



INTERNATIONAL CIVIL AVIATION ORGANIZATION

A United Nations Specialized Agency

ASBU/SIP/LIMA/2013-WP/17

ASBUs Environmental impact

SAM Regional office

Key Performance Area Environment



ATM Operational Concept :

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.

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.
- Requests ICAO to develop the necessary tools to assess the benefits associated with ATM improvements

Operational Improvements

- Following operational improvements results in reduced fuel burn consequently mitigating impact on environment
 - PBN
 - CDO
 - CCO
 - RVSM
 - FUA

A tool to estimate environmental benefits

IFSET



- **ICAO Fuel Savings Estimation Tool**
 - Simple to use and scientific defensible
 - States will report on fuel savings from operational improvements
 - Allows those States without modelling and/or measurement capabilities to estimate fuel savings from operational improvements.
 - Consistent with CAEP-endorsed GHG models.
 - Consistent with Global Air Navigation Plan.
 - Minimal data requirements.

IFSET – What it does



- 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.
- 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

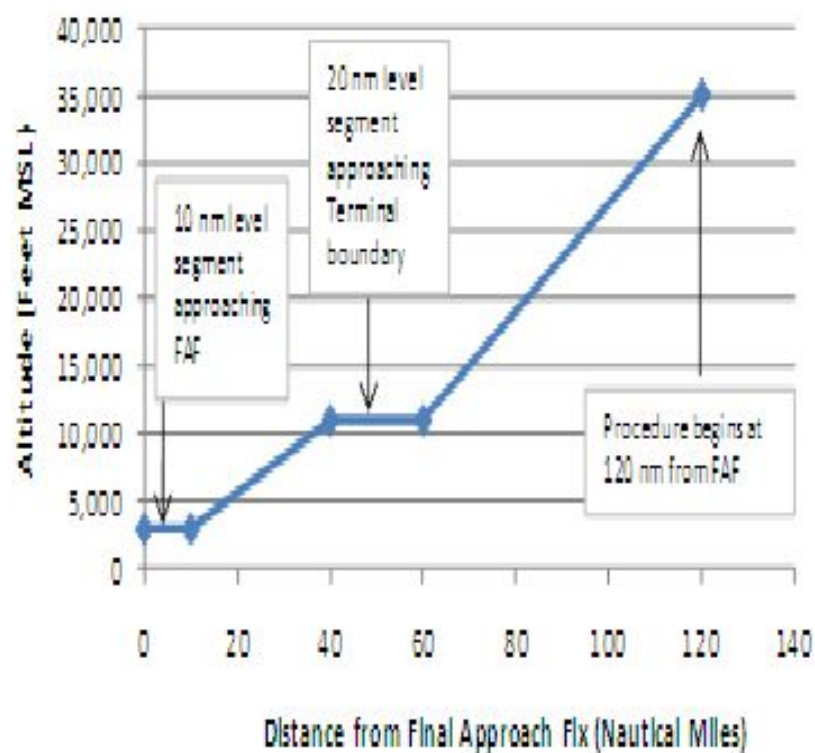
IFSET – User input

- Fleet mix defined for baseline and post-implementation scenario
 - Aircraft type group
 - “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

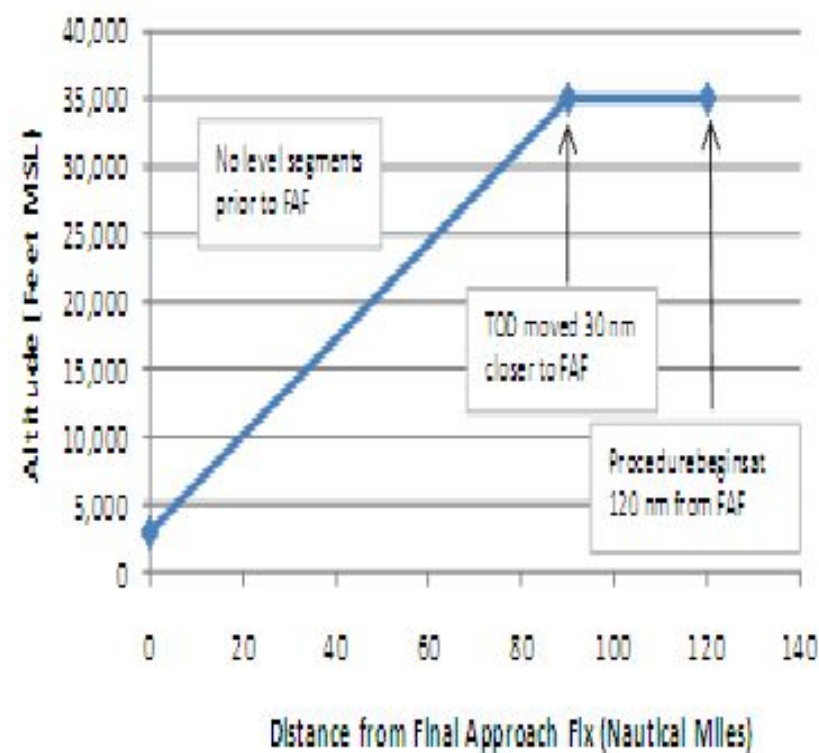
IFSET – example



Notional Baseline



Notional CDO (Post-Implementation)



Download IFSET



- Go to : <http://www.icao.int/environmental-protection/Pages/Tools.aspx>
- Scroll to the bottom and download the IFSET



ICAO Fuel Savings Estimation Tool

Operational measures are one of the instruments available to States to improve fuel efficiency and reduce CO₂ emissions. The ICAO Fuel Savings Estimation Tool (IFSET) has been developed by the Secretariat with support from States and international organizations to assist the States to estimate fuel savings in a manner consistent with the models approved by CAEP and aligned with the Global Air Navigation Plan.

The ICAO Fuel Savings Estimation Tool (IFSET) 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 without such facilities to estimate the benefits from operational improvements in a harmonized way.

Access the files here: [IFSET](#) (requires Microsoft Windows XP or newer) and the [IFSET User Guide](#).



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Thank You