savings Estimation Tool –IFSET that estimates fuel savings as part of the environmental benefits of these operation improvements.	
<b>References</b>	
• State Letter 2012/4	
<b>Strategic Objectives</b>	<i>This working paper is related to Strategic Objectives A and C</i>

**1. Introduction**

1.1 The *Global Air Traffic Management Operational Concept* (Doc 9854), endorsed by the 11th Air Navigation Conference (2003) describes the expectations of the ATM community in 11 key performance areas. One of them is environment, and the endorsed vision is that the ATM system should be environmentally sustainable.

**2. Discussion**

2.1 Against a background of increasing concern regarding the impact of aircraft engine emissions on the environment, ICAO has been considering what steps could be taken by the international aviation community to control and measure emissions.

2.2 Implementation of ATM operational improvements generally have benefits in areas such as improved airport and airspace capacity, shorter cruise, climb and descend times through the use of more optimized routes, and an increase of unimpeded taxi times. These improvements have the potential to reduce fuel burn and lower levels of pollutants.

2.3 Calculation of aviation emissions is dependent on several different factors including the number and type of aircraft operations, the type and efficiency of the aircraft engines, the type of fuel used, the length of flight, the power setting, the time spent at each stage of flight, and the location (altitude) at which exhaust gases are emitted.

2.4 Specifically for operational improvements benefit analyses, it is necessary to have data that can reflect the operational changes.

2.5 To this end, States or Air navigation service provider (ANSPs) should encourage the estimation and reporting of fuel savings resulting from national and regional operational improvements through the use of a simple but globally endorsed tool named the ICAO Fuel Savings Estimation Tool - IFSET specifically designed for this purpose, which does not require any specific user skills.

2.6 The tool is not intended to replace the use of detailed measurement or modelling of fuel savings, where those capabilities exist. Rather, it is provided to assist those States or ANSPs without such facilities to estimate the benefits from operational improvements. Moreover, the tool shall be considered to carry out these estimates under the Aviation System Block Upgrades (ASBU) methodology and the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (NAM/CAR RPBANIP).

2.7 States/ANSPs in the CAR region should start reporting the benefits as they plan or implement any type of operational improvement. After the estimation, the results should be timely sent to ICAO NACC Regional Office as soon as the analysis are finalized on a quarterly basis using the tool or the form included in the **Appendix**.

2.8 The data collected will be used to produce an annual global environmental report by ICAO outlining the PBN operational improvement benefits as an indication of positive environmental stewardship.

2.9 The presentation of the IFSET tool (P/01) will provide more details as well as the current application available on the following website: <http://www.mexico.icao.int/Meetings/ASBU2012.html>. Additional information on the user guide is available at: <http://www.icao.int/environmental-protection/Pages/Tools.aspx>

### 3. **Suggested Action**

3.1 The Meeting is invited to:

- a) note the information provided in this paper;
- b) agree on the implementation of the ICAO Fuel Savings Estimation Tool –IFSET as part of PBN measurement programme;
- c) review and agree with the proposed form in Appendix to this paper for reporting benefits, and
- d) suggest other actions to implement the PBN Measurement Programme, as deemed necessary.

**TABLE TO REPORT ENVIRONMENTAL BENEFITS OF OPERATIONAL IMPROVEMENTS**

Region	State	Current fuel burn (Kg)	Current CO2 emissions (Kg)	Op. Improvement	Savings-Fuel (Kg)	Savings-CO2 (Kg)	Savings-Fuel-%	Savings CO2-%	Tool
NACC	Mexico	1	3.16	RNAV FIR and TMA	7182902	22697970.32	7182902	7182902	IATA
NACC	Mexico	1	3.16		6182902	19537970.32	6182902	6182902	IFSET