



*International Civil Aviation Organization*

**Middle East Air Navigation Planning and  
Implementation Regional Group (MIDANPIRG)**

**Fourteenth Meeting**  
*(Jeddah, Saudi Arabia, 15-19 December 2013)*

---

**Agenda Item 4: Performance Framework for Regional Air Navigation Planning and  
Implementation:**  
**4.6 CNS/ATM**

OUTCOME OF ATMM TF/1

*(Presented by the Secretariat)*

**SUMMARY**

This paper presents the outcome of the First Meeting of the ATM Measurement Task Force as reviewed by the CNS/ATM/IC SG/7 meeting.

Action by the meeting is at paragraph 3.

**REFERENCES**

- ATMM TF/1 Report
- CNS/ATM/IC SG/7 Report

**1. INTRODUCTION**

1.1 The meeting may wish to note that the 38<sup>th</sup> Session of the ICAO Assembly resolved through Resolution A38-18 (bullet 5) that States and relevant organizations will work through ICAO 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, calculated on the basis of volume of fuel used per revenue tonnes kilometre performed.

1.2 The First Meeting of Air Traffic Management-Measurement Task Force (ATMM TF/1) was held at ICAO Middle East Regional Office in Cairo, Egypt, 8-9 September 2013.

1.3 The meeting was attended by a total of Fifteen (15) participants, including experts from Five (5) States (Bahrain, Egypt, Jordan, Kuwait and Saudi Arabia).

**2. DISCUSSION**

2.1 The meeting may wish to recall that Operational improvements are a key strategy that can be applied to deliver tangible reductions in aircraft fuel consumption. The Global Air Navigation Plan (Doc 9750) and the Operational Opportunities to Minimize Fuel Use and Reduce Emissions (Circular 303) are among several documents providing guidance regarding operational improvements being implemented to improve efficiency of the ATM System.

2.2 Implementation of operational improvements will 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 The meeting may wish to note that ICAO Fuel Savings Estimation Tool (IFSET) was developed to assist States to estimate and report fuel savings consistently with the models approved by ICAO's Committee on Aviation Environmental Protection (CAEP) and aligned with the Global Air Navigation Plan.

2.4 The IFSET, as well as instructions on its use, can be accessed at: <http://www.icao.int/environmental-protection/Pages/Tools.aspx>. It was highlighted that ICAO is committed to update the tool based on the feedback received from all stakeholders. In this respect, the meeting noted the feedback provided by Egypt.

2.5 The CNS/ATM/IC SG/7 meeting noted with concern that only Egypt sent an IFSET Report to the ICAO MID Regional Office, in accordance with MIDANPIRG Conclusion 13/35. Accordingly, the meeting endorsed the following Draft Conclusion emanating from the ATMM TF/1 meeting, to replace and supersede the MIDANPIRG Conclusion 13/35:

<b>Why</b>	To estimate Environmental benefits
<b>What</b>	State Letter / Identification of Operational improvements, collection of data, sending of IFSET Reports to ICAO MID Regional Office
<b>Who</b>	ICAO MID Office / States and IATA
<b>When</b>	February 2014 / 15 October 2014

***DRAFT CONCLUSION 7/6: ESTIMATING ENVIRONMENTAL BENEFITS***

*That, in order to follow-up the implementation of the ATM operational improvements and estimate the fuel savings accrued from the corresponding improvements on regional basis:*

*a) States be urged to:*

- i) identify the operational improvements which have been implemented within their FIR and/or international aerodromes;*
- ii) collect necessary data for the estimation of the environmental benefits accrued from the identified operational improvements;*
- iii) use IFSET to estimate the environmental benefits accrued from operational improvements; and*
- iv) send the IFSET reports/the accrued environmental benefits to ICAO on bi-annual basis; and*

*b) IATA to:*

- i) encourage users to support the ATM-M TF in the development of the MID Region Air Navigation Environmental Reports; and*

- ii) *consolidate users' inputs and report the accrued environmental benefits to the ICAO MID Regional Office on bi-annual basis.*

2.6 The meeting may wish to note that Egypt shared their experience including the detailed IFSET User Manual (Arabic version), which was distributed to the ATMM TF/1 participants.

2.7 The meeting emphasized that what is required is an **estimation** of the environmental benefits accrued from **implemented** operational improvements and not the determination of the exact amount of fuel saving or CO<sub>2</sub> Emission, which would require more advanced model/tool to capture all the operational elements needed to calculate the environment benefits.

2.8 The meeting noted with concern the difficulties related to the collection/provision of required data for the generation of the IFSET reports such as the number of movements for the old and new scenarios, aircraft categories, Flight Levels and the reporting frequency/period. The meeting underlined that coordination between the different Departments/Units within the States is very important for the generation of more realistic estimation of Fuel Savings reports.

2.9 The meeting questioned about the period to be used for the development of the IFSET reports (i.e: previous year, 2 years, 5 years, etc) as well as the format of the Regional Air Navigation Environmental Report and recognized that if the period was to be just 1 year, this might limit the number of implemented operational benefits. Accordingly, the meeting agreed that for the First MID Air Navigation Environmental Report, the following periods would be considered as follows:

- a) 2009-2011 (just a listing of the operational improvements which have been implemented during this period and which had environmental benefits);
- b) 2012-2013: period to be used for the generation of the First Regional IFSET Report; and
- c) 2014 and beyond (listing of planned operational improvements which will have environmental benefits).

2.10 The meeting emphasized that future ATM plans should consider the environmental benefits and urged States to inform the ICAO MID Regional Office of all initiatives/programmes which will have positive impact on the environment.

2.11 The meeting agreed that the implementation of new instrument approach procedures at the following Aerodromes/RWYs are to be considered by States when planning for future operational improvements

- Alexandria/Borg El-Arab Intl (HEBA), RWY 14;
- Shiraz/Shahid Dastghaib INTL (OISS), RWYs 11L and 11R
- Al Najaf (ORNI), RWY 10;
- Tripoli INTL (HLLT), RWY 09; and
- Benghazi/Benina INTL (HLLB), RWYs 15R and 33L

2.12 It was highlighted that the first meeting of the ATMM TF provided an opportunity to improve the understanding of the requirements and assigned tasks to the ATMM TF, as well as a forum to share experience and to practice the IFSET.

2.13 The CNS/ATM/IC SG/7 meeting noted that the First MID Region IFSET Report consolidated by the Secretariat and presented to the meeting included only two operational improvements from Egypt. Accordingly, the meeting urged States to provide their IFSET Reports/Inputs related to the operational improvements to the ICAO MID Regional Office before **15 November 2013**, in order for the Secretariat to consolidate the First MID Air Navigation Environmental Report for presentation to MIDANPIRG/14.

2.14 Based on the inputs received from Bahrain, Egypt, Jordan, Lebanon, Kuwait, Saudi Arabia and UAE, the First MID Air Navigation Environmental Report was consolidated as at **Appendix A** to this working paper.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) endorse, as appropriate, the Draft Conclusion in para 2.5;
- b) urge concerned States to implement the user requirements in para 2.11;
- c) endorse the First MID Air Navigation Environmental Report at **Appendix A**; and
- d) encourage States to organise at national level workshops related to the estimation of environmental benefits accrued for operational improvements with the support of ICAO and other interested stakeholders.

-----

**APPENDIX A**



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**THE MIDDLE EAST AIR NAVIGATION PLANNING  
AND IMPLEMENTATION REGIONAL GROUP  
(MIDANPIRG)**

**FIRST MID REGION AIR NAVIGATION  
ENVIRONMENTAL REPORT**

*(December 2013)*

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontier or boundaries.

## TABLE OF CONTENTS

<b>INTRODUCTION</b>	2
1. Background	2
2. Icao Fuel Savings Estimation Tool (IFSET)	2
<b>PART I – LIST OF OPERATIONAL IMPROVEMENTS IMPLEMENTED DURING YEAR 2009-2011</b>	4
TABLE I-1: Implemented Operational Improvements 2009-2011	4
<b>PART II - OPERATIONAL IMPROVEMENTS IMPLEMENTED DURING YEAR 2012-2013</b>	6
TABLE II-1: Identified Operational Improvements 2012-2013	6
TABLE II-2: IFSET Report	9
<b>PART III – STATES’ PLANNED OPERATIONAL IMPROVEMENTS FOR YEAR 2014 AND BEYOND</b>	13
TABLE III-1: Planned Operational Improvements 2014 and beyond	13

-----

## INTRODUCTION

### 1. BACKGROUND

1.1 The Operational improvements are a key strategy that can be applied to deliver tangible reductions in aircraft fuel consumption. The Global Air Navigation Plan (Doc 9750) and the Operational Opportunities to Minimize Fuel Use and Reduce Emissions (Circular 303) are among several documents providing guidance regarding operational improvements being implemented to improve efficiency of the ATM System.

1.2 Implementation of operational improvements will 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.

1.3 Environmental Protection represents one of the ICAO strategic objectives. It was highlighted in this respect that ICAO is introducing regional 'Performance Dashboard' homepages for every public website of the ICAO Regional Offices. These dashboards will illustrate the regional implementation status relating to the strategic objectives on Safety, Air Navigation Capacity and Efficiency, and Environmental Protection. The first Air Navigation Report is expected to be released in March 2014.

1.4 The 38<sup>th</sup> Session of the ICAO Assembly resolved through Resolution A38-18 (bullet 5) that States and relevant organizations will work through ICAO 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, calculated on the basis of volume of fuel used per revenue tonnes kilometre performed.

### 2. ICAO FUEL SAVINGS ESTIMATION TOOL (IFSET)

2.1. The ICAO Fuel Savings Estimation Tool (IFSET) was developed to assist States to estimate and report fuel savings consistently with the models approved by ICAO's Committee on Aviation Environmental Protection (CAEP) and aligned with the Global Air Navigation Plan.

2.2. The IFSET, as well as instructions on its use, can be accessed at: <http://www.icao.int/environmental-protection/Pages/Tools.aspx>.

2.3. It is to be highlighted that what is required is an **estimation** of the environmental benefits accrued from **implemented** operational improvements and not the determination of the exact amount of fuel saving or CO<sub>2</sub> emission, which would require more advanced model/tool to capture all the operational elements needed to calculate the environment benefits.

2.4. MIDANPIRG mandated the reporting of the operational improvements in the MID Region through MIDANPIRG/13 Conclusion 13/35, as follows:

*CONCLUSION 13/35: ESTIMATING ENVIRONMENT BENEFITS*

*That, in order to allow the Air Traffic Management Measurement Task Force (ATMM TF) and the CNS/ATM/IC SG to follow-up the implementation of the ATM operational improvements and estimate the fuel savings accrued from the corresponding improvements on regional basis:*

- a) *States be urged to:*
  - i) *use IFSET or a more advanced model/measurement capability available to estimate environment benefits accrued from operational improvements;*
  - ii) *send the IFSET reports/the accrued environmental benefits to ICAO MID Regional office on a bi-annual basis.*
- b) *IATA to:*
  - i) *encourage users to support the programme; and*
  - ii) *consolidate users' inputs and report the accrued environmental benefits to ICAO MID Regional Office on a bi-annual basis.*

2.5. The first meeting of Air Traffic Management-Measurement Task force (ATMM TF/1) held at the ICAO Middle East Regional Office in Cairo, Egypt, 8-9 September 2013 agreed that the operational improvements be reported in three Parts as follows:

- a) 2009-2011 just a listing of the operational improvements which have been implemented during this period and which had environmental benefits, as at **Part I, Table I-1**;
- b) 2012-2013: period used for the generation of the first regional IFSET report as at **Part II, Table II-1** and **Table II-2**; and
- c) 2014 and beyond listing of planned operational improvements which will have environmental benefits, as at **Part III, Table III-1**.

2.6. This Report has been prepared based on the inputs received from Bahrain, Egypt, Jordan, Lebanon, Kuwait, Saudi Arabia and UAE.

**PART I – LIST OF OPERATIONAL IMPROVEMENTS IMPLEMENTED DURING YEAR 2009-2011**

**TABLE I-1: IMPLEMENTED OPERATIONAL IMPROVEMENTS 2009-2011**

State	Implemented Operational Improvements 2009-2011	Remarks
Bahrain	<ol style="list-style-type: none"> <li>1- New Eastern Apron established for 9 code E aircraft or 19 code C. This apron Ramp services are all underground such as APU etc.</li> <li>2- Reducing the final approach separation to 3NM, due to newly established rapid. TWY D.</li> <li>3- Using EUROCAT system.</li> <li>4- New ATS &amp; NOTAM Management System Installed and operational.</li> <li>5- eAIP is available on Web.</li> <li>6- Full Airport aeronautical Survey was done up to annex 15 Ch 10 requirements.</li> <li>7- ISO 9001:2008 certified.</li> <li>8- New VISALA automatic weather observation system (Aerodrome station).</li> <li>9- New weather radar system.</li> <li>10- Climate database upgrade CLDB.</li> <li>11- Terminal area forecast TAF verification.</li> <li>12- New messages switch (Moving Weather).</li> <li>13- Competency Assessment System for Aeronautical Meteorological Personnel (CAS).</li> <li>14- Radar winds and temperature profiler system.</li> <li>15- First weather radar link interface between Bahrain and UAE.</li> <li>16- New VISALA automatic weather observation system Backup (Aerodrome station).</li> </ol>	
Egypt	<ol style="list-style-type: none"> <li>1- Ban of air traffic over Sidi Krair and P18 &amp; P19 is cancelled</li> <li>2- Ban of air traffic over Ras El Hekma P20 is cancelled.</li> <li>3- Ban of air traffic between FYM &amp; CVO via R778 is partially suspended.</li> <li>4- Restrictions regarding landing on 05L and departure on 23R are cancelled</li> <li>5- Establishing route Q680 between DBA &amp; SALUN</li> <li>6- Traffic between Cairo and Arish via V602-ISM-V606 is permitted.</li> <li>7- Establishing route L315 between CVO &amp; HGD</li> </ol>	
Iran		
Iraq	<ol style="list-style-type: none"> <li>1- RVSM Implementation</li> <li>2- implementation of ATS route UP975 to increase the traffic flow capacity from Turkey to the Gulf through Baghdad FIR.</li> </ol>	
Jordan	<ol style="list-style-type: none"> <li>1- METSA- MAZAR-ZELAF (UM690)</li> <li>2- GRY-BUSRA-DAM (G662)</li> <li>3- ZELAF DCT QAA (A412)</li> <li>4- GRY DCT QAA (UN318)</li> </ol>	

Kuwait	SIDs and STARs implementation	
Lebanon	RNAV STARs implementation	
Libya	New ATS Routes Implemented	
Oman		
Qatar		
Saudi Arabia		
Sudan		
Syria		
UAE	RNAV1/5 SID/STARs, PBN routes	
Yemen		

**PART II - OPERATIONAL IMPROVEMENTS IMPLEMENTED DURING YEAR 2012-2013**

**Table II-1: Identified Operational Improvements 2012-2013**

<b>State</b>	<b>Identified Operational Improvements 2012-2013</b>	<b>Nr. of Movements Per Month</b>	<b>Total Fuel Saving Per Month</b>
<b>Bahrain</b>	UM677	3418	
	UP975	3802	
	UL602	1047	
	UL768	700	
	UP699	399	
	UN318	991	
	UP559	993	
<b>Egypt</b>	NABED-KATAB (T55)	1800	396000
	TBA-NWB-KITOT (UL550-N697) via Saudi Arabia	1170	330000
<b>Iran</b>			
<b>Iraq</b>			
<b>Jordan</b>	End of 2013: Implementation of RNAV SIDs, STARs and Approach Procedures at OJAI, OJAM and OJAQ.	N/A	N/A
<b>Kuwait</b>	No Operational Improvement implemented		
<b>Lebanon</b>	No Operational Improvement implemented		
<b>Libya</b>			
<b>Oman</b>			

<b>Qatar</b>			
<b>Saudi Arabia</b>	UM449 ( )		
	UM318 ( )		
	UM863 ( )		
	UL564 ( )		
	UM430 (SALWA-HAS)		
	UL681 ( )		
	UP517 ( )		
	UL550 ( )		
	UB411 ( )		
	R652 ( )		
<b>Sudan</b>			
<b>Syria</b>			

<b>UAE</b>	L308	5343	
	P559	3720	
	M557	5865	
	N571	4448	
	P699	2340	
	N318	2389	
	L604 / N685	4041	
	L305	1049	
	Arrival Manager (AMAN) implemented (1 min flight time saved/arrival to OMDB)		
	RNP-AR STARS at Abu Dhabi and Al Bateen Airports		
<b>Yemen</b>			

**Table II-2: IFSET REPORT**

<b>BAHRAIN</b>												
<b>UM677</b>												
Aircraft	Baseline_Ops	MidProc_ops	NewProc_ops	ASL								
Twin Aisle Jet	3418	399	3019	3050								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
136	Level	29000	29000	289								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
60	Level	35000	35000	289								
Scenario	Old Climb Fuel in Kg	New Climb Fuel in Kg	Climb Savings in Kg	Old Descend Fuel in Kg	New Descend Fuel in Kg	Descend Savings in Kg	Old Level Fuel in Kg	New Level Fuel in Kg	Level Savings in Kg	Old Taxi Fuel in Kg	New Taxi Fuel in Kg	Taxi Savings in Kg
<b>UM677</b>	0	0	0	0	0	0	14331200	12592400	<b>-1738800</b>	0	0	0
<b>UP975</b>												
Aircraft	Baseline_Ops	MidProc_ops	NewProc_ops	ASL								
Twin Aisle Jet	3802	554	3248	3050								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
137	Level	29000	29000	159								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
61	Level	35000	35000	159								
Scenario	Old Climb Fuel in Kg	New Climb Fuel in Kg	Climb Savings in Kg	Old Descend Fuel in Kg	New Descend Fuel in Kg	Descend Savings in Kg	Old Level Fuel in Kg	New Level Fuel in Kg	Level Savings in Kg	Old Taxi Fuel in Kg	New Taxi Fuel in Kg	Taxi Savings in Kg
<b>UP975</b>	0	0	0	0	0	0	8770400	7741200	<b>-1029200</b>	0	0	0

**UL602**

Aircraft	Baseline_Ops	MidProc_ops	NewProc_ops	ASL								
Twin Aisle Jet	1047	382	665	3050								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
138	Level	29000	29000	278								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
62	Level	35000	35000	278								
Scenario	Old Climb Fuel in Kg	New Climb Fuel in Kg	Climb Savings in Kg	Old Descend Fuel in Kg	New Descend Fuel in Kg	Descend Savings in Kg	Old Level Fuel in Kg	New Level Fuel in Kg	Level Savings in Kg	Old Taxi Fuel in Kg	New Taxi Fuel in Kg	Taxi Savings in Kg
<b>UL602</b>	0	0	0	0	0	0	4222800	3854400	<b>-368400</b>	0	0	0

**UL768**

Aircraft	Baseline_Ops	MidProc_ops	NewProc_ops	ASL								
Twin Aisle Jet	700	230	470	3050								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
139	Level	29000	29000	312								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
63	Level	35000	35000	312								
Scenario	Old Climb Fuel in Kg	New Climb Fuel in Kg	Climb Savings in Kg	Old Descend Fuel in Kg	New Descend Fuel in Kg	Descend Savings in Kg	Old Level Fuel in Kg	New Level Fuel in Kg	Level Savings in Kg	Old Taxi Fuel in Kg	New Taxi Fuel in Kg	Taxi Savings in Kg
<b>UL768</b>	0	0	0	0	0	0	3168600	2876300	<b>-292300</b>	0	0	0

**UP699**

Aircraft	Baseline_Ops	MidProc_ops	NewProc_ops	ASL								
Twin Aisle Jet	399	99	300	3050								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
140	Level	29000	29000	178								
ID	Action	Frm_Alt	To_Alt	ASL	Time							

64	Level	35000	35000	178								
Scenario	Old Climb Fuel in Kg	New Climb Fuel in Kg	Climb Savings in Kg	Old Descend Fuel in Kg	New Descend Fuel in Kg	Descend Savings in Kg	Old Level Fuel in Kg	New Level Fuel in Kg	Level Savings in Kg	Old Taxi Fuel in Kg	New Taxi Fuel in Kg	Taxi Savings in Kg
<b>UP699</b>	0	0	0	0	0	0	1030400	924000	<b>-106400</b>	0	0	0
<b>UN318</b>												
Aircraft	Baseline_Ops	MidProc_ops	NewProc_ops	ASL								
Twin Aisle Jet	991	36	955	3050								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
141	Level	29000	29000	403								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
65	Level	35000	35000	403								
Scenario	Old Climb Fuel in Kg	New Climb Fuel in Kg	Climb Savings in Kg	Old Descend Fuel in Kg	New Descend Fuel in Kg	Descend Savings in Kg	Old Level Fuel in Kg	New Level Fuel in Kg	Level Savings in Kg	Old Taxi Fuel in Kg	New Taxi Fuel in Kg	Taxi Savings in Kg
<b>UN318</b>	0	0	0	0	0	0	5794200	5027200	<b>-767000</b>	0	0	0
<b>UP559</b>												
Aircraft	Baseline_Ops	MidProc_ops	NewProc_ops	ASL								
Twin Aisle Jet	993	11	983	3050								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
142	Level	29000	29000	426								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
66	Level	35000	35000	426								
Scenario	Old Climb Fuel in Kg	New Climb Fuel in Kg	Climb Savings in Kg	Old Descend Fuel in Kg	New Descend Fuel in Kg	Descend Savings in Kg	Old Level Fuel in Kg	New Level Fuel in Kg	Level Savings in Kg	Old Taxi Fuel in Kg	New Taxi Fuel in Kg	Taxi Savings in Kg
<b>UP559</b>	0	0	0	0	0	0	6137200	5308900	<b>-828300</b>	0	0	0
<b>EGYPT</b>												

**NADEB-KATAB (T55)**

Aircraft	Baseline_Ops	MidProc_ops	NewProc_ops	ASL								
Single Aisle Jet	1800	150	1650	3050								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
143	Level	24000	24000	245								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
67	Level	28000	28000	212								
Scenario	Old Climb Fuel in Kg	New Climb Fuel in Kg	Climb Savings in Kg	Old Descend Fuel in Kg	New Descend Fuel in Kg	Descend Savings in Kg	Old Level Fuel in Kg	New Level Fuel in Kg	Level Savings in Kg	Old Taxi Fuel in Kg	New Taxi Fuel in Kg	Taxi Savings in Kg
<b>NADEB-KATAB (T55)</b>	0	0	0	0	0	0	3187200	2490000	<b>-697200</b>	0	0	0

**TBA-NWB-KITOT (IL550-N697)**

Aircraft	Baseline_Ops	MidProc_ops	NewProc_ops	ASL								
Twin Aisle Jet	1170	30	1140	3050								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
144	Level	33000	33000	62								
ID	Action	Frm_Alt	To_Alt	ASL	Time							
68	Level	33000	33000	41								
Scenario	Old Climb Fuel in Kg	New Climb Fuel in Kg	Climb Savings in Kg	Old Descend Fuel in Kg	New Descend Fuel in Kg	Descend Savings in Kg	Old Level Fuel in Kg	New Level Fuel in Kg	Level Savings in Kg	Old Taxi Fuel in Kg	New Taxi Fuel in Kg	Taxi Savings in Kg
<b>TBA-NWB-KITOT (IL550-N697)</b>	0	0	0	0	0	0	949800	636400	<b>-313400</b>	0	0	0

**PART III – STATES’ PLANNED OPERATIONAL IMPROVEMENTS FOR YEAR 2014 AND BEYOND**

**TABLE III-1: PLANNED OPERATIONAL IMPROVEMENTS FOR YEAR 2014 AND BEYOND**

State	Planned Operational Improvements for year 2014 and beyond	Planned Year	Remarks
<b>Bahrain</b>	<ol style="list-style-type: none"> <li>1- RNAV1 SIDs and STARs.</li> <li>2- Introducing new RNAV1 AWYs with Kuwait FIR.</li> <li>3- Installation of Ground radar which will be used during CAT 2 operations and during LVP.</li> <li>4- We are planning for ASMGCS for the TWR to be used at the airport.</li> <li>5- DCL system in test.</li> <li>6- Upgrading ILS CAT 1 to CAT 2. This is under study.</li> <li>7- Special producer for A380 handling at Bahrain airport.</li> <li>8- IAPs will be reviewed and republish to reflect the new Airport Survey results.</li> <li>9- We are planning to open Clearance Delivery Position (CDP) at the TWR to release TWR GMC workload and frequency congestions.</li> <li>10- Also, planning to have ADM 270 degree simulator to train them on all emergencies and different abnormal situations to enhance the efficiency of our TWR operations.</li> <li>11- New automatic weather observation system three stationary and one portable station for Bahrain.</li> <li>12- Second weather radar link interface between Bahrain, UAE and Kuwait.</li> <li>13- Third weather radar link interface between Bahrain, UAE, Kuwait and Riyadh.</li> <li>14- Fourth weather radar link interface between Bahrain, UAE, Kuwait, Riyadh and Oman.</li> <li>15- Link common meteorological system with other GCC in order to enhance the cooperation (Integrated GCC automatic weather observation system).</li> </ol>	2014	
<b>Egypt</b>	PBN Implementation at HECA	2016	
<b>Iran</b>			
<b>Iraq</b>	SIDs, STARs and RNAV Approach at ORBI	2014	
<b>Jordan</b>	<ol style="list-style-type: none"> <li>1- Airway between METSA and MDB</li> <li>2- Airway between PASIP and METSA</li> <li>3- Airway between PASIP and METSA</li> <li>4- Expansion of GNSS</li> </ol>	2014	
<b>Kuwait</b>			

<b>Lebanon</b>	1- Planning for shorter RNAV SIDs and STARs 2- Direct routing between boundary points for over flight traffic.		
<b>Libya</b>	SIDs, STARs at HLLT	2014	
<b>Oman</b>			
<b>Qatar</b>			
<b>Saudi Arabia</b>			
<b>Sudan</b>			
<b>Syria</b>			
<b>UAE</b>	<ol style="list-style-type: none"> <li>1. Advanced AMAN/DMAN</li> <li>2. PRISMA system updates additional ATS Routes Civil/Military cooperation</li> <li>3. Seamless ANS provision throughout the UAE</li> <li>4. PBN route structure throughout the UAE</li> <li>5. Flight procedures optimised for CCO/CDO</li> <li>6. Airport infrastructure that maximises throughput and minimises congestion</li> <li>7. Interoperable ATM systems in the UAE</li> <li>8. Cost effective service provision.</li> <li>9. ANSP facilities accommodate the needed number of operational positions, support equipment, and personnel.</li> <li>10. ATM systems have sufficient capacity and functional capability to meet operational needs.</li> <li>11. Sufficient capacity without routine delays.</li> <li>12. Stakeholders are afforded a collaborative active role.</li> <li>13. Aviation policy development.</li> <li>14. Strategic planning. Tactical decision making.</li> <li>15. Routine and frequent communications among stakeholders, ANSP, and governmental organisations.</li> <li>16. Best Capable – Best Served during peak periods.</li> <li>17. Ground-Based Augmentation System (GBAS) for major airports</li> </ol>	2014/2030	
<b>Yemen</b>			

- END -