



**Combined Fourth Meeting of Arabian Sea Indian Ocean ATS Coordination Group
ASIOACG/8 and Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE/4) –**

Melbourne, Australia 25th November – 29th November 2013

Agenda Item 11: Works program for 2014

INSPIRE ANSPs to adopt CCOs and CDOs as a policy

(Presented by IATA)

SUMMARY:

To align ATC practices and procedures meeting global best practices, this paper proposes INSPIRE to consider adopting CCOs and CDOs as a policy. This paper proposes to include it under INSPIRE work plan 2014.

1. INTRODUCTION

- 1.1 CCOs and CDOs assist in improving aircraft energy management that enhances safety as well as fuel efficiency.
- 1.2 This paper outlines estimates of CO2 emissions reductions associated with CCOs and CDOs.

2. DISCUSSION

- 2.1 ICAO ASBU describes CDOs and CCOs as elements under block 0.
- 2.2 Adopting CCOs and CDOs as a policy by INSPIRE, will help in developing program by ANSPs that includes:
 - a) Timely review of SIDs and STARs to that facilitates CCO, CDO profiles.
 - b) Removing hard coded altitudes for SIDs and STARs and replacing it with At or Above / At or Below altitudes.
 - c) Departures vertical profile and lateral paths to be optimized that can facilitate unrestricted climb profiles as much as possible.
 - d) Training of ATCOs on CCOs & CDOs facilitation.

2.3 Chart below illustrates examples of estimated Fuel Savings at various stages of flight:

Flight Phases	For	Fuel Savings* (Kg)			CO2 Emission Savings (Ton) per 100 Flights#
		Narrow Bodies	Wide Twins	Wide Tri's & Quads	
Taxi	5 Min	81	128	252	34
Climb	10NM	113	265	466	56
Cruise	10NM	48	96	175	22
Descent	10NM	40	29	50	12
App & Land	10NM	25	44	74	11

(* Fuel Figures based on IATA Infra Calculator-IEMS)

(# For Traffic mix of 70% Narrow body, 20% Wide Twins and 10% Wide Tri's & Quads)

2.4 Example below illustrates potential of Fuel savings following CDOs:

A/C Type	CDO		Non CDO			Estimated Fuel Savings* (Kg)
	DES Time (Min)	DES Fuel (Kg)	DES Time (Min)	Level Flying (Min)	DES Fuel(Kg)	
Narrow Bodies	22	298	10	15	679	381
Wide Twins	22	464	10	15	1429	965

(*Estimated Max possible savings per flight, based on IATA Infra Calculator-IEMS)

2.5 A case Study in India indicates following potential of achievable CO2 emissions reduction following CDOs for a typical Intl airport:

A/C Type	CDO Facilitated ARR/Day **	Fuel Savings (Kg)
Narrow Bodies	150	57150
Wide-Twins	75	72375
Total	225	129525
CO2 Emission Savings	Per Day	408 Tons
	Per Year	148,921 Tons

(**avg 40% flights outside rush hours that can be facilitated for CDOs to begin with)

2.6 The Case study in India also indicated that out of 3500daily movements out of 29 important airports (11Intl, 6JV, 12 Customs Apts); even if 25% flights gets efficiency enhancement, it has potential to reduce 500,000tons of CO2 emissions per year.

3. ACTION BY THE MEETING:

3.1 The meeting is invited to:

- a) Take note of the potential of CO2 emissions following CCOs and CDOs.
- b) Consider incorporating CCOs and CDOs as a policy for INSPIRE ANSPs.
- c) Consider incorporating it in to the work plan 2014 and identify airports.

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