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Email: caas_singaporeais@caas.gov.sgURL: www.caas.gov.sgURL: <https://aim-sg.caas.gov.sg>**AIP Supplement for
Singapore****AIRAC AIP SUP
102/2022****Effective from 08 SEP 2022****PERM****Published on 28 JUL 2022****IMPLEMENTATION OF DIRECT ROUTING OPERATIONS (DRO) FOR ARRIVALS
INTO SINGAPORE CHANGI AIRPORT ON ATS ROUTES L642 AND N892****1 INTRODUCTION**

1.1 This AIP Supplement informs aircraft operators on the implementation of Direct Routing Operations (DRO) for arriving aircraft into Singapore Changi Airport, **effective from 08 September 2022, 0000UTC**.

1.2 To enhance flight efficiency and reduce fuel burn for aircraft operators, DRO will be available for flight planning for arriving aircraft into Singapore Changi Airport on ATS routes L642 and N892.

2 APPLICABLE ROUTES AND FLIGHT PLANNING PROCEDURES

2.1 Direct routes are available on specified segments of ATS routes listed in paragraph 2.2. Arriving aircraft into Singapore Changi Airport operating at **FL290 to FL460** (inclusive) and entering Singapore FIR between **1400UTC and 2300UTC** shall flight plan using the direct routes.

2.2 List of ATS routes available for DRO:

Flight planning for ATS routes	Flight planning for DRO (1400UTC – 2300UTC)	Remarks
ESPOB Q801 ESBUM Q802 ELALO to join ELALO STAR	ESPOB DCT ELALO to join ELALO STAR	For Changi arrivals entering Singapore FIR via ATS route L642
MELAS N892 MABAL to join MABAL STAR	MELAS DCT MABAL to join MABAL STAR	For Changi arrivals entering Singapore FIR via ATS route N892

3 CANCELLATION

3.1 This AIP Supplement will remain current until the information is incorporated into AIP Singapore.

ATS Route L642 [Annex A-1](#)
ATS Route N892 [Annex A-2](#)

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Annex A-1

Route Designator {RNP Type}	[Route Usage Notes]					Remarks
Significant Point Name	Significant Point Coordinates		Upper limit Lower limit	FL series		Controlling unit Frequency {Airspace class} Remarks
{RNP Type}	Initial Track MAG ↓ ↑	Great Circle Dist NM		↓	↑	
1	2	3	4	5	6	7
L642	Route availability: (1) H24					
▲ ESPOB (VWHM/WSJC FIR BDRY)	070000N 1053318E					(7)
(10)		149.2NM	FL 460 FL 135			[Class A] (2) (3) (4)
▲ ENREP	045224N 1041442E					(8)
(10)		60.4NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (5)
▲ VEPLI	035223N 1040542E					(9)
(10)		33.0NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (5)
▲ EGOLO (WSJC/WMFC FIR BDRY)	031934N 1040047E					(10)
(10)		25.1NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (6)
▲ ROBMO	025440N 1035700E					(11)
(10)		31.6NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (6)
▲ MERSING DVOR/DME (VMR)	022318N 1035218E					
Route Remarks:						
Lateral Limits:						
10NM either side of line joining VMR DVOR/DME to EGOLO and 25NM either side of line joining EGOLO to ESPOB.						
Bi-directional between VMR and ENREP.						
Flight planning for Direct Routing Operations (DRO):						
Arriving aircraft into Changi Airport operating at FL290 to FL460 (inclusive) and entering Singapore FIR via ESPOB between 1400UTC and 2300UTC shall flight plan using the direct route ESPOB DCT ELALO.						
Point/Segment Remarks:						
(2) ADS-C service is available to suitably equipped aircraft operating outside radar cover (between ESPOB and ENREP) and not in the exclusive ADS-B airspace within Singapore FIR.						
(3) Uni-directional for southbound flights from ESPOB to ENREP. No PDC Flight Levels FL310, FL320, FL350, FL360, FL390, FL400 applicable. Other levels available with prior approval.						
(4) Segment from ESPOB to ENREP use: P134.35MHz S133.6MHz						
(5) Segment from ENREP to EGOLO use: P123.7 MHz S127.3 MHz						
(6) Segment from EGOLO to VMR use: P133.8 MHz S127.3 MHz						
(7) NIL						
(8) VMR 008° 150.0NM						
(9) VMR 008° 89.7NM						
(10) VMR 008° 56.6NM						
(11) VMR 008° 31.6NM						

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Annex A-2

<i>Route Designator</i> {RNP Type}	<i>[Route Usage Notes]</i>					
<i>Significant Point Name</i>	<i>Significant Point Coordinates</i>				<i>Remarks</i>	
<i>{RNP Type}</i>	<i>Initial Track</i> MAG ↓ ↑	<i>Great Circle</i> Dist NM	<i>Upper limit</i> Lower limit	<i>FL series</i> ↓ ↑		<i>Controlling unit Frequency</i> {Airspace class} Remarks
1	2	3	4	5	6	7
N892	<i>Route availability:</i> (1) H24					
▲ MELAS (VWHM/WSJC FIR BDRY)	070518N 1080912E					
(10)		203.6NM	FL 460 FL 135			[Class A] (2) (3)
▲ MABLI	041717N 1061247E					(6)
(10)		52.1NM	FL 460 FL 135			[Class A] (4)
▲ MUMSO	034420N 1053213E					(7)
(10)		25.2NM	FL 460 FL 135			[Class A] (4)
▲ MABAL	032826N 1051236E					(8)
(10)		41.4NM	FL 460 FL 135			[Class A] (4)
▲ KILOT	030217N 1044023E					(9)
(10)		15.7NM	FL 460 FL 135			[Class A] (4)
▲ KIBOL WSJC/WMFC FIR BDRY	025224N 1042818E					(10)
(10)		28.1NM	FL 460 FL 135			[Class A] (5)
▲ PEKLA	023437N 1040618E					(11)
(10)		18.0NM	FL 460 FL 135			[Class A] (5)
▲ MERSING DVOR/DME (VMR)	022318N 1035218E					
<i>Route Remarks:</i>						
Lateral Limits: 10NM either side of line joining VMR DVOR/DME to KIBOL and 25NM either side of line joining KIBOL to MELAS.						
Uni-directional for south-west bound flights from MELAS to VMR. No PDC Flight Levels FL310, FL320, FL350, FL360, FL390, FL400 applicable. Other levels available with prior approval.						
<i>Flight planning for Direct Routing Operations (DRO):</i> Arriving aircraft into Changi Airport operating at FL290 to FL460 (inclusive) and entering Singapore FIR via MELAS between 1400UTC and 2300UTC shall flight plan using the direct route MELAS DCT MABAL.						
<i>Point/Segment Remarks:</i>						
(2) ADS-C service is available to suitably equipped aircraft operating outside radar cover (between MELAS and MABLI) and not in the exclusive ADS-B airspace within the Singapore FIR.						
(3) Segment from MELAS to MABLI use: P134.35 MHz S133.6 MHz						
(4) Segment from MABLI to KIBOL use: P134.7 MHz S134.15 MHz						
(5) Segment from KIBOL to VMR use: P133.8 MHz S127.3 MHz						
(6) VMR 051° 180.6NM						
(7) VMR 051° 128.4NM						
(8) VMR 051° 103.2NM						
(9) VMR 051° 61.8NM						
(10) VMR 050° 46.1NM						
(11) VMR 051° 18.0NM						

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