Introduction to the ICAO Fuel Savings Estimation Tool

IFSET

Overview

- BACKGROUND
- KPA
- IFSET
- SUMMARY
- QUESTIONS/OBSERVATIONS

Background

- **Need by States to compute the fuel savings from operational improvements**
- **Previous ICAO guidance - Rules of Thumb (2006)**
  - Avg. fuel burn per minute
  - Avg. fuel burn per nautical mile
  - Avg. fuel burn per change in flight level

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.

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
- Easy-to-use / minimal data requirements
- Better than the Rules of Thumb

IFSET-What it Does (cont.)

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

IFSET-What it Doesn't Do

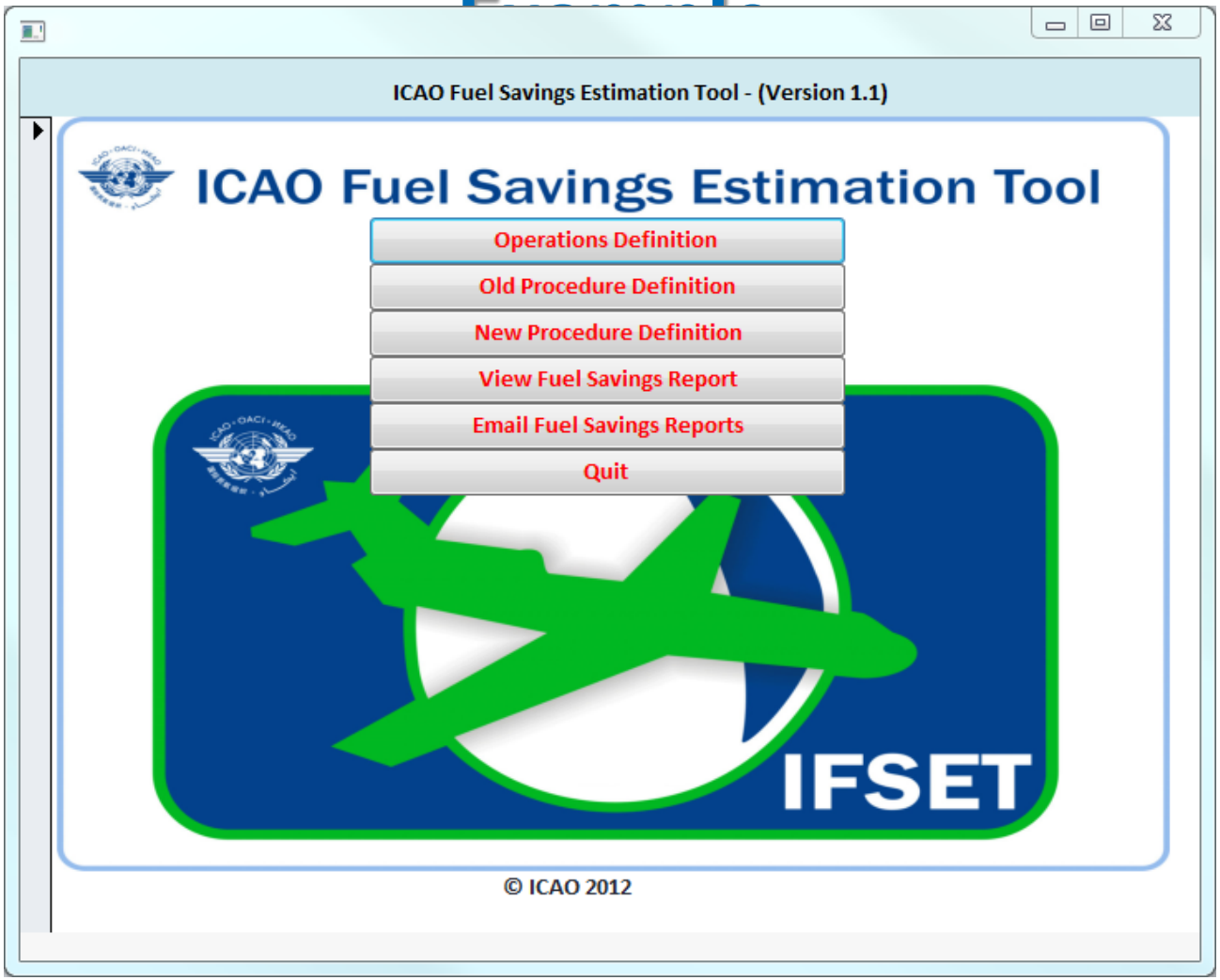
- **The tool does not:**
  - Replace detailed modelling or measurement of fuel consumption
  - Estimate fuel consumption from airborne holding
  - Compute emissions

How it Works: Underlying Data

- **CAEP-approved GHG model used to pre-compute**
  - Level, (steady state) climb, and (steady state) descent fuel consumption
  - By aircraft category
  - In 1,000 foot intervals

How it Works: 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**


ICAO Fuel Savings Estimation Tool - (Version 1.1)
ICAO Fuel Savings Estimation Tool
Operations Definition
Old Procedure Definition
New Procedure Definition
View Fuel Savings Report
Email Fuel Savings Reports
Quit
IFSET
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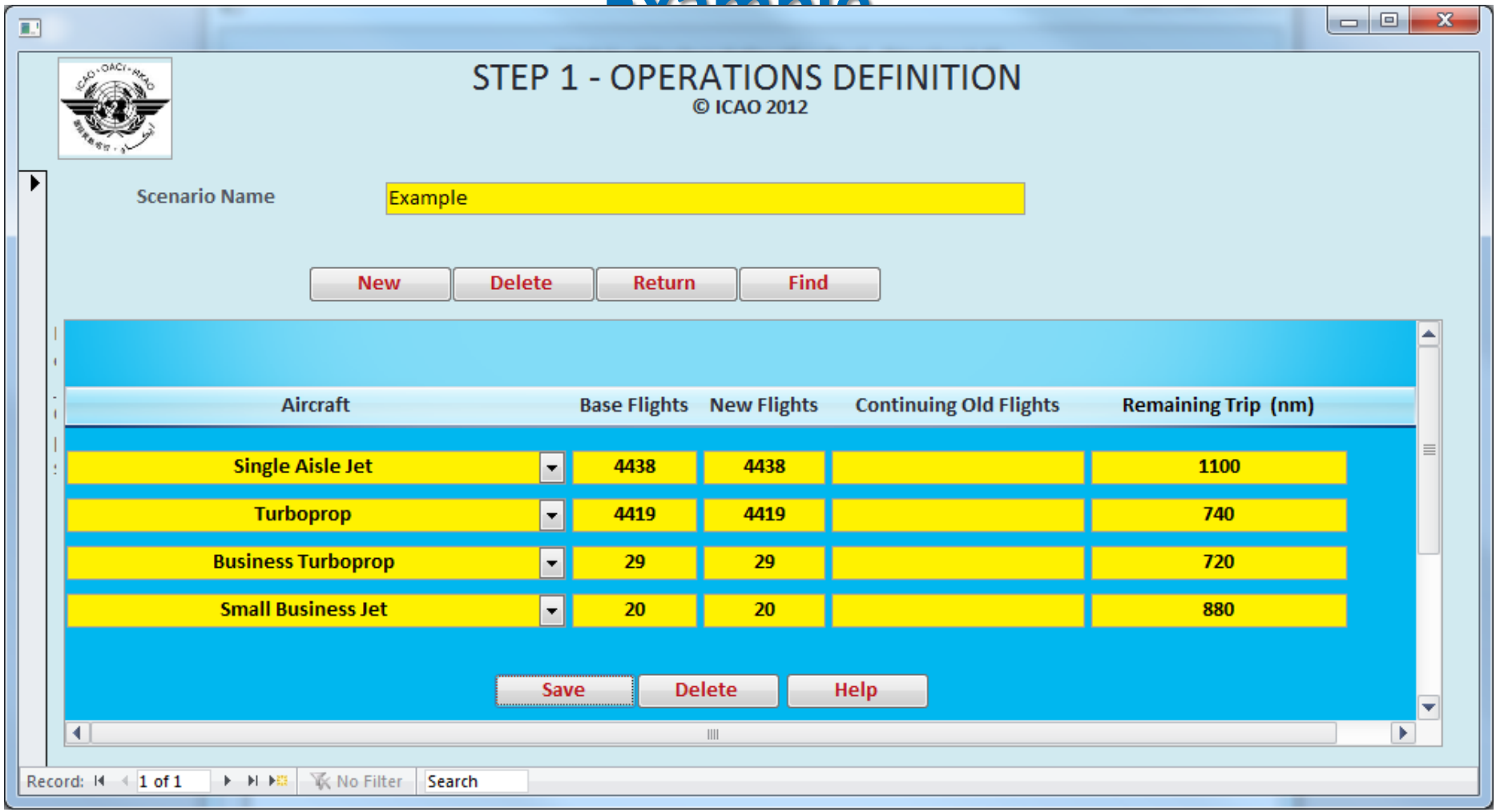
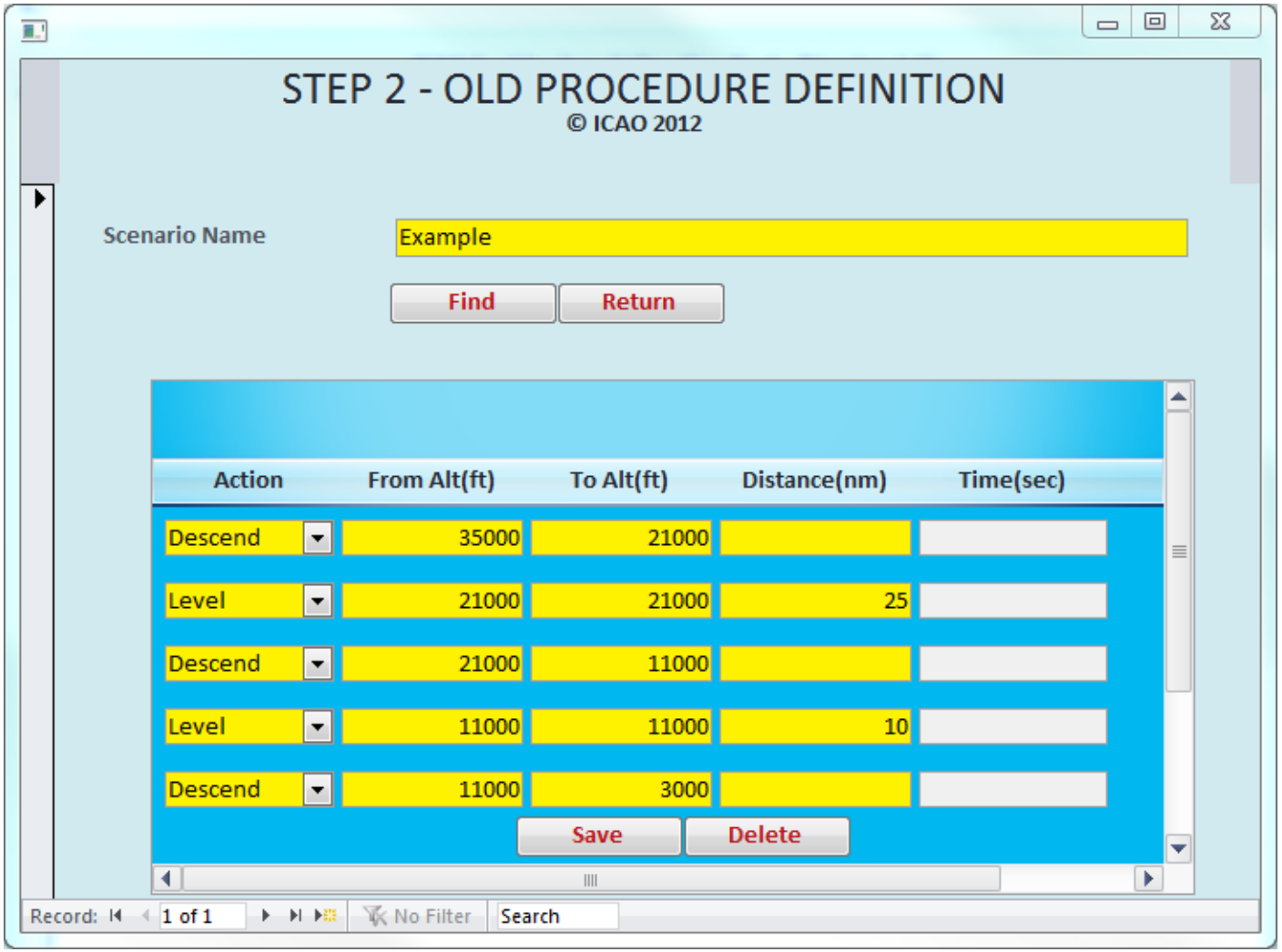
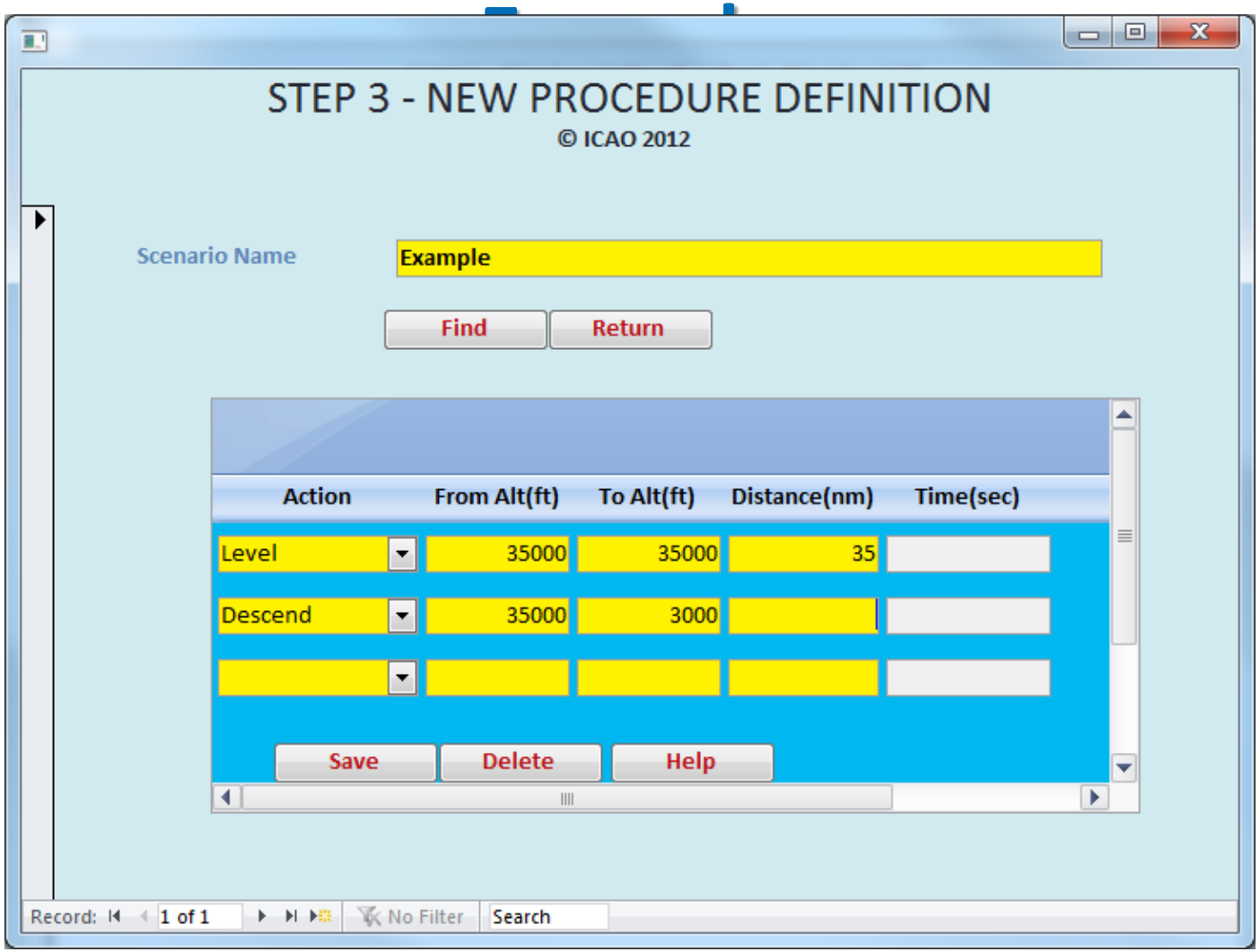
Example



Example




STEP 3 - NEW PROCEDURE DEFINITION
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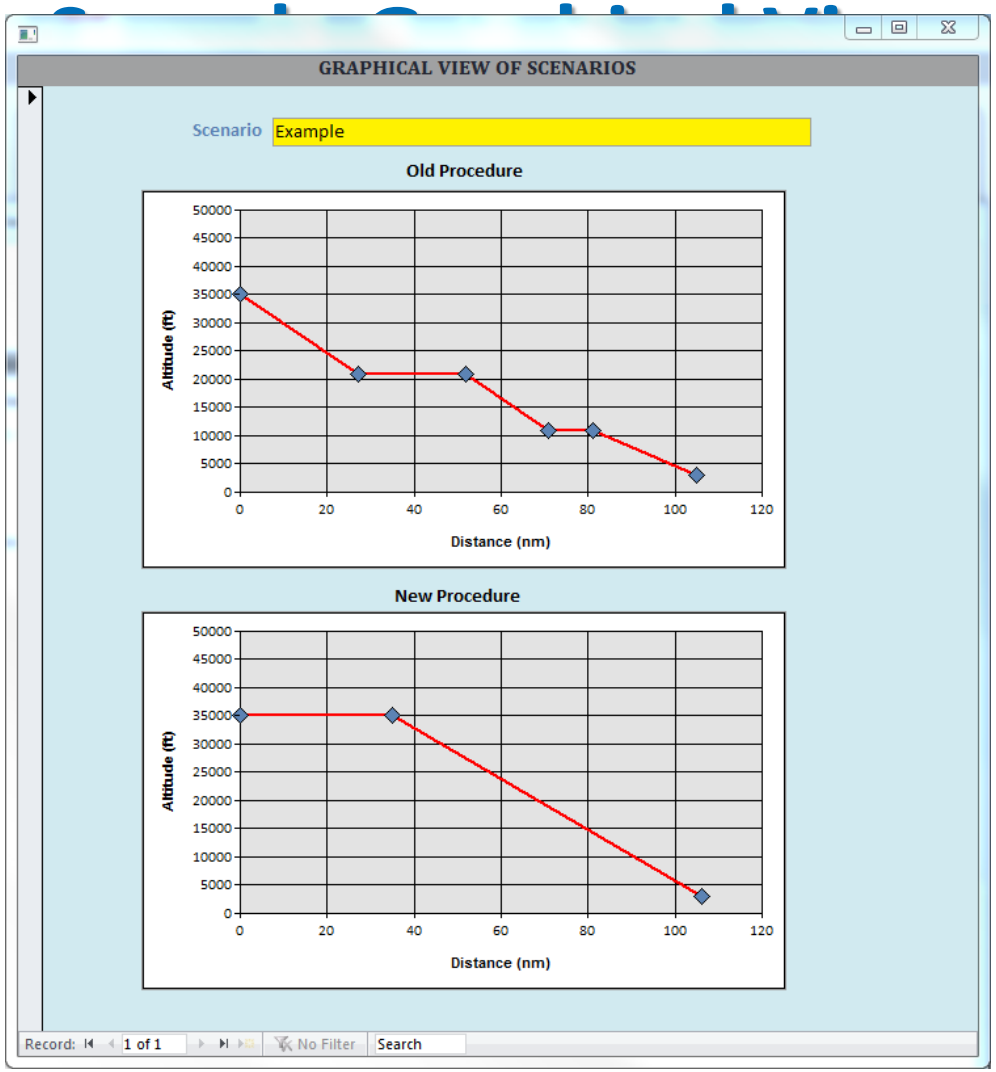
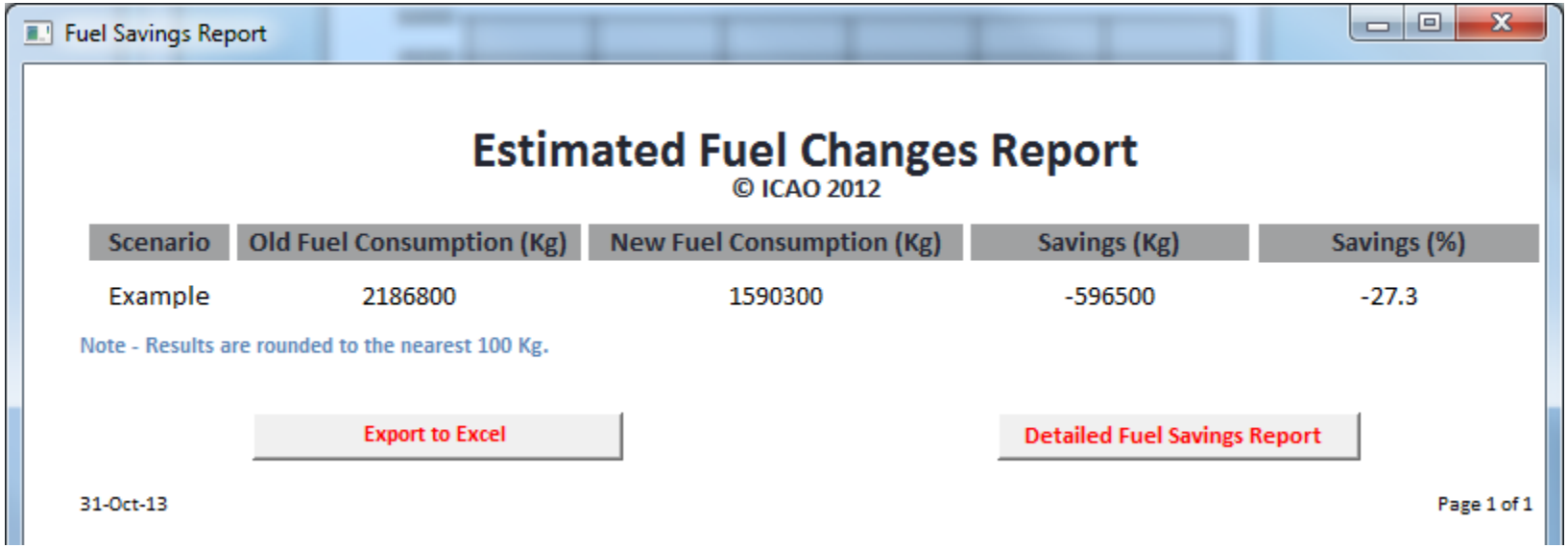
Scenario Name
Example
Find
Return
Action
From Alt(ft)
To Alt(ft)
Distance(nm)
Time(sec)
Level
35000
35000
35
Descend
35000
3000
Save
Delete
Help
Record:
1 of 1
No Filter
Search


GRAPHICAL VIEW OF SCENARIOS
Scenario
Example
Old Procedure
Attitude (ft)
Distance (nm)
New Procedure
Attitude (ft)
Distance (nm)
Record:
1 of 1
No Filter
Search

Example Results



Publicly Available

- All of the ICAO tools are available to the public from www.icao.int/env (click the "tools" button)

- Try them out for yourself!
- IFSET

THANK YOU