




International Civil Aviation Organization

**NPF/SIP/2011-WP/ 16**

# **Measurement of environmental benefits**

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**Workshop on the development of  
National Performance Framework for  
Air Navigation Systems  
(Nadi, Fiji, 28 March-1 April 2011)**



## **OVERVIEW**

- KPA
- ASSEMBLY RESOLUTION
- OPERATIONAL IMPROVEMENTS
- IFSET
- SUMMARY


Environment measurements 2

KPA 

- ENVIRONMENT

The air navigation system should contribute to the protection of the environment by considering noise and **emissions** in the implementation and operation of the global air navigation system.

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Assembly Resolution 

- Climate change
- **A37-19-Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change**

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## Assembly resolution

- **A37-19**
- ***Resolves:***
- **to achieve a global annual average fuel efficiency improvement of 2 per cent until 2020.**
- **and an aspirational global fuel efficiency improvement rate of 2 per cent per annum from 2021 to 2050.**

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## Assembly resolution

- **A37-19**
- **Requests ICAO to:**
- **develop the necessary tools to assess the benefits associated with ATM improvements.**

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**OPERATIONAL IMPROVEMENTS**



- **PBN**
- **CDO**
- **RVSM**
- **FUA**
- **ETC.**

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**IFSET**



- **ICAO FUEL SAVINGS ESTIMATION TOOL**
  - Simple to use and scientific defensible
- States will begin reporting on fuel savings from operational improvements in 2012.
- Not all States have the ability to quantify these savings.

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## IFSET – WHAT IT DOES



- Allows those States without modelling and/or measurement capabilities to estimate fuel savings from operational improvements.
- Consistent with CAEP-approved GHG models.
- Consistent with Global Air Navigation Plan.
- Easy-to-use / minimal data requirements.

## IFSET – WHAT IT DOES (Cont.)



- The tool can estimate:
  - Effects of shortening / eliminating level segments on departure and arrival.
  - Effects of shorter routes (either in time or distance).
  - Effects of cruising at different altitudes.
  - Effects of reduced taxi times.

## IFSET – WHAT IT DOES NOT



- **The tool does not replace detailed modelling or measurement of fuel consumption already available in a State.**

## IFSET – HOW IT WORKS



- Pre-compute aircraft performance
  - Level, climb and descent fuel consumption
  - By group of aircraft type
  - In 1000 foot intervals

## IFSET – HOW IT WORKS – USER INPUT



- Fleet mix defined for baseline and post-implementation scenario
  - Aircraft type (generic or specific) [under discussion]
  - “Remaining flight distance”(as a surrogate for weight)
- User selects “elements” to define the baseline and “new” procedure
- Tool estimates the change in total fuel consumption between the 2 scenarios

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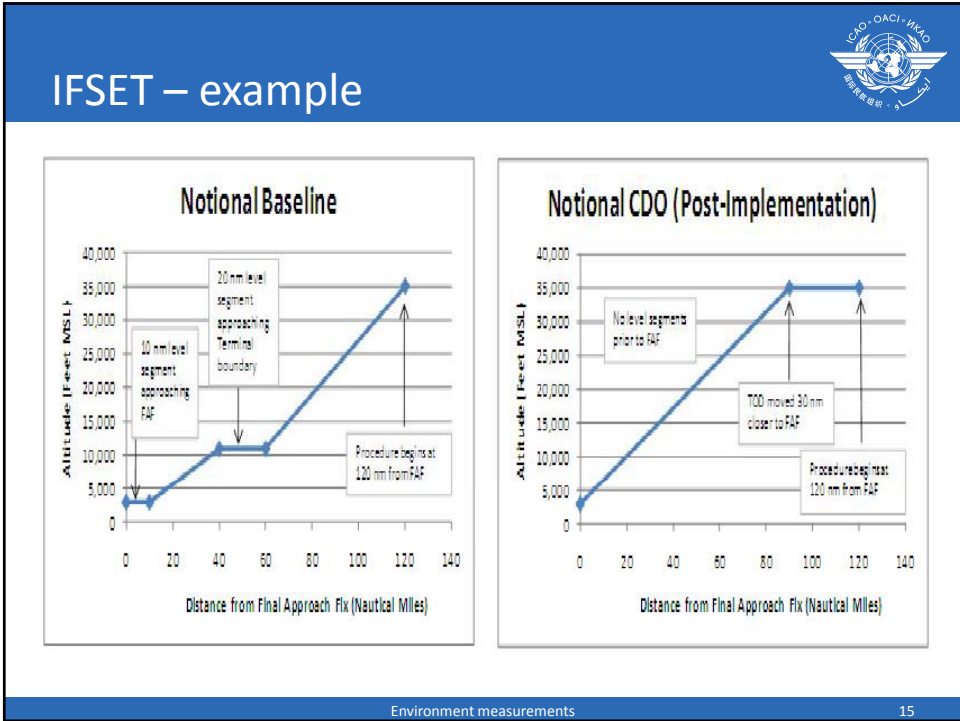
## IFSET – SCHEDULE



- **June 2011** – ICAO begins making available to States via PIRGs.
- **January 2012** – States begin reporting fuel savings.


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- IFSET – example**
- Fleet mix
    - Single aisle: 10 operations
    - Twin aisle: 10 operations
    - All 130 nm “distance remaining”
  - IFSET
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## SUMMARY

- KPA
- ASSEMBLY RESOLUTION
- OPERATIONAL IMPROVEMENTS
- IFSET

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## Measurement of environmental benefits

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THANK YOU

QUESTIONS?