

Contact

Post:

REPUBLIC OF SINGAPORE
AERONAUTICAL
INFORMATION SERVICES
CIVIL AVIATION AUTHORITY
OF SINGAPORE
SINGAPORE CHANGI
AIRPORT
P.O. BOX 1, SINGAPORE
918141

Tel: (65) 6595 6051

AFS: WSSSYNYX

Fax: (65) 64410221

Email: caas_singaporeais@caas.gov.sgURL: www.caas.gov.sgURL: <https://fpl-1.caasaim.gov.sg>**AIP Supplement for
Singapore****AIP SUP****079/2018****Effective from 03 JAN 2019****PERM****Published on 01 DEC 2018****SELETAR AIRPORT - IMPLEMENTATION OF INSTRUMENT LANDING SYSTEM
(ILS) AND ILS APPROACH PROCEDURE FOR RUNWAY 21****1 INTRODUCTION**

1.1 This AIP Supplement provides details on the implementation of ILS and ILS approach procedure at Seletar Airport. This procedure requires Required Navigation Performance (RNP) Approach (APCH) navigation specifications prior to the transition to ILS final approach point.

1.2 The ILS installed at Seletar Airport is ready for operations. In line with international practice and to allow operators time to make the necessary preparations, the ILS approach procedure for Runway 21 at Seletar Airport will be effective from **0000UTC, 03 January 2019**.

1.3 The ILS approach procedure serves to enhance the existing approach procedures into Seletar Airport. In IMC, ILS approach will be made available. In VMC, the default approach procedures shall be visual. Requests for ILS approach in VMC shall be made known to ATC on first contact with Singapore Approach. ATC will clear flights on the ILS approach procedure subject to air traffic and meteorological conditions.

2 DETAILS OF RADIO NAVIGATION AND LANDING AIDS

2.1 The details of the localizer (LLZ), glide path (GP) and Distance Measuring Equipment (DME) for Seletar Airport Runway 21 are in **Annex A** of this AIP Supplement.

3 FLIGHT PROCEDURE

3.1 The ILS approach procedure has been designed in accordance with ICAO PANS- OPS (Doc 8168) Volume II and ICAO Manual of Performance Based Navigation (PBN) (Doc 9613).

3.2 Instrument Approach Chart – ICAO – RWY 21 – SEL ILS is in **Annex B** of this AIP Supplement.

4 APPROVALS

4.1 Aircraft operators and pilots carrying out this procedure must possess the necessary operational approvals to conduct RNP APCH and ILS operations from their respective State authorities.

4.2 The on-board performance monitoring and alerting, criteria for specific navigation systems and functional requirement must be in accordance to Volume II, Part C - Chapter 5 of the ICAO Manual on PBN (Doc 9613).

5 CONTINGENCY PROCEDURE

5.1 The pilot must notify ATC of any loss of RNP APCH capability, together with the proposed course of action. If unable to comply with the requirements of an RNP APCH procedure, pilots must advise ATC as soon as possible. The loss of RNP APCH capability includes any failure or event causing the aircraft to no longer satisfy the RNP APCH requirements.

6 CANCELLATION

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

Annex A
RADIO NAVIGATION AND LANDING AIDS

Type of aid and Variation	IDENT	Frequency	OPR Hour	Position of Transmitting Antenna Coordinates	DME Transmitting Antenna Elevation / Remarks
1	2	3	4	5	6 & 7
RWY 21 ILS LLZ	SEL	110.3MHz	H24	012422.38N 1035138.28E	Located 309m (1014ft) from THR RWY 03, along RWY centreline. Course width 5.71°. EM: A0/A2. Maintenance Period: First Friday of every month between 1600-2300 or second Friday if the first Friday is a public holiday.
RWY 21 ILS GP	-	335MHz	H24	012511.78N 1035214.97E	Located 255m (837ft) from THR RWY 21 on left side of the RWY, 114m (374ft) from RWY centreline. GP angle 3.5°. HGT of ILS Reference Datum: 16.2m (53ft) EM: A0/A2
RWY 21 ILS DME	SEL	CH40X	H24	012511.78N 1035214.97E	DME co-located with GP. EM: P9

Annex B - INSTRUMENT APPROACH CHART - ICAO - SEL ILS RWY 21 [Annex B-1](#)
Annex B - ILS RWY 21 [Annex B-2](#)



Speed	knots	70	100	130	160
FAF - MAPt 5.2nm	min : s	4:27	3:07	2:24	1:57
Rate of descent	ft/min	435	620	805	990

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ILS RWY 21

Designator	Path Term	Waypoint Name	Fly-Over	Course °M (°T)	Magnetic Variation	Distance (NM)	Turn Dir	Altitude	Speed (IAS)	VPA/ TCH(ft)	Navigation Spec
ILS RWY 21	IF	AKOTI (IAF)	-	-	-	-	-	A035+	-	-	RNP APCH
ILS RWY 21	TF	TODOS (IF)	-	213 (213.5)	-0.5	3.5	-	A020@	-	-	RNP APCH
ILS RWY 21	TF	BATOR (FAP/FAF)	-	213 (213.5)	-0.5	3.0	-	A020@	-	-	RNP APCH
ILS RWY 21	TF	RW21 (MAPt)	Y	213 (213.5)	-0.5	5.2	-	-	-	-3.5°/ 56	RNP APCH
ILS RWY 21	CA	-	-	213 (213.5)	-0.5	-	-	A015	160	-	RNP APCH
ILS RWY 21	DF	POPOM	-	-	-	-	-	A020-	-	-	RNP APCH
ILS RWY 21	TF	BETBA	-	028 (028.5)	-	6.8	L	A040+	-	-	RNP APCH
ILS RWY 21	TF	TATIN	-	005 (005.5)	-0.5	3.3	-	A050+	-	-	RNP APCH
ILS RWY 21	TF	AKOMA	Y	005 (005.5)	-0.5	9.0	-	A050+	-	-	RNP APCH

Waypoint	Coordinates	
	Latitude	Longitude
AKOTI (IAF)	01° 35' 07.96" N	103° 58' 40.08" E
TODOS (IF)	01° 32' 12.16" N	103 ° 56' 45.21" E
BATOR (FAP/FAF)	01° 29' 41.48" N	103° 55' 06.76" E
RW21 (MAPt)	01° 25' 20.79" N	103° 52' 16.43" E
POPOM	01° 26' 58.95" N	103° 50' 13.80" E
BETBA	01° 33' 02.00" N	103° 53' 31.00" E
TATIN	01° 36' 19.53" N	103° 53' 50.48" E
AKOMA	01° 45' 22.00" N	103° 54' 43.00" E

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