

EDDF AD 2.1 Aerodrome Location Indicator and Name

EDDF FRANKFURT MAIN

EDDF AD 2.2 Aerodrome Geographical and Administrative Data

1	ARP coordinates and site at AD	N 50 01 59.90 E 008 34 13.64 822 m abeam centre line RWY 07C/25C in a southern direction from a point 1567 m W THR 25C N 50 00 47.00 E 008 31 37.00 on centre line RWY 18 in a south-western direction from a point 2500 m S/W THR 18 N 50 02 10.00 E 008 31 16.00 700 m abeam centre line RWY 07L/25R in a southern direction from a point 1220 m S/W THR 25R
2	Direction and distance from (city)	12 km (6.5 NM) SW Frankfurt city centre
3	Elevation/Reference temperature	364 ft / 24.2°C
4	Geoid undulation at AD ELEV PSN	48 m
5	MAG VAR/Annual change	1.8° E (2016,01) / -
6	AD operator, address, telephone, telefax, telex, AFS	Fraport AG Hugo-Eckener-Ring, 60547 Frankfurt am Main Tel.: +49 (0)1805 37 246 36 (24/7) +49 (0)69 690-77777 (Airside Duty Manager) +49 (0)69 690-71718 (General Aviation) +49 (0)69 690-71719 (General Aviation) Fax: +49 (0)69 690-70081 +49 (0)69 690-78464 +49 (0)69 690-71130 (Airside Duty Manager) +49 (0)69 690-59446 (General Aviation) SITA: FRAAF7X AFTN: EDDFYDYC Telex: 40305 - 0 fa d
7	Types of traffic permitted (IFR/VFR)	IFR/VFR
8	Remarks	Nil

EDDF AD 2.3 Operational Hours

1	AD operator	H24
2	Customs and immigration	H24
3	Health and sanitation	H24
4	AIS Briefing Office	-
5	ATS Reporting Office (ARO)	AIS-C H24 Tel.: +49 (0)69 78072 500 Fax: +49 (0)69 78072 505
6	MET Briefing Office	See EDDF AD 2.11
7	ATS	H24
8	Fuelling	H24
9	Handling	H24
10	Security	H24
11	De-icing	H24
12	Remarks	Flight Operations (Fraport AG): Service: Flight planning, meteorological consultation Availability: H24 Location: Terminal 1; Departure C, room 200/2140 Tel.: +49 (0)69 690-73584; Fax: -59856 AFTN: EDDFXHAX; SITA: FRAPFXH; e-mail: flt-ops@fraport.de

EDDF AD 2.4 Handling Services and Facilities

1	Cargo-handling facilities	All modern facilities
2	Fuel/oil types	Jet A1/ Aviation oils, Turbo oils
3	Fuelling facilities/capacity	Jet A1: Underground fuel hydrant system for Jet A1. Fuel farm capacity 186.000 m³, tankage out of system 15.000 m³/d, 194.000 l/MIN. Vehicles: 59 dispensers (MAX 4.000 l/MIN), 9 tank trucks for Jet A1 (MAX 3.200 l/MIN).
4	De-icing facilities	See AD 2.20
5	Hangar space for visiting aircraft	O/R
6	Repair facilities for visiting aircraft	O/R
7	Remarks	Oxygen and related servicing available.

EDDF AD 2.5 Passenger Facilities

1	Hotels	Sheraton Hotel, directly at airport Steigenberger Airport Hotel, Flughafenstraße 300 - 304 InterCity Hotel, Cargo City Süd, Frankfurt Airport
2	Restaurants	Various restaurants for crews and passengers; H24
3	Transportation	Citybus, private buses, taxi, railway
4	Medical facilities	Emergency medical center (physicians & paramedics) including all treatment facilities such as intensive care unit, surgery, x-ray, ear and eye examinations and vaccinations. Quarantine ward and service for medical examination of aviation staff is available. Six ambulance cars (mobile intensive care units), disaster prevention trucks, operational vehicles are part of the rescue service and the transportation of handicapped and disabled persons. Disaster prevention units with rescue and medical supplies.
5	Bank and Post Office	At the airport
6	Tourist Office	-
7	Remarks	Nil

EDDF AD 2.6 Rescue and Fire Fighting Services

1	AD category for fire fighting	10
2	Rescue equipment	According to ICAO Annex 14.
3	Capability for removal of disabled aircraft	All sizes
4	Remarks	Nil

EDDF AD 2.7 Seasonal Availability – Clearing

1	Types of clearing equipment	See seasonal snow plan
2	Clearance priorities	See seasonal and permanent snow plan
3	Remarks	Snow removal assured RWY 07C/25C, RWY07L/25R, RWY 07R/25L, RWY 18 de-iced/anti-iced with KFOR and/or NAFO if required.

EDDF AD 2.8 Aprons, Taxiways and Check Locations Data

1	Apron surface and strength	CONC; PCN 74/R/A/W/T
2	Taxiway width, surface and strength	TWY Y9: 30 m; PCN 74/F/A/W/T TWY S14, S16, S33, U, W, W1, W3, Y, Y1, Y3: 30 m; CONC; PCN 74/R/A/W/T TWY S13: 30 m; CONC; PCN 74/R/A/W/T (BTN TWY S11 – TWY J13) 18 m; CONC; PCN 74/R/A/W/T (south of TWY J13) TWY S11: 30 m; CONC; PCN 74/R/A/W/T TWY S10: 30 m; CONC; PCN 74/R/A/W/T 18 m; CONC; PCN 74/R/A/W/T (south of TWY S) TWY DP1, DP2, L6, L7, L8, L9, L10, L11, L13, L15, L16, L17, L19, L20, L21, L-north, M3, M6, M7, M9, M10, M11, M13, M14, M15, M17, M19, M21, M23, M24, M25, M28, M29, M30, N5, N7, N8, N11, N13, N14, N15, N16, N-north, N-south, R5, R7, R15, S4, S5, S6, S7: 30 m; CONC; PCN 74/R/A/W/T TWY L, L1, L3, L4, L5, L14, M, M8, M27, N, N1, N3, N4, N6, N10, N17, R, R3, R10, R11, R13, R17, S, S3, S9, S25, S27, S28, S29, S31, T, W7, W9: 30 m; ASPH; PCN 74/F/A/W/T TWY S8: 25 m; CONC; PCN 74/R/A/W/T TWY P4, P6, P8, P10, P14, P16, P20, P24, S23: 23 m; CONC; PCN 74/R/A/W/T TWY P1: 23 m; CONC; PCN 74/R/A/W/T (east of TWY W) 23 m; CONC; PCN 74/R/A/W/T (west of TWY W) TWY P: 23 m; CONC; PCN 74/R/A/W/T TWY Y5: 22.5 m; CONC; PCN 74/R/A/W/T TWY L-EAST OF U: 18 m; ASPH; PCN 74/F/A/W/T
3	Altimeter checkpoint location and elevation	Beginning RWY 07C: 329 ft Beginning RWY 25C: 364 ft Beginning RWY 07R: 328 ft Beginning RWY 25L: 362 ft Beginning RWY 18 : 326 ft
4	VOR checkpoints	-
5	INS checkpoints	See Chart AD 2 EDDF 2-9D/E
6	Remarks	Nil

EDDF AD 2.9 Surface Movement Guidance and Control System and Markings

1	Use of aircraft stand ID signs, TWY guide lines and visual docking/parking guidance system of aircraft stands	AGNIS/A-VDGS For detailed description see NfL I-21/72 and NfL I-145/11
2	RWY and TWY markings and LGT	White: THR marking, RWY designation, RWY centreline, touch-down zone, fixed distance markings, RWY side stripes Yellow: TWY centreline, taxi holding position markings, taxiing guide lines (apron), TWY designators, TWY intersection markings. Orange: TWY centreline Red: Apron safety lines Blue: TWY centreline; aircraft stand indicators.
3	Stop bars	R LIH
4	Remarks	See AD 2.20 Intermediate holding positions: Y LIH Runway guard lights: Y LIH

EDDF AD 2.10 Aerodrome Obstacles

Refer to EDDF AD 2.24 Aerodrome Obstacle Chart (AOC)

EDDF AD 2.11 Meteorological Information Provided

1	Associated MET Office	Meteorological advisory center for aviation (MAC) Central
2	Hours of service MET Office outside hours	H24
3	Office responsible for TAF preparation Periods of validity	MAC Central 30 HR
4	Trend forecast Interval of issuance	TREND 30 MIN
5	Briefing/consultation provided	see No. 10 by phone
6	Flight documentation Language(s) used	Charts, abbreviated plain language text ²⁾ English, German
7	Charts and other information available for briefing or consultation	SWC, W/T Charts, SIGMET, METAR/TAF en-route ²⁾
8	Supplementary equipment available for providing information	-
9	ATS units provided with information	Frankfurt TWR
10	Additional information (limitation of service, etc.)	Individual weather consultation: MAC Central Tel.: 0900 10 77 22 4 ¹⁾ ¹⁾ Value-added service prices see GEN 3.5-13 ²⁾ Provided by: www.flugwetter.de

EDDF AD 2.12 Runway Physical Characteristics

Designations RWY NR	TRUE BRG	Dimensions of RWY (m)	Strength (PCN) and surface of RWY and SWY	THR coordinates RWY end coordinates THR geoid undulation	THR elevation and highest elevation of TDZ of precision APP RWY
1	2	3	4	5	6
07C	69.64°	4000 x 60	74/F/A/W/T ASPH	N 50 01 57.421 E 008 32 04.667	THR 329 ft
25C	249.64°	4000 x 60	74/F/A/W/T ASPH	N 50 02 42.456 E 008 35 13.131	THR 364 ft
07R	69.65°	4000 x 45	74/F/A/W/T ASPH	N 50 01 39.151 E 008 32 03.025	THR 328 ft
25L	249.65°	4000 x 45	74/F/A/W/T ASPH	N 50 02 24.187 E 008 35 11.505	THR 362 ft
18	179.63°	4000 x 45	90/R/A/W/T CONC	N 50 02 03.010 E 008 31 33.350	THR 326 ft
07L	69.60°	2800 x 45	74/R/A/W/T CONC	N 50 02 13.396 E 008 29 49.482	THR 305 ft
25R	249.60°	2800 x 45	74/R/A/W/T CONC	N 50 02 44.971 E 008 32 01.377	THR 353 ft

Slope of RWY-SWY	SWY dimensions (m)	CWY dimensions (m)	Strip dimensions (m)	OFZ	Remarks
7	8	9	10	11	12
see AOC	-	-	4120 x 300	Available	RWY shoulders: 7.5 m on each side
see AOC	-	-	4120 x 300	Available	RWY shoulders: 7.5 m on each side
see AOC	-	-	4120 x 300	Available	RWY shoulders: 15 m on each side
see AOC	-	-	4120 x 300	Available	RWY shoulders: 15 m on each side
see AOC	-	-	4065 x 150	-	RWY shoulders: 15 m on each side Strength and surface of RWY: 74/F/A/W/T from THR 18 for 1425 m in length and 45 m in width ASPH
see AOC	-	-	2920 x 300	Available	RWY shoulders: 7.5 m on each side
see AOC	-	-	2920 x 300	Available	RWY shoulders: 7.5 m on each side

EDDF AD 2.13 Declared Distances

RWY Designator	TORA (m)	TODA (m)	ASDA (m)	LDA (m)	Remarks
1	2	3	4	5	6
07C	4000	4000	4000	4000	-
25C	4000	4000	4000	4000	-
07R	4000	4000	4000	4000	-
25L	4000	4000	4000	4000	-
18	3970	3970	3970	-	-
07L	-	-	-	2800	-
25R	-	-	-	2800	-

EDDF AD 2.14 Approach and Runway Lighting

RWY Designator	APCH LGT type LEN INTST	THR LGT colour WBAR	VASIS (MEHT) PAPI *	TDZ LGT LEN	RWY centre line LGT length, spacing colour, INTST	RWY edge LGT LEN Spacing, colour INTST	RWY end LGT colour WBAR	SWY LGT LEN (M) colour
1	2	3	4	5	6	7	8	9
07C	W VRB LIH/LIL	G VRB LIH	3.0° 67.00 ft	W VRB LIH	Up to 3100 m: W VRB LIH; 3100 – 3700 m: R/W VRB LIH; 3700 – 4000 m: R VRB LIH. 15 m spacing	W VRB LIH/LIL	R VRB LIH	-
25C	W VRB LIH/LIL	G VRB LIH	3.0° 67.00 ft	W VRB LIH	Up to 3100 m: W VRB LIH; 3100 – 3700 m: R/W VRB LIH; 3700 – 4000 m: R VRB LIH. 15 m spacing	W VRB LIH/LIL	R VRB LIH	-
07R	W VRB LIH/LIL	G VRB LIH	3.0° 68.00 ft	W VRB LIH	Up to 3100 m: W VRB LIH; 3100 – 3700 m: R/W VRB LIH; 3700 – 4000 m: R VRB LIH. 15 m spacing	W VRB LIH/LIL	R VRB LIH	-
25L	W VRB LIH/LIL	G VRB LIH	3.0° 68.00 ft	W VRB LIH	Up to 3100 m: W VRB LIH; 3100 – 3700 m: R/W VRB LIH; 3700 – 4000 m: R VRB LIH. 15 m spacing	W VRB LIH/LIL	R VRB LIH	-
18	-	-	-	-	Up to 3100 m: W VRB LIH; 3100 – 3700 m: R/W VRB LIH; 3700 – 4000 m: R VRB LIH. 15 m spacing	W VRB LIH/LIL	R VRB LIH	-
07L	W VRB LIH/LIL	G VRB LIH	3.0° 61.00 ft	W VRB LIH	Up to 1900 m: W VRB LIH; 1900 – 2500 m: R/W VRB LIH; 2500 – 2800 m: R VRB LIH. 15 m spacing	W VRB LIH/LIL	R VRB LIH	-
25R	W VRB LIH/LIL	G VRB LIH	3.0° 61.00 ft	W VRB LIH	Up to 1900 m: W VRB LIH; 1900 – 2500 m: R/W VRB LIH; 2500 – 2800 m: R VRB LIH. 15 m spacing	W VRB LIH/LIL	R VRB LIH	-

Remark: For all aircraft on ILS CAT I approaches the PAPI system is only usable down to a height of 200 ft referring to the respective THR.
*The PAPI signal is valid for both approaches (3° and 3.2°).

EDDF AD 2.15 Other Lighting, Secondary Power Supply

1	ABN/IBN location, characteristics and hours of operation	ABN white/white, at night and O/R during the day
2	LDI location and LGT Anemometer location and LGT	See Chart AD 2 EDDF 2-7
3	TWY edge and centre line lighting	TWY edge lights of TWYs DP1, DP2, L, L1, L3, L4, L5, L6, L7, L8, L9, L10, L11, L13, L14, L15, L16, L17, L19, L20, L21, L-EAST OF U, M, M6, M7, M8, M9, M10, M11, M13, M14, M15, M17, M19, M21, M23, M24, M25, M27, M28, M29, M30, N, N3, N4, N5, N6, N11, N13, N14, N15, N16, N17, N-north, N-south, P, P1, P4, P6, P8, P10, P14, P16, P20, P24, R, R3, R5, R7, R10, R11, R13, R15, R17, S, S3, S4, S5, S7, S8, S9, S10, S11, S14, S16, S23, S25, S29, S33, T, U, W, W1, W3, W9, Y: B LIL TWY Center line lights of TWYs DP1, DP2, L, L1, L3, L4, L5, L6, L7, L15, L17, L21, L-north, M, M7, M8, M9, M13, M17, M21, M23, M27, M29, M30, N, N1, N3, N5, N7, N8, N10, N11, N14, N15, N16, N17, N-north, N-south, P, P1, P4, P6, P8, P10, P14, P16, P20, P24, R, R3, R5, R10, R13, R15, R17, S, S3, S4, S5, S6, S7, S8, S9, S10, S11, S13, S29, S33, T, U, W, W1, W3, W9, Y, Y1, Y3, Y5, Y9: G LIL
4	Secondary power supply/switch-over time	Available
5	Remarks	Center line lights Y/G colour coded BTN RWY 07R/25L and TWY S, Turn-around area RWY 18/TWY Y and BTN RWY 07C/25C and TWY L as well as BTN RWY 07R/25L and TWY M

EDDF AD 2.16 Helicopter Landing Area

1	Coordinates TLOF or THR of FATO Geoid undulation	-
2	TLOF and/or FATO elevation m/ft	-
3	TLOF and FATO area dimensions, surface, strength, marking	-
4	True BRG of FATO	-
5	Declared distance available	-
6	APP and FATO lighting	-
7	Remarks	Helipad closed. All helicopters parking at the GAT have to expect landing and take-off on RWY 07R/25L.

EDDF AD 2.17 ATS Airspace

1	Designation and lateral limits	CTR Frankfurt
2	Vertical limits	1500 ft MSL
3	Airspace classification	D
4	ATS unit call sign Language(s)	FRANKFURT TOWER English, German
5	Transition altitude	5000 ft MSL
6	Remarks	For detailed airspace description see ENR 2.1

EDDF AD 2.18 ATS Communication Facilities

Service designation	Call sign	Channel/ Frequency (MHZ)	Hours of operation	Remarks
1	2	3	4	5
ATIS	FRANKFURT ATIS	121.500	H24	Emergency frequencies for all services
		243.000	H24	
		118.025	0400 (0300) – 2200 (2100)	
		118.725	0400 (0300) – 2200 (2100)	
APP	LANGEN RADAR	120.150	HX	(ARR ATIS) Designated operational coverage 60 NM, FL 250
		120.800	H24	(DEP ATIS) Designated operational coverage 25 NM
		125.350	HX	40 NM, FL 150
		126.550	HX	60 NM, FL 200
				60 NM, FL 200
		136.125	HX	Stand-by frequency for Frankfurt Departure, 45 NM, FL 150
		119.025	HX	60 NM, FL 200
				Stand-by frequency for Frankfurt Arrival, 60 NM, FL 200
TWR	FRANKFURT DIRECTOR	277.800	H24	50 NM, FL 250
		372.850	HX	50 NM, FL 250
		118.500	H24	40 NM, FL 150
		127.275	HX	40 NM, FL 150
	FRANKFURT TOWER	375.450	HX	25 NM, FL 100
		119.900	H24	25 NM, 5000 ft
		124.850	HX	DEP via RWY 18; 25 NM, 4000 ft
		118.775	H24	25 NM, 5000 ft
	FRANKFURT GROUND	127.325	HX	Stand-by frequency for Frankfurt TWR
				25 NM, 5000 ft
		136.500	HX	25 NM, 5000 ft
		378.350	H24	25 NM, 4000 ft
	FRANKFURT DELIVERY	121.800	HX	Taxi guidance within area of responsibility of DFS
				Initial call and start-up request
		121.900	H24	Push-back approvals and taxi guidance on apron by Fraport AG (apron control) in English, German
		121.650	H24	
		121.700	H24	
		121.750	H24	
		121.850	H24	
		121.950	H24	

EDDF AD 2.19 Radio Navigation and Landing Aids

Type of aid MAG VAR Type of supported OPS VOR/ILS/MLS declination	ID	Frequency	Hours of operation	Position of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
Charlie VOR (2° E/2012)	CHA	115.50 MHz	H24	N 49 55 15.97 E 009 02 23.32		Operational coverage sector 0°–360°: 60 NM, FL 250 The VOR may only be used for the radials in the published en-route, approach and departure procedures and is not permitted for area navigation.
Frankfurt DVORTACAN (2° E/2012)	FFM	114.20 MHz CH89x	H24	N 50 03 13.47 E 008 38 13.53	491	Operational coverage sector 203°–248°: 50 NM, FL 500 sector 248°–203°: 100 NM, FL 500 DVORTACAN unusable in sector 310°–340°: below 20 – 40 NM 4000 ft MSL beyond 40 NM 8000 ft MSL

Type of aid MAG VAR Type of supported OPS VOR/ILS/MLS <i>declination</i>	ID	Frequency	Hours of operation	Position of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
Frankfurt ILS 07C (CAT III) LOC (2° E/2016)	IFCE	110.55 MHz	H24	N 50 02 47.06 E 008 35 32.43		Usable: up to 25 NM in the area ±10°, in relation to the RCL MIN interception altitude in these area: 2600 ft MSL up to 17 NM in the area ±35°, in relation to the RCL MIN interception altitude in this area: 3600 ft MSL, at distances of less than 13.9 NM (from the antenna) it is 3010 ft MSL.
GP	-	329.45 MHz	H24	N 50 01 56.64 E 008 32 20.87		Operational range 15 NM
DME	IFCE	CH42y (110.55 MHz *)	H24	N 50 01 56.64 E 008 32 20.87	335	* Ghost frequency
Frankfurt ILS 07L (CAT III) LOC (2° E/2016)	IFNE	111.75 MHz	H24	N 50 02 49.81 E 008 32 21.61		Usable: up to 25 NM in the area ±10°, in relation to the RCL MIN interception altitude in this area: 2300 ft MSL up to 17 NM in the area 31°(N) – 35°(S), in relation to the RCL MIN interception altitude in this area: 3000 ft MSL, at distances of less than 16.5 NM (from the antenna) it is 2920 ft MSL.
GP	-	333.35 MHz	H24	N 50 02 20.36 E 008 30 00.10		Operational range 15 NM
DME	IFNE	CH54y (111.75 MHz *)	H24	N 50 02 20.34 E 008 30 01.13	313	* Ghost frequency
Frankfurt ILS 07R (CAT III) LOC (2° E/2016)	IFSE	110.95 MHz	H24	N 50 02 29.47 E 008 35 33.63		Usable: up to 17 NM in the area ±35°, in relation to the RCL up to 25 NM in the area ±10°, in relation to the RCL MIN interception altitude in these areas: 3400 ft MSL, at distances of less than 13.9 NM (from the antenna) it is 2860 ft MSL.
GP	-	330.65 MHz	H24	N 50 01 46.46 E 008 32 15.96		Operational range 15 NM Unusable beyond 4°(N) – 8°(S)
DME	IFSE	CH46y (110.95 MHz *)	H24	N 50 01 46.43 E 008 32 15.98	334	* Ghost frequency
Frankfurt ILS 25C (CAT III) LOC (2° E/2016)	IFCW	111.55 MHz	H24	N 50 01 52.92 E 008 31 45.85		Usable: up to 25 NM in the area ±10°, in relation to the RCL up to 17 NM in the area ±35°, in relation to the RCL MIN interception altitude in this areas: 3500 ft MSL, at distances of less than 13.8 NM (from the antenna) it is 2900 ft MSL.
GP	-	332.75 MHz	H24	N 50 02 34.79 E 008 34 59.06		Operational range 15 NM Unusable beyond 8°(N) – 5°(S), in relation to the RCL. MIN interception altitude: 2700 ft MSL
DME	IFCW	CH52y (111.55 MHz *)	H24	N 50 02 34.80 E 008 34 59.03	365	* Ghost frequency

Type of aid MAG VAR Type of supported OPS VOR/ILS/MLS declination	ID	Frequency	Hours of operation	Position of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
Frankfurt ILS 25L (CAT III) LOC (2° E/2016)	IFSW	111.15 MHz	H24	N 50 01 35.13 E 008 31 46.23		Usable: up to 25 NM in the area 05°(N) – 05°(S), in relation to the RCL up to 17 NM in the area 26°(N) – 16°(S), in relation to the RCL MIN interception altitude in this area: 3500 ft MSL, at distances of less than 13.8 NM (from the antenna) it is 2900 ft MSL.
GP	-	331.55 MHz	H24	N 50 02 24.11 E 008 34 53.26		Operational range 15 NM
DME	IFSW	CH48y (111.15 MHz *)	H24	N 50 02 24.11 E 008 34 53.26	363	* Ghost frequency
Frankfurt ILS 25R (CAT III) LOC (2° E/2016)	IFNW	111.35 MHz	H24	N 50 02 08.55 E 008 29 29.26		Usable: up to 17 NM in the area ±30°, in relation to the RCL up to 25 NM in the area ±10°, in relation to the RCL MIN interception altitude in these areas: 3000 ft MSL, at distances of less than 16.3 NM (from the antenna) it is 2900 ft MSL.
GP	-	332.15 MHz	H24	N 50 02 44.58 E 008 31 41.98		Operational range 15 NM Usable up to elevation angle of 5°.
DME	IFNW	CH50y (111.35 MHz *)	H24	N 50 02 44.48 E 008 31 41.99	347	* Ghost frequency
LO	FR	297.00 KHz	H24	N 50 03 56.56 E 008 41 00.56		Operational range sector 0°–360°: 10 NM 253°, 3.92 NM THR 25C
LO	FW	382.00 KHz	H24	N 50 00 17.84 E 008 25 46.39		Operational range sector 0°–360°: 15 NM 71°, 4.36 NM THR 07C
Frankfurt Main ILS 07Y (CAT I) LOC (2° E/2016)	IFEL	110.30 MHz	H24	N 50 02 48.34 E 008 32 15.48		Usable: up to 17 NM in the area 35°(N) – 30°(S), in relation to the RCL up to 25 NM in the area ±10°, in relation to the RCL MIN interception altitude in these areas: 3000 ft MSL up to 17 NM in the area ±35°, in relation to the RCL MIN interception altitude in this area: 5000 ft MSL, at distances of less than 15.5 NM (from the antenna) it is 2770 ft MSL.
GP	-	335.00 MHz	H24	N 50 02 20.59 E 008 30 00.60		Operational range 15 NM Unusable beyond 8°(S) – 4°(N), in relation to the RCL.
DME	IFEL	CH40x (110.30 MHz *)	H24	N 50 02 20.56 E 008 30 00.65	313	* Ghost frequency

Type of aid MAG VAR Type of supported OPS VOR/ILS/MLS declination	ID	Frequency	Hours of operation	Position of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
Frankfurt Main ILS 25Y (CAT I) LOC (2° E/2016)	IFWR	109.75 MHz	H24	N 50 02 10.02 E 008 29 35.38		Usable: up to 25 NM in the area ±10°, in relation to the RCL MIN interception altitude in this area: 3500 ft MSL up to 17 NM in the area 30°(N) – 25°(S), in relation to the RCL MIN interception altitude in this area: 3000 ft MSL, at distances of less than 15.4 NM (from the antenna) it is 3190 ft MSL.
GP	-	333.05 MHz	H24	N 50 02 45.06 E 008 31 42.84		Designated operational range 15 NM
DME	IFWR	CH34y (109.75 MHz *)	H24	N 50 02 45.02 E 008 31 42.83	347	* Ghost frequency
Frankfurt Main GBAS 07C	G07D	CH22803	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 07C	G07G	CH25269	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 07L	G07A	CH21159	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 07L	G07E	CH23625	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 07R	G07B	CH21981	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 07R	G07F	CH24447	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 07R	G07I	CH26913	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 25C	G25D	CH22392	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 25C	G25G	CH24858	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 25L	G25B	CH21570	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 25L	G25F	CH24036	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 25R	G25A	CH20748	H24	N 50 01 37.61 E 008 31 17.49		
Frankfurt Main GBAS 25R	G25E	CH23214	H24	N 50 01 37.61 E 008 31 17.49		
Fred DME	FRD	CH106x (115.90 MHz *)	H24	N 50 01 47.32 E 008 34 05.57	440	Operational coverage sector 0°–360°: 25 NM, 10000 ft MSL DME unusable in sector 336°–343°: below
						22 – 25 NM 4800 ft MSL * Ghost frequency

Type of aid MAG VAR Type of supported OPS VOR/ILS/MLS <i>declination</i>	ID	Frequency	Hours of operation	Position of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks																
1	2	3	4	5	6	7																
Gedern DVORTACAN <i>(2° E/2012)</i>	GED	110.80 MHz CH45x	H24	N 50 24 43.01 E 009 14 56.99	1631	Operational coverage sector 225°–315°: 70 NM, FL 500 sector 315°–225°: 80 NM, FL 500 The DVOR may only be used for the radials in the published en-route, approach and departure procedures and is not permitted for area navigation. TACAN unusable in sector 0°–360°: below <table><tr><td>0 – 10 NM</td><td>2700 ft MSL</td></tr><tr><td>10 – 20 NM</td><td>3900 ft MSL</td></tr><tr><td>20 – 30 NM</td><td>5300 ft MSL</td></tr><tr><td>30 – 40 NM</td><td>6800 ft MSL</td></tr><tr><td>40 – 50 NM</td><td>8500 ft MSL</td></tr><tr><td>50 – 60 NM</td><td>10300 ft MSL</td></tr><tr><td>60 – 70 NM</td><td>12200 ft MSL</td></tr></table> TACAN unusable in sector 315°–225°: below <table><tr><td>70 – 80 NM</td><td>14200 ft MSL</td></tr></table>	0 – 10 NM	2700 ft MSL	10 – 20 NM	3900 ft MSL	20 – 30 NM	5300 ft MSL	30 – 40 NM	6800 ft MSL	40 – 50 NM	8500 ft MSL	50 – 60 NM	10300 ft MSL	60 – 70 NM	12200 ft MSL	70 – 80 NM	14200 ft MSL
0 – 10 NM	2700 ft MSL																					
10 – 20 NM	3900 ft MSL																					
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30 – 40 NM	6800 ft MSL																					
40 – 50 NM	8500 ft MSL																					
50 – 60 NM	10300 ft MSL																					
60 – 70 NM	12200 ft MSL																					
70 – 80 NM	14200 ft MSL																					
Metro VOR <i>(2° E/2012)</i>	MTR	110.00 MHz	H24	N 50 16 34.59 E 008 50 55.05		Operational coverage sector 0°–360°: 60 NM, FL 250 The VOR may only be used for the radials in the published en-route, approach and departure procedures and is not permitted for area navigation.																
Nauheim DVOR <i>(2° E/2012)</i>	VFM	113.75 MHz	H24	N 49 57 42.58 E 008 28 16.39		Operational coverage sector 0°–360°: 3 NM, 5000 ft MSL DVOR unusable in sector 020°–350°: below <table><tr><td>0 – 3 NM</td><td>5000 ft MSL</td></tr></table>	0 – 3 NM	5000 ft MSL														
0 – 3 NM	5000 ft MSL																					
Ried DVOR/DME <i>(2° E/2012)</i>	RID	112.20 MHz CH59x	H24	N 49 46 54.09 E 008 32 29.35	337	Operational coverage sector 045°–225°: 60 NM, FL 250 sector 225°–045°: 40 NM, FL 250 Short-term course roughness in sector 80°–110° between 4 NM and 6 NM below 10000 ft MSL.																
Spessart NDB	PSA	370.00 KHz	H24	N 49 51 44.07 E 009 20 53.97		Operational range sector 050°–350°: 40 NM sector 350°–050°: 13 NM NDB unusable: in sector from station <table><tr><td>080°–190°</td><td>28 NM</td></tr><tr><td>190°–210°</td><td>20 NM</td></tr><tr><td>210°–340°</td><td>30 NM</td></tr><tr><td>340°–080°</td><td>17 NM</td></tr></table>	080°–190°	28 NM	190°–210°	20 NM	210°–340°	30 NM	340°–080°	17 NM								
080°–190°	28 NM																					
190°–210°	20 NM																					
210°–340°	30 NM																					
340°–080°	17 NM																					
Taunus DVORTACAN <i>(1° E/2012)</i>	TAU	116.70 MHz CH114x	H24	N 50 15 01.67 E 008 09 45.09	1348	Operational coverage sector 292°–338°: 60 NM, FL 250 sector 338°–292°: 40 NM, FL 250																

EDDF AD 2.20 Local aerodrome regulations

Die folgenden Regeln sind Anweisungen im Sinne der §§ 22 und 23 der Luftverkehrs-Ordnung (LuftVO). Sie sind gleichfalls Weisungen des Flughafenunternehmers Fraport AG Frankfurt Airport Services Worldwide (Fraport AG) zur Durchführung der Flughafen-Benutzungsordnung. Die Gültigkeit der Bestimmungen der Flughafen-Benutzungsordnung bleibt unberührt.

Die nachfolgenden Regeln gelten für Flugzeuge, für Drehflügler und andere Luftfahrzeuge sinngemäß.

1. Abwicklung des Luftverkehrs auf dem Verkehrsflughafen Frankfurt/Main / Einführung HIRO (High intensity runway operation)

1.1 Bevorzugte Landerichtung

Landenden Luftfahrzeugen wird bevorzugt die Landerichtung 25 zugewiesen, vorausgesetzt, die Rückenwindkomponente ist nicht größer als 5 kt. Die Start- und Landerichtung wird jedoch aus bei einer Rückenwindkomponente von weniger als 5 kt gewechselt, wenn die Bremswirkung auf den Pisten durch Eis, Schnee, Schneematsch usw. beeinträchtigt ist. Darüber hinaus kann die Start- und Landerichtung auch an der Verfügbarkeit von Navigationseinrichtungen oder signifikanten Wettereinflüssen im An- und Abflugbereich (z. B. Gewitter) ausgerichtet werden.

1.2 Anflüge

1.2.1 Anfliegende Luftfahrzeuge, für die eine Abstellposition im südlichen Flughafenbereich (Cargo City Süd, GAT) vorgesehen ist, haben bei Aufnahme des Sprechfunkverkehrs mit der Anflugkontrolle Frankfurt Arrival eine entsprechende Meldung abzugeben.

1.2.2 Diese Luftfahrzeuge werden von der Anflugkontrolle, ungeachtet ihrer Einflugstrecke, vorzugsweise zur Piste 07R/25L geführt. Die gleiche Zuweisung erhalten in der Regel auch jene Luftfahrzeuge, die im Ostbereich des nördlichen Vorfeldes geparkt werden.

1.2.3 Anflüge mit einem Gleitwinkel von 3,2°

1.2.3.1 Die Landebahn 07L/25R ist mit zwei ILS-Systemen je Landerichtung ausgestattet. Pro Landerichtung strahlt jeweils ein ILS mit einem Gleitwinkel von 3,2°, das andere mit einem Gleitwinkel von 3,0°.

Die PAPI Anlagen zeigen bis zu einer Höhe von 200 ft GND den korrekten Pfad für 3,0° und 3,2°.

1.2.3.2 Der Regelbetrieb findet ausschließlich unter CAT I Bedingungen statt. Die Anflugverfahren werden nur zugewiesen, wenn kein dauerhafter Rückenwind (>30 MIN) absehbar ist.

Herrscht Rückenwind vor oder ist dieser absehbar, werden die Regelungen der AIP EDDF AD 2.20.1 angewandt und hierbei ein ILS-Anflugverfahren mit 3,0° für die Piste 07L/25R zugewiesen.

1.2.3.3 Kann aus Sicherheitsgründen ein Anflug mit 3,2° nicht durchgeführt werden, ist der Luftfahrzeugführer aufgefordert, dies beim Erstanruf bei LANGEN RADAR auf den Frequenzen 120.800 MHz oder 125.350 MHz oder 119.025 MHz mitzuteilen. Diesen Luftfahrzeugen wird eine andere Piste zugewiesen.

1.2.4 Luftfahrzeuge der Typenreihe A225 und C5 dürfen nur in Notsituationen den Verkehrsflughafen Frankfurt/Main anfliegen. Luftfahrzeuge der Typenreihe A124 dürfen nur bei CAT I-Bedingungen und nur auf der RWY 07C/25C landen und starten.

1.2.5 Beim Frequenzwechsel von LANGEN RADAR (120.800 MHz oder 125.350 MHz) zu FRANKFURT DIRECTOR (127.275 MHz oder 118.500 MHz) ist der Einleitungsanruf auf FRANKFURT DIRECTOR + RUFZEICHEN + WIRBELSCHLEPPEN-KATEGORIE (letzteres nur wenn HEAVY oder SUPER) zu beschränken, um eine Überlastung der Frequenz zu vermeiden. Bei Übergabe durch die Anflugkontrolle an die Flugplatzkontrolle soll der Einleitungsanruf aus FRANKFURT TOWER + RUFZEICHEN + ANFLUGART + LANDEBAHN bestehen.

1.2.6 High intensity runway operation (HIRO) (Landungen)

1.2.6.1 Piloten werden daran erinnert

– den Schnellabrollweg während der Anflugbesprechung (Cockpit) zu planen und zu benennen

– die Landebahn schnellstmöglich zu verlassen, um den höchstmöglichen Durchfluss/Stunde zu ermöglichen

– die Rollgeschwindigkeit nach dem Aufsetzen anzupassen, wenn ersichtlich wird, dass der geplante Schnellabrollweg verpasst werden wird. In diesem Fall ist die Landebahn zügig über den nächsten Schnellabrollweg zu verlassen. Geringe Rollgeschwindigkeiten auf der Landebahn sind zu vermeiden.

1.2.6.2 Nachts beschränkt sich die Anwendung von HIRO auf die Landebahn 07L/25R und die Start-/Landebahn 25L, da nicht alle Schnellabrollwege mit einer Mittellinienbefeuerung ausgerüstet sind.

Ferner werden Luftfahrzeuge der Kategorie SUPER aufgrund infrastruktureller bedingter Beschränkungen nicht in HIRO eingebunden. Dennoch soll die Start-/Landebahn ebenfalls schnellstmöglich verlassen werden.

1.2.6.3 Sofern es die Landebahnverhältnisse erlauben, sollen nachfolgende Schnellabrollwege in die Planung einbezogen werden:

The below-mentioned regulations are instructions pursuant to sections 22 and 23 of the German Aviation Regulation (LuftVO). Also, they are directions of the airport operator Fraport AG Frankfurt Airport Services Worldwide (Fraport AG) for the implementation of the Airport Regulations. The validity of the provisions of the Airport Regulations remains unaffected.

The following regulations apply to aeroplanes, rotorcraft, and other aircraft analogously.

1. Handling of air traffic at Frankfurt/Main Airport / Introduction of HIRO (High Intensity RWY Operation)

1.1 Preferred landing direction

Landing direction 25 is the preferred direction to be assigned to landing aircraft, provided the tailwind component does not exceed 5 kt. However, the take-off and landing direction can be changed if the braking action on the runways is impaired by ice, snow, slush etc., even if the tailwind component is less than 5 kt. The take-off and landing direction also depends on the availability of navigation aids or the weather in the approach and departure area (e.g. thunderstorms).

1.2 Arrivals

1.2.1 Approaching aircraft that have been assigned an aircraft stand on the southern area of the airport (Cargo City South, GAT) shall report this to approach control Frankfurt Arrival when establishing radiotelephony communications.

1.2.2 Irrespective of the arrival route, the preferred runway to be assigned by approach control is runway 07R/25L. As a rule, this runway will also be assigned to aircraft to be parked on the eastern section of the northern apron.

1.2.3 Approaches at a glide angle of 3.2°

1.2.3.1 Runway 07L/25R is equipped with two ILS systems for each landing direction. One ILS per landing direction radiates signals for a glide angle of 3.2°, the other one for a glide angle of 3.0°.

The precision approach path indicator (PAPI) systems indicate the correct path down to a height of 200 ft GND for 3.0° and 3.2°.

1.2.3.2 Regular operations will be conducted under CAT I conditions only.

The approach procedure will only be assigned if no long-lasting tailwind (>30 MIN) is expected.

If tailwind prevails or is to be expected, the provisions of AIP EDDF AD 2.20.1 will be applied and an ILS approach procedure at 3.0° will be assigned for runway 07L/25R.

1.2.3.3 If it is not possible to conduct an approach at 3.2° for safety reasons, the pilot shall mention this in the initial call to LANGEN RADAR (frequencies 120.800 MHz or 125.350 MHz or 119.025 MHz). Such aircraft will be assigned another runway.

1.2.4 Aircraft of type A225 and C5 are only allowed to land at Frankfurt Airport in emergency situations. Aircraft of type A124 are only permitted in CAT I conditions and may only use RWY 07C/25C for landing and take-off.

1.2.5 When changing frequency from LANGEN RADAR (120.800 MHz or 125.350 MHz) to FRANKFURT DIRECTOR (127.275 MHz or 118.500 MHz) the initial call shall be restricted to FRANKFURT DIRECTOR + CALL SIGN + WAKE TURBULENCE CATEGORY (the latter only when HEAVY or SUPER) to avoid frequency congestion. When being transferred from approach control to aerodrome control the initial call shall consist of FRANKFURT TOWER + CALL SIGN + TYPE OF APPROACH + RUNWAY.

1.2.6 High intensity runway operation (HIRO) (landings)

1.2.6.1 Pilots are reminded

– to plan and to name the expected rapid exit taxiway during the approach briefing (cockpit)

– to vacate the runway as quickly as possible to allow for the highest possible throughput per hour

– to adjust taxi speed after touchdown when it is evident that the aircraft will miss the planned rapid exit taxiway. In such a case, aircraft shall quickly vacate the runway via the next rapid exit taxiway. Low taxi speeds shall be avoided on the runway.

1.2.6.2 At night, the use of HIRO is restricted to runway 07L/25R and runway 25L as not all rapid exit taxiways have centreline lights.

Furthermore, aircraft of the category SUPER will not be included in HIRO due to infrastructure restraints. They should, however, also vacate the runway as quickly as possible.

1.2.6.3 Whenever runway conditions permit, the following rapid exit taxiways shall be considered for planning:

bevorzugte Abrollwege / preferred turn-offs SR-30 – SS+30				bevorzugte Abrollwege / preferred turn-offs H24		
TYPE CLASS	RWY 07C	RWY 07R	RWY 25C	RWY 07L	RWY 25L	RWY 25R
HEAVY/(except SUPER) Distance to turn-off	L9* 2500 m	M13 2150 m	L13* 2055 m	P6 2250 m	M21 2275 m	P20 2250 m
MEDIUM (JET) Distance to turn-off	L11* 1800 m	M15* 1725 m	L10* 1700 m	P8 1750 m	M17 1870 m	P16/P20 1750 m/2250 m
MEDIUM (PROP) LIGHT Distance to turn-off	L11 1800 m	M15* 1725 m	L8* 1125 m	P10 1350 m	M11* 1085 m	P14 1350 m

*Schnellabrollweg ohne Mittellinienbefeuern / Rapid exit taxiway without centreline lights
Entfernung von der Schwelle der entsprechenden Start- und Landebahn zum Schnellabrollweg./Distance to go from the runway threshold to the rapid exit taxiway.
Anmerkung: Frühere Abrollwege nur planen, wenn diese sicher erreicht werden./
Note: Only plan an earlier exit, if it is certain that aircraft can turn off safely.

1.2.6.4 Die Möglichkeit der Anwendung herabgesetzter Staffeln auf Start- und Landebahnen durch die Flugplatzkontrolle bleibt unberührt und ist weiterhin zu beachten (EDDF AD 2.22).

1.2.7 Frequenzwechsel nach der Landung

1.2.7.1 Ein Frequenzwechsel nach der Landung ist nur nach Aufforderung durch die Flugplatzkontrolle durchzuführen.

Erhält der Luftfahrzeugführer keine weiterführende Rollfreigabe, ist unbedingt vor einer Start- und Landebahn, deren An- und Abflugflächen, sowie vor Rollbahn L bzw. vor N11 anzuhalten.

1.3 Abflüge

1.3.1 Bevorzugte Startrichtung bei Betriebsrichtung 25/18:

Zur optimalen Nutzung des Start- und Landebahnsystems wird:

– für Abflüge in Richtung Nordwest (OBOKA), Nord (MARUN) und Nordost (TOBAK) vorzugsweise die Start-/Landebahn 25C mit entsprechender Standard-Abflugstrecke zugewiesen, und

– für Abflüge in Richtung Südwest (SOBRA, ULKIG), Süd (ANEKI) und Südost (via AKONI in Richtung NOMBO, DKB, RATIM sowie ROTEN für DEST Gebiet EDDN) und Ost (SULUS) vorzugsweise die Startbahn 18 mit entsprechender Standard-Abflugstrecke zugewiesen, vorausgesetzt, die Rückenwindkomponente für die Startbahn 18 ist nicht größer als 15 kt.

1.3.1.1 Ausnahmen hiervon sind möglich, wenn Gründe der Verkehrssicherheit, die Verfügbarkeit von Navigationseinrichtungen, signifikante Wettereinfüsse im An- und Abflugbereich oder Maßnahmen zum Lärmschutz dies erfordern, oder wenn es die Verkehrslage nach Einschätzung der Flugplatzkontrolle zulässt.

1.3.2 Bevorzugte Startrichtung bei Betriebsrichtung 07/18:

Zur optimalen Nutzung des Start- und Landebahnsystems wird:

– Für Abflüge in Richtung Nordwest (OBOKA), Nord (MARUN), Nordost (TOBAK) und Ost (SULUS) inkl. Gebiet EDDN (KOMIB) vorzugsweise die Start-/Landebahn 07C mit entsprechender Standard-Abflugstrecke zugewiesen,

– für Abflüge in Richtung Südwest (SOBRA, ULKIG), Süd (ANEKI) und Südost (via AKONI in Richtung NOMBO, DKB, RATIM) vorzugsweise die Startbahn 18 mit entsprechender Standard-Abflugstrecke zugewiesen, vorausgesetzt, die Rückenwindkomponente für die Startbahn 18 ist nicht größer als 15 kt.

1.3.2.1 Ausnahmen hiervon sind möglich, wenn Gründe der Verkehrssicherheit, die Verfügbarkeit von Navigationseinrichtungen, signifikante Wettereinfüsse im An- und Abflugbereich oder Maßnahmen zum Lärmschutz dies erfordern, oder wenn es die Verkehrslage nach Einschätzung der Flugplatzkontrolle zulässt.

1.3.3 Rückenwindkomponente Startbahn 18

Beträgt die Rückenwindkomponente für die Startbahn 18 mehr als 10 kt, wird dies über ATIS bekanntgegeben.

ATIS-Text:

TAILWIND COMPONENT RUNWAY 18 MORE THAN 10 KNOTS.

PILOTS UNABLE TO ACCEPT SHALL ADVISE ATC UPON

START-UP REQUEST.

Luftfahrzeugführer, die die höhere Rückenwindkomponente nicht akzeptieren können, werden aufgefordert, dies gleichzeitig mit der Bitte um Anlassenfreigabe ATC mitzuteilen. Bei erhöhter Nichtakzeptanz kann die Flugplatzkontrolle nach eigener Einschätzung die Nutzung der Startbahn 18 ganz einstellen, um Flugwegkreuzungen im Abflugbereich zu vermeiden.

Warnung: Bei Starkwindsituationen ist auf der Startbahn 18 mit Windscherung und erhöhter Turbulenz zu rechnen.

1.3.4 Abflüge aus dem südlichen Flughafenbereich haben bei der Anforderung der Anlassenfreigabe ihren Standort mitzuteilen.

1.3.5 High intensity runway operation (HIRO) (Starts)

1.3.5.1 Nicht abflugbereite Luftfahrzeuge erhalten keine Freigabe zum Abflugpunkt auf der Startbahn. Luftfahrzeugführer werden gebeten, der Flugplatzkontrolle unaufgefordert mitzuteilen, wenn sie noch nicht abflugbereit sind.

1.2.6.4 Aerodrome control may apply reduced separation on runways. Any changes in separation by aerodrome control shall be observed (EDDF AD 2.22).

1.2.7 Frequency change after landing

1.2.7.1 Pilots shall only change the frequency after landing if instructed to do so by aerodrome control.

If pilots do not receive further taxi clearance, they must stop in front of runways and the corresponding landing and take-off climb surfaces and taxiways L and N11.

1.3 Departures

1.3.1 Preferred take-off direction for runway-in-use 25/18:

Optimal utilisation of the runway complex is achieved by the following:

– For departures to the northwest (OBOKA), north (MARUN) and northeast (TOBAK), runway 25C with the relevant standard departure route is preferred.

– For departures to the southwest (SOBRA, ULKIG), south (ANEKI) and southeast (via AKONI in the direction NOMBO, DKB, RATIM and ROTEN for DEST area EDDN) and east (SULUS), runway 18 with the relevant standard departure route is preferred, provided the tailwind component for runway 18 is not greater than 15 kt.

1.3.1.1 Exceptions are possible if required due to traffic safety, the availability of navigation aids, significant weather in the approach area or noise abatement measures or if aerodrome control deems that the traffic situation permits.

1.3.2 Preferred take-off direction for runway-in-use 07/18:

Optimal utilisation of the runway complex is achieved by the following:

– For departures to the northwest (OBOKA), north (MARUN), northeast (TOBAK) and east (SULUS) incl. area EDDN (KOMIB), runway 07C with the relevant standard departure route is preferred.

– For departures to the southwest (SOBRA), south (ANEKI) and southeast (via AKONI in Richtung NOMBO, DKB, RATIM), runway 18 with the relevant standard departure route is preferred, provided the tailwind component for runway 18 is not greater than 15 kt.

1.3.2.1 Exceptions are possible if required due to traffic safety, the availability of navigation aids, significant weather in the approach area or noise abatement measures or if aerodrome control deems that the traffic situation permits.

1.3.3 Tailwind component runway 18

If the tailwind component for runway 18 exceeds 10 kt, this will be broadcast by ATIS.

ATIS text:

TAILWIND COMPONENT RUNWAY 18 MORE THAN 10 KNOTS.

PILOTS UNABLE TO ACCEPT SHALL ADVISE ATC UPON

START-UP REQUEST.

Pilots unable to accept the greater tailwind component are requested to advise ATC at the same time they request start-up clearance. If an increased number of pilots cannot accept, aerodrome control may decide at their own discretion to completely stop the use of runway 18 to avoid crossing flight paths in the departure area.

Warning: In cases of strong winds, wind shear and increased turbulence must be expected on runway 18.

1.3.4 Departing aircraft from the southern area of the airport shall state their position when requesting start-up clearance.

1.3.5 High intensity runway operation (HIRO) (take-offs)

1.3.5.1 Aircraft that are not ready to depart will not receive clearance to line up. Pilots are requested to report to aerodrome control if they are not ready to depart without being asked.

1.3.5.2 Luftfahrzeugführer sollen der Flugplatzkontrolle mit dem Erstanruf ihre frühestmögliche Rollbahneinmündung für den Start mitteilen.

1.3.5.2.1 Bei Betriebspiste 07 / 18 sollen Luftfahrzeugführer, die über Rollbahn N oder L zur Startbahn 18 rollen, frühzeitig die Möglichkeit eines Startlaufbeginns aus Rollbahneinmündung M kalkulieren, um bei Bedarf eine entsprechende Anfrage der Flugplatzkontrolle zum Zwecke der Vorausplanung verzögerungsfrei beantworten zu können. Ein zügiger Startlaufbeginn aus Rollbahneinmündung M verringert die Abhängigkeit zu Anflügen zur Landebahn 07R.

1.3.5.3 Das gesamte Start- und Landebahnsystem ist von gegenseitigen Abhängigkeiten geprägt. Von den Luftfahrzeugführern wird daher erwartet, dass sie nach Erhalt der Startfreigabe sofort ihren Startlauf beginnen.

1.3.5.3.1 Nach dem Start soll zügig auf die veröffentlichte Maximalgeschwindigkeit für das Anfangssegment der frei gegebenen SID beschleunigt werden.

2. Airport Collaborative Decision Making - A-CDM

2.1 Allgemein

Airport-CDM ist der harmonisierte operationelle Ansatz zur Abwicklung eines optimalen Umdrehprozesses. Das Verfahren umfasst den Zeitraum Estimated Off-Block Time (EOBT) minus 3 Stunden bis Take-Off und ist ein durchgehender Prozess von der Flugplanung (ATC-Flugplan) über Landung und Umdrehprozess am Boden bis zum Start.

Airport-CDM am Verkehrsflughafen Frankfurt Main basiert auf dem europäischen Standard für Airport-CDM, sowie der Initiative "Deutsche Harmonisierung von Airport-CDM".

Resultierend aus qualitativ besseren Informationen zu In- und Outbound ist die Prozesskette von der Landung bis zum Start optimiert. Diese Optimierung mündet in der Target Start-Up Approval Time (TSAT), die Zeit, zu der ein Luftfahrzeug die Anlaffung gemäß des A-CDM Verfahrens erhält. Die TSAT ist der wesentliche Faktor zur Erstellung einer Pre-Departure Sequence unter Berücksichtigung der Belange aller beteiligten Partner. Die TSAT und die daraus resultierende Pre-Departure Sequence berücksichtigt die Target Off-Block Time (TOBT) sowie die lokalen Kapazitäten und die Kapazitäten des europäischen Netzwerks.

Um das lokale Airport-CDM Verfahren optimal in das europäische Verkehrsflussmanagement (ATFCM) einzubinden, wurde ein permanenter und voll automatisierter Datenaustausch mit dem Network Manager Operations Center (NMOC) eingeführt. Hieraus ergeben sich sowohl frühzeitig verlässliche Vorhersagen der Lande- bzw. In-Block-Zeit, als auch eine bessere Zuweisung der Calculated Take-Off Time (CTOT) für die regulierten Flüge.

2.2 Verfahren

2.2.1 Flugplanüberprüfung

Ziel der Flugplanüberprüfung ist der Abgleich des ATC-Flugplanes mit dem Airport Slot und den Flugplandaten des Flughafens. Die Estimated Off-Block Time (EOBT) muss mit der Scheduled Off-Block Time (SOBT) übereinstimmen. Ohne gültigen ATC-Flugplan und/oder ohne Airport Slot kann der A-CDM-Prozess nicht beginnen. Bei Abweichungen zwischen EOBT und SOBT erhält der Flugplaninhaber/TOBT-Verantwortliche eine Warnmeldung.

2.2.2 Target Off-Block Time - TOBT

Die TOBT ist der Zeitpunkt, an dem alle Abfertigungsprozesse, außer Push-back und Luftfahrzeugenteisung beendet sein müssen. Sie wird als beste verfügbare Zeit für die Koordination und Berechnung der Pre-Departure Sequenz verwendet.

TOBT = Vorhersage des "Aircraft Ready".

2.2.2.1 Automatische TOBT

30 Minuten vor der Estimated Landing Time (ELDT) des verketteten Inbound Fluges, generiert das System automatisch eine TOBT. Die Veröffentlichung der TOBT erfolgt jedoch frühestens 90 Minuten vor EOBT.

Die TOBT wird nur für die Flüge automatisch generiert, für die noch keine TOBT manuell eingegeben wurde (frühestens 90 Minuten vor EOBT möglich).

Die automatisch generierte TOBT wird unter Berücksichtigung der Estimated In-Block Time (EIBT), Minimum Turn-round Time (MTTT) oder der EOBT sowie der CTOT erzeugt.

Für Flüge mit CTOT wird die TOBT nicht automatisch generiert, wenn TOBT plus Estimated Taxi Out Time (EXOT) hinter dem Ende des Slot Tolerance Window (STW) liegt.

Falls die TOBT nicht automatisch erstellt werden kann, erfolgt eine Warnmeldung, die den TOBT-Verantwortlichen auffordert, eine TOBT einzugeben.

2.2.2.2 TOBT Verantwortung

Die Verantwortung für die Pflege (Eingabe, Update, Löschung), Korrektheit und Einhaltung der TOBT liegt beim Abfertigungsagenten, der Luftfahrtgesellschaft (für Flüge ohne Abfertigungsagenten) oder dem verantwortlichen Luftfahrzeugführer (für Flüge der Allgemeinen Luftfahrt ohne Abfertigungsagenten). Dieses gilt auch für automatisch generierte TOBT.

2.2.2.3 TOBT Korrektur/Löschung

Ist erkennbar, dass die TOBT nicht eingehalten werden kann, muss diese unmittelbar über die Meldewege korrigiert bzw. neu eingegeben werden.

1.3.5.2 Pilots shall advise aerodrome control on initial call of the earliest possible intersection take-off.

1.3.5.2.1 When runways 07 and 18 are the runways-in-use, pilots taxiing to runway 18 via taxiway N or L should calculate at an early stage whether or not they can start their take-off run from the intersection of taxiway M. If aerodrome control asks pilots about their intentions in this regard for planning purposes, pilots should be able to inform aerodrome control about their intention without delay. A rapid take-off run from the intersection to taxiway M reduces interdependencies with traffic approaching runway 07R.

1.3.5.3 The entire runway complex is characterised by interdependencies. Pilots are thus expected to begin their take-off runs immediately after receiving their take-off clearance.

1.3.5.3.1 After take-off, aircraft should rapidly accelerate to the published maximum speed for the initial segment of the cleared SID.

2. Airport Collaborative Decision Making - A-CDM

2.1 General

Airport-CDM is a harmonised method for handling an optimal turn-round process. It covers the period of time between the estimated off-block time (EOBT) minus 3 hours until take-off. It is a continuous process from flight planning (ATC flight plan) to landing and the subsequent turn-round process on the ground until the next take-off.

Airport CDM at Frankfurt Main Airport is based on the European standard for Airport CDM and the initiative "Deutsche Harmonisierung von Airport CDM" (German harmonisation of Airport CDM).

The improved quality of the inbound and outbound information is used to optimise the process chain from arrival to departure. This optimisation has led to the target start-up approval time (TSAT), i.e. the time at which an aircraft is issued start-up approval in accordance with the A-CDM procedure. The TSAT is an essential factor for preparing a pre-departure sequence which takes the requirements of all parties involved into account. The TSAT and the resulting pre-departure sequence take the target off-block time (TOBT) as well as local capacities and the capacities of the European network into account.

To optimise the integration of the local A-CDM procedure into the European air traffic flow and capacity management (ATFCM), a permanent and fully automated data exchange with the Network Manager Operations Centre (NMOC) has been implemented. This results in early and reliable forecasts of the landing and in-block times as well as enhancements in the assignment of the calculated take-off time (CTOT) for regulated flights.

2.2 Procedures

2.2.1 Flight plan validation

The aim of flight plan validation is to correlate the ATC flight plan with the airport slot and the airport schedule. The estimated off-block time (EOBT) must correspond to the scheduled off-block time (SOBT). The A-CDM process cannot start without a valid ATC flight plan and/or without an airport slot. If EOBT and SOBT do not correspond, an alert is sent to the flight plan originator/person responsible for the TOBT.

2.2.2 Target off-block time - TOBT

TOBT is the point in time when all ground handling processes except for aircraft push-back and de-icing have to be completed. It is used as the best available time to coordinate and calculate the pre-departure sequence.

TOBT = prediction of "aircraft ready"

2.2.2.1 Automatic TOBT

The system automatically generates a TOBT 30 minutes prior to the estimated landing time (ELDT) of the associated inbound flight. The earliest time to issue the TOBT is 90 minutes prior to EOBT.

The TOBT will only be generated automatically for flights that have not yet had a TOBT entered manually (earliest time possible: 90 minutes prior to EOBT)

The automatically generated TOBT is calculated on the basis of the estimated in-block time (EIBT), minimum turn-round time (MTTT), or EOBT and CTOT.

For flights with a CTOT, the TOBT will not be automatically generated, if the TOBT plus estimated taxi-out time (EXOT) is after the end of the slot tolerance window (STW).

If the TOBT cannot be automatically generated, an alert is triggered requesting the person responsible for the TOBT to enter a TOBT.

2.2.2.2 Responsibility for TOBT

The handling agent, the airline (for flights without a handling agent) or the pilot-in-command (for general aviation flights without a handling agent) are responsible for maintaining the TOBT (entry, update, deletion), its correction and its adherence. This also applies to automatically generated TOBT.

2.2.2.3 TOBT correction/deletion

If it is foreseeable that the TOBT cannot be adhered to, it shall be updated or re-entered directly via the reporting mechanisms.

Da die TOBT auch weitere Prozesse am Flughafen steuert, sind Anpassungen der TOBT von mehr als 5 Minuten (auch Verfrühungen) durch den TOBT-Verantwortlichen einzugeben.

Eine Korrektur der TOBT kann bis zur Ausgabe der TSAT (TOBT minus 40 Minuten) beliebig oft vorgenommen werden.

Nach Ausgabe der TSAT kann die TOBT maximal dreimal korrigiert werden, eine vierte Korrektur ist nicht möglich, die TOBT muss dann gelöscht und neu eingegeben werden.

Nach Erhalt der Anlanssfreigabe (CDM Status Start-Up Given, SUG) ist eine Eingabe oder Aktualisierung der TOBT nicht mehr möglich.

Treten nach Erhalt der Anlanssfreigabe Umstände ein, die einen Off-block Vorgang gem. A-CDM Verfahren verhindern, muss die Anlanssfreigabe (SUG) zurückgegeben werden. Anschließend kann eine neue TOBT eingegeben werden.

Muss das Luftfahrzeug nach erfolgten Off-block Vorgang zu einer Parkposition zurückkehren (z.B. technischer Defekt), erfolgt aus der Aktivierung des Rückkehrverfahrens die Rücknahme der Anlanssfreigabe (SUG) und die Löschung der Zielzeiten. Anschließend kann eine neue TOBT eingegeben werden.

Bei einer Verfrühung der TOBT ist darauf zu achten, dass der neue TOBT-Wert maximal 10 Minuten vor der aktuellen EOBT des ATC-Flugplans liegt.

Durch die festgelegten Anlanssverfahren ergibt sich daraus für die Erteilung der Anlanssfreigabe ein maximales Zeitfenster von 15 Minuten vor EOBT.

Kann die TOBT nicht eingehalten werden und ist keine neue TOBT bekannt oder ist die maximale Anzahl der Eingaben erreicht, ist die TOBT durch den TOBT-Verantwortlichen zu löschen. Wurde bereits eine TSAT generiert, wird diese bei TOBT-Löschung ebenfalls automatisch gelöscht. Der A-CDM Prozess ist für einen Flug mit gelöschter TOBT unterbrochen, bis eine neue TOBT eingegeben wird.

Bei Wechsel des Luftfahrzeugs und entsprechend erfolgter Änderungsmeldung (CHG - Type/Registration) wird die ursprüngliche TOBT beibehalten.

Bei TOBT Abweichungen von der EOBT um 15 Minuten oder mehr, besteht weiterhin die Verpflichtung eine Verspätungsmeldung (DLA) an den Network Manager zu übermitteln.

2.2.2.4 TOBT Dialog/Meldewege

Der TOBT Dialog erfolgt über einen der nachstehenden Meldewege:

- Common Situational Awareness Tool (CSA-Tool)
 - Internes System der Luftfahrtgesellschaft/des Abfertigungsagenten (über Schnittstelle)
 - Fraport- ACDC (Airside Coordination & Data Center) nach telefonischer Anfrage oder per E-Mail:
Tel.: +49 (0)69 690 71740
E-Mail: ACDC@Fraport.de
 - Rampdisplay des Andockführungssystems auf entsprechend ausgestatteten Positionen (nur Anzeige)
- Für Flüge der Allgemeinen Luftfahrt :
- Bei Fraport Executive Aviation Services in das CSA-Tool:
Tel.: +49 (0)69 690 71718/71719

2.2.3 Target Start-Up Approval Time - TSAT

Die TSAT ist die Zielzeit für die Erteilung der Anlanssfreigabe gemäß A-CDM Verfahren. Die Veröffentlichung der TSAT erfolgt frühestens 40 Minuten vor TOBT. Die "Pre Departure Sequence" ergibt sich aus den Flügen mit berechneter TSAT.

Bei einer Änderung der TOBT bleibt die TSAT grundsätzlich erhalten, sofern der neue TOBT-Wert nicht nach der aktuell gültigen TSAT liegt.

2.2.3.1 TSAT Dialog/Meldewege

Die Übermittlung der TSAT erfolgt über einen der folgenden Wege:

- CSA-Tool
- Schnittstelle für z. B. Airline- oder Ground Handler Systeme
- Systeme der Vorfeldkontrolle
- Systeme des Towers
- Short Message Service (SMS)
- Rampdisplay des Andockführungssystems auf entsprechend ausgestatteten Positionen

Für Flüge der Allgemeinen Luftfahrt :

- CSA-Tool

Der TOBT-Verantwortliche ist grundsätzlich für die Übermittlung der TSAT an den Piloten zuständig.

SMS Service:

Zur Abfrage einer TSAT, sendet der Nutzer eine SMS mit dem Schlüsselwort TSAT und der IATA-Flugnummer (commercial callsign) an die folgende Telefonnummer:

Tel.: +49 173 72 85 018.

Since the TOBT is also used for other ground processes at the Airport, it shall be updated by the person responsible for the TOBT when there are deviations of more than 5 minutes (plus or minus).

The TOBT may be corrected as often as required up until the time the TSAT is issued (TOBT minus 40 minutes).

After the TSAT has been issued, the TOBT may be corrected up to three times. It is not possible to correct it a fourth time. In this case, the TOBT has to be deleted and a new TOBT has to be entered.

After reception of Start Up Given (SUG), input or update of TOBT is no longer possible.

Should circumstances arise where the aircraft can not commence the off-block procedure, the start-up clearance (SUG) shall be forfeited. Thereafter a new TOBT can be entered.

If the aircraft needs to return to an aircraft stand (e.g. due to technical failure), forfeiture of the start-up clearance and deletion of target times occurs automatically. Thereafter a new TOBT can be entered.

It must be ensured that the new TOBT is not earlier than 10 minutes prior the current EOBT of the ATC flight plan.

The defined start-up procedures mean that the maximum time window for issuing the start-up approval is 15 minutes prior to EOBT.

If the TOBT cannot be adhered to and an updated TOBT is not known, or the maximum number of entries has been reached, the TOBT shall be deleted by the person responsible for the TOBT. If a TSAT has already been generated, it will also be automatically deleted when the TOBT is deleted. The A-CDM process will be interrupted for a flight with a deleted TOBT until a new TOBT is entered.

If the aircraft is changed and a change message (CHG - type/registration) is sent, the original TOBT remains in effect.

For TOBT deviations of 15 minutes or more from the EOBT, it is still mandatory to send a delay message (DLA) to the Network Manager.

2.2.2.4 TOBT dialogue channels

The TOBT dialogue is ensured by one the following transmission/communication channels:

- Common Situational Awareness Tool (CSA tool)
 - Internal system of the airline/handling agent (via interface)
 - Fraport ACDC (Airside Coordination & Data Centre) following a request by telephone or E-mail:
Tel.: +49 (0)69 690 71740
E-mail: ACDC@Fraport.de
 - Ramp display of the docking guidance system at positions with corresponding equipment (only display)
- For general aviation flights:
- Via Fraport Executive Aviation Services in the CSA tool:
Tel.: +49 (0)69 690 71718/71719

2.2.3 Target start-up approval time - TSAT

TSAT is the target time for issuing start-up approval as defined in the A-CDM procedure. The earliest time to issue the TSAT is 40 minutes prior to TOBT. The pre-departure sequence is determined by the flights with a calculated TSAT.

Changes to the TOBT do not affect the TSAT in general as long as the new TOBT does not come after the currently valid TSAT.

2.2.3.1 TSAT dialogue channels

TSAT is transmitted by one of following channels:

- CSA tool
- Interface of the systems used by airlines or ground handling agents
- Systems used by apron control
- Systems used by the tower
- Short message service (SMS)
- Ramp display of the docking guidance system at appropriately equipped positions

For general aviation flights:

- CSA tool

As a rule, the person responsible for the TOBT must ensure the correct transmission of the TSAT to the pilot.

SMS service:

To register a TSAT request, the user will send a text message (SMS) with the keyword TSAT and the IATA flight number (commercial call sign) to the following telephone number:

Tel.: +49 173 72 85 018

Die Registrierung für einen Flug kann frühestens eine Stunde vor Abflug erfolgen. Nach erfolgreicher Registrierung erhält der Nutzer die aktuelle TSAT und TOBT. Alle TSAT-Updates > 5 Minuten und alle TOBT-Updates werden automatisch übermittelt. Das letzte Update erfolgt zum Zeitpunkt TSAT minus 5 Minuten.

Bei fehlgeschlagener Registrierung, erhält der Nutzer eine Hinweis-SMS wie er zu verfahren hat.

Hinweis: Bitte beachten, dass eine TSAT erst zum Zeitpunkt TOBT minus 40 Minuten vorliegt.

2.2.3.2 Sequenztausch

Nach Berechnung der TSAT besteht innerhalb des Zuständigkeitsbereichs eines TOBT-Verantwortlichen die Möglichkeit, die TSAT zweier unregulierter Flüge einer Airline zu tauschen.

Jeder Tausch ist mit dem Tower zu koordinieren.

Für Flüge mit CTOT ist ein Sequenztausch nicht möglich.

2.2.4 Anlassverfahren - Start-Up

Die Pre-Departure Sequence wird gemäß TSAT erstellt. Die Freigabe für Start-Up erfolgt ausschließlich unter Berücksichtigung von TOBT und TSAT.

Mit Erreichen der TOBT muss das Luftfahrzeug fertig (Aircraft Ready) für Start-Up bzw. zur Standplatzeinteilung und der Pilot hörbereit auf der Frequenz von FRANKFURT DELIVERY sein.

Die Anfrage und Erteilung der Anlasserlaubnis (Start-Up) kann sowohl über Funk, als auch über Datalink (DCL) erfolgen.

2.2.4.1 Funk

Luftfahrzeugführer haben eine Freigabe zum Anlassen der Triebwerke auf der entsprechenden Frequenz von FRANKFURT DELIVERY einzuholen.

Für Freigabevorgänge mittels Funk muss der Pilot die Anlass- und Streckenfreigabe bei FRANKFURT DELIVERY im Zeitraum TSAT +/- 5 Minuten einholen. In Abhängigkeit der TSAT und der momentanen Verkehrssituation wird die Freigabe erteilt.

Luftfahrzeugführer sind verpflichtet, beim Erstanruf eindeutig mitzuteilen, ob ausschließlich eine Streckenfreigabe (Request EN-ROUTE CLEARANCE) oder eine kombinierte Anlass- und Streckenfreigabe (Request START UP and EN-ROUTE CLEARANCE) erbeten wird.

Bei Verzögerungen ist FRANKFURT DELIVERY zu informieren, andernfalls wird die TOBT gelöscht und es muss eine Neueingabe erfolgen.

2.2.4.2 Datalink - DCL

Des Weiteren bietet die DFS Deutsche Flugsicherung GmbH neben der Freigabe via Funk noch die Möglichkeit der Erteilung der Anlass- und Streckenfreigabe mittels Datalink (Eurocae Standard ED85A) an.

Für Freigaben mittels Datalink Departure Clearance (DCL) gelten die folgenden Zeitparameter:

- Ti = 30 MIN vor TOBT (frühester Zeitpunkt der Cockpit - RCD Meldung)
- Tt = TSAT (spätester Zeitpunkt der Cockpit - RCD Meldung)
- T0 = 1 MIN (festgelegter Standard)
- T1 = 5 MIN (festgelegter Standard)
- T2 = 1 MIN (festgelegter Standard)

Die Freigabe (CLD - Departure Clearance Uplink Message) durch den TWR erfolgt auf Basis der TSAT - "Start Up approved according TSAT". Es gilt die zu diesem Zeitpunkt über die TSAT- Meldewege veröffentlichte TSAT. Darüber hinaus ist die TSAT Entwicklung (Aktualisierungen) durch die Piloten zu überwachen. Nach Abschluss des Datalink Vorgangs haben die Piloten auf der in der CLD aufgeführten Frequenz Hörbereitschaft zu halten und von Nachfragen bezüglich der Anlassfreigabe abzusehen.

Abweichend hiervon kann, abhängig von der Verkehrs- und Wettersituation, die Streckenfreigabe separat nach Erhalt einer RCD vorab mittels Datalink (CLD) übermittelt werden, während die Anlassfreigabe zu einem späteren Zeitpunkt erteilt wird.

Luftfahrzeugführer sind verpflichtet, beim Erstanruf mittels RCD eindeutig mitzuteilen, ob ausschließlich eine Streckenfreigabe (Request EN-ROUTE CLEARANCE) oder eine kombinierte Anlass- und Streckenfreigabe (Request START UP and EN-ROUTE CLEARANCE) erbeten wird.

Luftfahrzeugführer sind dazu verpflichtet, während des gesamten Freigabevorganges, auf der Frequenz FRANKFURT DELIVERY Hörbereitschaft zu halten.

2.2.4.3 Remote Holding

Remote Holding beschreibt das Verfahren für ein abfliegendes Luftfahrzeug, das aufgrund einer hohen Differenz zwischen TOBT und TSAT eine Parkposition belegt, die dringend für ein ankommendes Luftfahrzeug zur Verfügung stehen muss.

Ist das Luftfahrzeug bereit, stellt der Luftfahrzeugführer den Start-Up/bzw. Push-Back Request für Remote Holding direkt bei der zentralen Vorfeldkontrolle.

Hinweis: Dieser Request bezieht sich nicht auf die Anlass- und Streckenfreigabe. Diese muss nach dem Erreichen der Remote Position beim Tower eingeholt werden.

The registration for a flight can be made one hour before departure at the earliest. After successful registration, the user will receive the current TSAT and TOBT. All TSAT updates > 5 minutes and all TOBT updates are transmitted automatically. The last update is made at TSAT minus 5 minutes.

If registration is not successful, the user will receive a text message (SMS) containing information on how to proceed.

Note: Please be aware that a TSAT is only available at TOBT minus 40 minutes.

2.2.3.2 Sequence swap

After the TSAT has been calculated, it is possible to swap the TSAT of two non-regulated flights of the same airline within the area of responsibility of the person responsible for the TOBT.

Such swaps shall be coordinated with the tower.

The sequence of flights with a CTOT may not be switched.

2.2.4 Start-up procedure

The pre-departure sequence is determined in accordance with TSAT. Start-up approval will only be issued under consideration of TOBT and TSAT.

At TOBT, the aircraft must be ready for start-up or on-stand de-icing, and the pilot shall maintain continuous air-ground voice communication watch on the frequency of FRANKFURT DELIVERY.

Start-up may be requested and approved either via radio or data link (DCL).

2.2.4.1 Radio

Pilots shall obtain a start-up approval on the appropriate frequency of FRANKFURT DELIVERY.

For clearances via radio, the pilot shall request start-up approval and en-route clearance from FRANKFURT DELIVERY within the time period of TSAT +/- 5 minutes. The approval will be issued dependent on the TSAT and the current traffic situation.

Pilots are obliged to state during their initial call whether only an en-route clearance (Request EN-ROUTE CLEARANCE) or a combined en-route and start-up approval (Request START UP and EN-ROUTE CLEARANCE) is requested.

In the case of delays, FRANKFURT DELIVERY shall be informed. Otherwise, the TOBT will be deleted and must be re-entered.

2.2.4.2 Data link departure clearance - DCL

In addition to clearances via radio, DFS Deutsche Flugsicherung GmbH offers to issue start-up approval and en-route clearance by means of data link (Eurocae Standard ED85A).

The following time parameters apply to data link departure clearances (DCL):

- Ti = 30 MIN prior to TOBT (earliest point in time for cockpit RCD message)
- Tt = TSAT (latest point in time for cockpit RCD message)
- T0 = 1 MIN (defined standard)
- T1 = 5 MIN (defined standard)
- T2 = 1 MIN (defined standard)

The clearance (CLD - departure clearance uplink message) issued by the tower is based on TSAT - "Start-up approved according TSAT". The TSAT issued at this point in time by means of the TSAT reporting channels applies. In addition, the pilot shall monitor TSAT updates. After completion of the data link process, the pilots shall maintain continuous air-ground voice communication watch on the frequency given in the CLD and shall refrain from asking questions about the start-up approval.

Depending on the traffic and weather situation, the process can be altered and the en-route clearance can be transmitted separately via data link (CLD) after receiving an RCD, while start-up approval will be issued at a later point in time.

Pilots are obliged to state during their initial call (RCD) whether only an en-route clearance (Request EN-ROUTE CLEARANCE) or a combined en-route and start-up approval (Request START UP and EN-ROUTE CLEARANCE) is requested.

Pilots shall maintain continuous air-ground voice communication watch on frequency FRANKFURT DELIVERY throughout the complete process.

2.2.4.3 Remote holding

Remote holding means the procedure for a departing aircraft which - due to a large gap between TOBT and TSAT - is parked at an aircraft stand which is urgently required by an arriving aircraft.

When the aircraft is ready, the pilot shall request start-up/push-back for remote holding from central apron control.

Note: This request is not related to start-up approval and en-route clearance. These must be obtained from the tower after reaching the remote position.

2.2.5 Push-Back Vorgang/ Rollfreigabe

Für eine Anlassfreigabe mittels Funkverfahren

- muss die Anfrage für Push-Back spätestens 5 Minuten nach Erhalt der Anlassfreigabe auf Push-Back Positionen erfolgen.
- muss die Anfrage für Taxi spätestens 10 Minuten nach Erhalt der Anlassfreigabe auf Roll-Out Positionen erfolgen.

Für eine Anlassfreigabe mittels Datalink

- muss die Anfrage für Push-Back auf Push-Back Positionen im Zeitraum TSAT - 5 Minuten bis TSAT + 5 Minuten erfolgen.
- muss die Anfrage für Taxi auf Roll-Out Positionen im Zeitraum TSAT - 5 Minuten bis TSAT + 10 Minuten erfolgen.

2.2.6 Enteisierung

Die Enteisungszeiten sind bei der Festlegung der TOBT nicht zu berücksichtigen, sie werden auf Basis der Anmeldung zur Enteisierung bei der TSAT-Berechnung berücksichtigt.

Auf Grund des Einflusses der Enteisierung auf die Sequenzierung wird dringend empfohlen, eine Enteisierung vor dem Zeitpunkt der TSAT-Veröffentlichung (TOBT minus 40 Minuten) anzufordern.

Die grundsätzlichen Luftfahrzeugenteisungsverfahren am Flughafen Frankfurt sind im Kapitel 11 ausführlich beschrieben.

2.2.7 A-CDM Alarmmeldungen

Während des gesamten A-CDM-Prozesses kann es zur Generierung von Warnmeldungen (CDM Alerts) kommen.

Warnmeldungen werden entweder durch lokale Ereignisse und Plausibilitätsprüfungen oder im Datenaustausch mit NMOC als Reaktion auf Error/Warning-Meldungen ausgelöst.

Für den Empfang der Warnmeldungen ist es erforderlich, dass für alle Airlines/Handlingagenten mindestens eine Kontaktadresse (E-Mail) beim Flughafenbetreiber bekannt gegeben wird.

Des Weiteren werden die Warnmeldungen in der CSA (Common Situational Awareness) Frankfurt A-CDM Anwendung dargestellt.

Die Warnmeldungen erfordern die Reaktion des Empfängers, da gegebenenfalls der A-CDM-Prozess unterbrochen und keine Anlassfreigabe erteilt wird.

2.2.8 Koordination mit dem Netzwerkmanagement - NMOC

Die grundsätzlichen Network Manager Verfahren bestehen weiterhin. Zusätzlich erfolgt durch A-CDM ein permanenter und automatisierter Datenaustausch mit NMOC. Hierzu werden vor und während des Umdrehprozesses voraussichtliche Abflugzeiten (Target Take-Off Times - TTOT) an den Network Manager übermittelt sowie voraussichtliche Landezeiten (Estimated Landing Times - ELDT) empfangen.

Der Network Manager berücksichtigt die voraussichtlichen Abflugzeiten bei der CTOT-Berechnung und versucht, die CTOT entsprechend anzupassen.

2.2.9 Begriffe / Abkürzungen

TOBT: Target Off-Block Time

Von Luftfahrtgesellschaft/Abfertigungsagent gemeldeter, verbindlicher Zeitpunkt, zu dem die gesamte Bodenabfertigung abgeschlossen sein wird, die Flügeltüren geschlossen sowie die Fluggastbrücken vom Luftfahrzeug entfernt sind und die Anlassfreigabe entgegengenommen werden, so dass danach die Push-Back/Taxi Freigabe erfolgen kann. TOBT ist die Orientierungszeit für alle Abfertigungsprozesse, außer Push-Back und Luftfahrzeugenteisierung. Sie wird als beste verfügbare Zeit für die Koordination verwendet.

TSAT: Target Start Up Approval Time

Zielzeit für die Erteilung der Anlassfreigabe gemäß A-CDM Verfahren. Die TSAT beinhaltet alle bekannten Einschränkungen, z.B. CTOT oder die Verkehrssituation am Verkehrsflughafen Frankfurt Main.

Aircraft Ready:

Der Zeitpunkt, zu dem das Luftfahrzeug für Push-Back/Taxi bereit ist, d.h. die Flügeltüren geschlossen sowie die Fluggastbrücken vom Luftfahrzeug entfernt sind und das Push-Back Fahrzeug gemäß dem A-CDM Verfahren disponiert ist. Der Status Aircraft Ready muss spätestens zum Zeitpunkt TOBT erreicht sein, anderenfalls ist die TOBT entsprechend anzupassen.

MTTT: Minimum Turn-Round Time

Die Minimum Turn-Round Time ist eine im Flughafensystem hinterlegte, Airline-, Flugzeugtyp- und Zielort-abhängige Mindestumdrehzeit für Luftfahrzeuge. Änderungen sind dem Flughafen von der Airline bekannt zu geben. Die MTTT ist die mindestende zu erwartende Zeit zwischen Ankunft und Verlassen der Parkposition.

EIBT: Estimated In-Block Time

Erwartete Ankunft an der Parkposition, inklusive berücksichtigter Verzögerungen während des Flugverlaufes.

SOBT: Scheduled Off-Block Time

Koordinierte Zeit zum Verlassen der Parkposition (Airport Slot).

2.2.5 Push-back procedure/taxi clearance

For start-up approvals by means of radio communication procedures

- push-back must be requested no later than 5 minutes after receiving start-up approval at push-back positions;
- taxi clearance must be requested no later than 10 minutes after receiving start-up approval at roll-out positions.

For start-up approval by means of data link

- push-back must be requested at push-back positions within the time period of TSAT - 5 minutes to TSAT + 5 minutes;
- taxi clearance must be requested at roll-out positions within the time period of TSAT - 5 minutes to TSAT + 10 minutes.

2.2.6 De-icing

The de-icing times shall not taken into consideration when the TOBT is defined. They are, however, considered in the TSAT calculation based on the request for de-icing.

Due to the influence of de-icing on sequencing, it is highly recommended to request de-icing before the TSAT is issued (TOBT minus 40 minutes).

The general de-icing procedures at Frankfurt Airport are described in detail in chapter 11.

2.2.7 A-CDM alert messages

During the entire A-CDM procedure, alert messages may be generated (CDM alerts).

Alerts will either be triggered by local occurrences and coherency checks or when exchanging data with the NMOC as a reaction to error/warning messages.

To receive these alerts, it is necessary that all airlines/handling agents have submitted at least one contact address (e-mail) to the airport operator.

Furthermore, alert messages will be displayed in the CSA Frankfurt A-CDM tool.

Alert messages require a response from the recipient because the A-CDM process might be interrupted and start-up approval not issued.

2.2.8 Coordination with the Network Manager Operations Centre - NMOC

The general Network Manager procedures remain unchanged. In addition, A-CDM ensures a permanent and automated data exchange with the NMOC. For this purpose, target take-off times (TTOT) will be transmitted to the Network Manager during the turn-round process and estimated landing times (ELDT) will be received.

The Network Manager will take the target take-off times into consideration when calculating the CTOT and will try to adjust the CTOT accordingly.

2.2.9 Terms / Abbreviations

TOBT: Target off-block time

The time that an aircraft operator or ground handler estimates that an aircraft will be ready, all doors closed, boarding bridge removed, push back vehicle available and ready to start up/push back immediately upon reception of clearance from the tower. TOBT is a reference time used for all ground handling processes except for aircraft push-back and de-icing. This time is the best available time for coordination.

TSAT: Target start-up approval time

Target time for issuing start-up approval in accordance with the A-CDM procedure. TSAT includes any limitations known, e.g. CTOT or the traffic situation at Frankfurt Main Airport.

Aircraft ready:

The time when the aircraft is ready for push-back/taxiing, i.e. all doors are closed, boarding bridges have been removed and the push-back vehicle is planned according A-CDM procedure. The aircraft ready status must have been reached at TOBT, if not, the TOBT needs to be adjusted accordingly.

MTTT: Minimum turn-round time

The minimum turn-round time required by aircraft and filed in the airport system, depending on the airline, type of aircraft and destination of aircraft. Changes shall be communicated to the airport by the airline. MTTT is the minimum time expected to be required between arrival at and departure from the aircraft stand.

EIBT: Estimated in-block time

The expected time when an aircraft will arrive at the aircraft stand (in-block); it takes into account delays during flight progress.

SOBT: Scheduled off-block time

The time when an aircraft is scheduled to depart from its aircraft stand (airport slot).

CSA-Tool:

Das Common Situational Awareness Tool ist ein Anzeigemedium, welches dem Nutzer den lesenden sowie schreibenden Zugriff auf Flugdaten gibt. Die Flugdaten bestehen aus allgemeinen Informationen zur Flugbewegung sowie aus Zeitstempeln, die im Rahmen des Airport-CDM Verfahrens eine wichtige Rolle spielen.

2.2.10 Kontaktadressen und Informationen

Für den TOBT-Dialog und die TSAT-Übermittlung ist es für alle Airlines/Abfertigungsagenten erforderlich, eine aktuelle Kontaktadresse (TOBT-Verantwortlicher) bei Fraport bekannt zu geben.

Für Flüge der allgemeinen Luftfahrt ohne Abfertigungsagenten ist dies nicht erforderlich, da die Meldungen des Airport-CDM-Verfahrens an Fraport Executive Aviation Services übermittelt werden.

Für nähere Informationen zum Airport-CDM Verfahren sind eine Verfahrensbeschreibung (Brief Description) und ein Flight Crew Briefing verfügbar. Weitere Informationen unter www.cdm.frankfurt-airport.com und unter www.acdm-germany.de.

2.2.11 A-CDM Ansprechpartner

Um das Airport-CDM Verfahren im Sinne des Gesamtprozesses weiterentwickeln zu können, bitten wir alle Beteiligten, uns Ihre Erfahrungen, Kritikpunkte und Verbesserungsvorschläge zu übermitteln.

Local A-CDM@FRA Management:

Tel.: +49 (0)69 690 28544

E-Mail: info@cdm.frankfurt-airport.com

3. Lärmschutz

3.1 Einschränkung des Nachtluftverkehrs sowie Betriebsbeschränkungen außerhalb der Nachtzeit für die Zivilluftfahrt

Die Landebahn Nordwest (07L/25R) darf nur durch Luftfahrzeuge bis einschließlich Codebuchstabe E gemäß der Kategorisierung der ICAO benutzt werden. Luftfahrzeuge des Codebuchstaben F gemäß Kategorisierung nach ICAO Anhang 14, Strahlflugzeuge, die nicht in die Luftfahrzeuggruppen bis einschließlich S 6.3 gemäß der Anleitung zur Berechnung von Lärmschutzbereichen (AzB) eingeordnet werden können sowie Luftfahrzeuge des Musters MD11 dürfen die Landebahn Nordwest (07L/25R) nicht benutzen. Auf der Landebahn Nordwest (07L/25R) sind Starts von Luftfahrzeugen unzulässig.

3.1.1 Luftfahrzeuge ohne Lärmzulassung nach Anhang 16 zum ICAO-Abkommen dürfen während der gesamten Betriebszeit des Verkehrsflughafens Frankfurt/Main auf dem gesamten Start- und Landebahnsystem des Verkehrsflughafens Frankfurt Main weder starten noch landen.

3.1.2 Luftfahrzeuge, welche lediglich die Lärmzertifizierungswerte nach Anhang 16, Band 1, Teil II, Kapitel 2 des ICAO-Abkommens erfüllen, dürfen während der Betriebszeit des Verkehrsflughafens Frankfurt Main auf dem gesamten Start- und Landebahnsystem des Verkehrsflughafens Frankfurt/Main weder starten noch landen, soweit nicht - nachgewiesen durch eine Bescheinigung gemäß § 11c Abs. 7 Luftverkehrs-Ordnung (LuftVO) - das Luftfahrt-Bundesamt für das betreffende Luftfahrzeug eine Ausnahme nach Maßgabe des § 11 c Abs. 4 - 6 LuftVO zugelassen hat oder eine von einem Mitgliedstaat der Europäischen Union zugelassene Ausnahme gemäß § 11c Abs. 8 LuftVO anzuerkennen ist

3.1.3 Für Luftfahrzeuge, welche die Vorschriften des Anhangs 16, Band 1, Teil II, Kapitel 3 des ICAO-Abkommens knapp i. S. d. § 48a Nr. 4 Luftverkehrs-Zulassungs-Ordnung (LuftVZO) erfüllen, gelten die folgenden Betriebsregelungen:

3.1.3.1 Starts und Landungen sind in der Zeit von 1900 (1800) bis 0700 (0600) an allen Wochentagen unzulässig, soweit nicht eine Ausnahme nach Maßgabe des § 48f Abs. 1 LuftVZO gilt oder für den Einzelfall gemäß Abs. 2 der Vorschrift zugelassen worden ist.

3.1.3.2 Ab Beginn der Flugplanperiode Winter 2011/2012 sind Starts und Landungen zusätzlich in der Zeit von Freitag, 1900 (1800), bis Montag, 0700 (0600), unzulässig, soweit nicht eine Ausnahme nach Maßgabe des § 48f Abs. 1 LuftVZO gilt oder für den Einzelfall gemäß Abs. 2 der Vorschrift zugelassen worden ist.

3.1.3.3 Verspätet oder verfrüht ankommende Luftfahrzeuge, deren Landung nach der durch den Flughafenkoordinator vergebenen Zeitschleife (Slot) außerhalb der Betriebsbeschränkungszeiten bis 1900 (1800) bzw. ab 0700 (0600) geplant ist, dürfen bis 2100 (2000) und ab 0500 (0400) landen, sofern sich die Verspätung oder Verfrühung nicht schon aus der Flugplangestaltung (§ 25 LuftVO) ergibt.

3.1.4 Nach der Inbetriebnahme der Landebahn Nordwest dürfen ab dem ersten Tag der Flugplanperiode, für die unter Nutzung der Kapazität der Landebahn Nordwest eine Erhöhung des Koordinierungseckwertes festgelegt wurde, auf dem gesamten Start- und Landebahnsystem des Verkehrsflughafens Frankfurt/Main an allen Wochentagen in der Zeit von 2100 (2000) bis 0500 (0400) keine Luftfahrzeuge starten oder landen, soweit nicht nachfolgend etwas anderes bestimmt ist.

CSA tool:

The Common Situational Awareness Tool is a display system which gives the user read and write access to flight data. These flight data consist of general information about flights and time stamps which play an important role in the Airport CDM procedure.

2.2.10 Contact addresses and information

For the TOBT dialogue and the TSAT transmission, all airlines/ground handlers are required to submit a current address (person responsible for the TOBT) to Fraport.

This is not necessary for general aviation flights without a handling agent because the messages from the Airport-CDM procedure will be transmitted to Fraport Executive Aviation Services.

More detailed information about the Airport CDM procedure is included in the "Brief Description" and in a flight crew briefing. Additional information can be found at: www.cdm.frankfurt-airport.com and at: www.acdm-germany.de.

2.2.11 A-CDM contact persons

To help improve the overall Airport CDM procedure, we kindly request all those involved to inform us about their experience. We also welcome any criticism, comments or suggestions.

Local A-CDM@FRA Management:

Tel.: +49 (0)69 690 28544

E-mail: info@cdm.frankfurt-airport.com

3. Noise abatement

3.1 Night flight restriction and operational restrictions for civil aviation outside nighttime hours

Landing runway northwest (07L/25R) may only be used by aircraft up to and including code letter E in compliance with ICAO categorisation. Aircraft with code letter F in compliance with categorisation according to ICAO Attachment 14, jet airplanes, which cannot be classified into the aircraft groups up to and including S 6.3 in compliance with the instructions for calculating noise protection zones as well as aircraft of the type MD11 may not use landing runway northwest (07L/25R). Take-offs of aircraft are not permitted from landing runway northwest (07L/25R).

3.1.1 Aircraft without noise certification in accordance with ICAO Annex 16 are not permitted to take off from or land on the entire runway system of Frankfurt/Main Airport during the hours of operation of Frankfurt Main Airport.

3.1.2 Aircraft that merely meet the noise certification levels in accordance with ICAO Annex 16, Volume 1, Part II, Chapter 2 are not permitted to take off from or land on the entire runway system of Frankfurt/Main Airport during the hours of operation of Frankfurt Main Airport unless - documented by a certificate according to Section 11c(7) of the German Aviation Regulation (LuftVO) - the Federal Aviation Office (LBA) has granted an exemption for the aircraft concerned according to Section 11 c(4-6) of the LuftVO, or a Member State of the European Union has granted an exemption in accordance with Article 11c(8) of the LuftVO.

3.1.3 The following operational provisions apply to aircraft that marginally comply with ICAO Annex 16, Volume 1, Part II, Chapter 3 within the meaning of Section 48a(4) of the German Regulation on the Certification and Licensing in Aviation (LuftVZO):

3.1.3.1 Take-offs and landings are not permitted on any days of the week between 1900 (1800) and 0700 (0600), unless an exemption in accordance with Section 48f(1) of the LuftVZO or an individual exemption in accordance with Section 48f(2) of the regulation has been granted.

3.1.3.2 Since the beginning of the winter 2011/2012 scheduling period, take-offs and landings have not been permitted between Friday 1900 (1800) and Monday 0700 (0600), unless they have been granted an exemption in accordance with Section 48f(1) of the LuftVZO or an individual exemption in accordance with Section 48f(2) of the regulation.

3.1.3.3 Aircraft arriving late or early whose landing is planned by the airport coordinator for a slot outside the operational restrictions up to 1900 (1800) or from 0700 (0600) may land until 2100 (2000) and from 0500 (0400), provided that the late or early arrival was not envisaged as such in the flight plan (Section 25 LuftVO).

3.1.4 Following the opening of the landing runway northwest, from the first day of the new scheduling period, which - because of the added capacity of the landing runway northwest - provides an increase in the coordinated hourly runway capacity, take-offs and landings are not permitted on the entire runway system of Frankfurt/Main Airport between 2100 (2000) and 0500 (0400) on any days of the week, unless otherwise provided for in the following.

3.1.4.1 Zwischen 2100 (2000) und 0500 (0400) sind nach Maßgabe der folgenden Bestimmungen durchschnittlich 133 planmäßige Flugbewegungen pro Nacht auf dem Verkehrsflughafen Frankfurt/Main zulässig. Der Durchschnittswert darf jeweils bezogen auf das Kalenderjahr nicht überschritten werden; der Flughafenkoordinator darf kalenderjährlich nicht mehr als 48.545 Zeiträumen (Slots) für Flugbewegungen zwischen 2100 (2000) und 0500 (0400) zuweisen. Eine Übertragung nicht zugewiesener bzw. nicht genutzter Zeiträume in das folgende Kalenderjahr ist nicht gestattet. Die koordinierten und tatsächlichen Flugbewegungen eines jeden Kalenderjahres sowie die sich daraus ergebenden durchschnittlichen Flugbewegungszahlen sind der Genehmigungsbehörde jeweils nach Ablauf eines jeden Kalenderjahres nachzuweisen.

3.1.4.1.1 Zwischen 2100 (2000) und 2200 (2100) sowie zwischen 0400 (0300) und 0500 (0400) dürfen nur solche Luftfahrzeuge starten und landen,

– welche die Lärmzertifizierungswerte nach Anhang 16, Band 1, Teil II, Kapitel 4 des ICAO-Abkommens erfüllen und

– deren Start oder Landung spätestens am Vortag vom Flughafenkoordinator der Bundesrepublik Deutschland koordiniert worden ist.

3.1.4.1.2 Zwischen 2200 (2100) und 0400 (0300) sind keine planmäßigen Flugbewegungen zulässig.

3.1.4.1.3 Für Landungen verspätet oder verfrüht ankommender Luftfahrzeuge gelten die folgenden Regelungen:

3.1.4.1.3.1 Luftfahrzeuge, welche mindestens die Lärmzertifizierungswerte nach Anhang 16, Band 1, Teil II, Kapitel 3 des ICAO-Abkommens nicht nur knapp i. S. d. § 48a Nr. 4 LuftVZO erfüllen und deren Landung nach der durch den Flughafenkoordinator vergebenen Zeiträume (Slot) bis 2100 (2000) bzw. ab 0500 (0400) geplant ist, dürfen bis 2300 (2200) bzw. ab 0400 (0300) ohne Anrechnung auf die Kontingentierung zu Ziffer 3.1.4.1 landen, sofern sich die Verspätung oder Verfrühtung nicht schon aus der Flugplangestaltung (§ 25 LuftVO) ergibt.

3.1.4.1.3.2 Luftfahrzeuge, welche die Lärmzertifizierungswerte nach Anhang 16, Band 1, Teil II, Kapitel 4 des ICAO-Abkommens erfüllen und deren Landung nach der durch den Flughafenkoordinator vergebenen Zeiträume (Slot) zwischen 2100 (2000) und 2200 (2100) bzw. zwischen 0400 (0300) und 0500 (0400) unter den Voraussetzungen der Ziffer 3.1.4.1.1 geplant ist, dürfen bis 2300 (2200) landen, sofern sich die Verspätung nicht schon aus der Flugplangestaltung (§ 25 LuftVO) ergibt. Verfrühtlandungen vor 0400 (0300) sind untersagt.

3.1.4.1.3.3 Für den Fall, dass die Zahl der nach Ziffer 3.1.4.1.3.1 und 3.1.4.1.3.2 zulässigen Verspätungslandungen zwischen 2200 (2100) und 2300 (2200) im Durchschnitt eines Kalenderjahres den Wert von 7,5 überschreitet, bleiben unter Beachtung der öffentlichen Verkehrsinteressen nachträgliche Änderungen und Ergänzungen der für diesen Nachtzeitraum angeordneten Verspätungsregelungen vorbehalten. Zu diesem Zweck sind der Genehmigungsbehörde jeweils nach Ablauf eines Kalenderjahres die Zahl der verspätungsbedingt zwischen 2200 (2100) und 2300 (2200) durchgeführten Landungen sowie der sich daraus im Jahresmittel ergebende Durchschnittswert nachzuweisen.

3.1.4.2 Für die nach Ziffer 3.1.4.1 zulässigen Flugbewegungen gelten die folgenden weiteren Einschränkungen:

3.1.4.2.1 Die Benutzung der Landebahn Nordwest durch Luftfahrzeuge ist zwischen 2200 (2100) und 0400 (0300) untersagt.

3.1.4.2.2 Die Flugbewegungen sollen, soweit dies bei der Durchführung der Flugverkehrskontrolle i. S. d. § 27c Abs. 2 Nr. 1 a) Luftverkehrsgesetz (LuftVG) vertretbar erscheint, zwischen 2200 (2100) und 0400 (0300) unter Berücksichtigung der Siedlungsstruktur so auf die Start- und Landebahnen Center (07C/25C) und Süd (07R/25L) sowie die Startbahn West (18) des Verkehrsflughafens Frankfurt/Main verteilt werden, dass Überflüge besiedelter Gebiete auf das unumgängliche Maß beschränkt bleiben und auf eine möglichst ausgeglichene Verteilung der Flugbewegungen hingewirkt wird.

3.1.4.3 Starte und Landungen zur Durchführung von Funk- und Radarmessungen oder für Überprüfungsmaßnahmen von Flughafenanlagen sind zwischen 2100 (2000) und 0500 (0400) auf dem Verkehrsflughafen Frankfurt/Main lediglich dann zulässig, wenn die Luftfahrzeuge den Lärmzertifizierungswerten nach Anhang 16, Band 1, Teil II, Kapitel 4 des ICAO-Abkommens genügen und die Durchführung der Maßnahmen während dieser Zeit zwingend erforderlich ist. Eine Anrechnung auf die gemäß Ziffer 3.1.4.1 in diesem Zeitraum zulässigen Flugbewegungen findet nicht statt. Die Regelungen für die Bahnbenutzung gemäß Ziffer 3.1.4.2 gelten für solche Flüge nicht.

3.1.4.4 Propellerflugzeuge mit einer zulässigen Höchstabflugmasse von weniger als 9.000 kg dürfen zwischen 2100 (2000) und 0500 (0400) nur unter den Einschränkungen der Ziffer 3.1.4.1 bis 3.1.4.3 starten und landen, wobei sie anstelle der dort genannten Lärmzertifizierungswerte mindestens die erhöhten Schallschutzanforderungen i. S. d. § 4 der Landeplatz-Lärmschutz-Verordnung vom 05.01.1999 (BGBl. I, S. 35; NfL I 134/99) erfüllen müssen.

3.1.4.5 Bis zu dem in Ziffer 3.1.4 bezeichneten Zeitpunkt (Erhöhung des Koordinierungszeitpunkts) gelten für die davon betroffenen Luftfahrzeuge die nächtlichen Betriebsbeschränkungen der Genehmigung für den Verkehrsflughafen Frankfurt/Main in der Fassung der jeweils letzten Änderungsgenehmigung fort.

3.1.4.1 Between 2100 (2000) and 0500 (0400), an average of 133 scheduled aircraft movements per night are permitted at Frankfurt/Main Airport in accordance with the following provisions. The average value may not be exceeded based on the respective calendar year; the airport coordinator may not allocate more than 48,545 slots for aircraft movements between 2100 (2000) and 0500 (0400) per calendar year. Slots that were not allocated or used may not be carried over into the next calendar year. Documentation of the coordinated and actual aircraft movements for a calendar year as well as the resulting average number of aircraft movements have to be submitted to the approving authority after the end of each calendar year.

3.1.4.1.1 Between 2100 (2000) and 2200 (2100) as well as between 0400 (0300) and 0500 (0400), only such aircraft are permitted to take off or land

– that meet the noise certification levels in accordance with ICAO Annex 16, Volume 1, Part II, Chapter 4 and

– whose take-off or landing has been coordinated by the airport coordinator of the Federal Republic of Germany at least one day in advance.

3.1.4.1.2 Between 2200 (2100) and 0400 (0300), scheduled aircraft movements are not permitted.

3.1.4.1.3 The following regulations apply to aircraft arriving late or early:

3.1.4.1.3.1 Aircraft that do not only marginally comply with the noise certification levels of ICAO Annex 16, Volume 1, Part III, Chapter 3 within the meaning of Section 48a of the LuftVZO and whose landing is planned by the airport coordinator for a slot up to 2100 (2000) or from 0500 (0400), are permitted to land until 2300 (2200) or from 0400 (0300) without counting towards the quota under item 3.1.4.1, provided that the late or early arrival was not envisaged as such in the flight plan (Section 25 LuftVO).

3.1.4.1.3.2 Aircraft that meet the noise certification levels of ICAO Annex 16, Volume 1, Part II, Chapter 4 and whose landing is planned by the airport coordinator for a slot between 2100 (2000) and 2200 (2100) or between 0400 (0300) and 0500 (0400) under the conditions set out in item 3.1.4.1.1 are permitted to land until 2300 (2200) provided that the late arrival was not envisaged as such in the flight plan (Article 25 LuftVO). Early arrivals before 0400 (0300) are not permitted.

3.1.4.1.3.3 If the number of approved late landings under items 3.1.4.1.3.1 and 3.1.4.1.3.2 between 2200 (2100) and 2300 (2200) exceeds an average of 7.5 in a calendar year, the right is reserved to make subsequent changes and amendments to the delay provisions laid down for this nighttime period, taking the public interest regarding transport into account. To this end, evidence shall be provided to the approving authority after the end of each calendar year on the number of late arrivals conducted between 2200 (2100) and 2300 (2200) as well as the resulting average number for the year.

3.1.4.2 The following additional restrictions apply to aircraft movements approved under item 3.1.4.1:

3.1.4.2.1 Aircraft are not permitted to use the landing runway northwest between 2200 (2100) and 0400 (0300).

3.1.4.2.2 If it appears justifiable for the provision of air traffic control as defined in Section 27c(2)(1a) of the German Aviation Act (LuftVG), aircraft movements should be distributed between the central runway (07C/25C) and runway south (07R/25L) as well as runway west (18) at Frankfurt/Main Airport between 2200 (2100) and 0400 (0300), taking the settlement pattern into account, so as to limit flights over built-up areas to an absolute minimum and distribute them as evenly as possible.

3.1.4.3 At Frankfurt/Main Airport, take-offs and landings of aircraft conducting flight checks of radio, radar or airport facilities are only permitted between 2100 (2000) and 0500 (0400) if the aircraft meet the noise certification levels of ICAO Annex 16, Volume 1, Part II, Chapter 4 and if it is absolutely necessary to conduct these checks during this period of time. The take-offs and landings do not count towards the aircraft movements approved for this period under item 3.1.4.1. The provisions for the use of the runway under item 3.1.4.2 do not apply to such flights.

3.1.4.4 Propeller aircraft with a maximum take-off mass of less than 9,000 kg may take off and land between 2100 (2000) and 0500 (0400) only under the restrictions outlined in items 3.1.4.1 to 3.1.4.3; instead of the mentioned noise certification levels, they must at least fulfil the higher sound-proofing requirements defined in Section 4 of the German Airfield Noise Abatement Ordinance (Landeplatz-LärmschutzV) of 5 January 1999 (Federal Law Gazette I, page 35; German-language publication NfL I 134/99).

3.1.4.5 Until the point in time specified in item 3.1.4 (increase in coordinated hourly runway capacity), the nighttime operating restrictions laid down in the latest amendment of the approval for Frankfurt/Main Airport continue to apply to the aircraft concerned.

3.1.5 Verspätete Starts von Luftfahrzeugen, die in einem Betriebsbeschränkungszeitraum mit einem unter die Beschränkung fallenden Luftfahrzeug ausgeführt werden sollen, bedürfen in jedem Einzelfall der Erlaubnis durch die örtliche Luftaufsichtsstelle. Die Erlaubnis darf nur erteilt werden, wenn die Verspätung auf Gründen beruht, die außerhalb des Einflussbereiches des jeweiligen Luftverkehrsunternehmens liegen. Starts verspäteter Luftfahrzeuge sind zwischen 2300 (2200) und 0400 (0300) unzulässig.

3.1.6 Ausnahmen:

3.1.6.1 Von den betrieblichen Einschränkungen nach den Ziffern 3.1.1 bis 3.1.5 sind ausgenommen:

3.1.6.1.1 Landungen von Luftfahrzeugen, die aus meteorologischen, technischen oder sonstigen Sicherheitsgründen den Verkehrsflughafen Frankfurt/Main als Ausweichflughafen anfliegen, Starts und Landungen von Luftfahrzeugen, die sich in medizinischen Hilfeleistungs- oder Katastropheneinsätzen befinden, sowie Evakuierungsflüge;

3.1.6.1.2 Flüge in besonderem öffentlichen Interesse.

3.1.6.2 Im Übrigen darf die Genehmigungsbehörde Ausnahmen von den betrieblichen Einschränkungen nur in Fällen besonderer Härte auf Antrag zulassen. Kein Fall besonderer Härte liegt vor, wenn durch die Betriebseinschränkung die Flugzeugumlaufplanung des Luftverkehrsunternehmens erschwert oder Maßnahmen des Passagiertransfers bzw. der Passagierunterbringung erforderlich werden. Die Bearbeitung der Anträge ist kostenpflichtig.

Anträge sind grundsätzlich schriftlich - in Eilfällen auch vorab telefonisch - zu stellen bei:

Hessisches Ministerium für Wirtschaft, Energie, Verkehr und
Landesentwicklung
Örtliche Luftaufsichtsstelle
Gebäude (building) 514
60547 Frankfurt a. M.
E-Mail: luftaufsicht@wirtschaft.hessen.de
Fax: +49 (0)69 690 - 661 50
Tel.: +49 (0)69 690 - 717 17

Ein Antrag auf Erteilung einer Ausnahmegenehmigung muss enthalten:

- Name des Antragstellers und ggf. des Handlingpartners,
- Telefon- und Faxnummer des Antragstellers,
- Name und Anschrift des Luftverkehrsunternehmens,
- Flugnummer,
- Kennzeichen und Muster des Luftfahrzeuges,
- Einstufung des Luftfahrzeuges nach Lärmzertifizierungswerten (Lärmzeugnis des Luftfahrzeuges gemäß § 11c LuftVO),
- geplanter Zeitpunkt des Starts oder der Landung, wofür die Ausnahme beantragt wird,
- Anzahl der Passagiere,
- Gewicht der Fracht in Tonnen.

Der Antrag ist zu begründen; hierbei hat der Antragsteller insbesondere darzulegen, inwieweit die Verspätung bei einem Start auf Gründen beruht, die außerhalb des Einflussbereiches des Luftverkehrsunternehmens liegen (3.1.5) bzw. worin die besondere Härte liegt (3.1.6.2).

Die von der Flugverkehrskontrolle (ATC) erteilten Start- oder Landefreigaben sowie andere Freigaben beinhalten nicht automatisch die erforderliche Ausnahmegenehmigung der Genehmigungsbehörde. ATC übermittelt per Sprechfunk keine Ausnahmegenehmigungen.

Landungen von Luftfahrzeugen, die in einem Betriebsbeschränkungszeitraum mit einem unter die Beschränkung fallenden Luftfahrzeug ausgeführt wurden und die keinen der Ausnahmetatbestände der vorstehenden Regelungen unter Nr. 3 erfüllen, hat der verantwortliche Luftfahrzeugführer (PIC) unmittelbar nach der Landung der Örtlichen Luftaufsichtsstelle anzuzeigen und schriftlich zu begründen (Declaration of PIC).

3.1.7 Auf dem gesamten Start-/Landebahnsystem des Verkehrsflughafens Frankfurt/Main darf Schubumkehr - außer in den aus Sicherheitsgründen unvermeidlichen Fällen - nicht eingesetzt werden. Ausgenommen hiervon ist die Stufe Leerlauf-Schubumkehr.

3.1.8 Auf den gesamten Flugbetriebsflächen des Verkehrsflughafens Frankfurt/Main einschließlich der Luftfahrzeugwartungshallen und Werftvorfelder dürfen Rollvorgänge von Luftfahrzeugen, die nicht einem Start vorausgehen bzw. nicht nach einer Landung erfolgen, nur mittels Flugzeugschleppern und nicht mit Triebwerksleistung durchgeführt werden.

3.1.9 Triebwerksprobeläufe

3.1.9.1 Triebwerksprobeläufe mit Schubeinstellungen oberhalb „Leerlauf“ dürfen nur an folgenden Positionen durchgeführt werden:

- in der Zeit von 0500 (0400) bis 2100 (2000) auf dem Vorfeld der Halle 5 sowie in der Triebwerksprobelaufeinrichtung,

3.1.5 Delayed take-offs to be conducted in a period of restricted operations by an aircraft subject to these restrictions require individual permission from the local aviation supervision office. Permission may only be granted if the delay is due to reasons beyond the control of the airline concerned. Take-offs of delayed aircraft are not permitted between 2300 (2200) and 0400 (0300).

3.1.6 Exemptions:

3.1.6.1 The following flights are exempt from the operational restrictions according to items 3.1.1 to 3.1.5

3.1.6.1.1 Landings of aircraft using Frankfurt/Main Airport as an alternate aerodrome for meteorological, technical or other safety reasons as well as take-offs and landings of disaster relief and medical assistance flights, and evacuation flights;

3.1.6.1.2 Flights of particular public interest.

3.1.6.2 Apart from this, the approving authority may grant exemptions from the operational restrictions only upon application in cases of particular hardship. It is not a case of particular hardship if the operational restriction makes the airline's aircraft turn-around planning more difficult or requires arrangements for passenger transfer or accommodation. Processing of applications is subject to charges.

As a rule, applications shall be submitted in writing - in urgent cases also via telephone - to:

Hessisches Ministerium für Wirtschaft, Energie, Verkehr und
Landesentwicklung
Local aviation supervision office
Gebäude (building) 514
60547 Frankfurt a. M.
E-mail: luftaufsicht@wirtschaft.hessen.de
Fax: +49 (0)69 690 - 661 50
Tel.: +49 (0)69 690 - 717 17

Applications for exemptions shall contain:

- applicant's name and, if necessary, name of the handling partner,
- applicant's telephone and fax numbers,
- name and address of the airline,
- flight number,
- registration and type of aircraft,
- classification of the aircraft according to noise certification level (noise certificate of the aircraft according to Section 11c LuftVO),
- planned time of departure or landing for which the exemption is requested,
- number of passengers,
- weight of cargo in tonnes.

The reasons for the application shall be specified; the applicant shall state, in particular, to what extent the take-off delay is due to reasons beyond the control of the airline (3.1.5) and/or where the hardship lies (3.1.6.2).

Take-off or landing clearances granted by ATC as well as other clearances do not automatically include the necessary exemption by the approving authority. ATC will not grant exemptions via radiotelephony.

The pilot-in-command (PIC) shall report any landing conducted during a period of restricted operations by an aircraft subject to the restriction which does not meet any of the grounds for exemption according to the provisions under item 3 to the local aviation supervision office immediately after landing and specify the reasons (declaration of PIC).

3.1.7 Reverse thrust must not be used on the entire runway system of Frankfurt/Main Airport - except for safety reasons in unavoidable cases. This does not apply to idle reverse thrust.

3.1.8 On the entire operating area of Frankfurt/Main Airport including aircraft hangars and their aprons, taxi manoeuvres which do not take place prior to take-off or after landing of an aircraft must be carried out by means of aircraft tractors and not by means of engine power.

3.1.9 Engine run-ups

3.1.9.1 Engine run-ups with thrust settings above the idle power setting may only be conducted at the following positions:

- on the apron of hangar 5 and in the run-up enclosure in the time between 0500 (0400) and 2100 (2000),

– in der Zeit von 2100 (2000) bis 0500 (0400) Triebwerksprobeläufe mit der Schubeinstellung „Teillast“ auf dem Vorfeld der Halle 5, wobei auf der Position Halle 5 West als maximale Leistungsstufe nur Teillast niedrig (bis 50% N1) angefahren werden darf, sowie in der Triebwerksprobelaufeinrichtung; Triebwerksprobeläufe mit der Schubeinstellung „Volllast“ ausschließlich in der Triebwerksprobelaufeinrichtung.

3.1.9.2 Triebwerksprobeläufe sind so durchzuführen, dass während ihrer Einwirkzeit an der nächsten Wohnbebauung durchschnittlich keine höheren Dauerschallpegel als 57 dB(A) am Tag und 50 dB(A) in der Nacht auftreten.

3.1.9.3 Die Triebwerksprobeläufe in der Zeit von 2100 (2000) bis 0500 (0400) mit der Schubeinstellung oberhalb „Leerlauf“ sind der örtlichen Luftaufsichtsstelle anzuzeigen.

3.1.10 Die Tore von Wartungshallen sind soweit betrieblich möglich geschlossen zu halten. In der Zeit von 2100 (2000) bis 0500 (0400) ist das Öffnen der Hallentore auf die Ein- und Ausfahrt von Fahrzeugen zu beschränken.

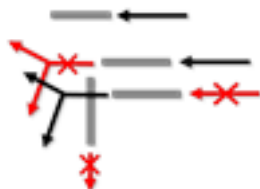
3.1.11 Soweit die Betriebsregelungen Flugbewegungen (Starts und Landungen) betreffen, handelt es sich um Take-Off- bzw. Touch-Down-Zeiten.

3.2 Weitere Lärmschutzmaßnahmen

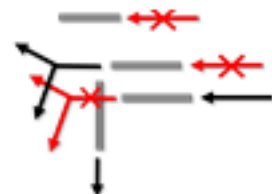
3.2.1 Betriebskonzept "Lärmpausen"

Am Flughafen Frankfurt/Main werden Lärmpausen bei Betriebsrichtung 25 entsprechend den aufgeführten Schemata durchgeführt. Hierfür ist grundsätzlich die nachfolgende Pistennutzung in den entsprechenden Zeiträumen vorgesehen:

In der Zeit von 0400 (0300) – 0500 (0400)



In der Zeit von 2100 (2000) – 2200 (2100)



3.2.1.1 Allgemeines

Grundsätzlich werden Lärmpausen in den Zeiträumen 0400 (0300) – 0500 (0400) und 2100 (2000) – 2200 (2100) durchgeführt, soweit die flugsicherungsbedingten Voraussetzungen gegeben sind.

Bei der Durchführung der Flugverkehrskontrolle sind u. a. folgende Flüge von den Regelungen der Lärmpausen ausgenommen:

1. Flüge, bei denen der Luftfahrzeugführer eine Notlage erklärt hat oder bei denen eine Notlage offensichtlich ist, einschließlich der von einem widerrechtlichen Eingriff betroffenen oder bedrohten Flüge;
2. Schutzflüge der Luftverteidigung;
3. Flüge im Such- und Rettungseinsatz;
4. Flüge mit kranken und verletzten Personen, die sofortiger ärztlicher Hilfe bedürfen (einschließlich Flüge, die mit "LHO" (Live Human Organ) gekennzeichnet sind);
5. Regierungsflüge einschließlich Flüge mit Staatsoberhäuptern nach den Bestimmungen des Bundesministeriums für Verkehr und digitale Infrastruktur (BMVI).
6. Flüge, bei denen der Luftfahrzeugführer aus Sicherheitsgründen die Nutzung einer bestimmten Piste verlangt;
7. besonders gefährdete Flüge;
8. Vermessungsflüge.

Lärmpausen werden ebenfalls nicht angewendet, wenn infrastrukturelle Einschränkungen oder schlechte Wetterbedingungen vorliegen (aufgrund von z.B. Bauarbeiten, Schneeräumen).

– between 2100 (2000) and 0500 (0400), engine run-ups with the thrust setting on part-load on the apron of hangar 5, whereby on the position hangar 5 west the maximum power setting may only be taken to part-load low (up to 50% N1), as well as in the run-up enclosure; engine run-ups with the thrust setting on full-load may only be conducted in the run-up enclosure.

3.1.9.2 Engine run-ups shall be conducted in such a way that the continuous sound level experienced at the next built-up area shall not, on average, be higher than 57 dB(A) during the day and 50 dB(A) during the night during the duration of exposure.

3.1.9.3 Engine run-ups conducted between 2100 (2000) and 0500 (0400) with a thrust setting above the idle power setting shall be reported to the local aviation supervision office.

3.1.10 The doors to the maintenance hangars shall remain closed as far as operationally possible. Between 2100 (2000) and 0500 (0400), the opening of the hangar doors shall be limited to the entry and exit of vehicles.

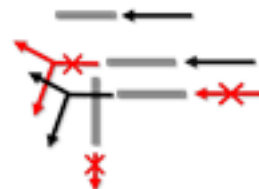
3.1.11 If the operational provisions refer to aircraft movements (take-offs and landings), they refer to take-off and touch-down times.

3.2 Additional noise abatement measures

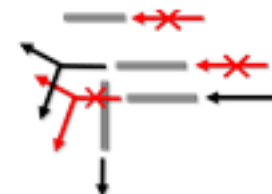
3.2.1 Operational concept "noise respite periods"

At Frankfurt Main Airport, noise respite periods for operating direction 25 will be implemented in accordance with the following plan. As a rule, the following runways shall always be used during the times shown:

From 0400 (0300) – 0500 (0400)



From 2100 (2000) – 2200 (2100)



3.2.1.1 General

As a rule, noise respite periods will always be implemented in the time periods 0400 (0300) – 0500 (0400) and 2100 (2000) – 2200 (2100), provided the conditions required by air traffic control are met.

In the provision of air traffic control, the following flights, among others, will be exempt from the regulations of the noise respite periods:

1. Flights for which the pilot has declared an emergency or which are apparently in an emergency situation, including flights affected or threatened by unlawful interference;
2. Security flights of air defence;
3. Flights on search and rescue missions;
4. Flights transporting sick or injured persons requiring immediate medical assistance (including flights designated as LHO (Live Human Organ));
5. Government flights, including flights with Head of State status in accordance with the regulations laid down by the Federal Ministry of Transport and Digital Infrastructure (BMVI);
6. Flights where a pilot requests the use of a certain runway for safety reasons;
7. Particularly endangered flights;
8. Calibration flights.

In addition, noise respite periods will not be implemented when restricted by infrastructure or poor weather conditions (e.g. construction work, snow clearing).

Weitere Informationen können dem zu Grunde liegenden Bündnispapier entnommen werden (siehe www.wirtschaft.hessen.de).

3.2.1.2 Verfahren

Die Regelungen zu verspäteten Starts und Landungen von Luftfahrzeugen (siehe AD 2 EDDF "3.1 Einschränkung des Nachtluftverkehrs sowie Betriebsbeschränkungen") bleiben unberührt.

Führt die Durchführung der morgendlichen oder abendlichen Lärmpause nach Ansicht des Flughafenbetreibers Fraport oder einer den Flughafen nutzenden Fluggesellschaft mit sehr hoher Wahrscheinlichkeit zu einer Störung seines / ihres Betriebsablauf, so teilt er / sie dies unter Angabe von Gründen der Luftaufsicht mit und erwirkt damit ohne weitere Formalitäten oder Prüfprozesse ein Aussetzen der Lärmpause über die Luftaufsicht:

Hessisches Ministerium für Wirtschaft, Energie, Verkehr und
Landesentwicklung
Örtliche Luftaufsichtsstelle
Gebäude (building) 514
60547 Frankfurt a. M.
E-Mail: luftaufsicht@wirtschaft.hessen.de
Fax: +49 (0)69 690 - 661 50
Tel.: +49 (0)69 690 - 717 17

Die Luftaufsicht informiert die Fraport über das Aussetzen der Lärmpause, die daraufhin über ihre Kommunikationsmedien Flugsicherung und Fluggesellschaften informiert.

4. Führung von Luftfahrzeugen auf dem Vorfeld

Die Führung des Flugzeugrollverkehrs auf dem Vorfeld und den Abstellflächen des Verkehrsflughafens Frankfurt/Main obliegt der Vorfeldkontrolle der Fraport AG und wird mit Hilfe von Bodenfunkstellen mit dem Funkrufzeichen FRANKFURT APRON durchgeführt. Im Bedarfsfall stehen Leitfahrzeuge zur Verfügung.

Leitfahrzeuge sind durch eingeschaltetes rotes Rundumlicht/Blitzlicht kenntlich.

4.1 Zuständigkeitsbereich der Vorfeldkontrolle der Fraport AG

Hierzu gehören die Flächen, die zum Abfertigen bzw. Abstellen der Luftfahrzeuge und zum Ein- und Ausrollen auf die jeweiligen Positionen notwendig sind, sowie Zurollwege zu den Hallenvorfeldern der Wartungshallen im Südteil des Verkehrsflughafens Frankfurt/Main mit Ausnahme der Rollbahnen S25 zur Halle 12 und S27 zur Halle 7.

Die Abgrenzung der Zuständigkeitsbereiche ist der jeweils gültigen Karte AD 2 EDDF 2-5 zu entnehmen, die Vorfeldkontrolle erteilt nur solche Anweisungen, die innerhalb dieser Zuständigkeitsbereiche wirksam werden.

4.1.1 Benutzung des Vorfelds mit Luftfahrzeugen

Die Benutzung des Vorfelds mit Luftfahrzeugen ist nur mit Zustimmung der Vorfeldkontrolle zulässig und unterliegt deren Weisungen.

4.1.2 Zustimmungen für die Benutzung des Vorfelds mit Luftfahrzeugen sind stets vorher bei der Vorfeldkontrolle einzuholen.

4.1.3 Die Vorfeldkontrolle erteilt die Zustimmungen über Funk oder Telefon sowie über Einweiser (Marshaller) in Leitfahrzeugen. Von der Vorfeldkontrolle eingeholte Zustimmungen sind inhaltlich wie Weisungen zu behandeln und zu befolgen.

4.1.4 Stand- und Probeläufe von Triebwerken sowie größere Wartungsarbeiten an Luftfahrzeugen auf den Positionen sind nicht zulässig. Die Vorfeldkontrolle kann in begründeten Fällen Ausnahmen zulassen.

4.1.5 Stand- und Probeläufe von Triebwerken mit Schubeinstellung oberhalb Leerlauf dürfen nur an den unter Ziffer 3.1.9.1 aufgeführten Positionen durchgeführt werden.

4.2 Bodenfunkstellen

Die Vorfeldkontrolle betreibt fünf Bodenfunkstellen (121.750 MHz, 121.850 MHz, 121.650 MHz, 121.950 MHz und 121.700 MHz), die alle das Rufzeichen FRANKFURT APRON benutzen. (s. auch Seite AD 2 EDDF 1-8, Karten AD 2-5, AD 2-9, AD 2-9A, AD 2-9B).

4.3 Verfahren

Zuweisung von Abfertigungs- bzw. Abstellplätzen (Positionen) für Luftfahrzeuge.

4.3.1 Allgemeines

Das Airside Coordination und Data Center der Fraport AG weist Positionen für die Luftfahrzeuge auf dem Vorfeld zu. Die Vorfeldkontrolle führt die Luftfahrzeuge über Funk und/oder Leitfahrzeuge dorthin.

4.3.1.1 Das Abstellen der Luftfahrzeuge auf den Positionen erfolgt entweder durch Signale des Einweisers oder mit einer technischen Einrollhilfe (AGNIS/PAPA siehe Nfl I - 21/72 oder A-VDGS siehe Nfl I - 145/11).

Stellt die Besatzung fest, dass die technische Einrollhilfe nicht eingeschaltet oder nicht funktionstüchtig ist, hat sie sofort anzuhalten und dies der Vorfeldkontrolle zu melden. Die weiteren Weisungen sind dann abzuwarten.

4.3.1.2 Das Abstellen von Luftfahrzeugen auf Positionen, die nicht mit einer technischen Einrollhilfe (siehe Nfl I - 21/72 und Nfl I - 145/11) ausgestattet sind, ist nur nach den Signalen des Einweisers zulässig.

Further information can be found in the "alliance paper" which is the basis for the respite periods (www.wirtschaft.hessen.de).

3.2.1.2 Procedures

The provisions concerning delayed take-offs and landings of aircraft (see AD 2 EDDF "3.1 Night flight restriction and operational restrictions") remain unaffected.

If the airport operator Fraport or an airline using the airport thinks that the implementation of the noise respite period in the morning or evening is very likely to lead to operational disruptions, they shall inform the aviation supervision office (Luftaufsicht) about this. The aviation supervision office will then suspend the noise respite period without further formalities or verification processes.

Hessisches Ministerium für Wirtschaft, Energie, Verkehr und
Landesentwicklung
Local aviation supervision office
Gebäude (building) 514
60547 Frankfurt a. M.
E-mail: luftaufsicht@wirtschaft.hessen.de
Fax: +49 (0)69 690 - 661 50
Tel.: +49 (0)69 690 - 717 17

The aviation supervision office (Luftaufsicht) will inform Fraport about the suspension of the noise respite period. Fraport will in turn inform the air navigation services and airlines using its communication channels.

4. Aircraft Guidance on the Apron

Aircraft guidance on the apron and the parking areas of Frankfurt/Main Airport is subject to apron control of Fraport AG and is performed by means of aeronautical stations with the call sign FRANKFURT APRON. If required, follow-me cars will be available.

Follow-me cars are identifiable by a functioning red omni-directional light/flashing light.

4.1 Area of Responsibility of Fraport AG Apron Control

This area includes those areas necessary for loading and parking of aircraft and those for taxiing into and taxiing out from the positions concerned, as well as TWYs to the apron of the hangars in the southern part of Frankfurt/Main Airport with the exception of TWY S25 to hangar 12 and TWY S27 to hangar 7.

The areas of responsibility are marked off on the current chart AD 2 EDDF 2-5. Apron control issues only such instructions as will become effective within these areas of responsibility.

4.1.1 Use of Apron by Aircraft

Aircraft are allowed to use the apron only with the permission by apron control, and on its instructions.

4.1.2 Use of the apron shall always depend on prior permission by apron control.

4.1.3 Apron control will issue permission via radio or telephone as well as through marshalls in follow-me cars. Permission obtained from apron control is to be treated in content like an instruction and to be observed.

4.1.4 Engine test runs and run-ups as well as extensive maintenance work on aircraft at the positions are not permitted. Apron control may grant exceptions in justified cases.

4.1.5 Ground and test run-ups of engines with a thrust suspension greater than idling may be carried out only at the positions listed in Item 3.1.9.1.

4.2 Aeronautical Stations

Apron control operates five aeronautical stations (121.750 MHz, 121.850 MHz, 121.650 MHz, 121.950 MHz and 121.700 MHz), all of which use call sign FRANKFURT APRON. (also see page AD 2 EDDF 1-8, charts AD 2-5, AD 2-9, AD 2-9A, AD 2-9B).

4.3 Procedures

Allocation of loading and/or parking positions („positions“) for aircraft.

4.3.1 General

Positions for aircraft on the apron are assigned by the "Airside Coordination and Data Center" of Fraport AG. Apron control guides the aircraft via radio and/or by follow-me cars to the positions allocated.

4.3.1.1 Parking of aircraft at the positions is performed either according to the signals of the marshaller or with the assistance of a docking guidance system (AGNIS/PAPA see Nfl I - 21/72, or A-VDGS see Nfl I - 145/11).

If the crew discovers that the docking guidance system is not switched on or not in operation, they shall stop the aircraft immediately and report this to apron control. They shall then await all further instructions.

4.3.1.2 Parking of aircraft at positions not provided with a docking guidance system (see Nfl I - 21/72 and Nfl I - 145/11) is only permitted according to the signals of the marshaller.

4.3.1.3 Luftfahrzeuge dürfen „Nose-in“-Positionen nur mit Flugzeugschlepperhilfe verlassen. Die Verwendung von Schubumkehr oder von Verstellpropellern ist untersagt. Luftfahrzeughalter haben entsprechende Vorkehrungen zu treffen.

4.4 Abfliegende Luftfahrzeuge

4.4.1 Alle Luftfahrzeuge haben auf der Frequenz 121.900 MHz FRANKFURT DELIVERY Sprechfunkverbindung mit der Flugplatzkontrolle aufzunehmen.

Mit Aufnahme der Sprechfunkverbindung ist bei IFR-Flügen das ATIS-Kennwort zu nennen. Für VFR-Flüge werden Informationen über die in Betrieb befindliche Startbahn, Wind und Luftdruck von der Flugplatzkontrolle übermittelt.

4.4.2 Luftfahrzeugführer von Luftfahrzeugen haben eine Anlassfreigabe von der Flugplatzkontrolle anzufordern. Die Angabe der Parkposition kann entfallen.

Für IFR-Flüge wird mit Erteilung der Anlassfreigabe grundsätzlich die IFR-Streckenfreigabe erteilt.

4.4.3 Die Luftfahrzeugführer werden von der Flugplatzkontrolle angewiesen, Sprechfunkverbindung mit der Vorfeldkontrolle aufzunehmen, um Anweisungen und Informationen für die Durchführung von Bewegungsabläufen in den Zuständigkeitsbereichen der Fraport AG entgegen zu nehmen.

Bei allen „Nose-in“-Positionen ist bei FRANKFURT APRON eine Erlaubnis zum Zurückstoßen aus der Abfertigungs- bzw. Abstellposition (push-back) anzufordern. Die Rollbereitschaft ist danach FRANKFURT APRON zu melden.

4.4.4 Die Luftfahrzeugführer werden von ihren Positionen in Richtung auf die jeweilige Startbahn bis zur Übergabe an die Flugplatzkontrollstelle geführt. Dabei kann eine zusätzliche Aufforderung zum Frequenzwechsel erforderlich werden, wenn die Rollstrecke durch mehrere Zuständigkeitsbereiche der Vorfeldkontrolle führt. Gegebenenfalls erfolgt die Führung zusätzlich durch Leitfahrzeuge.

4.4.5 Vor Verlassen des Vorfeldes haben die Luftfahrzeugführer nach Anweisung der Vorfeldkontrolle unverzüglich Sprechfunkverbindung mit der Flugplatzkontrolle aufzunehmen.

Die Flugplatzkontrolle erteilt ggf. weitere Rollanweisungen, IFR-Streckenfreigaben (sofern noch nicht erteilt) und die Startfreigabe.

4.4.6 Halteverfahren an Rollhalten vor Start- und Landebahnen

Zu Zwecken der Rollführung werden am Verkehrsflughafen Frankfurt/Main unter allen Wetterbedingungen rote Haltebalken genutzt. Diese flexible Nutzung der Haltebalken dient neben der Freihaltung der ILS Critical/Sensitive Areas insbesondere auch dem Einrollschutz (Vermeidung von Runway Incursions). Ein Rollhalt darf nur mit Erlaubnis der Flugplatzkontrolle gekreuzt werden.

Die Nutzung der roten Haltebalken bei CAT II/III/LVTO Betrieb bei RVR Werten $\leq 600\text{m}$ ist Standard. Unter besseren Wetterbedingungen (CAT I oder besser) können ebenfalls die roten CAT II/III Haltebalken zur Rollregelung genutzt werden. Auch für diese Nutzung gilt, dass die angeschalteten Haltebalken nur nach vorheriger ausdrücklicher Freigabe und nach dem Ausschalten durch den Lotsen überquert werden dürfen.

Luftfahrzeugführer werden gebeten, jeweils so dicht wie möglich am entsprechenden Rollhalt zu halten, um anderen Luftfahrzeugen das Vorbeirollen zu ermöglichen. Dies entlässt den Luftfahrzeugführer eines vorbeirollenden Luftfahrzeugs nicht aus der Verantwortung, den Sicherheitsabstand zum haltenden Luftfahrzeug sicherzustellen. (Siehe auch Punkt 6.4)

4.5 Ankommende Luftfahrzeuge

Ankommende Luftfahrzeuge haben nach Aufforderung durch die Flugplatzkontrolle unverzüglich unter Nennung des aktuellen Standortes, Sprechfunkverbindung mit der Vorfeldkontrolle aufzunehmen. Den Anweisungen der Vorfeldkontrolle ist Folge zu leisten. Im Bedarfsfall erfolgt die Einweisung zusätzlich durch Leitfahrzeuge. Die Luftfahrzeugführer sollen die „Nose-in“-Position mit Hilfe einer technischen Einrollhilfe AGNIS/PAPA oder A-VDGS (siehe NfL I - 21/72 und NfL I - 145/11) ansteuern.

Das Einrollen in den Zuständigkeitsbereich der Fraport AG (s. AD 2 EDDF 2-5) ist nur nach erteilter Erlaubnis der Vorfeldkontrolle gestattet.

4.6 Rollen von Luftfahrzeugen auf dem Vorfeld

Luftfahrzeuge dürfen nur dann ohne die Führung durch ein Leitfahrzeug auf dem Vorfeld gerollt werden, wenn während des gesamten Rollvorgangs ständige Sprechfunkverbindung mit der Vorfeldkontrolle aufrechterhalten werden kann. Setzt die Vorfeldkontrolle zur Führung eines rollenden Luftfahrzeugs ein Leitfahrzeug ein, hat der Luftfahrzeugführer dessen Signale zu beachten. Wünscht der Luftfahrzeugführer für einen Rollvorgang die Unterstützung durch ein Leitfahrzeug, kann er dieses bei der Vorfeldkontrolle anfordern.

4.6.1 Luftfahrzeuge dürfen auf dem Vorfeld nur mit der unbedingt erforderlichen Mindestdrehzahl der Triebwerke gerollt werden.

4.6.1.1 Um Beschädigungen zu vermeiden, dürfen Luftfahrzeuge der Kategorie „HEAVY“ insbesondere in den Vorfeldhöfen und in der Nähe von Gebäuden die Triebwerksleistung nicht wesentlich über die Leerlaufdrehzahl hinaus steigern.

4.6.1.2 Luftfahrzeuge, die aus der Position B10 abrollen und Helikopter, welche die Positionen H322 und H323 verlassen wollen, haben vor dem Anlassen der Triebwerke Sprechfunkverbindung mit der Vorfeldkontrolle aufzunehmen.

4.3.1.3 Aircraft may leave nose-in positions only with the aid of aircraft tractors. Reverse thrust or variable pitch propellers shall not be used. Aircraft operators shall make suitable arrangements.

4.4 Departing aircraft

4.4.1 All aircraft shall establish radio contact with the control tower on frequency 121.900 MHz FRANKFURT DELIVERY.

When establishing radio contact, the ATIS identification shall be indicated for IFR flights. For VFR flights information about the runway in use, wind and air pressure will be given by the control tower.

4.4.2 Pilots of aircraft shall request a start-up clearance from the control tower. Indication of the parking position need not be given.

With issuance of the start-up clearance, IFR routing clearance will generally be issued for IFR flights.

4.4.3 Pilots will be advised by the control tower to establish radio contact with apron control to obtain instructions and information for movements in the Fraport AG areas of responsibility.

At all nose-in positions permission to push-back from the loading or parking positions shall be requested from FRANKFURT APRON. Thereafter, ready to taxi shall be reported to FRANKFURT APRON.

4.4.4 Pilots will be guided from their positions towards the RWY concerned until requested to contact the control tower. An additional change of frequency may become necessary if the taxiing route crosses several areas of responsibility. If necessary, guidance will be provided additionally by follow-me cars.

4.4.5 Before leaving the apron, pilots shall establish radio contact with the control tower immediately upon instruction by apron control.

If necessary the control tower will give further taxiing instructions, IFR route clearances (unless already issued) and the clearance for take-off.

4.4.6 Holding procedure at runway holding positions

Frankfurt /Main Airport uses red stop bars for taxiing guidance purposes in all meteorological conditions. This flexible use of stop bars is to ensure that ILS critical/sensitive areas remain clear and it is also a runway incursion prevention measure. A holding point may only be crossed with the permission of the control tower.

The use of stop bars in CAT II/III/LVTO operations at an RVR $\leq 600\text{m}$ is a standard procedure. The red CAT II/III stop bars may also be used for taxiing guidance in better meteorological conditions (CAT I or better). In this case, too, lighted stop bars may only be crossed after the controller has given an explicit clearance and switched the stop bars off.

Pilots are requested to stop and hold as close to the holding point as possible to enable other aircraft to taxi by. This does not relieve the taxiing pilots of their responsibility to ensure a safe distance from the holding aircraft. (See also item 6.4)

4.5 Arriving aircraft

Upon request by the control tower, arriving aircraft shall immediately establish radiotelephony communication with apron control, specifying their current position. Instructions from apron control shall be followed. If necessary, guidance will be provided additionally by follow-me cars. The pilots shall approach the nose-in position with the assistance of a docking guidance system AGNIS/PAPA or A-VDGS (see NfL I - 21/72 and NfL I - 145/11).

Taxiing into the area of responsibility of Fraport AG (see AD 2 EDDF 2-5) without clearance by apron control is not permitted.

4.6 Taxiing of aircraft on the apron

Aircraft are permitted to taxi on the apron without guidance by a follow-me car only if permanent radiotelephony communication with apron control can be maintained during the entire taxiing manoeuvre. If apron control advises a follow-me car to guide a taxiing aircraft, the pilot shall adhere to its signals. If the pilot prefers guidance by a follow-me car for a taxiing manoeuvre, he may request one from apron control.

4.6.1 Aircraft are permitted to taxi on the apron only at the indispensable minimum engine speed.

4.6.1.1 In order to avoid damage, aircraft types of the category „HEAVY“ are not allowed to increase engine power considerably beyond idle motion speed, especially when taxiing close to buildings or within the cul-de-sacs.

4.6.1.2 Aircraft exiting from position B10 and helicopters wishing to leave positions H322 and H323 shall establish radio contact with apron control prior to starting up their engines.

4.6.1.3 Luftfahrzeuge der Typenreihen DC10, L101 und MD11 dürfen das Triebwerk Nr. 2 vor dem Zurückstoßen aus einer „Nose-in“-Position nur nach Absprache mit der Vorfeldkontrolle anlassen.

4.6.1.4 Beim Einrollen in Positionen dürfen Luftfahrzeuge grundsätzlich nicht in der Kurve zwischen der Mittellinie der Vorfeldrollbahn oder Standplatzrollgasse und der Mittellinie der Position anhalten, um die weitere Anwendung von Anrollschub zu vermeiden.

4.6.1.5 Kommt im Zuge eines im Absatz 4.6.1.4 beschriebenen Manövers ein Luftfahrzeug unbeabsichtigt zum Stehen, so hat der Luftfahrzeugführer vor der Erhöhung der Triebwerksleistung zum Weiterrollen die Vorfeldkontrolle zu unterrichten und deren weitere Weisungen abzuwarten.

4.6.2 Luftfahrzeuge dürfen auf dem Vorfeld nur auf und entlang der gelben, blauen und orangen Rolleitlinien gerollt werden. Abweichungen oder Abkürzungen sind unzulässig. In Ausnahmefällen sind Rollbewegungen abseits der Leitlinien unter Führung eines Leitfahrzeugs nach den besonderen Weisungen der Vorfeldkontrolle möglich.

4.6.3 Auf dem gesamten Vorfeld dürfen Rollvorgänge von Luftfahrzeugen, die nicht einem Start vorausgehen bzw. nach einer Landung erfolgen, nur mittels Flugzeugschleppern und nicht mit Triebwerksleistung durchgeführt werden.

4.6.4 Rollen in Standplatzrollgassen und Vorfeldrollbahnen

Die Rollbahnen zu den Positionsbereichen nördlich Rollbahn L und südlich Rollbahn S sind Standplatzrollgassen und Vorfeldrollbahnen mit reduzierten Mindestabständen zwischen Leitlinien und Hindernissen.

Die Wing-Tip-Clearance für B 747-400 beträgt auf Standplatzrollgassen mindestens 7,5 m zu festen Hindernissen und 5 m zu parallelen höhenbegrenzten Vorfeldstraßen.

Die Wing-Tip-Clearance für A380 beträgt auf Standplatzrollgassen mindestens 7,5 m zu festen Hindernissen und 2,5 m zu parallelen höhenbegrenzten Vorfeldstraßen.

Wegen reduzierter Wing-Tip-Clearance sind die gelben Rolleitlinien unbedingt einzuhalten. Die Rollgeschwindigkeit ist entsprechend anzupassen.

4.7 Schleppen von Luftfahrzeugen auf dem Vorfeld

Luftfahrzeuge dürfen auf dem Vorfeld nur mit Zustimmung der Vorfeldkontrolle geschleppt werden. Mit Ausnahme des Verlassens einer „Nose-in“-Position in Zusammenhang mit einer Rollbewegung müssen geschleppte Luftfahrzeuge grundsätzlich durch ein Leitfahrzeug geführt werden.

4.7.1 Weist die Vorfeldkontrolle oder das Airside Coordination and Data Center der Fraport AG aus betrieblichen oder sicherheitsbedingten Gründen das Schleppen eines Luftfahrzeugs an, so hat der Luftfahrzeughalter dieser Weisung unverzüglich zu entsprechen und das zur Durchführung des Schleppvorgangs erforderliche Personal bereitzustellen.

4.7.1.1 Luftfahrzeugbewegungen unter Schlepperhilfe, die unter Führung eines Leitfahrzeugs oder mittels Flugzeugschleppers mit eingeschaltetem roten Rundumlicht/Blitzlicht stattfinden, folgen direkten Funkanweisungen der Vorfeldkontrolle. Sie sind mit Eigenkraft rollenden Luftfahrzeugen gleichzusetzen und haben Vorrang vor anderem Fahrzeugverkehr.

4.7.1.2 Im funkkontrollierten Wartungsschleppbetrieb eingesetzte schleppstangenlose Flugzeugschlepper können zusätzlich mit einem Blitzlichtsystem ausgestattet sein, bei dem bei Dunkelheit anstelle der Positionslichter das geschleppte Luftfahrzeug durch links rote und rechts grün intermittierende Anstrahlung kenntlich gemacht wird.

4.7.2 Der Luftfahrzeugtyp A380-800 wird auf der Rollbahn N11 mit reduzierten Hindernisabständen von 5 m geschleppt.

5. Führung von Luftfahrzeugen auf dem Rollfeld

5.1 Zur Aufrechterhaltung eines reibungslosen Rollverkehrs werden, wenn möglich, auf der Start-/Landebahn 07R/25L gelandete Luftfahrzeuge in Abhängigkeit zur zugewiesenen Abstellposition zu definierten Übergabestellen zum Kreuzen der Start-/Landebahn 07C/25C geführt.

Dieses Verfahren tritt bei Schlechtwetterbetrieb, spätestens bei CAT III, außer Kraft.

5.2 Luftfahrzeuge dürfen zwischen der Start-/Landebahn 07C/25C und Rollbahn L nur mit der unbedingt erforderlichen Mindestdrehzahl der Triebwerke gerollt werden.

5.3 Abflüge von der Startbahn 18

Alle Luftfahrzeuge, die auf Positionen östlich Rollbahn N3 abgestellt sind und die von der Startbahn 18 abzufliegen beabsichtigen, müssen damit rechnen, zwischen 0500 (0400) und 2100 (2000) über die Rollbahnen U, T, R und S zu rollen, ausgenommen davon sind Luftfahrzeuge, die nicht die Voraussetzungen des ICAO Anhang 16, Band I, Teil II, Kapitel 3 erfüllen. Der Abflug wird grundsätzlich von der Kreuzung S erfolgen. Luftfahrzeugführer, die nicht in der Lage sind, diesen Bedingungen nachzukommen, haben dies der Vorfeldkontrolle der Fraport AG bei der ersten Sprechfunkverbindung mitzuteilen.

5.4 Standard Taxi Route (STR) Verfahren

Zur Minimierung der Frequenzbelastung und zur Vermeidung langer Rollfreigaben kann FRANKFURT TOWER Standard Taxi Routen freigeben, deren Freibegrenzen eindeutig erteilt werden.

4.6.1.3 Aircraft types DC10, L101 and MD11 may only start engine no. 2 before pushing back from a nose-in aircraft stand upon agreement with apron control.

4.6.1.4 When taxiing into aircraft stands, aircraft shall generally not stop in curves between the centrelines of apron taxiways or aircraft stand taxi lanes and the centrelines of aircraft stands so as to avoid the further appliance of break-away power.

4.6.1.5 If in the course of a manoeuvre as described in para 4.6.1.4 an aircraft inadvertently comes to a stop, prior to increasing engine power again to continue, the pilot shall notify apron control and await further instructions.

4.6.2 When taxiing on the apron, aircraft shall observe the yellow, blue and orange taxi guide lines. No deviations or short-cuts are permitted. In exceptional cases taxiing off the guide lines is permitted under guidance of a follow-me car on special instructions by apron control.

4.6.3 On the whole of the apron, taxiing by aircraft which do not proceed a take-off and/or follow a landing may be conducted only with the aid of aircraft tractors and not with power output.

4.6.4 Taxiing on aircraft stand taxi lanes and apron taxiways

TWYs to the position areas north of TWY L and south of TWY S are aircraft stand taxi lanes and apron taxiways with reduced minimum separation distances between the guide lines and the obstacles.

Wing-tip-clearance for B 747-400 on aircraft stand taxi lanes is at least 7.5 m to fixed obstacles and 5 m to the parallel apron roadways which are restricted in height.

Wing-tip-clearance for A380 on aircraft stand taxi lanes is at least 7.5 m to fixed obstacles and 2.5 m to the parallel apron roadways which are restricted in height.

Due to reduced wing-tip-clearance, adhere strictly to the yellow taxi guide lines. Taxi speed to be adjusted accordingly.

4.7 Towing of Aircraft on the Apron

Towing of aircraft on the apron shall be effected only with permission by apron control. Unless leaving a nose-in position in connection with a taxiing manoeuvre, towed aircraft should always be guided by a follow-me car.

4.7.1 If towing of an aircraft is advised by apron control or the Airside Coordination and Data Center of Fraport AG for operational or safety reasons, the aircraft operator shall follow this instruction without delay and arrange for the personnel required for the towing manoeuvre.

4.7.1.1 Aircraft on tow, either by a follow-me car or by a airplane tractor with a functioning red omni-directional light/flashing light, shall follow direct radio instructions from apron control. They shall be equated with self-powered taxiing aircraft and have priority over other traffic.

4.7.1.2 In radio-controlled towing operations for maintenance purposes, bar-less airplane tractors can be additionally equipped with a flashing light system by which at night the aircraft being towed can be identified by intermittent illumination, red on the left and green on the right, instead of position lights.

4.7.2 Aircraft type A380-800 will be towed with reduced obstacle clearance of 5 m on TWY N11.

5. Guidance of Aircraft on the Manoeuvring Area

5.1 To maintain smooth taxiing traffic, aircraft having landed on RWY 07R/ 25L will be guided, if possible, to defined change-over points, depending on the assigned parking position, to cross RWY 07C/25C.

This procedure will be withdrawn during adverse weather conditions, at the latest when CAT III operation is in force.

5.2 Aircraft are permitted to taxi between RWY 07C/25C and TWY L only with the minimum engine revolution absolutely required.

5.3 Departures from RWY 18

All aircraft parked on positions east of TWY N3 and intending to depart from take-off runway 18 shall expect to taxi via TWYs U, T, R and S between 0500 (0400) and 2100 (2000) with the exception of aircraft not fulfilling the requirements of ICAO Annex 16, Volume I, Part II, Chapter 3. Departures will generally take place from intersection S. Pilots unable to fulfil these conditions shall notify the apron control of Fraport AG of this in their first radio-telephony communication.

5.4 Standard taxi route (STR) procedure

To minimise frequency congestion and to avoid long taxi clearances, FRANKFURT TOWER may issue clearances for standard taxi routes with clearly defined clearance limits.

Die Standard Taxi Route TRANSITION 1 wird für Abflüge auf der Piste 18 wie folgt angewendet:

"Taxi to holding point S Runway 18 via standard taxi route TRANSITION 1"

Die Standard Taxi Route TRANSITION 1 ist wie folgt beschrieben

Übergabe APRON-DFS	Rollanweisung	Haltepunkt	Name
STOP U2	U – S – S11 – R – S25 – S	S – RWY 18	TRANSITION 1

Eine gesonderte Beschilderung mit dem Namen der Standard Taxi Route ist nicht vorhanden.

Eine Rollfreigabe zum Überqueren der STOPs U2 und U6 muss zusätzlich von FRANKFURT TOWER erteilt werden.

Wenn eine Luftfahrzeugbesatzung nicht in der Lage ist, der Standard-Standard Taxi Route TRANSITION 1 zu folgen, so ist dies FRANKFURT TOWER beim Erstanruf rechtzeitig mitzuteilen. Sollte es während des Rollvorganges bei der Luftfahrzeugbesatzung zu Unsicherheiten bezüglich der Standard Taxi Route TRANSITION 1 kommen, so ist bei FRANKFURT TOWER eine individuelle Einzelfreigabe anzufordern. Die Nutzung der Standard Taxi Route TRANSITION 1 kann durch FRANKFURT TOWER jederzeit aufgehoben und durch eine Einzelfreigabe ersetzt oder verändert werden. Dies kann beispielsweise aufgrund von Baumaßnahmen notwendig werden.

6. Führung von Luftfahrzeugen mit Hilfe von Rollbahnmittellinienfeuern, Freigabe- und Haltebalken

6.1 Zur Durchführung des Allwetterflugbetriebes und um die Rollverkehrsführung bei ungünstigen Witterungsbedingungen und/oder nachts zu erleichtern, sind Rollbahnmittellinienfeuer, Freigabe- und Haltebalken installiert.

6.2 Sobald Allwetterflugbetrieb nach CAT III angekündigt wird, ist für alle Luftfahrzeuge, sofern keine andere Anweisung erteilt worden ist, das Rollen nur auf den Rollbahnen mit eingeschalteten Mittellinienfeuern zulässig.

Die Rollbahnmittellinienfeuer innerhalb der ILS-Schutzzone sind von der Start-/Landebahn 07C/25C zu den Rollbahnen L und M sowie von der Start-/Landebahn 07R/25L zu den Rollbahnen M und R sowie von der Landebahn 07L/25R zur Rollbahn P sowie von der Startbahn 18 aus Norden zur Rollbahn Y5 sowie von der Startbahn 18 aus Süden zu den Rollbahnen L und N farbcodiert (gelb/grün). Gelandete Luftfahrzeuge sind aufgefordert, frei von den farbcodierten Rollbahnmittellinienfeuern zu melden, um darauf hinzuweisen, dass das Luftfahrzeug die ILS-Schutzzone verlassen hat.

6.3 Freigabebalken

Freigabebalken werden zusammen mit der Mittellinienbefeuerung betrieben. Sie bestehen aus drei einseitig gerichteten gelben Unterflurfeuern, die vor der Rollbahnkreuzung im rechten Winkel zur Rollbahnmittellinie, in Rollbahnachse bzw. teilweise seitlich versetzt, angeordnet sind.

Falls die Verkehrssituation es erfordert, werden Luftfahrzeuge angewiesen, an einem näher bezeichneten Freigabebalken anzuhalten. Wenn eine derartige Anweisung nicht gegeben wurde, dürfen die Freigabebalken ohne besondere Freigabe überrollt werden.

6.4 Haltebalken

Haltebalken werden unabhängig von der Mittellinienbefeuerung betrieben. Sie bestehen aus einseitig gerichteten roten Unterflurfeuern, die vor einem Rollhalteort/einer Rollbahnkreuzung in Abständen von 3 m im rechten Winkel zur Rollbahnmittellinie über die gesamte Breite einer Rollbahn angeordnet sind.

Zur Absicherung der An- und Abflugflächen der Start- und Landebahnen 07C/25C und 07R/25L sind die Rollhalteorte M2, T2, T4, T6, T8, U2, U4, U6, U8, W2, W4, W6, W8, W10, Y10, Y12, Y2, Y4, Y6, Y8 und S40 für die Betriebsstufen I, II und III zusammengelegt, markiert, beschildert und befeuert. Die Rollhalte sind in der Karte EDDF 2-5 dargestellt. (Siehe auch Punkt 4.4.6)

Das Überrollen eines eingeschalteten Haltebalkens ist in keinem Fall zulässig.

7. Bewegungsunfähige Luftfahrzeuge

Luftfahrzeughalter haben die Vorkehrungen zu treffen, um im Falle einer Bewegungsunfähigkeit das Luftfahrzeug schnellstmöglich von der Bewegungsfläche zu entfernen.

8. Starts und Landungen auf der Rollbahn M

Die Flugplatzkontrolle kann für Luftfahrzeuge bis 2500 kg MPW die Genehmigung erteilen, Rollbahn M zwischen den Rollbahnen L1/M6 und L14/M24 für Starts und Landungen zu nutzen. Bis auf weiteres macht die Flugplatzkontrolle hiervon keinen Gebrauch.

9. Adressierung von Flugsicherheitsmeldungen der Allgemeinen Luftfahrt

Zur Gewährleistung einer rechtzeitigen Vorinformation der einschlägigen Behörden und Bodendienste sind Flugsicherheitsmeldungen (FPL, DEP, DLA, ARR, CNL, CHG) für Flüge der Allgemeinen Luftfahrt zusätzlich an EDDFYDYC zu adressieren.

The standard taxi route TRANSITION 1 for RWY 18 departures shall be applied as follows:

"Taxi to holding point S Runway 18 via standard taxi route TRANSITION 1"

The standard taxi route TRANSITION 1 is described as follows:

Handover from APRON to DFS	Taxi instruction	Holding point	Name
STOP U2	U – S – S11 – R – S25 – S	S – RWY 18	TRANSITION 1

There is no signage with the name of the standard taxi route.

FRANKFURT TOWER must also issue an additional taxi clearance to cross STOPs U2 and U6.

If the flight crew is unable to follow the standard taxi route TRANSITION 1, they shall inform FRANKFURT TOWER about this during the initial call. If the flight crew becomes unsure about the standard taxi route TRANSITION 1 at any point while taxiing, they shall request an individual clearance from FRANKFURT TOWER. FRANKFURT TOWER can cancel or change the standard taxi route TRANSITION 1 at any time and replace it with an individual clearance. This may be necessary at certain times, for example during construction work.

6. Aircraft Guidance by Means of Taxiway Centre Line Lights, Clearance Bars and Stop Bars

6.1 For all-weather operations and in order to facilitate ground movement control during adverse weather conditions and/or at night, taxiway centre line lights, clearance and stop bars are installed.

6.2 Whenever the operation of CAT III low visibility procedures is announced, taxiing is restricted for all aircraft to TWYs with operating centre line lights, unless otherwise instructed.

The taxiway centreline lighting within the ILS critical/sensitive area is colour-coded (yellow/green) from runway 07C/25C to taxiways L and M, from runway 07R/25L to taxiways M and R, from runway 07L/25R to taxiway P, from runway 18 from the north to taxiway Y5 and from runway 18 from the south to taxiways L and N. Landing aircraft are requested to report when they are clear of the colour-coded taxiway centreline lighting to indicate that they have vacated the ILS critical/sensitive area.

6.3 Clearance Bars

Clearance bars are operated together with the centre line lighting and consist of three unidirectional surface lights showing yellow in the direction of approach to the intersection, arranged at 90° to the taxiway centre line and partly displaced laterally to centre line.

If the traffic situation requires, aircraft may be instructed to hold at a specific clearance bar. If no such instruction is given, aircraft may taxi across the clearance bar without a specific clearance.

6.4 Stop Bars

Stop bars are operated independently of the centre line lighting and consist of unidirectional surface lights showing red in the direction of approach to a taxi-holding position/an intersection, spaced at intervals of 3 m across the overall width of a taxiway at 90° to the taxiway centre line.

To protect the approach and take-off climb surfaces of RWYs 07C/25C and 07R/25L, taxi holding positions M2, T2, T4, T6, T8, U2, U4, U6, U8, W2, W4, W6, W8, W10, Y10, Y12, Y2, Y4, Y6, Y8 and S40 for operational performance categories I, II and III have been grouped together, given markings and designation, and provided with lighting. The taxi holding positions are depicted on the chart on page EDDF 2-5. (See also item 4.4.6)

Taxiing across an operating stop bar is strictly prohibited.

7. Disabled Aircraft

Provisions shall be made by aircraft operators to remove disabled aircraft from the movement areas as quickly as possible.

8. Take-Offs and Landings on TWY M

The control tower may give permission for aircraft up to 2500 kg MPW to use TWY M between TWYs L1/M6 and L14/M24 for take-offs and landings. For the time being, the control tower will not make use of this.

9. Addressing of Flight Safety Messages of General Aviation

In order to guarantee timely pre-information from the competent authorities and ground services, flight safety messages (FPL, DEP, DLA, ARR, CNL, CHG) for General Aviation flights shall be additionally addressed to EDDFYDYC.

10. Vollzug der Luftaufsicht – Abwehr betriebsbedingter Gefahren –

Die Luftaufsicht wird von Sachbearbeitern der Luftaufsicht als Bedienstete der Luftfahrtbehörde in der Örtlichen Luftaufsichtsstelle am Verkehrsflughafen Frankfurt/Main wahrgenommen. Die Sachbearbeiter für Luftaufsicht können sich durch einen von der Luftfahrtbehörde ausgestellten Ausweis als solche legitimieren. Sie sind verpflichtet und berechtigt, die erforderlichen Anordnungen zu treffen. Sie können insbesondere in Ausübung der Luftaufsicht für den Bereich des Verkehrsflughafens Frankfurt/Main Verfügungen erlassen (vgl. Nfl I - 4/12).

11. Verfahren zur Enteisung von Luftfahrzeugen

11.1 Allgemeines

Auf dem Verkehrsflughafen Frankfurt Main findet die Enteisung von Luftfahrzeugen sowohl auf den Luftfahrzeugstandplätzen (Gebäude - und Vorfeldpositionen) als auch auf den Enteisungsflächen DP1 und DP2 westlich des Startbahnkopfes der Startbahn 18 oder, sofern der Betriebsablauf es erfordert, zusätzlich auf anderen Flächen statt. Die Bezeichnung dieser Flächen erfolgt im Saisonalen Luftfahrzeugenteisungsplan für den Verkehrsflughafen Frankfurt/Main. Die Koordination der Enteisungsvorgänge erfolgt durch das "Aircraft De-icing Center" (ADC). Weitere Einzelheiten über organisatorische Abläufe werden gesondert von DFS / NMOC oder Fraport AG / ADC veröffentlicht.

11.2 Flächen zur Enteisung von Luftfahrzeugen

Die Enteisungsfläche DP-West (DPW) liegt im Zuständigkeitsbereich der Flugplatzkontrolle und beinhaltet die Enteisungsflächen DP1 und DP2 (s. AIP, AD 2 EDDF 2-5). Für die Durchführung von Enteisungsvorgängen geht die Zuständigkeit vorübergehend auf die Vorfeldkontrolle über. Die anderen Flächen, auf denen im Bedarfsfall Luftfahrzeuge zusätzlich enteist werden können, liegen im Zuständigkeitsbereich der Vorfeldkontrolle (s. AIP, AD 2 EDDF 2-5). Auf diesen Flächen werden grundsätzlich nur strahlgetriebene Luftfahrzeuge bei laufenden Triebwerken enteist. Voraussetzung hierfür ist, dass der Luftfahrzeughalter oder verantwortliche Luftfahrzeugführer diesem Verfahren in eigener Verantwortung zugestimmt und sichergestellt hat, dass alle Vorschriften des Luftfahrzeugherstellers eingehalten werden. Andernfalls ist die Enteisung nur auf einer Gebäude- oder Vorfeldposition möglich. Auf den Enteisungsflächen (DPs) dürfen propellergetriebene Luftfahrzeuge aus Sicherheitsgründen nicht enteist werden.

Zum optimalen Nutzen der Verkehrsabwicklung werden auf den Enteisungsflächen (DP) vorzugsweise strahlgetriebene Luftfahrzeuge enteist, die zuvor eine Gebäudeposition belegt hatten.

Nachfolgende Behandlungen können auf den Enteisungsflächen (DP) aus verfahrenstechnischen Gründen nicht vorgenommen werden: Enteisungen unterhalb der Tragflächen oder mit Heißluft, Fahrwerksenteisungen, Enteisungen mit besonderen Viskositäten, Kontrolle der mittleren Triebwerke (z.B. DC10/MD11) und Sonderprüfungen einzelner Luftfahrzeugteile (z.B. „hands on checks“).

11.3 Bodenfunkstellen für die Luftfahrzeugenteisung

Durch das ADC wird eine Bodenfunkstelle mit dem Rufzeichen FRANKFURT DEICING auf der Frequenz 122.300 MHz betrieben. Die Kontaktfrequenz im Bereich der Enteisungsflächen (DP) zwischen Flugzeugbesatzung und Enteisungsmannschaft wird dem Luftfahrzeugführer durch die Vorfeldkontrolle mitgeteilt.

11.4 Anmeldung zur Luftfahrzeugenteisung

Anmeldungen zur Luftfahrzeugenteisung können durch den Luftfahrzeughalter oder dessen Vertreter auf der Frequenz 122.300 MHz oder in Ausnahmefällen unter Tel.: +49 (0)69 690 73891 durchgeführt werden. Zur Enteisung angemeldete Luftfahrzeuge halten auf der Frequenz 122.300 MHz Hörbereitschaft.

Hinweis: Vom 1. Mai bis einschließlich 14. Oktober eines Jahres, können Luftfahrzeugenteisungen ausschließlich über die Telefonnummer +49 (0) 69 690 73891 angefragt werden.

11.5 Ablauf der Luftfahrzeugenteisung

11.5.1 Luftfahrzeugenteisung auf den Luftfahrzeugstandplätzen

Die Enteisung von Luftfahrzeugen auf den jeweiligen Standplätzen erfolgt bei abgestellten Triebwerken, bei abgelegten Fluggastbrücken und frei von Abfertigungsgeräten. Sonderbehandlungen, wie aufgelistet unter Ziffer 11.2, letzter Satz, sind nur hier möglich.

11.5.2 Luftfahrzeugenteisung auf den Enteisungsflächen

Die Luftfahrzeuge werden durch das ADC zur Enteisung auf den Enteisungsflächen DPW oder anderen Flächen eingeteilt. Die Anlassfreigabe zum Verlassen der Abfertigungsposition erteilt der Tower gemäß dem A-CDM Anlassverfahren. Anweisungen für Push-Back Vorgänge für Rollvorgänge zu den Enteisungsflächen und auf die einzelnen Enteisungspositionen (s. AIP, AD 2 EDDF 2-5) werden durch die Vorfeldkontrolle erteilt.

10. Exercising of Aviation Supervision – Averting Operational Dangers –

Aviation supervision is in the hands of persons in charge of aviation supervision as public employees of the Aeronautical Authority at the local aviation supervision office at Frankfurt/Main Airport. The persons in charge of aviation supervision can prove authorization by an identification card issued by the Aeronautical Authority. They are obliged and authorized to give the necessary instructions. They are allowed to issue directives, especially when exercising aviation supervision for the area of Frankfurt/Main Airport (see Nfl I - 4/12).

11. Procedures for the De-icing of Aircraft

11.1 General

At Frankfurt Main Airport, aircraft de-icing is conducted at the aircraft stands (terminal and apron positions), on the de-icing pads DP1 and DP2 located to the west of the head of RWY 18, and, if necessary for operations, at additional locations. De-icing pad designators are published in the seasonal aircraft de-icing plan for Frankfurt Airport. De-icing operations are coordinated by the Aircraft De-icing Centre (ADC). Further details about the logistics of de-icing operations will be published separately by DFS / NMOC or Fraport AG / ADC.

11.2 Aircraft de-icing positions

The de-icing pad West (DPW) falls within the responsibility of aerodrome control and includes de-icing pads DP1 and DP2 (see AIP, AD 2 EDDF 2-5). Responsibility is temporarily transferred to Fraport Apron Control during de-icing operations. Additional positions where aircraft can be de-iced are located within the area of responsibility of Fraport Apron Control (see AIP, AD 2 EDDF 2-5). As a rule, only jet aircraft with running engines will be de-iced on these positions. This will only be done on condition that the aircraft operator or responsible pilot-in-command has assumed responsibility for this procedure and has ensured that all the stipulations of the aeroplane manufacturer are observed. Otherwise, de-icing will only be possible at terminal or apron position. On the de-icing pads (DPs), propeller aeroplanes may not be de-iced for safety reasons.

In order to achieve optimal traffic handling, jet-propelled aeroplanes, which have previously occupied a terminal position, will be given preference for de-icing on the de-icing pads (DP).

The following treatment cannot be carried out on the de-icing pads (DP) for technical reasons: de-icing beneath the wings or with hot air, de-icing of the undercarriage, de-icing with special viscosities, control of the central engines (e. g. DC10/MD11), and special examinations of individual aircraft parts (e. g. „hands on checks“).

11.3 Aeronautical Stations for the De-icing of Aircraft

An aeronautical station will be operated by the ADC with call sign FRANKFURT DEICING on frequency 122.300 MHz. In the vicinity of the de-icing pads (DP), the contact-frequency between aircraft staff and the de-icing crew will be assigned by apron control.

11.4 De-icing Notification

Aircraft operators or their representatives can request aircraft de-icing on frequency 122.300 MHz or in exceptional cases by telephone: +49 (0)69 690 73891. Aircraft scheduled to be de-iced must maintain air-ground voice communication watch on frequency 122.300 MHz.

Note: In the period of 1 May up to and including 14 October, requests for aircraft de-icing can only be made by telephone: +49 (0) 69 690 73891.

11.5 Aircraft De-icing Proceedings

11.5.1 De-icing of Aircraft at the Aircraft Stands

The de-icing of aircraft at the respective aircraft stands will take place with engines switched off, passenger bridges cast off, and the aircraft clear of handling equipment. Special treatment, as listed under para 11.2, last sentence, is only possible here.

11.5.2 De-icing of Aircraft on the De-icing Pad

ADC will assign aircraft to be de-iced to the de-icing pads DPW or other pads. The tower will issue start-up approval to leave the handling position as defined in the A-CDM procedure for start-up approvals. Instructions for push-back procedures to taxi to the de-icing pads and onto individual de-icing positions (see AIP, AD 2 EDDF 2-5) will be issued by apron control.

11.5.2.1 Enteisungsfläche DP1

Auf der Enteisungsfläche DP1 steht eine Enteisungsposition zur Verfügung, die für Luftfahrzeuge bis A380 (ICAO-Code F) ausgelegt ist. Die Luftfahrzeuge werden mittels einer individuell zu schaltenden Mittellinienbefeuerung zur Enteisungsposition geführt. Die Positionierung der Luftfahrzeuge auf der Enteisungsfläche DP1 erfolgt durch eine optische Einrollhilfe (Eyeline) links von der Mittellinie, die dem Luftfahrzeugführer die genaue Halteposition visualisiert. Diese Einrollhilfe besteht aus 5 gelben einseitig strahlenden Unterflurleuchten. Bei Ausfall der Mittellinienbefeuerung oder der Einrollhilfe (Eyeline) werden die Luftfahrzeuge durch einen Einweiser auf die Enteisungsposition geführt. Den Anweisungen des Einweisers ist zu folgen.

Nach Aufforderung durch die Vorfeldkontrolle ist auf der zugewiesenen Frequenz Sprechfunkverbindung mit der Enteisungsmannschaft aufzunehmen.

11.5.2.2 Enteisungsfläche DP2

Auf der Enteisungsfläche (DP2) stehen drei Enteisungspositionen zur Verfügung, die abhängig von der Luftfahrzeuggröße betrieben werden. Die mittlere Position (DP Centre) ist für Luftfahrzeuge bis A380 (ICAO-Code F) ausgelegt. Die beiden äußeren Positionen (DP West und DP East) sind für Luftfahrzeuge bis einschließlich A321 (ICAO-Code C) ausgelegt und können parallel betrieben werden. Die Luftfahrzeuge werden mittels einer individuell zu schaltenden Mittellinienbefeuerung zur jeweiligen Enteisungsposition geführt. Die Positionierung der Luftfahrzeuge auf der Enteisungsfläche (DP) erfolgt durch eine optische Einrollhilfe (Eyeline) links von der jeweiligen Mittellinie, die dem Luftfahrzeugführer die genaue Halteposition visualisiert. Diese Einrollhilfe besteht aus 5 gelben einseitig strahlenden Unterflurleuchten. Bei Ausfall der Mittellinienbefeuerung oder der Einrollhilfe (Eyeline) werden die Luftfahrzeuge durch einen Einweiser auf die entsprechende Enteisungsposition geführt. Den Anweisungen des Einweisers ist zu folgen.

Nach Aufforderung durch die Vorfeldkontrolle ist auf der zugewiesenen Frequenz Sprechfunkverbindung mit der Enteisungsmannschaft aufzunehmen.

11.5.2.3 Luftfahrzeugenteisung auf anderen Flächen

Sofern durch den Betriebsablauf erforderlich, werden die Luftfahrzeuge durch das ADC zur Enteisung zusätzlich auf andere Flächen (Rollbahn N7, Positionsbereiche V159/V161 und G16) eingeteilt. Anweisungen für Rollvorgänge zu diesen Flächen werden durch die Vorfeldkontrolle erteilt. Die Luftfahrzeuge werden durch einen Einweiser auf die entsprechende Enteisungsposition geführt. Den Anweisungen des Einweisers ist zu folgen. Nach Aufforderung durch die Vorfeldkontrolle ist auf der zugewiesenen Frequenz Sprechfunkverbindung mit der Enteisungsmannschaft aufzunehmen. Luftfahrzeuge, die auf Positionen östlich Rollbahn N3 abgestellt sind und die von der Startbahn 18 abzufliegen beabsichtigen, können im Bereich der Position G16 mit laufenden Triebwerken enteist werden. Der Abflug wird grundsätzlich von der Kreuzung S oder M erfolgen. Luftfahrzeugführer, die nicht in der Lage sind, diesen Bedingungen nachzukommen, haben dies bei der Anmeldung zur Enteisung mit der ersten Sprechfunkverbindung mitzuteilen.

11.5.3 Der Luftfahrzeugführer hat während des Enteisungsvorganges ständige Hörbereitschaft auf der entsprechenden Frequenz der Vorfeldkontrolle zu gewährleisten. Nach Beendigung des Enteisungsvorganges hat der Luftfahrzeugführer der Vorfeldkontrolle die Rollbereitschaft zu melden.

12. Nach An- und Abflügen getrennte ATIS-Informationen

Zu bestimmten Zeiten können die ATIS-Informationen auf den veröffentlichten Frequenzen getrennt für **Anflüge** (118.025 MHz) und **Abflüge** (118.725 MHz) ausgestrahlt werden.

Für Anflüge wird die ATIS mit dem Kenner FRANKFURT ARRIVAL-INFORMATION ausgesendet. Nutzern von ATIS-Informationen per Datalink wird als Kenner **ARR-ATIS** für Arrival-ATIS übermittelt.

Für Abflüge wird die ATIS mit dem Kenner FRANKFURT DEPARTURE-INFORMATION ausgesendet. Nutzern von ATIS-Informationen per Datalink wird als Kenner **DEP-ATIS** für Departure-ATIS übermittelt.

Zu allen anderen Zeiten wird auf beiden Frequenzen die ATIS mit identischen Inhalten für An- und Abflüge ausgesendet.

11.5.2.1 De-Icing Pad DP1

A de-icing position is available on de-icing pad DP1 which is designed for aircraft up to A380 (ICAO-Code F). Aircraft will be guided to the de-icing position with the aid of centreline lighting which can be individually switched on and off. Aircraft are brought into position on de-icing pad DP1 by an optical taxiing-in aid (Eyeline) to the left of the centreline, which depicts the exact holding position to the pilot optically. This taxiing-in aid is made up of 5 amber surface lights with single-sided beams. If the surface lighting or the taxiing-in aid (Eyeline) is out of order, the aircraft will be guided to the de-icing position by a marshaller. The instructions of the marshaller shall be followed.

When requested by apron control, radiotelephony communication shall be established with the de-icing crew on the allocated frequency.

11.5.2.2 De-Icing Pad DP2

On the de-icing pad (DP2), three de-icing positions are available which are operated according to the size of the aircraft. The centre position (DP Centre) is designed for aircraft up to A380 (ICAO Code F). The two outer positions (DP West and DP East) are designed for aircraft up to and including A321 (ICAO Code C) and can be operated parallel to each other. Aircraft will be guided to the respective de-icing position by means of centreline lighting which can be switched on/off individually. The aircraft will be positioned on the de-icing pad (DP) by an Eyeline to the left of the respective centreline which enables the pilot to visualize the exact holding position. This Eyeline is made up of 5 yellow surface lights which shine on one side. If the centreline lighting or Eyeline is out of operation, aircraft will be guided by a marshaller to the respective de-icing position. Instructions from the marshaller shall be followed.

When requested by apron control, radiotelephony communication shall be established with the de-icing crew on the frequency assigned.

11.5.2.3 Aircraft de-icing at other locations

If necessary for operations, the Aircraft De-Icing Centre (ADC) will assign aircraft to be de-iced at additional locations (TWY N7, positions V159, V161 and G16). Instructions for taxiing to and onto these positions will be issued by apron control. Aircraft will be guided by a marshaller to the de-icing position. The marshaller's instructions must be followed. When requested by apron control, radiotelephony communication shall be established with the de-icing crew on the frequency assigned. Aircraft parked on positions east of TWY N3 which intend to depart from RWY 18 can be de-iced at position G16 with running engines. As a rule, departures will be conducted from intersections S or M. Pilots unable to comply with these conditions shall communicate this during their first radiotelephony communication to request de-icing.

11.5.3 During the de-icing proceedings, the pilot shall ensure continuous listening watch on the respective frequency of apron control. After de-icing proceedings have been concluded, the pilot shall report to apron control that he is ready to taxi.

12. Separate ATIS Information for Arrivals and Departures

At specified times, ATIS information will be transmitted separately on the published frequencies for **arrivals** (118.025 MHz) and **departures** (118.725 MHz).

The ATIS for arrivals will be broadcast with the identification FRANKFURT ARRIVAL INFORMATION. The arrival ATIS will be transmitted to users of ATIS information per datalink with the identification **ARR-ATIS**.

The ATIS for departures will be broadcast with the identification FRANKFURT DEPARTURE INFORMATION. The departure ATIS will be transmitted to users of ATIS information per datalink with the identification **DEP-ATIS**.

At all other times, the ATIS will be broadcast with identical contents for arrivals and departures on both frequencies.

EDDF AD 2.21 Noise abatement procedures

Zusätzliche Verfahren zur Lärminderung für Anflüge

Zusätzlich zu den allgemeinen Verfahren zur Lärminderung (ENR 1.5) und zusätzlich zu den Verfahren unter EDDF AD 2.20 (2. Lärmschutz), wird Frankfurt ATC folgende „Nacht-Verfahren“ anwenden:

1. In der Zeit von 2200 (2100) bis 0400 (0300) haben anfliegende Luftfahrzeuge Freigaben zu erwarten, aus denen hervorgeht, dass die Endanflugkurse in einer Mindestentfernung von:

- circa 18 NM (Start- Landebahnen 25 C/L) sowie
- circa 19 NM (Start- Landebahnen 07 C/R) vor der Schwelle (THR) erreicht werden.

Diese „Endanflug-Punkte“ entsprechen den GPS/FMS-Wegpunkten DF622 (Start-/Landebahnen 25 C/L) sowie DF652 (Start-/Landebahnen 07 C/R). Die "Fly-by"-Funktion dieser Wegpunkte bleibt erhalten.

1.1 Danach sollen Luftfahrzeugführer eine Freigabe für einen ILS-Anflug erwarten, einschließlich der Freigabe den Gleitweg in 5000 ft zu erfliegen.

1.2 Weiterhin sollen Luftfahrzeugführer darauf vorbereitet sein, dass eine Sinkflugfreigabe unterhalb FL 70 erst 6 NM vor den oben erwähnten Punkten zu erwarten ist. Luftfahrzeugführer sollen ihre Geschwindigkeit entsprechend anpassen (ca. 200 – 220 kt bei Verlassen von FL 70) und werden dringend gebeten, den Sinkflug aus FL 70, wann immer möglich, als kontinuierlichen Sinkflug durchzuführen.

1.3 Im Falle der Nicht-Verfügbarkeit des ILS, d.h. bei Freigaben für Nicht-Präzisionsanflüge, wird die Anflugkontrolle Sinkflugfreigaben nach 4000 ft erteilen.

1.4 Nicht-Präzisionsanflüge zu Übungszwecken werden nicht genehmigt.

1.5 Diese Verfahren werden nicht angewendet:

- für Flüge mit STS/HOSP
- bei Wetterbedingungen, wie z.B. CB, TS
- und selbstverständlich bei Notfällen.

1.6 Entfernungen:

DF622	THR 25 C:	18.0 NM
DF622	THR 25 L:	18.1 NM
DF652	THR 07 C:	19.6 NM
DF652	THR 07 R:	19.5 NM

2. In der Zeit von 2200 (2100) bis 0400 (0300) haben anfliegende Luftfahrzeuge Freigaben zu erwarten, aus denen hervorgeht, dass die Endanflugkurse erst in einer Entfernung von 5.0 NM (Start-Landebahn 25C/25L) und 5.1 NM (Start-Landebahn 07C/07R) vor der Schwelle (THR) erreicht werden.

Diese „Endanflug-Punkte“ entsprechen den GPS/FMS-Wegpunkten RATRU (25C), TITUT (25L) sowie TIXAK (07C) und BOGVO (07R).

2.1 Weiterhin sollten Luftfahrzeugführer darauf vorbereitet sein, dass eine Sinkflugfreigabe unterhalb FL 70 erst 6 NM vor KUGUV bzw. ORVIV (25C/25L) und 6 NM vor ULNOK bzw. IBLUS (07C/07R) zu erwarten ist. Luftfahrzeugführer sollen ihre Geschwindigkeit entsprechend anpassen (ca. 200 – 220 kt bei Verlassen von FL 70) und werden dringend gebeten, den Sinkflug aus FL 70, wann immer möglich, als kontinuierlichen Sinkflug durchzuführen.

2.2 Diese Verfahren werden nicht angewendet:

- für Flüge mit STS/HOSP
- bei Wetterbedingungen, wie z. B. CB, TS
- bei Notfällen.

2.3 Im Falle der Nicht-Anwendbarkeit der R-NAV (GPS)-Anflugverfahren wegen fehlender RNAV (GPS)-Ausstattung erhalten Luftfahrzeugführer eine Freigabe für einen ILS-Anflug (entsprechend dem Nachtanflugverfahren - EDDF AD 2.21).

2.4 Im Falle der Nichtverfügbarkeit des ILS, d. h. bei Freigaben für Nicht-Präzisionsanflüge, wird die Anflugkontrolle Sinkflugfreigaben nach 4000 ft erteilen.

Additional Noise Abatement Procedures for Arrivals

In addition to the general noise abatement procedures (ENR 1.5) and in addition to the procedures under EDDF AD 2.20 (2. Noise Abatement), Frankfurt ATC will apply the following „Night Procedures“:

1. Between 2200 (2100) and 0400 (0300) all inbound aircraft should expect clearances whereby the final track will be reached not closer to the airport than:

- approximately 18 NM (RWYs 25 C/L) and
- approximately 19 NM (RWYs 07 C/R) from THR.

These „final-interception points“ correspond to the GPS/FMS waypoints DF622 (RWYs 25 C/L) and DF652 (RWYs 07 C/R). The fly-by function of these waypoints is not affected!

1.1 Pilots should subsequently expect a clearance for an ILS approach with glide-path interception at 5000 ft.

1.2 In addition, pilots should expect a clearance to descend below FL 70 only 6 NM prior to reaching the above-mentioned points. Pilots should adjust their speed accordingly (approx. 200 – 220 kt when leaving FL 70) and are urgently requested to perform their descent from FL 70 as a continuous descent whenever possible.

1.3 In the event of technical failure of the ILS equipment, i.e. the need to fly non-precision approaches, descent clearances to 4000 ft will be issued.

1.4 Requests for non-precision approaches for training purposes will be denied.

1.5 These procedures will not be applied:

- to flights with STS/HOSP,
- in adverse weather conditions, e.g. CB, TS
- and, of course, in emergency situations.

1.6 Distances:

DF622	THR 25 C:	18.0 NM
DF622	THR 25 L:	18.1 NM
DF652	THR 07 C:	19.6 NM
DF652	THR 07 R:	19.5 NM

2. From 2200 (2100) until 0400 (0300), approaching aircraft shall wait for clearances with the information that the final approach tracks can only be reached at a distance of 5.0 NM (RWY 25C/25L) and 5.1 NM (RWY 07C/07R) in front of the THR.

These „final approach points“ correspond to the GPS/FMS waypoints RATRU (25C), TITUT (25L) as well as TIXAK (07C) and BOGVO (07R).

2.1 In addition, pilots should be prepared not to expect a descent clearance below FL 70 until 6 NM prior to reaching KUGUV and/or ORVIV (25C/25L) and 6 NM prior to reaching ULNOK and/or IBLUS (07C/07R). Pilots shall adjust their speed accordingly (approx. 200 – 220 kt when leaving FL 70) and are urgently requested to conduct the descent from FL 70 as continuous descent, whenever possible.

2.2 These procedures may not be applied:

- to flights with STS/HOSP
- in meteorological conditions such as CB, TS
- in emergencies.

2.3 In the case that R-NAV (GPS) approach procedures cannot be applied due to the absence of RNAV (GPS) equipment, pilots will be issued with a clearance for an ILS approach (in compliance with the night approach procedure - EDDF AD 2.21).

2.4 In the case of the ILS not being available, i.e. for clearances for non-precision approaches, approach control will issue descent clearances after 4000 ft.

EDDF AD 2.22 Flight procedures

1. Geschwindigkeitsanweisungen durch ATC

Geschwindigkeitsanweisungen durch ATC - vor allem im Endanflug - sind die Basis für eine flüssige und sichere Betriebsdurchführung gerade bei hoher Verkehrslast.

Die Nichteinhaltung von Geschwindigkeitsanweisungen kann dazu führen, dass das jeweilige Luftfahrzeug aus der vorgesehenen Anflugreihenfolge genommen werden muss.

1. Speed instructions by ATC

Speed instructions by ATC, particularly during final approach, are essential for smooth and safe operations, especially at times of high traffic loads.

If an aircraft does not comply with the speed instructions, it may have to be excluded from the planned approach sequence.

2. Reduzierte Radarstaffelungsmindestwerte auf Parallelpistensystemen

(Grundlage NfL I-55/11)

2.1 Bei Anflügen auf das Parallelpistensystem 07C/07R und 25C/25L am Verkehrsflughafen Frankfurt/Main beträgt der Radarstaffelungsmindestwert im Endanflug zwischen 10 NM und Aufsetzpunkt unter den nachfolgenden Voraussetzungen 2,5 NM.

- a) Das vorausfliegende Luftfahrzeug hat die gleiche oder eine geringere Gewichtsklasse. Luftfahrzeuge der Gewichtsklasse SUPER, HEAVY, sowie die B757 als vorausfliegendes Luftfahrzeug, sind von diesem Vorhaben ausgeschlossen.
- b) Die Abrollwege der Start-/Landebahn können vom Kontrollturm aus, durch Augenbeobachtung oder mit Hilfe von Bodenradar, eingesehen werden.
- c) Die Piste ist trocken.

2.2 Der reduzierte Radarstaffelungsmindestwert kann auch zwischen versetzten Anflügen zu den parallelen Pisten angewendet werden. In diesen Fällen ist weder die Einsehbarkeit der Abrollwege (2.1b) noch der Pistenzustand (2.1c) als Voraussetzung zu berücksichtigen.

3. Reduzierte Radarmindeststaffelung für diagonal versetzte Anflüge

(Grundlage NfL I-54/11)

3.1 Für diagonal versetzte Anflüge auf den Verkehrsflughafen Frankfurt/Main beträgt die Radarmindeststaffelung (MRS):

- 2.5 NM zwischen 20 NM und Voreinflugzeichen und
- 2.0 NM zwischen Voreinflugzeichen und Aufsetzpunkt.

3.2 Die reduzierte Radarmindeststaffelung wird für die Parallelpistensysteme 07C/07R und 25C/25L angewendet, vorausgesetzt, die folgenden Bedingungen sind erfüllt:

- das vorausfliegende und das nachfolgende Luftfahrzeug fliegen unterschiedliche Pisten an;
- beide Luftfahrzeuge sind auf dem Endanflugkurs etabliert;
- beide Luftfahrzeuge nutzen zwischen Voreinflugzeichen und Aufsetzpunkt Präzisionsanflughilfen;
- CAT I-Bedingungen herrschen vor.

3.3 Die Anwendung der reduzierten Radarmindeststaffelung erfordert darüber hinaus:

- der Einleitungsanruf ist auf das Luftfahrzeugrufzeichen zu beschränken;
- die strikte Einhaltung der durch ATC gegebenen Geschwindigkeitsanweisungen;
- die grundsätzliche Nutzung der Piste 18 für Abflüge.

4. Parallelbahnbetrieb am Flughafen Frankfurt/Main

(Grundlage: NfL I-102-14)

4.1 Unabhängige parallele Anflüge auf den Pisten 25L/25R und 07L/07R sowie 25R/25C und 07L/07C

Unabhängige parallele Anflüge können durchgeführt werden.

Die Bedingungen gemäß

- ICAO Doc 4444 Chapter 6.7.3 und
- ICAO Annex 14 Chapter 3.1.12

sind unter Berücksichtigung der in der AIP GEN 1.7 notifizierten Abweichungen erfüllt.

4.2 Getrennter paralleler Betrieb auf den Pisten 25C/25R und 07C/07L

Getrennter paralleler Betrieb kann auf Parallelpisten durchgeführt werden.

Die Bedingungen gemäß

- ICAO Doc 4444 Chapter 6.7.3 und
- ICAO Annex 14 Chapter 3.1.12

sind unter Berücksichtigung der in der AIP GEN 1.7 notifizierten Abweichungen erfüllt.

5. Treibstoffberechnung, Sinkprofil und Flugplanung

5.1 Flugplanung für alle Anflüge nach Frankfurt Main

Zur Flug- und Sinkflugplanung sind folgende Flughöhen an den Übergabepunkten zwischen Langen ACC und Frankfurt APP zu erwarten:

KERAX	zwischen	FL 130 und FL 110
PSA	zwischen	FL 120 und FL 100
ROLIS	in	Flughöhe 150
UNOKO	zwischen	FL 130 und FL 110 (bei RAMOB)

Diese Flughöhen sind nur für Planungszwecke zu verwenden. Die tatsächliche Übergabeflughöhe wird von der Flugverkehrskontrolle individuell freigegeben.

2. Reduced radar separation minima on parallel runway systems

(Based on NfL I-55/11)

2.1 During approaches to the parallel runway system 07C/07R and 25C/25L at Frankfurt/Main Airport, a radar separation minimum of 2.5 NM applies on final approach between 10 NM and touchdown, provided the following conditions are met:

- a) The preceding aircraft has the same or a lower weight category. Aircraft of weight category SUPER, HEAVY and the B757 as preceding aircraft are excluded from this procedure.
- b) The exit taxiways of the runway can be observed from the control tower visually or by means of surface movement radar.
- c) The runway is dry.

2.2 The reduced radar separation minimum may also be applied between staggered approaches to the parallel runways. In these cases, neither the line of sight of the exit taxiways (2.1b) nor the runway conditions (2.1c) need to be considered as a precondition.

3. Reduced minimum radar separation for diagonally staggered approaches

(Based on NfL I-54/11)

3.1 The minimum radar separation for diagonally staggered approaches at Frankfurt/Main Airport is:

- 2.5 NM between 20 NM and outer marker and
- 2.0 NM between outer marker and touchdown.

3.2 The reduced minimum radar separation is used for the parallel runway systems 07C/07R and 25C/25L, provided the following conditions are met:

- the preceding and the succeeding aircraft are approaching different runways;
- both aircraft have been established on the final approach track;
- both aircraft are using precision approach aids between outer marker and touchdown;
- CAT I conditions prevail.

3.3 The application of the reduced minimum radar separation also requires:

- initial call is restricted to aircraft call sign;
- strict adherence to speed instructions by ATC;
- general use of runway 18 for departures.

4. Parallel runway operations at Frankfurt/Main Airport

(Based on: NfL I-102-14)

4.1 Independent parallel approaches to runways 25L/25R and 07L/07R as well as 25R/25C and 07L/07C

Independent parallel approaches may be conducted.

The requirements of

- ICAO Doc 4444, Chapter 6.7.3 and
- ICAO Annex 14, Chapter 3.1.12

are fulfilled taking into account the differences notified in AIP Germany GEN 1.7.

4.2 Segregated parallel operations on runways 25C/25R and 07C/07L

Segregated parallel operations may be conducted on parallel runways.

The requirements of

- ICAO Doc 4444, Chapter 6.7.3 and
- ICAO Annex 14, Chapter 3.1.12

are fulfilled taking into account the differences notified in AIP Germany GEN 1.7.

5. Fuel Calculation, Descent Profile and Flight Planning

5.1 Flight planning all arrivals to Frankfurt Main

For flight and descent planning purposes expect the following levels at the transfer points from Langen ACC to Frankfurt APP:

KERAX	between	FL 130 and FL 110
PSA	between	FL 120 and FL 100
ROLIS	at	FL 150
UNOKO	between	FL 130 and FL 110 (at RAMOB)

These levels shall only be used for planning purposes. The actual transfer level will be cleared by ATC individually.

5.2 Flugplanung RNAV STARs ASPAT und EMPAX

Obwohl die RNAV STARs ASPAT und EMPAX nur an die Südbahn (RWY 25L/07R) angebunden sind, können die Pisten 25C/R bzw. 07C/L nach taktischer Entscheidung durch die Flugverkehrskontrolle ebenfalls für Anflüge und Landungen genutzt werden.

Ab den Übergabepunkten von Langen ACC zu Frankfurt APP sind die RNAV STARs ähnlich wie die Übergangsphase "GPS / FMS RNAV Transition to final approach" veröffentlicht. Hierbei wird ein Overlay zur Radarführung mit einer maximalen Flugweglänge einschließlich zusätzlicher Streckenlänge für Sequenzierung und mögliche Verspätungen abgebildet. Daher ist die Flugentfernung dieser RNAV STARs größer als die Flugentfernung der Standard-Instrumenteneinflugstrecke.

Zur Flug- und Treibstoffplanung kann ein Abstand von 45 NM (RWY 25L) oder 73 NM (RWY 07R) als zu erwartende Flugentfernung zwischen Übergabepunkt PSA und Landung angenommen werden. Abweichungen davon können als Verspätung gesehen werden.

5.3 Umgang mit veröffentlichten Höhen- und Geschwindigkeitsbeschränkungen

Veröffentlichte Beschränkungen auf den RNAV STARs sind nur nach Erhalt einer Freigabe zu befolgen.

Wenn bis zum Erreichen des ersten Punkts der RNAV STAR (EMPAX_W/E oder ASPAT_W/E) keine Sinkflugfreigabe erteilt wurde, so ist dem lateralen Profil der STAR zu folgen. Der Sinkflug darf nur in Übereinstimmung mit einer Sinkflugfreigabe eingeleitet werden.

Bei Erhalt einer Freigabe "DESCEND VIA STAR" liegt es in der Verantwortung des Piloten, die Höhenbeschränkungen genau einzuhalten; Abweichungen von den veröffentlichten Höhen- und Geschwindigkeitsbeschränkungen können zu Staffelungsunterschreitungen führen und den sicheren Betrieb anderer Luftfahrzeuge gefährden.

5.2 Flight planning RNAV STARs ASPAT and EMPAX

Although RNAV STARs ASPAT and EMPAX are connected to the southern RWY (25L/07R) only, an approach to and landing on RWYs 25C/R or 07C/L is also possible on a tactical decision by ATC.

Beyond the transfer points from Langen ACC to Frankfurt APP the RNAV STARs are published similar to "GPS / FMS RNAV Transition-to-final approach", which depict an overlay to radar vectoring with a maximum flight track length - including additional track length for sequencing and possible delay. Therefore the flight distance of these RNAV STARs is longer than the distance of the "Standard Instrument Arrival Routes".

For flight and fuel planning purposes a distance of 45 NM (RWY 25L) or 73 NM (RWY 07R) may be regarded as the expected flight distance from transfer point PSA until landing. Any deviation from this may be regarded as a delay situation.

5.3 Handling of published level and speed constraints

Published constraints on the RNAV STARs are to be followed only after having received a clearance.

When reaching the first point of the RNAV STAR (EMPAX_W/E or ASPAT_W/E) without having received a descent clearance, the lateral profile of the STAR shall be followed - descent shall be commenced only in accordance with a descent clearance.

If a clearance to "DESCEND VIA STAR" is received, it is the responsibility of the pilot to strictly comply with the vertical constraints; any deviation from published level and speed constraints may lead to separation infringements and may jeopardise the safe operation of other aircraft.

EDDF AD 2.23 Additional information

1. Winddrehung und Turbulenz auf Startbahn 18

Bei Winden zwischen 200° und 160° im Uhrzeigersinn sowie Geschwindigkeiten von 15 kt und darüber auf der Startbahn 18, können Böen und starke Winddrehungen bis zu Rückenwindkomponenten vorkommen.

1. Wind shift and turbulence on take-off runway 18

In the case of winds between 200° and 160° in a clockwise direction and speeds of 15 kt and more on take-off runway 18, gusts and strong wind shifts up to tail wind components may occur.

2. Vogelschlagwarnungen Anflugrichtung 07L (Area 2)

Zur Erfassung und Prognose von Vogelschwärmen am Kreuzungspunkt Main- km 14,4 mit dem Anflugkorridor 07L ist das System MIVOTHERM für die Anflugrichtung 07L eingerichtet.

Das System basiert auf der Thermofotografie-Technik, besteht aus drei Beobachtungstürmen, die an drei unterschiedlichen Standorten entlang des Mains eingerichtet sind. Das System ist aufgrund seiner optisch-/mechanischen sowie seiner soft- und hardwaremäßigen Systemkonfiguration in der Lage, in den betreffenden Bereichen Vogelschwärme am jeweiligen Standort mit einem Sensorsystem zu erfassen und, soweit erforderlich, entsprechende Meldungen hinreichend schnell zu übertragen. Das mit dem System eingesetzte bildgebende Verfahren erkennt Flughöhe und Fluggeschwindigkeit eines Vogelschwarms und erfasst dabei dessen Ausdehnung, die Anzahl der Vögel und ihre Größe. Der Luftraum am Kreuzungspunkt bei Main-km 14,4 mit dem Anflugkorridor 07L wird mit dem System überwacht und die Übermittlung von Warmmeldungen an DFS Deutsche Flugsicherung GmbH in Echtzeit realisiert. Warmmeldungen (höchste Stufe), die das System bei Betriebsrichtung über Vogelzug liefert, werden von DFS Deutsche Flugsicherung GmbH per Sprechfunk wann immer möglich übermittelt. Für den Fall, dass über einen längeren Zeitraum gehäuft Warmmeldungen auftreten, wird ersatzweise durch den Flughafenunternehmer ein NOTAM veröffentlicht und durch DFS Deutsche Flugsicherung GmbH eine ATIS-Aufsprache vorgenommen werden.

Einschränkungen bei der Erfassung kann es bei extremen Wetterlagen wie Schneetreiben, Starkregen oder sehr dichtem Nebel geben, da hier die Wärmebilderkennung reduziert ist.

Systemausfälle werden den Luftfahrern von dem Flughafenunternehmen per NOTAM bekanntgegeben. Für Fälle eines Systemausfalles wird den Luftfahrzeugführern anfliegender Luftfahrzeuge (Anflugrichtung 07L) empfohlen, den Systemausfall bzw. die Ausfallmeldung vorsorglich (analog) als Vogelschlagwarmmeldung für das Gebiet 2 (Area 2) zu betrachten.

2. Bird strike warnings for approach direction 07L (Area 2)

The MIVOTHERM system has been installed for approach direction 07L to detect and predict flocks of birds at the intersection point of "Main river kilometre 14.4" and the approach corridor 07L.

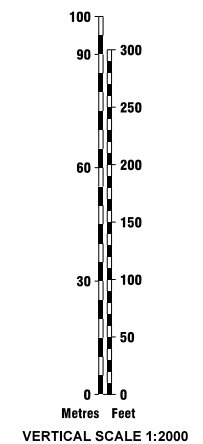
The system is based on thermal imaging and consists of three observation towers which have been erected at three different locations along the Main river. Thanks to the system configuration of its optical/mechanical features as well as its software and hardware, the sensor system is able to detect flocks of birds in the areas concerned and, if required, to transmit the relevant reports in due time. The imaging technique of the system ensures that the altitude and speed of a flock of birds are determined and that its dimensions and the number and size of the birds are recorded. The system monitors the airspace at the intersection point of "Main river kilometre 14.4" and approach corridor 07L and transmits warning messages to DFS in real time. Bird migration warning messages (highest category) issued by the system for this approach direction are communicated by DFS over radiotelephony, whenever possible. In the case of frequent warning messages over a longer period of time, the airport operator will publish a NOTAM instead and DFS may broadcast an ATIS recording.

Detection may be restricted in extreme weather conditions, such as blowing snow, heavy rain or very dense fog, since thermal imaging will then be impaired.

In the case of system outages, airmen will be informed by the airport operator by means of NOTAM. As a precautionary measure, pilots of approaching aircraft (approach direction 07L) are recommended to consider a system outage and the associated message in the same way as a bird strike warning message for Area 2.

EDDF AD 2.24 Charts related to the aerodrome

See next pages

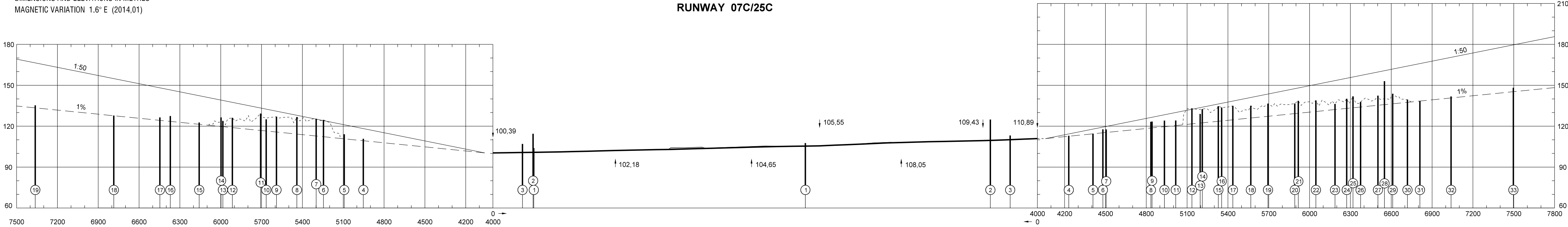


HORIZONTAL SCALE 1:20000

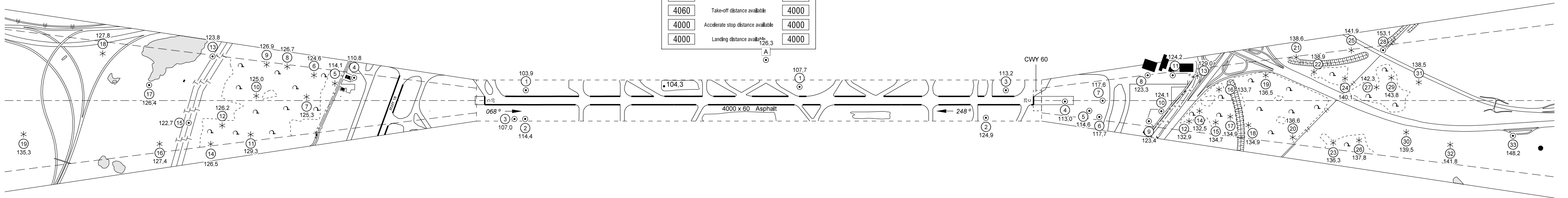
The horizontal scale bar is divided into two rows. The top row is labeled 'Metres' and has markings at 300, 200, 100, 0, 500, 1000, 1500, and 2000. The bottom row is labeled 'Feet' and has markings at 1000, 500, 0, 1000, 2000, 3000, 4000, 5000, and 6000. The bar is a solid black line with white tick marks.

DIMENSIONS AND ELEVATIONS IN METRES
MAGNETIC VARIATION 1.6° E (2014,01)

RUNWAY 07C/25C



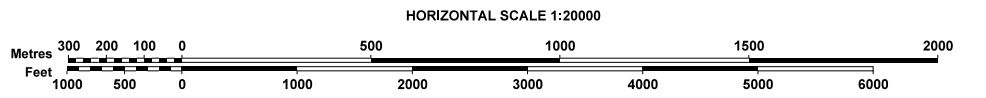
RWY 07C	DECLARED DISTANCES	RWY 25C
4000	Take-off run available	4000
4060	Take-off distance available	4000
4000	Accelerate stop distance available	4000
4000	Landing distance available	4000

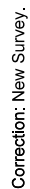


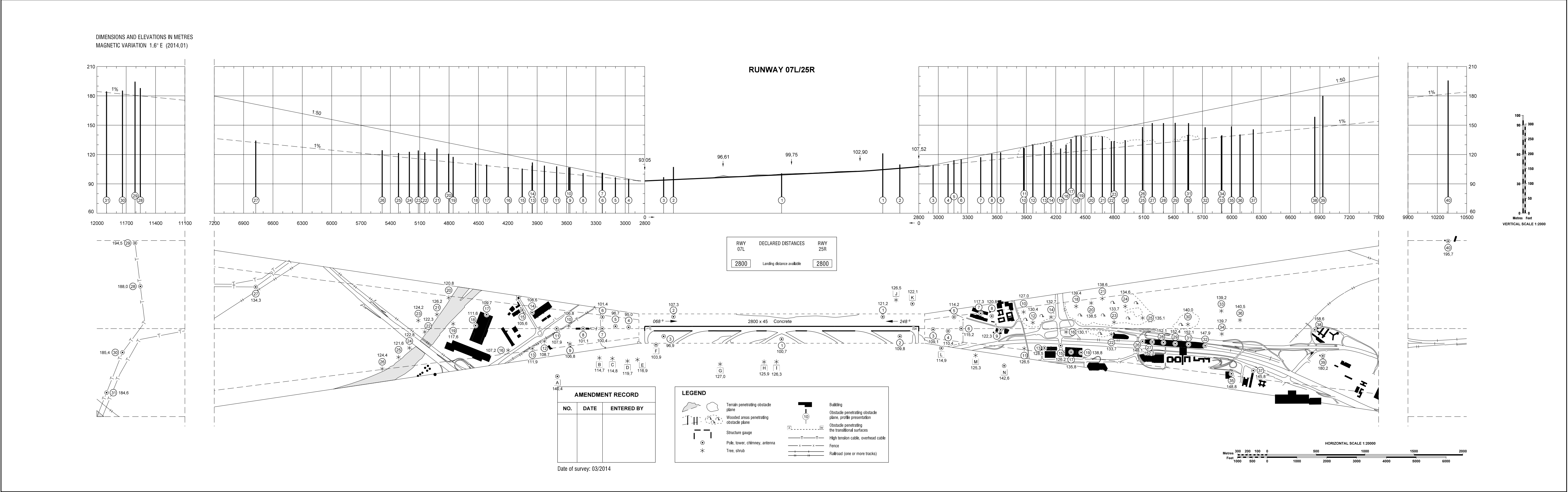
AMENDMENT RECORD		
NO.	DATE	ENTERED BY
1	30 JUN 11	RWY designator 07C/25C

Date of survey: 2014/03

LEGEND	
	Terrain penetrating obstacle plane
	Wooded areas penetrating obstacle plane
	Structure gauge
	Pole, tower, chimney, antenna
	Tree, shrub
	Building
	Obstacle penetrating obstacle plane, profile presentation
	Obstacle penetrating the transitional surfaces
	High tension cable, overhead cable
	Fence
	Railroad (one or more tracks)



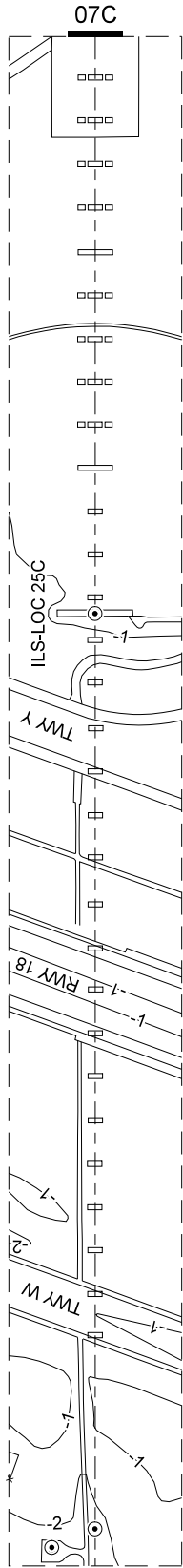
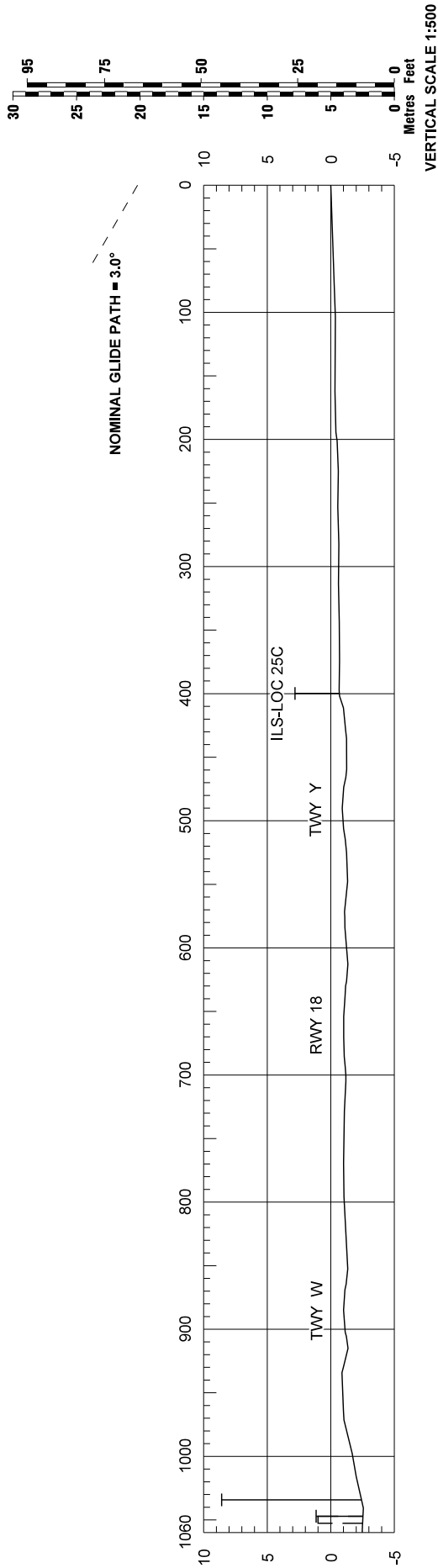




BODENPROFILKARTE FÜR PRÄZISIONSANFLUG - ICAO
PRECISION APPROACH TERRAIN CHART - ICAO

FRANKFURT MAIN
RWY 07C

Correction: New survey.



LEGEND

- Contours
- Tree, shrub
- Building
- Pole, tower, chimney, antenna
- Approach lighting
- Profile of extended RWY centre line
- High tension cable, overhead cable
- Fence
- Railroad (one or more tracks)

CONTOURS AND HEIGHTS ARE RELATED TO THRESHOLD ELEVATION

Date of survey: 2014/03

DIMENSIONS AND HEIGHTS IN METRES

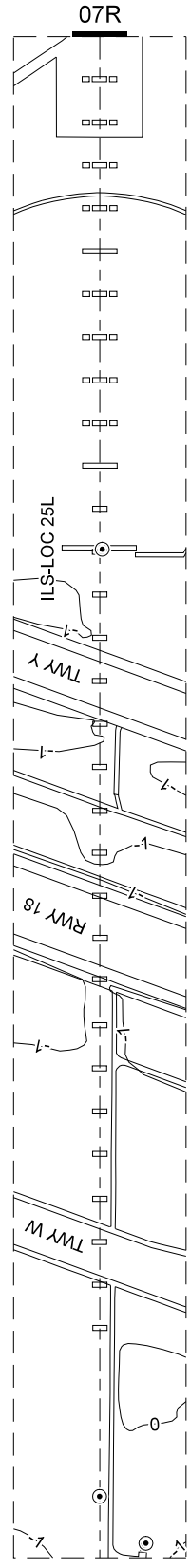
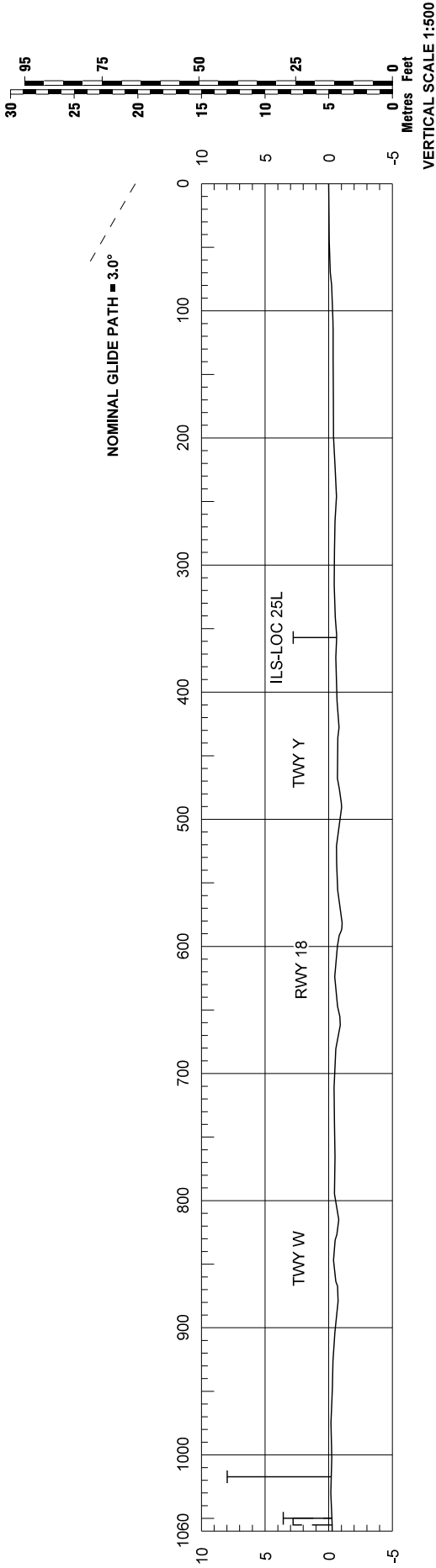


FRANKFURT MAIN
RWY 25C

BODENPROFILKARTE FÜR PRÄZISIONSANFLUG - ICAO
PRECISION APPROACH TERRAIN CHART - ICAO

FRANKFURT MAIN
RWY 07R

Correction: New survey.



LEGEND

Contours

Tree, shrub

Building

Pole, tower, chimney, antenna

Approach lighting

Profile of extended RWY centre line

High tension cable, overhead cable

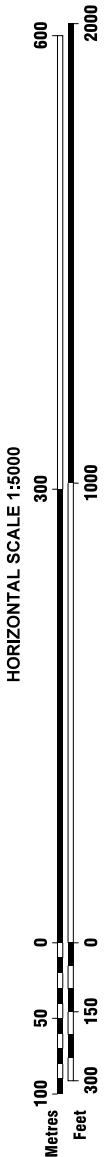
Fence

Railroad (one or more tracks)

CONTOURS AND HEIGHTS ARE RELATED TO THRESHOLD ELEVATION

DIMENSIONS AND HEIGHTS IN METRES

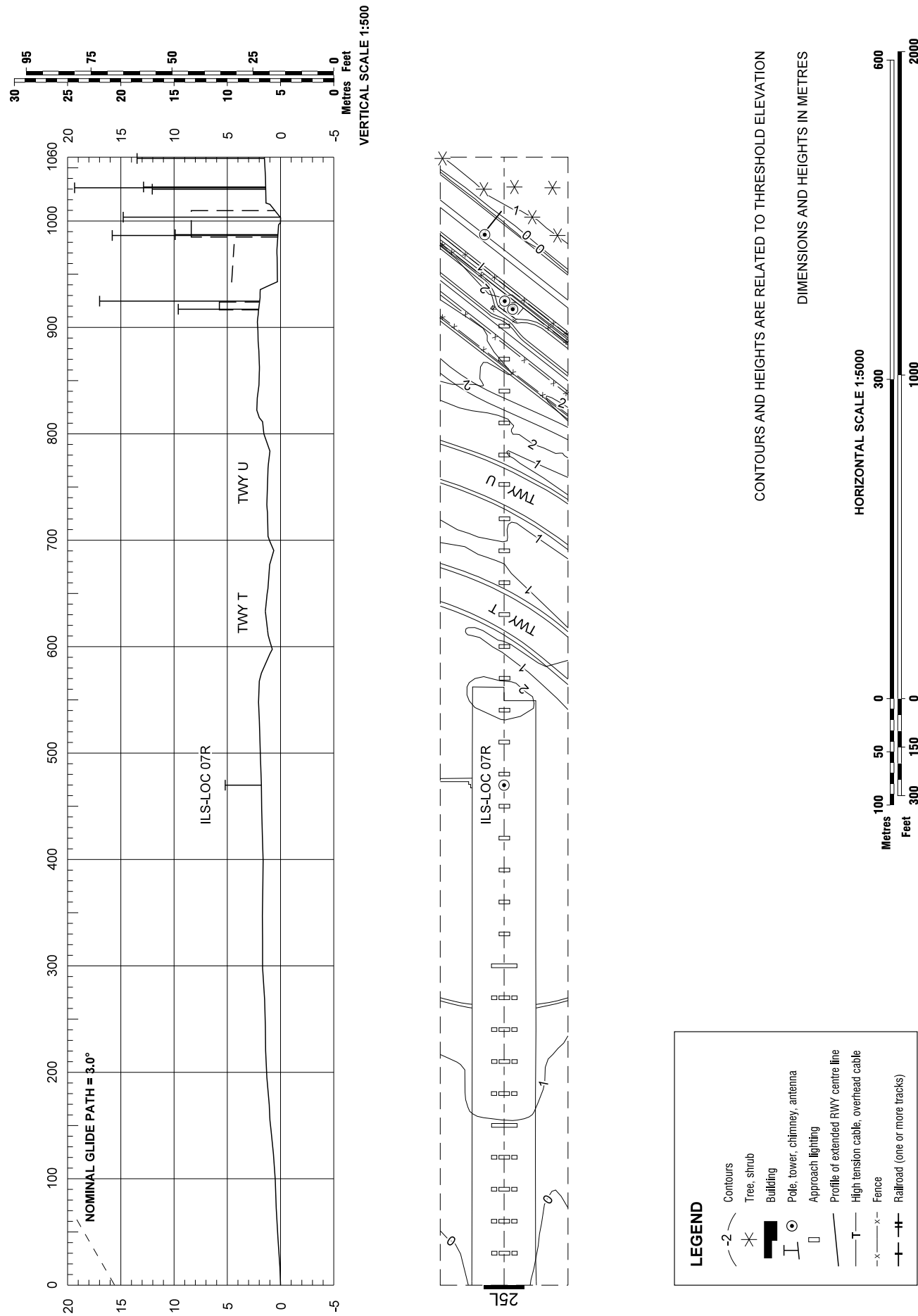
Date of survey: 2014/03



PRECISION APPROACH TERRAIN CHART - ICAO

FRANKFURT MAIN
RWY 25L

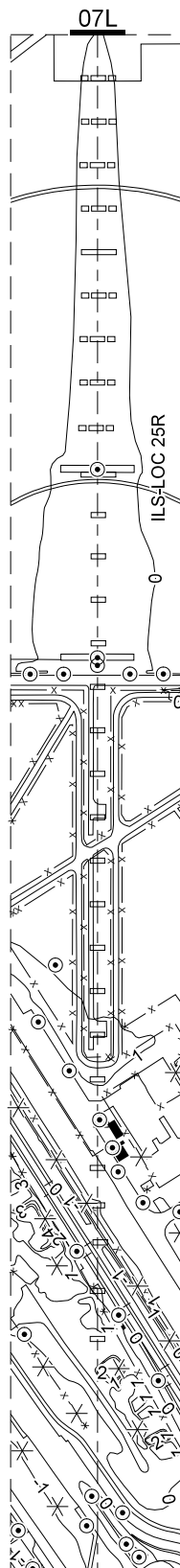
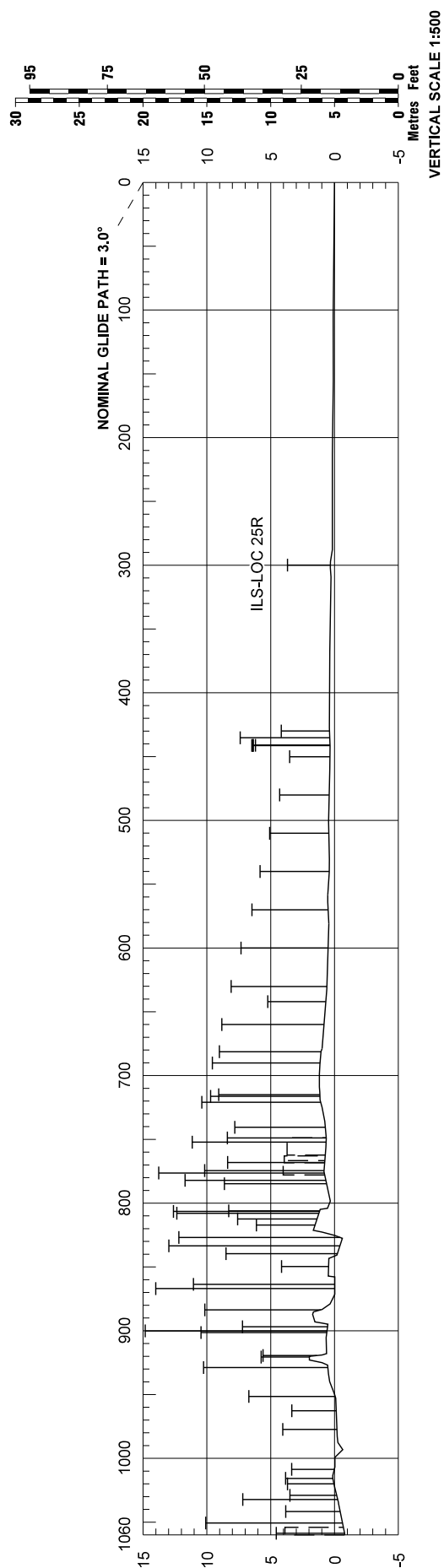
Correction: TWY designator.



BODENPROFILKARTE FÜR PRÄZISIONSANFLUG - ICAO
PRECISION APPROACH TERRAIN CHART - ICAO

FRANKFURT MAIN
RWY 07L

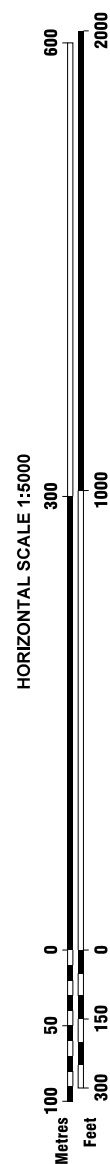
Correction: New Survey.



LEGEND

- Contours
- Tree, shrub
- Building
- Pole, tower, chimney, antenna
- Approach lighting
- Profile of extended RWY centre line
- High tension cable, overhead cable
- Fence
- Railroad (one or more tracks)

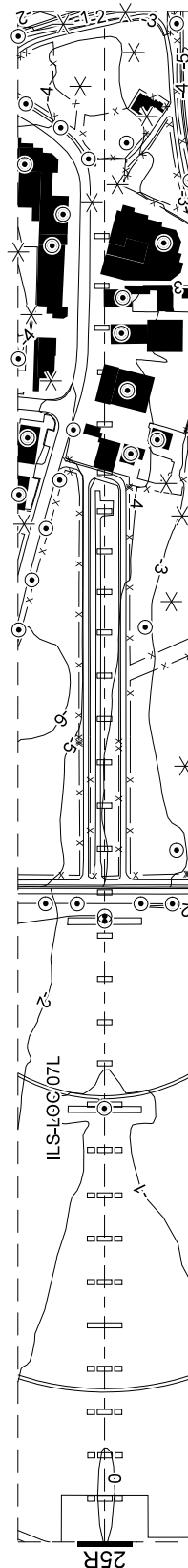
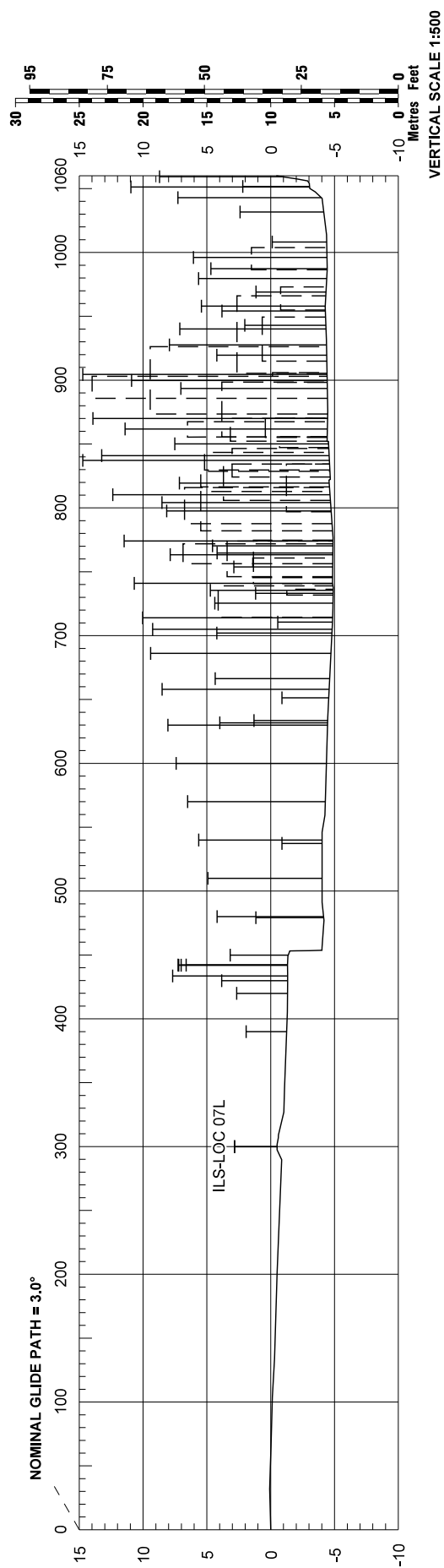
CONTOURS AND HEIGHTS ARE RELATED TO THRESHOLD ELEVATION
DIMENSIONS AND HEIGHTS IN METRES



BODENPROFILKARTE FÜR PRÄZISIONSANFLUG - ICAO
PRECISION APPROACH TERRAIN CHART - ICAO

FRANKFURT MAIN
RWY 25R

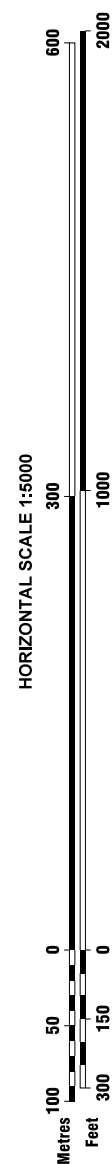
Correction: New Survey.



LEGEND

- 2- Contours
- * Tree, shrub
- Building
- I Pole, tower, chimney, antenna
- Approach lighting
- Profile of extended RWY centre line
- High tension cable, overhead cable
- x-x- Fence
- + + Railroad (one or more tracks)

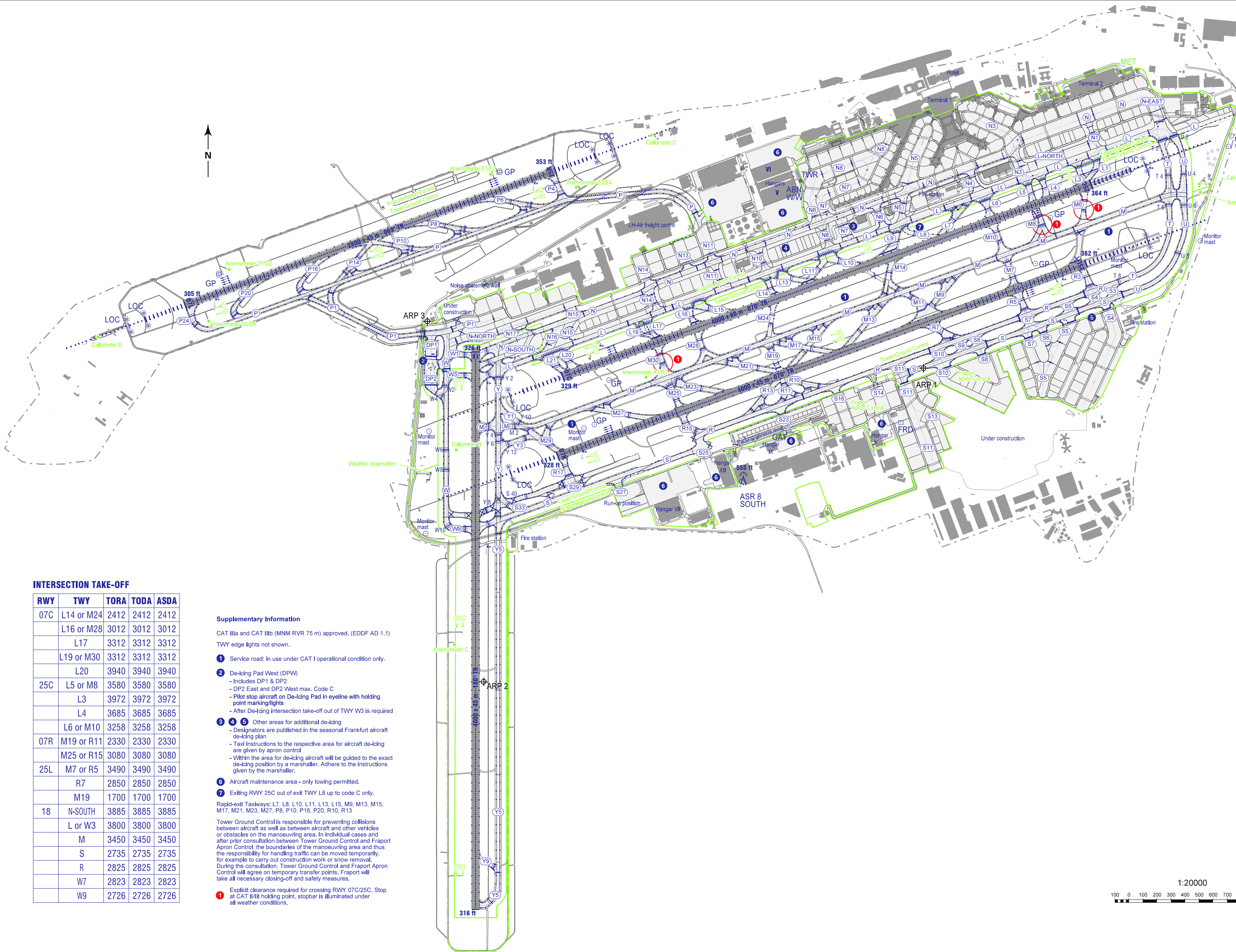
CONTOURS AND HEIGHTS ARE RELATED TO THRESHOLD ELEVATION
DIMENSIONS AND HEIGHTS IN METRES



AERODROME CHART - ICAO

ARP 1	328 ft	ARP 2		ARP 3		AERODROME
N 50° 01' 59.90"		N 50° 00' 47.00"		N 50° 02' 10.00"		ELEVATION
E 008° 34' 13.64"		E 008° 31' 37.00"		E 008° 31' 16.00"		364 ft

FRANKFURT MAIN



INTERSECTION TAKE-OFF

RWY	TWY	TORA	TODA	ASDA
07C	L14 or M24	2412	2412	2412
	L16 or M28	3012	3012	3012
	L17	3312	3312	3312
	L19 or M30	3312	3312	3312
25C	L20	3940	3940	3940
	L5 or M8	3580	3580	3580
	L3	3972	3972	3972
	L4	3685	3685	3685
07R	L6 or M10	3258	3258	3258
	M19 or R11	2330	2330	2330
	M25 or R15	3080	3080	3080
	M7 or R5	3490	3490	3490
25L	R7	2850	2850	2850
	M19	1700	1700	1700
	N-SOUTH	3885	3885	3885
	L or W3	3800	3800	3800
18	M	3450	3450	3450
	S	2735	2735	2735
	R	2825	2825	2825
	W7	2823	2823	2823
	W9	2726	2726	2726

Supplementary Information

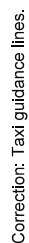
CAT IIIa and CAT IIIb (MNM RVR 75 m) approved, (EDDF AD 1.1)
 TWY edge lights not shown.

- Service road; in use under CAT I operational condition only.
- De-icing Pad West (DPW)
- Includes DP1 & DP2
- DP2 East and DP2 West max. Code C
- Pilot stop aircraft on De-icing Pad in eyeline with holding point marking/lights
- After De-icing intersection take-off out of TWY W3 is required
- Other areas for additional de-icing
- Designators are published in the seasonal Frankfurt aircraft de-icing plan
- Taxi Instructions to the respective area for aircraft de-icing are given by apron control
- Within the area for de-icing aircraft will be guided to the exact de-icing position by a marshaller. Adhere to the instructions given by the marshaller.
- Aircraft maintenance area - only towing permitted.
- Exiting RWY 25C out of exit TWY L8 up to code C only.

Rapid-exit Taxiways: L7, L8, L10, L11, L13, L15, M9, M13, M15, M17, M21, M23, M27, P8, P10, P16, P20, R10, R13
 Tower Ground Control is responsible for preventing collisions between aircraft as well as between aircraft and other vehicles or obstacles on the manoeuvring area. In individual cases and after prior consultation between Tower Ground Control and Fraport Apron Control, the boundaries of the manoeuvring area and thus the responsibility for handling traffic can be moved temporarily, for example to carry out construction work or snow removal. During the consultation, Tower Ground Control and Fraport Apron Control will agree on temporary transfer points. Fraport will take all necessary closing-off and safety measures.

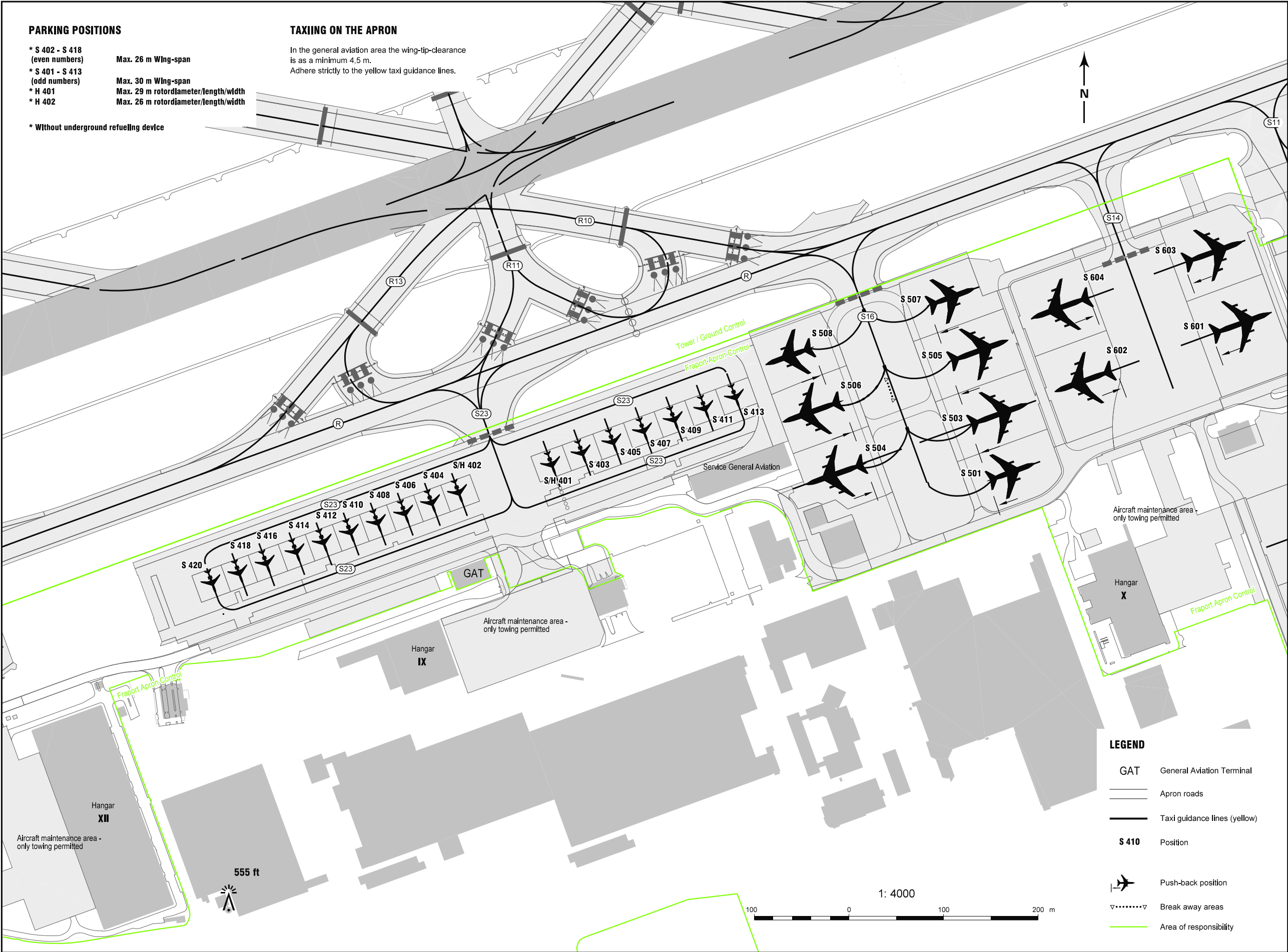
- Explicit clearance required for crossing RWY 07C/25C. Stop at CAT II/III holding point, stopbar is illuminated under all weather conditions.

Correction: Holding point TWY N11.

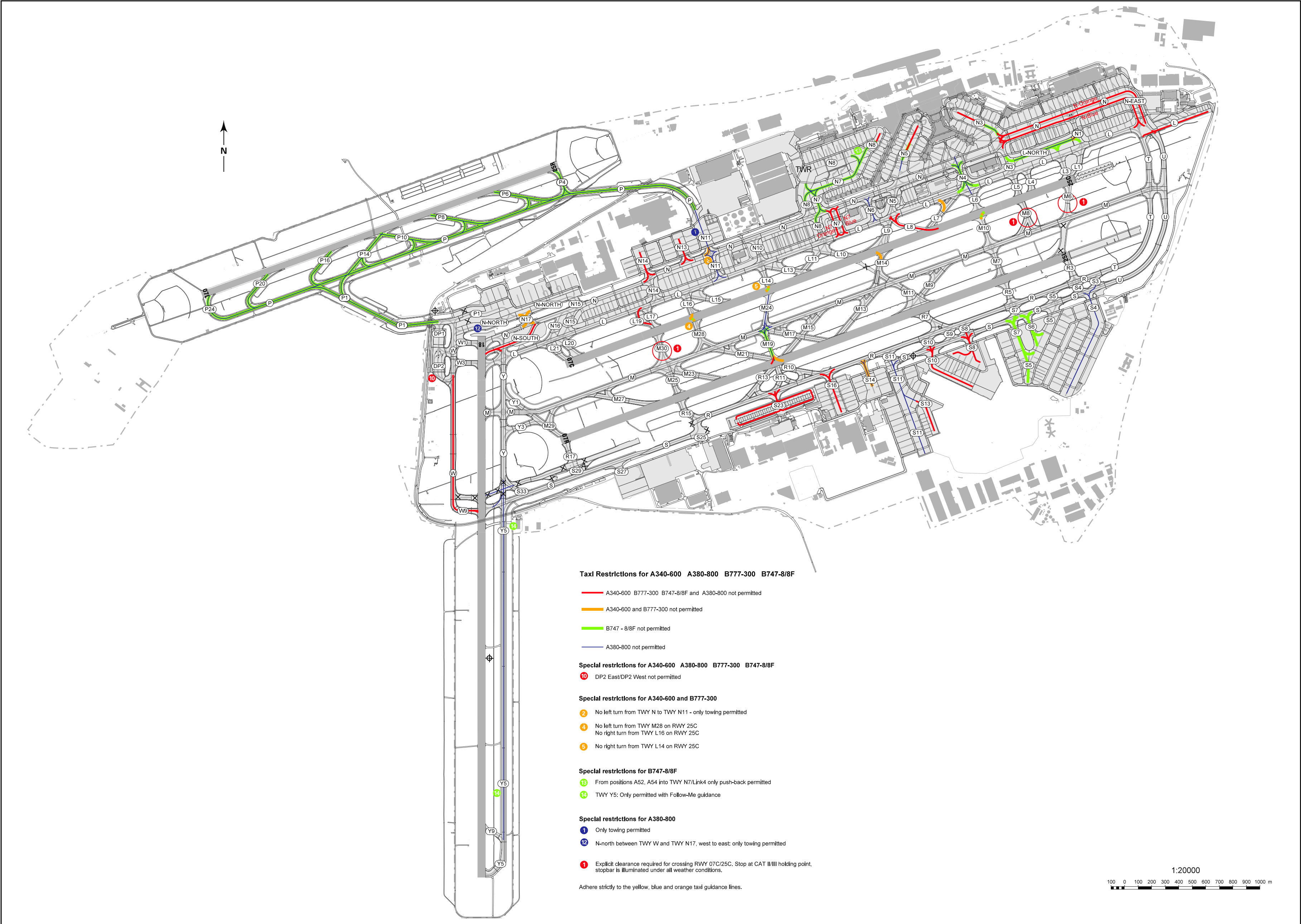


AERODROME GROUND MOVEMENT CHART - ICAO GENERAL AVIATION

FRANKFURT MAIN



Correction: Taxi guidance line L17.



INS REFERENCE POINTS

FRANKFURT MAIN

A1	N 50 02 56.98	E 008 34 15.67	C8	N 50 02 58.95	E 008 34 40.90
A11	N 50 02 56.66	E 008 34 10.23	D1	N 50 03 03.65	E 008 35 14.07
A13	N 50 02 55.11	E 008 34 08.58	D1A	N 50 03 02.67	E 008 35 14.69
A14	N 50 02 51.92	E 008 34 04.88	D4	N 50 03 02.72	E 008 35 10.31
A15	N 50 02 53.34	E 008 34 07.32	D4A	N 50 03 02.26	E 008 35 11.01
A16	N 50 02 50.05	E 008 34 04.00	D4B	N 50 03 01.37	E 008 35 10.02
A17	N 50 02 51.42	E 008 34 06.58	D5	N 50 03 01.82	E 008 35 06.54
A18	N 50 02 48.28	E 008 34 02.74	D5A	N 50 03 00.87	E 008 35 07.16
A19	N 50 02 49.81	E 008 34 04.80	D8	N 50 03 00.93	E 008 35 02.77
A20	N 50 02 46.52	E 008 34 01.48	D8A	N 50 02 59.98	E 008 35 03.37
A21	N 50 02 48.05	E 008 34 03.54	E2	N 50 03 04.52	E 008 35 17.85
A22	N 50 02 44.40	E 008 33 59.96	E2A	N 50 03 04.06	E 008 35 18.55
A23	N 50 02 46.28	E 008 34 02.29	E5	N 50 03 05.59	E 008 35 22.33
A24	N 50 02 42.83	E 008 33 58.23	E5A	N 50 03 05.13	E 008 35 23.02
A25	N 50 02 44.16	E 008 34 00.78	E5B	N 50 03 04.23	E 008 35 22.04
A26	N 50 02 40.55	E 008 33 55.68	E6	N 50 03 06.49	E 008 35 26.10
A28	N 50 02 40.10	E 008 33 53.82	E6A	N 50 03 05.54	E 008 35 26.71
A30	N 50 02 39.66	E 008 33 51.95	E9	N 50 03 07.42	E 008 35 29.85
A34	N 50 02 38.74	E 008 33 48.13	E9A	N 50 03 06.44	E 008 35 30.48
A36	N 50 02 38.29	E 008 33 46.26	F211	N 50 02 23.08	E 008 32 39.31
A38	N 50 02 37.85	E 008 33 44.39	F212	N 50 02 25.23	E 008 32 37.48
A40	N 50 02 37.40	E 008 33 42.53	F213	N 50 02 23.66	E 008 32 41.78
A50	N 50 02 53.99	E 008 33 56.51	F214	N 50 02 25.94	E 008 32 40.47
A52	N 50 02 53.22	E 008 33 53.06	F215	N 50 02 26.50	E 008 32 53.62
A54	N 50 02 52.32	E 008 33 49.29	F216	N 50 02 28.79	E 008 32 52.36
A54A	N 50 02 51.68	E 008 33 49.95	F219	N 50 02 30.49	E 008 33 01.05
A54B	N 50 02 51.18	E 008 33 48.77	F220	N 50 02 28.52	E 008 33 02.19
A58	N 50 02 51.34	E 008 33 45.17	F221	N 50 02 19.13	E 008 32 27.52
A58A	N 50 02 50.70	E 008 33 45.82	F222	N 50 02 19.43	E 008 32 27.34
A58B	N 50 02 50.19	E 008 33 44.65	F223	N 50 02 20.36	E 008 32 26.83
A62	N 50 02 50.35	E 008 33 41.04	F224	N 50 02 21.39	E 008 32 25.94
A62A	N 50 02 49.71	E 008 33 41.70	F225	N 50 02 21.60	E 008 32 26.19
A62B	N 50 02 49.21	E 008 33 40.52	F231	N 50 02 18.54	E 008 32 05.21
A66	N 50 02 49.37	E 008 33 36.92	F232	N 50 02 17.39	E 008 32 00.42
A66A	N 50 02 48.73	E 008 33 37.58	F232A	N 50 02 14.49	E 008 32 02.10
A66B	N 50 02 48.24	E 008 33 36.39	F233	N 50 02 16.21	E 008 31 55.47
A69	N 50 02 48.47	E 008 33 33.15	F233A	N 50 02 13.31	E 008 31 57.15
B10	N 50 02 55.23	E 008 34 17.78	F234	N 50 02 15.07	E 008 31 50.69
B20	N 50 02 52.90	E 008 34 19.84	F235	N 50 02 14.04	E 008 31 46.34
B22	N 50 02 50.46	E 008 34 18.10	F237	N 50 02 15.62	E 008 31 39.24
B23	N 50 02 49.70	E 008 34 20.35	F238	N 50 02 14.55	E 008 31 34.77
B24	N 50 02 48.70	E 008 34 16.77	G1	N 50 01 53.66	E 008 35 00.85
B25	N 50 02 47.48	E 008 34 15.73	G10	N 50 02 03.67	E 008 35 12.06
B26	N 50 02 46.08	E 008 34 15.69	G11	N 50 02 03.88	E 008 35 08.69
B27	N 50 02 46.90	E 008 34 19.20	G12	N 50 02 05.89	E 008 35 13.64
B28	N 50 02 48.00	E 008 34 19.20	G13	N 50 02 06.53	E 008 35 10.57
B42	N 50 02 51.98	E 008 34 29.86	G14	N 50 02 08.09	E 008 35 15.21
B43	N 50 02 53.74	E 008 34 30.03	G15	N 50 02 08.95	E 008 35 12.33
B44	N 50 02 52.71	E 008 34 33.59	G16	N 50 02 10.29	E 008 35 13.89
B45	N 50 02 52.27	E 008 34 35.59	G2	N 50 01 54.07	E 008 35 05.22
B46	N 50 02 51.46	E 008 34 36.54	G3	N 50 01 54.94	E 008 35 01.77
B47	N 50 02 50.53	E 008 34 35.01	G4	N 50 01 56.28	E 008 35 06.79
B48	N 50 02 51.14	E 008 34 32.52	G5	N 50 01 56.22	E 008 35 02.68
C11	N 50 02 58.10	E 008 34 44.16	G6	N 50 01 58.50	E 008 35 08.38
C13	N 50 02 57.27	E 008 34 47.50	G7	N 50 01 58.01	E 008 35 04.50
C14	N 50 02 57.73	E 008 34 49.63	G8	N 50 02 00.72	E 008 35 09.96
C15	N 50 02 58.71	E 008 34 53.75	G9	N 50 02 00.66	E 008 35 06.39
C16	N 50 02 59.76	E 008 34 57.84	H12	N 50 02 03.11	E 008 34 46.48
C2	N 50 03 00.27	E 008 34 28.16	H2	N 50 01 54.35	E 008 34 51.23
C4	N 50 03 01.53	E 008 34 31.43	H322	N 50 02 07.36	E 008 35 26.21
C5	N 50 03 00.81	E 008 34 34.21	H323	N 50 02 06.14	E 008 35 25.51
C6	N 50 02 59.95	E 008 34 37.14	H4	N 50 01 55.99	E 008 34 50.05

INS REFERENCE POINTS

FRANKFURT MAIN

A1	N 50 02 56.98	E 008 34 15.67	C8	N 50 02 58.95	E 008 34 40.90
A11	N 50 02 56.66	E 008 34 10.23	D1	N 50 03 03.65	E 008 35 14.07
A13	N 50 02 55.11	E 008 34 08.58	D1A	N 50 03 02.67	E 008 35 14.69
A14	N 50 02 51.92	E 008 34 04.88	D4	N 50 03 02.72	E 008 35 10.31
A15	N 50 02 53.34	E 008 34 07.32	D4A	N 50 03 02.26	E 008 35 11.01
A16	N 50 02 50.05	E 008 34 04.00	D4B	N 50 03 01.37	E 008 35 10.02
A17	N 50 02 51.42	E 008 34 06.58	D5	N 50 03 01.82	E 008 35 06.54
A18	N 50 02 48.28	E 008 34 02.74	D5A	N 50 03 00.87	E 008 35 07.16
A19	N 50 02 49.81	E 008 34 04.80	D8	N 50 03 00.93	E 008 35 02.77
A20	N 50 02 46.52	E 008 34 01.48	D8A	N 50 02 59.98	E 008 35 03.37
A21	N 50 02 48.05	E 008 34 03.54	E2	N 50 03 04.52	E 008 35 17.85
A22	N 50 02 44.40	E 008 33 59.96	E2A	N 50 03 04.06	E 008 35 18.55
A23	N 50 02 46.28	E 008 34 02.29	E5	N 50 03 05.59	E 008 35 22.33
A24	N 50 02 42.83	E 008 33 58.23	E5A	N 50 03 05.13	E 008 35 23.02
A25	N 50 02 44.16	E 008 34 00.78	E5B	N 50 03 04.23	E 008 35 22.04
A26	N 50 02 40.55	E 008 33 55.68	E6	N 50 03 06.49	E 008 35 26.10
A28	N 50 02 40.10	E 008 33 53.82	E6A	N 50 03 05.54	E 008 35 26.71
A30	N 50 02 39.66	E 008 33 51.95	E9	N 50 03 07.42	E 008 35 29.85
A34	N 50 02 38.74	E 008 33 48.13	E9A	N 50 03 06.44	E 008 35 30.48
A36	N 50 02 38.29	E 008 33 46.26	F211	N 50 02 23.08	E 008 32 39.31
A38	N 50 02 37.85	E 008 33 44.39	F212	N 50 02 25.23	E 008 32 37.48
A40	N 50 02 37.40	E 008 33 42.53	F213	N 50 02 23.66	E 008 32 41.78
A50	N 50 02 53.99	E 008 33 56.51	F214	N 50 02 25.94	E 008 32 40.47
A52	N 50 02 53.22	E 008 33 53.06	F215	N 50 02 26.50	E 008 32 53.62
A54	N 50 02 52.32	E 008 33 49.29	F216	N 50 02 28.79	E 008 32 52.36
A54A	N 50 02 51.68	E 008 33 49.95	F219	N 50 02 30.49	E 008 33 01.05
A54B	N 50 02 51.18	E 008 33 48.77	F220	N 50 02 28.52	E 008 33 02.19
A58	N 50 02 51.34	E 008 33 45.17	F221	N 50 02 19.13	E 008 32 27.52
A58A	N 50 02 50.70	E 008 33 45.82	F222	N 50 02 19.43	E 008 32 27.34
A58B	N 50 02 50.19	E 008 33 44.65	F223	N 50 02 20.36	E 008 32 26.83
A62	N 50 02 50.35	E 008 33 41.04	F224	N 50 02 21.39	E 008 32 25.94
A62A	N 50 02 49.71	E 008 33 41.70	F225	N 50 02 21.60	E 008 32 26.19
A62B	N 50 02 49.21	E 008 33 40.52	F231	N 50 02 18.54	E 008 32 05.21
A66	N 50 02 49.37	E 008 33 36.92	F232	N 50 02 17.39	E 008 32 00.42
A66A	N 50 02 48.73	E 008 33 37.58	F232A	N 50 02 14.49	E 008 32 02.10
A66B	N 50 02 48.24	E 008 33 36.39	F233	N 50 02 16.21	E 008 31 55.47
A69	N 50 02 48.47	E 008 33 33.15	F233A	N 50 02 13.31	E 008 31 57.15
B10	N 50 02 55.23	E 008 34 17.78	F234	N 50 02 15.07	E 008 31 50.69
B20	N 50 02 52.90	E 008 34 19.84	F235	N 50 02 14.04	E 008 31 46.34
B22	N 50 02 50.46	E 008 34 18.10	F237	N 50 02 15.62	E 008 31 39.24
B23	N 50 02 49.70	E 008 34 20.35	F238	N 50 02 14.55	E 008 31 34.77
B24	N 50 02 48.70	E 008 34 16.77	G1	N 50 01 53.66	E 008 35 00.85
B25	N 50 02 47.48	E 008 34 15.73	G10	N 50 02 03.67	E 008 35 12.06
B26	N 50 02 46.08	E 008 34 15.69	G11	N 50 02 03.88	E 008 35 08.69
B27	N 50 02 46.90	E 008 34 19.20	G12	N 50 02 05.89	E 008 35 13.64
B28	N 50 02 48.00	E 008 34 19.20	G13	N 50 02 06.53	E 008 35 10.57
B42	N 50 02 51.98	E 008 34 29.86	G14	N 50 02 08.09	E 008 35 15.21
B43	N 50 02 53.74	E 008 34 30.03	G15	N 50 02 08.95	E 008 35 12.33
B44	N 50 02 52.71	E 008 34 33.59	G16	N 50 02 10.29	E 008 35 13.89
B45	N 50 02 52.27	E 008 34 35.59	G2	N 50 01 54.07	E 008 35 05.22
B46	N 50 02 51.46	E 008 34 36.54	G3	N 50 01 54.94	E 008 35 01.77
B47	N 50 02 50.53	E 008 34 35.01	G4	N 50 01 56.28	E 008 35 06.79
B48	N 50 02 51.14	E 008 34 32.52	G5	N 50 01 56.22	E 008 35 02.68
C11	N 50 02 58.10	E 008 34 44.16	G6	N 50 01 58.50	E 008 35 08.38
C13	N 50 02 57.27	E 008 34 47.50	G7	N 50 01 58.01	E 008 35 04.50
C14	N 50 02 57.73	E 008 34 49.63	G8	N 50 02 00.72	E 008 35 09.96
C15	N 50 02 58.71	E 008 34 53.75	G9	N 50 02 00.66	E 008 35 06.39
C16	N 50 02 59.76	E 008 34 57.84	H12	N 50 02 03.11	E 008 34 46.48
C2	N 50 03 00.27	E 008 34 28.16	H2	N 50 01 54.35	E 008 34 51.23
C4	N 50 03 01.53	E 008 34 31.43	H322	N 50 02 07.36	E 008 35 26.21
C5	N 50 03 00.81	E 008 34 34.21	H323	N 50 02 06.14	E 008 35 25.51
C6	N 50 02 59.95	E 008 34 37.14	H4	N 50 01 55.99	E 008 34 50.05

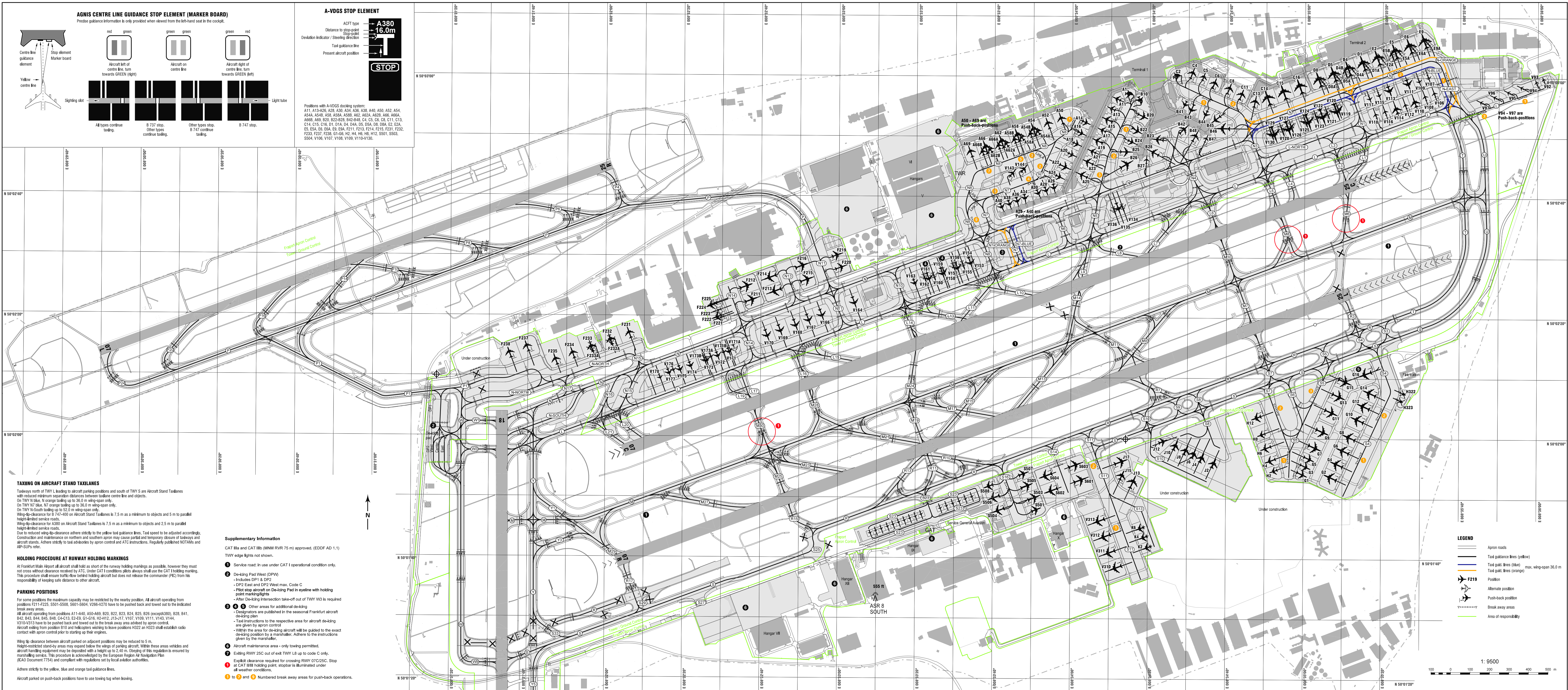
FRANKFURT MAIN

INS REFERENCE POINTS

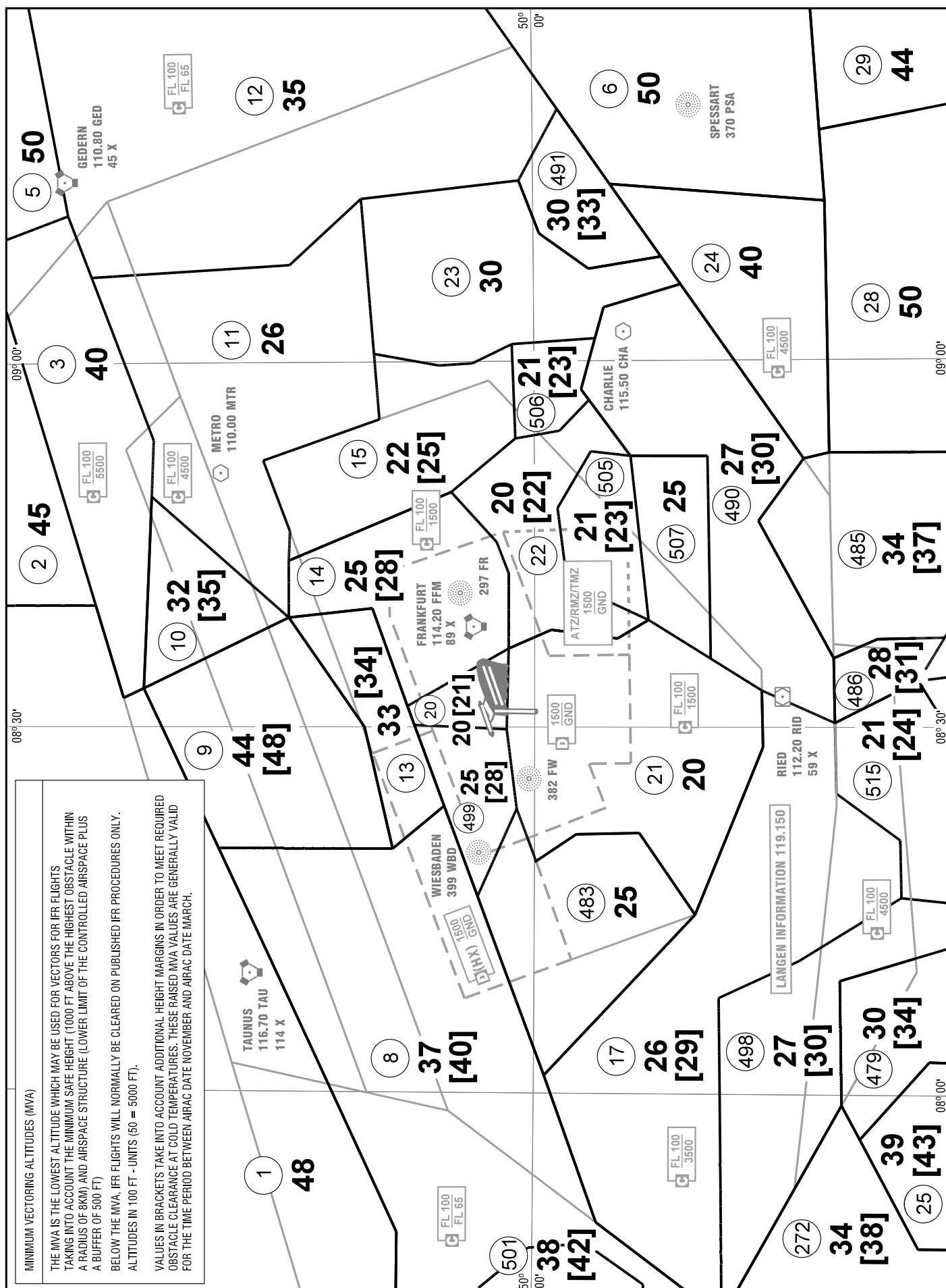
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H8	N 50 02 00.38	E 008 34 48.05	V125	N 50 02 51.24	E 008 35 00.89
J10	N 50 01 59.53	E 008 34 27.38	V126	N 50 02 50.36	E 008 34 57.24
J12	N 50 01 59.93	E 008 34 26.04	V127	N 50 02 49.95	E 008 34 56.51
J13	N 50 01 53.90	E 008 34 16.88	V128	N 50 02 50.00	E 008 34 54.76
J15	N 50 01 54.59	E 008 34 13.82	V129	N 50 02 49.07	E 008 34 52.84
J17	N 50 01 56.45	E 008 34 14.69	V130	N 50 02 49.15	E 008 34 52.15
J2	N 50 01 56.62	E 008 34 37.23	V134	N 50 02 37.28	E 008 34 13.63
J4	N 50 01 57.53	E 008 34 34.15	V135	N 50 02 37.02	E 008 34 12.54
J6	N 50 01 58.14	E 008 34 32.09	V136	N 50 02 36.76	E 008 34 11.46
J8	N 50 01 58.74	E 008 34 30.04	V143	N 50 02 44.00	E 008 33 44.77
K2	N 50 01 41.44	E 008 34 18.26	V144	N 50 02 44.79	E 008 33 47.81
K4	N 50 01 43.13	E 008 34 17.29	V153	N 50 02 28.11	E 008 33 35.24
K6	N 50 01 44.63	E 008 34 16.42	V154	N 50 02 27.93	E 008 33 34.49
S401	N 50 01 47.75	E 008 33 26.71	V155	N 50 02 27.49	E 008 33 32.65
S402	N 50 01 46.69	E 008 33 21.82	V156	N 50 02 27.12	E 008 33 31.10
S403	N 50 01 48.14	E 008 33 28.33	V157	N 50 02 26.94	E 008 33 30.38
S404	N 50 01 46.34	E 008 33 20.38	V158	N 50 02 26.31	E 008 33 27.74
S405	N 50 01 48.52	E 008 33 29.96	V159	N 50 02 26.20	E 008 33 27.28
S406	N 50 01 46.00	E 008 33 18.95	V160	N 50 02 25.69	E 008 33 25.13
S407	N 50 01 48.91	E 008 33 31.58	V161	N 50 02 25.36	E 008 33 23.74
S408	N 50 01 45.66	E 008 33 17.51	V162	N 50 02 25.15	E 008 33 22.88
S409	N 50 01 49.30	E 008 33 33.21	V163	N 50 02 24.52	E 008 33 20.19
S410	N 50 01 45.31	E 008 33 16.07	V164	N 50 02 20.85	E 008 33 04.86
S411	N 50 01 49.69	E 008 33 34.83	V166	N 50 02 18.83	E 008 32 56.42
S412	N 50 01 44.97	E 008 33 14.63	V167	N 50 02 18.02	E 008 32 53.04
S413	N 50 01 50.08	E 008 33 36.45	V168	N 50 02 17.21	E 008 32 49.64
S414	N 50 01 44.63	E 008 33 13.20	V169	N 50 02 16.27	E 008 32 45.72
S416	N 50 01 44.25	E 008 33 11.60	V170	N 50 02 15.46	E 008 32 42.34
S418	N 50 01 43.90	E 008 33 10.17	V171	N 50 02 13.10	E 008 32 32.34
S420	N 50 01 43.56	E 008 33 08.73	V171A	N 50 02 13.19	E 008 32 32.71
S501	N 50 01 48.33	E 008 33 52.33	V171B	N 50 02 12.77	E 008 32 31.08
S503	N 50 01 50.22	E 008 33 51.24	V172	N 50 02 12.37	E 008 32 29.44
S504	N 50 01 47.57	E 008 33 40.12	V173	N 50 02 11.67	E 008 32 26.51
S505	N 50 01 52.35	E 008 33 50.02	V173A	N 50 02 11.98	E 008 32 27.79
S506	N 50 01 49.69	E 008 33 38.91	V173B	N 50 02 11.58	E 008 32 26.14
S507	N 50 01 54.27	E 008 33 48.91	V174	N 50 02 10.71	E 008 32 22.47
S508	N 50 01 51.61	E 008 33 37.80	V175	N 50 02 10.06	E 008 32 19.74
S601	N 50 01 53.69	E 008 34 05.41	V176	N 50 02 09.40	E 008 32 16.98
S602	N 50 01 50.64	E 008 33 52.76	V177	N 50 02 08.82	E 008 32 14.58
S603	N 50 01 56.14	E 008 34 03.98	V178	N 50 02 08.25	E 008 32 12.18
S604	N 50 01 53.10	E 008 33 51.34	V310	N 50 01 37.67	E 008 34 08.70
V106	N 50 02 58.42	E 008 35 32.64	V311	N 50 01 40.25	E 008 34 07.21
V107	N 50 02 59.02	E 008 35 32.30	V312	N 50 01 42.83	E 008 34 05.72
V108	N 50 02 57.94	E 008 35 30.20	V313	N 50 01 45.41	E 008 34 04.24
V109	N 50 02 58.45	E 008 35 29.89	V92	N 50 03 00.27	E 008 36 01.10
V110	N 50 02 57.28	E 008 35 27.45	V93	N 50 02 59.82	E 008 35 59.25
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V112	N 50 02 56.63	E 008 35 25.11	V95	N 50 02 57.95	E 008 35 51.39
V113	N 50 02 56.65	E 008 35 22.36	V96	N 50 02 57.12	E 008 35 47.90
V114	N 50 02 56.13	E 008 35 22.65	V97	N 50 02 56.28	E 008 35 44.38
V115	N 50 02 56.00	E 008 35 19.62			
V116	N 50 02 55.48	E 008 35 19.92			
V117	N 50 02 55.43	E 008 35 17.21			
V118	N 50 02 54.81	E 008 35 17.56			
V119	N 50 02 53.26	E 008 35 09.37			
V120	N 50 02 52.94	E 008 35 08.91			
V121	N 50 02 52.78	E 008 35 06.44			
V122	N 50 02 52.04	E 008 35 05.26			
V123	N 50 02 52.11	E 008 35 03.60			

AERODROME GROUND MOVEMENT CHART - ICAO

FRANKFURT MAIN



FRANKFURT MAIN



FRANKFURT MAIN

LIST OF COORDINATES
FOR MVA
FRANKFURT MAIN

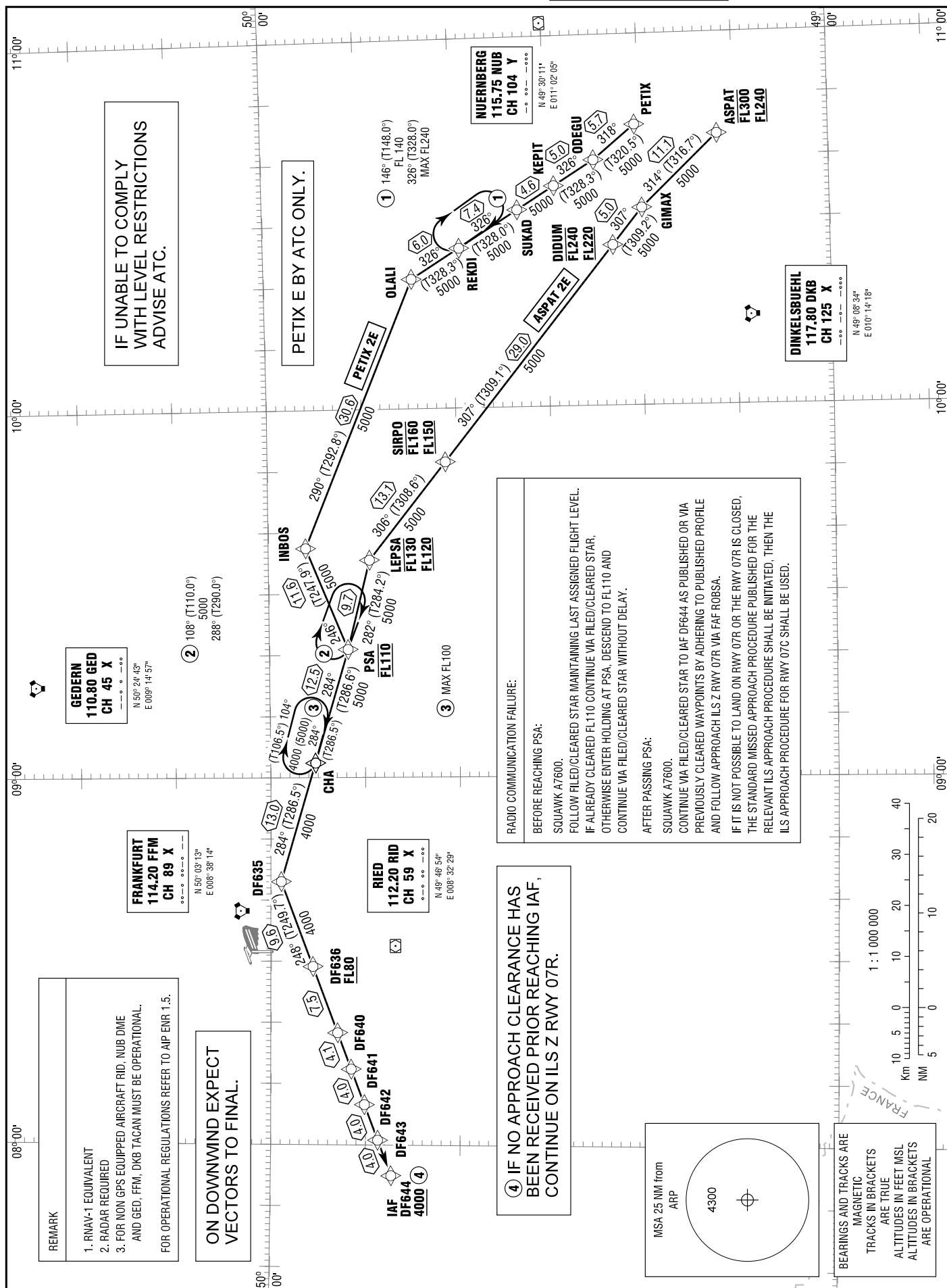
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STANDARD ARRIVAL
CHART - INSTRUMENT
RNAV (GPS, DME/DME, DME/DME/IRU)

TRANSITION
ALTITUDE 5000
VAR 2° E

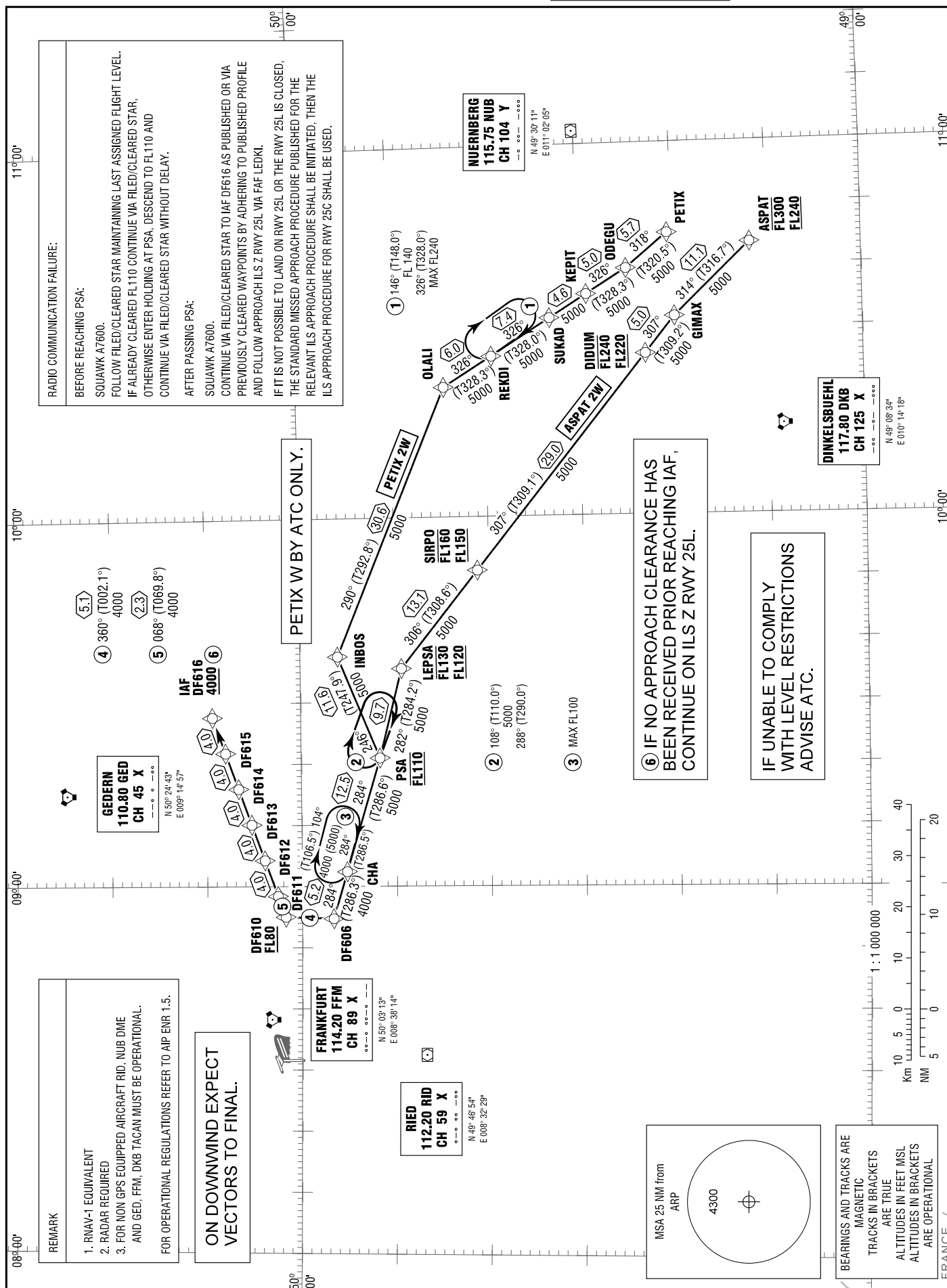
ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350

FRANKFURT MAIN (EAST)
RWY 07R



TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.025
LANGEN RADAR (N)	120.800
LANGEN RADAR (S)	125.350

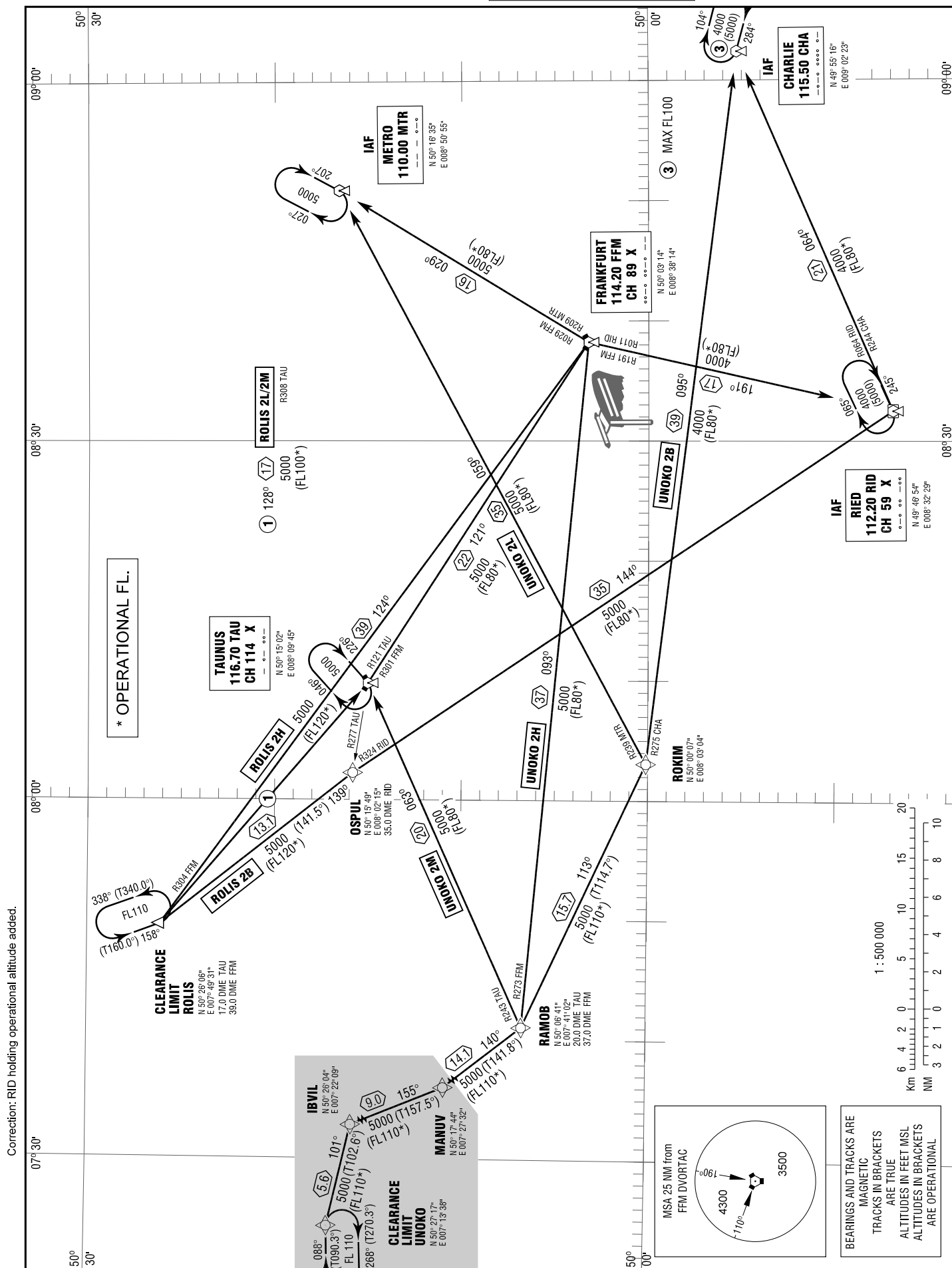
FRANKFURT MAIN (EAST)
RWY 25L

STANDARD ARRIVAL
CHART - INSTRUMENT
(STAR)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS
LANGEN RADAR (N) 118.025
LANGEN RADAR (S) 125.350

FRANKFURT MAIN (WEST)
RWY 07L/C/R
RWY 25L/C/R

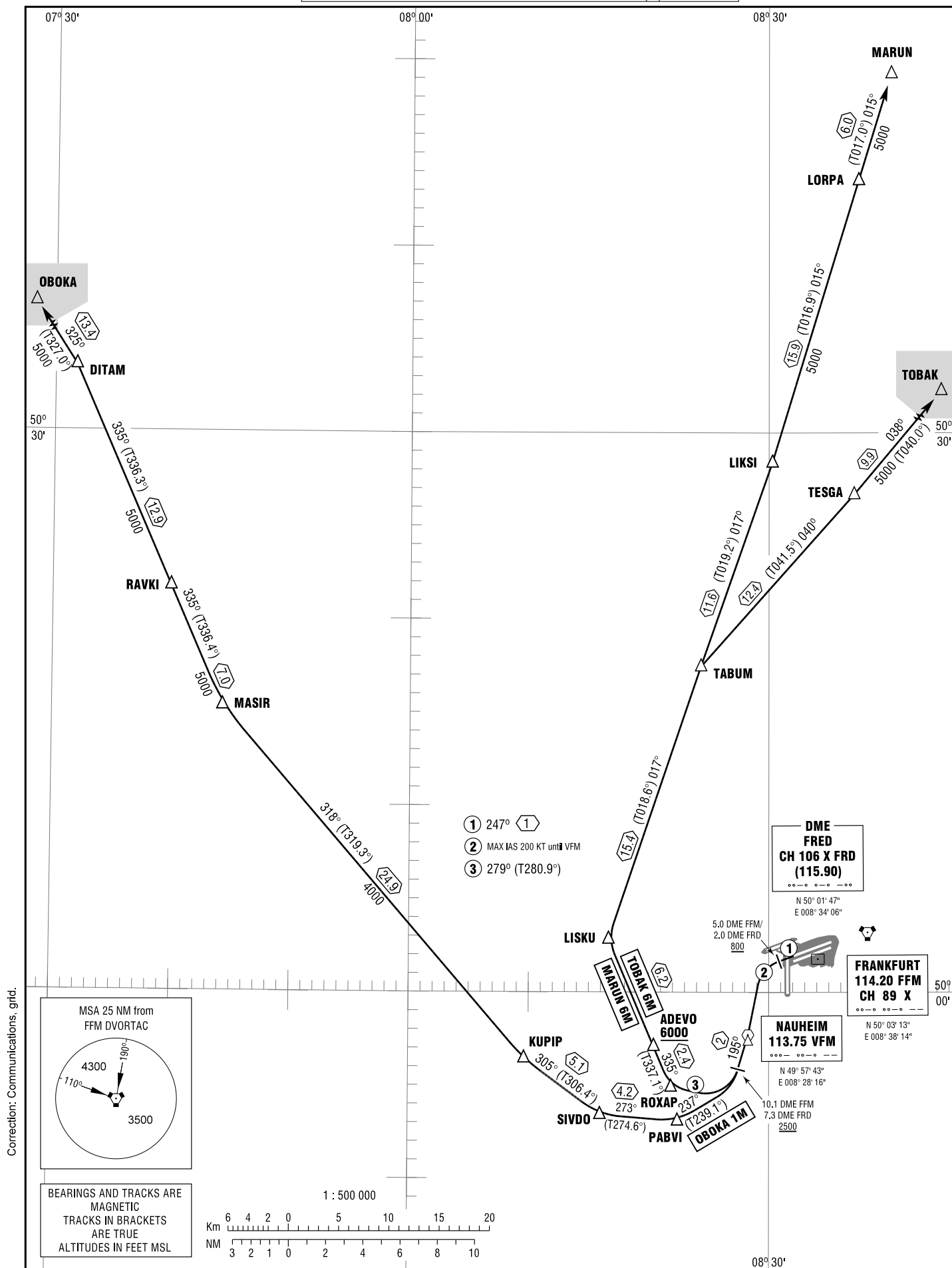


STANDARD DEPARTURE
CHART - INSTRUMENT
(SID)

TRANSITION
ALTITUDE 5000
VAR 2° E

FRANKFURT ATIS	118.725	FRANKFURT GROUND	121.800
FRANKFURT DELIVERY (Initial Call)	121.900	FRANKFURT TOWER	118.775
FRANKFURT APRON	121.750		119.900
	121.850	LANGEN RADAR (N, NW)	120.150
	121.950	LANGEN RADAR (W)	136.125

FRANKFURT MAIN (NORTH)
RWY 25C
MIKE



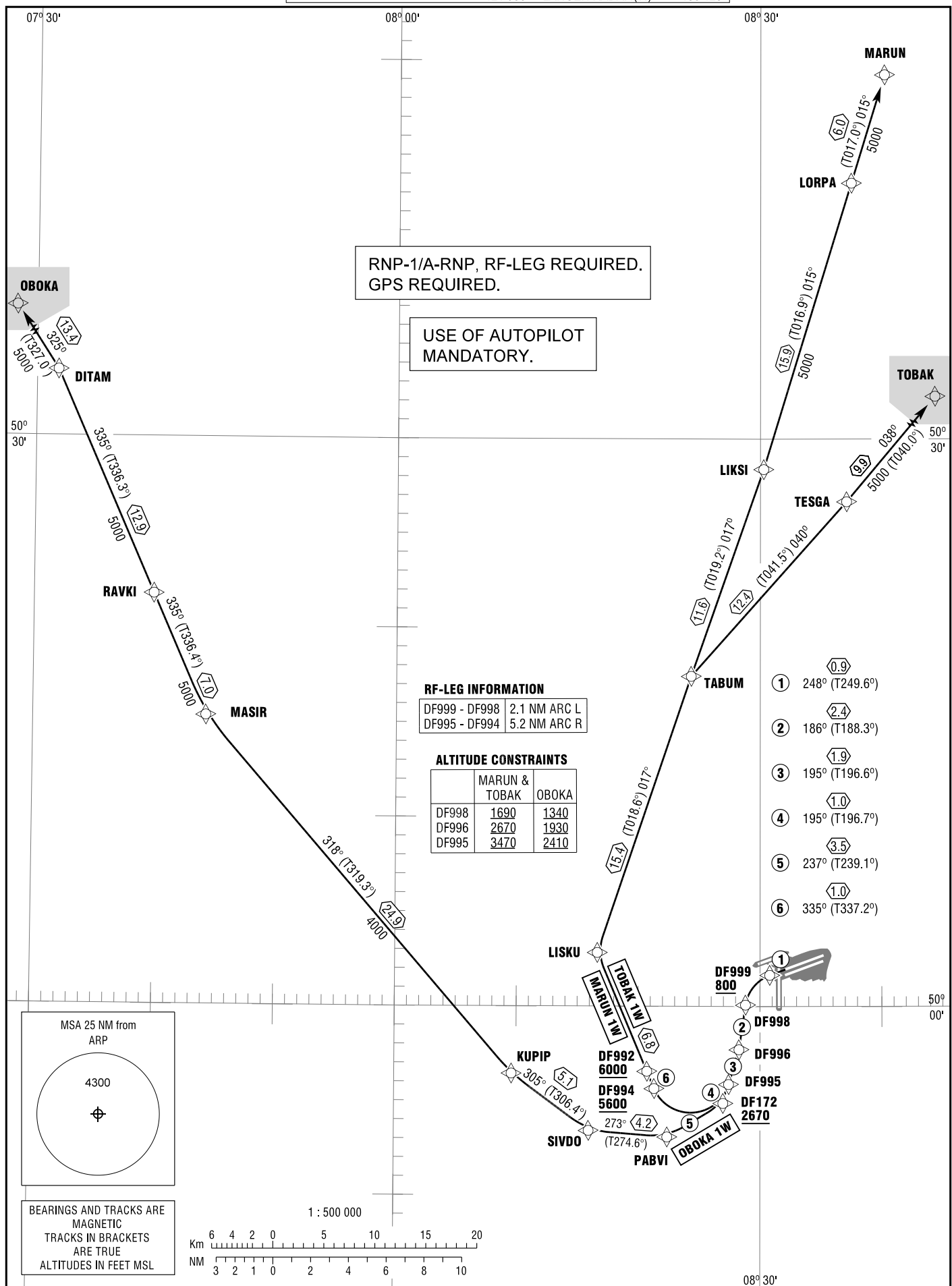
STANDARD DEPARTURE
CHART - INSTRUMENT
RNAV (GPS)

TRANSITION
ALTITUDE 5000
VAR 2° E

FRANKFURT ATIS 118.725
FRANKFURT DELIVERY (Initial Call) 121.900
FRANKFURT APRON 121.750
121.850
121.950

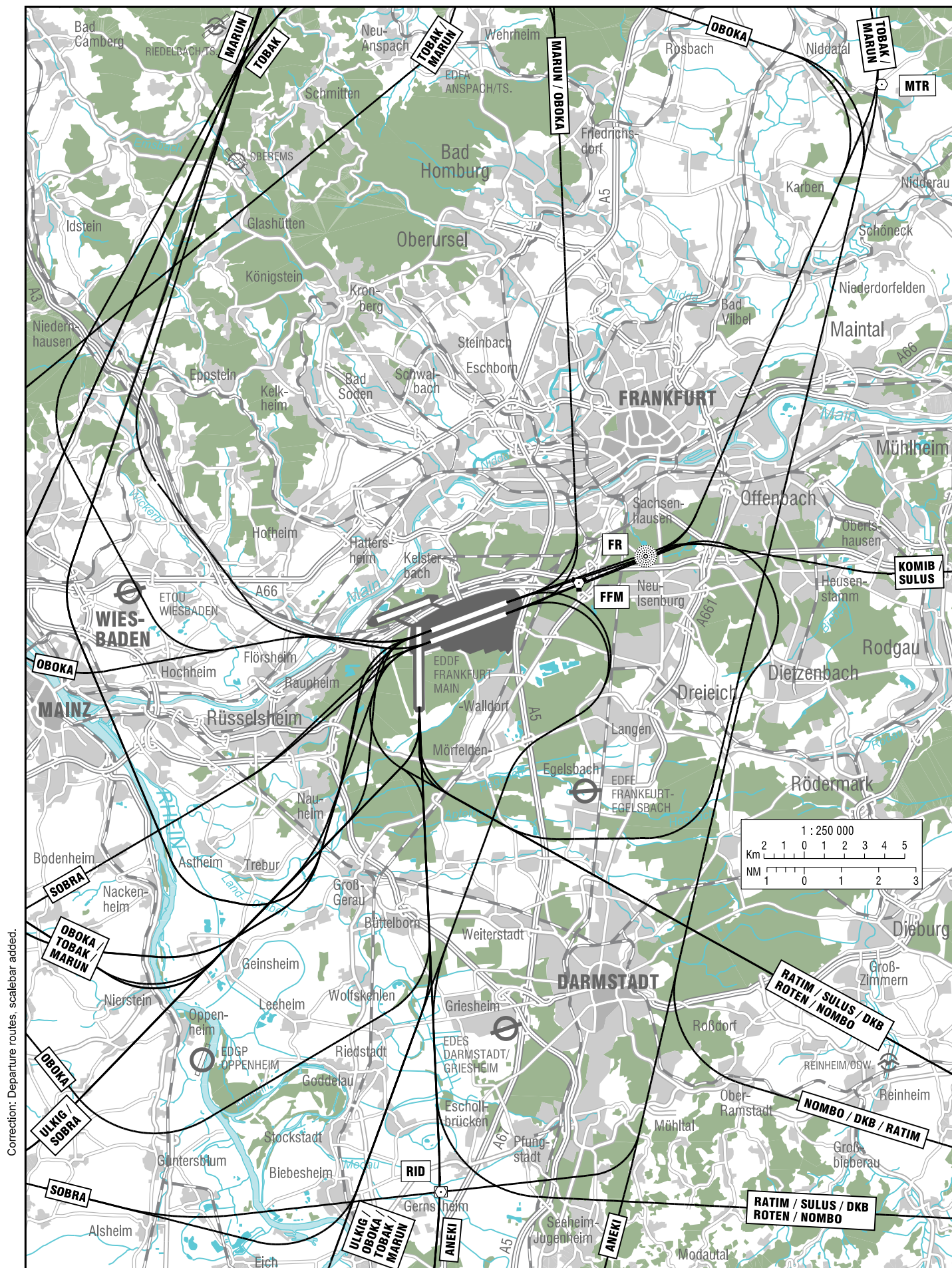
FRANKFURT GROUND 121.800
FRANKFURT TOWER 118.775
119.900
LANGEN RADAR (N, NW) 120.150
LANGEN RADAR (W) 136.125

FRANKFURT MAIN (NORTH)
RWY 25C
WHISKEY



MINIMUM NOISE ROUTING
(SID)

FRANKFURT MAIN



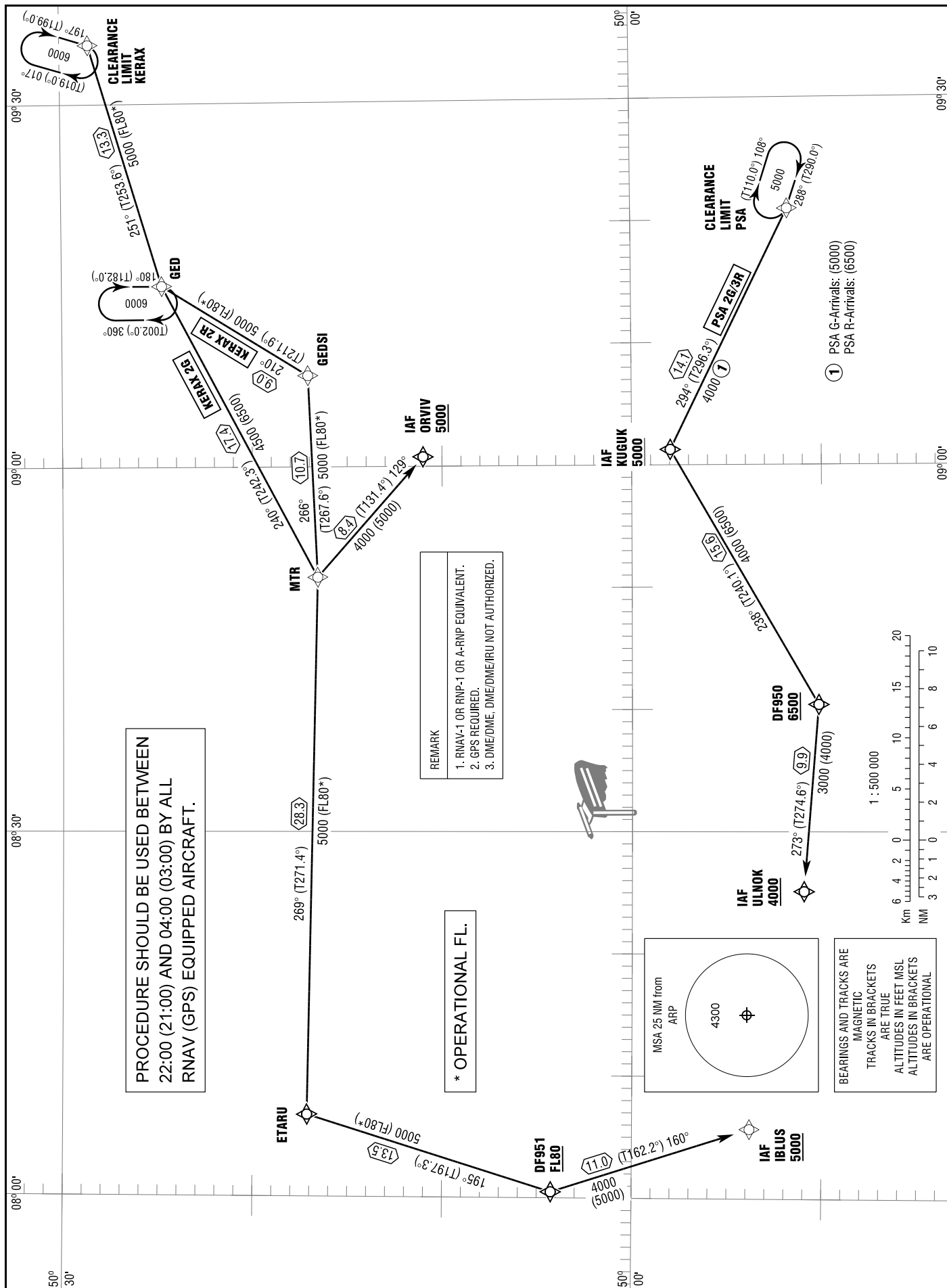
Correction: Departure routes, scalebar added.

FRANKFURT MAIN (EAST)
RWY 07C/R
RWY 25L/C

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350

TRANSITION
ALTITUDE 5000
VAR 2° E

STANDARD ARRIVAL
CHART - INSTRUMENT
STAR RNAV (GPS)



STANDARD ARRIVAL
ROUTES - INSTRUMENT
GPS/RNAV (STAR)

FRANKFURT MAIN
RWY 07 C/R
RWY 25 L/C

Designator	Identification Significant Points	Mag (True) Track	Dist NM	MNM IFR Cruising Level	Remarks
1	2	3	4	5	6
KERAX 2G	KERAX TWO GOLF △ KERAX				By ATC only.
	△ GED	251 (253.6)	13.3	5000 (FL80*)	
	△ MTR	240 (242.3)	17.4	4500 (6500*)	
	△ ORVIV	129 (131.4)	8.4	4000 (5000*)	
PSA 2G	SPESSART TWO GOLF △ PSA				
	△ KUGUK	294 (296.3)	14.1	4000 (5000*)	
UNOKO 2G	UNOKO TWO GOLF △ UNOKO				
	△ IBVIL	101 (102.6)	5.6	5000 (FL110*)	
	△ MANUV	155 (157.5)	9.0	5000 (FL110*)	
	△ RAMOB	140 (141.8)	14.1	5000 (FL110*)	
	△ ROKIM	113 (114.7)	15.7	5000 (FL80*)	
	△ FFM	080 (081.9)	22.9	4000 (FL80*)	
	△ MTR	029 (031.3)	15.7	4000 (6500*)	
	△ ORVIV	129 (131.4)	8.4	4000 (5000*)	
ROLIS 2G	ROLIS TWO GOLF △ ROLIS				
	△ ETARU	127 (129.0)	14.2	5000 (FL110*)	
	△ FFM	122 (124.3)	24.6	5000 (FL 80*)	
	△ MTR	029 (031.3)	15.7	4000 (6500*)	
	△ ORVIV	129 (131.4)	8.4	4000 (5000*)	
KERAX 2R	KERAX TWO ROMEO △ KERAX				
	△ GED	251 (253.6)	13.3	5000 (FL80*)	
	△ GEDSI	210 (211.9)	9.0	5000 (FL80*)	
	△ MTR	266 (267.6)	10.7	5000 (FL80*)	
	△ ETARU	269 (271.4)	28.3	5000 (FL80*)	
	△ DF951	195 (197.3)	13.5	5000 (FL80*)	
	△ IBLUS	160 (162.2)	11.0	4000 (5000*)	
PSA 3R	SPESSART THREE ROMEO △ PSA				
	△ KUGUK	294 (296.3)	14.1	4000 (6500*)	
	△ DF950	238 (240.1)	15.6	4000 (6500*)	
	△ ULNOK	273 (274.6)	9.9	3000 (4000*)	
UNOKO 2R	UNOKO TWO ROMEO △ UNOKO				
	△ IBVIL	101 (102.6)	5.6	5000 (FL110*)	
	△ MANUV	155 (157.5)	9.0	5000 (FL110*)	
	△ RAMOB	140 (141.8)	14.1	5000 (FL110*)	
	△ REDLI	138 (140.3)	7.1	5000 (FL80*)	
	△ IBLUS	121 (123.0)	13.6	4000 (5000*)	
ROLIS 2R	ROLIS TWO ROMEO △ ROLIS				
	△ DF951	160 (162.1)	23.0	5000 (FL80*)	
	△ IBLUS	160 (162.2)	11.0	4000 (5000*)	

(*Operational Altitude)

Note: Route Designator R STAR RWY 07, G STAR RWY 25

STANDARD ARRIVAL
CHART - INSTRUMENT
RNAV (GPS, DME/DME, DME/DME/IRU)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS
LANGEN RADAR (N) 118.025
LANGEN RADAR (S) 120.800
125.350

FRANKFURT MAIN (SOUTH)
RWY 07R

REMARK

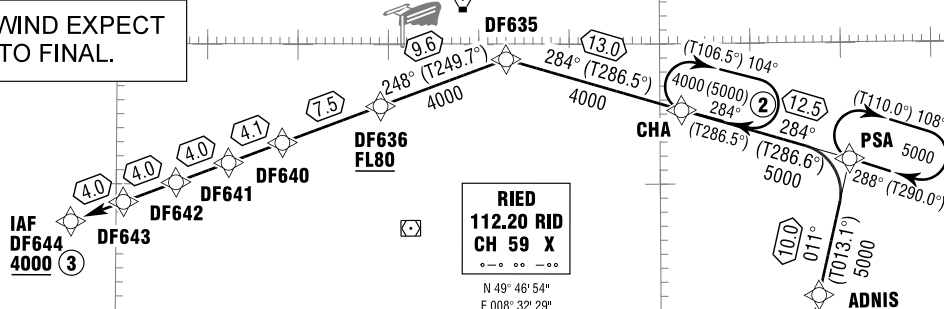
1. RNAV-1 EQUIVALENT
 2. RADAR REQUIRED
 3. FOR NON GPS EQUIPPED AIRCRAFT RID, KRH DME AND GED, FFM TACAN MUST BE OPERATIONAL.
- FOR OPERATIONAL REGULATIONS REFER TO AIP ENR 1.5.

IF UNABLE TO COMPLY
WITH LEVEL RESTRICTIONS
ADVISE ATC.

GEDERN
110.80 GED
CH 45 X
N 50° 24' 43"
E 009° 14' 57"

FRANKFURT
114.20 FFM
CH 89 X
N 50° 03' 13"
E 008° 38' 14"

ON DOWNWIND EXPECT
VECTORS TO FINAL.



③ IF NO APPROACH CLEARANCE HAS
BEEN RECEIVED PRIOR REACHING IAF,
CONTINUE ON ILS Z RWY 07R.

① SPEED LIMIT OF
250 KT IAS AT AND
BELOW FL100 NOT
APPLICABLE.

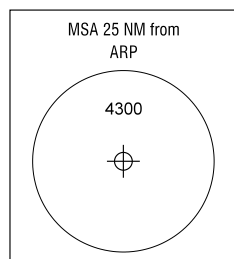
RADIO COMMUNICATION FAILURE PROCEDURE

BEFORE REACHING PSA AND IF STAR IS FILED IN FPL:
SQUAWK A7600.
FOLLOW EMPAX STAR MAINTAINING LAST ASSIGNED FLIGHT LEVEL.
IF ALREADY CLEARED TO FL100 CONTINUE VIA EMPAX STAR,
OTHERWISE ENTER HOLDING AT PSA, DESCEND TO FL100 AND
CONTINUE VIA EMPAX STAR WITHOUT DELAY.

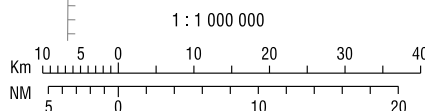
AFTER PASSING PSA:
SQUAWK A7600.
CONTINUE VIA EMPAX STAR TO IAF DF644 AS PUBLISHED OR VIA
PREVIOUSLY CLEARED WAYPOINTS BY ADHERING TO PUBLISHED
PROFILE AND FOLLOW APPROACH ILS Z RWY 07R VIA FAF ROBSA.

IF IT IS NOT POSSIBLE TO LAND ON RWY 07R OR THE RWY IS CLOSED,
THE STANDARD MISSED APPROACH PROCEDURE PUBLISHED FOR THE
RELEVANT ILS APPROACH PROCEDURE SHALL BE INITIATED, THEN
THE ILS APPROACH PROCEDURE FOR RWY 07C SHALL BE USED.

FRANCE



BEARINGS AND TRACKS ARE
MAGNETIC
TRACKS IN BRACKETS
ARE TRUE
ALTITUDES IN FEET MSL
ALTITUDES IN BRACKETS
ARE OPERATIONAL



Correction: Speed restrictions, procedure.

FRANKFURT MAIN (SOUTH)
RWY 07R

STANDARD ARRIVAL
ROUTES - INSTRUMENT (STAR)
RNAV (GPS, DME/DME, DME/DME/IRU)

EMPAX TWO ECHO EMPAX 2E											
Recom- mended Path Termi- nator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°)	NAV Speci- fication	Remarks
IF	EMPAX	N 48 27 43.05 E 008 59 53.34	-	-	-	-	FL360- FL290+	-	-	RNAV-1	-
TF	NELLI	N 48 37 39.55 E 009 01 24.54	-	(T005.8) 004	10.0	-	FL320- FL260+	-	-	RNAV-1	-
TF	KOVAN	N 48 52 56.59 E 009 05 03.45	-	(T008.9) 007	15.5	-	FL270- FL220+	-	-	RNAV-1	-
TF	XIBGI	N 49 00 30.21 E 009 06 08.09	-	(T005.4) 003	7.6	-	FL240- FL200+	-	-	RNAV-1	-
TF	XINLA	N 49 17 01.13 E 009 08 29.79	-	(T005.3) 003	16.6	-	FL190- FL160+	-	-	RNAV-1	-
TF	XOPMO	N 49 36 00.42 E 009 15 14.54	-	(T013.0) 011	19.5	-	FL110- FL100+	280-	-	RNAV-1	-
TF	ADNIS	N 49 42 00.33 E 009 17 23.55	-	(T013.1) 011	6.2	-	@FL100	280-	-	RNAV-1	-
TF	PSA	N 49 51 44.07 E 009 20 53.97	-	(T013.1) 011	10.0	-	-	-	-	RNAV-1	-
TF	CHA	N 49 55 15.97 E 009 02 23.32	-	(T286.6) 284	12.5	-	-	-	-	RNAV-1	-
TF	DF635	N 49 58 56.74 E 008 43 00.98	-	(T286.5) 284	13.0	-	-	-	-	RNAV-1	-
TF	DF636	N 49 55 36.32 E 008 29 08.06	-	(T249.7) 248	9.6	-	FL80+	-	-	RNAV-1	-
TF	DF640	N 49 52 59.30 E 008 18 18.40	-	(T249.7) 248	7.5	-	-	-	-	RNAV-1	-
TF	DF641	N 49 51 32.73 E 008 12 22.52	-	(T249.7) 248	4.1	-	-	-	-	RNAV-1	-
TF	DF642	N 49 50 07.98 E 008 06 35.09	-	(T249.7) 248	4.0	-	-	-	-	RNAV-1	-
TF	DF643	N 49 48 42.94 E 008 00 48.00	-	(T249.7) 248	4.0	-	-	-	-	RNAV-1	-
TF	DF644	N 49 47 17.60 E 007 55 01.26	-	(T249.7) 248	4.0	-	A4000+	-	-	RNAV-1	-

RNAV HOLDING IDENTIFICATION								
Recom- mended Path Termi- nator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	PSA	N 49 51 44.07 E 009 20 53.97	(T290.0) 288	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

STANDARD ARRIVAL
CHART - INSTRUMENT
RNAV (GPS, DME/DME, DME/DME/IRU)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350

FRANKFURT MAIN (SOUTH)
RWY 25L

IF UNABLE TO COMPLY
WITH LEVEL RESTRICTIONS
ADVISE ATC.

FRANKFURT
114.20 FFM
CH 89 X
N 50° 03' 13"
E 008° 38' 14"

GEDERN
110.80 GED
CH 45 X
N 50° 24' 43"
E 009° 14' 57"

REMARK
1. RNAV-1 EQUIVALENT
2. RADAR REQUIRED
3. FOR NON GPS EQUIPPED AIRCRAFT
KRH DME AND GED, FFM TACAN
MUST BE OPERATIONAL.
FOR OPERATIONAL REGULATIONS REFER TO AIP ENR 1.5.

IAF
DF616
4000 ⑤

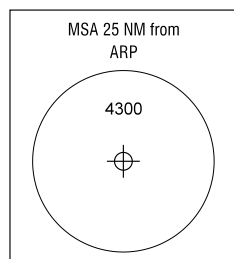
⑤ IF NO APPROACH CLEARANCE HAS
BEEN RECEIVED PRIOR REACHING IAF,
CONTINUE ON ILS Z RWY 25L.

ON DOWNWIND EXPECT
VECTORS TO FINAL.

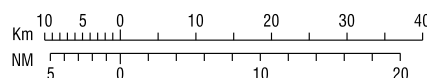
① SPEED LIMIT OF
250 KT IAS AT AND
BELOW FL100 NOT
APPLICABLE.

RADIO COMMUNICATION FAILURE PROCEDURE
BEFORE REACHING PSA AND IF STAR IS FILED IN FPL:
SQUAWK A7600.
FOLLOW EMPAX STAR MAINTAINING LAST ASSIGNED FLIGHT LEVEL.
IF ALREADY CLEARED TO FL100 CONTINUE VIA EMPAX STAR,
OTHERWISE ENTER HOLDING AT PSA, DESCEND TO FL100 AND
CONTINUE VIA EMPAX STAR WITHOUT DELAY.
AFTER PASSING PSA:
SQUAWK A7600.
CONTINUE VIA EMPAX STAR TO IAF DF616 AS PUBLISHED OR VIA
PREVIOUSLY CLEARED WAYPOINTS BY ADHERING TO PUBLISHED
PROFILE AND FOLLOW APPROACH ILS Z RWY 25L VIA FAF LEDKI.
IF IT IS NOT POSSIBLE TO LAND ON RWY 25L OR THE RWY IS CLOSED,
THE STANDARD MISSED APPROACH PROCEDURE PUBLISHED FOR THE
RELEVANT ILS APPROACH PROCEDURE SHALL BE INITIATED, THEN
THE ILS APPROACH PROCEDURE FOR RWY 25C SHALL BE USED.

KARLSRUHE
115.95 KRH
CH 106 Y
N 48° 59' 35"
E 008° 35' 03"



BEARINGS AND TRACKS ARE
MAGNETIC
TRACKS IN BRACKETS
ARE TRUE
ALTITUDES IN FEET MSL
ALTITUDES IN BRACKETS
ARE OPERATIONAL



Correction: Speed restrictions, procedure.

FRANKFURT MAIN (SOUTH)
RWY 25L

STANDARD ARRIVAL
ROUTES - INSTRUMENT (STAR)
RNAV (GPS, DME/DME, DME/DME/IRU)

EMPAX TWO WHISKEY EMPAX 2W											
Recom- mended Path Termi- nator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°)	NAV Speci- fication	Remarks
IF	EMPAX	N 48 27 43.05 E 008 59 53.34	-	-	-	-	FL360- FL290+	-	-	RNAV-1	-
TF	NELLI	N 48 37 39.55 E 009 01 24.54	-	(T005.8) 004	10.0	-	FL320- FL260+	-	-	RNAV-1	-
TF	KOVAN	N 48 52 56.59 E 009 05 03.45	-	(T008.9) 007	15.5	-	FL270- FL220+	-	-	RNAV-1	-
TF	XIBGI	N 49 00 30.21 E 009 06 08.09	-	(T005.4) 003	7.6	-	FL240- FL200+	-	-	RNAV-1	-
TF	XINLA	N 49 17 01.13 E 009 08 29.79	-	(T005.3) 003	16.6	-	FL190- FL160+	-	-	RNAV-1	-
TF	XOPMO	N 49 36 00.42 E 009 15 14.54	-	(T013.0) 011	19.5	-	FL110- FL100+	280-	-	RNAV-1	-
TF	ADNIS	N 49 42 00.33 E 009 17 23.55	-	(T013.1) 011	6.2	-	@FL100	280-	-	RNAV-1	-
TF	PSA	N 49 51 44.07 E 009 20 53.97	-	(T013.1) 011	10.0	-	-	-	-	RNAV-1	-
TF	CHA	N 49 55 15.97 E 009 02 23.32	-	(T286.6) 284	12.5	-	-	-	-	RNAV-1	-
TF	DF606	N 49 56 42.71 E 008 54 43.24	-	(T286.3) 284	5.2	-	-	-	-	RNAV-1	-
TF	DF610	N 50 01 45.80 E 008 55 00.29	-	(T002.1) 360	5.1	-	FL80+	-	-	RNAV-1	-
TF	DF611	N 50 02 34.21 E 008 58 24.59	-	(T069.8) 068	2.3	-	-	-	-	RNAV-1	-
TF	DF612	N 50 03 56.30 E 009 04 14.88	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF613	N 50 05 18.10 E 009 10 05.71	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF614	N 50 06 39.59 E 009 15 56.87	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF615	N 50 08 00.79 E 009 21 48.37	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF616	N 50 09 21.68 E 009 27 40.21	-	(T069.8) 068	4.0	-	A4000+	-	-	RNAV-1	-

RNAV HOLDING IDENTIFICATION								
Recom- mended Path Termi- nator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	PSA	N 49 51 44.07 E 009 20 53.97	(T290.0) 288	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

FRANKFURT MAIN (EAST)
RWY 07R

STANDARD ARRIVAL
ROUTES - INSTRUMENT (STAR)
RNAV (GPS, DME/DME, DME/DME/IRU)

ASPAT TWO ECHO ASPAT 2E											
Recom- mended Path Termi- nator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°)	NAV Speci- fication	Remarks
IF	ASPAT	N 49 11 46.23 E 010 43 32.98	-	-	-	-	FL300- FL240+	-	-	RNAV-1	-
TF	GIMAX	N 49 19 51.65 E 010 31 51.21	-	(T316.7) 314	11.1	-	-	-	-	RNAV-1	-
TF	DIDUM	N 49 23 00.88 E 010 25 55.33	-	(T309.2) 307	5.0	-	FL240- FL220+	-	-	RNAV-1	-
TF	SIRPO	N 49 41 12.08 E 009 51 15.95	-	(T309.1) 307	29.0	-	FL160- FL150+	-	-	RNAV-1	-
TF	LEPSA	N 49 49 22.37 E 009 35 26.20	-	(T308.6) 306	13.1	-	FL130- FL120+	-	-	RNAV-1	-
TF	PSA	N 49 51 44.07 E 009 20 53.97	-	(T284.2) 282	9.7	-	@FL110	-	-	RNAV-1	-
TF	CHA	N 49 55 15.97 E 009 02 23.32	-	(T286.6) 284	12.5	-	-	-	-	RNAV-1	-
TF	DF635	N 49 58 56.74 E 008 43 00.98	-	(T286.5) 284	13.0	-	-	-	-	RNAV-1	-
TF	DF636	N 49 55 36.32 E 008 29 08.06	-	(T249.7) 248	9.6	-	FL80+	-	-	RNAV-1	-
TF	DF640	N 49 52 59.30 E 008 18 18.40	-	(T249.7) 248	7.5	-	-	-	-	RNAV-1	-
TF	DF641	N 49 51 32.73 E 008 12 22.52	-	(T249.7) 248	4.1	-	-	-	-	RNAV-1	-
TF	DF642	N 49 50 07.98 E 008 06 35.09	-	(T249.7) 248	4.0	-	-	-	-	RNAV-1	-
TF	DF643	N 49 48 42.94 E 008 00 48.00	-	(T249.7) 248	4.0	-	-	-	-	RNAV-1	-
TF	DF644	N 49 47 17.60 E 007 55 01.26	-	(T249.7) 248	4.0	-	A4000+	-	-	RNAV-1	-

PETIX TWO ECHO PETIX 2E											
Recom- mended Path Termi- nator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°)	NAV Speci- fication	Remarks
IF	PETIX	N 49 20 27.65 E 010 45 17.30	-	-	-	-	-	-	-	RNAV-1	-
TF	ODEGU	N 49 24 52.35 E 010 39 42.85	-	(T320.5) 318	5.7	-	-	-	-	RNAV-1	-
TF	KEPIT	N 49 29 07.68 E 010 35 41.00	-	(T328.3) 326	5.0	-	-	-	-	RNAV-1	-
TF	SUKAD	N 49 33 03.50 E 010 31 56.92	-	(T328.3) 326	4.6	-	-	-	-	RNAV-1	-
TF	REKDI	N 49 39 17.67 E 010 25 56.65	-	(T328.0) 326	7.4	-	-	-	-	RNAV-1	-
TF	OLALI	N 49 44 24.15 E 010 21 04.59	-	(T328.3) 326	6.0	-	-	-	-	RNAV-1	-
TF	INBOS	N 49 56 06.03 E 009 37 26.97	-	(T292.8) 290	30.6	-	-	-	-	RNAV-1	-
TF	PSA	N 49 51 44.07 E 009 20 53.97	-	(T247.9) 246	11.6	-	@FL110	-	-	RNAV-1	-
TF	CHA	N 49 55 15.97 E 009 02 23.32	-	(T286.6) 284	12.5	-	-	-	-	RNAV-1	-
TF	DF635	N 49 58 56.74 E 008 43 00.98	-	(T286.5) 284	13.0	-	-	-	-	RNAV-1	-
TF	DF636	N 49 55 36.32 E 008 29 08.06	-	(T249.7) 248	9.6	-	FL80+	-	-	RNAV-1	-
TF	DF640	N 49 52 59.30 E 008 18 18.40	-	(T249.7) 248	7.5	-	-	-	-	RNAV-1	-
TF	DF641	N 49 51 32.73 E 008 12 22.52	-	(T249.7) 248	4.1	-	-	-	-	RNAV-1	-
TF	DF642	N 49 50 07.98 E 008 06 35.09	-	(T249.7) 248	4.0	-	-	-	-	RNAV-1	-
TF	DF643	N 49 48 42.94 E 008 00 48.00	-	(T249.7) 248	4.0	-	-	-	-	RNAV-1	-
TF	DF644	N 49 47 17.60 E 007 55 01.26	-	(T249.7) 248	4.0	-	A4000+	-	-	RNAV-1	-

RNAV HOLDING IDENTIFICATION								
Recom- mended Path Termi- nator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	PSA	N 49 51 44.07 E 009 20 53.97	(T290.0) 288	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-
HM	REKDI	N 49 39 17.67 E 010 25 56.65	(T328.0) 326	230-	FL140+/FL240-	1 MIN	R	-

FRANKFURT MAIN (EAST)
RWY 25L

STANDARD ARRIVAL
ROUTES - INSTRUMENT (STAR)
RNAV (GPS, DME/DME, DME/DME/IRU)

ASPAT TWO WHISKEY ASPAT 2W											
Recom- mended Path Termi- nator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°)	NAV Speci- fication	Remarks
IF	ASPAT	N 49 11 46.23 E 010 43 32.98	-	-	-	-	FL300- FL240+	-	-	RNAV-1	-
TF	GIMAX	N 49 19 51.65 E 010 31 51.21	-	(T316.7) 314	11.1	-	-	-	-	RNAV-1	-
TF	DIDUM	N 49 23 00.88 E 010 25 55.33	-	(T309.2) 307	5.0	-	FL240- FL220+	-	-	RNAV-1	-
TF	SIRPO	N 49 41 12.08 E 009 51 15.95	-	(T309.1) 307	29.0	-	FL160- FL150+	-	-	RNAV-1	-
TF	LEPSA	N 49 49 22.37 E 009 35 26.20	-	(T308.6) 306	13.1	-	FL130- FL120+	-	-	RNAV-1	-
TF	PSA	N 49 51 44.07 E 009 20 53.97	-	(T284.2) 282	9.7	-	@FL110	-	-	RNAV-1	-
TF	CHA	N 49 55 15.97 E 009 02 23.32	-	(T286.6) 284	12.5	-	-	-	-	RNAV-1	-
TF	DF606	N 49 56 42.71 E 008 54 43.24	-	(T286.3) 284	5.2	-	-	-	-	RNAV-1	-
TF	DF610	N 50 01 45.80 E 008 55 00.29	-	(T002.1) 360	5.1	-	FL80+	-	-	RNAV-1	-
TF	DF611	N 50 02 34.21 E 008 58 24.59	-	(T069.8) 068	2.3	-	-	-	-	RNAV-1	-
TF	DF612	N 50 03 56.30 E 009 04 14.88	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF613	N 50 05 18.10 E 009 10 05.71	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF614	N 50 06 39.59 E 009 15 56.87	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF615	N 50 08 00.79 E 009 21 48.37	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF616	N 50 09 21.68 E 009 27 40.21	-	(T069.8) 068	4.0	-	A4000+	-	-	RNAV-1	-

PETIX TWO WHISKEY PETIX 2W											
Recom- mended Path Termi- nator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°)	NAV Speci- fication	Remarks
IF	PETIX	N 49 20 27.65 E 010 45 17.30	-	-	-	-	-	-	-	RNAV-1	-
TF	ODEGU	N 49 24 52.35 E 010 39 42.85	-	(T320.5) 318	5.7	-	-	-	-	RNAV-1	-
TF	KEPIT	N 49 29 07.68 E 010 35 41.00	-	(T328.3) 326	5.0	-	-	-	-	RNAV-1	-
TF	SUKAD	N 49 33 03.50 E 010 31 56.92	-	(T328.3) 326	4.6	-	-	-	-	RNAV-1	-
TF	REKDI	N 49 39 17.67 E 010 25 56.65	-	(T328.0) 326	7.4	-	-	-	-	RNAV-1	-
TF	OLALI	N 49 44 24.15 E 010 21 04.59	-	(T328.3) 326	6.0	-	-	-	-	RNAV-1	-
TF	INBOS	N 49 56 06.03 E 009 37 26.97	-	(T292.8) 290	30.6	-	-	-	-	RNAV-1	-
TF	PSA	N 49 51 44.07 E 009 20 53.97	-	(T247.9) 246	11.6	-	@FL110	-	-	RNAV-1	-
TF	CHA	N 49 55 15.97 E 009 02 23.32	-	(T286.6) 284	12.5	-	-	-	-	RNAV-1	-
TF	DF606	N 49 56 42.71 E 008 54 43.24	-	(T286.3) 284	5.2	-	-	-	-	RNAV-1	-
TF	DF610	N 50 01 45.80 E 008 55 00.29	-	(T002.1) 360	5.1	-	FL80+	-	-	RNAV-1	-
TF	DF611	N 50 02 34.21 E 008 58 24.59	-	(T069.8) 068	2.3	-	-	-	-	RNAV-1	-
TF	DF612	N 50 03 56.30 E 009 04 14.88	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF613	N 50 05 18.10 E 009 10 05.71	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF614	N 50 06 39.59 E 009 15 56.87	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF615	N 50 08 00.79 E 009 21 48.37	-	(T069.8) 068	4.0	-	-	-	-	RNAV-1	-
TF	DF616	N 50 09 21.68 E 009 27 40.21	-	(T069.8) 068	4.0	-	A4000+	-	-	RNAV-1	-

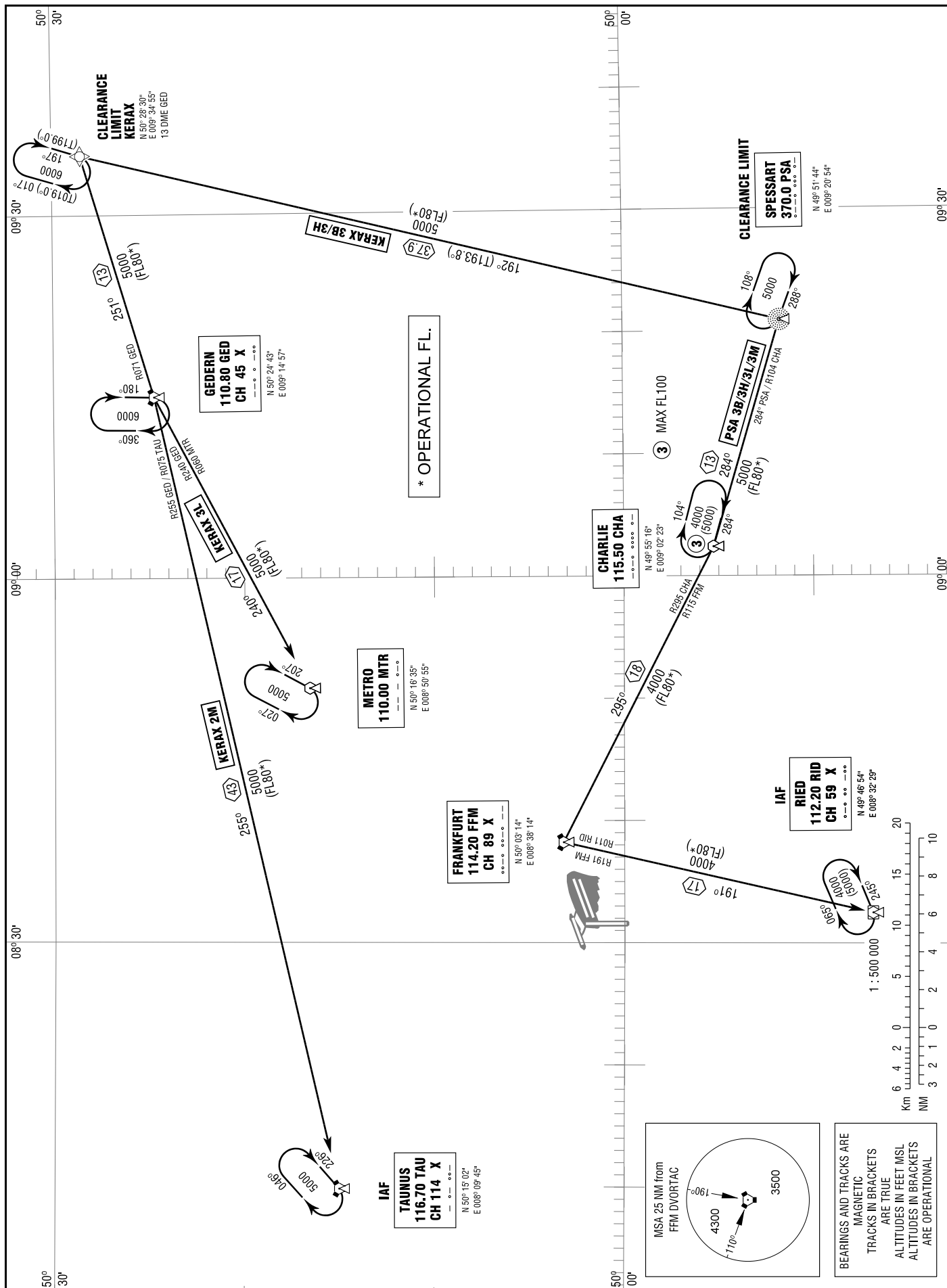
RNAV HOLDING IDENTIFICATION								
Recom- mended Path Termi- nator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	PSA	N 49 51 44.07 E 009 20 53.97	(T290.0) 288	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-
HM	REKDI	N 49 39 17.67 E 010 25 56.65	(T328.0) 326	230-	FL140+/FL240-	1 MIN	R	-

FRANKFURT MAIN (EAST)
RWY 07L/C/R
RWY 25L/C/R

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350

TRANSITION
ALTITUDE 5000
VAR 2° E

STANDARD ARRIVAL
CHART - INSTRUMENT
(STAR)



STANDARD ARRIVAL
ROUTES - INSTRUMENT
(STAR)

FRANKFURT MAIN
RWY 07 C/L/R

Designator	Identification Significant Points	Mag (True) Track	Dist NM	MNM IFR Cruising Level	Remarks
1	2	3	4	5	6
KERAX 3H	KERAX THREE HOTEL				1. From KERAX to PSA BRNAV equipment necessary. 2. After PSA BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 3. GPS/FMS-aircraft expect KERAX 07S Transition. 4. Route only for aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35.
	△ KERAX	192 (193.8)	37.9	5000 (FL80*)	
	△ Spessart NDB	284	13	5000 (FL80*)	
	△ Charlie VOR	295	18	4000 (FL80*)	
	△ Frankfurt DVORTAC	191	17	4000 (FL80*)	
	△ Ried DVOR/DME				
KERAX 2M	KERAX TWO MIKE				1. BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 2. GPS/FMS-aircraft expect KERAX 07N Transition. 3. Route not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35; those aircraft have to file KERAX H instead.
	△ KERAX	251	13	5000 (FL80*)	
	△ Gedern DVORTAC	255	43	5000 (FL80*)	
	△ Taunus DVORTAC				
PSA 3H	SPESSART THREE HOTEL				1. BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 2. GPS/FMS-aircraft expect PSA 07S Transition. 3. Route only for aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35.
	△ Spessart NDB	284	13	5000 (FL80*)	
	△ Charlie VOR	295	18	4000 (FL80*)	
	△ Frankfurt DVORTAC	191	17	4000 (FL80*)	
	△ Ried DVOR/DME				
PSA 3M	SPESSART THREE MIKE				1. BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 2. GPS/FMS-aircraft expect PSA 07S Transition. 3. Route not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35; those aircraft have to file PSA H instead.
	△ Spessart NDB	284	13	5000 (FL80*)	
	△ Charlie VOR	295	18	4000 (FL80*)	
	△ Frankfurt DVORTAC	191	17	4000 (FL80*)	
	△ Ried DVOR/DME				
ROLIS 2H	ROLIS TWO HOTEL				1. BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 2. GPS/FMS-aircraft expect ROLIS 07S Transition. 3. Route only for aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35.
	△ ROLIS	124	39	5000 (FL120*)	
	△ Frankfurt DVORTAC	191	17	4000 (FL80*)	
	△ Ried DVOR/DME				
ROLIS 2M	ROLIS TWO MIKE				1. BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 2. GPS/FMS-aircraft expect ROLIS 07N Transition. 3. Route not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35; those aircraft have to file ROLIS H instead.
	△ ROLIS	128	17	5000 (FL100*)	
	△ Taunus DVORTAC				
UNOKO 2H	UNOKO TWO HOTEL				1. From UNOKO to RAMOB BRNAV equipment necessary. 2. After RAMOB BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 3. GPS/FMS-aircraft expect UNOKO 07S Transition. 4. Route only for aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35. 5. Immediate Transition at RAMOB possible when approaching via Z111.
	△ UNOKO	101 (102.6)	5.6	5000 (FL110*)	
	△ IBVIL	155 (157.5)	9.0	5000 (FL110*)	
	△ MANUV	140 (141.8)	14.1	5000 (FL110*)	
	△ RAMOB	093	37	5000 (FL80*)	
	△ Frankfurt DVORTAC	191	17	4000 (FL80*)	
	△ Ried DVOR/DME				
UNOKO 2M	UNOKO TWO MIKE				1. From UNOKO to RAMOB BRNAV equipment necessary. 2. After RAMOB BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 3. GPS/FMS-aircraft expect UNOKO 07N Transition. 4. Route not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35; those aircraft have to file UNOKO H instead. 5. Immediate Transition at RAMOB possible when approaching via Z111.
	△ UNOKO	101 (102.6)	5.6	5000 (FL110*)	
	△ IBVIL	155 (157.5)	9.0	5000 (FL110*)	
	△ MANUV	140 (141.8)	14.1	5000 (FL110*)	
	△ RAMOB	063	20	5000 (FL80*)	
	△ Taunus DVORTAC				

(*Operational Altitude)

FRANKFURT MAIN
RWY 25 C/L/R

STANDARD ARRIVAL
ROUTES - INSTRUMENT
(STAR)

Designator	Identification Significant Points	Mag (True) Track	Dist NM	MNM IFR Cruising Level	Remarks
1	2	3	4	5	6
KERAX 3B	KERAX THREE BRAVO △ KERAX △ Spessart NDB △ Charlie VOR				1. From KERAX to PSA BRNAV equipment necessary. 2. After PSA BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 3. GPS/FMS-aircraft expect KERAX 25S Transition. 4. Route only for aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35.
		192 (193.8)	37.9	5000 (FL80*)	
		284	13	5000 (FL80*)	
KERAX 3L	KERAX THREE LIMA △ KERAX △ Gedern DVORTAC △ Metro VOR				1. BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 2. GPS/FMS-aircraft expect KERAX 25N Transition. 3. Route not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35; those aircraft have to file KERAX B instead.
		251	13	5000 (FL80*)	
		240	17	5000 (FL80*)	
PSA 3B	SPESSART THREE BRAVO △ Spessart NDB △ Charlie VOR				1. BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 2. GPS/FMS-aircraft expect PSA 25S Transition. 3. Route only for aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35.
		284	13	5000 (FL80*)	
PSA 3L	SPESSART THREE LIMA △ Spessart NDB △ Charlie VOR				1. BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 2. GPS/FMS-aircraft expect PSA 25S Transition. 3. Route not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35; those aircraft have to file PSA B instead.
		284	13	5000 (FL80*)	
ROLIS 2B	ROLIS TWO BRAVO △ ROLIS △ OSPUL △ Ried DVOR/DME △ Charlie VOR				1. From ROLIS to OSPUL BRNAV equipment necessary. 2. After OSPUL BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 3. GPS/FMS-aircraft expect ROLIS 25S Transition. 4. Route only for aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35.
		139 (141.5)	13.1	5000 (FL120*)	
		144	35	5000 (FL80*)	
		064	21	4000 (FL80*)	
ROLIS 2L	ROLIS TWO LIMA △ ROLIS △ Taunus DVORTAC △ Frankfurt DVORTAC △ Metro VOR				1. BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 2. GPS/FMS-aircraft expect ROLIS 25N Transition. 3. Route not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35; those aircraft have to file ROLIS B instead.
		128	17	5000 (FL100*)	
		121	22	5000 (FL80*)	
		029	16	5000 (FL80*)	
UNOKO 2B	UNOKO TWO BRAVO △ UNOKO △ IBVIL △ MANUV △ RAMOB △ ROKIM △ Charlie VOR				1. From UNOKO to ROKIM BRNAV equipment necessary. 2. After ROKIM BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 3. GPS/FMS-aircraft expect UNOKO 25S Transition. 4. Route only for aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35. 5. Immediate Transition at RAMOB possible when approaching via Z111.
		101 (102.6)	5.6	5000 (FL110*)	
		155 (157.5)	9.0	5000 (FL110*)	
		140 (141.8)	14.1	5000 (FL110*)	
		113 (114.7)	15.7	5000 (FL110*)	
		095	39	4000 (FL80*)	
UNOKO 2L	UNOKO TWO LIMA △ UNOKO △ IBVIL △ MANUV △ RAMOB △ ROKIM △ Metro VOR				1. From UNOKO to ROKIM BRNAV equipment necessary. 2. After ROKIM BRNAV and NON-RNAV aircraft expect radar vectors to final approach. 3. GPS/FMS-aircraft expect UNOKO 25N Transition. 4. Route not to be used by aircraft type A380, B747, DC-10, L-1011, MD11, AN124, AN225, C5, E3A & KC35; those aircraft have to file UNOKO B instead. 5. Immediate Transition at RAMOB possible when approaching via Z111.
		101 (102.6)	5.6	5000 (FL110*)	
		155 (157.5)	9.0	5000 (FL110*)	
		140 (141.8)	14.1	5000 (FL110*)	
		113 (114.7)	15.7	5000 (FL110*)	
		059	35	5000 (FL80*)	

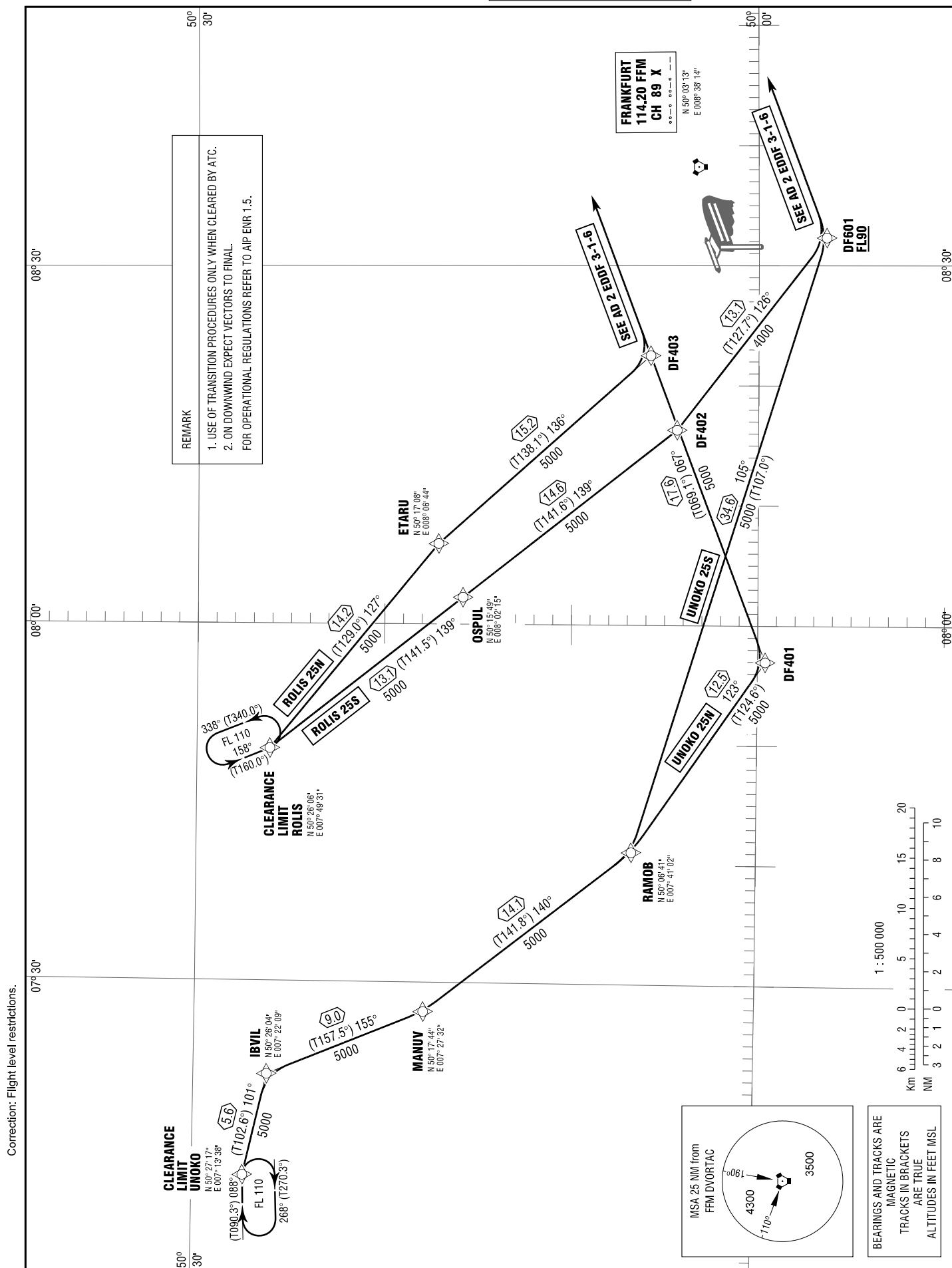
(*Operational Altitude)

GPS / FMS RNAV ARRIVAL CHART
TRANSITION TO FINAL APPROACH
(OVERLAY TO RADAR VECTOR PATTERN)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350

FRANKFURT MAIN (WEST)
RWY 25L/C/R

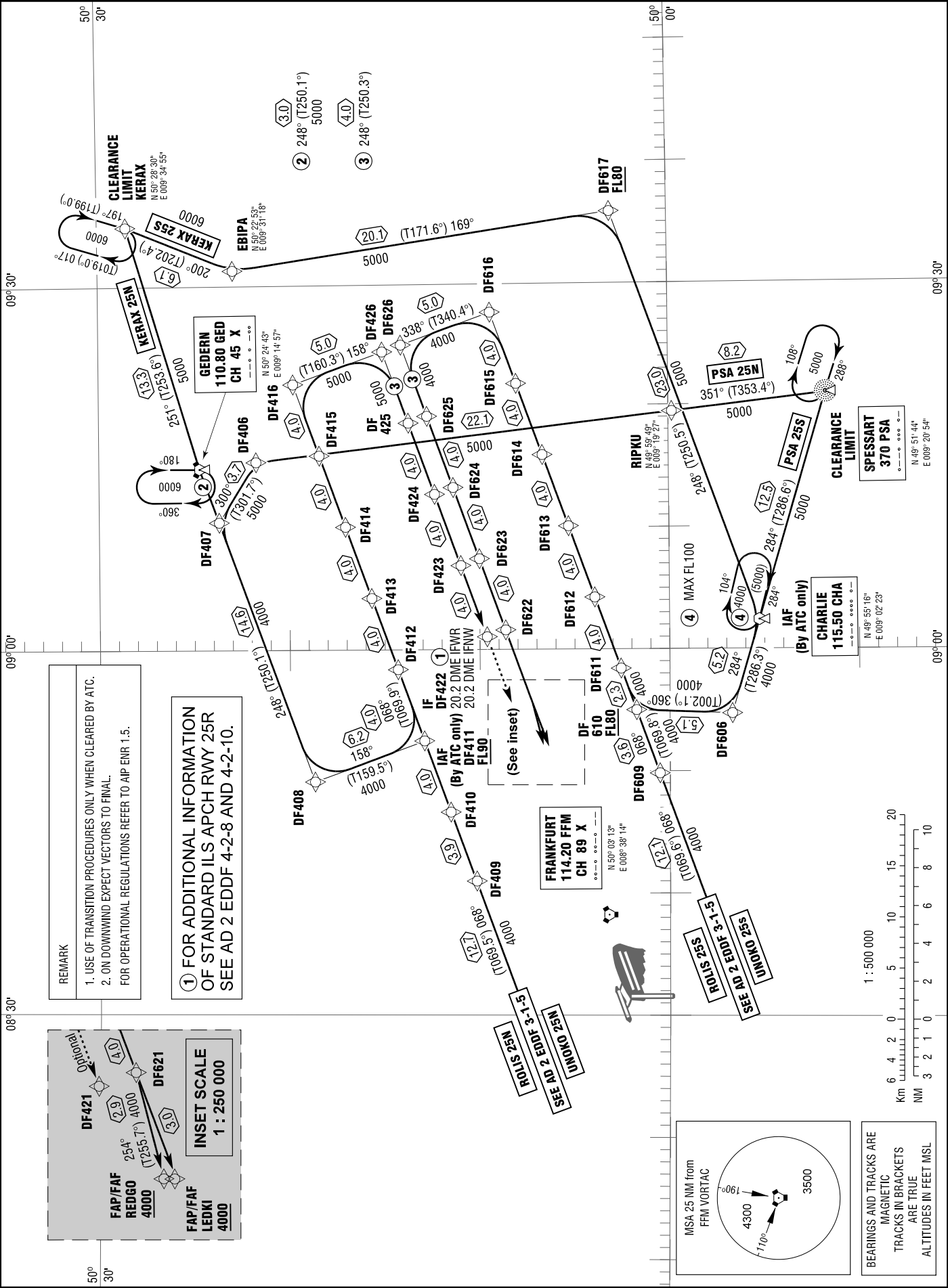


FRANKFURT MAIN (EAST)
RWY 25L/C/R

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350

TRANSITION
ALTITUDE 5000
VAR 2° E

GPS / FMS RNAV ARRIVAL CHART
TRANSITION TO FINAL APPROACH
(OVERLAY TO RADAR VECTOR PATTERN)

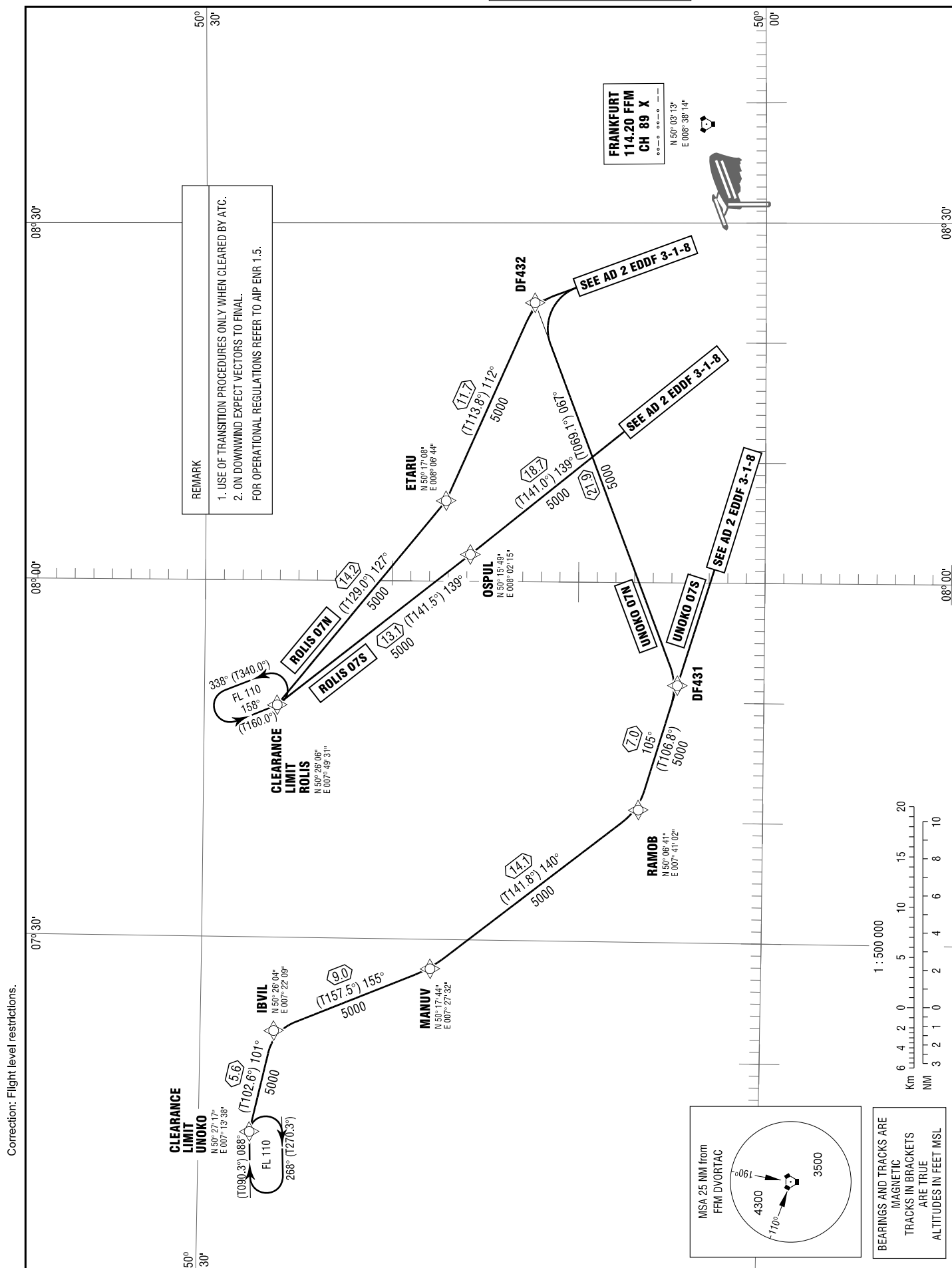


GPS / FMS RNAV ARRIVAL CHART
TRANSITION TO FINAL APPROACH
(OVERLAY TO RADAR VECTOR PATTERN)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350

FRANKFURT MAIN (WEST)
RWY 07L/C/R

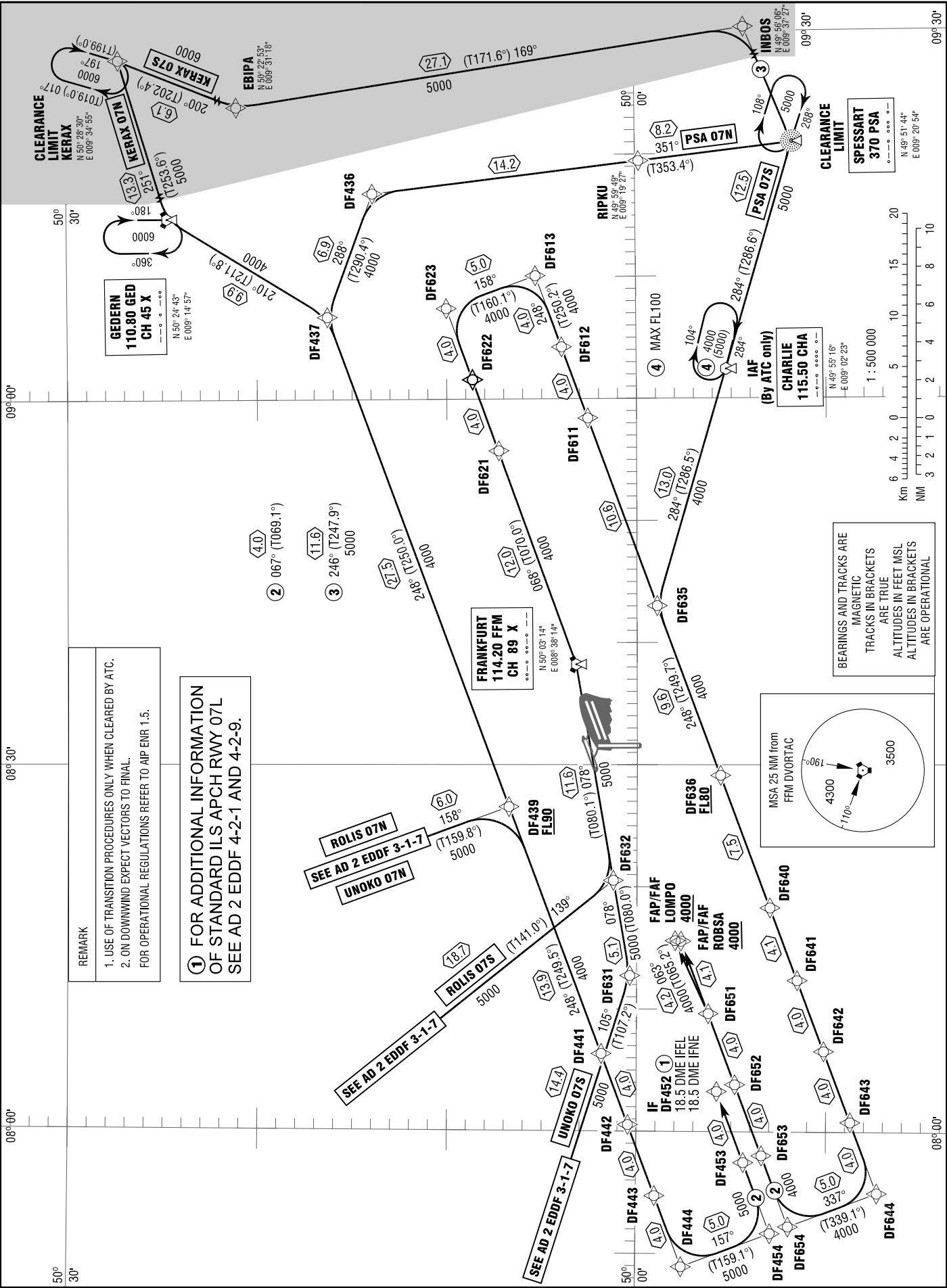


FRANKFURT MAIN (EAST)
RWY 07L/C/R

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350

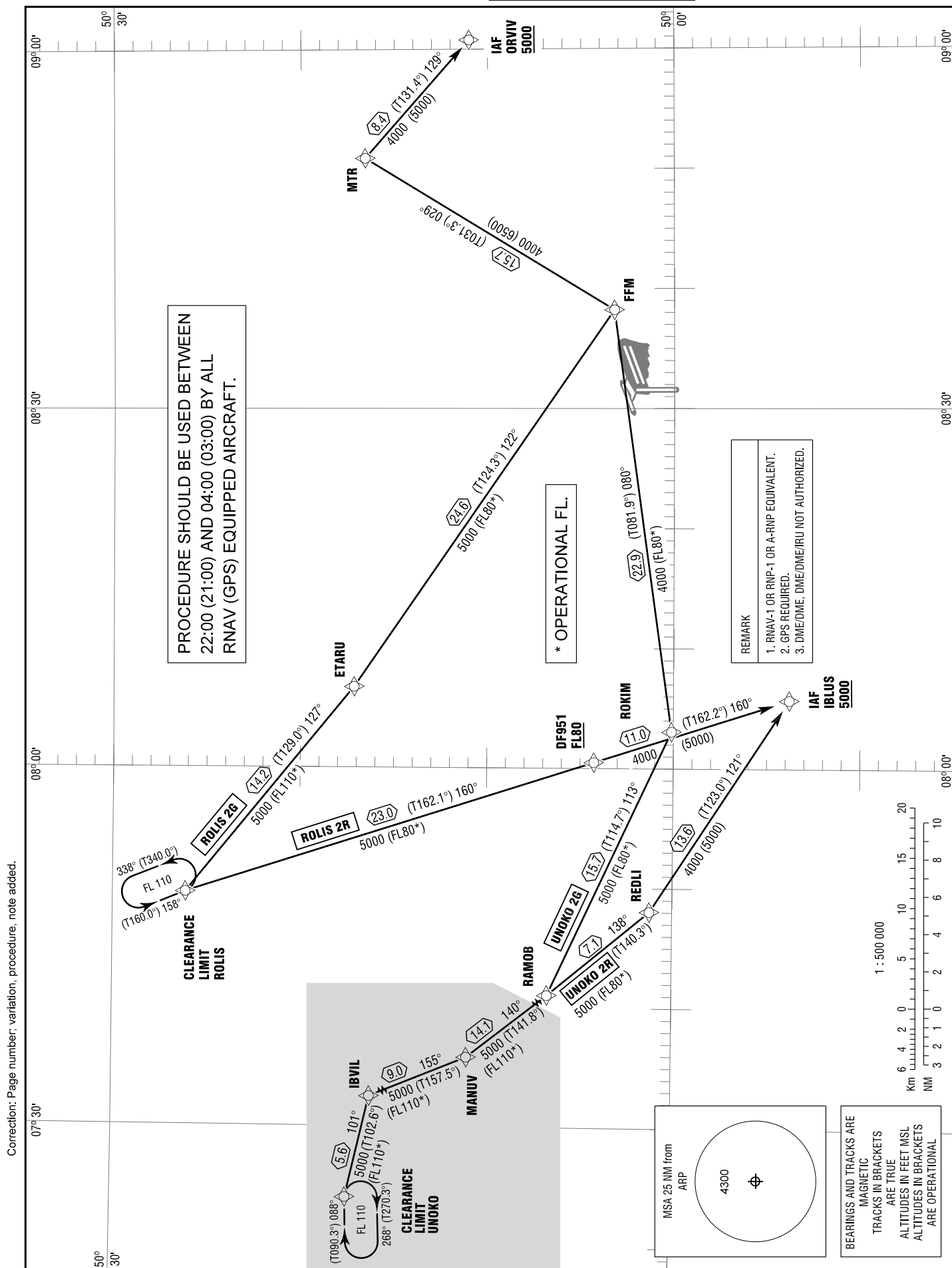
TRANSITION
ALTITUDE 5000
VAR 2° E

GPS / FMS RNAV ARRIVAL CHART
TRANSITION TO FINAL APPROACH
(OVERLAY TO RADAR VECTOR PATTERN)

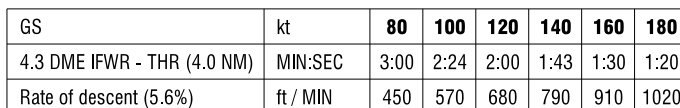


ATIS	118.025
LANGEN RADAR (N)	120.800
LANGEN RADAR (S)	125.350

FRANKFURT MAIN (WEST)
RWY 07C/R
RWY 25L/C



INSTRUMENT APPROACH CHART - ICAO



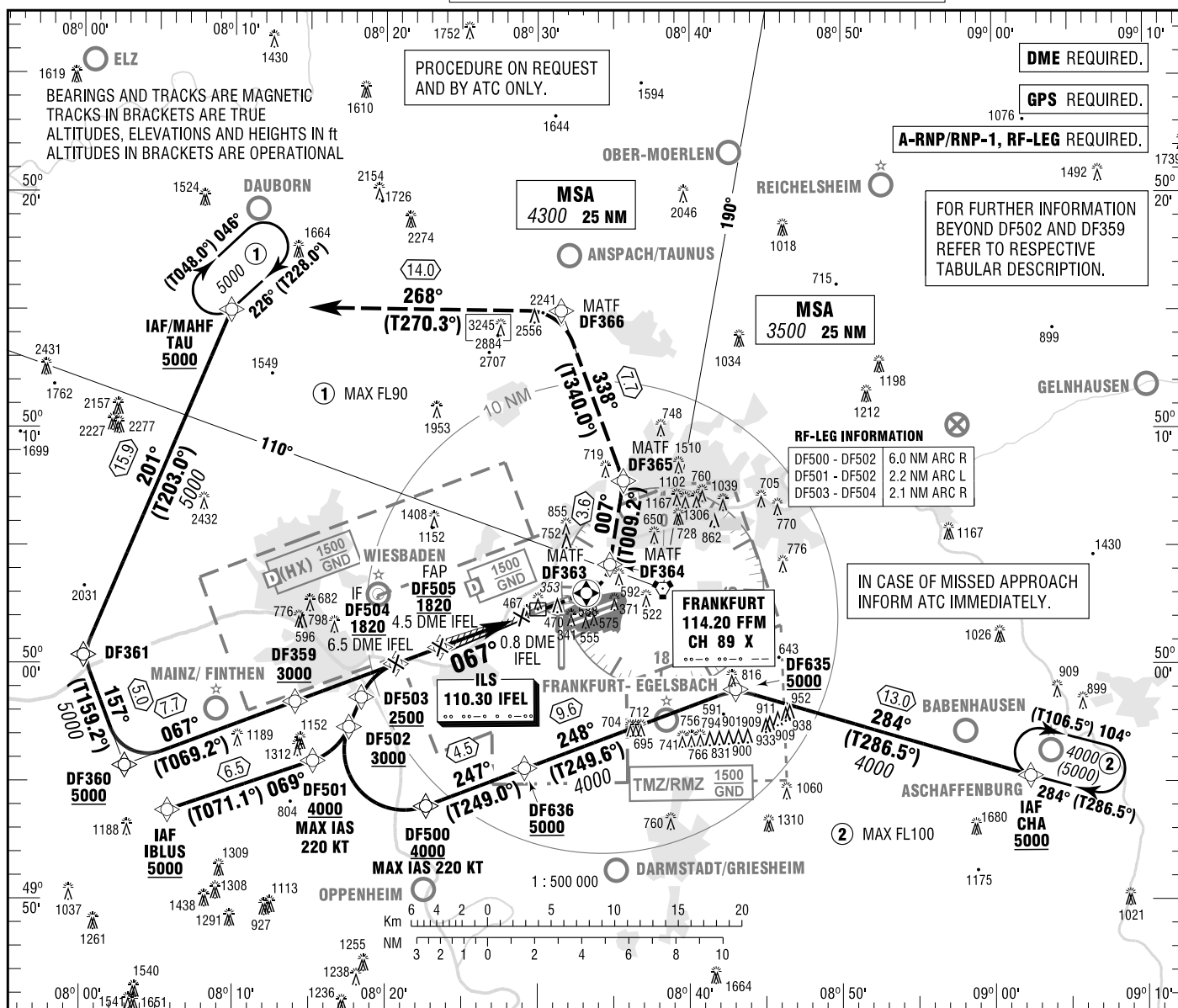
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 07L ELEV 305

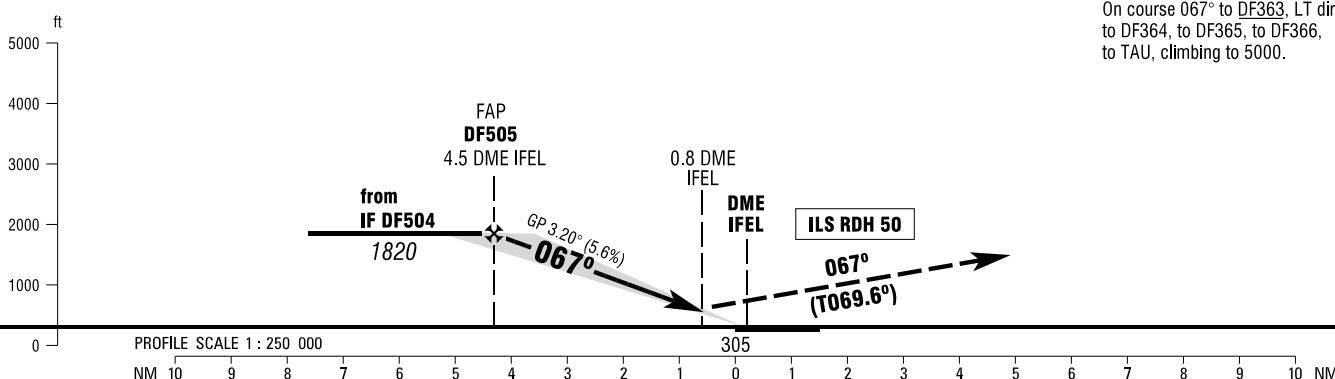
ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	136.500		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
ILS X
RWY 07L



MISSED APPROACH PROCEDURE

On course 067° to DF363, LT direct to DF364, to DF365, to DF366, to TAU, climbing to 5000.



OCA (OCH)	A	B	C	D
ILS/DME CAT I*	484 (179)	494 (189)	503 (198)	513 (208)

* Min climb gradient 4.6% until passing 3500ft.

DME IFEL	4	3	2	1
DIST THR	3.8	2.8	1.8	0.8
ALTITUDE	1650	1310	970	630

GS	kt	80	100	120	140	160	180
4.5 DME IFEL - THR (4.3 NM)	MIN:SEC	3:14	2:35	2:09	1:51	1:37	1:26
Rate of descent (5.6%)	ft / MIN	450	570	680	790	910	1020

Correction: Page number, procedure, obstacles revised.

FRANKFURT MAIN
ILS X
RWY 07L

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH												
Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from IBLUS	IF	IBLUS	N 49 53 48.13 E 008 05 41.10	-	-	-	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF501	N 49 55 54.87 E 008 15 13.68	-	(T071.0) 069	6.5	-	A4000+	220-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF502	N 49 57 21.01 E 008 17 35.86	-	-	2.2	L	A3000+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF506: N 49 58 19.47 E 008 13 56.92 ARC Radius: 2,55 NM
	TF	DF503	N 49 58 36.59 E 008 18 24.43	-	(T022.5) 021	1.4	-	A2500+	-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF504	N 50 00 01.39 E 008 20 40.38	-	-	2.1	R	A1820+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF507: N 49 57 38.23 E 008 22 03.45 ARC Radius: 2,55 NM
	CF	DF505	N 50 00 43.38 E 008 23 34.61	-	(T069.5) 067	2.0	-	@A1820	-	-	A-RNP/RNP-1, RF-Leg required	FAP for Coding
Initial Intermediate APCH from CHA	IF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF635	N 49 58 56.74 E 008 43 00.98	-	(T 286.5) 284	13.0	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF636	N 49 55 36.32 E 008 29 08.06	-	(T249.6) 248	9.6	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF500	N 49 53 59.85 E 008 22 39.87	-	(T249.0) 247	4.5	-	A4000+	220-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF502	N 49 57 21.01 E 008 17 35.86	-	-	6.0	R	A3000+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF508: N 49 56 22.44 E 008 21 14.65 ARC Radius: 2,55 NM
	TF	DF503	N 49 58 36.59 E 008 18 24.43	-	(T022.5) 021	1.4	-	A2500+	-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF504	N 50 00 01.39 E 008 20 40.38	-	-	2.1	R	A1820+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF507: N 49 57 38.23 E 008 22 03.45 ARC Radius: 2,55 NM
	CF	DF505	N 50 00 43.38 E 008 23 34.61	-	(T069.5) 067	2.0	-	@A1820	-	-	A-RNP/RNP-1, RF-Leg required	FAP for Coding
Initial Intermediate APCH from TAU	IF	TAU	N 50 15 01.66 E 008 09 45.06	-	-	-	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF361	N 50 00 21.94 E 008 00 06.88	-	(T203.0) 201	15.9	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF360	N 49 55 41.72 E 008 02 51.69	-	(T159.2) 157	5.0	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF359	N 49 58 25.31 E 008 14 03.23	-	(T069.2) 067	7.7	-	A3000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	CF	DF504	N 50 00 01.39 E 008 20 40.38	-	(T069.4) 067	4.6	-	A1820+	-	-	A-RNP/RNP-1, RF-Leg required	-
	CF	DF505	N 50 00 43.38 E 008 23 34.61	-	(T069.5) 067	2.0	-	@A1820	-	-	A-RNP/RNP-1, RF-Leg required	FAP for Coding
Missed APCH	-	RW07L	N 50 02 13.40 E 008 29 49.48	-	-	-	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	CF	DF363	N 50 03 01.83 E 008 33 11.89	Y	(T069.6) 067	-	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	DF	DF364	N 50 04 14.48 E 008 34 44.77	-	-	-	L	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF365	N 50 07 47.25 E 008 35 38.53	-	(T009.2) 007	3.6	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF366	N 50 14 59.63 E 008 31 32.61	-	(T340.0) 338	7.7	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	TAU	N 50 15 01.66 E 008 09 45.06	-	(T270.3) 268	14.0	-	@A5000	-	-	A-RNP/RNP-1, RF-Leg required	-

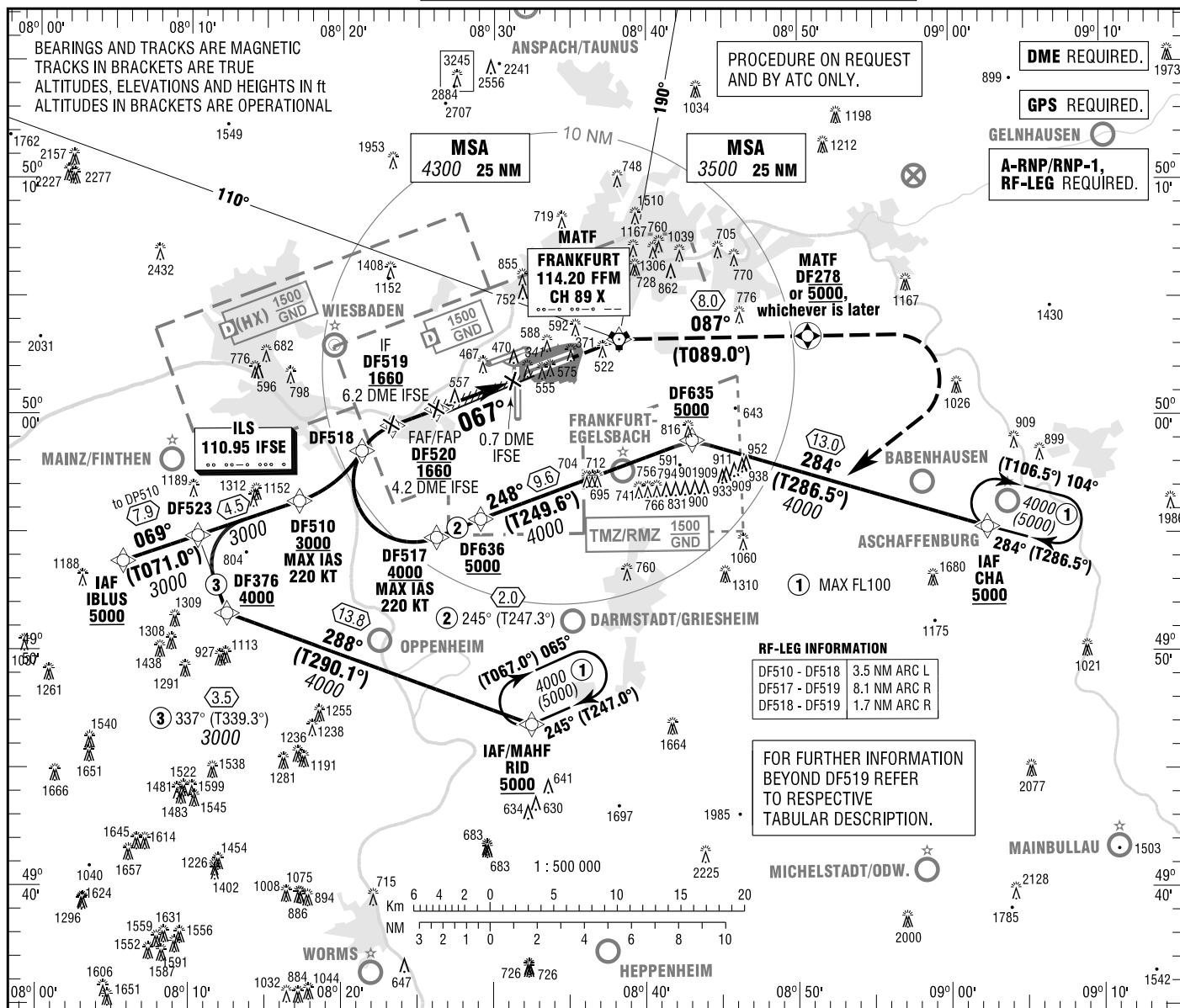
RNAV HOLDING IDENTIFICATION									
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks	
HM	TAU	N 50 15 01.66 E 008 09 45.06	(T228.0) 226	230	A5000+/FL90-	1 MIN	R	-	
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230	A5000+/FL100-	1 MIN	R	-	

INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E
ELEV 364
OCH RELATED TO
THR 07R ELEV 328

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275
TOWER 119.900
GROUND 121.800
APRON 121.750
121.850
121.950

FRANKFURT MAIN
ILS X CAT II & III or LOC X
RWY 07R



FRANKFURT MAIN
ILS X CAT II & III OR LOC X
RWY 07R

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH

Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from IBLUS	IF	IBLUS	N 49 53 48.13 E 008 05 41.10	-	-	-	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF510	N 49 56 21.47 E 008 17 14.44	-	(T071.0) 069	7.9	-	A3000+	220-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF518	N 49 58 29.28 E 008 21 19.99	-	-	3.5	L	-	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF522: N 50 01 01.86 E 008 14 46.02 ARC Radius: 4,9 NM
	RF	DF519	N 49 59 33.61 E 008 23 20.05	-	-	1.7	R	A1660+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF521: N 49 57 10.42 E 008 24 42.97 ARC Radius: 2,55 NM
	CF	DF520	N 50 00 15.53 E 008 26 14.29	-	(T069.5) 067	2.0	-	@A1660	-	-	A-RNP/RNP-1, RF-Leg required	FAP for Coding
Initial Intermediate APCH from RID	IF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF376	N 49 51 35.73 E 008 12 30.04	-	(T290.1) 288	13.8	-	A4000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF523	N 49 54 53.25 E 008 10 34.73	-	(T339.3) 337	3.5	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF510	N 49 56 21.47 E 008 17 14.44	-	(T071.0) 069	4.5	-	A3000+	220-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF518	N 49 58 29.28 E 008 21 19.99	-	-	3.5	L	-	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF522: N 50 01 01.86 E 008 14 46.02 ARC Radius: 4,9 NM
	RF	DF519	N 49 59 33.61 E 008 23 20.05	-	-	1.7	R	A1660+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF521: N 49 57 10.42 E 008 24 42.97 ARC Radius: 2,55 NM
	CF	DF520	N 50 00 15.53 E 008 26 14.29	-	(T069.5) 067	2.0	-	@A1660	-	-	A-RNP/RNP-1, RF-Leg required	FAP for Coding
Initial Intermediate APCH from CHA	IF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF635	N 49 58 56.74 E 008 43 00.98	-	(T 286.5) 284	13.0	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF636	N 49 55 36.32 E 008 29 08.06	-	(T249.6) 248	9.6	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF517	N 49 54 49.44 E 008 26 14.44	-	(T247.3) 245	2.0	-	A4000+	220-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF519	N 49 59 33.61 E 008 23 20.05	-	-	8.1	R	A1660+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF521: N 49 57 10.42 E 008 24 42.97 ARC Radius: 2,55 NM
	CF	DF520	N 50 00 15.53 E 008 26 14.29	-	(T069.5) 067	2.0	-	@A1660	-	-	A-RNP/RNP-1, RF-Leg required	FAP for Coding
Missed APCH	-	RW07R	N 50 01 39.15 E 008 32 03.03	-	-	-	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	FFM	N 50 03 13.47 E 008 38 13.53	-	(T068.4) 066	-	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF278	N 50 03 21.16 E 008 50 38.21	Y	(T089.0) 087	8.0	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	CA	-	-	-	(T089.0) 087	-	-	@A5000	-	-	A-RNP/RNP-1, RF-Leg required	-
	DF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	R	@A5000	-	-	A-RNP/RNP-1, RF-Leg required	-

RNAV HOLDING IDENTIFICATION

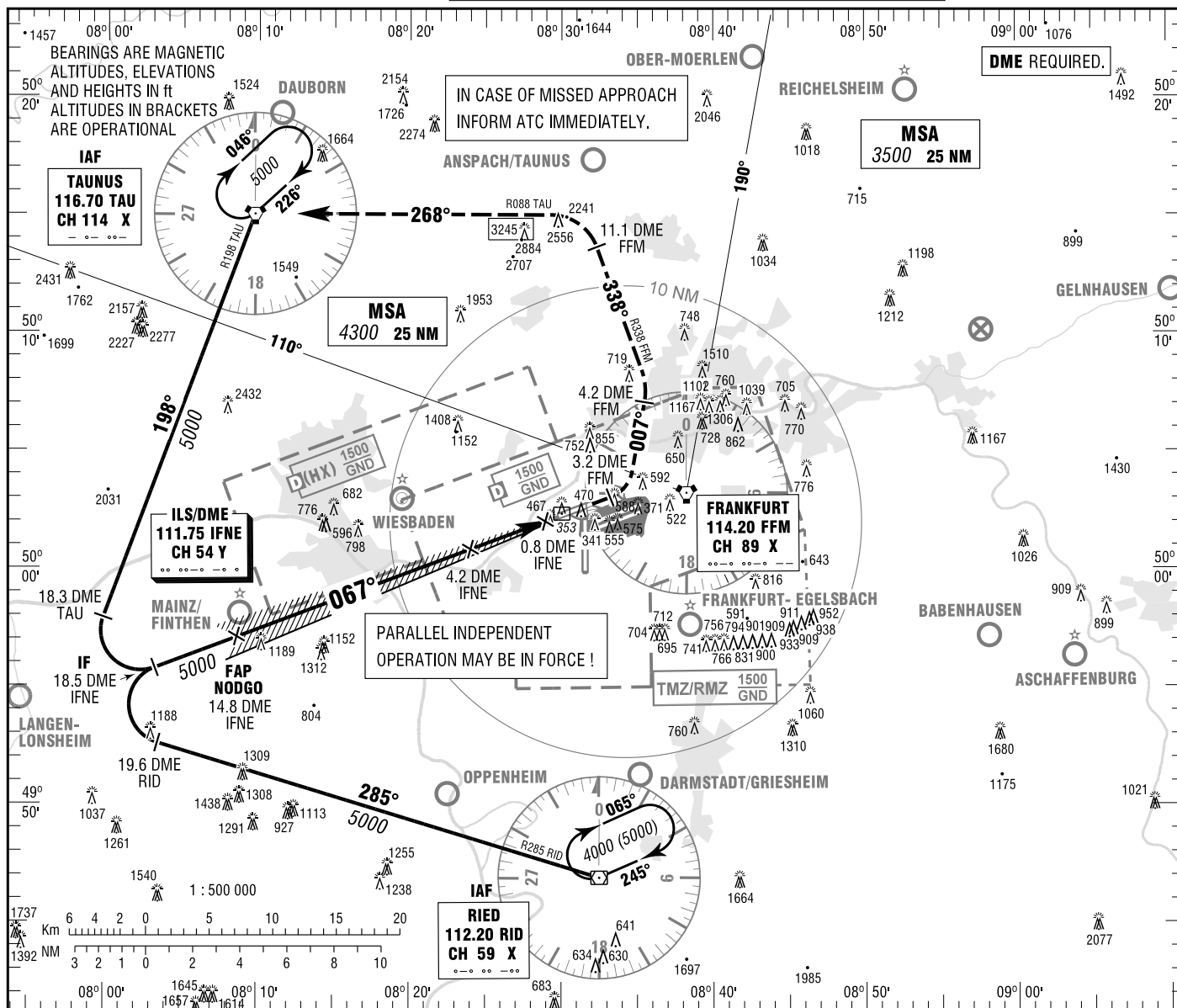
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	RID	N 49 46 54.09 E 008 32 29.35	(T247.0) 245	230-	A5000+/FL100-	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E
ELEV 364
OCH RELATED TO
THR 07L ELEV 305

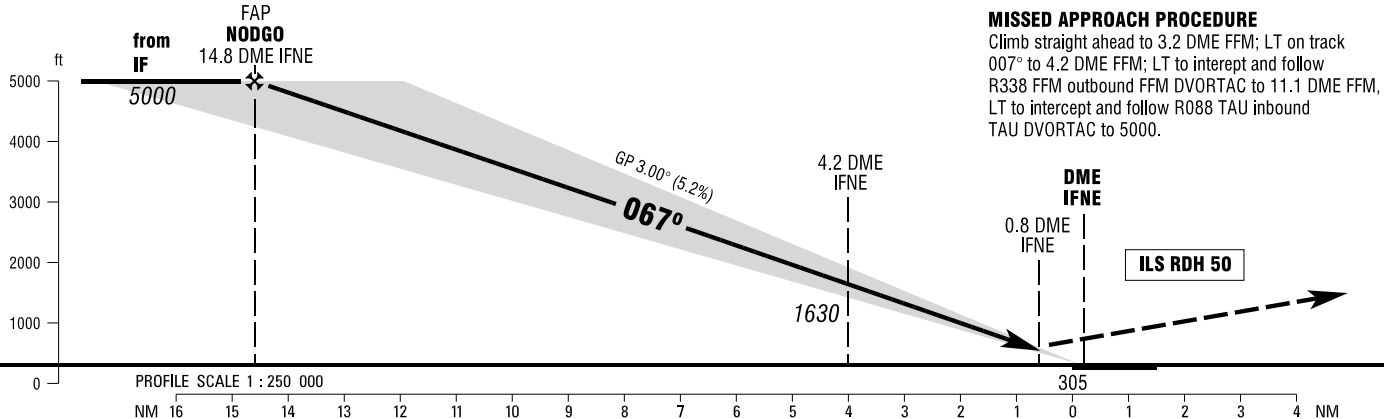
ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275
TOWER 136.500
GROUND 121.800
APRON 121.750
121.850
121.950

FRANKFURT MAIN
ILS Z CAT II & III
RWY 07L



MISSED APPROACH PROCEDURE

Climb straight ahead to 3.2 DME FFM; LT on track 007° to 4.2 DME FFM; LT to intercept and follow R338 FFM outbound FFM DVORTAC to 11.1 DME FFM, LT to intercept and follow R088 TAU inbound TAU DVORTAC to 5000.



OCA (OCH)	A	B	C	D
ILS/DME CAT I*	484 (179)	494 (189)	503 (198)	513 (208)
ILS/DME CAT II*	395 (90)	412 (107)	425 (120)	438 (133)
*Minimum climb gradient 4.6% until passing 3500ft				

CAT IIIA AND CAT IIIB (MNM RVR 75m) APPROVED.

DME IFNE	11	10	9	8	7	6	5	4	3	2
DIST THR	10.8	9.8	8.8	7.8	6.8	5.8	4.8	3.8	2.8	1.8
ALTITUDE	3800	3480	3160	2840	2530	2210	1890	1570	1250	930

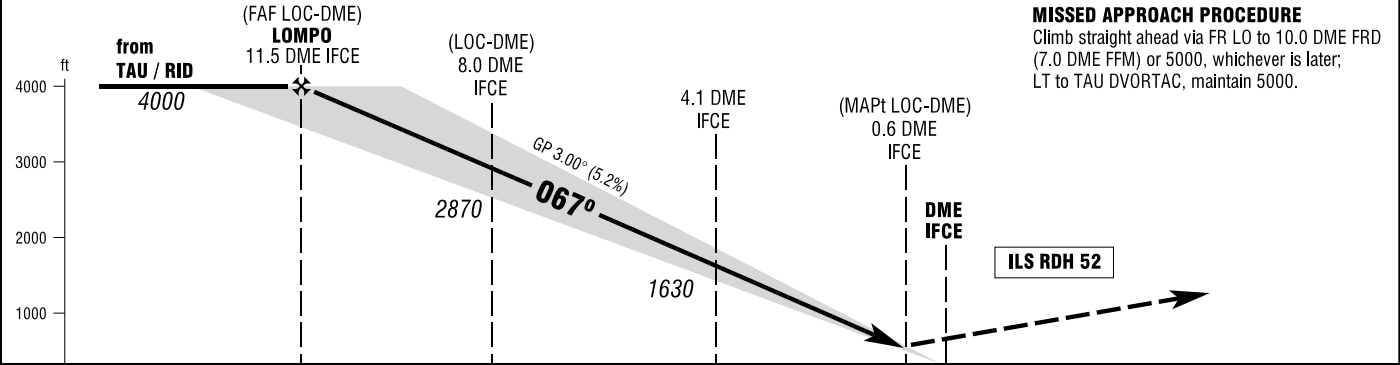
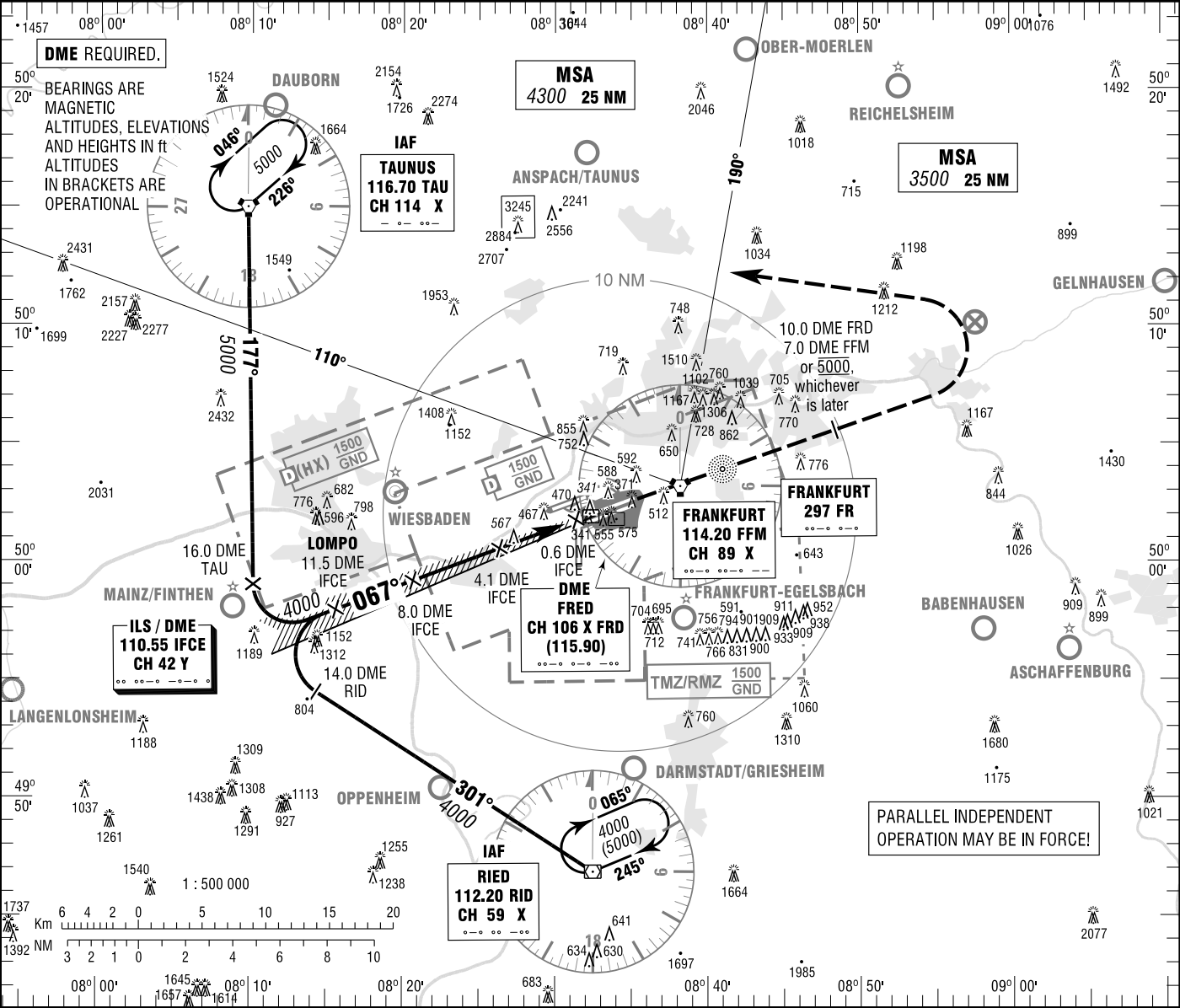
GS	kt	80	100	120	140	160	180
4.2 DME IFNE - THR (4.0 NM)	MIN:SEC	3:00	2:24	2:00	1:43	1:30	1:20
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

FRANKFURT MAIN
ILS CAT II & III or LOC
RWY 07C

ATIS	118.025	TOWER	118.775	APRON	121.750
LANGEN RADAR (N)	120.800		119.900		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950
DIRECTOR	127.275				

ELEV 364
OCH RELATED TO
THR 07C ELEV 329
VAR 2° E

INSTRUMENT
APPROACH
CHART - ICAO



OCA (OCH)	A	B	C	D	D _L
ILS/DME CAT I	473 (144)	482 (153)	492 (163)		502 (173)
ILS/DME CAT II	384 (55)	400 (71)	414 (85)		427 (98)
LOC-DME	820 (490)	820 (490)	820 (490)	820 (490)	

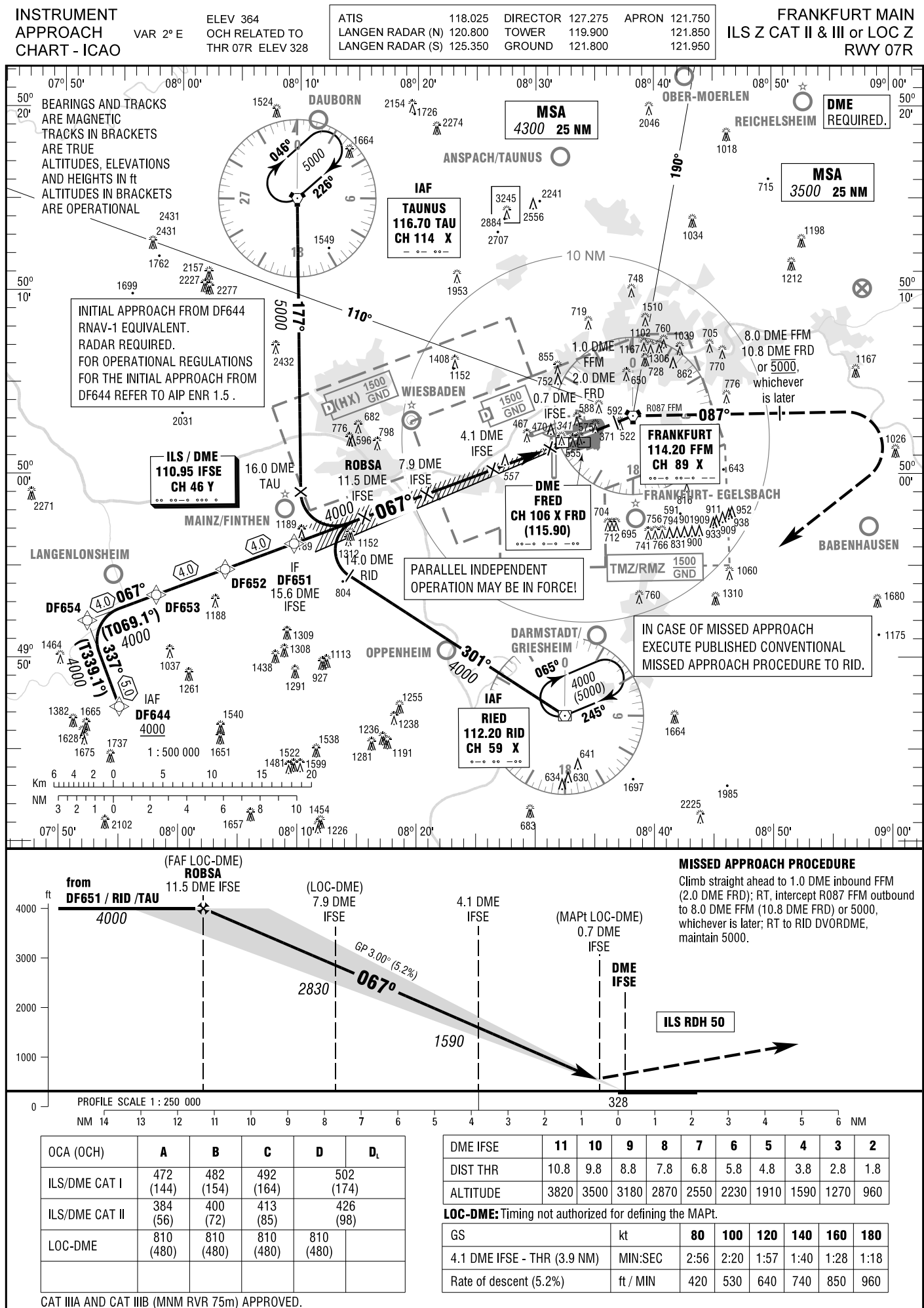
DME IFCE	11	10	9	8	7	6	5	4	3	2
DIST THR	10.8	9.8	8.8	7.8	6.8	5.8	4.8	3.8	2.8	1.8
ALTITUDE	3820	3510	3190	2870	2550	2230	1910	1600	1280	960

LOC-DME: Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
4.1 DME IFCE - THR (4.0 NM)	MIN:SEC	3:00	2:24	2:00	1:43	1:30	1:20
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

CAT IIIA AND CAT IIIB (MNM RVR 75m) APPROVED.

Correction: Variation, tracks, obstacles revised.



Correction: Procedure, obstacles revised.

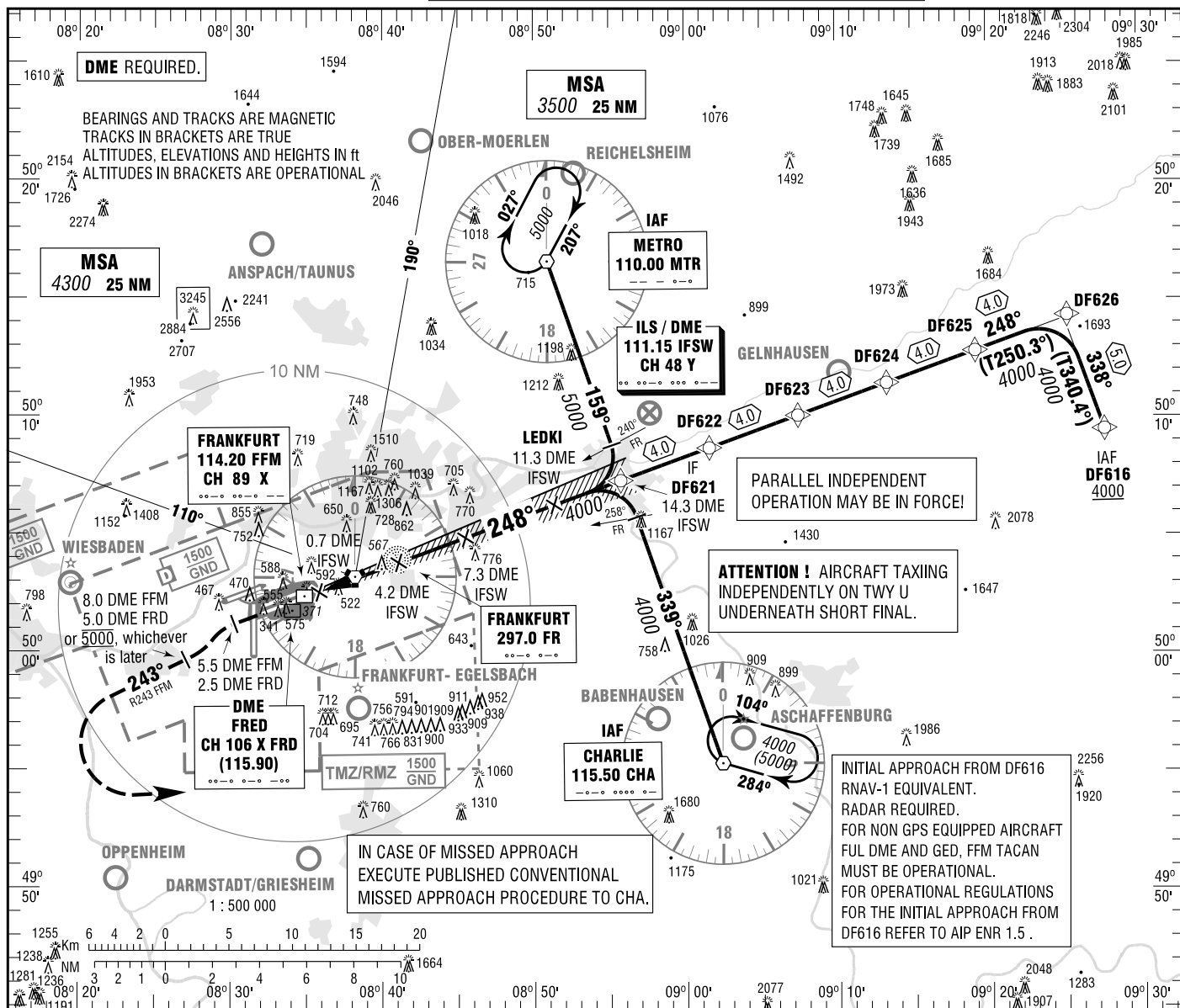
TO BE USED IN CONJUNCTION WITH RNAV STAR CONTAINING THE SUFFIX "E" INITIAL APPROACH FROM DF644												
Approach Segment	Recommended Path Terminator	Way-point Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial APCH from DF644	IF	DF644	N 49 47 17.60 E 007 55 01.26	-	-	-	-	A4000+	-	-	RNAV-1	-
	TF	DF654	N 49 51 57.93 E 007 52 16.05	-	(T339.1) 337	5.0	R	-	-	-	RNAV-1	-
	CF	DF653	N 49 53 23.41 E 007 58 03.28	-	(T069.1) 067	4.0	-	-	-	-	RNAV-1	-
	CF	DF652	N 49 54 48.60 E 008 03 50.85	-	(T069.1) 067	4.0	-	-	-	-	RNAV-1	-
	CF	DF651	N 49 56 13.49 E 008 09 38.78	-	(T069.1) 067	4.0	-	A4000+	-	-	RNAV-1	-

**INSTRUMENT
APPROACH
CHART - ICAO**

VAR 2° E
ELEV 364
OCH RELATED TO
THR 25L ELEV 362

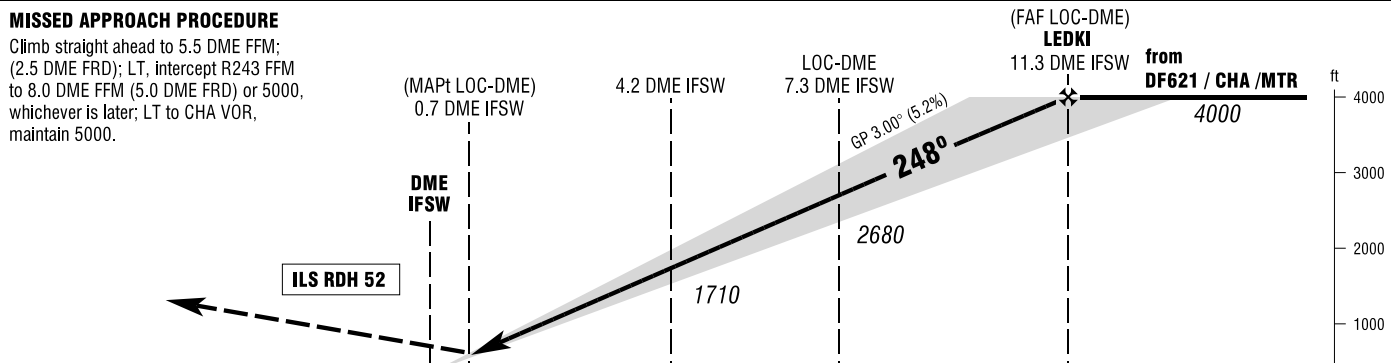
ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275
TOWER 119.900
GROUND 121.800
APRON 121.750
121.850
121.950

FRANKFURT MAIN
ILS Z CAT II & III or LOC Z
RWY 25L



MISSED APPROACH PROCEDURE

Climb straight ahead to 5.5 DME FFM; (2.5 DME FRD); LT. intercept R243 FFM to 8.0 DME FFM (5.0 DME FRD) or 5000, whichever is later; LT to CHA VOR, maintain 5000.



OCA (OCH)	A	B	C	D	D _i
ILS/DME CAT I	502 (140)	512 (150)	522 (160)	532 (170)	
ILS/DME CAT II	414 (52)	430 (68)	443 (81)	456 (94)	
LOC-DME	820 (460)	820 (460)	820 (460)	820 (460)	

CAT IIIA AND CAT IIIB (MNM RVR 75m) APPROVED.

DME IFSW	2	3	4	5	6	7	8	9	10	11
DIST THR	1.8	2.8	3.8	4.8	5.8	6.8	7.8	8.8	9.8	10.8
ALTITUDE	990	1310	1630	1950	2270	2580	2900	3220	3540	3860

LOC-DME: Timing not authorized for defining the MAP.

GS	kt	80	100	120	140	160	180
4.2 DME IFSW - THR (4.1 NM)	MIN:SEC	3:05	2:28	2:03	1:45	1:32	1:22
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

TO BE USED IN CONJUNCTION WITH RNAV STAR CONTAINING THE SUFFIX "W" INITIAL APPROACH FROM DF616												
Approach Segment	Recommended Path Terminator	Way-point Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial APCH from DF616	IF	DF616	N 50 09 21.68 E 009 27 40.21	-	-	-	-	A4000+	-	-	RNAV-1	-
	TF	DF626	N 50 14 04.23 E 009 25 02.97	-	(T340.4) 338	5.0	L	-	-	-	RNAV-1	-
	CF	DF625	N 50 12 43.20 E 009 19 10.62	-	(T250.3) 248	4.0	-	-	-	-	RNAV-1	-
	CF	DF624	N 50 11 21.87 E 009 13 18.60	-	(T250.3) 248	4.0	-	-	-	-	RNAV-1	-
	CF	DF623	N 50 10 00.24 E 009 07 26.93	-	(T250.3) 248	4.0	-	-	-	-	RNAV-1	-
	CF	DF622	N 50 08 38.31 E 009 01 35.59	-	(T250.3) 248	4.0	-	-	-	-	RNAV-1	-
	CF	DF621	N 50 07 16.07 E 008 55 44.60	-	(T250.3) 248	4.0	-	A4000+	-	-	RNAV-1	-

**INSTRUMENT
APPROACH
CHART - ICAO**

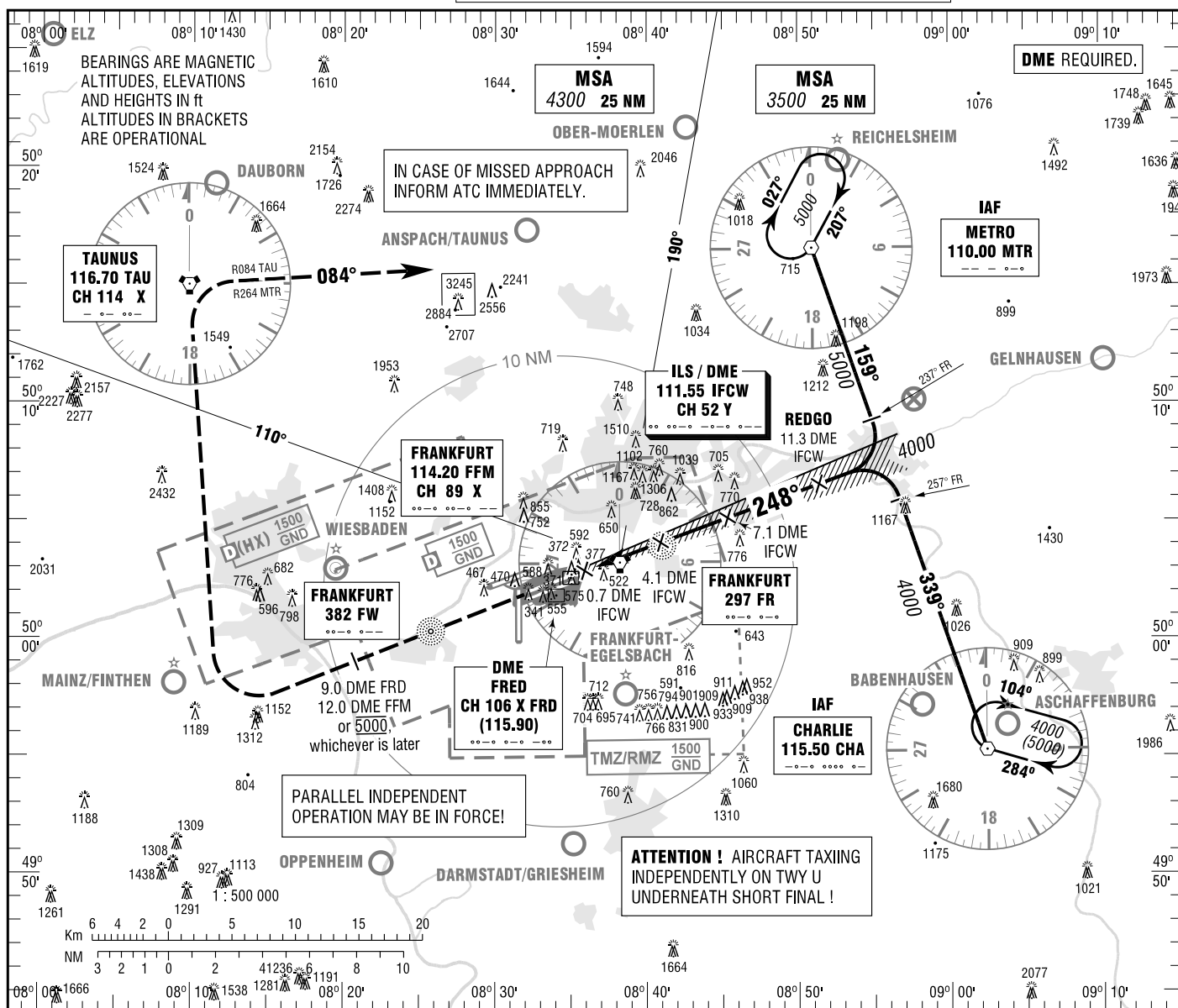
VAR 2° E

ELEV 364
OCH RELATED TO
THR 25C ELEV 364

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275

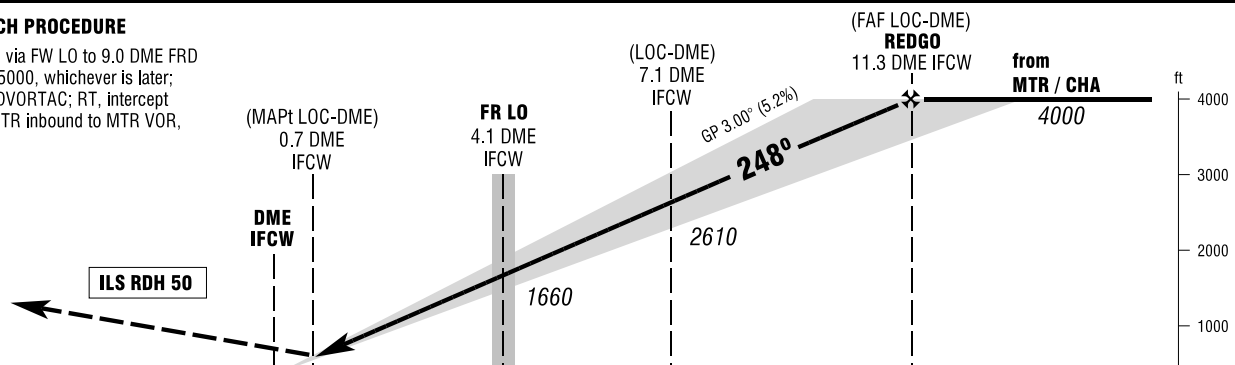
TOWER 118.775
GROUND 121.800
APRON 121.750
121.850
121.950

FRANKFURT MAIN
ILS CAT II & III or LOC
RWY 25C



MISSED APPROACH PROCEDURE

Climb straight ahead via FW LO to 9.0 DME FRD (12.0 DME FFM) or 5000, whichever is later; RT inbound to TAU DVORTAC; RT, intercept R084 TAU / R264 MTR inbound to MTR VOR, maintain 5000.



OCA (OCH)	A	B	C	D	D _L
ILS/DME CAT I	503 (139)	513 (149)	523 (159)	533 (169)	
ILS/DME CAT II	415 (51)	431 (67)	444 (80)	457 (93)	
LOC-DME	810 (450)	810 (450)	810 (450)	810 (450)	

DME IFCW	2	3	4	5	6	7	8	9	10	11
DIST THR	1.8	2.8	3.8	4.8	5.8	6.8	7.8	8.8	9.8	10.8
ALTITUDE	990	1310	1630	1950	2270	2580	2900	3220	3540	3860

LOC-DME: Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
4.1 DME IFCW - THR (3.9 NM)	MIN:SEC	2:56	2:20	1:57	1:40	1:28	1:18
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

CAT IIIA AND CAT IIIB (MNM RVR 75m) APPROVED.

Correction: Page number, variation, procedure, obstacles revised.

FRANKFURT MAIN

ILS Z CAT II & III

RWY 25R

ATIS

118.025

DIRECTOR

127.275

APRON

121.750

ELEV

364

OCH RELATED TO

VAR 2° E

LANGEN RADAR (N)

120.800

TOWER

136.500

121.850

THR 25R

ELEV 353

LANGEN RADAR (S)

125.350

GROUND

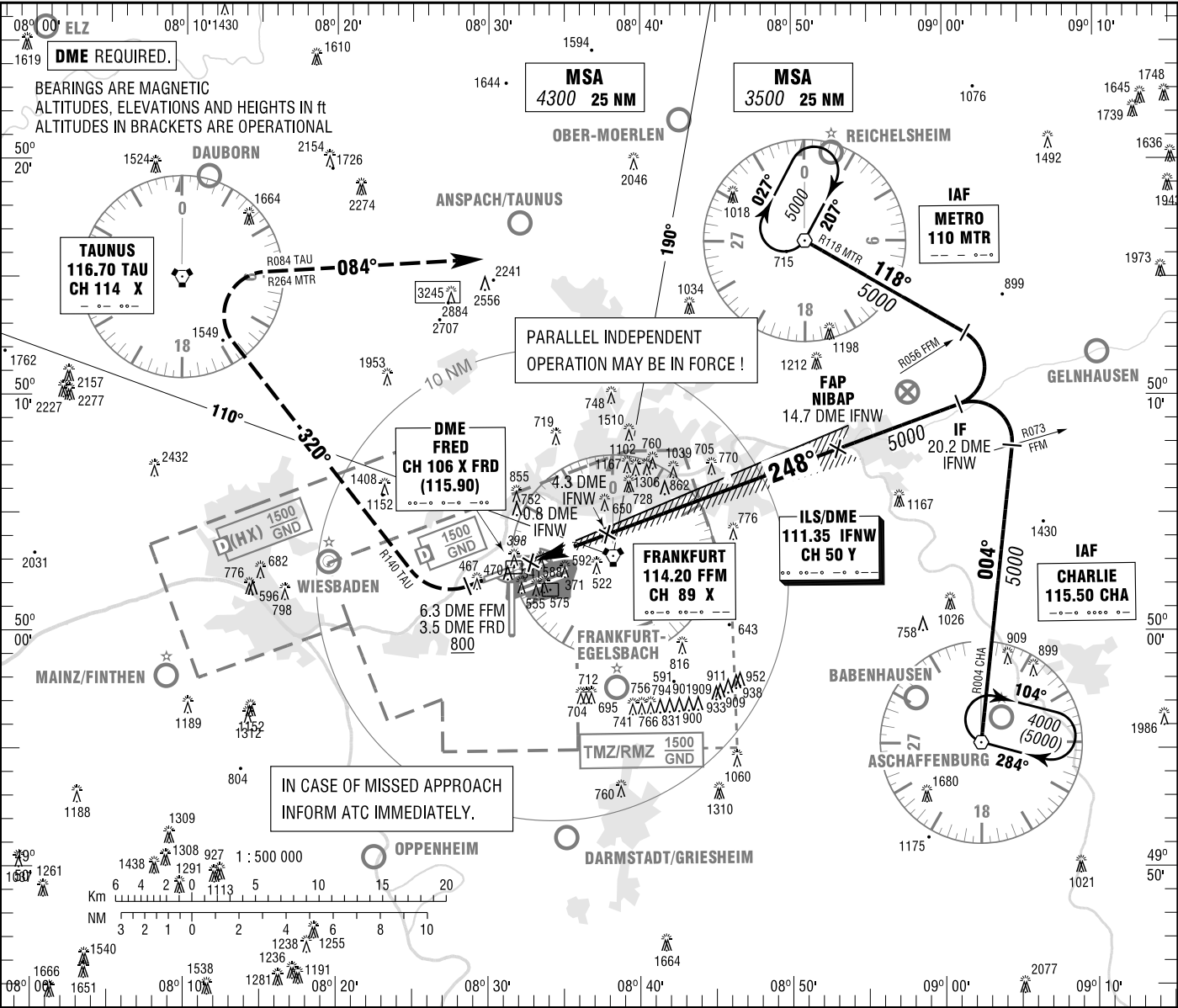
121.800

121.950

INSTRUMENT

APPROACH

CHART - ICAO



MISSED APPROACH PROCEDURE

Climb straight ahead to 6.3 DME FFM (3.5 DME FRD) at or above 800; RT to intercept R140 TAU inbound TAU DVORTAC; RT, intercept R084 TAU / R264 MTR inbound MTR to 5000.

PROFILE SCALE 1 : 250 000

NM	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	NM
----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----

OCA (OCH)	A	B	C	D
ILS/DME CAT I*	530 (177)	540 (187)	550 (197)	559 (206)
ILS/DME CAT II*	441 (88)	458 (105)	471 (118)	484 (131)

*Minimum climb gradient 5.0% until passing 2000ft

CAT IIIA AND CAT IIIB (MNM RVR 75m) APPROVED.

DME IFNW	2	3	4	5	6	7	8	9	10	11
DIST THR	1.8	2.8	3.8	4.8	5.8	6.8	7.8	8.8	9.8	10.8
ALTITUDE	980	1300	1620	1940	2250	2570	2890	3210	3530	3850

GS	kt	80	100	120	140	160	180
4.3 DME IFNW - THR (4.0 NM)	MIN:SEC	3:00	2:24	2:00	1:43	1:30	1:20
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Page number, variation, procedure, obstacles revised.

AIRAC AMDT 02/17

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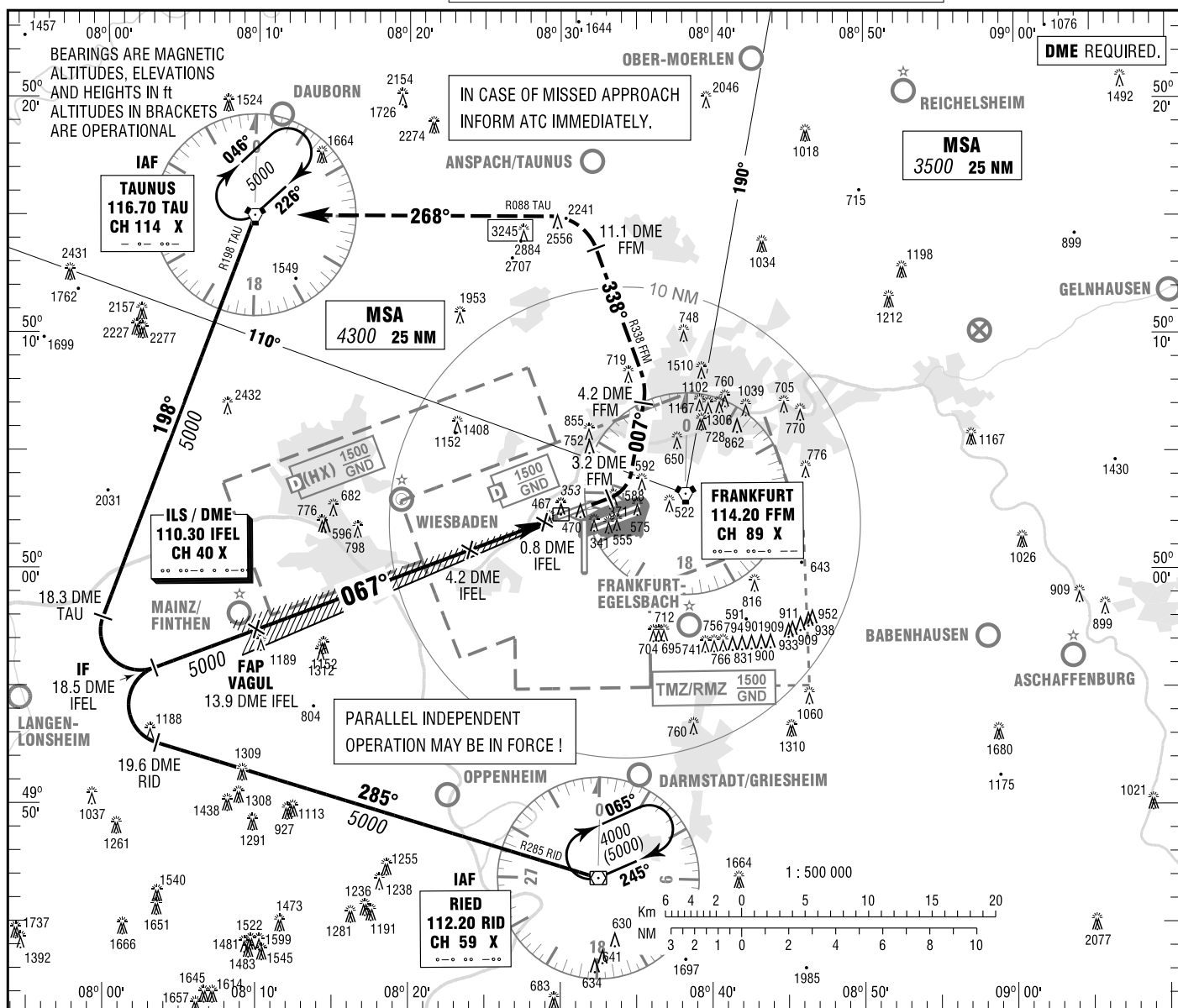
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 07L ELEV 305

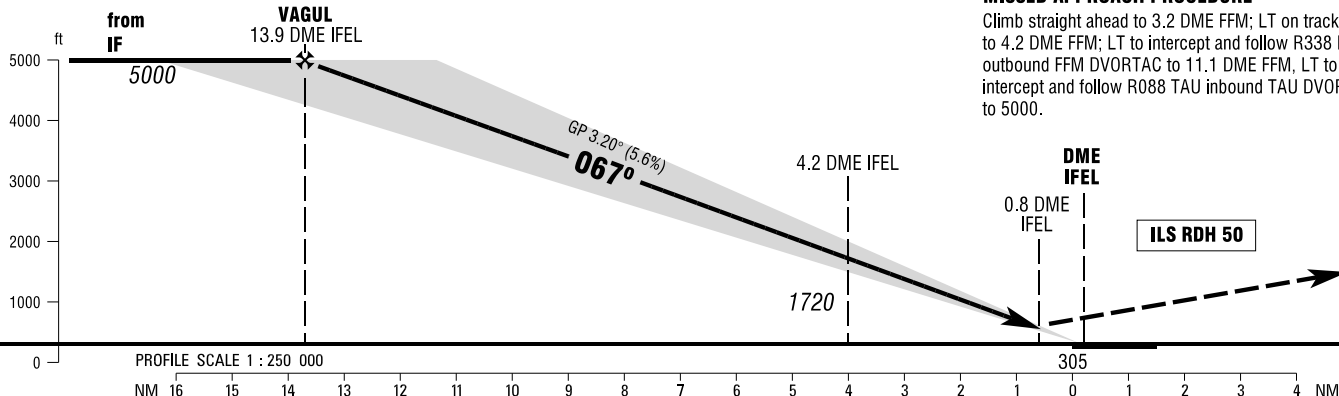
ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	136.500		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
ILS Y
RWY 07L



MISSED APPROACH PROCEDURE

Climb straight ahead to 3.2 DME FFM; LT on track 007° to 4.2 DME FFM; LT to intercept and follow R338 FFM outbound FFM DVORTAC to 11.1 DME FFM, LT to intercept and follow R088 TAU inbound TAU DVORTAC to 5000.



OCA (OCH)	A	B	C	D
ILS/DME CAT I*	484 (179)	494 (189)	503 (198)	513 (208)

* Min climb gradient 4.6% until passing 3500ft.

DME IFEL	12	11	10	9	8	7	6	5	4	3	2
DIST THR	11.8	10.8	9.8	8.8	7.8	6.8	5.8	4.8	3.8	2.8	1.8
ALTITUDE	4370	4030	3690	3350	3010	2670	2330	1990	1650	1310	970

GS	kt	80	100	120	140	160	180
4.2 DME IFEL - THR (4.0 NM)	MIN:SEC	3:00	2:24	2:00	1:43	1:30	1:20
Rate of descent (5.6%)	ft / MIN	450	570	680	790	910	1020

Correction: Page number, variation, procedure, obstacles revised..

INSTRUMENT
APPROACH
CHART - ICAO

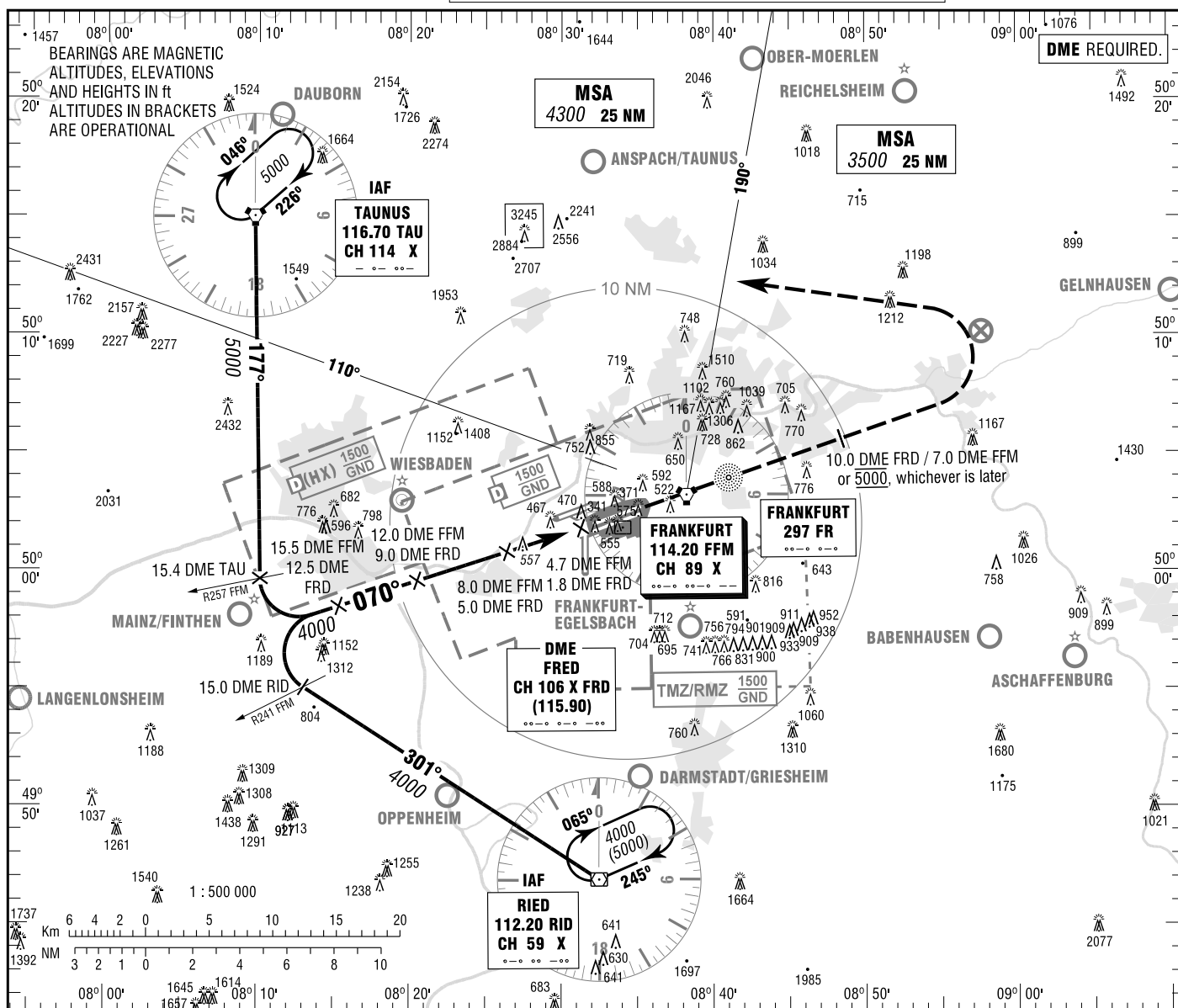
VAR 2° E

ELEV 364
OCH RELATED TO
THR 07C ELEV 329

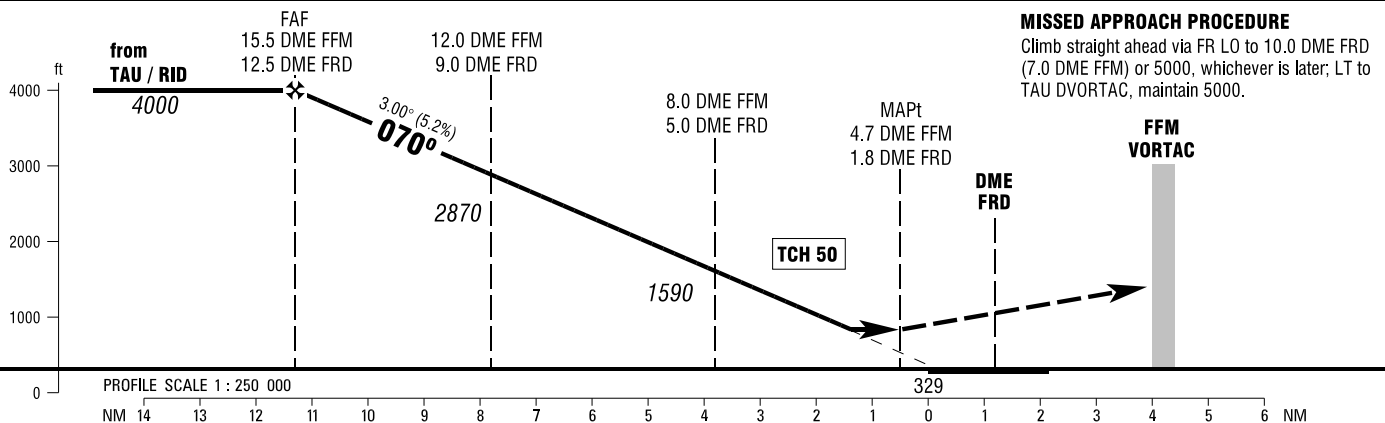
ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275

TOWER 118.775
GROUND 121.800
APRON 121.750
121.850
121.950

FRANKFURT MAIN
VOR
RWY 07C



Correction: Variation, procedure, obstacles revised.



OCA (OCH)	A	B	C	D
VOR/DME	810 (480)	810 (480)	810 (480)	810 (480)

DME FFM	15	14	13	12	11	10	9	8	7	6
DIST THR	10.8	9.8	8.8	7.8	6.8	5.8	4.8	3.8	2.8	1.8
ALTITUDE	3820	3500	3190	2870	2550	2230	1910	1590	1280	960

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
8.0 DME FFM/5.0 DME FRD - MAPt (3.3 NM)	MIN:SEC	2:29	1:59	1:39	1:25	1:14	1:06
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

FRANKFURT MAIN
VOR
RWY 07R

ATIS118.025
LANGEN RADAR (N)120.800
LANGEN RADAR (S)125.350

DIRECTOR127.275
TOWER119.900
GROUND121.800

APRON121.750
121.850
121.950

ELEV364
OCH RELATED TO
THR 07R ELEV 328

VAR 2° E

INSTRUMENT
APPROACH
CHART - ICAO

from
TAU / RID
4000

FAF
15.6 DME FFM
12.6 DME FRD

12.0 DME FFM
9.0 DME FRD

8.0 DME FFM
5.0 DME FRD

4.8 DME FFM
1.8 DME FRD

MAPt
4.8 DME FFM
1.8 DME FRD

DME
FRD

FFM
VORTAC

3.00° (5.2%)
066°

2830

1560

328

MISSED APPROACH PROCEDURE
Climb straight ahead to 1.0 DME inbound FFM (2.0 DME FRD); RT, intercept R087 FFM outbound to 8.0 DME FFM (10.8 DME FRD) or 5000, whichever is later; RT to RID DVOR/DME, maintain 5000.

PROFILE SCALE 1 : 250 000

OCA (OCH)	A	B	C	D
VOR/DME	800 (480)	800 (480)	810 (480)	810 (480)

DME FFM	15	14	13	12	11	10	9	8	7	6
DIST THR	10.7	9.7	8.7	7.7	6.7	5.7	4.7	3.7	2.7	1.7
ALTITUDE	3790	3470	3150	2830	2520	2200	1880	1560	1240	920

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
8.0 DME FFM/5.0 DME FRD - MAPt (3.2 NM)	MIN:SEC	2:24	1:55	1:36	1:22	1:12	1:06
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

AIRAC AMDT 02/17

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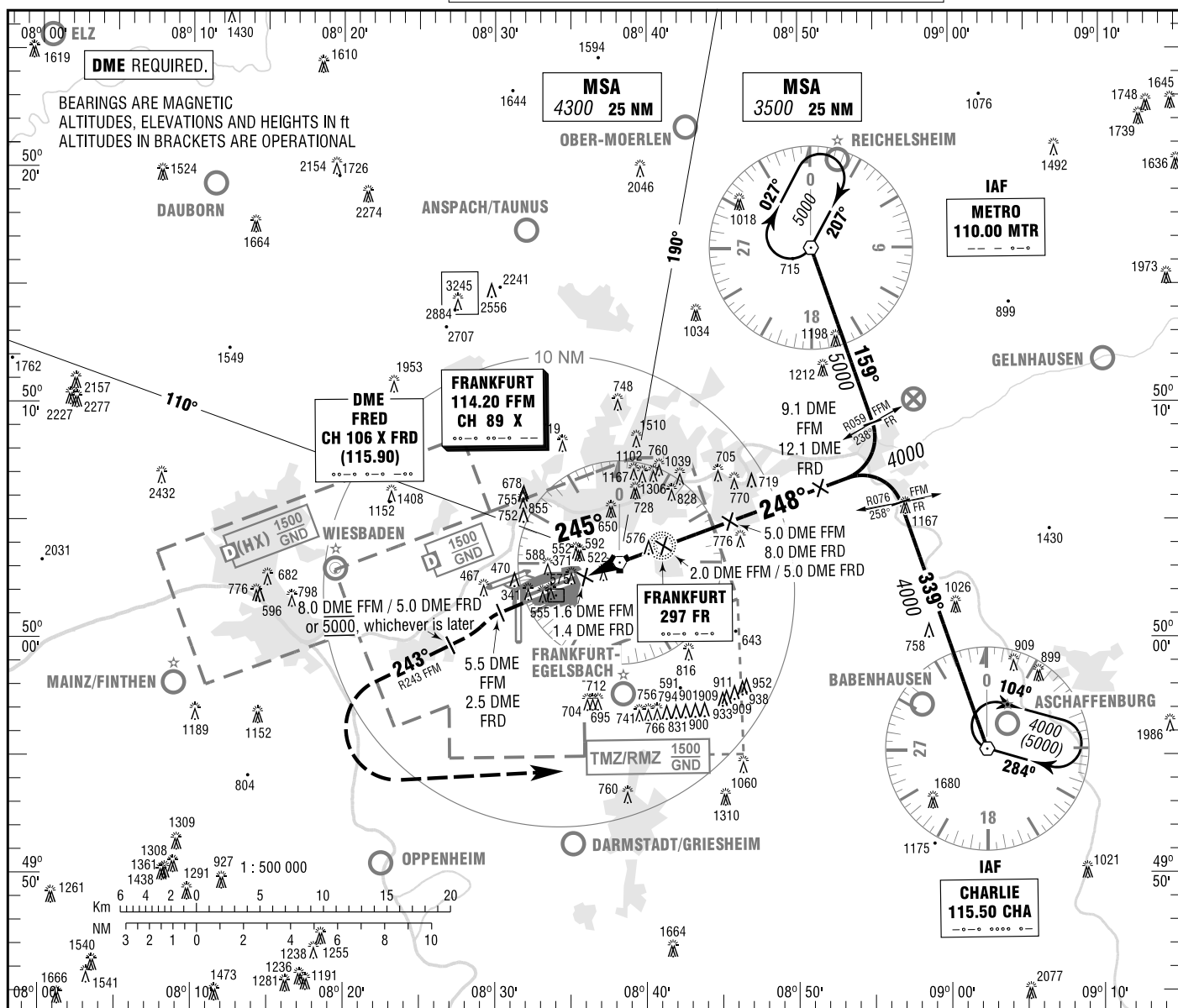
Correction: Variation, procedure, obstacles revised.

INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E
ELEV 364
OCH RELATED TO
THR 25L ELEV 362

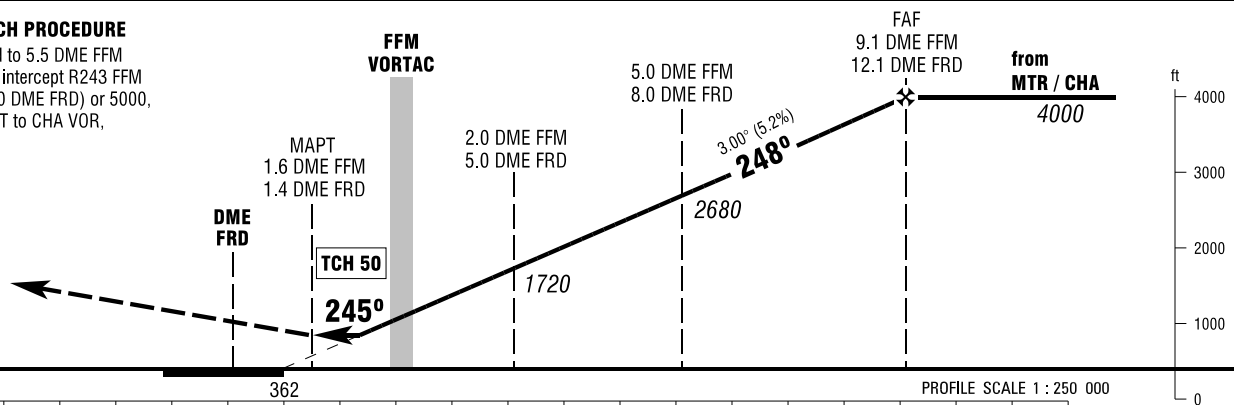
ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275
TOWER 119.900
GROUND 121.800
APRON 121.750
121.850
121.950

FRANKFURT MAIN
VOR
RWY 25L



MISSED APPROACH PROCEDURE

Climb straight ahead to 5.5 DME FFM (2.5 DME FRD); LT, intercept R243 FFM to 8.0 DME FFM (5.0 DME FRD) or 5000, whichever is later; LT to CHA VOR, maintain 5000.



OCA (OCH)	A	B	C	D
VOR/DME	830 (470)	830 (470)	830 (470)	830 (470)

DME FFM	0	1	2	3	4	5	6	7	8	9
DIST THR	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1	10.1	11.1
ALTITUDE	1090	1400	1720	2040	2360	2680	3000	3310	3630	3950

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
2.0 DME FFM/5.0 DME FRD - MAPt (3.5 NM)	MIN:SEC	2:37	2:06	1:45	1:30	1:19	1:10
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Variation, procedure, obstacles revised.

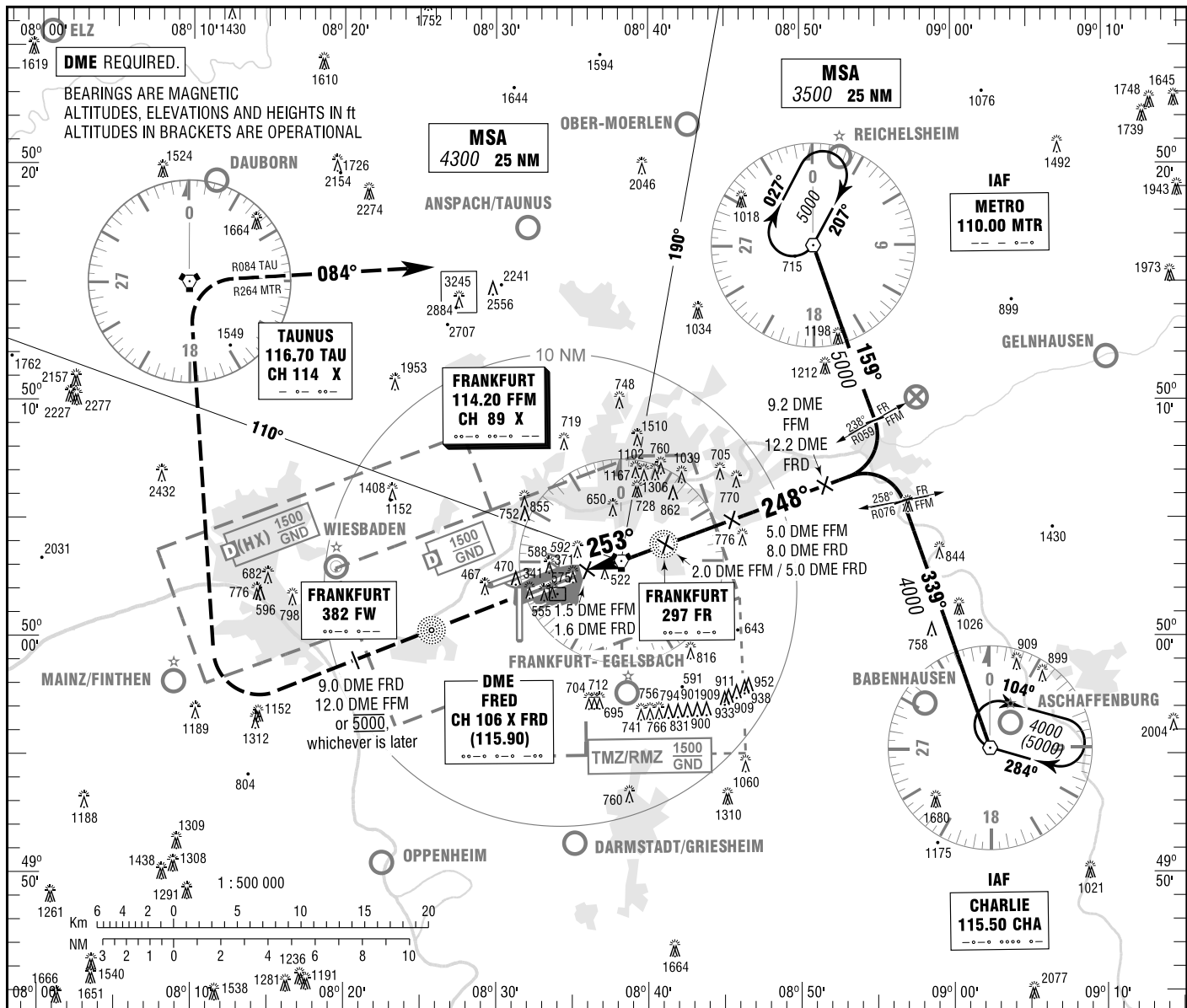
FRANKFURT MAIN
VOR
RWY 25C

ATIS	118.025	TOWER	118.775	APRON	121.750
LANGEN RADAR (N)	120.800		119.900		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950
DIRECTOR	127.275				

ELEV 364
OCH RELATED TO
THR 25C ELEV 364

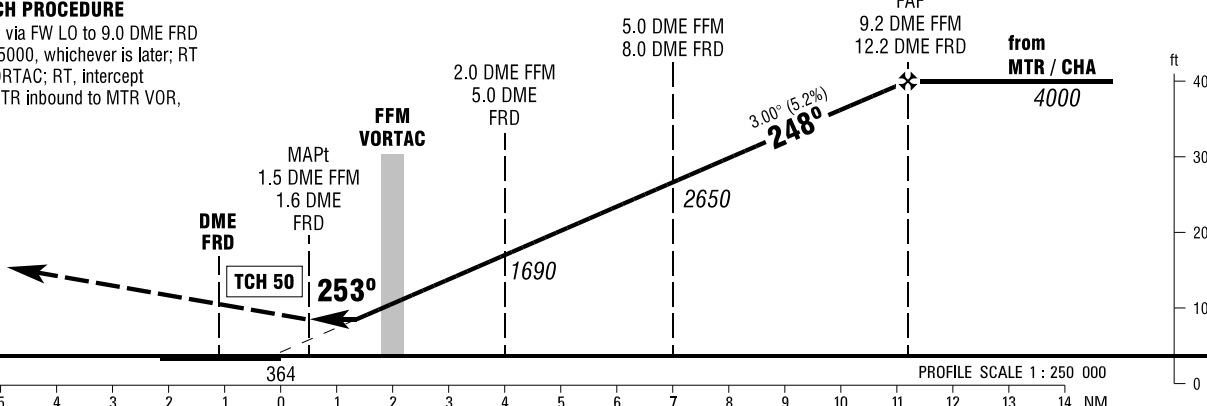
VAR 2° E

INSTRUMENT
APPROACH
CHART - ICAO



MISSED APPROACH PROCEDURE

Climb straight ahead via FW LO to 9.0 DME FRD (12.0 DME FFM) or 5000, whichever is later; RT inbound to TAU DVORTAC; RT, intercept R084 TAU / R264 MTR inbound to MTR VOR, maintain 5000.



OCA (OCH)	A	B	C	D
VOR/DME	840 (480)	840 (480)	840 (480)	840 (480)

DME FFM	0	1	2	3	4	5	6	7	8	9
DIST THR	2	3	4	5	6	7	8	9	10	11
ALTITUDE	1060	1370	1690	2010	2330	2650	2970	3280	3600	3920

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
2.0 DME FFM/5.0 DME FRD - MAPt (3.5 NM)	MIN:SEC	2:37	2:06	1:45	1:30	1:19	1:10
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Variation, procedure, obstacles revised.

INSTRUMENT
APPROACH
CHART - ICAO

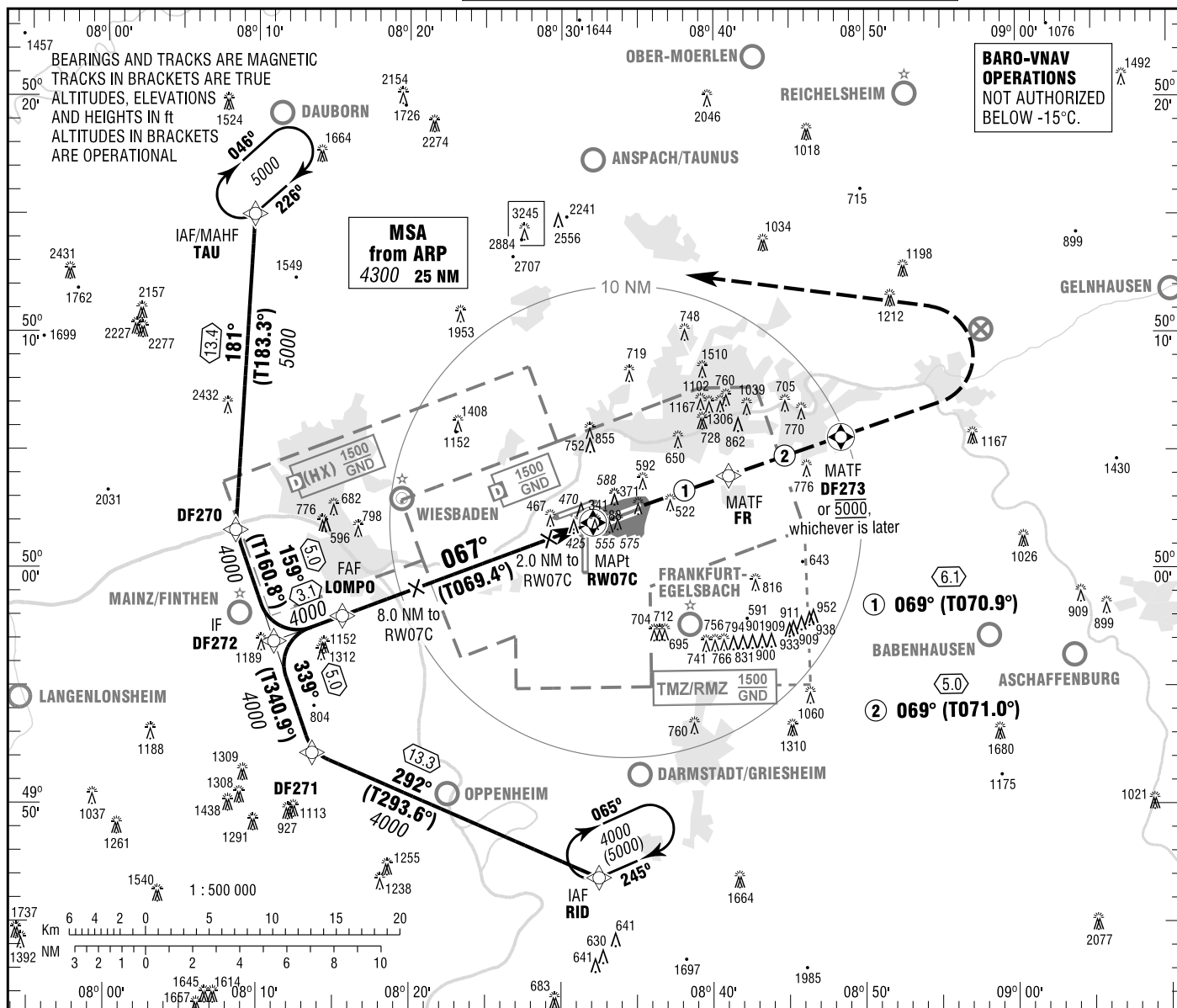
VAR 2° E

ELEV 364
OCH RELATED TO
THR 07C ELEV 329

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275

TOWER 118.775
GROUND 121.800
APRON 121.750
121.850
121.950

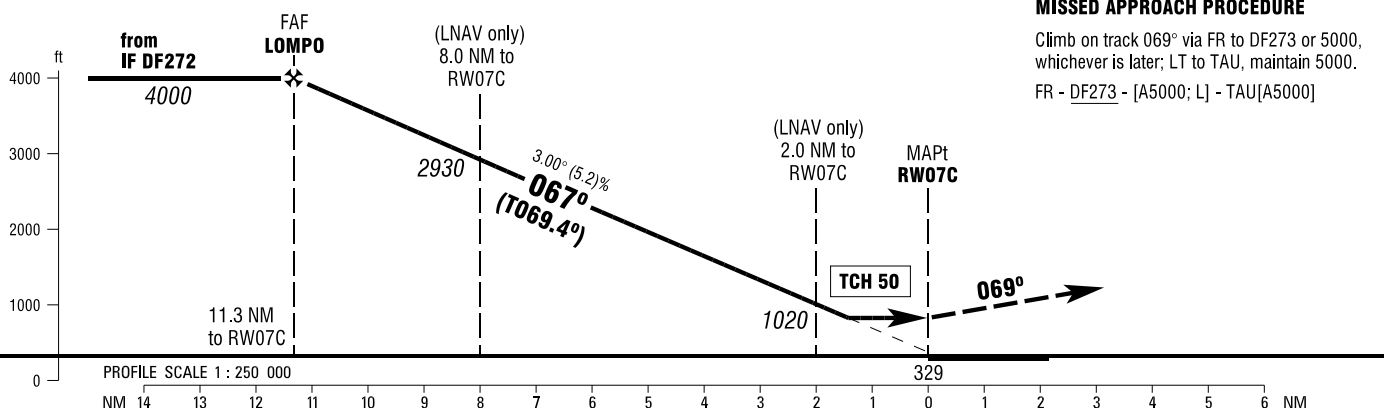
FRANKFURT MAIN
RNAV (GPS) Z
RWY 07C



MISSED APPROACH PROCEDURE

Climb on track 069° via FR to DF273 or 5000, whichever is later; LT to TAU, maintain 5000.

FR - DF273 - [A5000; L] - TAU[A5000]



OCA (OCH)	A	B	C	D
LNAV	790 (460)	820 (490)	840 (510)	840 (510)
LNAV / VNAV	680 (350)	680 (350)	680 (350)	720 (390)

DIST THR / RW07C	11	10	9	8	7	6	5	4	3	2
ALTITUDE	3890	3570	3250	2930	2610	2290	1980	1660	1340	1020

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
LOMPO - RW07C (11.3 NM)	MIN:SEC	8:29	6:47	5:39	4:51	4:14	3:46
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Variation, procedure, obstacles revised.

FRANKFURT MAIN
RNAV (GPS) Z
RWY 07R

ATIS118.025
LANGEN RADAR (N)120.800
LANGEN RADAR (S)125.350

DIRECTOR127.275
TOWER119.900
GROUND121.800

APRON121.750
121.850
121.950

ELEV364
OCH RELATED TO
THR 07R ELEV 328

VAR 2° E

INSTRUMENT
APPROACH
CHART - ICAO

from IF DF277
4000

FAF ROBSA

(LNAV only)
8.0 NM to RWY07R

2930

3.00° (5.2%)
067° (T069.4°)

1020

MAPt RW07R

TCH 50

066°

PROFILE SCALE 1: 250 000

NM 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 NM

OCA (OCH)	A	B	C	D
LNAV	810 (480)	810 (480)	830 (500)	840 (510)
LNAV / VNAV	680 (350)	680 (350)	680 (350)	680 (350)

DIST THR / RWY07R	11	10	9	8	7	6	5	4	3	2
ALTITUDE	3890	3570	3250	2930	2610	2290	1970	1660	1340	1020

MISSSED APPROACH PROCEDURE

Climb on track 066° to FFM; RT on track 087° to DF278 or 5000, whichever is later; RT to RID, maintain 5000.

FFM[R] - DF278 - [A5000; R] - RID[A5000]

AIRAC AMDT 02/17

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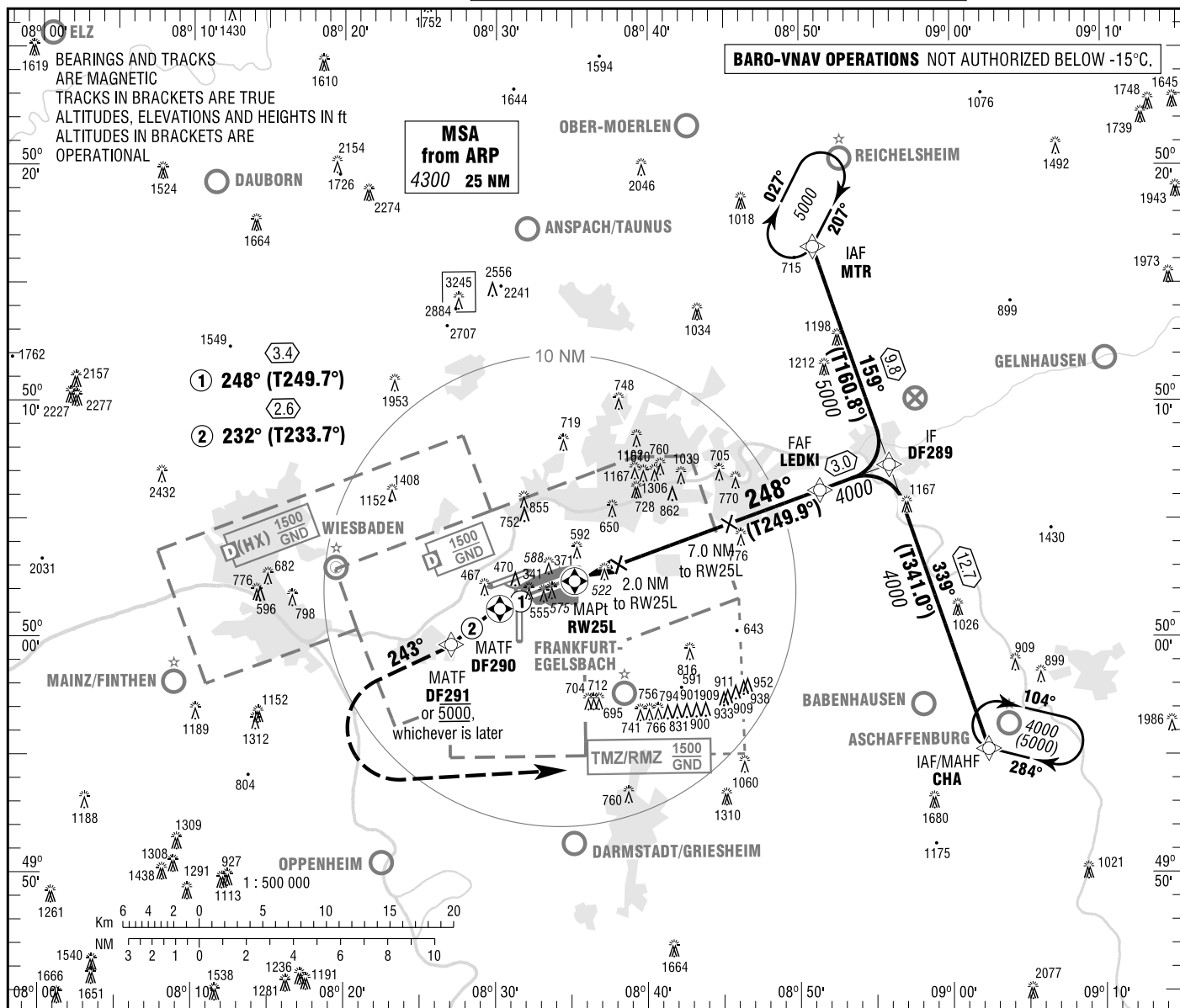
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 25L ELEV 362

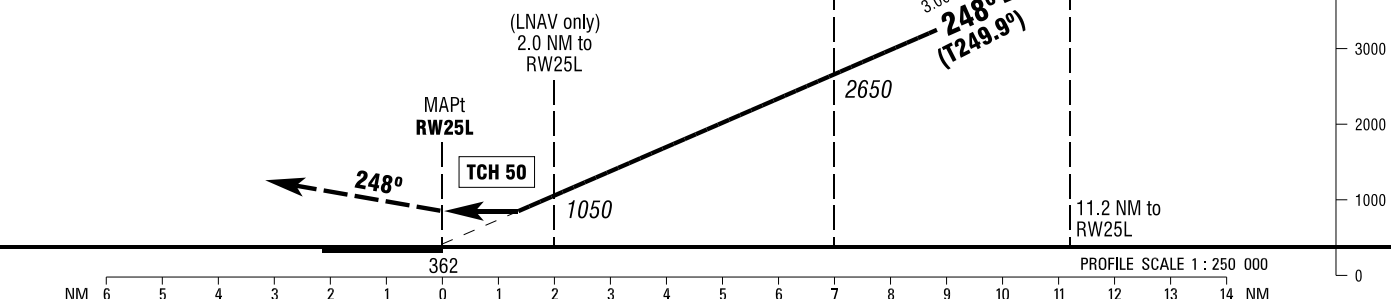
ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	119.900		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
RNAV (GPS) Z
RWY 25L



MISSED APPROACH PROCEDURE

Climb on track 248° to DF290; LT, on track 232° to DF291;
RT, on track 243°, climb to 5000; LT to CHA, maintain 5000.
DF290[L] - DF291[R] - [A5000; L] - CHA[A5000]



OCA (OCH)	A	B	C	D
LNAV	770 (410)	820 (460)	820 (460)	830 (460)
LNAV / VNAV	770 (410)	770 (410)	770 (410)	770 (410)

DIST THR / RW25L	2	3	4	5	6	7	8	9	10	11
ALTITUDE	1050	1370	1690	2010	2330	2650	2960	3280	3600	3920

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
LEDKI - RW25L (11.2 NM)	MIN:SEC	8:24	6:43	5:36	4:48	4:12	3:44
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Variation, procedure, obstacles revised.

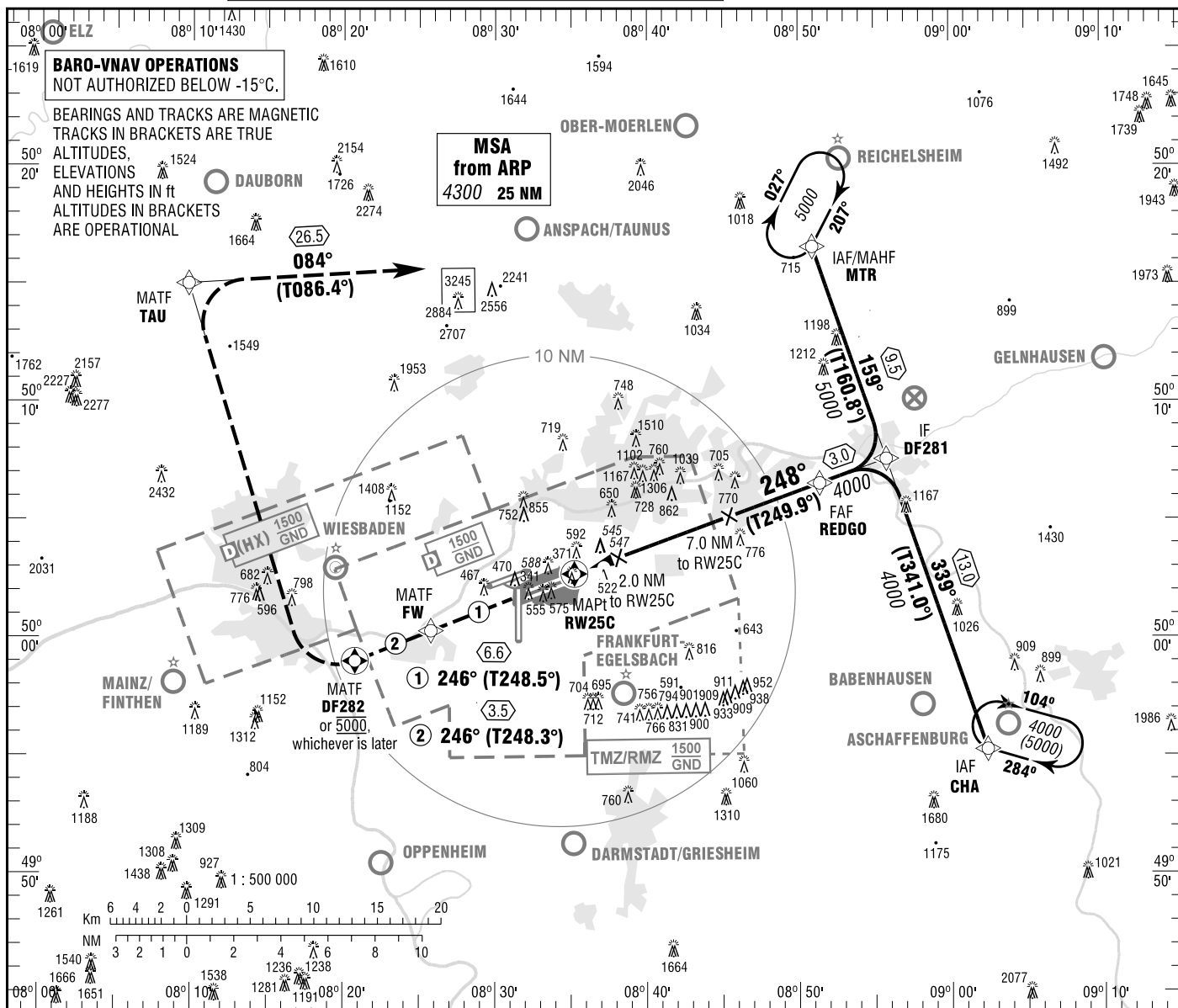
FRANKFURT MAIN
RNAV (GPS) Z
RWY 25C

ATIS	118.025	TOWER	118.775	APRON	121.750
LANGEN RADAR (N)	120.800		119.900		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950
DIRECTOR	127.275				

ELEV 364
OCH RELATED TO
THR 25C ELEV 364

VAR 2° E

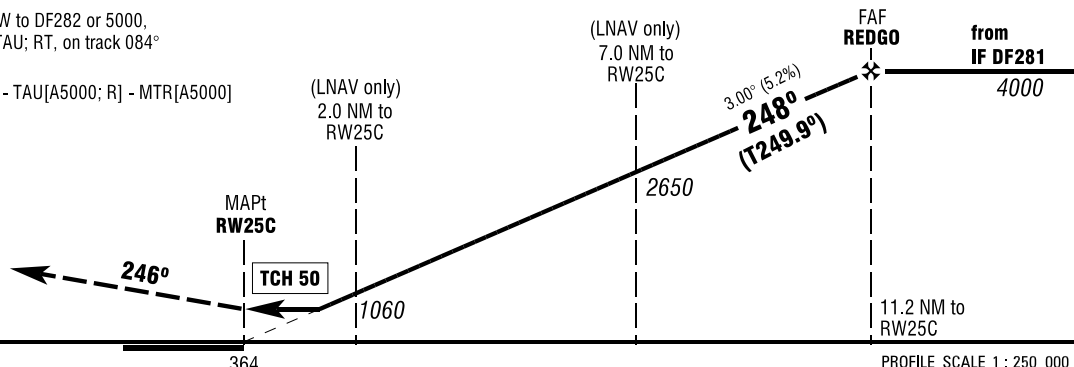
**INSTRUMENT
APPROACH
CHART - ICAO**



MISSED APPROACH PROCEDURE

Climb on track 246° via FW to DF282 or 5000, whichever is later; RT to TAU; RT, on track 084° to MTR, maintain 5000.

FW - DF282 - [A5000; R] - TAU[A5000; R] - MTR[A5000]



OCA (OCH)	A	B	C	D
LNAV	800 (430)	800 (430)	840 (470)	840 (470)
LNAV / VNAV	800 (430)	800 (430)	800 (430)	800 (430)

DIST THR / RW25C	2	3	4	5	6	7	8	9	10	11
ALTITUDE	1060	1370	1690	2010	2330	2650	2970	3280	3600	3920

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
REDGO - RW25C (11.2 NM)	MIN:SEC	8:24	6:43	5:36	4:48	4:12	3:44
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Variation, procedure, obstacles revised.

INSTRUMENT
APPROACH
CHART - ICAO

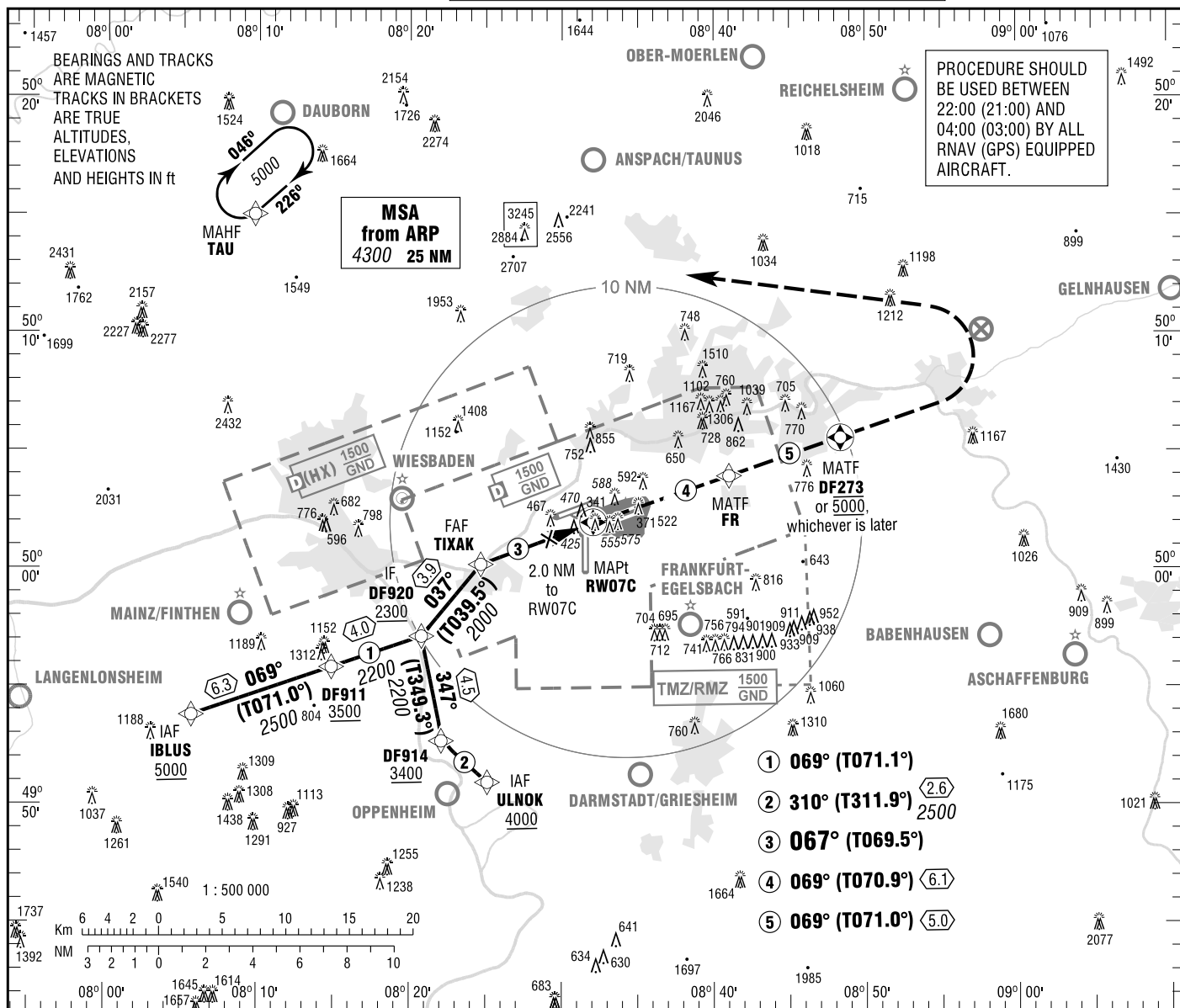
VAR 2° E

ELEV 364
OCH RELATED TO
THR 07C ELEV 329

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275

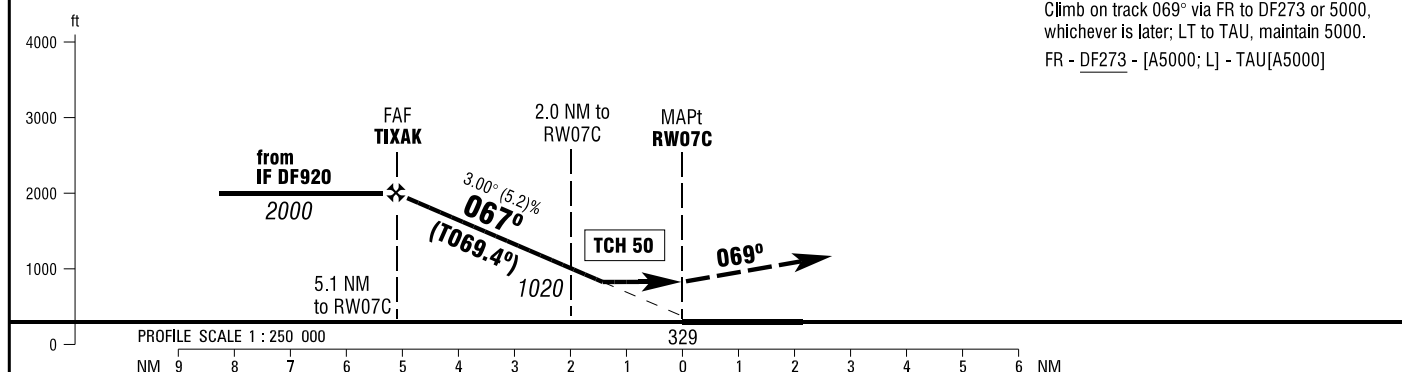
TOWER 118.775
GROUND 119.900
APRON 121.750
121.850
121.950

FRANKFURT MAIN
RNAV (GPS) Y
RWY 07C



MISSED APPROACH PROCEDURE

Climb on track 069° via FR to DF273 or 5000, whichever is later; LT to TAU, maintain 5000.
FR - DF273 - [A5000; L] - TAU[A5000]



OCA (OCH)	A	B	C	D
LNAV	790 (460)	820 (490)	840 (510)	840 (510)

DIST THR / RW07C	4	3	2		
ALTITUDE	1660	1340	1020		

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
TIXAK - RW07C (5.1 NM)	MIN:SEC	3:50	3:04	2:33	2:11	1:55	1:42
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Variation, procedure, obstacles revised.

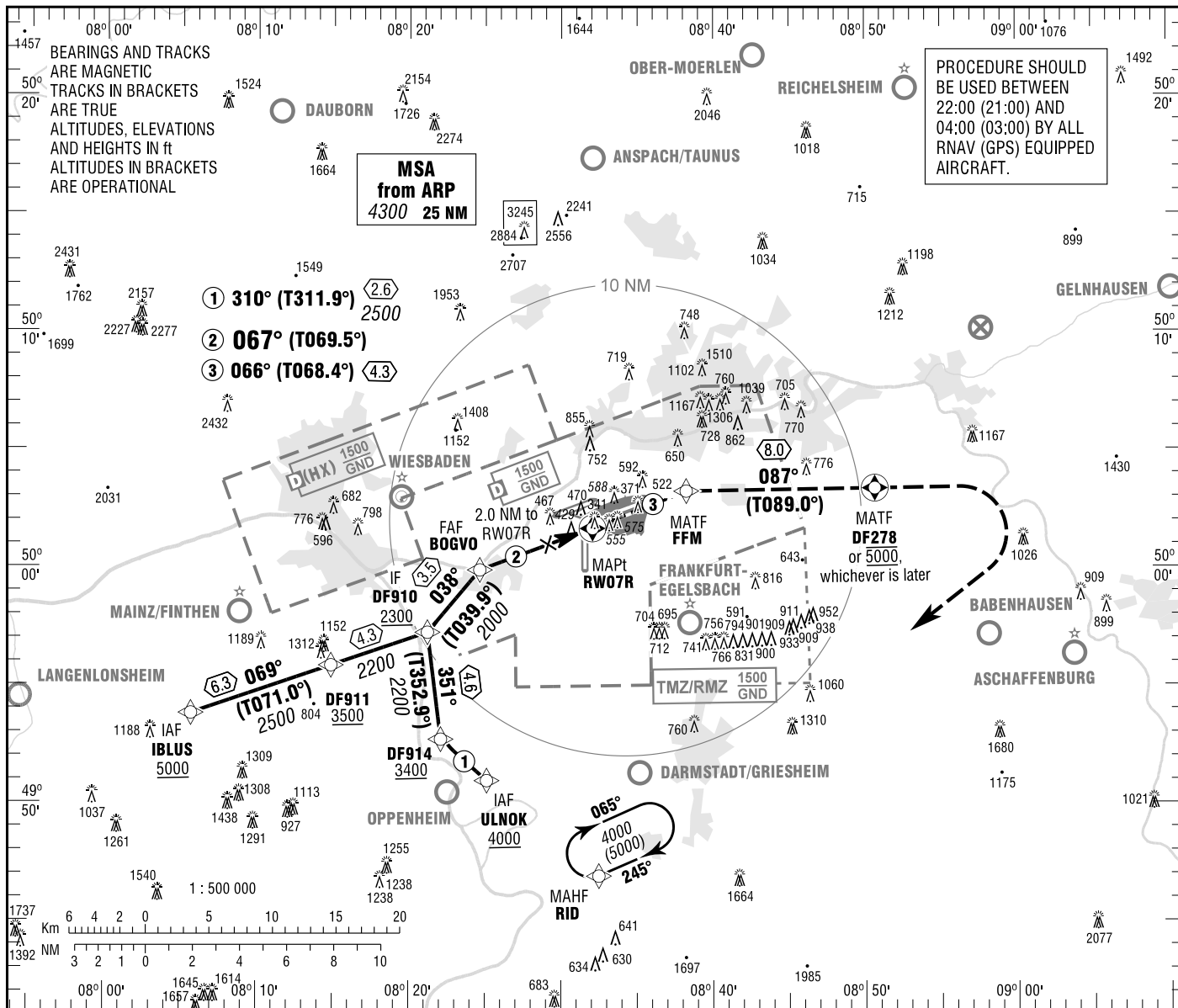
FRANKFURT MAIN
RNAV (GPS) Y
RWY 07R

ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	119.900		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

ELEV 364
OCH RELATED TO
THR 07R ELEV 328

VAR 2° E

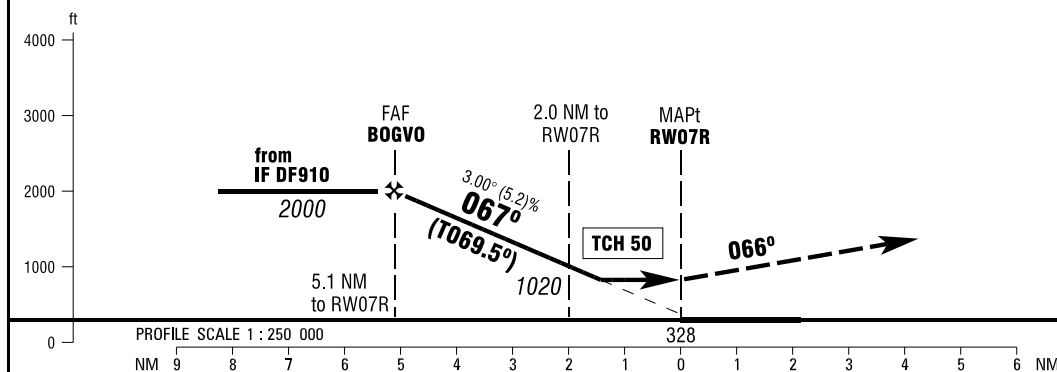
INSTRUMENT
APPROACH
CHART - ICAO



MISSED APPROACH PROCEDURE

Climb on track 066° to FFM; RT on
track 087° to DF278 or 5000,
whichever is later; RT to RID,
maintain 5000.

FFM[R] - DF278 - [A5000; R] - RID[A5000]



OCA (OCH)	A	B	C	D
LNAV	810 (480)	810 (480)	830 (500)	840 (510)

DIST THR / RW07R	4	3	2		
ALTITUDE	1660	1340	1020		

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
BOGVO - RW07R (5.1 NM)	MIN:SEC	3:50	3:04	2:33	2:11	1:55	1:42
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Variation, procedure, obstacles revised.

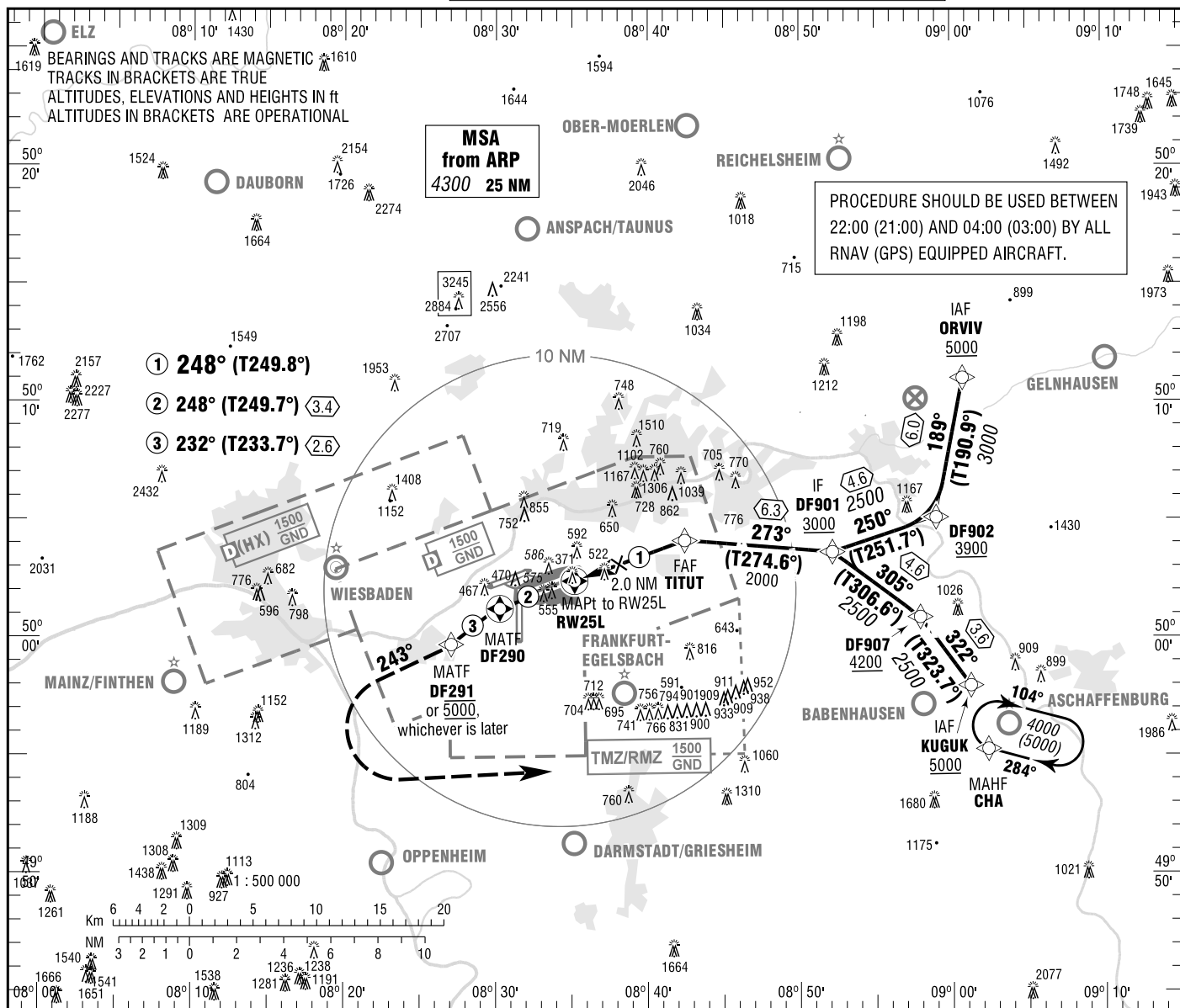
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 25L ELEV 362

ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	119.900		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

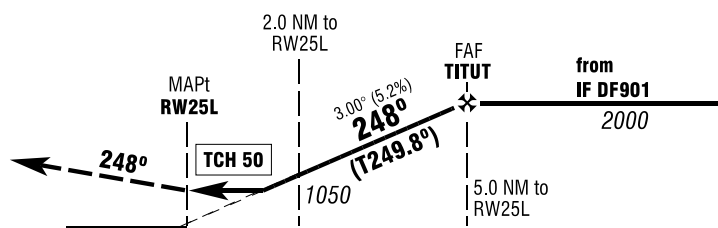
FRANKFURT MAIN
RNAV (GPS) Y
RWY 25L



MISSED APPROACH PROCEDURE

Climb on track 248° to DF290; LT, on track 232° to DF291;
RT, on track 243°, climb to 5000; LT to CHA, maintain 5000.

DF290[L] - DF291[R] - [A5000; L] - CHA[A5000]



OCA (OCH)	A	B	C	D
LNAV	770 (410)	820 (460)	820 (460)	830 (460)

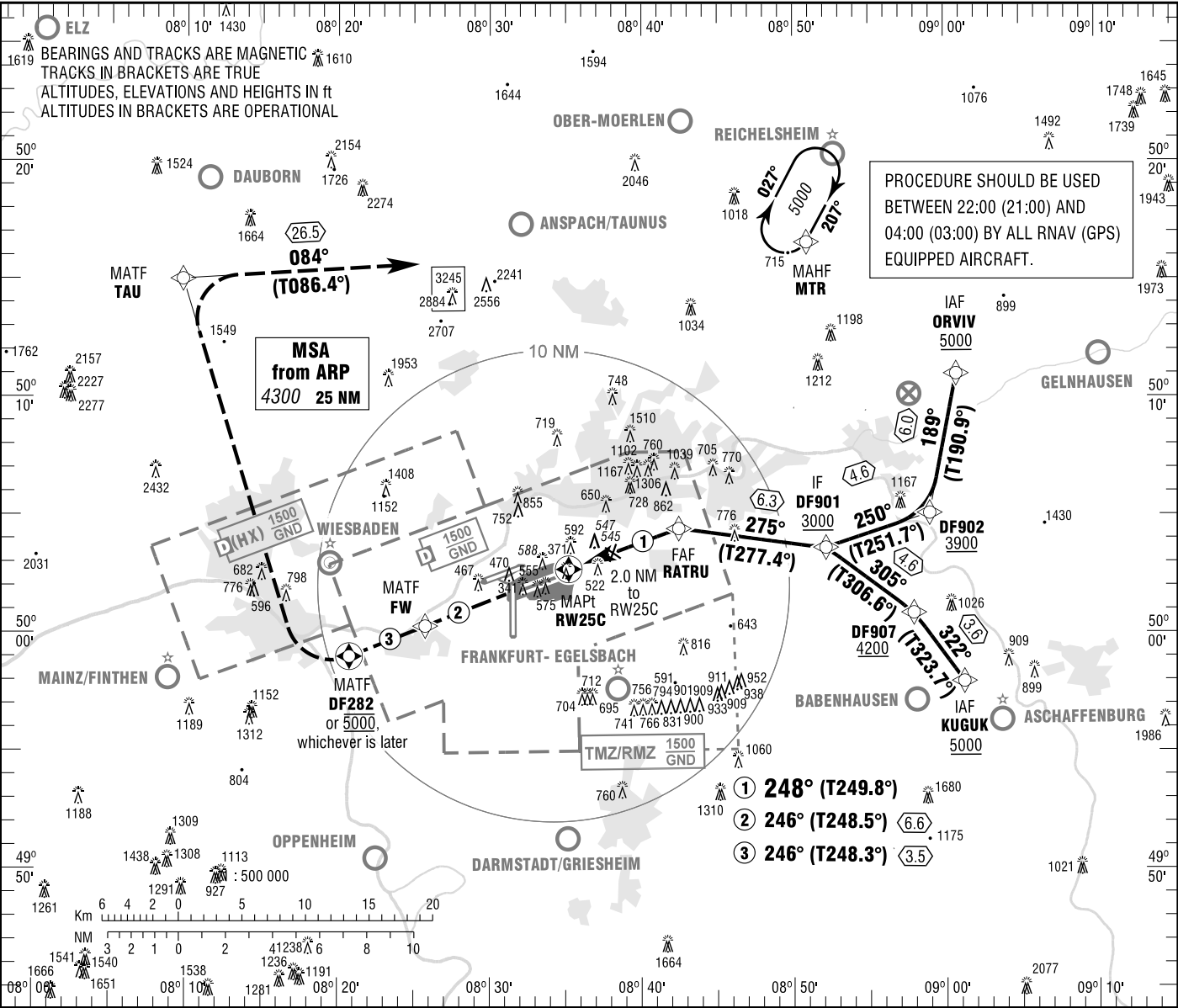
DIST THR / RW25L	2	3	4			
ALTITUDE	1050	1370	1690			

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
TITUT - RW25L (5.0 NM)	MIN:SEC	3:45	3:00	2:30	2:09	1:53	1:40
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Variation, procedure, obstacles revised.

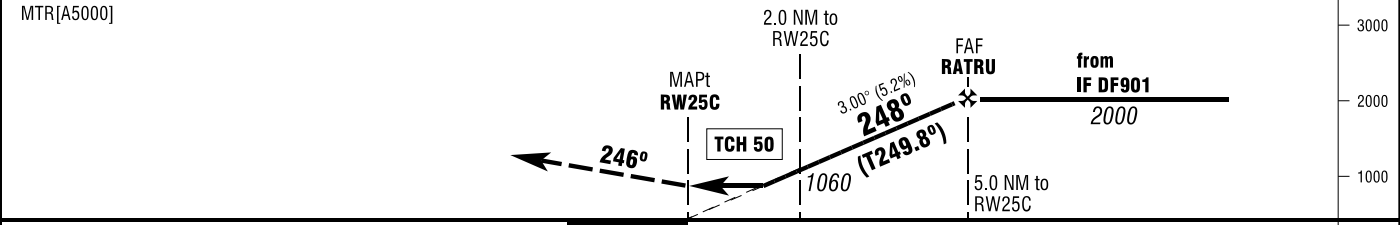
FRANKFURT MAIN RNAV (GPS) Y RWY 25C	ATIS	118.025	TOWER	118.775	APRON	121.750	ELEV 364 OCH RELATED TO THR 25C ELEV 364	VAR 2° E	INSTRUMENT APPROACH CHART - ICAO
	LANGEN RADAR (N)	120.800		119.900		121.850			
	LANGEN RADAR (S)	125.350	GROUND	121.800		121.950			
	DIRECTOR	127.275							



MISSED APPROACH PROCEDURE

Climb on track 246° via FW to DF282 or 5000, whichever is later; RT to TAU; RT, on track 084° to MTR, maintain 5000.

FW - DF282 - [A5000; R] - TAU[A5000; R] - MTR[A5000]



OCA (OCH)	A	B	C	D
	800 (430)	800 (430)	840 (470)	840 (470)
LNAV				

DIST THR / RW25C	2	3	4			
ALTITUDE	1060	1370	1690			

Timing not authorized for defining the MAPt.

GS	kt	80	100	120	140	160	180
RATRU - RW25C (5.0 NM)	MIN:SEC	3:45	3:00	2:30	2:09	1:53	1:40
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

FRANKFURT MAIN
GLS Z
RWY 25C

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH												
Approach Segment	Recom- mended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direc- tion	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from CHA	IF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF382	N 50 03 14.07 E 008 59 52.97	-	(T348.6) 347	8.1	-	-	-	-	RNP APCH	-
	TF	DF381	N 50 07 55.55 E 008 57 13.06	-	(T339.9) 338	5.0	-	A4000+	-	-	RNP APCH	-
	TF	REDGO	N 50 06 33.03 E 008 51 22.94	-	(T249.9) 248	4.0	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from MTR	IF	MTR	N 50 16 34.59 E 008 50 55.05	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF383	N 50 12 36.98 E 008 54 32.61	-	(T149.6) 148	4.6	-	A5000+	-	-	RNP APCH	-
	TF	DF381	N 50 07 55.55 E 008 57 13.06	-	(T159.9) 158	5.0	-	A4000+	-	-	RNP APCH	-
	TF	REDGO	N 50 06 33.03 E 008 51 22.94	-	(T249.9) 248	4.0	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW25C	N 50 02 42.46 E 008 35 13.13	-	-	-	-	-	-	-	RNP APCH	-
	TF	FW	N 50 00 17.84 E 008 25 46.39	-	(T248.5) 246	-	-	-	-	-	RNP APCH	-
	TF	DF282	N 49 59 00.91 E 008 20 46.40	Y	(T248.3) 246	3.5	-	-	-	-	RNP APCH	-
	CA	-	-	-	(T248.3) 246	-	-	@A5000	-	-	RNP APCH	-
	DF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	R	-	-	-	RNP APCH	-
	TF	MTR	N 50 16 34.59 E 008 50 55.05	-	(T086.4) 084	26.5	R	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION								
Recom- mended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) Mag Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	MTR	N 50 16 34.59 E 008 50 55.05	(T209.0) 207	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

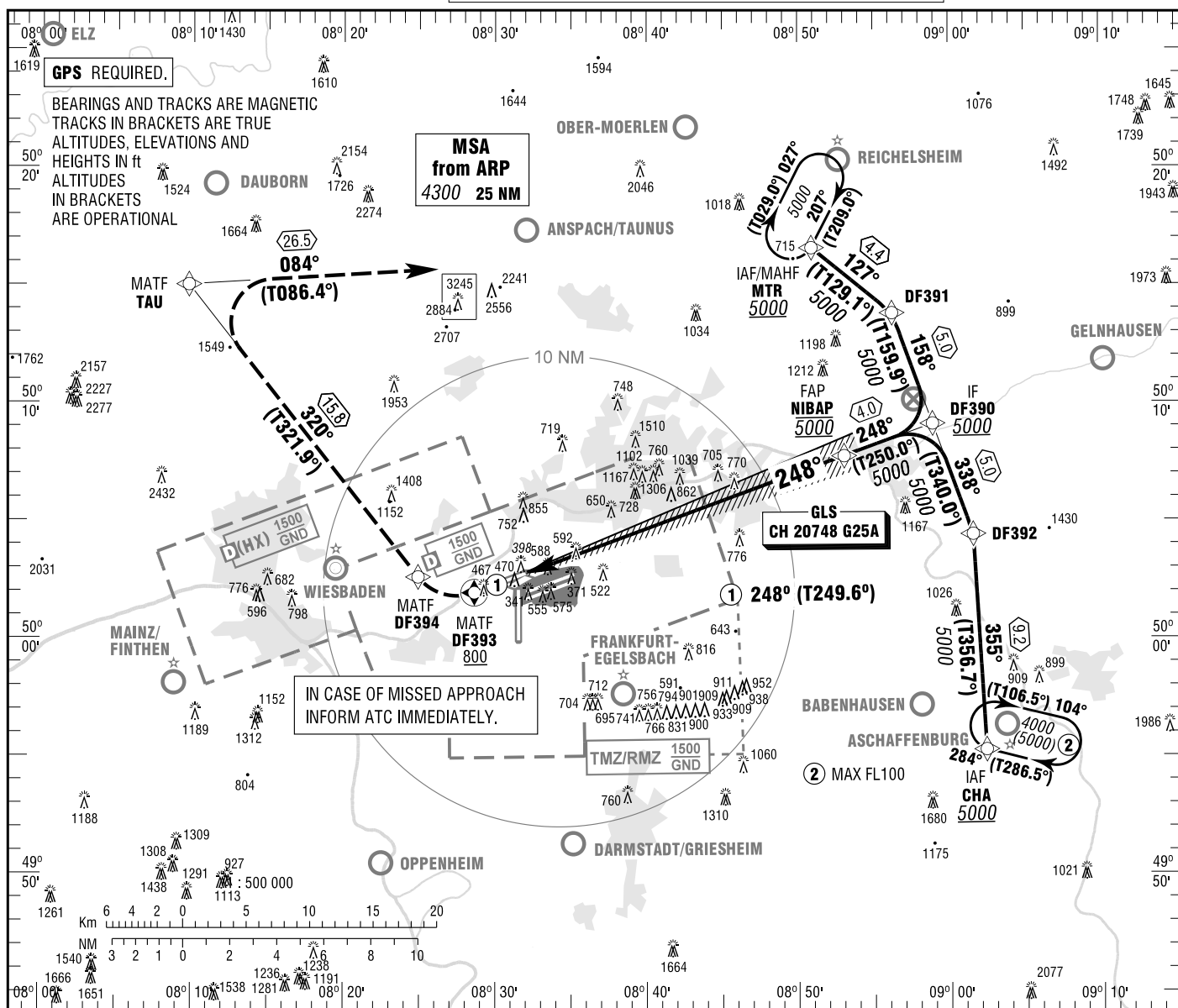
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 25R ELEV 353

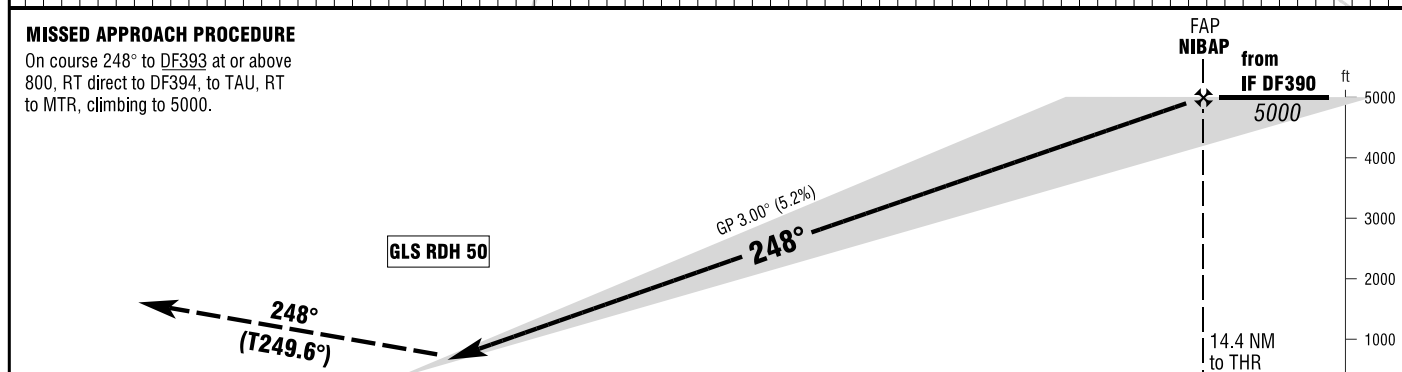
ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	136.500		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
GLS Z
RWY 25R



MISSED APPROACH PROCEDURE

On course 248° to DF393 at or above
800, RT direct to DF394, to TAU, RT
to MTR, climbing to 5000.



NM 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 NM

OCA (OCH)	A	B	C	D
GLS CAT I *	530 (177)	540 (187)	550 (197)	559 (206)
* Minimum climb gradient 5.0% until passing 2000ft				

DIST THR	1	2	3	4	5	6	7	8	9	10	11	12
ALTITUDE	730	1040	1360	1680	2000	2320	2640	2960	3270	3590	3910	4230

GS	kt	80	100	120	140	160	180
NIBAP - THR (14.4 NM)	MIN:SEC	10:48	8:38	7:12	6:10	5:24	4:48
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Page number, variation, procedure, obstacles revised.

FRANKFURT MAIN
GLS Z
RWY 25R

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH

Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from CHA	IF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF392	N 50 04 24.98 E 009 01 33.61	-	(T356.7) 355	9.2	-	-	-	-	RNP APCH	-
	TF	DF390	N 50 09 06.62 E 008 58 54.17	-	(T340.0) 338	5.0	-	A5000+	-	-	RNP APCH	-
	TF	NIBAP	N 50 07 44.35 E 008 53 03.62	-	(T250.0) 248	4.0	-	@A5000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from MTR	IF	MTR	N 50 16 34.59 E 008 50 55.05	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF391	N 50 13 48.20 E 008 56 14.20	-	(T129.1) 127	4.4	-	-	-	-	RNP APCH	-
	TF	DF390	N 50 09 06.62 E 008 58 54.17	-	(T159.9) 158	5.0	-	A5000+	-	-	RNP APCH	-
	TF	NIBAP	N 50 07 44.35 E 008 53 03.62	-	(T250.0) 248	4.0	-	@A5000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW25R	N 50 02 44.97 E 008 32 01.38	-	-	-	-	-	-	-	RNP APCH	-
	CF	DF393	N 50 01 56.38 E 008 28 38.44	Y	(T249.6) 248	-	-	A800+	-	-	RNP APCH	-
	DF	DF394	N 50 02 36.50 E 008 24 56.21	-	-	-	R	-	-	-	RNP APCH	-
	TF	TAU	N 50 15 01.67 E 008 09 45.09	-	(T321.9) 320	15.8	R	-	-	-	RNP APCH	-
	TF	MTR	N 50 16 34.59 E 008 50 55.05	-	(T086.4) 084	26.5	-	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION

Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	MTR	N 50 16 34.59 E 008 50 55.05	(T209.0) 207	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

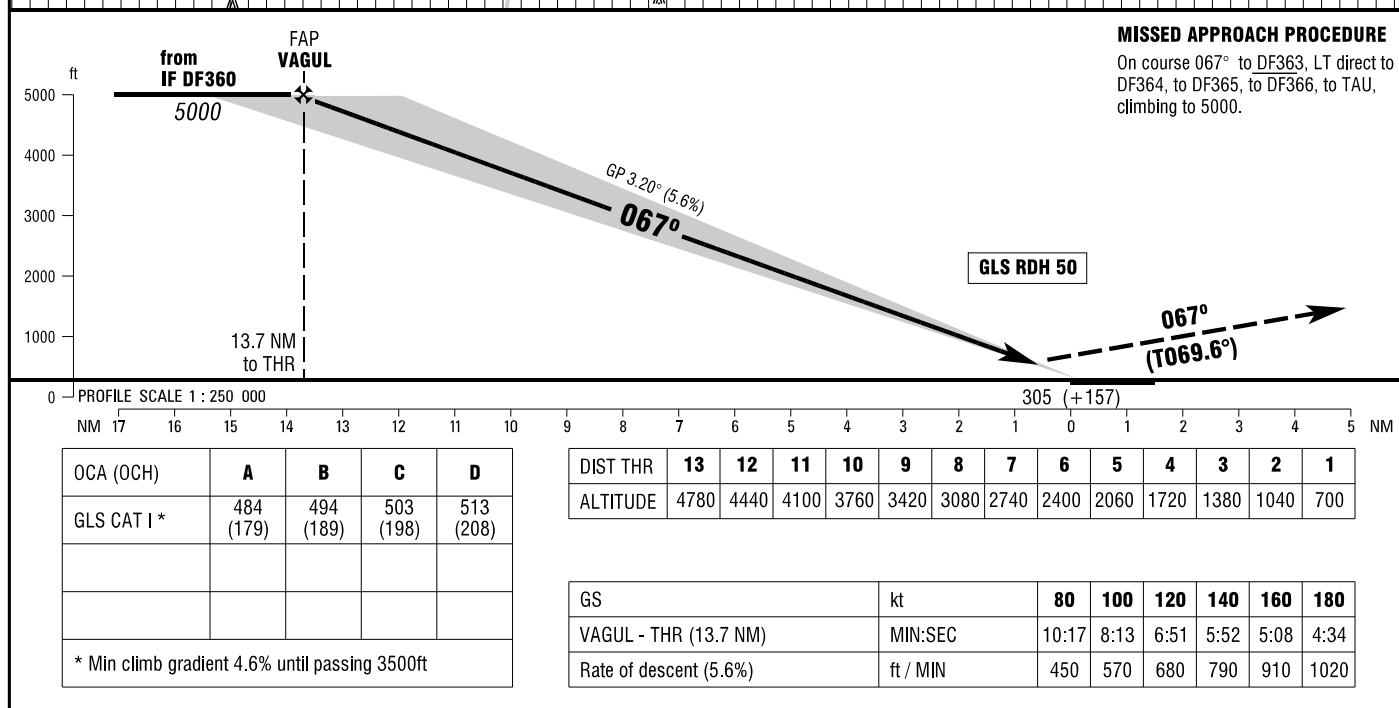
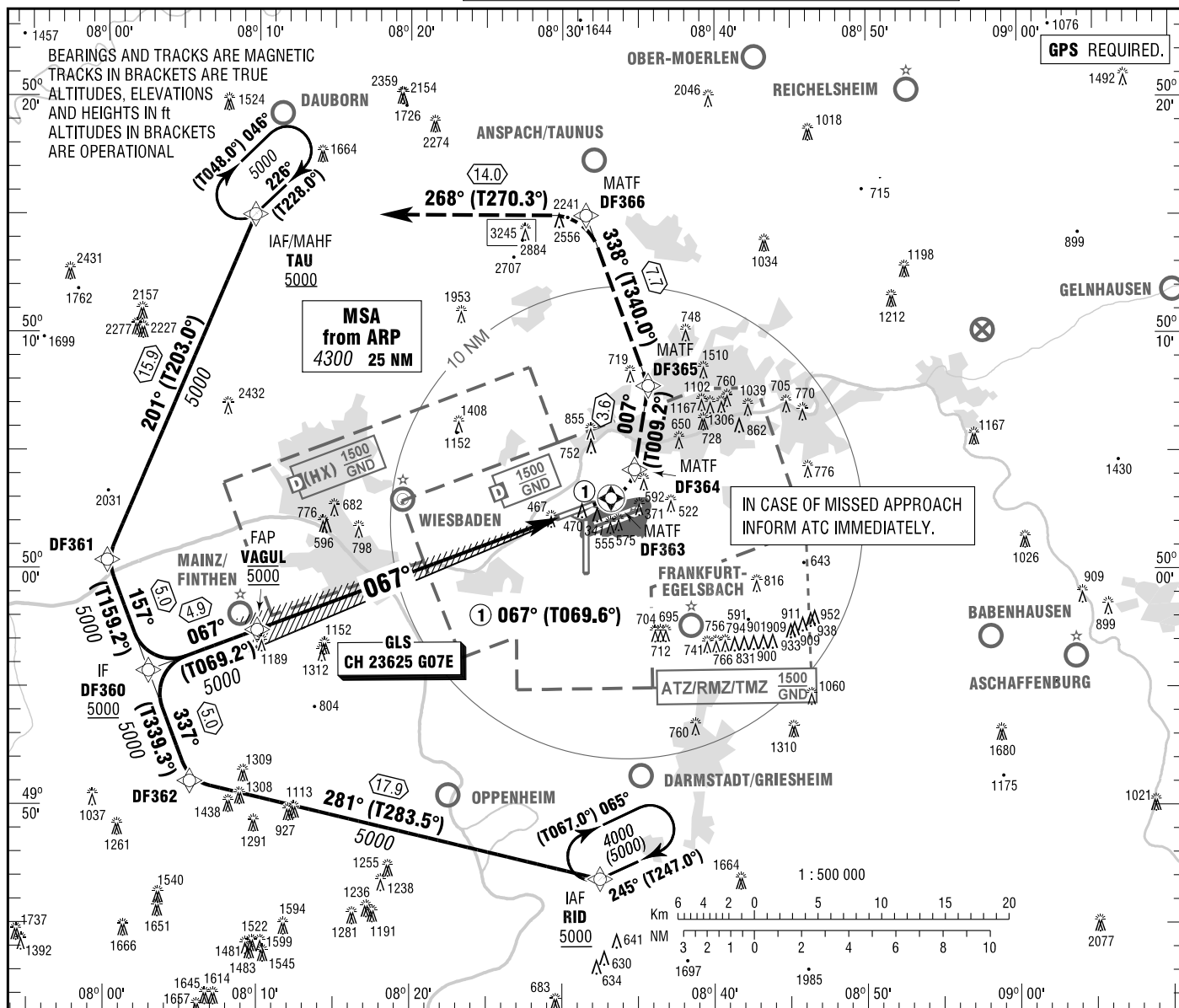
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 07L ELEV 305

ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	136.500		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
GLS Y
RWY 07L



Correction: New chart.

FRANKFURT MAIN
GLS Y
RWY 07L

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH												
Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from TAU	IF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF361	N 50 00 21.94 E 008 00 06.88	-	(T203.0) 201	15.9	-	-	-	-	RNP APCH	-
	TF	DF360	N 49 55 41.72 E 008 02 51.69	-	(T159.2) 157	5.0	-	A5000+	-	-	RNP APCH	-
	TF	VAGUL	N 49 57 25.89 E 008 09 58.65	-	(T069.2) 067	4.9	-	@A5000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from RID	IF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF362	N 49 51 01.45 E 008 05 35.95	-	(T283.5) 281	17.9	-	-	-	-	RNP APCH	-
	TF	DF360	N 49 55 41.72 E 008 02 51.69	-	(T339.3) 337	5.0	-	A5000+	-	-	RNP APCH	-
	TF	VAGUL	N 49 57 25.89 E 008 09 58.65	-	(T069.2) 067	4.9	-	@A5000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW07L	N 50 02 13.40 E 008 29 49.48	-	-	-	-	-	-	-	RNP APCH	-
	CF	DF363	N 50 03 01.83 E 008 33 11.89	Y	(T069.6) 067	-	-	-	-	-	RNP APCH	-
	DF	DF364	N 50 04 14.48 E 008 34 44.77	-	-	-	L	-	-	-	RNP APCH	-
	TF	DF365	N 50 07 47.25 E 008 35 38.53	-	(T009.2) 007	3.6	-	-	-	-	RNP APCH	-
	TF	DF366	N 50 14 59.63 E 008 31 32.61	-	(T340.0) 338	7.7	-	-	-	-	RNP APCH	-
	TF	TAU	N 50 15 01.67 E 008 09 45.09	-	(T270.3) 268	14.0	-	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION								
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	TAU	N 50 15 01.67 E 008 09 45.09	(T228.0) 226	230-	A5000+	1 MIN	R	-
HM	RID	N 49 46 54.09 E 008 32 29.35	(T247.0) 245	230-	A5000+	1 MIN	R	-

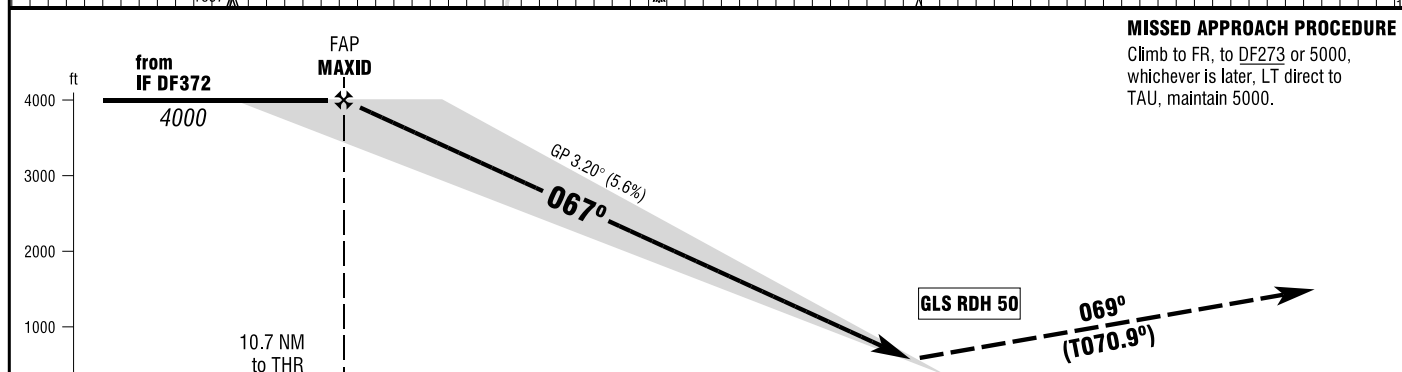
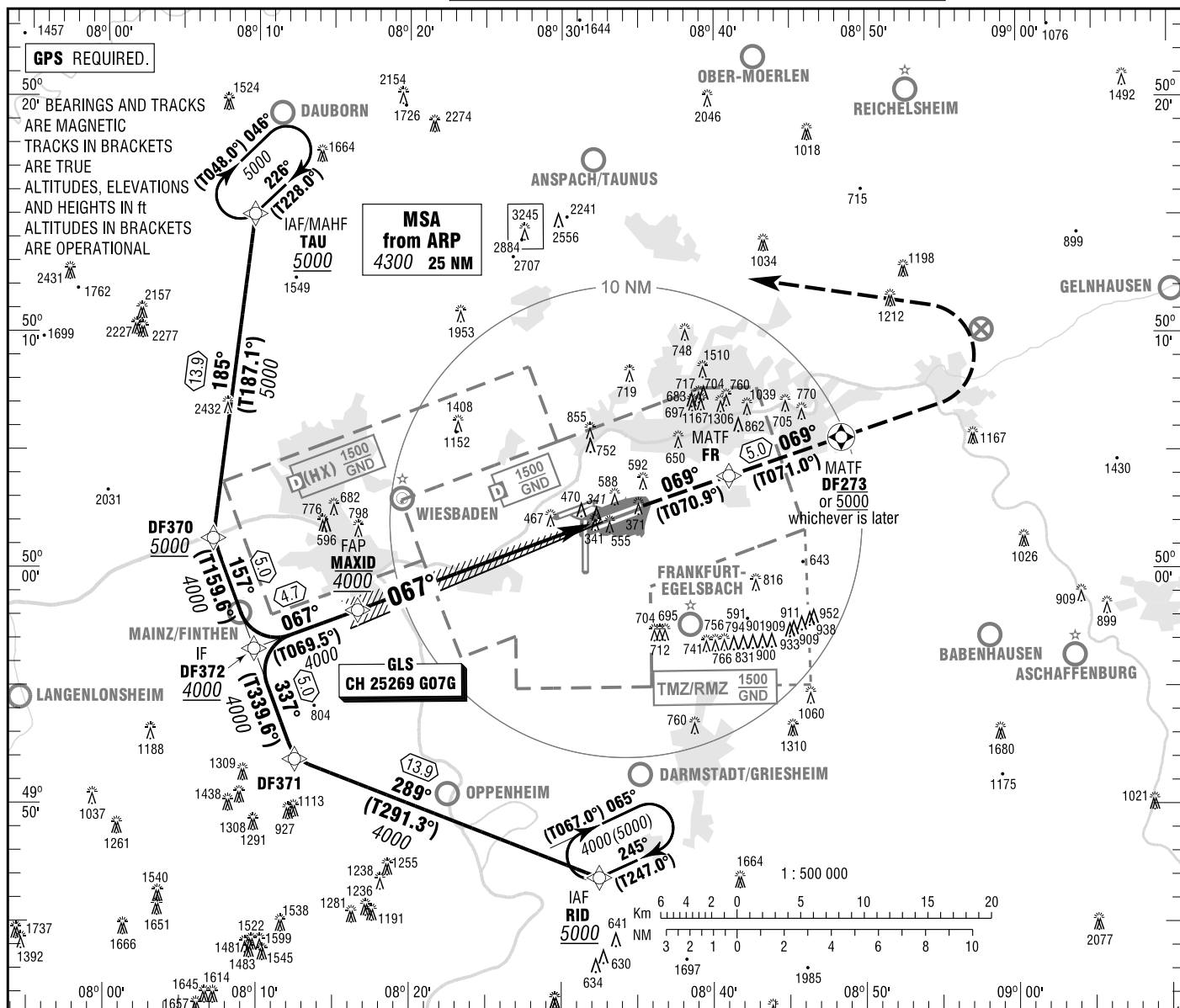
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E
ELEV 364
OCH RELATED TO
THR 07C ELEV 329

ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275

TOWER 118.775
GROUND 119.900
APRON 121.750
121.850
121.950

FRANKFURT MAIN
GLS Y
RWY 07C



OCA (OCH)	A	B	C	D	D _L
GLS CAT I	473 (144)	482 (153)	492 (163)	502 (173)	

DIST THR	10	9	8	7	6	5	4	3	2	1
ALTITUDE	3780	3440	3100	2760	2420	2080	1740	1400	1060	720

GS	kt	80	100	120	140	160	180
MAXID - THR (10.7 NM)	MIN:SEC	8:02	6:25	5:21	4:35	4:01	3:34
Rate of descent (5.6%)	ft / MIN	450	570	680	790	910	1020

Correction: New chart.

FRANKFURT MAIN
GLS Y
RWY 07C

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH

Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from TAU	IF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF370	N 50 01 16.57 E 008 07 05.70	-	(T187.1) 185	13.9	-	A5000+	-	-	RNP APCH	-
	TF	DF372	N 49 56 35.71 E 008 09 47.89	-	(T159.6) 157	5.0	-	A4000+	-	-	RNP APCH	-
	TF	MAXID	N 49 58 13.89 E 008 16 36.05	-	(T069.5) 067	4.7	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from RID	IF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF371	N 49 51 54.78 E 008 12 29.55	-	(T291.3) 289	13.9	-	-	-	-	RNP APCH	-
	TF	DF372	N 49 56 35.71 E 008 09 47.89	-	(T339.6) 337	5.0	-	A4000+	-	-	RNP APCH	-
	TF	MAXID	N 49 58 13.89 E 008 16 36.05	-	(T069.5) 067	4.7	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW07C	N 50 01 57.42 E 008 32 04.67	-	-	-	-	-	-	-	RNP APCH	-
	TF	FR	N 50 03 56.56 E 008 41 00.56	-	(T070.9) 069	-	-	-	-	-	RNP APCH	-
	TF	DF273	N 50 05 34.58 E 008 48 24.46	Y	(T071.0) 069	5.0	-	-	-	-	RNP APCH	-
	CA	-	-	-	(T071.0) 069	-	-	@A5000	-	-	RNP APCH	-
	DF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	L	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION

Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	TAU	N 50 15 01.67 E 008 09 45.09	(T228.0) 226	230-	A5000+	1 MIN	R	-
HM	RID	N 49 46 54.09 E 008 32 29.35	(T247.0) 245	230-	A5000+	1 MIN	R	-

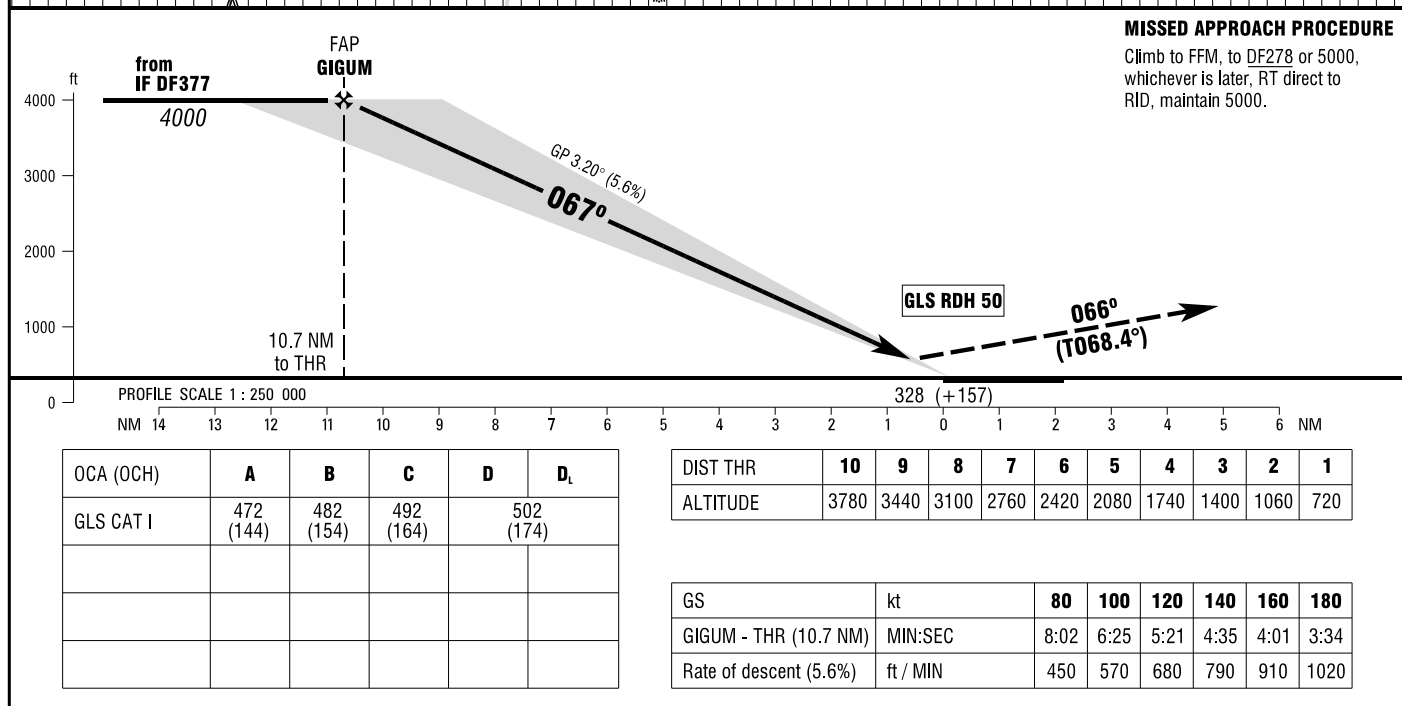
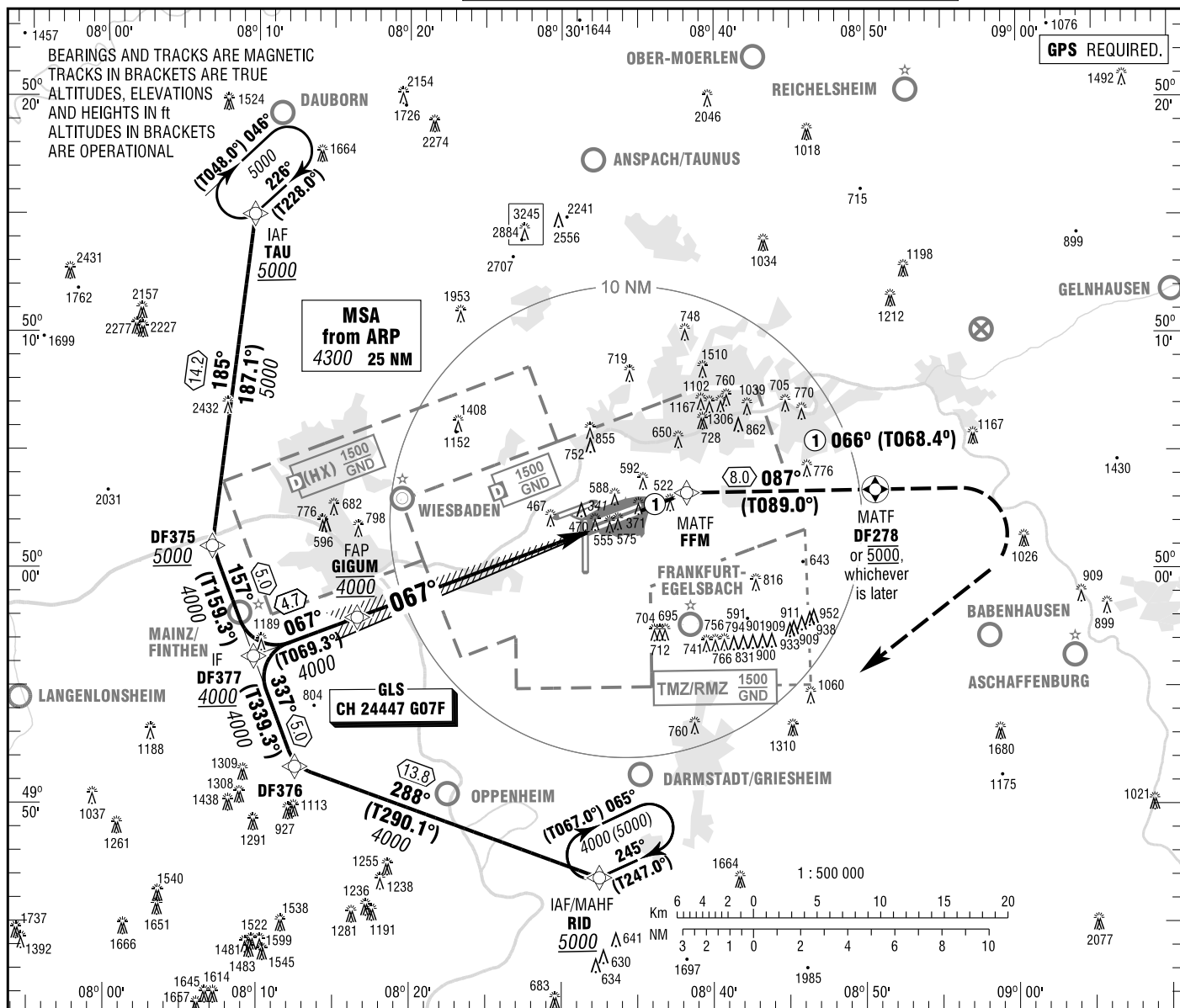
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 07R ELEV 328

ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	119.900		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
GLS Y
RWY 07R



Correction: New chart.

FRANKFURT MAIN
GLS Y
RWY 07R

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH												
Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from TAU	IF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF375	N 50 00 56.48 E 008 07 01.92	-	(T187.1) 185	14.2	-	A5000+	-	-	RNP APCH	-
	TF	DF377	N 49 56 16.13 E 008 09 46.26	-	(T159.3) 157	5.0	-	A4000+	-	-	RNP APCH	-
	TF	GIGUM	N 49 57 55.59 E 008 16 34.23	-	(T069.3) 067	4.7	-	@ A4000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from RID	IF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF376	N 49 51 35.73 E 008 12 30.04	-	(T290.1) 288	13.8	-	-	-	-	RNP APCH	-
	TF	DF377	N 49 56 16.13 E 008 09 46.26	-	(T339.3) 337	5.0	-	A4000+	-	-	RNP APCH	-
	TF	GIGUM	N 49 57 55.59 E 008 16 34.23	-	(T069.3) 067	4.7	-	@ A4000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW07R	N 50 01 39.15 E 008 32 03.03	-	-	-	-	-	-	-	RNP APCH	-
	TF	FFM	N 50 03 13.47 E 008 38 13.53	-	(T068.4) 066	-	-	-	-	-	RNP APCH	-
	TF	DF278	N 50 03 21.16 E 008 50 38.21	Y	(T089.0) 087	8.0	-	-	-	-	RNP APCH	-
	CA	-	-	-	(T089.0) 087	-	-	@ A5000	-	-	RNP APCH	-
	DF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	R	@ A5000	-	-	RNP APCH	-

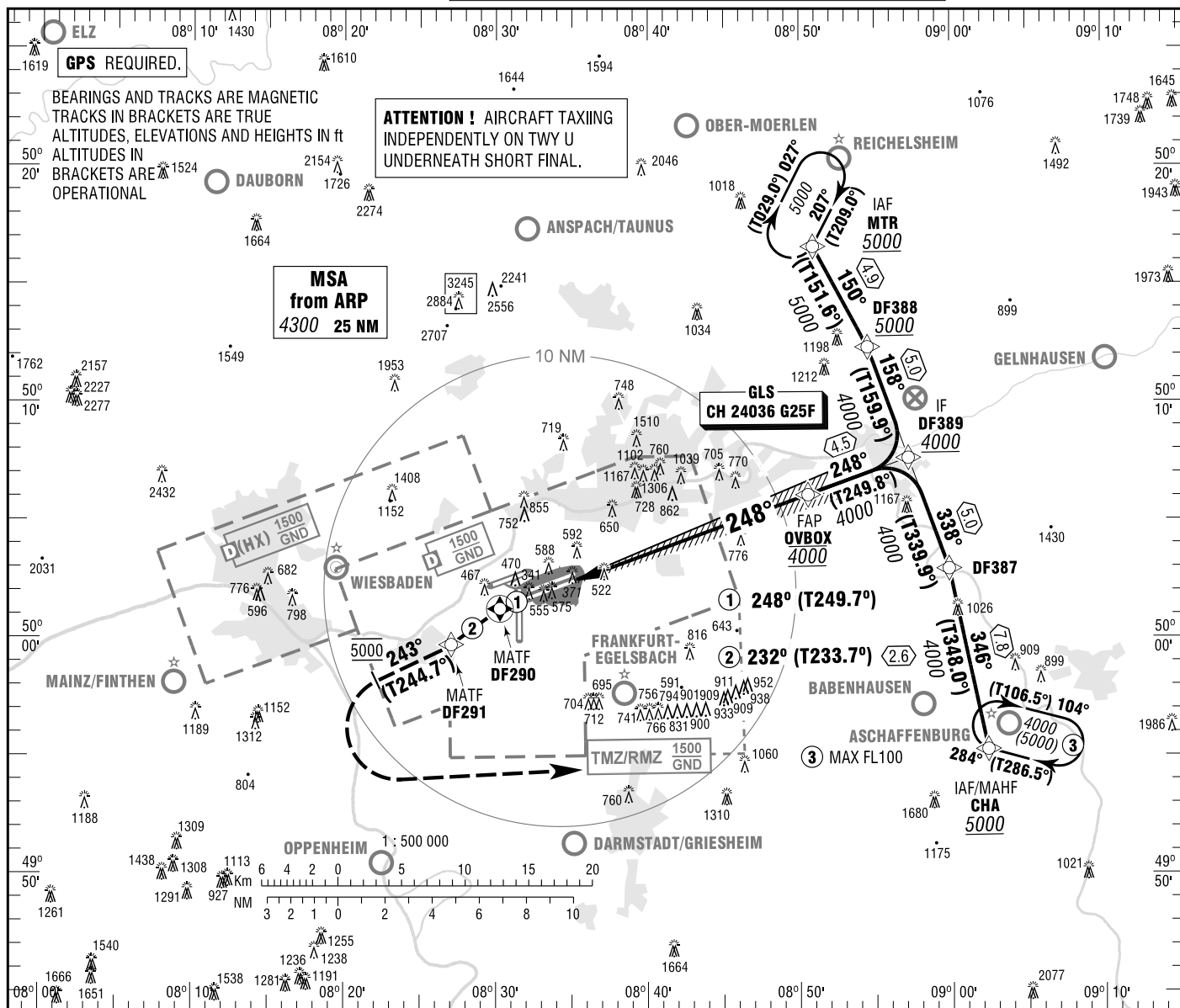
RNAV HOLDING IDENTIFICATION								
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	TAU	N 50 15 01.67 E 008 09 45.09	(T228.0) 226	230-	A5000+	1 MIN	R	-
HM	RID	N 49 46 54.09 E 008 32 29.35	(T247.0) 245	230-	A5000+	1 MIN	R	-

INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E
ELEV 364
OCH RELATED TO
THR 25L ELEV 362

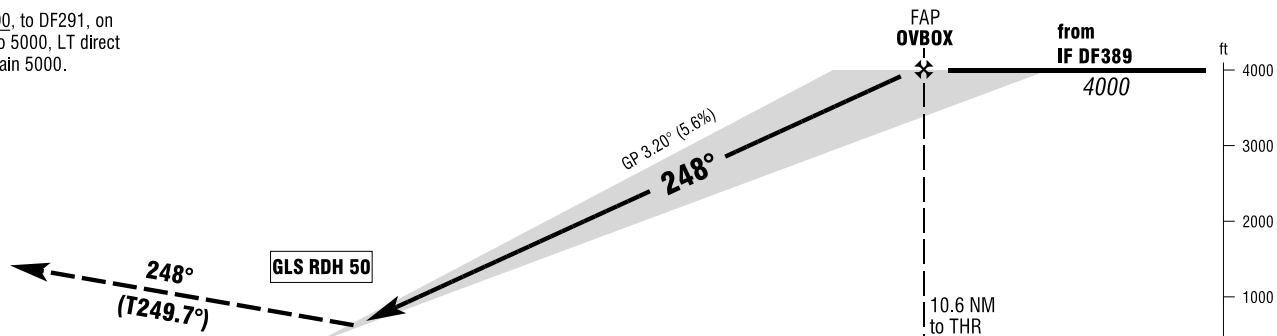
ATIS 118.025 DIRECTOR 127.275 APRON 121.750
LANGEN RADAR (N) 120.800 TOWER 119.900 121.850
LANGEN RADAR (S) 125.350 GROUND 121.800 121.950

FRANKFURT MAIN
GLS Y
RWY 25L



MISSED APPROACH PROCEDURE

Climb to DF290, to DF291, on
course 243° to 5000, LT direct
to CHA, maintain 5000.



OCA (OCH)	A	B	C	D	D _L
GLS CAT I	502 (140)	512 (150)	522 (160)	532 (170)	

DIST THR	1	2	3	4	5	6	7	8	9	10
ALTITUDE	760	1100	1440	1780	2120	2450	2790	3130	3470	3810

GS	kt	80	100	120	140	160	180
OVBOX - THR (10.6 NM)	MIN:SEC	7:57	6:22	5:18	4:33	3:59	3:32
Rate of descent (5.6%)	ft / MIN	450	570	680	790	910	1020

Correction: New chart.

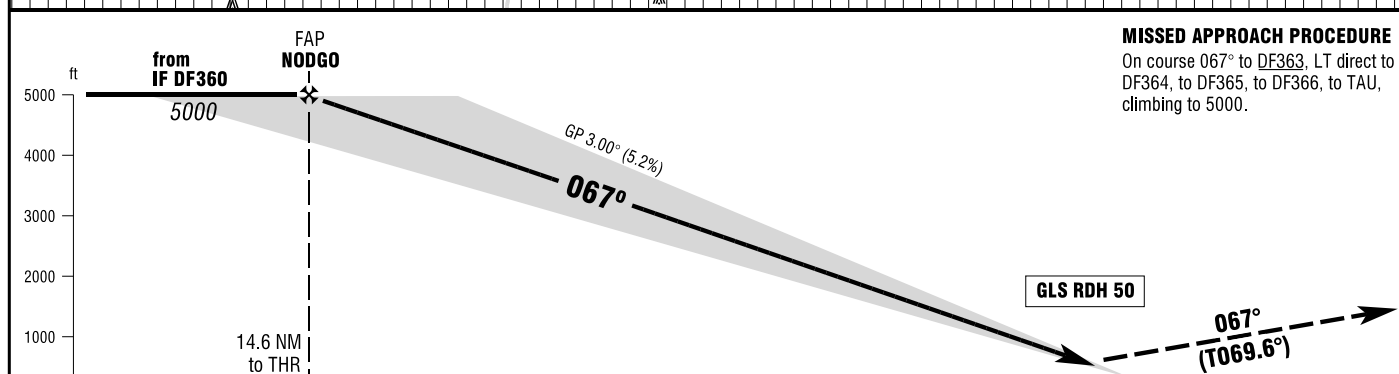
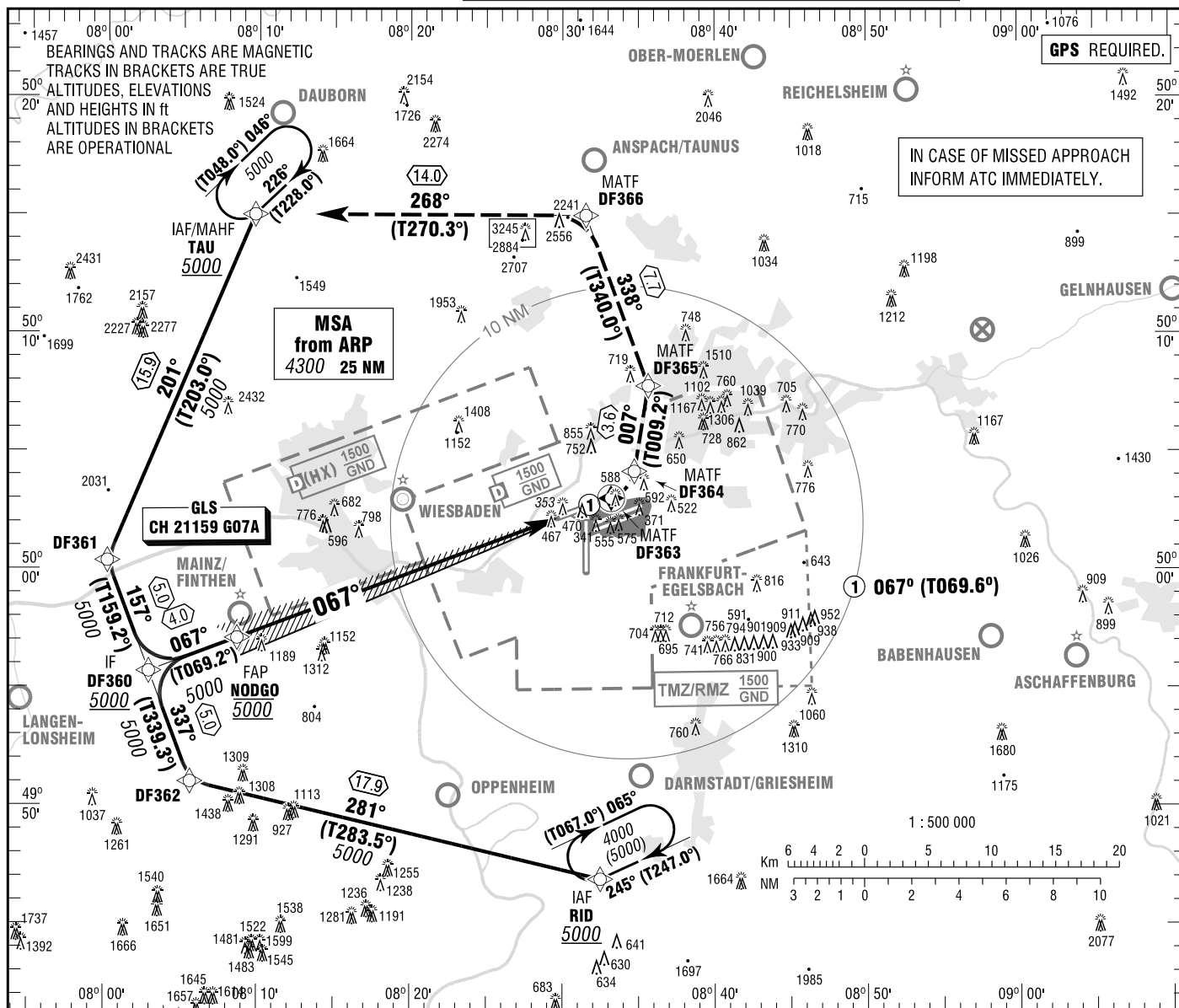
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 07L ELEV 305

ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	136.500		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
GLS Z
RWY 07L



OCA (OCH)	A	B	C	D
GLS CAT I *	484 (179)	494 (189)	503 (198)	513 (208)

* Minimum climb gradient 4.6% until passing 3500ft.

DIST THR	13	12	11	10	9	8	7	6	5	4	3	2	1
ALTITUDE	4500	4180	3860	3540	3230	2910	2590	2270	1950	1630	1320	1000	680

GS	kt	80	100	120	140	160	180
NODGO - THR (14.6 NM)	MIN:SEC	10:57	8:46	7:18	6:15	5:29	4:52
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

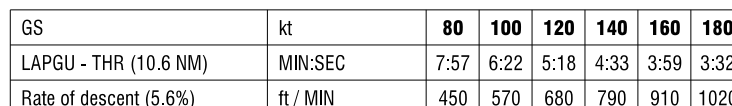
FRANKFURT MAIN
GLS Y
RWY 25L

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH												
Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from CHA	IF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF387	N 50 02 55.81 E 008 59 51.19	-	(T348.0) 346	7.8	-	-	-	-	RNP APCH	-
	TF	DF389	N 50 07 37.29 E 008 57 11.29	-	(T339.9) 338	5.0	-	A4000+	-	-	RNP APCH	-
	TF	OVBOX	N 50 06 03.12 E 008 50 34.50	-	(T249.8) 248	4.5	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from MTR	IF	MTR	N 50 16 34.59 E 008 50 55.05	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF388	N 50 12 18.71 E 008 54 30.86	-	(T151.6) 150	4.9	-	A5000+	-	-	RNP APCH	-
	TF	DF389	N 50 07 37.29 E 008 57 11.29	-	(T159.9) 158	5.0	-	A4000+	-	-	RNP APCH	-
	TF	OVBOX	N 50 06 03.12 E 008 50 34.50	-	(T249.8) 248	4.5	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW25L	N 50 02 24.19 E 008 35 11.51	-	-	-	-	-	-	-	RNP APCH	-
	TF	DF290	N 50 01 13.69 E 008 30 16.69	Y	(T249.7) 248	-	-	-	-	-	RNP APCH	-
	TF	DF291	N 49 59 42.65 E 008 27 04.53	-	(T233.7) 232	2.6	-	-	-	-	RNP APCH	-
	CA	-	-	-	(T244.7) 243	-	-	@A5000	-	-	RNP APCH	-
	DF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	L	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION								
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	MTR	N 50 16 34.59 E 008 50 55.05	(T209.0) 207	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

FRANKFURT MAIN
GLS Y
RWY 25C



FRANKFURT MAIN
GLS Y
RWY 25C

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH												
Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from CHA	IF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF382	N 50 03 14.07 E 008 59 52.97	-	(T348.6) 347	8.1	-	-	-	-	RNP APCH	-
	TF	DF381	N 50 07 55.55 E 008 57 13.06	-	(T339.9) 338	5.0	L	A4000+	-	-	RNP APCH	-
	TF	LAPGU	N 50 06 21.36 E 008 50 35.95	-	(T249.8) 248	4.5	-	@A4000	-	-	RNP APCH	FAF for GLS FAS
Initial Intermediate APCH from MTR	IF	MTR	N 50 16 34.59 E 008 50 55.05	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF383	N 50 12 36.98 E 008 54 32.61	-	(T149.6) 148	4.6	-	A5000+	-	-	RNP APCH	-
	TF	DF381	N 50 07 55.55 E 008 57 13.06	-	(T159.9) 158	5.0	R	A4000+	-	-	RNP APCH	-
	TF	LAPGU	N 50 06 21.36 E 008 50 35.95	-	(T249.8) 248	4.5	-	@A4000	-	-	RNP APCH	FAF for GLS FAS
Missed APCH	-	RW25C	N 50 02 42.46 E 008 35 13.13	-	-	-	-	-	-	-	RNP APCH	-
	TF	FW	N 50 00 17.84 E 008 25 46.39	-	(T248.5) 246	-	-	-	-	-	RNP APCH	-
	TF	DF282	N 49 59 00.91 E 008 20 46.40	Y	(T248.3) 246	3.5	-	-	-	-	RNP APCH	-
	CA	-	-	-	(T248.3) 246	-	-	@A5000	-	-	RNP APCH	-
	DF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	R	-	-	-	RNP APCH	-
	TF	MTR	N 50 16 34.59 E 008 50 55.05	-	(T086.4) 084	26.5	R	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION								
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	MTR	N 50 16 34.59 E 008 50 55.05	(T209.0) 207	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

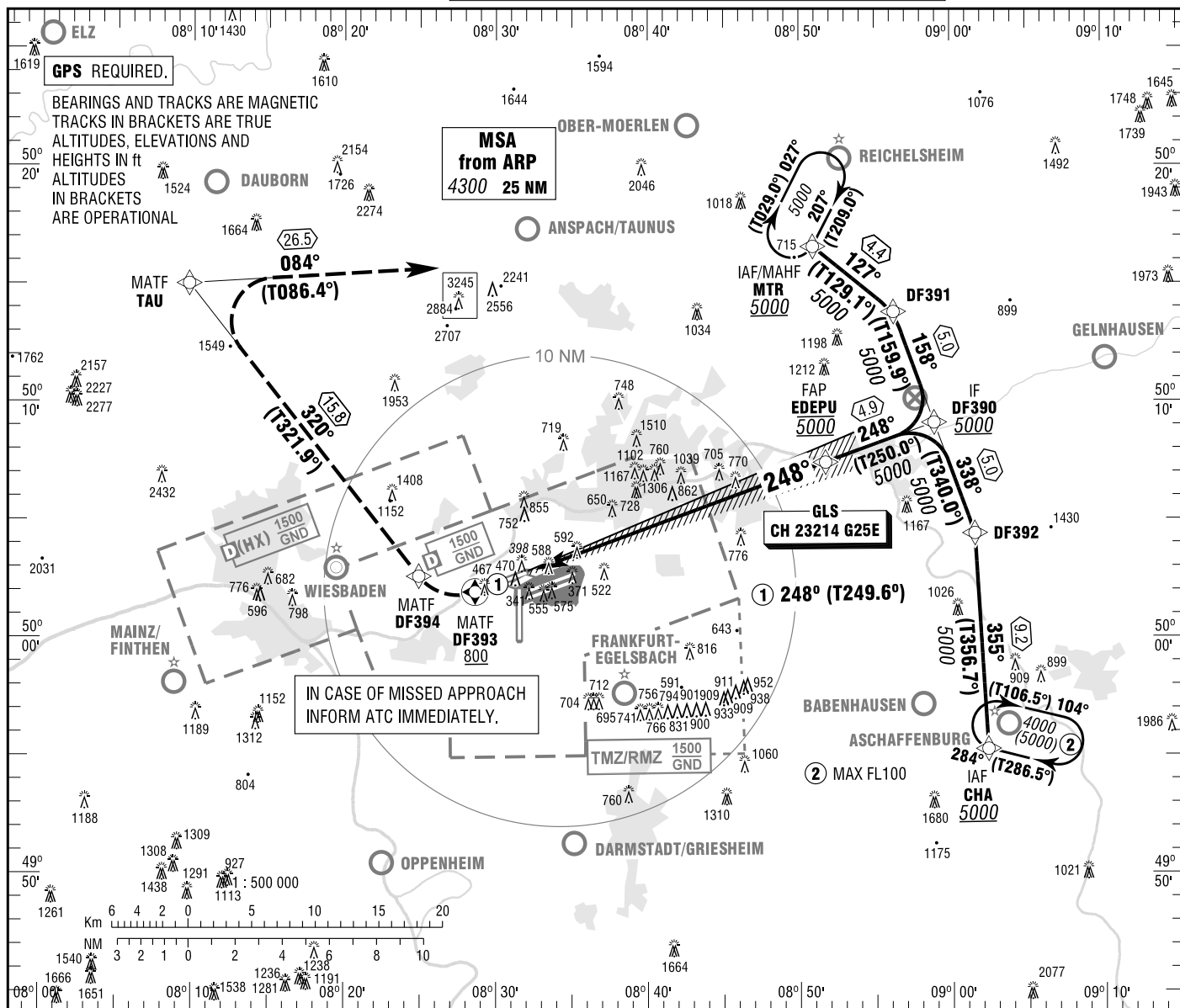
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 25R ELEV 353

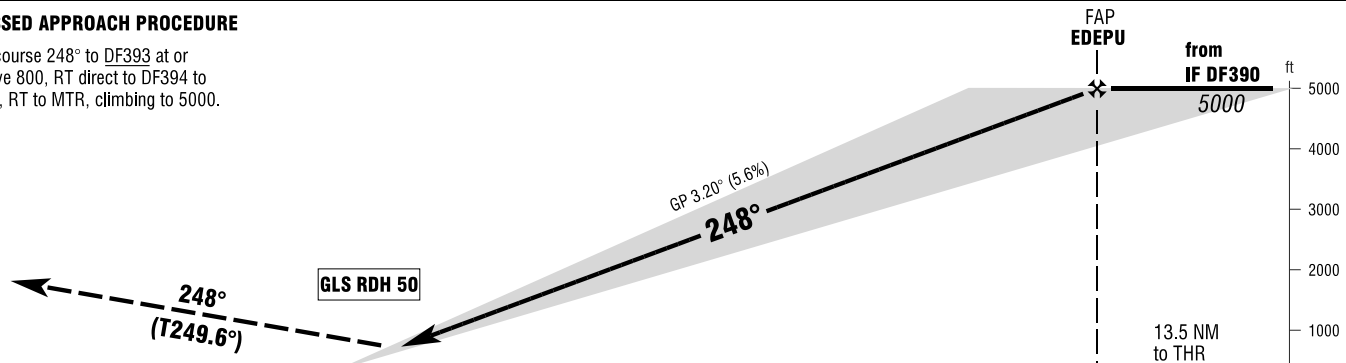
ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	136.500		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
GLS Y
RWY 25R



MISSED APPROACH PROCEDURE

On course 248° to DF393 at or
above 800, RT direct to DF394 to
TAU, RT to MTR, climbing to 5000.



Correction: New procedure.

OCA (OCH)	A	B	C	D
GLS CAT I *	530 (177)	540 (187)	550 (197)	559 (206)
* Min climb gradient 5.0% until passing 2000ft				

DIST THR	1	2	3	4	5	6	7	8	9	10	11	12
ALTITUDE	750	1090	1430	1770	2110	2450	2790	3130	3460	3800	4140	4480

GS	kt	80	100	120	140	160	180
EDEPU - THR (13.5 NM)	MIN:SEC	10:08	8:06	6:45	5:47	5:04	4:30
Rate of descent (5.6%)	ft / MIN	450	570	680	790	910	1020

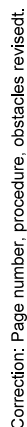
FRANKFURT MAIN
GLS Y
RWY 25R

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH												
Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from CHA	IF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF392	N 50 04 24.98 E 009 01 33.61	-	(T356.7) 355	9.2	-	-	-	-	RNP APCH	-
	TF	DF390	N 50 09 06.62 E 008 58 54.17	-	(T340.0) 338	5.0	-	A5000+	-	-	RNP APCH	-
	TF	EDEPU	N 50 07 25.72 E 008 51 44.46	-	(T250.0) 248	4.9	-	@A5000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from MTR	IF	MTR	N 50 16 34.59 E 008 50 55.05	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF391	N 50 13 48.20 E 008 56 14.20	-	(T129.1) 127	4.4	-	-	-	-	RNP APCH	-
	TF	DF390	N 50 09 06.62 E 008 58 54.17	-	(T159.9) 158	5.0	-	A5000+	-	-	RNP APCH	-
	TF	EDEPU	N 50 07 25.72 E 008 51 44.46	-	(T250.0) 248	4.9	-	@A5000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW25R	N 50 02 44.97 E 008 32 01.38	-	-	-	-	-	-	-	RNP APCH	-
	CF	DF393	N 50 01 56.38 E 008 28 38.44	Y	(T249.6) 248	-	-	A800+	-	-	RNP APCH	-
	DF	DF394	N 50 02 36.50 E 008 24 56.21	-	-	-	R	-	-	-	RNP APCH	-
	TF	TAU	N 50 15 01.67 E 008 09 45.09	-	(T321.9) 320	15.8	R	-	-	-	RNP APCH	-
	TF	MTR	N 50 16 34.59 E 008 50 55.05	-	(T086.4) 084	26.5	-	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION								
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	MTR	N 50 16 34.59 E 008 50 55.05	(T209.0) 207	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

FRANKFURT MAIN
GLS X
RWY 07R



GS	kt	80	100	120	140	160	180
DF520 - THR (4.0 NM)	MIN:SEC	3:00	2:24	2:00	1:43	1:30	1:20
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

FRANKFURT MAIN
GLS X
RWY 07R

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH												
Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from IBLUS	IF	IBLUS	N 49 53 48.13 E 008 05 41.10	-	-	-	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF510	N 49 56 21.47 E 008 17 14.44	-	(T071.0) 069	7.9	-	A3000+	220-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF518	N 49 58 29.28 E 008 21 19.99	-	-	3.5	L	-	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF522: N 50 01 01.86 E 008 14 46.02 ARC Radius: 4.9 NM
	RF	DF519	N 49 59 33.61 E 008 23 20.05	-	-	1.7	R	A1660+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF521: N 49 57 10.42 E 008 24 42.97 ARC Radius: 2.55 NM
	TF	DF520	N 50 00 15.53 E 008 26 14.29	-	(T069.5) 067	2.0	-	@A1660	-	-	A-RNP/RNP-1, RF-Leg required	FAP for GLS FAS
Initial Intermediate APCH from RID	IF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF376	N 49 51 35.73 E 008 12 30.04	-	(T290.1) 288	13.8	-	A4000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF523	N 49 54 53.25 E 008 10 34.73	-	(T339.3) 337	3.5	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF510	N 49 56 21.47 E 008 17 14.44	-	(T071.0) 069	4.5	-	A3000+	220-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF518	N 49 58 29.28 E 008 21 19.99	-	-	3.5	L	-	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF522: N 50 01 01.86 E 008 14 46.02 ARC Radius: 4.9 NM
	RF	DF519	N 49 59 33.61 E 008 23 20.05	-	-	1.7	R	A1660+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF521: N 49 57 10.42 E 008 24 42.97 ARC Radius: 2.55 NM
	TF	DF520	N 50 00 15.53 E 008 26 14.29	-	(T069.5) 067	2.0	-	@A1660	-	-	A-RNP/RNP-1, RF-Leg required	FAP for GLS FAS
Initial Intermediate APCH from CHA	IF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF635	N 49 58 56.74 E 008 43 00.98	-	(T286.5) 284	13.0	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF636	N 49 55 36.32 E 008 29 08.06	-	(T249.6) 248	9.6	-	A5000+	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF517	N 49 54 49.44 E 008 26 14.44	-	(T247.3) 245	2.0	-	A4000+	220-	-	A-RNP/RNP-1, RF-Leg required	-
	RF	DF519	N 49 59 33.61 E 008 23 20.05	-	-	8.1	R	A1660+	-	-	A-RNP/RNP-1, RF-Leg required	ARC Center DF521: N 49 57 10.42 E 008 24 42.97 ARC Radius: 2.55 NM
	TF	DF520	N 50 00 15.53 E 008 26 14.29	-	(T069.5) 067	2.0	-	@A1660	-	-	A-RNP/RNP-1, RF-Leg required	FAP for GLS FAS
Missed APCH	-	RW07R	N 50 01 39.15 E 008 32 03.03	-	-	-	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	FFM	N 50 03 13.47 E 008 38 13.53	-	(T068.4) 066	-	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	TF	DF278	N 50 03 21.16 E 008 50 38.21	Y	(T089.0) 087	8.0	-	-	-	-	A-RNP/RNP-1, RF-Leg required	-
	CA	-	-	-	(T089.0) 087	-	-	@A5000	-	-	A-RNP/RNP-1, RF-Leg required	-
	DF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	R	@A5000	-	-	A-RNP/RNP-1, RF-Leg required	-

RNAV HOLDING IDENTIFICATION								
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	RID	N 49 46 54.09 E 008 32 29.35	(T247.0) 245	230-	A5000+/FL100-	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

FRANKFURT MAIN
GLS Z
RWY 07L

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH

Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track [°]) MAG Track ^c	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from TAU	IF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF361	N 50 00 21.94 E 008 00 06.88	-	(T203.0) 201	15.9	-	-	-	-	RNP APCH	-
	TF	DF360	N 49 55 41.72 E 008 02 51.69	-	(T159.2) 157	5.0	-	A5000+	-	-	RNP APCH	-
	TF	NODGO	N 49 57 06.57 E 008 08 39.25	-	(T069.2) 067	4.0	-	@A5000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from RID	IF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF362	N 49 51 01.45 E 008 05 35.95	-	(T283.5) 281	17.9	-	-	-	-	RNP APCH	-
	TF	DF360	N 49 55 41.72 E 008 02 51.69	-	(T339.3) 337	5.0	-	A5000+	-	-	RNP APCH	-
	TF	NODGO	N 49 57 06.57 E 008 08 39.25	-	(T069.2) 067	4.0	-	@A5000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW07L	N 50 02 13.40 E 008 29 49.48	-	-	-	-	-	-	-	RNP APCH	-
	CF	DF363	N 50 03 01.83 E 008 33 11.89	Y	(T069.6) 067	-	-	-	-	-	RNP APCH	-
	DF	DF364	N 50 04 14.48 E 008 34 44.77	-	-	-	L	-	-	-	RNP APCH	-
	TF	DF365	N 50 07 47.25 E 008 35 38.53	-	(T009.2) 007	3.6	-	-	-	-	RNP APCH	-
	TF	DF366	N 50 14 59.63 E 008 31 32.61	-	(T340.0) 338	7.7	-	-	-	-	RNP APCH	-
	TF	TAU	N 50 15 01.67 E 008 09 45.09	-	(T270.3) 268	14.0	-	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION

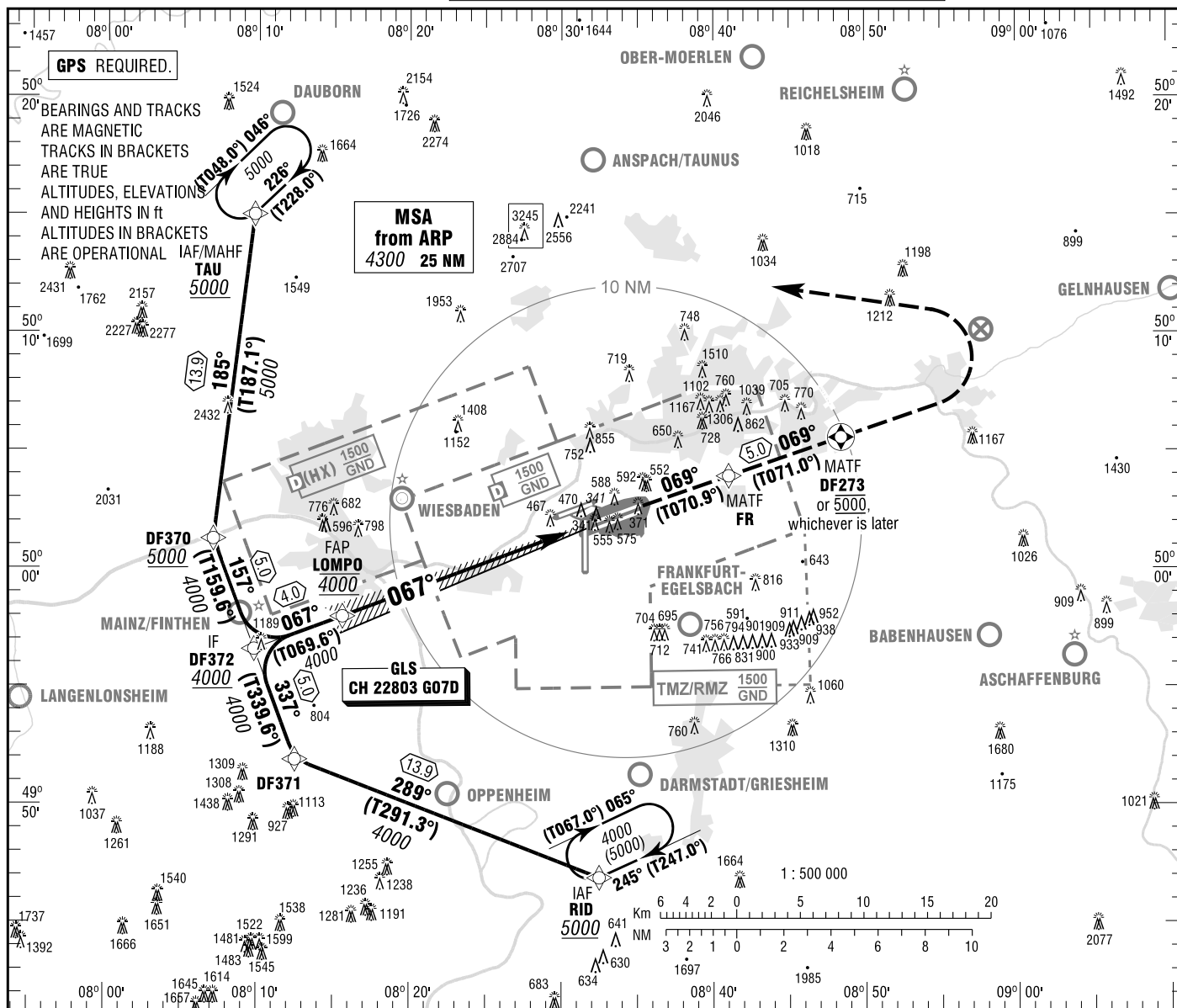
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track [°]) MAG Track ^c	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	TAU	N 50 15 01.67 E 008 09 45.09	(T228.0) 226	230-	A5000+	1 MIN	R	-
HM	RID	N 49 46 54.09 E 008 32 29.35	(T247.0) 245	230-	A5000+	1 MIN	R	-

INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E
ELEV 364
OCH RELATED TO
THR 07C ELEV 329

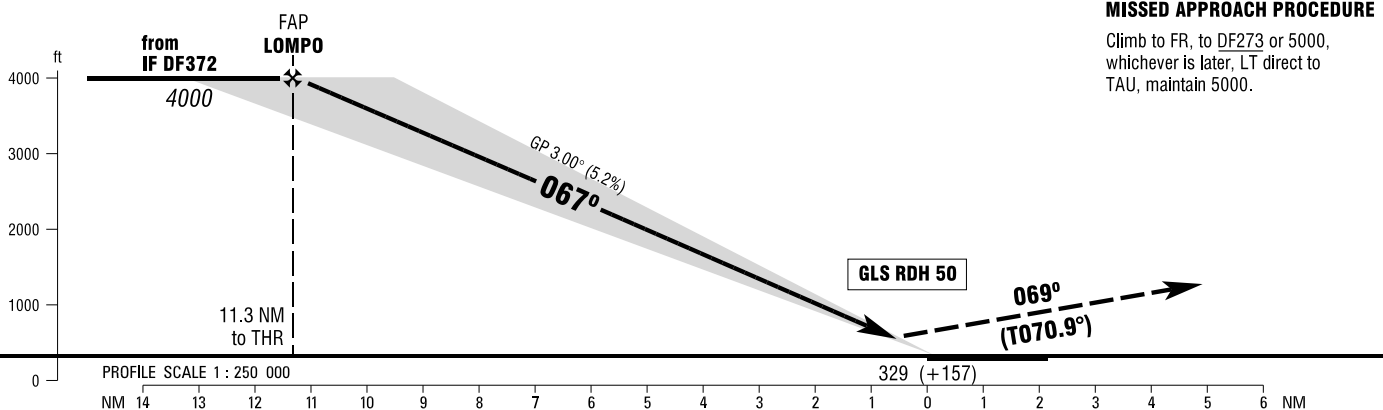
ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275
TOWER 118.775
GROUND 119.900
APRON 121.750
121.850
121.950

FRANKFURT MAIN
GLS Z
RWY 07C



MISSED APPROACH PROCEDURE

Climb to FR, to DF273 or 5000, whichever is later, LT direct to TAU, maintain 5000.



OCA (OCH)	A	B	C	D	D _L
GLS CAT I	473 (144)	482 (153)	492 (163)	502 (173)	

DIST THR	11	10	9	8	7	6	5	4	3	2	1
ALTITUDE	3890	3570	3250	2930	2610	2290	1980	1660	1340	1020	700

GS	kt	80	100	120	140	160	180
LOMPO - THR (11.3 NM)	MIN:SEC	8:29	6:47	5:39	4:51	4:14	3:46
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Page number, variation, procedure, obstacles revised.

FRANKFURT MAIN
GLS Z
RWY 07C

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH

Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from TAU	IF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF370	N 50 01 16.57 E 008 07 05.70	-	(T187.1) 185	13.9	-	A5000+	-	-	RNP APCH	-
	TF	DF372	N 49 56 35.71 E 008 09 47.89	-	(T159.6) 157	5.0	-	A4000+	-	-	RNP APCH	-
	TF	LOMPO	N 49 57 59.15 E 008 15 36.27	-	(T069.6) 067	4.0	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from RID	IF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF371	N 49 51 54.78 E 008 12 29.55	-	(T291.3) 289	13.9	-	-	-	-	RNP APCH	-
	TF	DF372	N 49 56 35.71 E 008 09 47.89	-	(T339.6) 337	5.0	-	A4000+	-	-	RNP APCH	-
	TF	LOMPO	N 49 57 59.15 E 008 15 36.27	-	(T069.6) 067	4.0	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW07C	N 50 01 57.42 E 008 32 04.67	-	-	-	-	-	-	-	RNP APCH	-
	TF	FR	N 50 03 56.56 E 008 41 00.56	-	(T070.9) 069	-	-	-	-	-	RNP APCH	-
	TF	DF273	N 50 05 34.58 E 008 48 24.46	Y	(T071.0) 069	5.0	-	-	-	-	RNP APCH	-
	CA	-	-	-	(T071.0) 069	-	-	@A5000	-	-	RNP APCH	-
	DF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	L	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION

Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	TAU	N 50 15 01.67 E 008 09 45.09	(T228.0) 226	230-	A5000+	1 MIN	R	-
HM	RID	N 49 46 54.09 E 008 32 29.35	(T247.0) 245	230-	A5000+	1 MIN	R	-

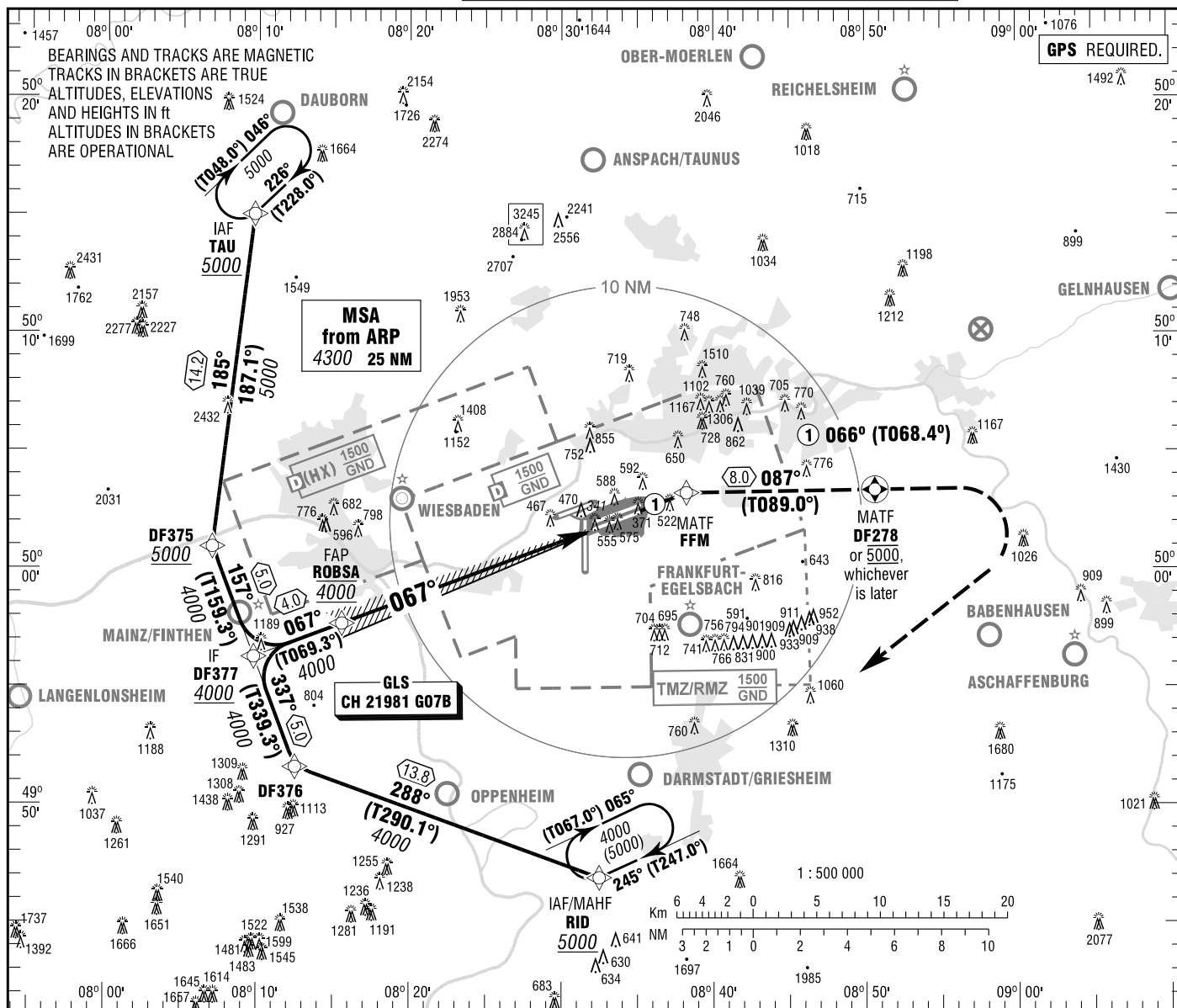
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 07R ELEV 328

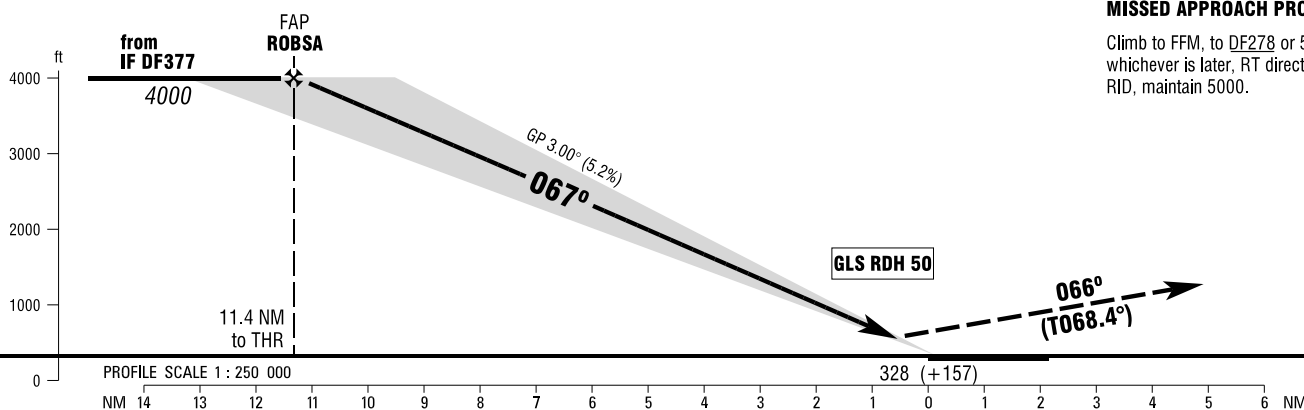
ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	119.900		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
GLS Z
RWY 07R



MISSED APPROACH PROCEDURE

Climb to FFM, to DF278 or 5000, whichever is later, RT direct to RID, maintain 5000.



OCA (OCH)	A	B	C	D	D _L
GLS CAT I	472 (144)	482 (154)	492 (164)	502 (174)	

DIST THR	11	10	9	8	7	6	5	4	3	2	1
ALTITUDE	3890	3570	3250	2930	2610	2290	1970	1660	1340	1020	700

GS	kt	80	100	120	140	160	180
ROBSA - THR (11.4 NM)	MIN:SEC	8:33	6:50	5:42	4:53	4:17	3:48
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Page number, variation, procedure, obstacles revised.

FRANKFURT MAIN
GLS Z
RWY 07R

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH												
Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from TAU	IF	TAU	N 50 15 01.67 E 008 09 45.09	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF375	N 50 00 56.48 E 008 07 01.92	-	(T187.1) 185	14.2	-	A5000+	-	-	RNP APCH	-
	TF	DF377	N 49 56 16.13 E 008 09 46.26	-	(T159.3) 157	5.0	-	A4000+	-	-	RNP APCH	-
	TF	ROBSA	N 49 57 40.69 E 008 15 33.95	-	(T069.3) 067	4.0	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from RID	IF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF376	N 49 51 35.73 E 008 12 30.04	-	(T290.1) 288	13.8	-	-	-	-	RNP APCH	-
	TF	DF377	N 49 56 16.13 E 008 09 46.26	-	(T339.3) 337	5.0	-	A4000+	-	-	RNP APCH	-
	TF	ROBSA	N 49 57 40.69 E 008 15 33.95	-	(T069.3) 067	4.0	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW07R	N 50 01 39.15 E 008 32 03.03	-	-	-	-	-	-	-	RNP APCH	-
	TF	FFM	N 50 03 13.47 E 008 38 13.53	-	(T068.4) 066	-	-	-	-	-	RNP APCH	-
	TF	DF278	N 50 03 21.16 E 008 50 38.21	Y	(T089.0) 087	8.0	-	-	-	-	RNP APCH	-
	CA	-	-	-	(T089.0) 087	-	-	@A5000	-	-	RNP APCH	-
	DF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	R	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION								
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	TAU	N 50 15 01.67 E 008 09 45.09	(T228.0) 226	230-	A5000+	1 MIN	R	-
HM	RID	N 49 46 54.09 E 008 32 29.35	(T247.0) 245	230-	A5000+	1 MIN	R	-

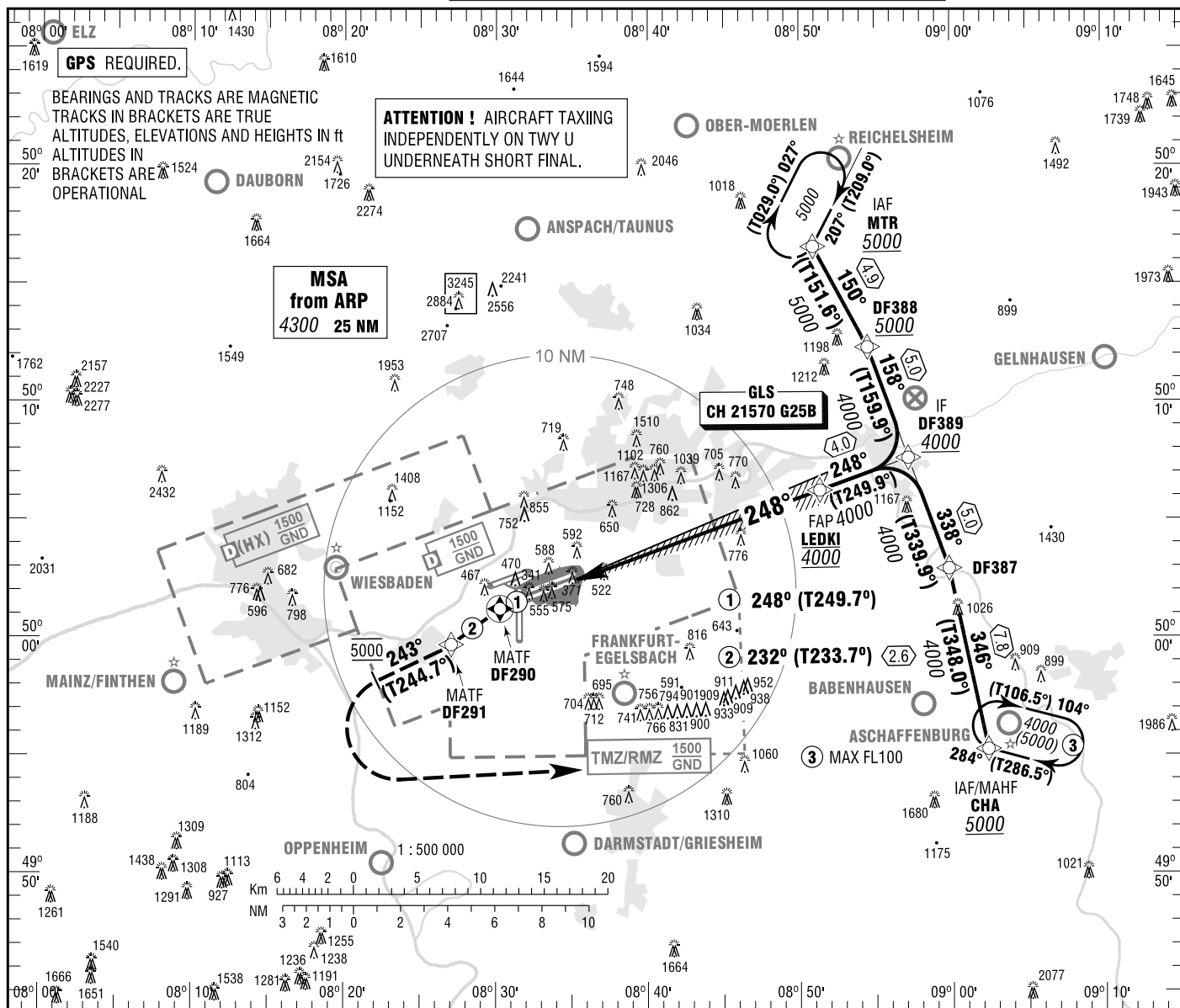
INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E

ELEV 364
OCH RELATED TO
THR 25L ELEV 362

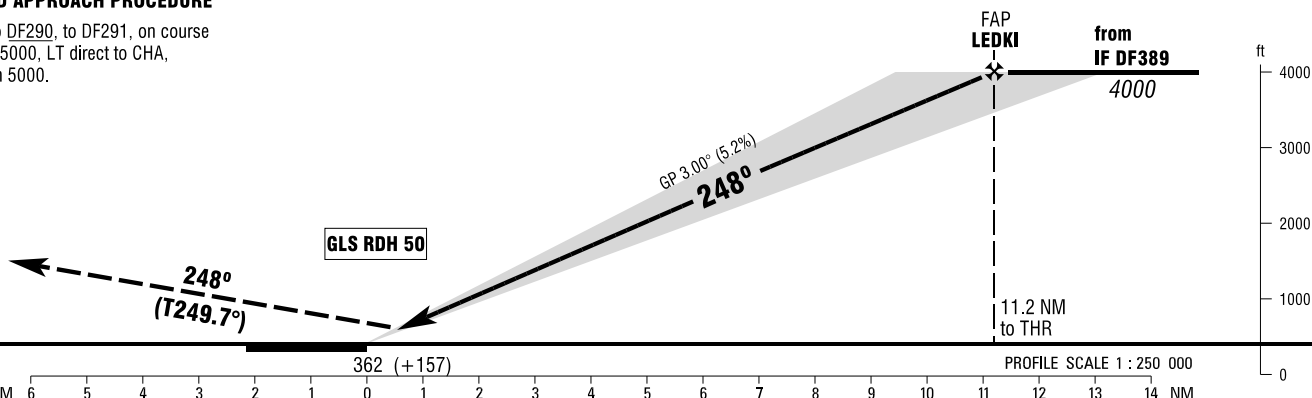
ATIS	118.025	DIRECTOR	127.275	APRON	121.750
LANGEN RADAR (N)	120.800	TOWER	119.900		121.850
LANGEN RADAR (S)	125.350	GROUND	121.800		121.950

FRANKFURT MAIN
GLS Z
RWY 25L



MISSED APPROACH PROCEDURE

Climb to DF290, to DF291, on course 243° to 5000, LT direct to CHA, maintain 5000.



OCA (OCH)	A	B	C	D	D _L
GLS CAT I	502 (140)	512 (150)	522 (160)	532 (170)	

DIST THR	1	2	3	4	5	6	7	8	9	10	11
ALTITUDE	740	1050	1370	1690	2010	2330	2650	2960	3280	3600	3920

GS	kt	80	100	120	140	160	180
LEDKI - THR (11.2 NM)	MIN:SEC	8:24	6:43	5:36	4:48	4:12	3:44
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Page number, variation, procedure, obstacles revised.

FRANKFURT MAIN
GLS Z
RWY 25L

INSTRUMENT APPROACH PROCEDURE
TABULAR DESCRIPTION

INITIAL, INTERMEDIATE AND MISSED APPROACH

Approach Segment	Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) MAG Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	Vertical Path Angle (°) / TCH (ft)	NAV Specification	Remarks
Initial Intermediate APCH from CHA	IF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF387	N 50 02 55.81 E 008 59 51.19	-	(T348.0) 346	7.8	-	-	-	-	RNP APCH	-
	TF	DF389	N 50 07 37.29 E 008 57 11.29	-	(T339.9) 338	5.0	-	A4000+	-	-	RNP APCH	-
	TF	LEDKI	N 50 06 14.76 E 008 51 21.21	-	(T249.9) 248	4.0	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Initial Intermediate APCH from MTR	IF	MTR	N 50 16 34.59 E 008 50 55.05	-	-	-	-	A5000+	-	-	RNP APCH	-
	TF	DF388	N 50 12 18.71 E 008 54 30.86	-	(T151.6) 150	4.9	-	A5000+	-	-	RNP APCH	-
	TF	DF389	N 50 07 37.29 E 008 57 11.29	-	(T159.9) 158	5.0	-	A4000+	-	-	RNP APCH	-
	TF	LEDKI	N 50 06 14.76 E 008 51 21.21	-	(T249.9) 248	4.0	-	@A4000	-	-	RNP APCH	FAP for GLS FAS
Missed APCH	-	RW25L	N 50 02 24.19 E 008 35 11.51	-	-	-	-	-	-	-	RNP APCH	-
	TF	DF290	N 50 01 13.69 E 008 30 16.69	Y	(T249.7) 248	-	-	-	-	-	RNP APCH	-
	TF	DF291	N 49 59 42.65 E 008 27 04.53	-	(T233.7) 232	2.6	-	-	-	-	RNP APCH	-
	CA	-	-	-	(T244.7) 243	-	-	@A5000	-	-	RNP APCH	-
	DF	CHA	N 49 55 15.97 E 009 02 23.32	-	-	-	L	@A5000	-	-	RNP APCH	-

RNAV HOLDING IDENTIFICATION

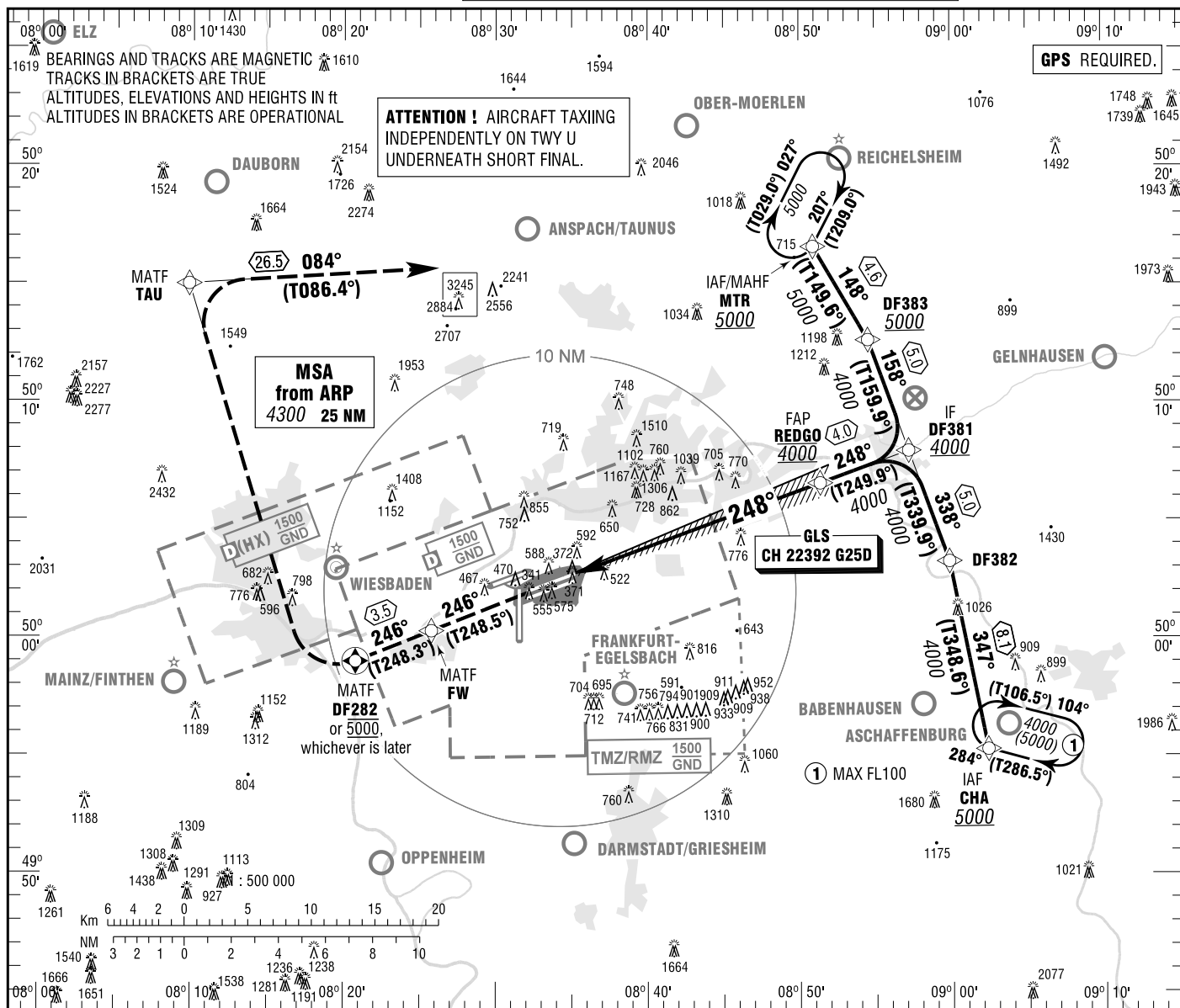
Recommended Path Terminator	Holding Fix	Coordinates	Inbound (True Track°) MAG Track°	Speed Limit (kt IAS)	Altitude (ft) / Flight Level	Time / Distance outbound	Turn Direction	Remarks
HM	MTR	N 50 16 34.59 E 008 50 55.05	(T209.0) 207	230-	A5000+	1 MIN	R	-
HM	CHA	N 49 55 15.97 E 009 02 23.32	(T286.5) 284	230-	A5000+/FL100-	1 MIN	R	-

INSTRUMENT
APPROACH
CHART - ICAO

VAR 2° E
ELEV 364
OCH RELATED TO
THR 25C ELEV 364

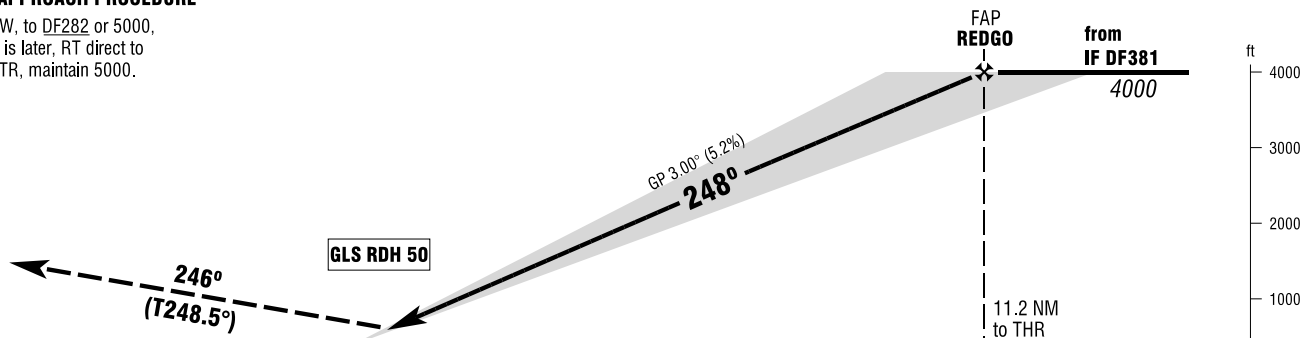
ATIS 118.025
LANGEN RADAR (N) 120.800
LANGEN RADAR (S) 125.350
DIRECTOR 127.275
TOWER 118.775
GROUND 121.800
APRON 121.750
121.850
121.950

FRANKFURT MAIN
GLS Z
RWY 25C



MISSED APPROACH PROCEDURE

Climb to FW, to DF282 or 5000,
whichever is later, RT direct to
TAU, to MTR, maintain 5000.



OCA (OCH)	A	B	C	D	D _L
GLS CAT I	503 (139)	513 (149)	523 (159)	533 (169)	

DIST THR	1	2	3	4	5	6	7	8	9	10	11
ALTITUDE	740	1060	1370	1690	2010	2330	2650	2970	3280	3600	3920

GS	kt	80	100	120	140	160	180
REDGO - THR (11.2 NM)	MIN:SEC	8:24	6:43	5:36	4:48	4:12	3:44
Rate of descent (5.2%)	ft / MIN	420	530	640	740	850	960

Correction: Page number, variation, procedure, obstacles revised.

STANDARD DEPARTURE CHART - INSTRUMENT (SID)



STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 07C / 07R, RWY 25L / 25C
SIDs with Route Designator **CHARLIE / QUEBEC**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

1. **NON-RNAV (enroute only)** equipped aircraft only.

2. Delay has to be expected.

3. Further routing to destination shall be based on VOR and has to be coordinated with ATC prior to start-up.

4. MAX FL90 and MAX IAS 250 KT in German airspace.

5. Special permission needed prior to flight, see AIP GEN 1.5.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5

RWY 07 C / R

MTR 4C	METRO FOUR CHARLIE On RWY track to 800; then direct to FR; at FR (5.0 DME FRD / 2.0 DME outbound FFM) immediate LT on R202 MTR to MTR (Δ).	5000 ft	Langen Radar 120.150*	
RID 8C	RIED EIGHT CHARLIE On RWY track to 800; via FR to 6.0 DME FRD (3.0 DME outbound FFM) (MAX IAS 220 KT until established on R191 MTR); RT, on R191 MTR to 15.0 DME FFM (crossing R073 RID); RT, on R082 RID to RID (Δ).	4000 ft	Langen Radar 136.125*	

RWY 25 C / L

RID 3Q	RIED THREE QUEBEC On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, on R356 RID (max. IAS 220KT until established on R356 RID) to RID (Δ).	5000 ft	Langen Radar 136.125*	
TAU 4Q	TAUNUS FOUR QUEBEC On RWY track to 5.0 DME FFM or 800, whichever is later; RT, MT 275° (RWY 25L: MT 278°), on R258 FFM to 3500; RT to TAU (Δ), but not before reaching R258 FFM.		Langen Radar 120.150*	

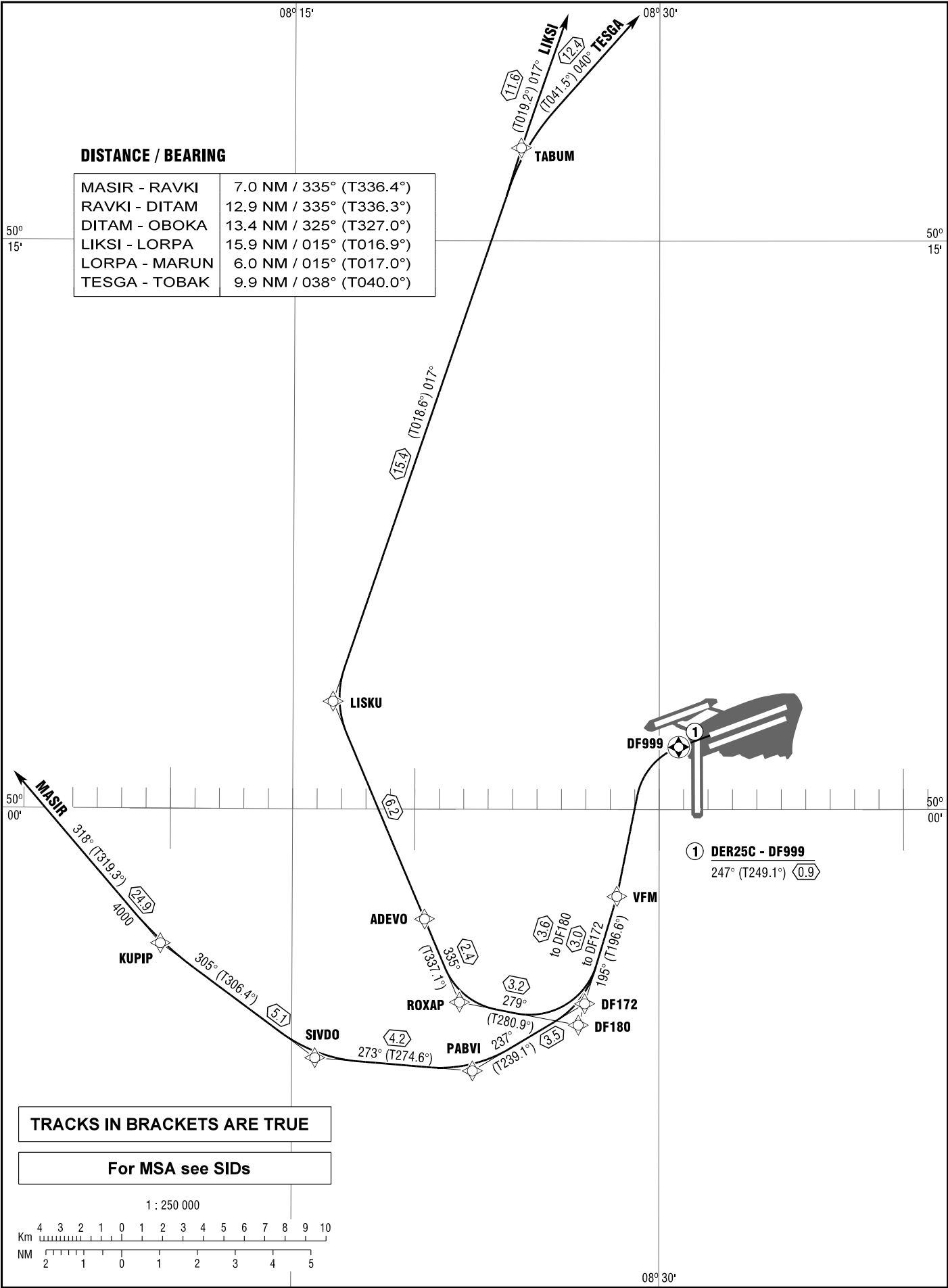
* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

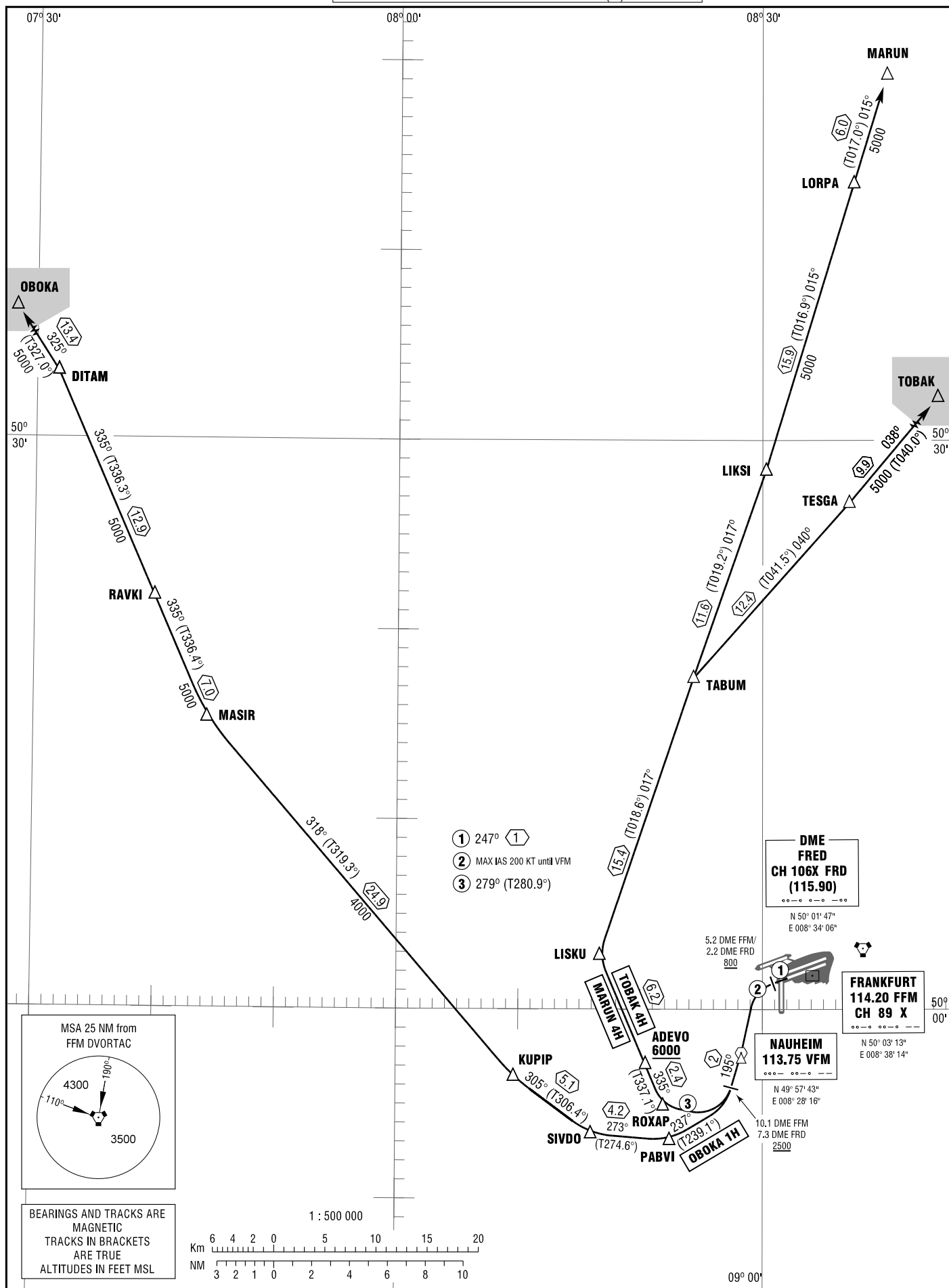
FRANKFURT MAIN (NORTH)
RWY 25C
MIKE

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	118.775
APRON	121.750		119.900
	121.850	LANGEN RADAR (N, NW)	120.150
	121.950	LANGEN RADAR (W)	136.125

TRANSITION GPS / FMS RNAV DEPARTURE
ALTITUDE 5000 CHART - INSTRUMENT
VAR 2° E (OVERLAY)



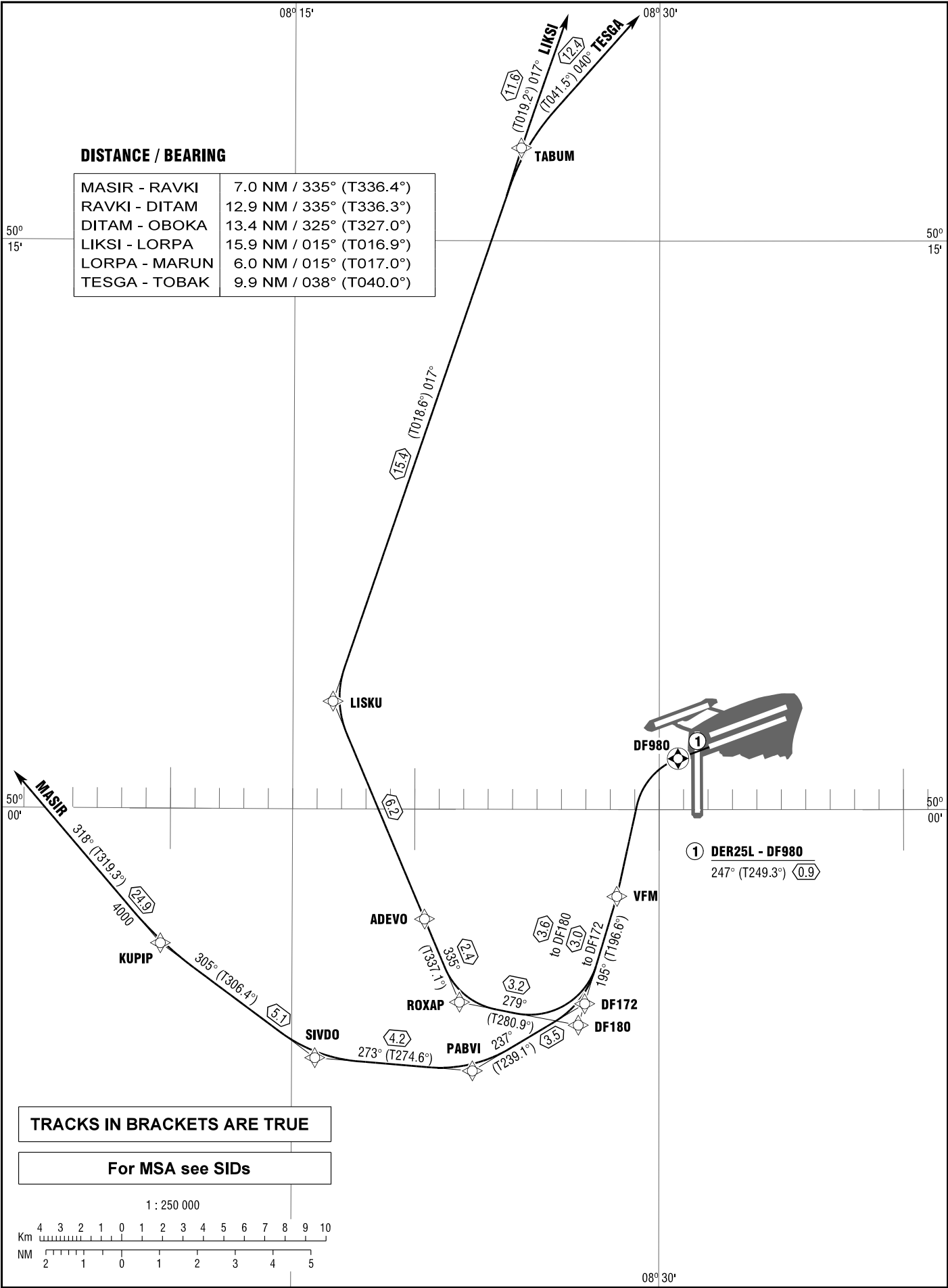
FRANKFURT MAIN (NORTH)
RWY 25L
HOTEL



FRANKFURT MAIN (NORTH)
RWY 25L
HOTEL

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	118.775
APRON	121.750		119.900
	121.850	LANGEN RADAR (N, NW)	120.150
	121.950	LANGEN RADAR (W)	136.125

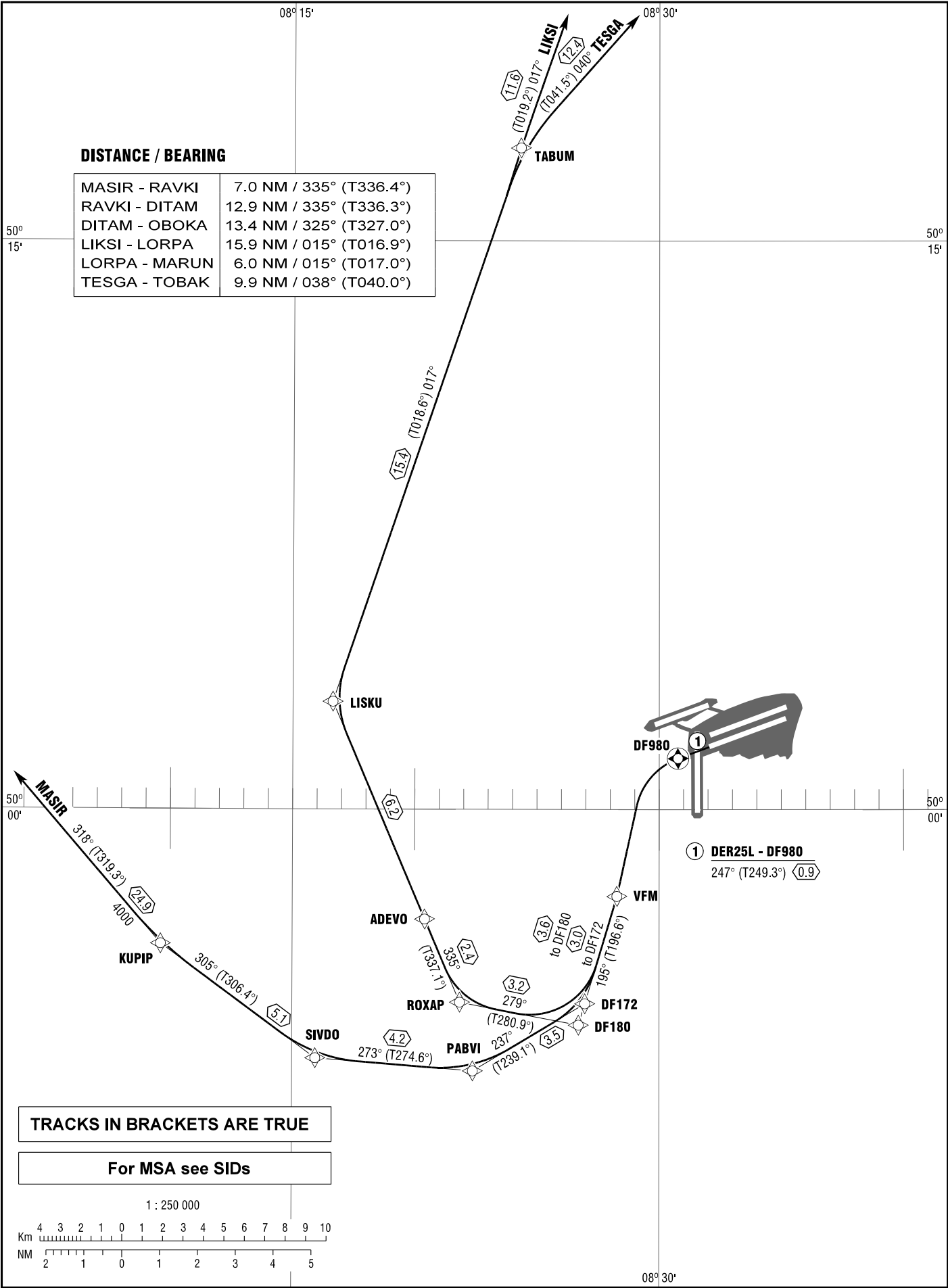
TRANSITION GPS / FMS RNAV DEPARTURE
ALTITUDE 5000 CHART - INSTRUMENT
VAR 2° E (OVERLAY)



FRANKFURT MAIN (NORTH)
RWY 25L
HOTEL

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	118.775
APRON	121.750		119.900
	121.850	LANGEN RADAR (N, NW)	120.150
	121.950	LANGEN RADAR (W)	136.125

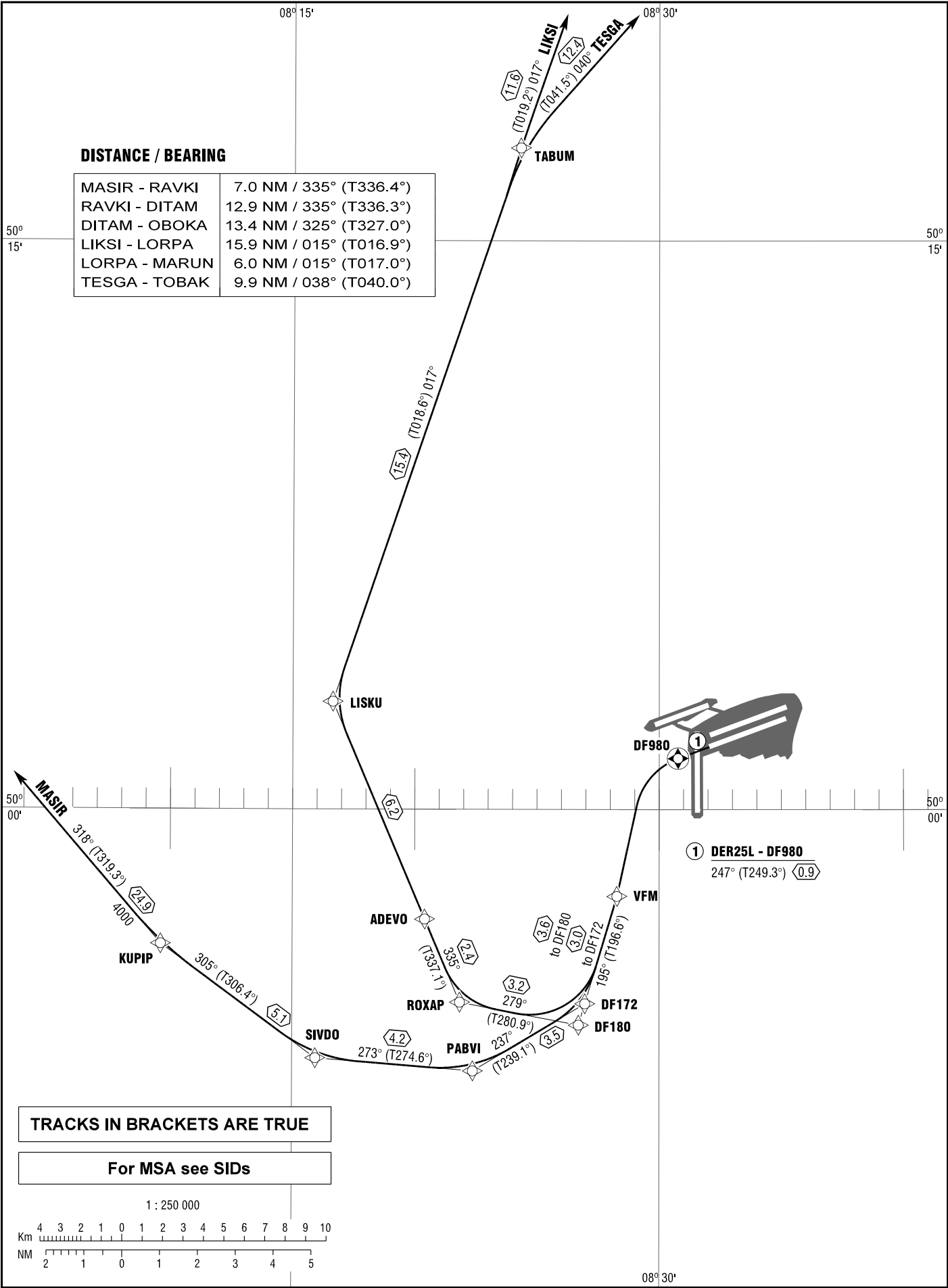
TRANSITION GPS / FMS RNAV DEPARTURE
ALTITUDE 5000 CHART - INSTRUMENT
VAR 2° E (OVERLAY)



FRANKFURT MAIN (NORTH)
RWY 25L
HOTEL

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	118.775
APRON	121.750		119.900
	121.850	LANGEN RADAR (N, NW)	120.150
	121.950	LANGEN RADAR (W)	136.125

TRANSITION GPS / FMS RNAV DEPARTURE
ALTITUDE 5000 CHART - INSTRUMENT
VAR 2° E (OVERLAY)



FRANKFURT MAIN
RWY 25C

STANDARD DEPARTURE
ROUTES - INSTRUMENT (SID)
RNAV (GPS)

Designator	Route			After Take-Off				Remarks Text Page		
				Climb to		Contact				
OBOKA 1W	OBOKA ONE WHISKEY To DF999 at or above 800, LT with 2.0 NM radius to DF998 at or above 1340, maximum speed 200 kts, to DF996 at or above 1930, maximum speed 230 kts, to DF995 at or above 2410, maximum speed 230 kts, to DF172 at or above 2670, to PABVI, to SIVDO to KUPIP, to MASIR, to RAVKI, to DITAM, to OBOKA.			FL 70		LANGEN RADAR 120.150 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		1. PDG 8.5% / 520 ft/NM or more until passing 800 due to operational requirements. 2. PDG 4.1% / 250 ft/NM or more after passing 800 until passing 2500 due to airspace structure. 3. Use of autopilot mandatory 4. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.		
Recommen- ded Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direc- tion	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV- Specification	Remarks
IF	RW07C	N 50 01 57.42 E 008 32 04.67	-	-	-	-	-	-	RNP-1, RF-Leg required	-
TF	DF999	N 50 01 39.03 E 008 30 47.83	-	(T249.6) 248	0.9	-	A800+	200-	RNP-1, RF-Leg required	-
RF	DF998	N 50 00 04.58 E 008 28 48.74	-	-	2.1	L	A1340+	200-	RNP-1, RF-Leg required	ARC Center: DF997 N 49 59 46.65 E 008 31 52.63 ARC Radius: 2.00 NM
TF	DF996	N 49 57 42.90 E 008 28 16.77	-	(T188.3) 186	2.4	-	A1930+	230-	RNP-1, RF-Leg required	-
TF	DF995	N 49 55 52.63 E 008 27 25.87	-	(T196.6) 195	1.9	-	A2410+	230-	RNP-1, RF-Leg required	-
TF	DF172	N 49 54 52.57 E 008 26 57.96	-	(T196.7) 195	1.0	-	A2670+	-	RNP-1, RF-Leg required	-
TF	PABVI	N 49 53 05.98 E 008 22 22.99	-	(T239.1) 237	3.5	-	-	-	RNP-1, RF-Leg required	-
TF	SIVDO	N 49 53 26.07 E 008 15 56.78	-	(T274.6) 273	4.2	-	-	-	RNP-1, RF-Leg required	-
TF	KUPIP	N 49 56 26.82 E 008 09 37.02	-	(T306.4) 305	5.1	-	-	-	RNP-1, RF-Leg required	-
TF	MASIR	N 50 15 17.69 E 007 44 16.54	-	(T319.3) 318	24.9	-	-	-	RNP-1, RF-Leg required	-
TF	RAVKI	N 50 21 41.99 E 007 39 53.65	-	(T336.4) 335	7.0	-	-	-	RNP-1, RF-Leg required	-
TF	DITAM	N 50 33 29.20 E 007 31 46.42	-	(T336.3) 335	12.9	-	-	-	RNP-1, RF-Leg required	-
TF	OBOKA	N 50 44 41.51 E 007 20 16.97	-	(T327.0) 325	13.4	-	-	-	RNP-1, RF-Leg required	-

Designator	Route			After Take-Off				Remarks Text Page		
				Climb to		Contact				
MARUN 1W	MARUN ONE WHISKEY To DF999 at or above 800, LT with 2.0 NM radius to DF998 at or above 1690, maximum speed 200 kts, to DF996 at or above 2670, maximum speed 230 kts, to DF995 at or above 3470, RT with 2.1 NM radius to DF994 at or above 5600, maximum speed 230 kts, to DF992 at or above 6000, to LISKU, to TABUM, to LIKSI, to LORPA, to MARUN			FL 70		LANGEN RADAR 120.150 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		1. PDG 8.5% / 520 ft/NM or more until passing 800 due to operational requirements. 2. PDG 6.8% / 415 ft/NM or more after passing 800 until passing 6000 due to operational requirements. 3. Use of autopilot mandatory		
Recommen- ded Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direc- tion	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV- Specification	Remarks
IF	RW07C	N 50 01 57.42 E 008 32 04.67	-	-	-	-	-	-	RNP-1, RF-Leg required	-
TF	DF999	N 50 01 39.03 E 008 30 47.83	-	(T249.6) 248	0.9	-	A800+	200-	RNP-1, RF-Leg required	-
RF	DF998	N 50 00 04.58 E 008 28 48.74	-	-	2.1	L	A1690+	200-	RNP-1, RF-Leg required	ARC Center: DF997 N 49 59 46.65 E 008 31 52.63 ARC Radius: 2.00 NM
TF	DF996	N 49 57 42.90 E 008 28 16.77	-	(T188.3) 186	2.4	-	A2670+	230-	RNP-1, RF-Leg required	-
TF	DF995	N 49 55 52.63 E 008 27 25.87	-	(T196.6) 195	1.9	-	A3470+	230-	RNP-1, RF-Leg required	-
RF	DF994	N 49 55 39.37 E 008 21 19.40	-	-	5.2	R	A5600+	230-	RNP-1, RF-Leg required	ARC Center: DF993 N 49 56 28.51 E 008 24 18.94 ARC Radius: 2.1 NM
TF	DF992	N 49 56 34.16 E 008 20 43.76	-	(T337.2) 335	1.0	-	A6000+	-	RNP-1, RF-Leg required	-
TF	LISKU	N 50 02 50.58 E 008 16 38.23	-	(T337.2) 335	6.8	-	-	-	RNP-1, RF-Leg required	-
TF	TABUM	N 50 17 27.33 E 008 24 18.21	-	(T018.6) 017	15.4	-	-	-	RNP-1, RF-Leg required	-
TF	LIKSI	N 50 28 23.50 E 008 30 16.44	-	(T019.2) 017	11.6	-	-	-	RNP-1, RF-Leg required	-
TF	LORPA	N 50 43 32.42 E 008 37 32.69	-	(T016.9) 015	15.9	-	-	-	RNP-1, RF-Leg required	-
TF	MARUN	N 50 49 16.20 E 008 40 18.99	-	(T017.0) 015	6.0	-	-	-	RNP-1, RF-Leg required	-

STANDARD DEPARTURE
ROUTES - INSTRUMENT (SID)
RNP (GPS)

FRANKFURT MAIN
RWY 25C

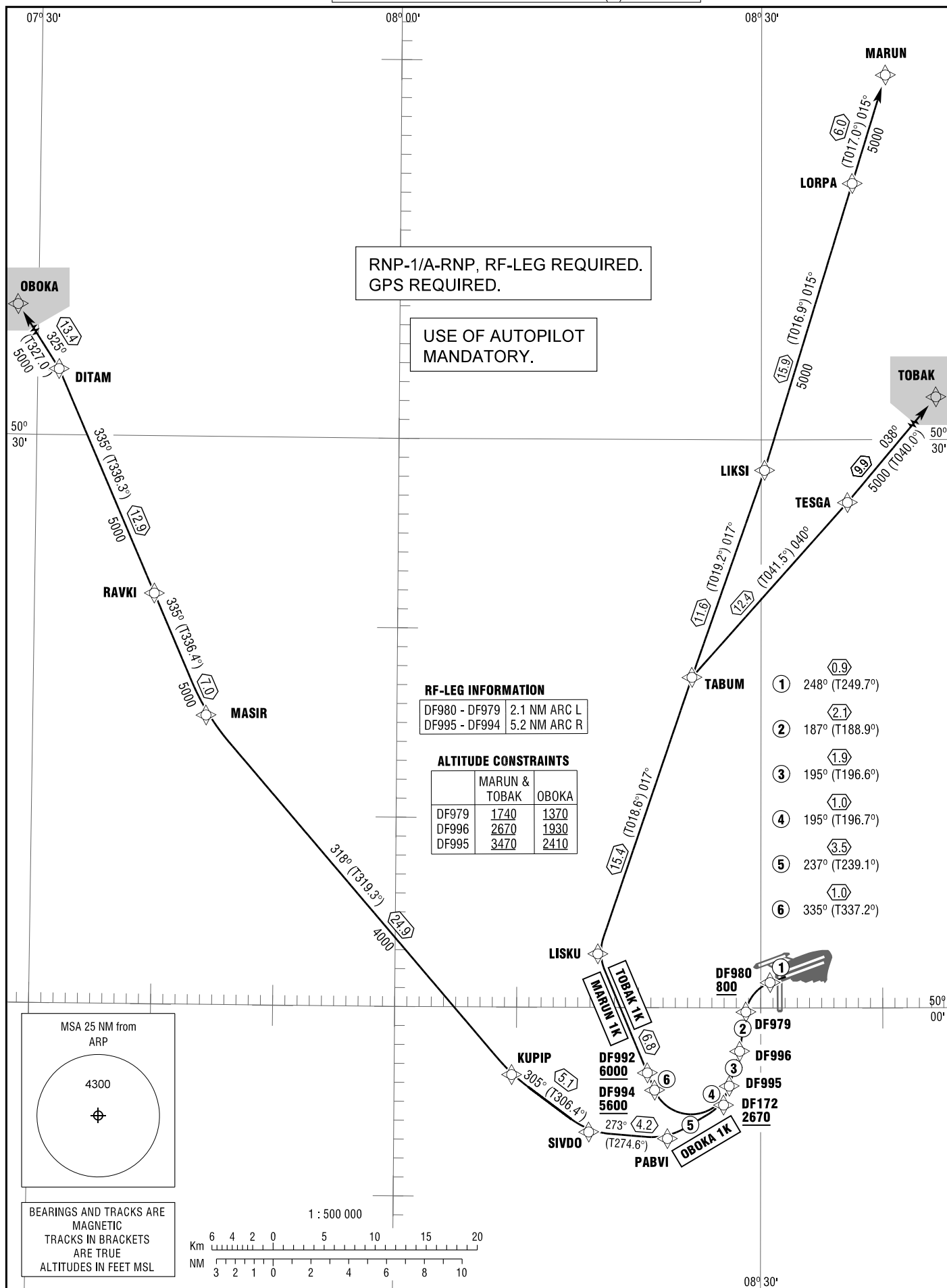
Designator	Route			After Take-Off				Remarks Text Page		
				Climb to		Contact				
TOBAK 1W	TOBAK ONE WHISKEY To DF999 at or above 800, LT with 2.0 NM radius to DF998 at or above 1690, maximum speed 200 kts, to DF996 at or above 2670, maximum speed 230 kts, to DF995 at or above 3470, RT with 2.1 NM radius to DF994 at or above 5600, maximum speed 230 kts, to DF992 at or above 6000, to LISKU, to TABUM, to TESGA, to TOBAK			FL 70		LANGEN RADAR 120.150 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		1. PDG 8.5% / 520 ft/NM or more until passing 800 due to operational requirements. 2. PDG 6.8% / 415 ft/NM or more after passing 800 until passing 6000 due to operational requirements. 3. Use of autopilot mandatory		
Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV-Specification	Remarks
IF	RW07C	N 50 01 57.42 E 008 32 04.67	-	-	-	-	-	-	RNP-1, RF-Leg required	-
TF	DF999	N 50 01 39.03 E 008 30 47.83	-	(T249.6) 248	0.9	-	A800+	200-	RNP-1, RF-Leg required	-
RF	DF998	N 50 00 04.58 E 008 28 48.74	-	-	2.1	L	A1690+	200-	RNP-1, RF-Leg required	ARC Center: DF997 N 49 59 46.65 E 008 31 52.63 ARC Radius: 2.00 NM
TF	DF996	N 49 57 42.90 E 008 28 16.77	-	(T188.3) 186	2.4	-	A2670+	230-	RNP-1, RF-Leg required	-
TF	DF995	N 49 55 52.63 E 008 27 25.87	-	(T196.6) 195	1.9	-	A3470+	230-	RNP-1, RF-Leg required	-
RF	DF994	N 49 55 39.37 E 008 21 19.40	-	-	5.2	R	A5600+	230-	RNP-1, RF-Leg required	ARC Center: DF993 N 49 56 28.51 E 008 24 18.94 ARC Radius: 2.1 NM
TF	DF992	N 49 56 34.16 E 008 20 43.76	-	(T337.2) 335	1.0	-	A6000+	-	RNP-1, RF-Leg required	-
TF	LISKU	N 50 02 50.58 E 008 16 38.23	-	(T337.2) 335	6.8	-	-	-	RNP-1, RF-Leg required	-
TF	TABUM	N 50 17 27.33 E 008 24 18.21	-	(T018.6) 017	15.4	-	-	-	RNP-1, RF-Leg required	-
TF	TESGA	N 50 26 41.64 E 008 37 07.94	-	(T041.5) 040	12.4	-	-	-	RNP-1, RF-Leg required	-
TF	TOBAK	N 50 34 17.93 E 008 47 08.81	-	(T040.0) 038	9.9	-	-	-	RNP-1, RF-Leg required	-

STANDARD DEPARTURE
CHART - INSTRUMENT
RNAV (GPS)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	118.775
APRON	121.750		119.900
	121.850	LANGEN RADAR (N. NW)	120.150
	121.950	LANGEN RADAR (W)	136.125

FRANKFURT MAIN (NORTH)
RWY 25L
KILO



Correction: Page number, page scale, departures via BIBTI withdrawn.

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 25/07/18
OPERATIONAL RUNWAY USE CONCEPT

SID Standards				
RWY-in-use	RWY (C)enter (L)eft (R)ight	SID Route Designator	Route details see SID description. If unable to comply with restrictions, advise EDDF DELIVERY prior to start-up. Non-standards on request or if considered necessary by ATC	NAV-Spec
25 / 18			RWY 25C for DEP to the NW (OBOKA), N (MARUN), NE (TOBAK). <i>RWY 25L with special authorization by TWR only</i> RWY 18 for DEP to the SW (SOBRA, ULKIG), S (ANEKI), SE (SIDs via AKONI, incl. DEST EDDN AREA), E (SULUS)	
07 / 18			RWY 07C for DEP to the NW (OBOKA), N (MARUN), NE (TOBAK), E (SULUS) and EDDN Area (KOMIB) <i>RWY 07R with special authorization by TWR only</i> RWY 18 for DEP to the SW (SOBRA, ULKIG), S (ANEKI), SE (SIDs via AKONI excl. DEST EDDN Area)	
25	C + L	FOXTROT	2-engined HEAVY aircraft to the N, NE	BRNAV
	C + L	GOLF	2-engined HEAVY aircraft to the NW, N, NE	BRNAV
			All aircraft to the NW, N, NE unable to comply with restrictions on SIDs northbound.	
	C	MIKE	All aircraft, except 2-engined HEAVY aircraft, to the NW, N, NE.	BRNAV
	C	WHISKEY	Shall be used by all aircraft, except 2-engined HEAVY aircraft, to the NW, N, NE complying with RNP-1 and RF-leg requirements instead of MIKE	RNP-1, RF-leg
	L	HOTEL	All aircraft RWY 25L (with special authorization by TWR only), except 2-engined HEAVY aircraft, to the NW, N, NE.	BRNAV
	L	KILO		RNP-1, RF-leg
	C + L	NOVEMBER	<u>2100 (2000) until 0600 (0500):</u> All 3- and 4-engined HEAVY and SUPER aircraft, B727 and YK42 due to noise abatement.	BRNAV
	C + L	PAPA	Single- and Twin-Props and DASH 7 may use PAPA instead of RWY18 to the SW.	BRNAV
	C + L	QUEBEC	NON-RNAV equipped aircraft	BRNAV

FRANKFURT MAIN
RWY 25L

STANDARD DEPARTURE
ROUTES - INSTRUMENT (SID)
RNAV (GPS)

Designator	Route			After Take-Off				Remarks Text Page		
				Climb to		Contact				
OBOKA 1K	OBOKA ONE KILO To DF980 at or above 800, LT with 2.0 NM radius to DF979 at or above 1370, maximum speed 200 kts, to DF996 at or above 1930, maximum speed 230 kts, to DF995 at or above 2410, maximum speed 230 kts, to DF172 at or above 2670, to PABVI, to SIVDO to KUPIP, to MASIR, to RAVKI, to DITAM, to OBOKA.			FL 70		LANGEN RADAR 120.150 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		1. PDG 8.5% / 520 ft/NM or more until passing 800 due to operational requirements. 2. PDG 4.4% / 270 ft/NM or more after passing 800 until passing 1930 due to airspace structure. 3. PDG 4.1% / 250 ft/NM or more after passing 1930 until passing 2500 due to airspace structure. 4. Use of autopilot mandatory 5. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.		
Recommen- ded Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direc- tion	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV- Specification	Remarks
IF	RW07R	N 50 01 39.15 E 008 32 03.03	-	-	-	-	-	-	RNP-1, RF-Leg required	-
TF	DF980	N 50 01 20.75 E 008 30 46.00	-	(T249.7) 248	0.9	-	A800+	200-	RNP-1, RF-Leg required	-
RF	DF979	N 49 59 47.40 E 008 28 47.06	-	-	2.1	L	A1370+	200-	RNP-1, RF-Leg required	ARC Center: DF978 N 49 59 28.35 E 008 31 50.66 ARC Radius: 2.00 NM
TF	DF996	N 49 57 42.90 E 008 28 16.77	-	(T188.9) 187	2.1	-	A1930+	230-	RNP-1, RF-Leg required	-
TF	DF995	N 49 55 52.63 E 008 27 25.87	-	(T196.6) 195	1.9	-	A2410+	230-	RNP-1, RF-Leg required	-
TF	DF172	N 49 54 52.57 E 008 26 57.96	-	(T196.7) 195	1.0	-	A2670+	-	RNP-1, RF-Leg required	-
TF	PABVI	N 49 53 05.98 E 008 22 22.99	-	(T239.1) 237	3.5	-	-	-	RNP-1, RF-Leg required	-
TF	SIVDO	N 49 53 26.07 E 008 15 56.78	-	(T274.6) 273	4.2	-	-	-	RNP-1, RF-Leg required	-
TF	KUPIP	N 49 56 26.82 E 008 09 37.02	-	(T306.4) 305	5.1	-	-	-	RNP-1, RF-Leg required	-
TF	MASIR	N 50 15 17.69 E 007 44 16.54	-	(T319.3) 318	24.9	-	-	-	RNP-1, RF-Leg required	-
TF	RAVKI	N 50 21 41.99 E 007 39 53.65	-	(T336.4) 335	7.0	-	-	-	RNP-1, RF-Leg required	-
TF	DITAM	N 50 33 29.20 E 007 31 46.42	-	(T336.3) 335	12.9	-	-	-	RNP-1, RF-Leg required	-
TF	OBOKA	N 50 44 41.51 E 007 20 16.97	-	(T327.0) 325	13.4	-	-	-	RNP-1, RF-Leg required	-

Designator	Route			After Take-Off				Remarks Text Page		
				Climb to		Contact				
MARUN 1K	MARUN ONE KILO To DF980 at or above 800, LT with 2.0 NM radius to DF979 at or above 1740, maximum speed 200 kts, to DF996 at or above 2670, maximum speed 230 kts, to DF995 at or above 3470, RT with 2.1 NM radius to DF994 at or above 5600, maximum speed 230 kts, to DF992 at or above 6000, to LISKU, to TABUM, to LIKSI, to LORPA, to MARUN			FL 70		LANGEN RADAR 120.150 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		1. PDG 8.5% / 520 ft/NM or more until passing 800 due to operational requirements. 2. PDG 7.3% / 445 ft/NM or more after passing 800 until passing 2670 due to operational requirements. 3. PDG 6.8% / 415 ft/NM or more after passing 2670 until passing 6000 due to operational requirements. 4. Use of autopilot mandatory		
Recommen- ded Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direc- tion	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV- Specification	Remarks
IF	RW07R	N 50 01 39.15 E 008 32 03.03	-	-	-	-	-	-	RNP-1, RF-Leg required	-
TF	DF980	N 50 01 20.75 E 008 30 46.00	-	(T249.7) 248	0.9	-	A800+	200-	RNP-1, RF-Leg required	-
RF	DF979	N 49 59 47.40 E 008 28 47.06	-	-	2.1	L	A1740+	200-	RNP-1, RF-Leg required	ARC Center: DF978 N 49 59 28.35 E 008 31 50.66 ARC Radius: 2.00 NM
TF	DF996	N 49 57 42.90 E 008 28 16.77	-	(T188.9) 187	2.1	-	A2670+	230-	RNP-1, RF-Leg required	-
TF	DF995	N 49 55 52.63 E 008 27 25.87	-	(T196.6) 195	1.9	-	A3470+	230-	RNP-1, RF-Leg required	-
RF	DF994	N 49 55 39.37 E 008 21 19.40	-	-	5.2	R	A5600+	230-	RNP-1, RF-Leg required	ARC Center: DF993 N 49 56 28.51 E 008 24 18.94 ARC Radius: 2.1 NM
TF	DF992	N 49 56 34.16 E 008 20 43.76	-	(T337.2) 335	1.0	-	A6000+	-	RNP-1, RF-Leg required	-
TF	LISKU	N 50 02 50.58 E 008 16 38.23	-	(T337.2) 335	6.8	-	-	-	RNP-1, RF-Leg required	-
TF	TABUM	N 50 17 27.33 E 008 24 18.21	-	(T018.6) 017	15.4	-	-	-	RNP-1, RF-Leg required	-
TF	LIKSI	N 50 28 23.50 E 008 30 16.44	-	(T019.2) 017	11.6	-	-	-	RNP-1, RF-Leg required	-
TF	LORPA	N 50 43 32.42 E 008 37 32.69	-	(T016.9) 015	15.9	-	-	-	RNP-1, RF-Leg required	-
TF	MARUN	N 50 49 16.20 E 008 40 18.99	-	(T017.0) 015	6.0	-	-	-	RNP-1, RF-Leg required	-

STANDARD DEPARTURE
ROUTES - INSTRUMENT (SID)
RNP (GPS)

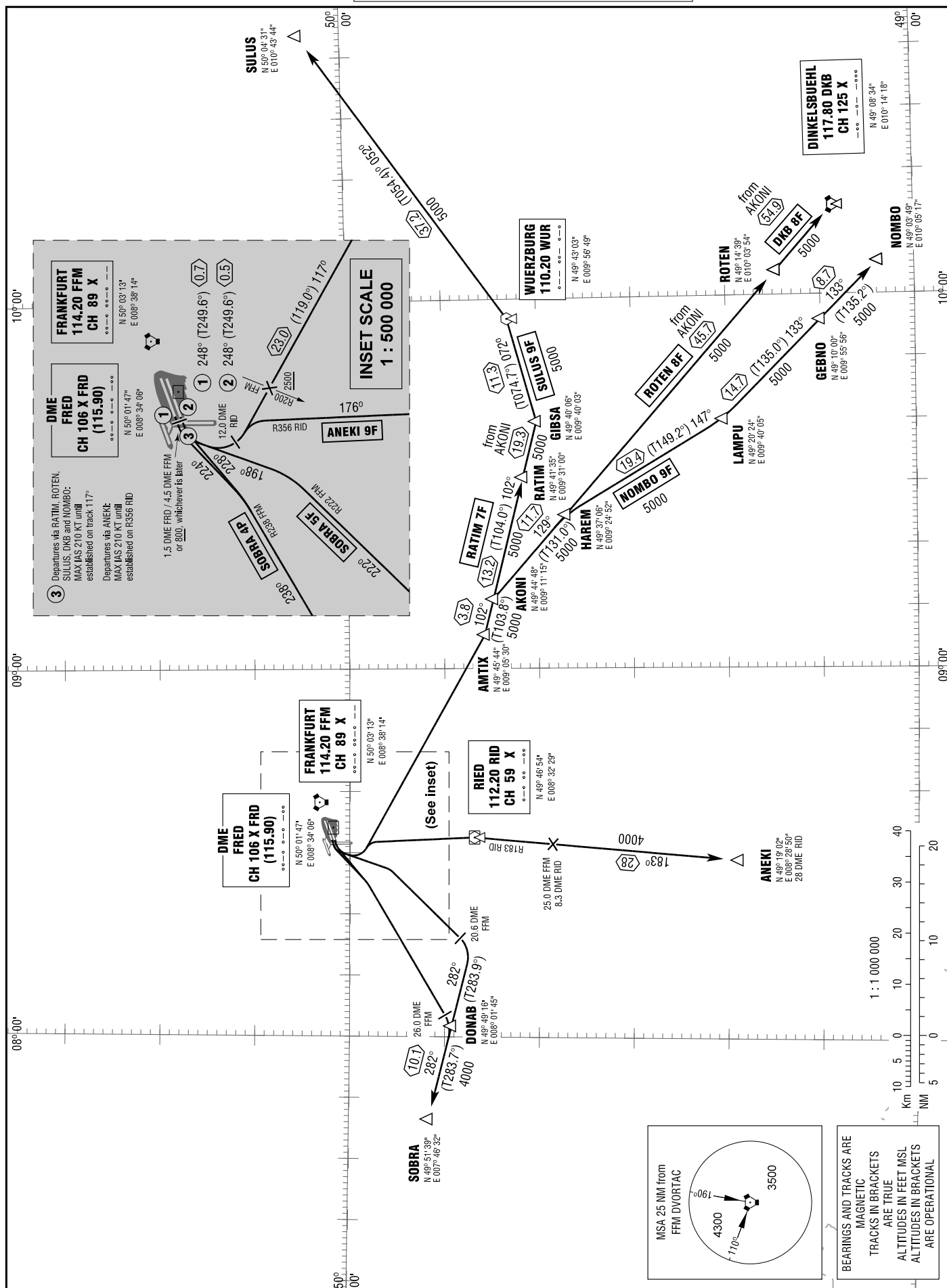
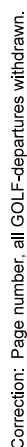
FRANKFURT MAIN
RWY 25L

Designator	Route			After Take-Off				Remarks Text Page		
				Climb to		Contact				
TOBAK 1K	TOBAK ONE KILO To DF980 at or above 800, LT with 2.0 NM radius to DF979 at or above 1740, maximum speed 200 kts, to DF996 at or above 2670, maximum speed 230 kts, to DF995 at or above 3470, RT with 2.1 NM radius to DF994 at or above 5600, maximum speed 230 kts, to DF992 at or above 6000, to LISKU, to TABUM, to TESGA, to TOBAK			FL 70		LANGEN RADAR 120.150 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		1. PDG 8.5% / 520 ft/NM or more until passing 800 due to operational requirements. 2. PDG 7.3% / 445 ft/NM or more after passing 800 until passing 2670 due to operational requirements. 3. PDG 6.8% / 415 ft/NM or more after passing 2670 until passing 6000 due to operational requirements. 4. Use of autopilot mandatory		
Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV-Specification	Remarks
IF	RW07R	N 50 01 39.15 E 008 32 03.03	-	-	-	-	-	-	RNP-1, RF-Leg required	-
TF	DF980	N 50 01 20.75 E 008 30 46.00	-	(T249.7) 248	0.9	-	A800+	200-	RNP-1, RF-Leg required	-
RF	DF979	N 49 59 47.40 E 008 28 47.06	-	-	2.1	L	A1740+	200-	RNP-1, RF-Leg required	ARC Center: DF978 N 49 59 28.35 E 008 31 50.66 ARC Radius: 2.00 NM
TF	DF996	N 49 57 42.90 E 008 28 16.77	-	(T188.9) 187	2.1	-	A2670+	230-	RNP-1, RF-Leg required	-
TF	DF995	N 49 55 52.63 E 008 27 25.87	-	(T196.6) 195	1.9	-	A3470+	230-	RNP-1, RF-Leg required	-
RF	DF994	N 49 55 39.37 E 008 21 19.40	-	-	5.2	R	A5600+	230-	RNP-1, RF-Leg required	ARC Center: DF993 N 49 56 28.51 E 008 24 18.94 ARC Radius: 2.1 NM
TF	DF992	N 49 56 34.16 E 008 20 43.76	-	(T337.2) 335	1.0	-	A6000+	-	RNP-1, RF-Leg required	-
TF	LISKU	N 50 02 50.58 E 008 16 38.23	-	(T337.2) 335	6.8	-	-	-	RNP-1, RF-Leg required	-
TF	TABUM	N 50 17 27.33 E 008 24 18.21	-	(T018.6) 017	15.4	-	-	-	RNP-1, RF-Leg required	-
TF	TESGA	N 50 26 41.64 E 008 37 07.94	-	(T041.5) 040	12.4	-	-	-	RNP-1, RF-Leg required	-
TF	TOBAK	N 50 34 17.93 E 008 47 08.81	-	(T040.0) 038	9.9	-	-	-	RNP-1, RF-Leg required	-

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	118.775
APRON	121.750		119.900
	121.850	LANGEN RADAR	120.150
	121.950		136.125

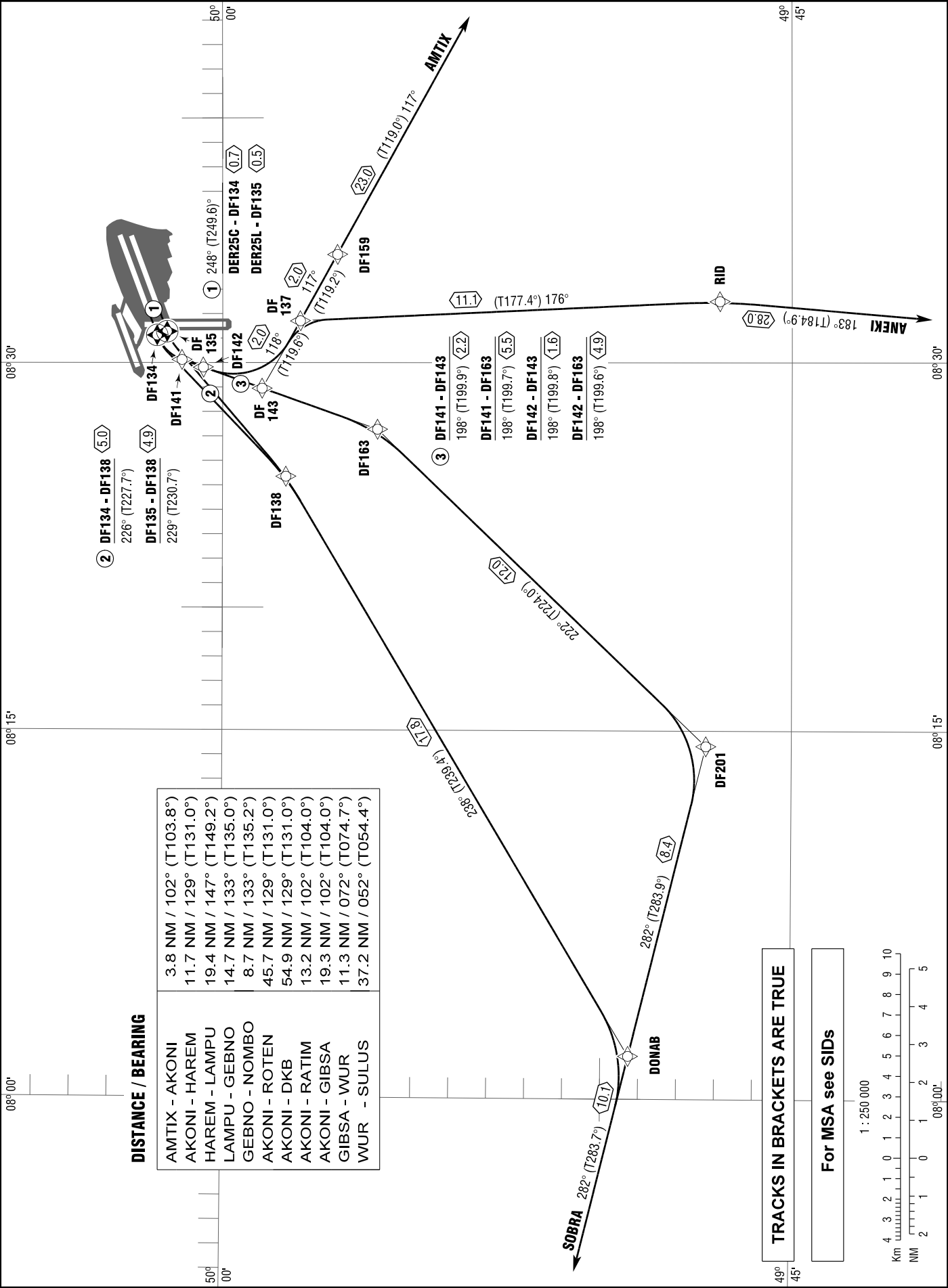
FRANKFURT MAIN (SOUTH)
RWY 25L/25C
FOXTROT / PAPA



FRANKFURT MAIN (SOUTH)
RWY 25L/25C
FOXTROT / PAPA

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	136.125

GPS / FMS RNAV DEPARTURE
CHART - INSTRUMENT
(OVERLAY)
TRANSITION
ALTITUDE 5000
VAR 2° E



FRANKFURT MAIN
RWY 25/07/18
OPERATIONAL RUNWAY USE CONCEPT

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

SID Standards				
RWY-in-use	RWY (C)enter (L)eft (R)ight	SID Route Designator	Route details see SID description. If unable to comply with restrictions, advise EDDF DELIVERY prior to start-up. Non-standards on request or if considered necessary by ATC	NAV-Spec
07	C + R	CHARLIE	NON-RNAV equipped aircraft	
	C + R	DELTA	All HEAVY and SUPER aircraft to the NW, N, NE, E	BRNAV
			All MEDIUM and LIGHT aircraft to the NE, E or if considered necessary by ATC	
			<u>2100 (2000) until 0600 (0500):</u> All aircraft due to noise abatement	
	C + R	ECHO	0600 (0500) until 2100 (2000): All MEDIUM and LIGHT aircraft to the NW, N	BRNAV
18		ALPHA	All aircraft to the S, SE (by ATC only)	RNAV-1 (GPS)
		LIMA	All aircraft to the SW, S, SE	BRNAV or RNAV-1 (GPS)*
		SIERRA	All aircraft to the SW, SE	BRNAV
		ROMEO	<u>Only avbl btn 2200 (2100) and 0500 (0400)</u> All aircraft to the NW, N, NE (by ATC only)	BRNAV
		TANGO	Contingency SID under special circumstances, e.g. closure RWY 07 (by ATC only)	BRNAV

*check SID description for required NAV-Specification

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 25L / 25C
SIDs with Route Designator **FOXTROT**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
ANEKI 9F	ANEKI NINE FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT (MAX IAS 210 KT until established on R356 RID), on R356 RID to RID (Δ); on R183 RID to ANEKI (Δ). GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF143[L] - DF137[K 210-; R] - RID[R] - ANEKI.	5000 ft	Langen Radar 136.125*	
DKB 8F	DINKELSBUEHL EIGHT FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, inbound RID to 12.0 DME RID; LT (MAX IAS 210 KT until established on track 117°), on track 117° to AMTIX (Δ); LT, on track 102° to AKONI (Δ); RT, on track 129° to DKB (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF143[L] - DF137[K210-] - DF159[A2500+] - AMTIX[L] - AKONI[R] - DKB.			1. PDG 5.2% / 315 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Only for flights terminating within EDMM FIR.
MARUN 4F	MARUN FOUR FOXTROT On RWY track to 5.0 DME FFM/2.0 DME FRD or 800, whichever is later; RT MT 275° (RWY 25L: MT 278°) to 8.4 DME FFM; RT, on R141 TAU to 11.4 DME TAU (crossing R282 FFM); RT, on track 015° to TABUM (Δ); RT, on track 017° to LIKSI (Δ); LT, on track 015° via LORPA (Δ) to MARUN (Δ). Cross 8.4 DME FFM at 3500 or above. Cross 11.4 DME TAU (R282 FFM) at 4400 or above. GPS/FMS RNAV: [A800+] - DF234 (25C)[R] / DF235 (25L)[R] - DF233[A3500+; R] - DF132[A4400+; R] - TABUM[R] - LIKSI[L] - LORPA - MARUN.		Langen Radar 120.150*	1. PDG 12% / 750 ft/NM to 8.4 DME FFM (4.5 NM after DER*) due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 11.4 DME TAU (crossing R282 FFM) BRNAV equipment necessary.
NOMBO 9F	NOMBO NINE FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, inbound RID to 12.0 DME RID; LT (MAX IAS 210 KT until established on track 117°), on track 117° to AMTIX (Δ); LT, on track 102° to AKONI (Δ); RT, on track 129° to HAREM (Δ); RT, on track 147° to LAMPU (Δ); LT, on track 133° via GEBNO (Δ) to NOMBO (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF143[L] - DF137[K210-] - DF159[A2500+] - AMTIX[L] - AKONI[R] - HAREM[R] - LAMPU[L] - GEBNO - NOMBO.		Langen Radar 136.125*	1. PDG 5.2% / 315 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Not for flights terminating within EDDN Area or EDMM FIR. 4. Not for propeller-driven aircraft. These flights shall file SID RATIM.

(Sample: DF134 fly-over way point)

* DER = Departure End of Runway

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

FRANKFURT MAIN
RWY 25L / 25C

STANDARD DEPARTURE
ROUTES - INSTRUMENT (SID)
SIDs with Route Designator **FOXTROT**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
RATIM 7F	RATIM SEVEN FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, inbound RID to 12.0 DME RID; LT (MAX IAS 210 KT until established on track 117°), on track 117° to AMTIX (△); LT, on track 102° via AKONI (△) to RATIM (△). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF143[L] - DF137[K210-] - DF159[A2500+] - AMTIX[L] - AKONI - RATIM.	5000 ft	Langen Radar 136.125*	1. PDG 5.2% / 315 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Only for propeller-driven aircraft (MAX RFL 230) instead of SID NOMBO. 4. Not for flights terminating within EDDN Area or EDMM FIR.
ROTEN 8F	ROTEN EIGHT FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, inbound RID to 12.0 DME RID; LT (MAX IAS 210 KT until established on track 117°), on track 117° to AMTIX (△); LT, on track 102° to AKONI (△); RT, on track 129° to ROTEN (△). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF143[L] - DF137[K210-] - DF159[A2500+] - AMTIX[L] - AKONI[R] - ROTEN.			1. PDG 5.2% / 315 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After crossing R200 FFM BRNAV equipment necessary. 2. Only for flights terminating within EDDN Area.
SOBRA 5F	SOBRA FIVE FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, on track 198° to intercept R222 FFM; RT, on R222 FFM to 20.6 DME FFM; RT, on track 282° via DONAB (△) to SOBRA (△). GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF163[R] - DF201[R] - DONAB - SOBRA.			1. For flights intending to proceed at FL 250 or above via Y180/Y181. Flights have to be able to cross RUDOT at FL 240 or above. If unable to comply, flight plan shall read RUDOT FL 220 - Y180 – NISIV – UY180 – DIK RFL. 2. After 20.6 DME FFM BRNAV equipment necessary.
SULUS 9F	SULUS NINE FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, inbound RID to 12.0 DME RID; LT (MAX IAS 210 KT until established on track 117°), on track 117° to AMTIX (△); LT, on track 102° via AKONI (△) to GIBSA (△); LT, on track 072° to WUR (△); LT, on track 052° to SULUS (△). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF143[L] - DF137[K210-] - DF159[A2500+] - AMTIX[L] - AKONI - GIBSA[L] - WUR[L] - SULUS.			1. PDG 5.2% / 315 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Not for flights destination EDDN.
TOBAK 5F	TOBAK FIVE FOXTROT On RWY track to 5.0 DME FFM/2.0 DME FRD or 800, whichever is later; RT MT 275° (RWY 25L: MT 278°) to 8.4 DME FFM; RT, on R141 TAU to 11.4 DME TAU (crossing R228 FFM); RT, on track 015° to TABUM (△); RT, on track 040° to TESGA (△); LT, on track 038° to TOBAK (△). Cross 8.4 DME FFM at 3500 or above. Cross 11.4 DME TAU (R282 FFM) at 4400 or above. GPS/FMS RNAV: [A800+] - DF234 (25C)[R]/DF235 (25L)[R] - DF233[A3500+; R] - DF132[A4400+; R] - TABUM[R] - TESGA[L] - TOBAK.		Langen Radar 120.150*	1. PDG 12% / 750 ft/NM to 8.4 DME FFM (4.5 NM after DER*) due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 11.4 DME TAU (crossing R282 FFM) BRNAV equipment necessary. 3. Not for flights continuing via Z10.

(Sample: DF134 fly-over way point)

* DER = Departure End of Runway

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

FRANKFURT MAIN
RWY 25L / 25C

STANDARD DEPARTURE
ROUTES - INSTRUMENT (SID)
SIDs with Route Designator **FOXTROT**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
RATIM 7F	RATIM SEVEN FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, inbound RID to 12.0 DME RID; LT (MAX IAS 210 KT until established on track 117°), on track 117° to AMTIX (△); LT, on track 102° via AKONI (△) to RATIM (△). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF143[L] - DF137[K210-] - DF159[A2500+] - AMTIX[L] - AKONI - RATIM.	5000 ft	Langen Radar 136.125*	1. PDG 5.2% / 315 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Only for propeller-driven aircraft (MAX RFL 230) instead of SID NOMBO. 4. Not for flights terminating within EDDN Area or EDMM FIR.
ROTEN 8F	ROTEN EIGHT FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, inbound RID to 12.0 DME RID; LT (MAX IAS 210 KT until established on track 117°), on track 117° to AMTIX (△); LT, on track 102° to AKONI (△); RT, on track 129° to ROTEN (△). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF143[L] - DF137[K210-] - DF159[A2500+] - AMTIX[L] - AKONI[R] - ROTEN.			1. PDG 5.2% / 315 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After crossing R200 FFM BRNAV equipment necessary. 2. Only for flights terminating within EDDN Area.
SOBRA 5F	SOBRA FIVE FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, on track 198° to intercept R222 FFM; RT, on R222 FFM to 20.6 DME FFM; RT, on track 282° via DONAB (△) to SOBRA (△). GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF163[R] - DF201[R] - DONAB - SOBRA.			1. For flights intending to proceed at FL 250 or above via Y180/Y181. Flights have to be able to cross RUDOT at FL 240 or above. If unable to comply, flight plan shall read RUDOT FL 220 - Y180 – NISIV – UY180 – DIK RFL. 2. After 20.6 DME FFM BRNAV equipment necessary.
SULUS 9F	SULUS NINE FOXTROT On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT, inbound RID to 12.0 DME RID; LT (MAX IAS 210 KT until established on track 117°), on track 117° to AMTIX (△); LT, on track 102° via AKONI (△) to GIBSA (△); LT, on track 072° to WUR (△); LT, on track 052° to SULUS (△). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF134 (25C)[L] / DF135 (25L)[L] - DF141 (25C) / DF142 (25L) - DF143[L] - DF137[K210-] - DF159[A2500+] - AMTIX[L] - AKONI - GIBSA[L] - WUR[L] - SULUS.			1. PDG 5.2% / 315 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Not for flights destination EDDN.
TOBAK 5F	TOBAK FIVE FOXTROT On RWY track to 5.0 DME FFM/2.0 DME FRD or 800, whichever is later; RT MT 275° (RWY 25L: MT 278°) to 8.4 DME FFM; RT, on R141 TAU to 11.4 DME TAU (crossing R228 FFM); RT, on track 015° to TABUM (△); RT, on track 040° to TESGA (△); LT, on track 038° to TOBAK (△). Cross 8.4 DME FFM at 3500 or above. Cross 11.4 DME TAU (R282 FFM) at 4400 or above. GPS/FMS RNAV: [A800+] - DF234 (25C)[R]/DF235 (25L)[R] - DF233[A3500+; R] - DF132[A4400+; R] - TABUM[R] - TESGA[L] - TOBAK.		Langen Radar 120.150*	1. PDG 12% / 750 ft/NM to 8.4 DME FFM (4.5 NM after DER*) due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 11.4 DME TAU (crossing R282 FFM) BRNAV equipment necessary. 3. Not for flights continuing via Z10.

(Sample: DF134 fly-over way point)

* DER = Departure End of Runway

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 25L / 25C
SIDs with Route Designator **GOLF**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
OBOKA 1G	OBOKA ONE GOLF On RWY track to 5.0 DME FFM/2.0 DME FRD or 800, whichever is later; RT MT 274° (RWY 25L: MT 278°), on R258 FFM to 13.7 DME FFM; RT, on track 293° to ESUPI (Δ); RT, on track 307° to MASIR (Δ); RT, on track 335° via RAVKI (Δ) to DITAM (Δ); LT, on track 325° to OBOKA (Δ). Cross 13.7 DME FFM at 3600 or above. GPS/FMS RNAV: [A800+] - DF234 (25C)[R] / DF235 (25L)[R] - DF133[L] - DF136[A3600+; R] - ESUPI[R] - MASIR[R] - RAVKI - DITAM[L] - OBOKA.	5000 ft	Langen Radar 120.150*	1. PDG 5.8% / 350ft/NM until passing 3600 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 13.7 DME FFM BRNAV equipment necessary. 3. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
MARUN 6G	MARUN SIX GOLF On RWY track to 5.0 DME FFM/2.0 DME FRD or 800, whichever is later; RT MT 274° (RWY 25L: MT 278°), on R258 FFM to 9.7 DME FFM or 3500, whichever is later, RT, on R150 TAU to 9.6 DME TAU (crossing R282 FFM); RT, on track 027° to TABUM (Δ); LT, on track 017° to LIKSI (Δ); LT, on track 015° via LORPA (Δ) to MARUN (Δ). Cross 9.6 DME TAU (R282 FFM) at 4400 or above. GPS/FMS RNAV: [A800+] - DF234 (25C)[R] / DF235 (25L)[R] - DF133[L] - DF236 - [A3500+; R] - DF238[A4400+; R] - TABUM[L] - LIKSI[L] - LORPA - MARUN.			After 9.6 DME TAU (crossing R282 FFM) BRNAV equipment necessary.
TOBAK 7G	TOBAK SEVEN GOLF On RWY track to 5.0 DME FFM/2.0 DME FRD or 800, whichever is later; RT MT 274° (RWY 25L: MT 278°), on R258 FFM to 9.7 DME FFM or 3500, whichever is later, RT, on R150 TAU to 9.6 DME TAU (crossing R282 FFM); RT, on track 027° to TABUM (Δ); RT, on track 040° to TESGA (Δ); LT, on track 038° to TOBAK (Δ). Cross 9.6 DME TAU (R282 FFM) at 4400 or above. GPS/FMS RNAV: [A800+] - DF234 (25C)[R] / DF235 (25L)[R] - DF133[L] - DF236 - [A3500+; R] - DF238[A4400+; R] - TABUM[R] - TESGA[L] - TOBAK.			1. After 9.6 DME TAU (crossing R282 FFM) BRNAV equipment necessary. 2. Not for flights continuing via Z10.

(Sample: DF236 fly-over way point)

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

FRANKFURT MAIN
RWY 25C
SIDs with Route Designator **MIKE**

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2				
Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.				
Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
OBOKA 1M	OBOKA ONE MIKE On RWY track to 5.0 DME FFM/2.0 DME FRD; LT, direct VFM (MAX IAS 200 KT until VFM); on track 195° to 10.1 DME FFM/7.3 DME FRD. RT, on track 237° to PABVI (Δ); RT, on track 273° to SIVDO (Δ); RT, on track 305° to KUPIP (Δ); RT, on track 318° to MASIR (Δ); RT, on track 335° via RAVKI (Δ) to DITAM (Δ); LT, on track 325° to OBOKA (Δ). Cross 5.0 DME FFM/2.0 DME FRD at or above 800. Cross 10.1 DME FFM/7.3 DME FRD at or above 2500. GPS/FMS RNAV: DF999[A800+; L] - VFM[K200-] - DF172[A2500+, R] - PABVI[R] - SIVDO[R] - KUPIP[R] - MASIR[R] - RAVKI - DITAM[L] - OBOKA. Recommended Path Terminator for initial departure turn: Direct to a Fix (DF).	FL 70	Langen Radar 120.150*	1. PDG 8.5% / 520 ft/NM or more until passing 800, then PDG 4.5% / 273 ft/NM or more until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 10.1 DME FFM (7.3 DME FRD) BRNAV equipment necessary. 3. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
MARUN 6M	MARUN SIX MIKE On RWY track to 5.0 DME FFM/2.0 DME FRD; LT, direct VFM (MAX IAS 200 KT until VFM); on track 195° to 10.1 DME FFM/7.3 DME FRD. RT, on track 279° to ROXAP (Δ); RT, on track 335° via ADEVO (Δ) to LISKU (Δ); RT, on track 017° via TABUM (Δ) to LIKSI (Δ); LT, on track 015° via LORPA (Δ) to MARUN (Δ). Cross 5.0 DME FFM/2.0 DME FRD at or above 800. Cross 10.1 DME FFM/7.3 DME FRD at or above 2500. Cross ADEVO at or above 6000. GPS/FMS RNAV: DF999[A800+; L] - VFM[K200-] - DF180[A2500+, R] - ROXAP[R] - ADEVO[A6000+] - LISKU[R] - TABUM - LIKSI[L] - LORPA - MARUN. Recommended Path Terminator for initial departure turn: Direct to a Fix (DF).			1. PDG 8.5% / 520 ft/NM or more until passing 800, then PDG 6.8% / 415 ft/NM or more until passing 6000 due to operational requirements. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 10.1 DME FFM (7.3 DME FRD) BRNAV equipment necessary.
TOBAK 6M	TOBAK SIX MIKE On RWY track to 5.0 DME FFM/2.0 DME FRD; LT, direct VFM (MAX IAS 200 KT until VFM); on track 195° to 10.1 DME FFM/7.3 DME FRD. RT, on track 279° to ROXAP (Δ); RT, on track 335° via ADEVO (Δ) to LISKU (Δ); RT, on track 017° to TABUM (Δ); RT, on track 040° to TESGA (Δ); LT, on track 038° to TOBAK (Δ). Cross 5.0 DME FFM/2.0 DME FRD at or above 800. Cross 10.1 DME FFM/7.3 DME FRD at or above 2500. Cross ADEVO at or above 6000. GPS/FMS RNAV: DF999[A800+; L] - VFM[K200-] - DF180[A2500+, R] - ROXAP[R] - ADEVO[A6000+] - LISKU[R] - TABUM[R] - TESGA[L] - TOBAK. Recommended Path Terminator for initial departure turn: Direct to a Fix (DF).			
(Sample: <u>DF999</u> fly-over way point) * Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency. Contact LANGEN RADAR when advised by Tower!				

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 25L
SIDs with Route Designator **HOTEL**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
OBOKA 1H	OBOKA ONE HOTEL On RWY track to 5.2 DME FFM/2.2 DME FRD; LT, direct VFM (MAX IAS 200 KT until VFM); on track 195° to 10.1 DME FFM/7.3 DME FRD. RT, on track 237° to PABVI (△); RT, on track 273° to SIVDO (△); RT, on track 305° to KUPIP (△); RT, on track 318° to MASIR (△); RT, on track 335° via RAVKI (△) to DITAM (△); LT, on track 325° to OBOKA (△). Cross 5.2 DME FFM/2.2 DME FRD at or above 800. Cross 10.1 DME FFM/7.3 DME FRD at or above 2500. GPS/FMS RNAV: DF980[A800+; L] - VFM[K200-] - DF172[A2500+, R] - PABVI[R] - SIVDO[R] - KUPIP[R] - MASIR[R] - RAVKI - DITAM[L] - OBOKA. Recommended Path Terminator for initial departure turn: Direct to a Fix (DF).	FL 70	Langen Radar 120.150*	1. PDG 8.5% / 520 ft/NM or more until passing 800, then PDG 4.5% / 273 ft/NM or more until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 10.1 DME FFM (7.3 DME FRD) BRNAV equipment necessary. 3. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
MARUN 4H	MARUN FOUR HOTEL On RWY track to 5.2 DME FFM/2.2 DME FRD; LT, direct VFM (MAX IAS 200 KT until VFM); on track 195° to 10.1 DME FFM/7.3 DME FRD. RT, on track 279° to ROXAP (△); RT, on track 335° via ADEVO(△) to LISKU (△); RT, on track 017° via TABUM (△) to LIKSI (△); LT, on track 015° via LORPA (△) to MARUN (△). Cross 5.2 DME FFM/2.2 DME FRD at or above 800. Cross 10.1 DME FFM/7.3 DME FRD at or above 2500. Cross ADEVO at or above 6000. GPS/FMS RNAV: DF980[A800+; L] - VFM[K200-] - DF180[A2500+, R] - ROXAP[R] - ADEVO[A6000+] - LISKU[R] - TABUM - LIKSI[L] - LORPA - MARUN. Recommended Path Terminator for initial departure turn: Direct to a Fix (DF).			1. PDG 8.5% / 520 ft/NM or more until passing 800, then PDG 6.8% / 415 ft/NM or more until passing 6000 due to operational requirements. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 10.1 DME FFM (7.3 DME FRD) BRNAV equipment necessary.
TOBAK 4H	TOBAK FOUR HOTEL On RWY track to 5.2 DME FFM/2.2 DME FRD; LT, direct VFM (MAX IAS 200 KT until VFM); on track 195° to 10.1 DME FFM/7.3 DME FRD. RT, on track 279° to ROXAP (△); RT, on track 335° via ADEVO(△) to LISKU (△); RT, on track 017° to TABUM (△); RT, on track 040° to TESGA (△); LT, on track 038° to TOBAK (△). Cross 5.2 DME FFM/2.2 DME FRD at or above 800. Cross 10.1 DME FFM/7.3 DME FRD at or above 2500. Cross ADEVO at or above 6000. GPS/FMS RNAV: DF980[A800+; L] - VFM[K200-] - DF180[A2500+, R] - ROXAP[R] - ADEVO[A6000+] - LISKU[R] - TABUM[R] - TESGA[L] - TOBAK. Recommended Path Terminator for initial departure turn: Direct to a Fix (DF).			

(Sample: DF980 fly-over way point)

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

FRANKFURT MAIN
RWY 25L / 25C
SIDs with Route Designator **NOVEMBER & PAPA**

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
OBOKA 1N	OBOKA ONE NOVEMBER On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT (MAX IAS 220 KT until established on track 183°), on track 183° to intercept R222 FFM; on R222 FFM to 14.0 DME FFM; RT, on R301 RID to 16.0 DME RID (crossing R174 TAU; crossing R244 FFM); RT, on track 318° to MASIR (Δ); RT, on track 335° via RAVKI (Δ) to DITAM (Δ); LT, on track 325° to OBOKA (Δ). GPS/FMS RNAV: [A800+] - <u>DF134</u> (25C)[L] / <u>DF135</u> (25L)[L] - DF162 (25C)[K220-] / DF165 (25L)[K220-] - DF166[R] - DF164[R] - KUPIP[R] - MASIR[R] - RAVKI - DITAM[L] - OBOKA.	5000 ft	Langen Radar 120.150*	1. After 16.0 DME RID (crossing R174 TAU; crossing R244 FFM) BRNAV equipment necessary. 2. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
MARUN 6N	MARUN SIX NOVEMBER On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT (MAX IAS 220 KT until established on track 183°), on track 183° to intercept R222 FFM; on R222 FFM to 14.0 DME FFM; RT, on R301 RID to 16.0 DME RID (crossing R174 TAU; crossing R244 FFM); RT, on track 022° to TABUM (Δ); LT, on track 017° to LIKSI (Δ); LT, on track 015° via LORPA (Δ) to MARUN (Δ). GPS/FMS RNAV: [A800+] - <u>DF134</u> (25C)[L] / <u>DF135</u> (25L)[L] - DF162 (25C)[K220-] / DF165 (25L)[K220-] - DF166[R] - DF164[R] - KUPIP[R] - TABUM[L] - LIKSI[L] - LORPA - MARUN.			After 16.0 DME RID (crossing R174 TAU; crossing R244 FFM) BRNAV equipment necessary.
SOBRA 6N	SOBRA SIX NOVEMBER On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT (MAX IAS 220 KT until established on track 183°), on track 183° to intercept R222 FFM; on R222 FFM to 20.6 DME FFM; RT, on track 282° via DONAB (Δ) to SOBRA (Δ). GPS/FMS RNAV: [A800+] - <u>DF134</u> (25C)[L] / <u>DF135</u> (25L)[L] - DF162 (25C)[K220-] / DF165 (25L)[K220-] - DF166[R] - DF201[R] - DONAB - SOBRA.			1. For flights intending to proceed at FL 250 or above via Y180/Y181. Flights have to be able to cross RUDOT at FL 240 or above. If unable to comply, flight plan shall read RUDOT FL 220 - Y180 - NISIV - UY180 - DIK RFL. 2. After 20.6 DME FFM BRNAV equipment necessary.
TOBAK 8N	TOBAK EIGHT NOVEMBER On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; LT (MAX IAS 220 KT until established on track 183°), on track 183° to intercept R222 FFM; on R222 FFM to 14.0 DME FFM; RT, on R301 RID to 16.0 DME RID (crossing R174 TAU; crossing R244 FFM); RT, on track 022° to TABUM (Δ); RT, on track 040° to TESGA (Δ); LT, on track 038° to TOBAK (Δ). GPS/FMS RNAV: [A800+] - <u>DF134</u> (25C)[L] / <u>DF135</u> (25L)[L] - DF162 (25C)[K220-] / DF165 (25L)[K220-] - DF166[R] - DF164[R] - KUPIP[R] - TABUM[R] - TESGA[L] - TOBAK.			1. After 16.0 DME RID (crossing R174 TAU; crossing R244 FFM) BRNAV equipment necessary. 2. Not for flights continuing via Z10.
SOBRA 4P	SOBRA FOUR PAPA On RWY track to 4.5 DME FFM/1.5 DME FRD or 800, whichever is later; RT, on track 224° (RWY25L: track 228°) to intercept R238 FFM to 26.0 DME FFM; RT, on track 282° to SOBRA (Δ). GPS/FMS RNAV: [A800+] - <u>DF134</u> (25C)[L] / <u>DF135</u> (25L)[L] - DF138[R] - DONAB[R] - SOBRA.		Langen Radar 136.125*	1. For flights intending to proceed at FL 250 or above via Y180/Y181. Flights have to be able to cross RUDOT at FL 240 or above. If unable to comply, flight plan shall read RUDOT FL 220 - Y180 - NISIV - UY180 - DIK RFL. 2. After 26.0 DME FFM BRNAV equipment necessary.

(Sample: DF134 fly-over way point)

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

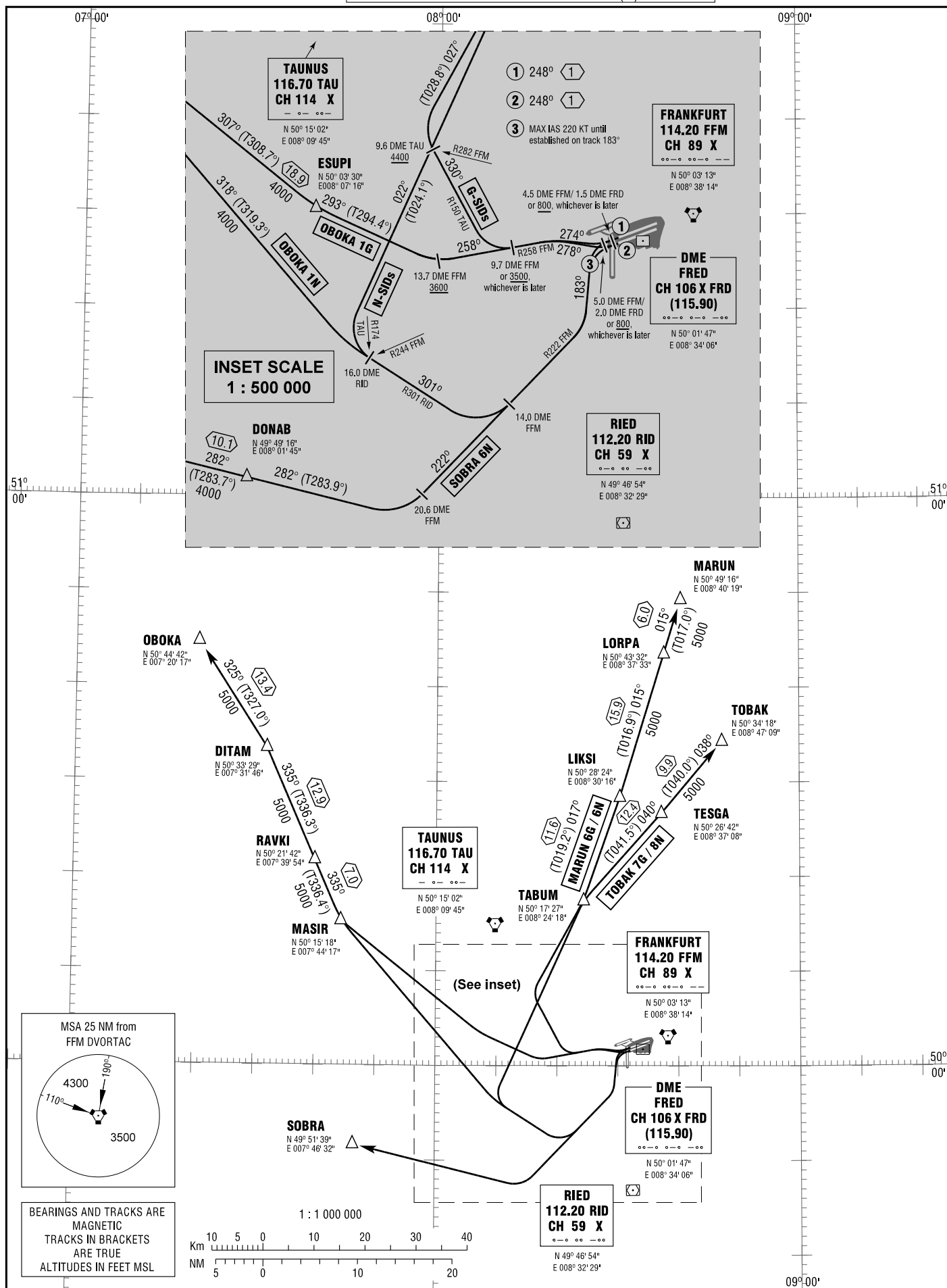
Contact LANGEN RADAR when advised by Tower!

STANDARD DEPARTURE
CHART - INSTRUMENT
(SID)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	118.775
APRON	121.750		119.900
	121.850	LANGEN RADAR (N, NW)	120.150
	121.950	LANGEN RADAR (W)	136.125

FRANKFURT MAIN (NORTH)
RWY 25L/25C
GOLF/NOVEMBER



Correction: Page number, departures via BIBTI withdrawn.

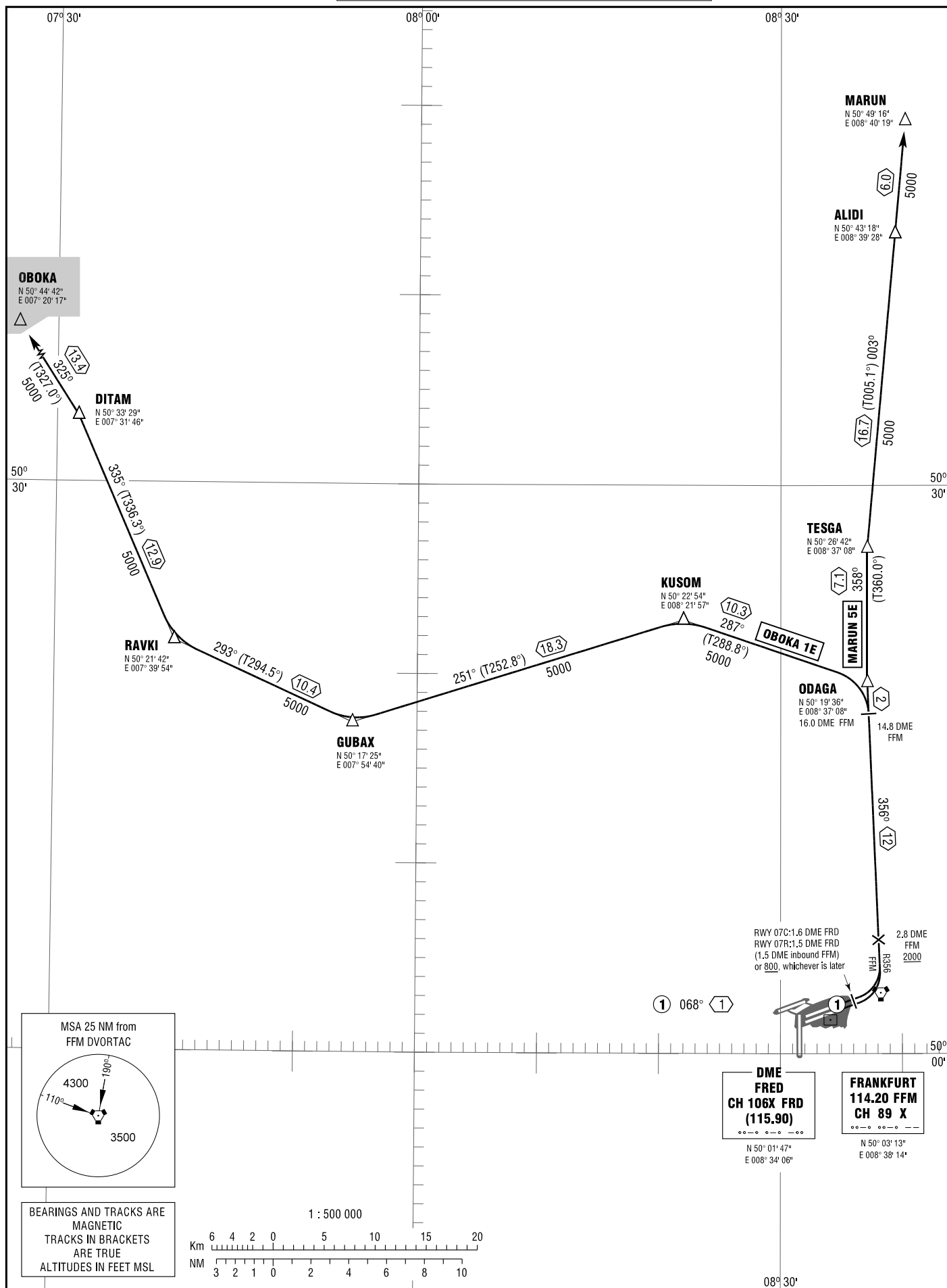
STANDARD DEPARTURE
CHART - INSTRUMENT
(SID)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	120.150

FRANKFURT MAIN (NORTH)
RWY 07C/07R
ECHO

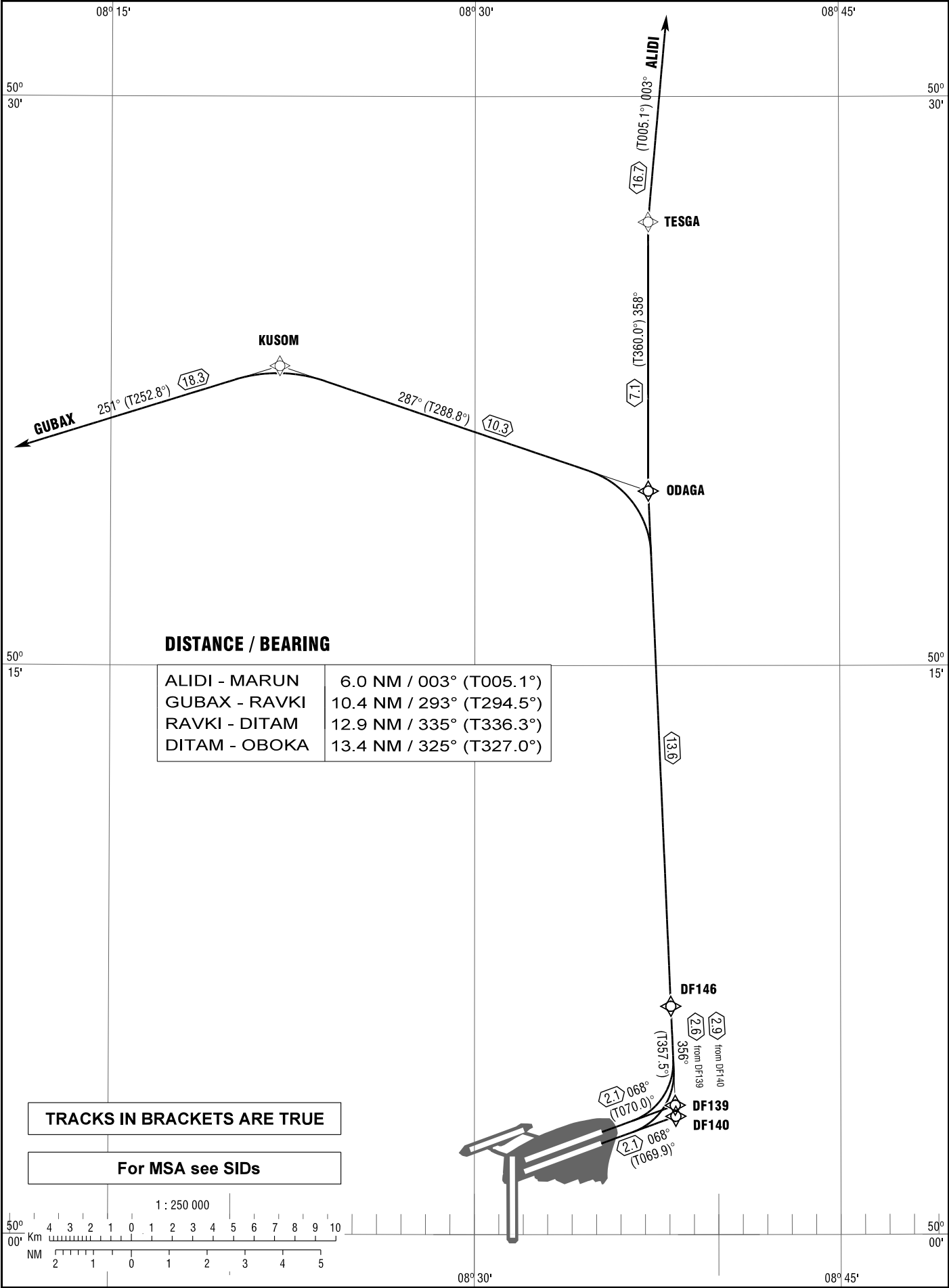
Correction: Page number, page scale, departures via BIBTI, TOBAK, KOMIB & SULUS withdrawn.



FRANKFURT MAIN (NORTH)
RWY 07C/07R
ECHO

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	120.150

TRANSITION GPS / FMS RNAV DEPARTURE
ALTITUDE 5000 CHART - INSTRUMENT
VAR 2° E (OVERLAY)

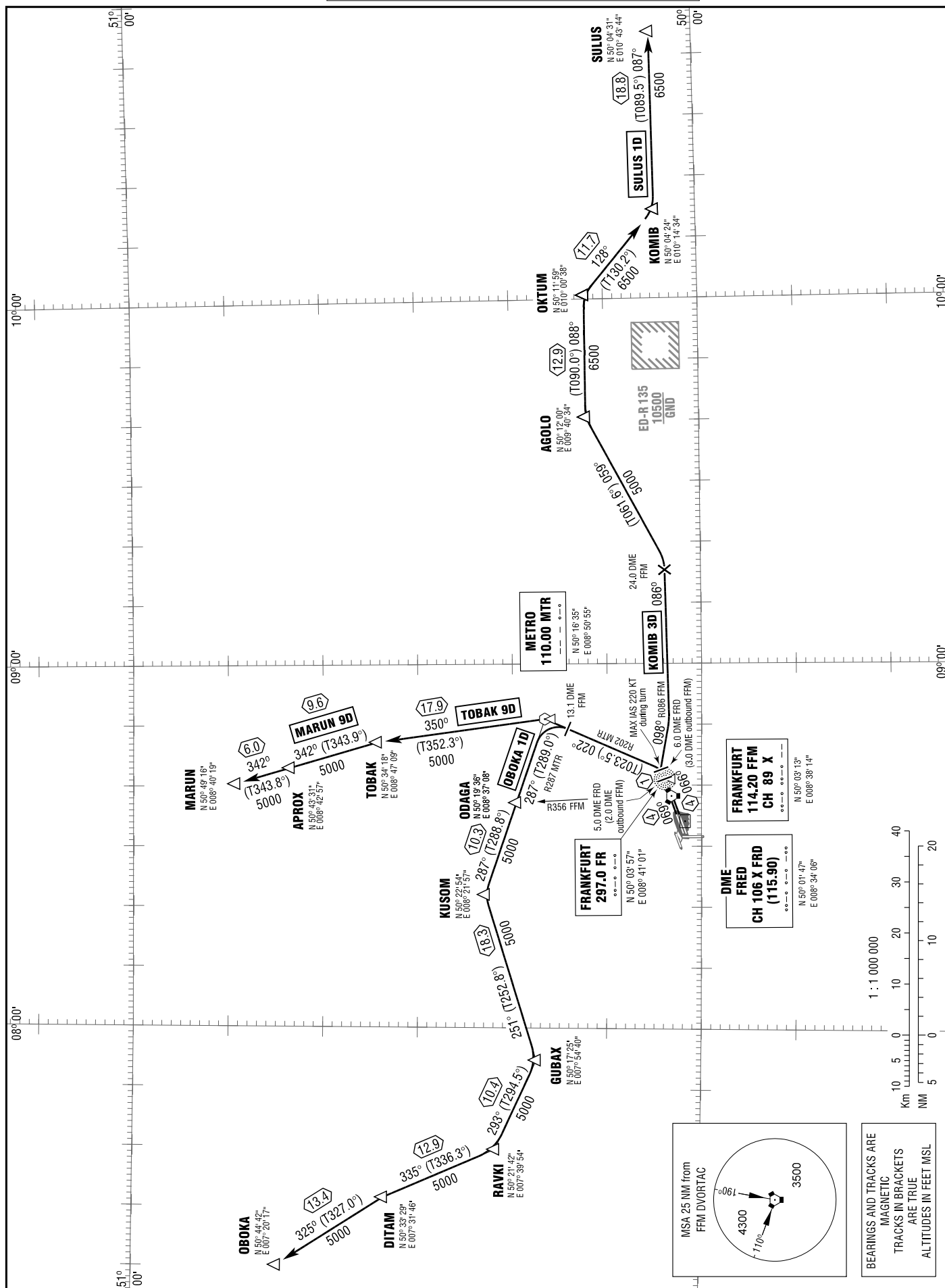
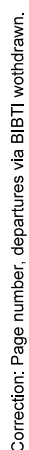


Correction: Page number, departures via BIBTI, TOBAK, KOMIB & SULUS withdrawn.

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	120.150

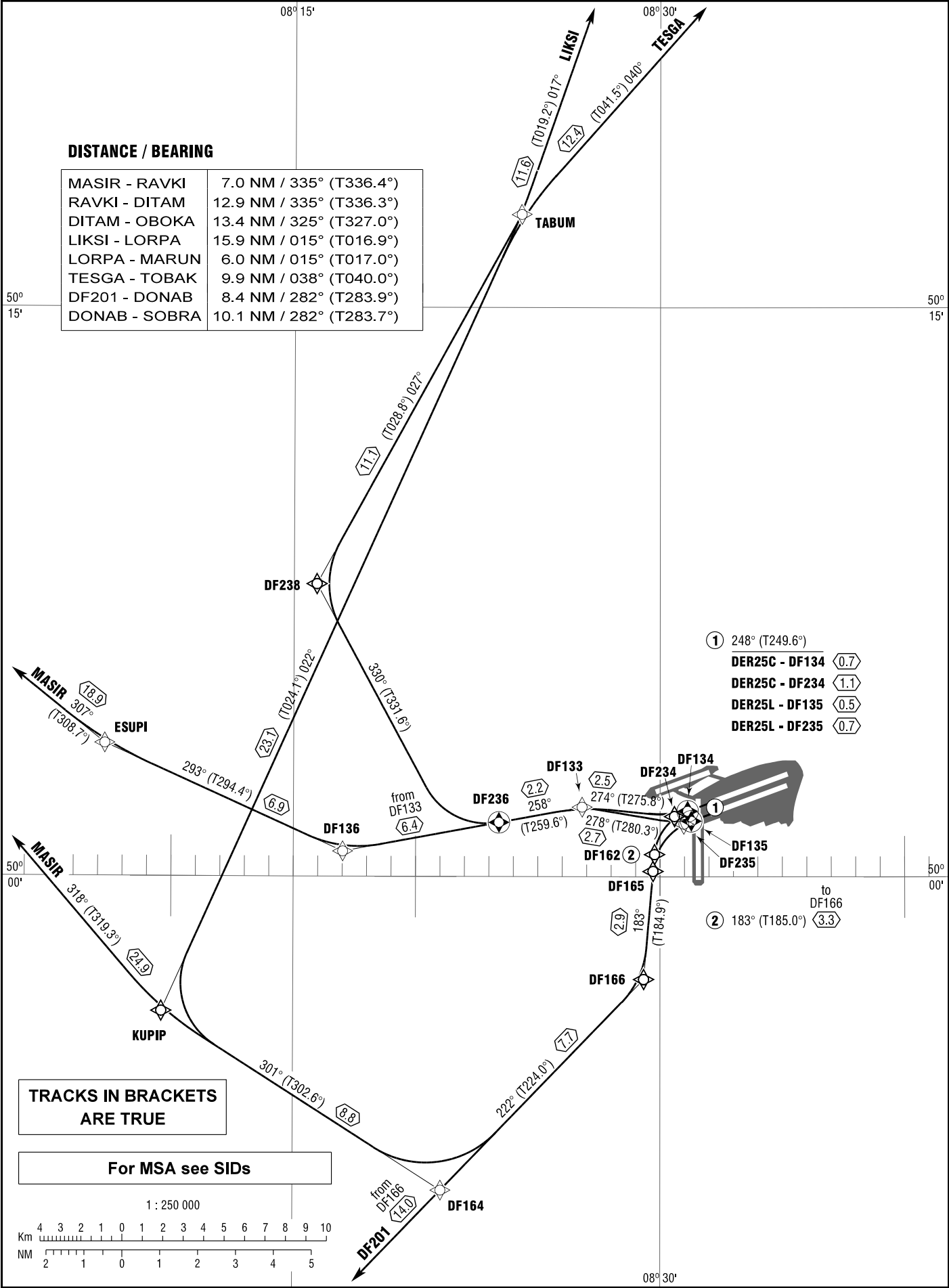
FRANKFURT MAIN (NORTH)
RWY 07C/07R
DELTA



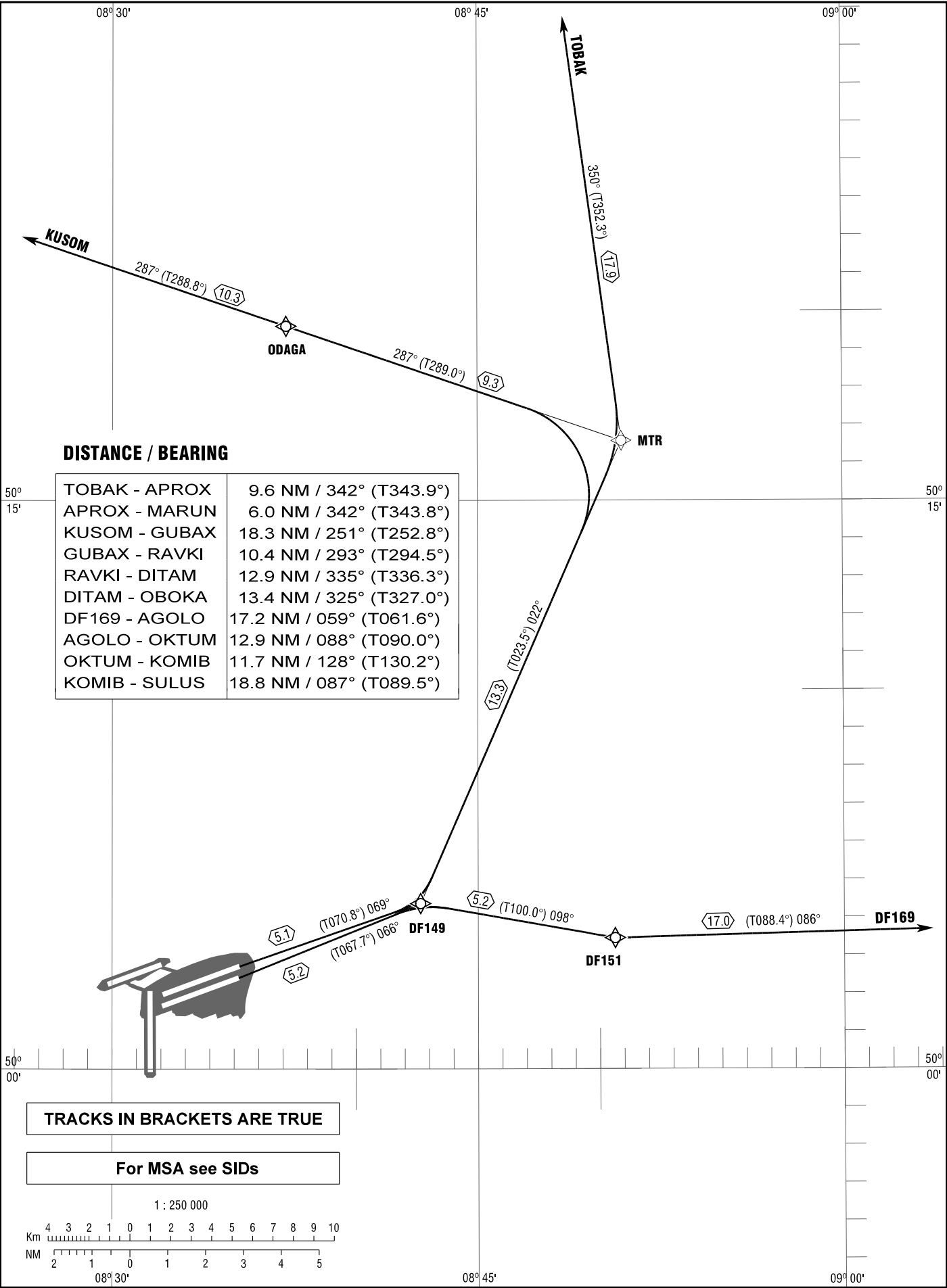
FRANKFURT MAIN (NORTH)
RWY 25L/25C
GOLF/NOVEMBER

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	118.775
APRON	121.750		119.900
	121.850	LANGEN RADAR (N, NW)	120.150
	121.950	LANGEN RADAR (W)	136.125

TRANSITION GPS / FMS RNAV DEPARTURE
ALTITUDE 5000 CHART - INSTRUMENT
VAR 2° E (OVERLAY)



FRANKFURT MAIN (NORTH) RWY 07C/07R DELTA	ATIS	118.725	APRON	121.750	GROUND	121.800	TRANSITION	GPS / FMS RNAV DEPARTURE CHART - INSTRUMENT (OVERLAY)
	DELIVERY	121.900		121.850	TOWER	119.900		
	(Initial Call)			121.950	LANGEN RADAR	120.150		
							ALTITUDE 5000 VAR 2° E	

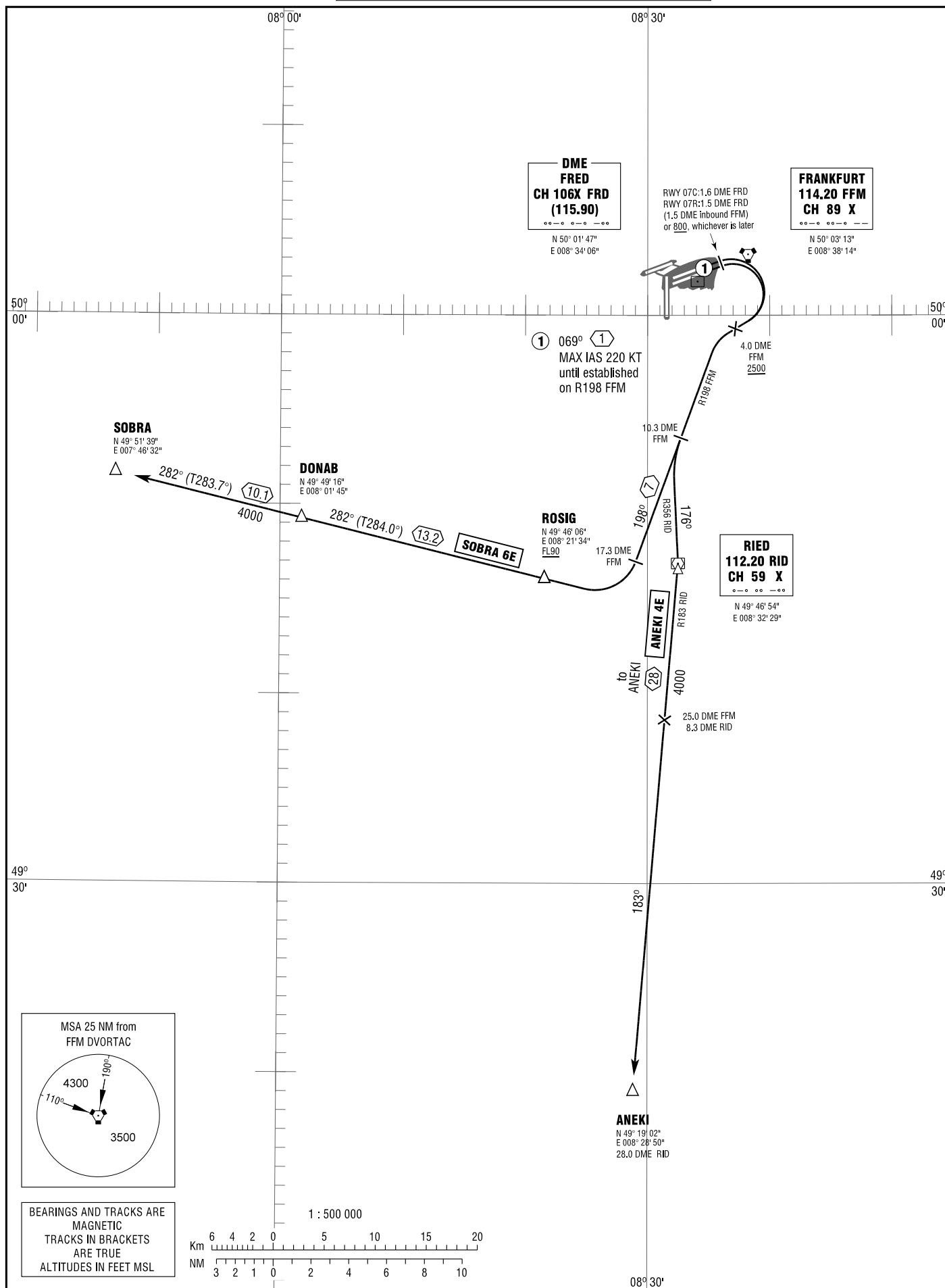


STANDARD DEPARTURE
CHART - INSTRUMENT
(SID)

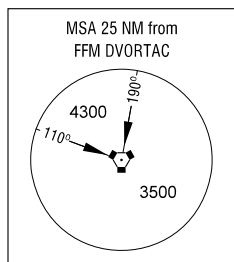
TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	136.125

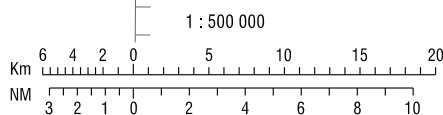
FRANKFURT MAIN (SOUTH)
RWY 07C/07R
ECHO



Correction: Page number, page scale, departures via RATIM, DKB & NOMBO withdrawn.



BEARINGS AND TRACKS ARE
MAGNETIC
TRACKS IN BRACKETS
ARE TRUE
ALTITUDES IN FEET MSL

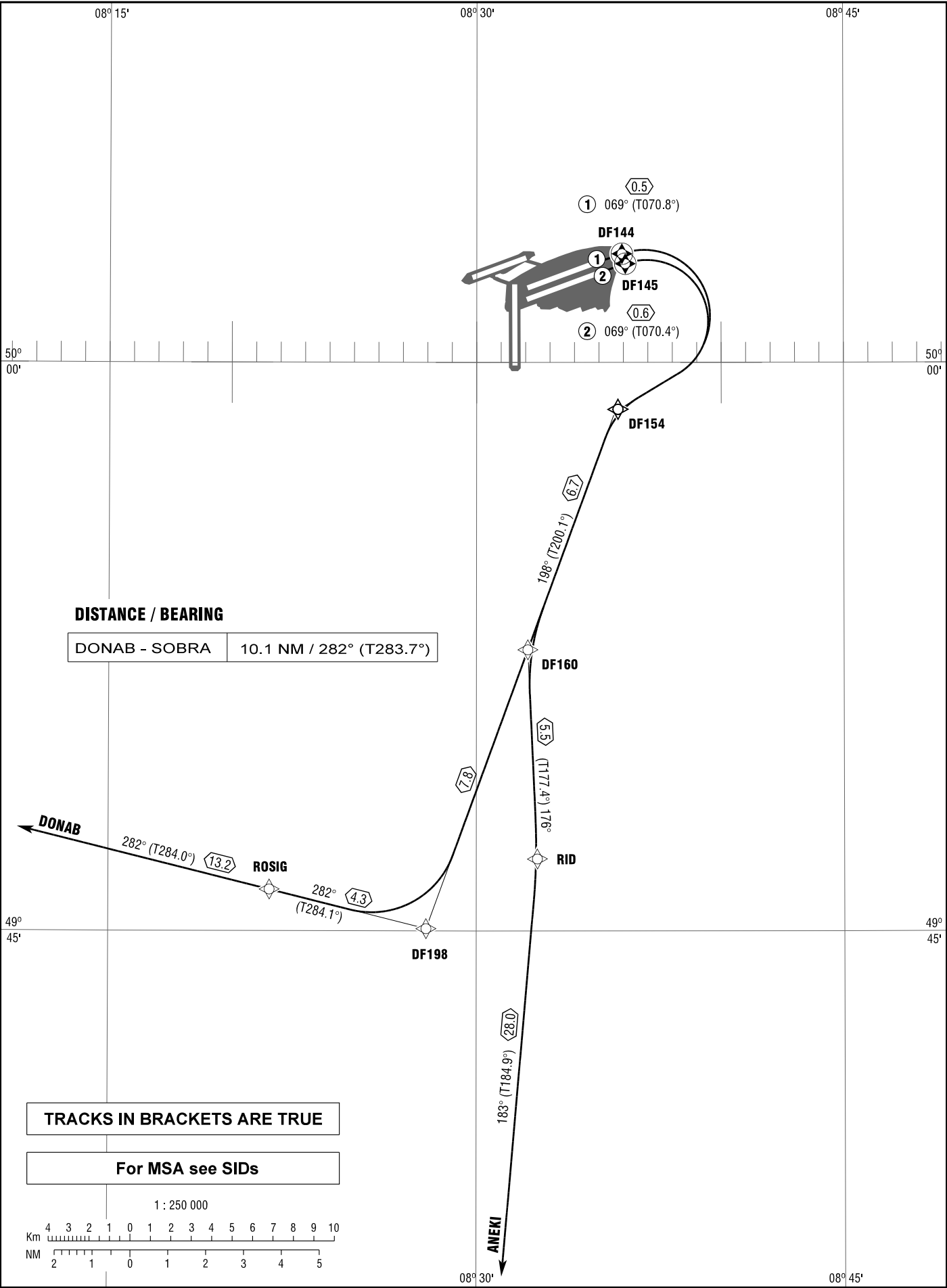


FRANKFURT MAIN (SOUTH)
RWY 07C/07R
ECHO

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	136.125

TRANSITION
ALTITUDE 5000
VAR 2° E

GPS / FMS RNAV DEPARTURE
CHART - INSTRUMENT
(OVERLAY)



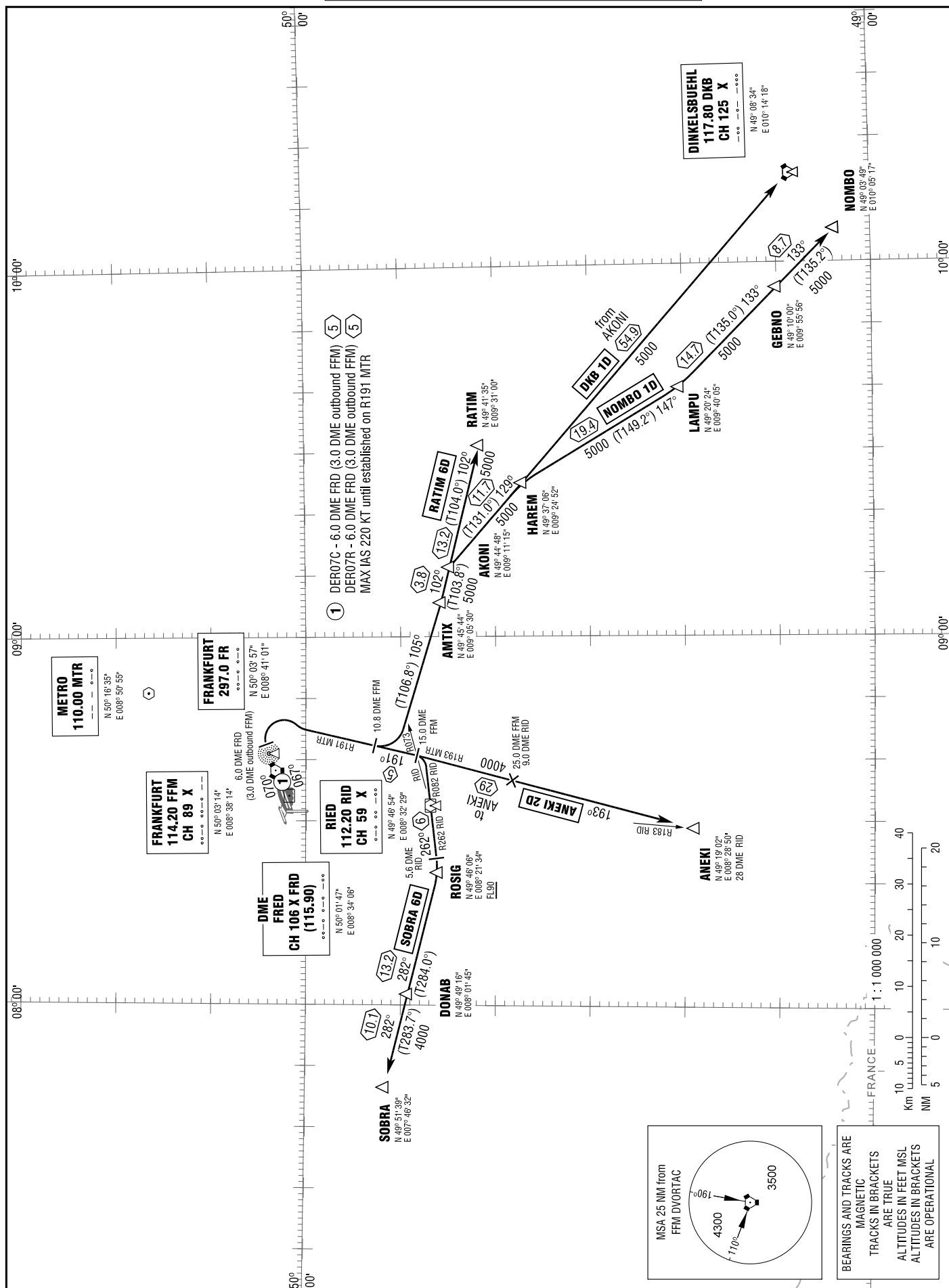
STANDARD DEPARTURE
CHART - INSTRUMENT
(SID)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	136.125

FRANKFURT MAIN (SOUTH)
RWY 07C/07R
DELTA

Correction: Page number, altitude restrictions withdrawn.

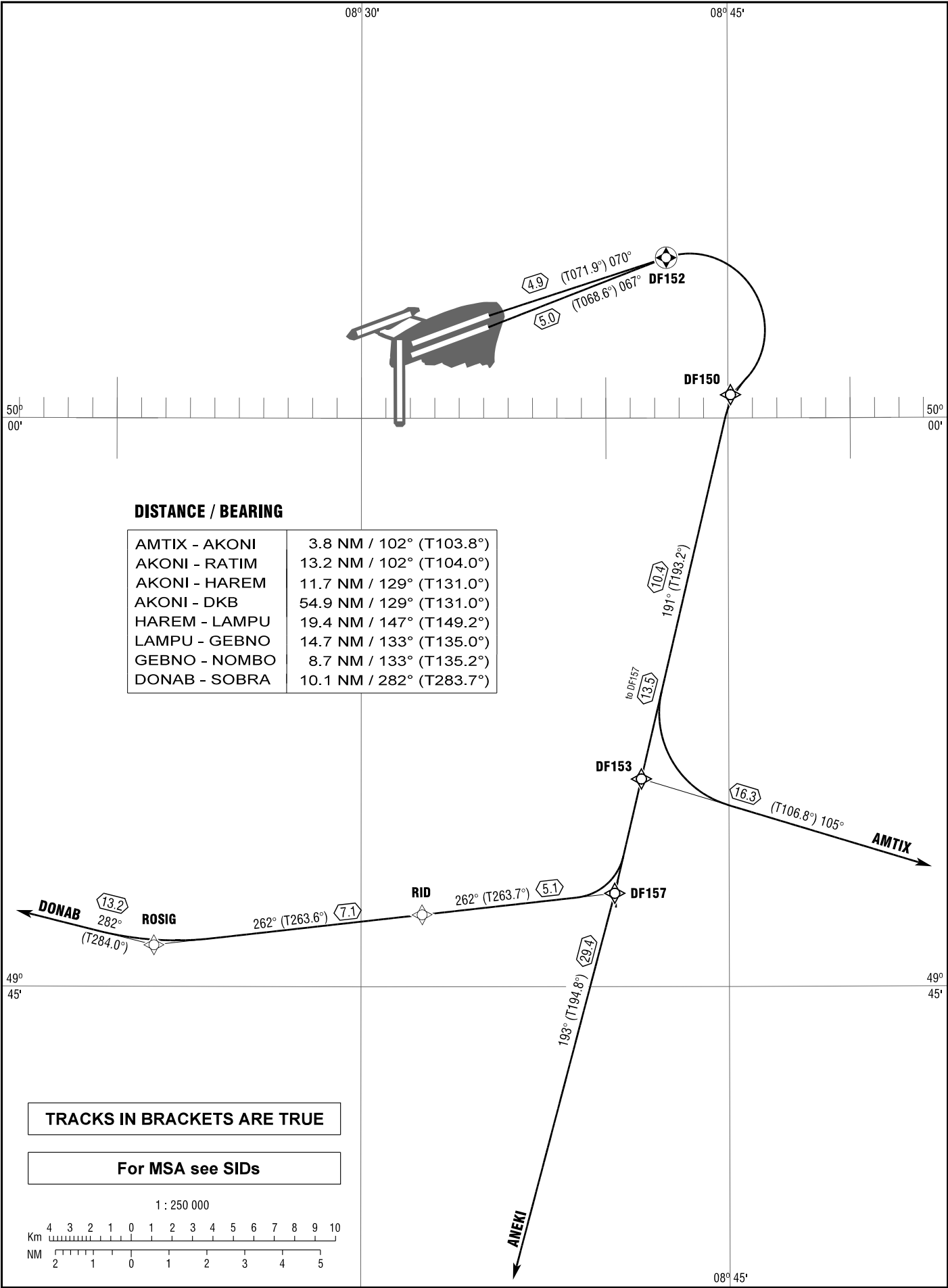


FRANKFURT MAIN (SOUTH)
RWY 07C/07R
DELTA

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	136.125

TRANSITION
ALTITUDE 5000
VAR 2° E

GPS/FMS RNAV DEPARTURE
CHART - INSTRUMENT
(OVERLAY)



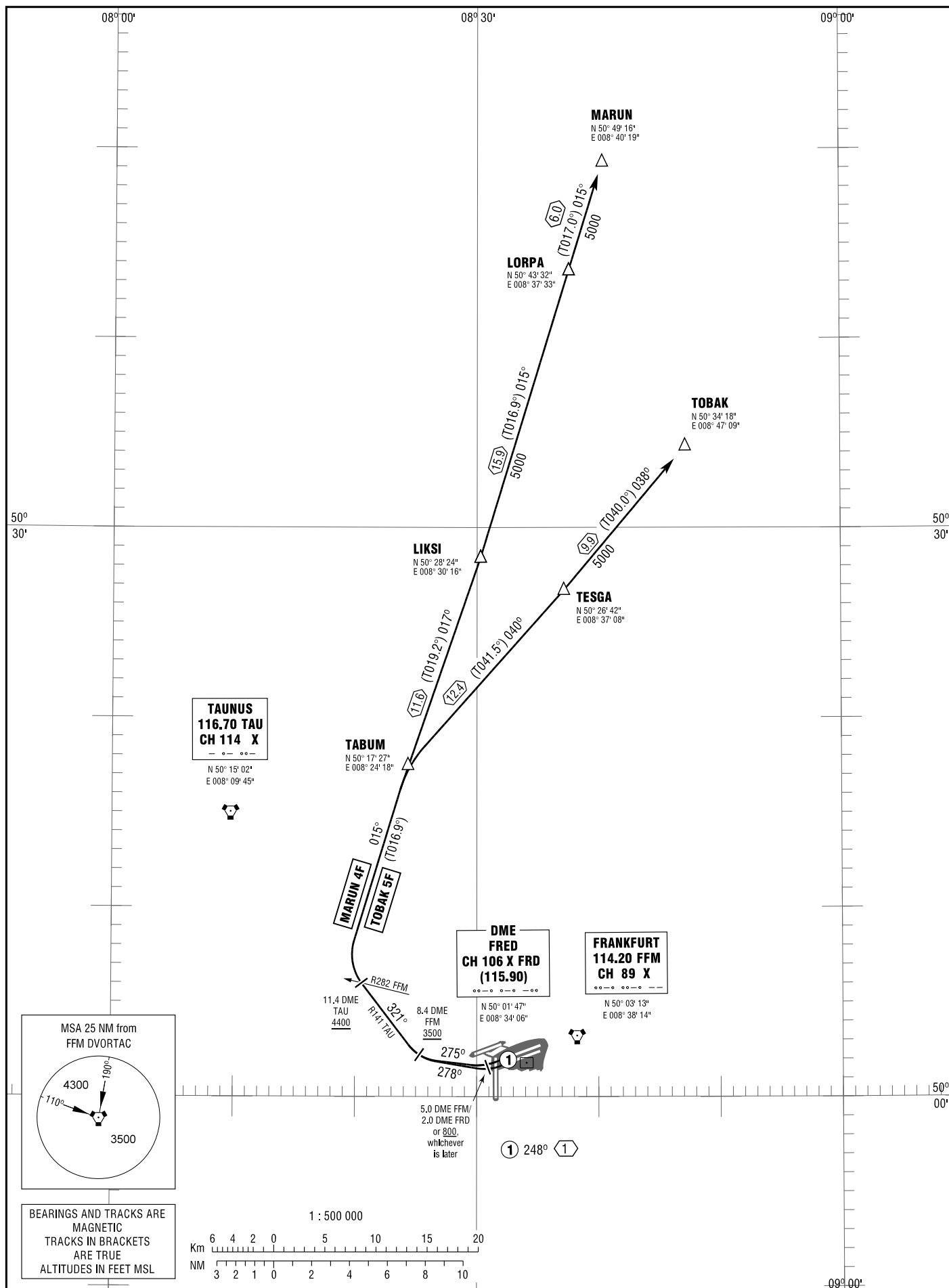
STANDARD DEPARTURE
CHART - INSTRUMENT
(SID)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	120.150

FRANKFURT MAIN (NORTH)
RWY 25L/25C
FOXTROT

Correction: Communications, page number, page scale, JULIET- departures & departures via BIBTI withdrawn.



STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 07C / 07R
SIDs with Route Designator **ECHO**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
ANEKI 4E	ANEKI FOUR ECHO On RWY track to 1.6 DME FRD/1.5 DME inbound FFM (RWY 07R: 1.5 DME FRD/1.5 DME inbound FFM) or 800, whichever is later; RT (MAX IAS 220 KT until established on R198 FFM), on R198 FFM to 10.3 DME FFM; LT, on R356 RID to RID (Δ); RT, on R183 RID to ANEKI (Δ). Cross 4.0 DME FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF144 (07C)[R] / DF145 (07R)[R] - DF154 [A2500+; K220-; L] - DF160[L] - RID[R] - ANEKI.	4000 ft	Langen Radar 136.125*	PDG 5.4% / 330ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up.
OBOKA 1E	OBOKA ONE ECHO On RWY track to 1.6 DME FRD/1.5 DME inbound FFM (RWY 07R: 1.5 DME FRD/1.5 DME inbound FFM) or 800, whichever is later; LT, on R356 FFM to ODAGA (Δ); LT, on track 287° to KUSOM (Δ); LT, on track 251° to GUBAX (Δ); RT, on track 293° to RAVKI (Δ); RT, on track 335° to DITAM (Δ); LT, on track 325° to OBOKA (Δ). Cross 2.8 DME FFM north of FFM at 2000 or above. GPS/FMS RNAV: [A800+] - DF139 (07C)[L] / DF140 (07R)[L] - DF146[A2000+] - ODAGA[L] - KUSOM[L] - GUBAX[R] - RAVKI[R] - DITAM[L] - OBOKA.	5000 ft	Langen Radar 120.150*	1. PDG 6.3% / 380ft/NM until passing 2000 due to obstacle. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After ODAGA BRNAV equipment necessary. 3. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
MARUN 5E	MARUN FIVE ECHO On RWY track to 1.6 DME FRD/1.5 DME inbound FFM (RWY 07R: 1.5 DME FRD/1.5 DME inbound FFM) or 800, whichever is later; LT, on R356 FFM to ODAGA (Δ); RT, on track 358° to TESGA (Δ); RT, on track 003° via ALIDI (Δ) to MARUN (Δ). Cross 2.8 DME FFM north of FFM at 2000 or above. GPS/FMS RNAV: [A800+] - DF139 (07C)[L] / DF140 (07R)[L] - DF146[A2000+] - ODAGA[R] - TESGA[R] - ALIDI - MARUN.	5000 ft	Langen Radar 120.150*	1. PDG 6.3% / 380ft/NM until passing 2000 due to obstacle. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After ODAGA BRNAV equipment necessary.
SOBRA 6E	SOBRA SIX ECHO On RWY track to 1.6 DME FRD/1.5 DME inbound FFM (RWY 07R: 1.5 DME FRD/1.5 DME inbound FFM) or 800, whichever is later; RT (MAX IAS 220 KT until established on R198 FFM), on R198 FFM to 17.3 DME FFM; RT, on track 282° via ROSIG (Δ) and DONAB (Δ) to SOBRA (Δ). Cross 4.0 DME FFM at 2500 or above. Cross ROSIG at FL 90 or above. GPS/FMS RNAV: [A800+] - DF144 (07C)[R] / DF145 (07R)[R] - DF154 [A2500+; K220-] - DF160 - DF198[R] - ROSIG[F090+] - DONAB - SOBRA.	4000 ft	Langen Radar 136.125*	1. PDG 5.5% / 335ft/NM until passing FL90 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. For flights intending to proceed at FL 250 or above via Y180/Y181. Flights have to be able to cross RUDOT at FL 240 or above. If unable to comply, flight plan shall read RUDOT FL 220 – Y180 – NISIV – UY180 – DIK RFL. 3. After 17.3 DME FFM BRNAV equipment necessary.

(Sample: DF144 fly-over way point)

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

FRANKFURT MAIN
RWY 07C / 07R
SIDs with Route Designator **DELTA**

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
ANEKI 2D	ANEKI TWO DELTA On RWY track to 800; via FR to 6.0 DME FRD (3.0 DME outbound FFM) (MAX IAS 220 KT until established on R191 MTR); RT, on R191 MTR to 15.0 DME FFM/crossing R073 RID; RT, on R193 MTR to ANEKI (Δ). GPS/FMS RNAV: [A800+] - <u>DF152</u> [R] - DF150[K220-; L] - DF157[R] - ANEKI.	4000 ft	Langen Radar 136.125*	
OBOKA 1D	OBOKA ONE DELTA On RWY track to 800; then direct to FR; at FR (5.0 DME FRD / 2.0 DME outbound FFM) immediate LT (MAX IAS 220 KT during turn), on R202 MTR inbound MTR to 13.1 DME FFM; LT, on R287 MTR to ODAGA (Δ) on track 287° to KUSOM (Δ); LT, on track 251° to GUBAX (Δ); RT, on track 293° to RAVKI (Δ); RT, on track 335° to DITAM (Δ); LT, on track 325° to OBOKA (Δ). GPS/FMS RNAV: [A800+] - DF149[K220-; L] - MTR[L] - ODAGA - KUSOM[L] - GUBAX[R] - RAVKI[R] - DITAM[L] - OBOKA.	5000 ft	Langen Radar 120.150*	1. After ODAGA BRNAV equipment necessary. 2. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
DKB 1D	DINKELSBUHEL ONE DELTA On RWY track to 800; via FR to 6.0 DME FRD (3.0 DME outbound FFM) (MAX IAS 220 KT until established on R191 MTR); RT, on R191 MTR to 10.8 DME FFM; LT, on track 105° to AMTIX (Δ); LT, on track 102° to AKONI (Δ); RT, on track 129° to DKB (Δ). GPS/FMS RNAV: [A800+] - <u>DF152</u> [R] - DF150[K220-; L] - DF153[L] - AMTIX[L] - AKONI[R] - DKB.	4000 ft	Langen Radar 136.125*	1. Only for flights terminating within EDMM FIR. 2. After 10.8 DME FFM BRNAV equipment necessary.
KOMIB 3D	KOMIB THREE DELTA On RWY track to 800; via FR to 6.0 DME FRD (3.0 DME outbound FFM); RT (MAX IAS 220 KT during turn), on track 098°; LT, intercept R086 FFM to 24.0 DME FFM; LT, on track 059° to AGOLO (Δ); RT, on track 088° to OKTUM (Δ); RT, on track 128° to KOMIB (Δ). GPS/FMS RNAV: [A800+] - DF149[K220-; R] - DF151[L] - DF169[L] - AGOLO[R] - OKTUM[R] - KOMIB			1. Only for flights terminating within EDDN Area. 2. After 24.0 DME FFM BRNAV equipment necessary.
MARUN 9D	MARUN NINE DELTA On RWY track to 800; then direct to FR; at FR (5.0 DME FRD / 2.0 DME outbound FFM) immediate LT (MAX IAS 220 KT during turn), on R202 MTR to MTR (Δ); LT, on track 350° to TOBAK (Δ); LT, on track 342° via APROX (Δ) to MARUN (Δ). GPS/FMS RNAV: [A800+] - DF149[K220-; L] - MTR[L] - TOBAK[L] - APROX - MARUN.	5000 ft	Langen Radar 120.150*	After MTR BRNAV equipment necessary.
NOMBO 1D	NOMBO ONE DELTA On RWY track to 800; via FR to 6.0 DME FRD (3.0 DME outbound FFM) (MAX IAS 220 KT until established on R191 MTR); RT, on R191 MTR to 10.8 DME FFM; LT, on track 105° to AMTIX (Δ); LT, on track 102° to AKONI (Δ); RT, on track 129° to HAREM (Δ); RT, on track 147° to LAMPU (Δ); LT, on track 133° via GEBNO (Δ) to NOMBO (Δ). GPS/FMS RNAV: [A800+] - <u>DF152</u> [R] - DF150[K220-; L] - DF153[L] - AMTIX[L] - AKONI[R] - HAREM[R] - LAMPU[L] - GEBNO - NOMBO.	4000 ft	Langen Radar 136.125*	1. After 10.8 DME FFM BRNAV equipment necessary. 2. Not for flights terminating EDDN Area or EDMM FIR. 3. Not for propeller-driven aircraft. These flights shall file SID RATIM.
RATIM 6D	RATIM SIX DELTA On RWY track to 800; via FR to 6.0 DME FRD (3.0 DME outbound FFM) (MAX IAS 220 KT until established on R191 MTR); RT, on R191 MTR to 10.8 DME FFM; LT, on track 105° to AMTIX (Δ); LT, on track 102° via AKONI (Δ) to RATIM (Δ). GPS/FMS RNAV: [A800+] - <u>DF152</u> [R] - DF150[K220-; L] - DF153[L] - AMTIX[L] - AKONI - RATIM.			1. Only for propeller-driven aircraft (MAX RFL 230) instead of SID NOMBO. 2. After 10.8 DME FFM BRNAV equipment necessary. 3. Not for flights terminating within EDDN Area or EDMM FIR.

(Sample: DF152 fly-over way point)

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 07C / 07R
SIDs with Route Designator **DELTA**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

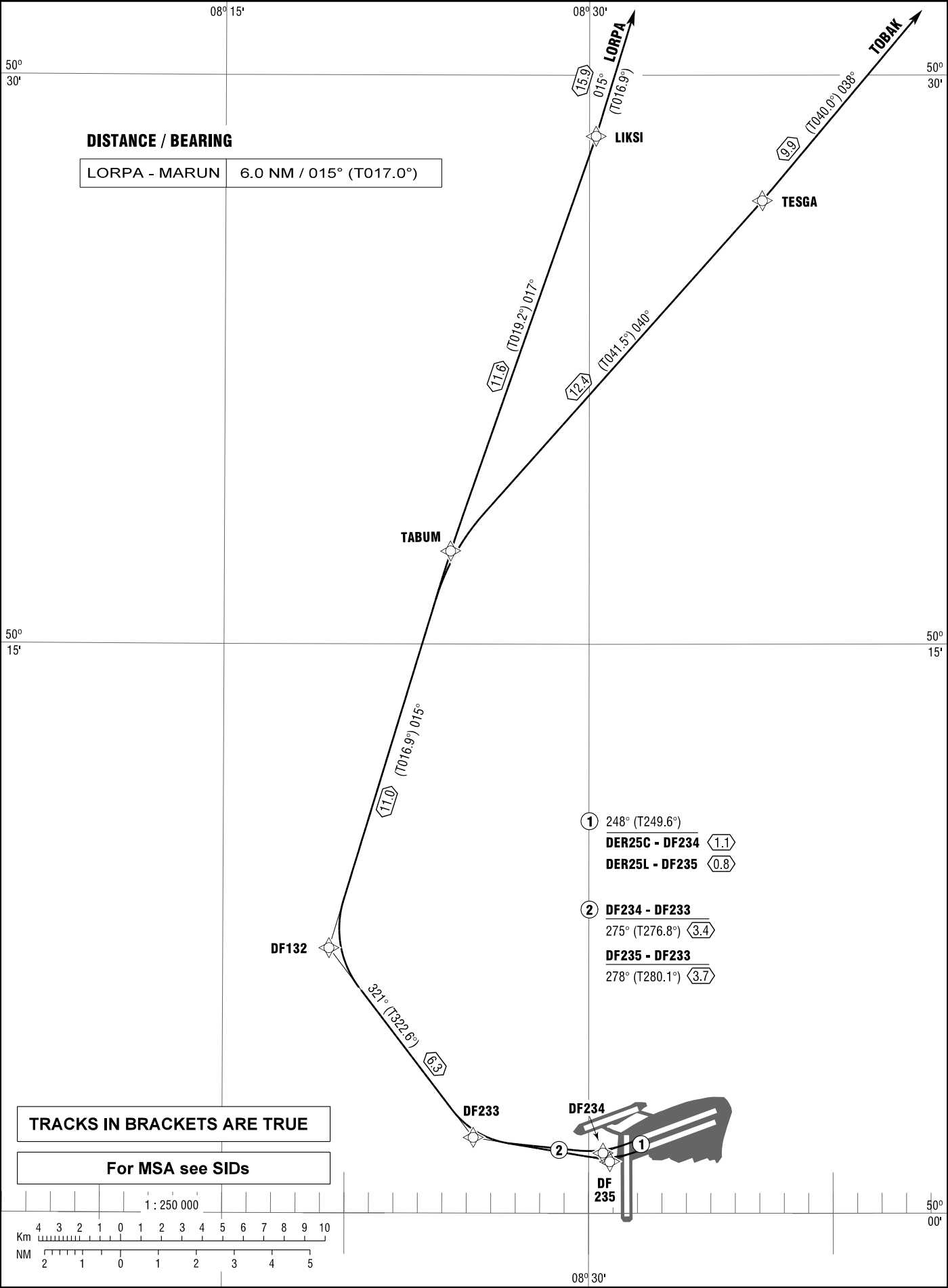
Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
SOBRA 6D	SOBRA SIX DELTA On RWY track to 800; via FR to 6.0 DME FRD (3.0 DME outbound FFM) (MAX IAS 220 KT until established on R191 MTR); RT, on R191 MTR to 15.0 DME FFM/crossing R073 RID; RT, on R082 RID to RID (Δ); on R262 RID to 5.6 DME RID; RT, on track 282° via ROSIG (Δ) and DONAB (Δ) to SOBRA (Δ). Cross ROSIG at FL 90 or above. GPS/FMS RNAV: [A800+] - DF152[R] - DF150[K220-; L] - DF157[R] - RID - ROSIG[F090+; R] - DONAB - SOBRA.	4000 ft	Langen Radar 136.125*	1. PDG 3.9%/240ft/NM until passing FL 90 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. For flights intending to proceed at FL 250 or above via Y180/Y181. Flights have to be able to cross RUDOT at FL 240 or above. If unable to comply, flight plan shall read RUDOT FL 220 - Y180 - NISIV - UY180 - DIK RFL. 3. After 5.6 DME RID BRNAV equipment necessary.
SULUS 1D	SULUS ONE DELTA On RWY track to 800; via FR to 6.0 DME FRD (3.0 DME outbound FFM); RT (MAX IAS 220 KT during turn), on track 098°; LT, intercept R086 FFM to 24.0 DME FFM; LT, on track 059° to AGOLO (Δ); RT, on track 088° to OKTUM (Δ); RT, on track 128° to KOMIB (Δ); LT, on track 087° to SULUS(Δ). GPS/FMS RNAV: [A800+] - DF149[K220-; R] - DF151[L] - DF169[L] - AGOLO[R] - OKTUM[R] - KOMIB[L] - SULUS			1. After 24.0 DME FFM BRNAV equipment necessary. 2. Not for flights destination EDDN.
TOBAK 9D	TOBAK NINE DELTA On RWY track to 800; then direct to FR; at FR (5.0 DME FRD / 2.0 DME outbound FFM) immediate LT (MAX IAS 220 KT during turn), on R202 MTR to MTR (Δ); LT, on track 350° to TOBAK (Δ). GPS/FMS RNAV: [A800+] - DF149[K220-; L] - MTR[L] - TOBAK.	5000 ft	Langen Radar 120.150*	1. After MTR BRNAV equipment necessary. 2. Not for flights continuing via Z10.

(Sample: DF152 fly-over way point)

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

FRANKFURT MAIN (NORTH) RWY 25L/25C FOXTROT	ATIS	118.725	APRON	121.750	GROUND	121.800	TRANSITION	GPS / FMS RNAV DEPARTURE CHART - INSTRUMENT (OVERLAY)
	DELIVERY	121.900		121.850	TOWER	119.900	ALTITUDE	
	(Initial Call)			121.950	LANGEN RADAR	120.150	VAR	
							2° E	

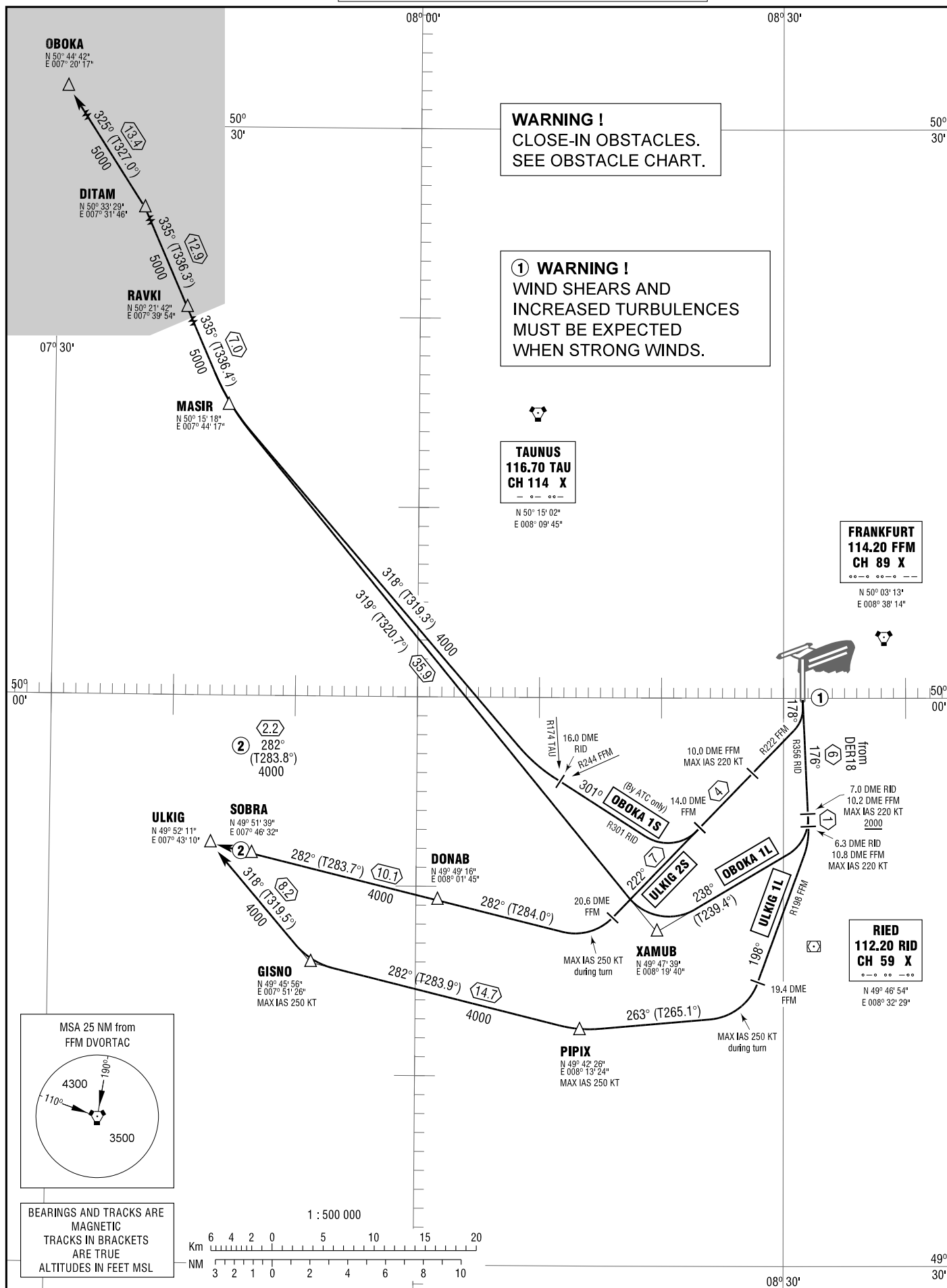
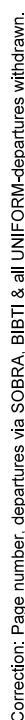


Correction: Communications, page number, JULIET-departures & departures via BIBTI withdrawn.

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	119.900
APRON	121.750	LANGEN RADAR (N, NW)	120.150
	121.850	LANGEN RADAR (W)	136.125
	121.950		

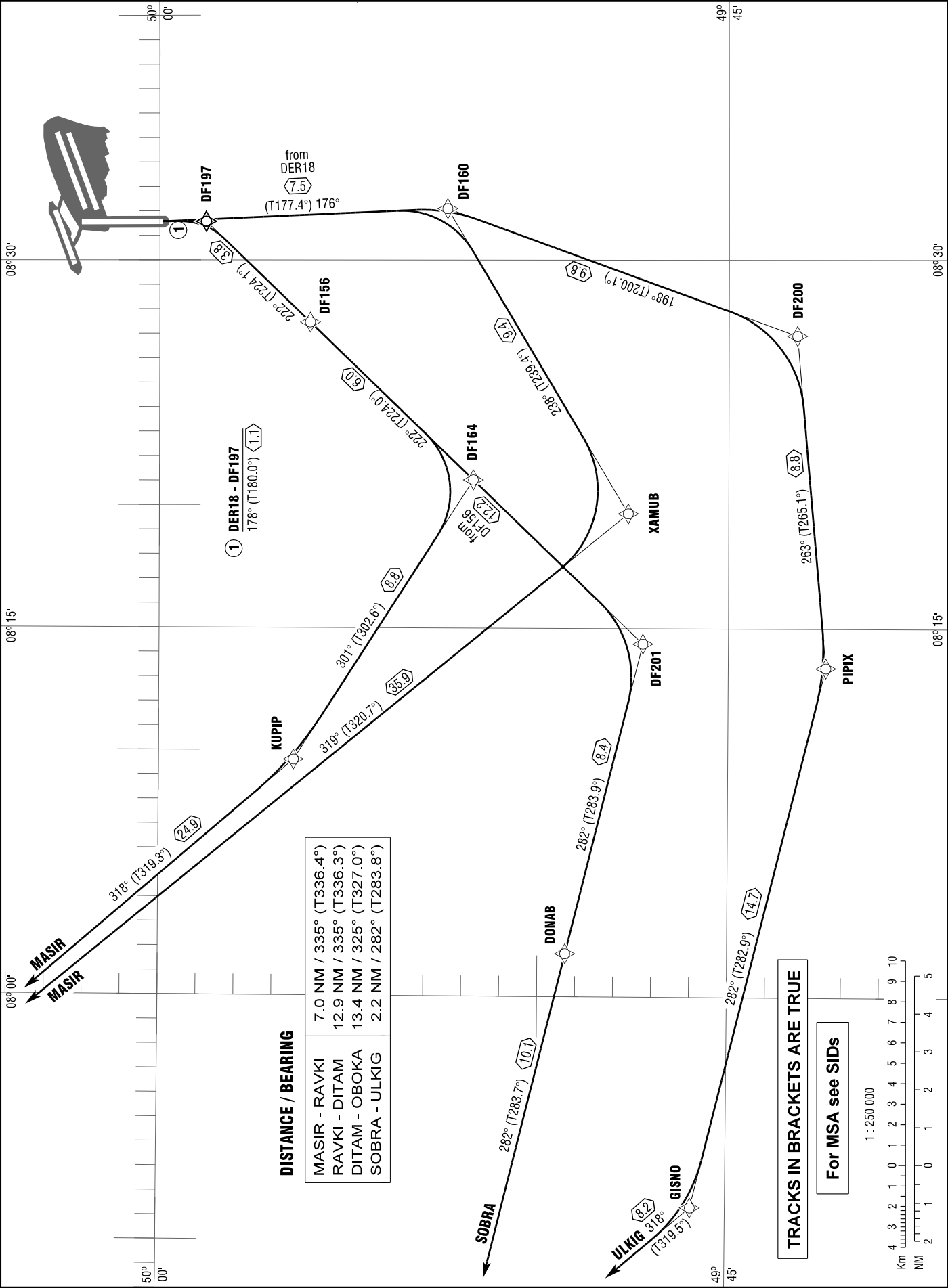
FRANKFURT MAIN (WEST)
RWY 18
LIMA / SIERRA



FRANKFURT MAIN (WEST)
RWY 18
LIMA / SIERRA

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	119.900
APRON	121.750	LANGEN RADAR (N, NW)	120.150
	121.850	LANGEN RADAR (W)	136.125
	121.950		

TRANSITION GPS / FMS RNAV DEPARTURE
ALTITUDE 5000
VAR 2° E
CHART - INSTRUMENT
(OVERLAY)



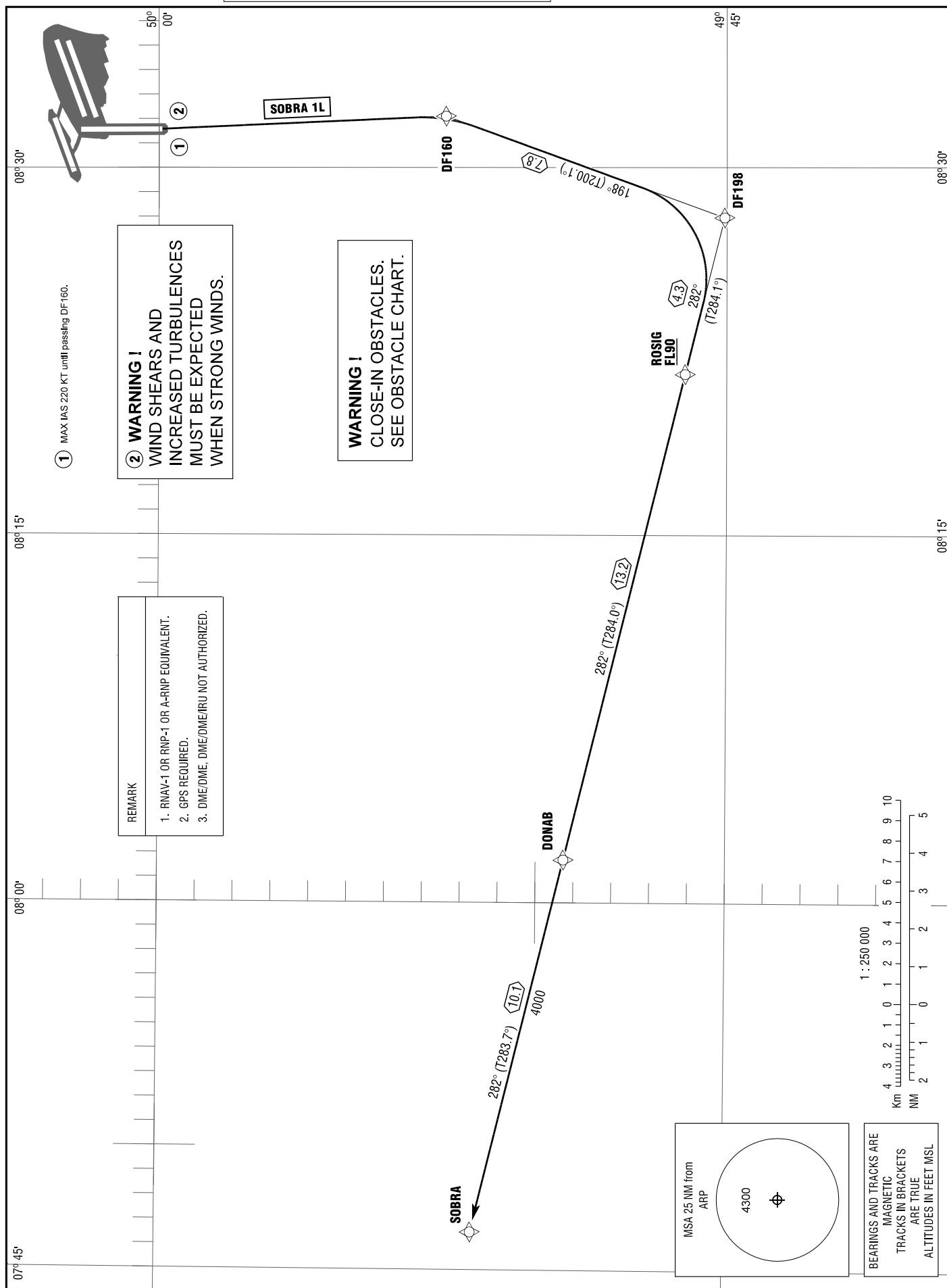
FRANKFURT MAIN (WEST)
RWY 18

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	119.900
APRON	121.750	LANGEN RADAR	136.125
	121.850		
	121.950		

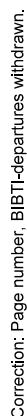
TRANSITION
ALTITUDE 5000
VAR 2° E

STANDARD DEPARTURE
CHART - INSTRUMENT
RNAV (GPS)

Correction: Page number, ALPHA-departure changed to LIMA-departure.



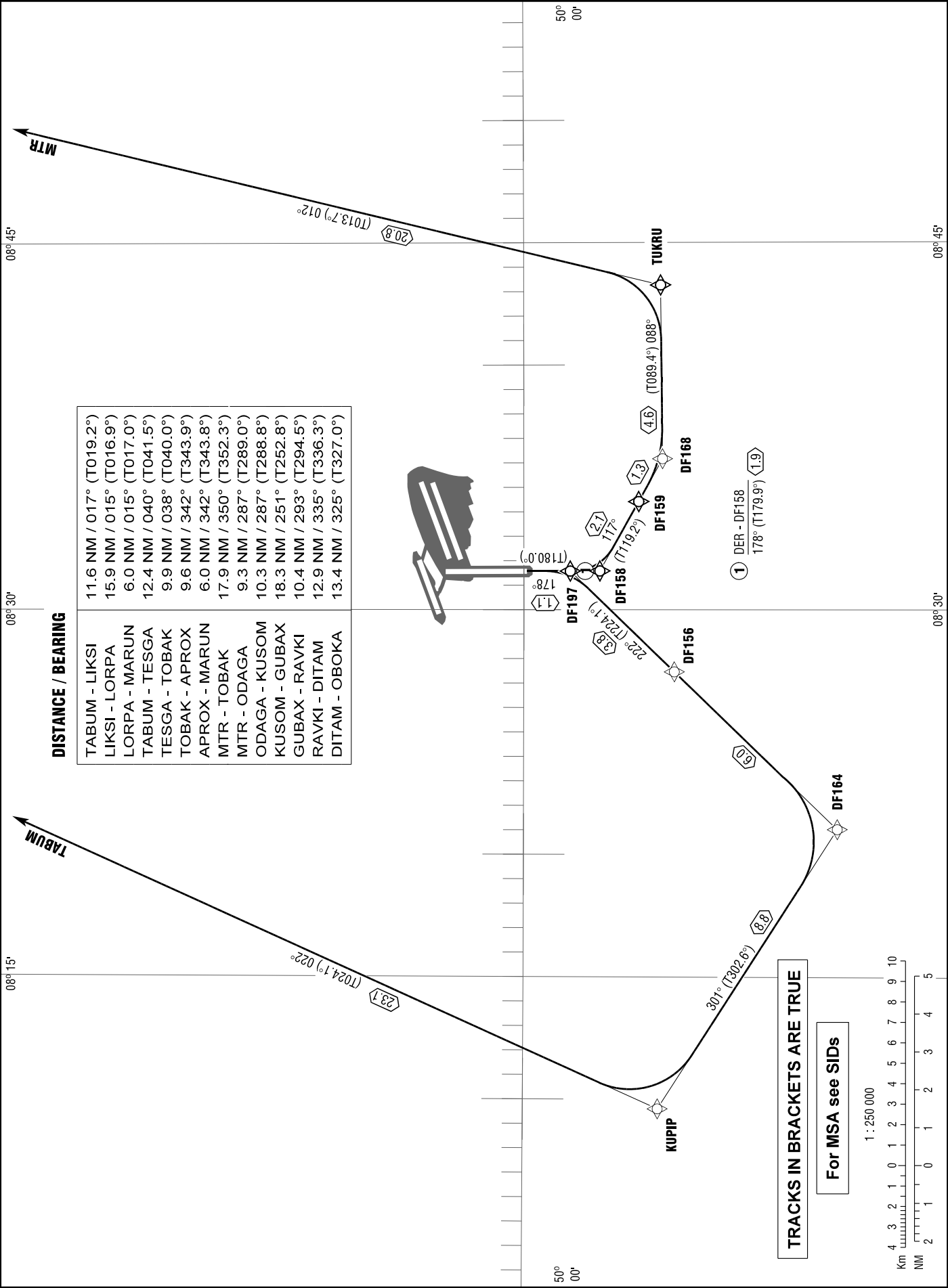
FRANKFURT MAIN (NORTH)
RWY 18
ROMEO / SIERRA



FRANKFURT MAIN (NORTH)
RWY 18
ROMEO / SIERRA

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	119.900
APRON	121.750	LANGEN RADAR (N, NW)	120.150
	121.850	LANGEN RADAR (W)	136.125
	121.950		

TRANSITION GPS / FMS RNAV DEPARTURE
ALTITUDE 5000
VAR 2° E
CHART - INSTRUMENT
(OVERLAY)

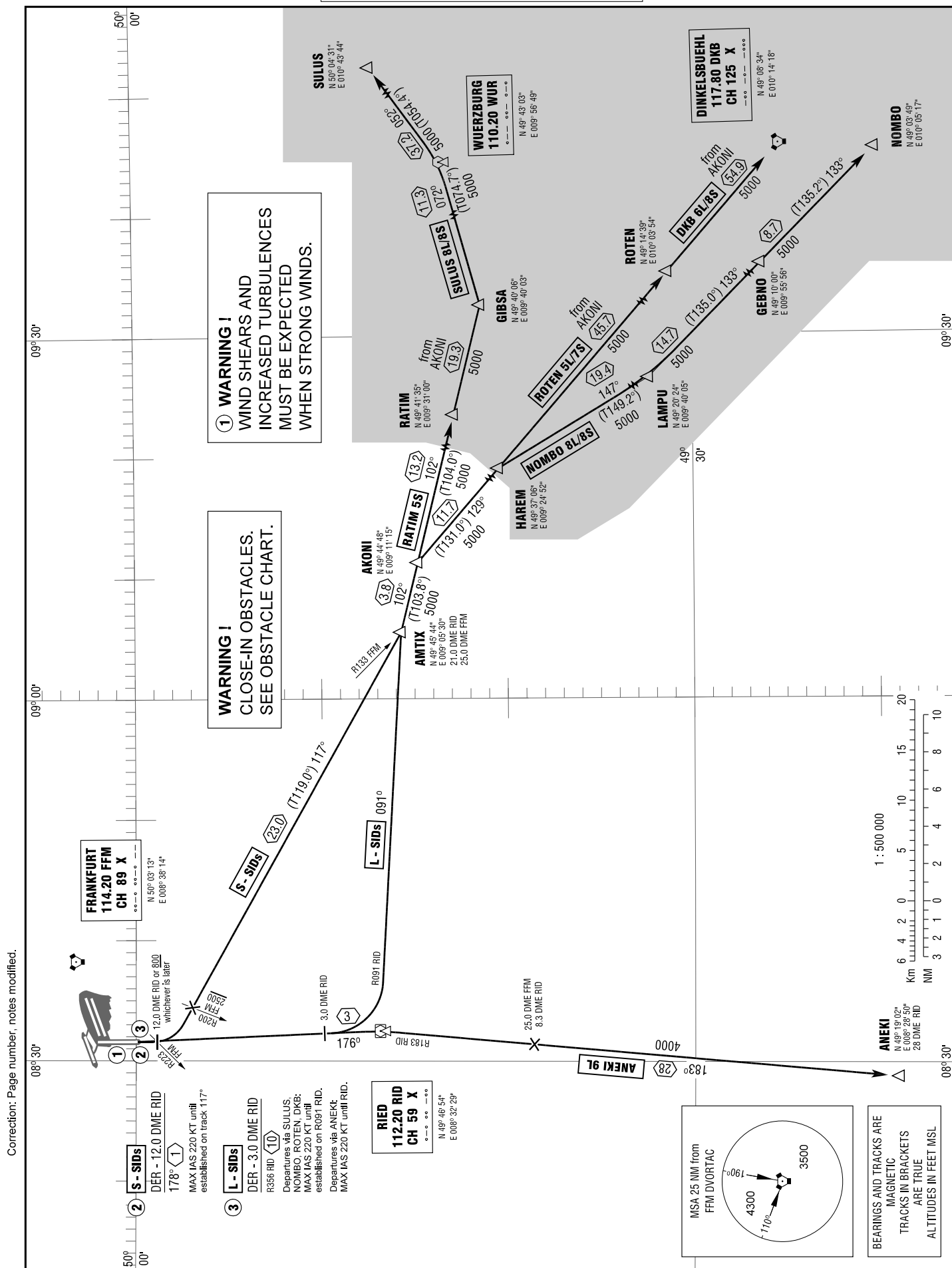


STANDARD DEPARTURE
CHART - INSTRUMENT
(SID)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	119.900
APRON	121.750	LANGEN RADAR	136.125
	121.850		
	121.950		

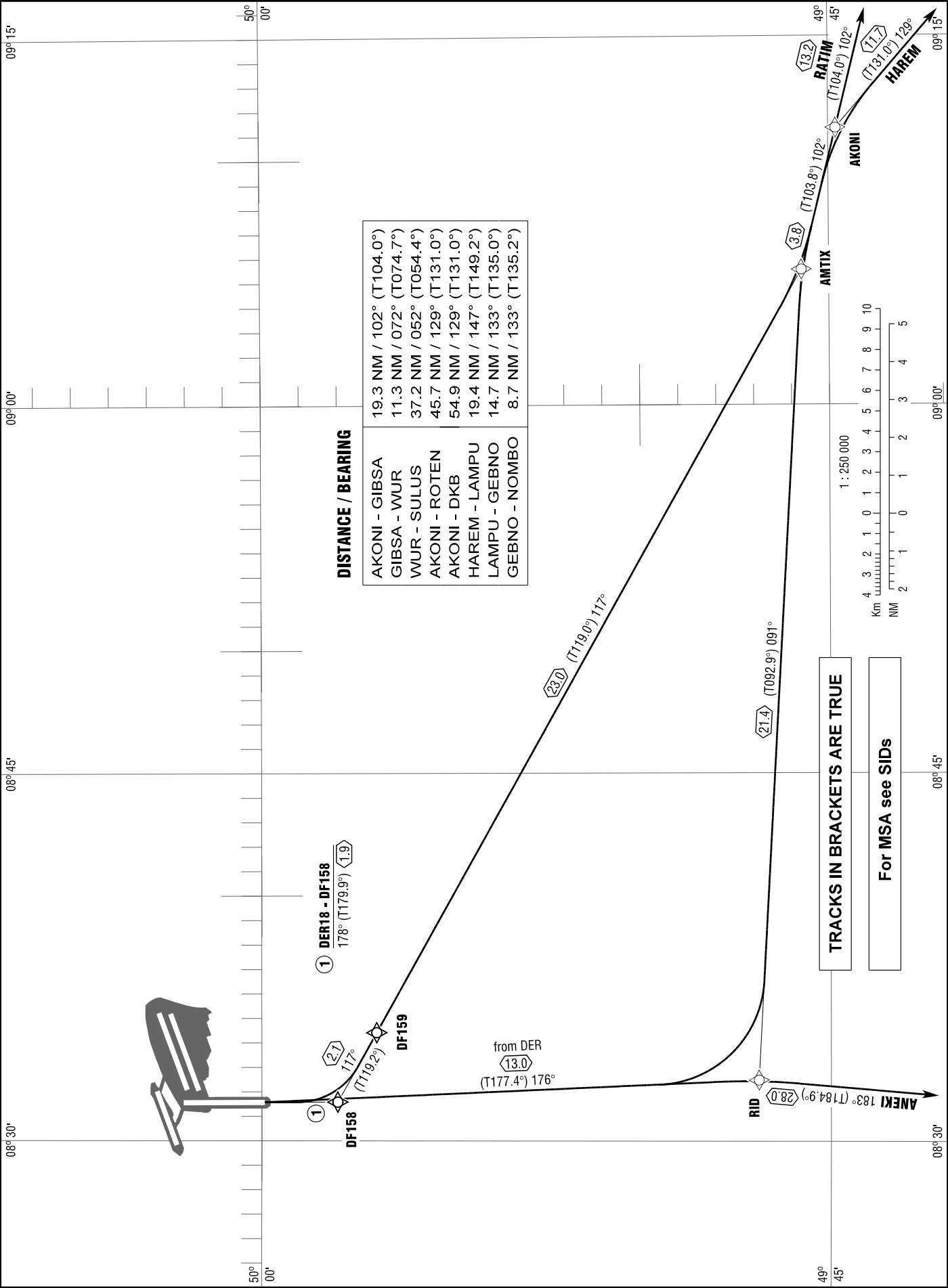
FRANKFURT MAIN (SOUTH & EAST)
RWY 18
LIMA / SIERRA



FRANKFURT MAIN (SOUTH & EAST)
RWY 18
LIMA / SIERRA

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	119.900
APRON	121.750	LANGEN RADAR	136.125
	121.850		
	121.950		

TRANSITION GPS / FMS RNAV DEPARTURE
ALTITUDE 5000 CHART - INSTRUMENT
VAR 2° E (OVERLAY)



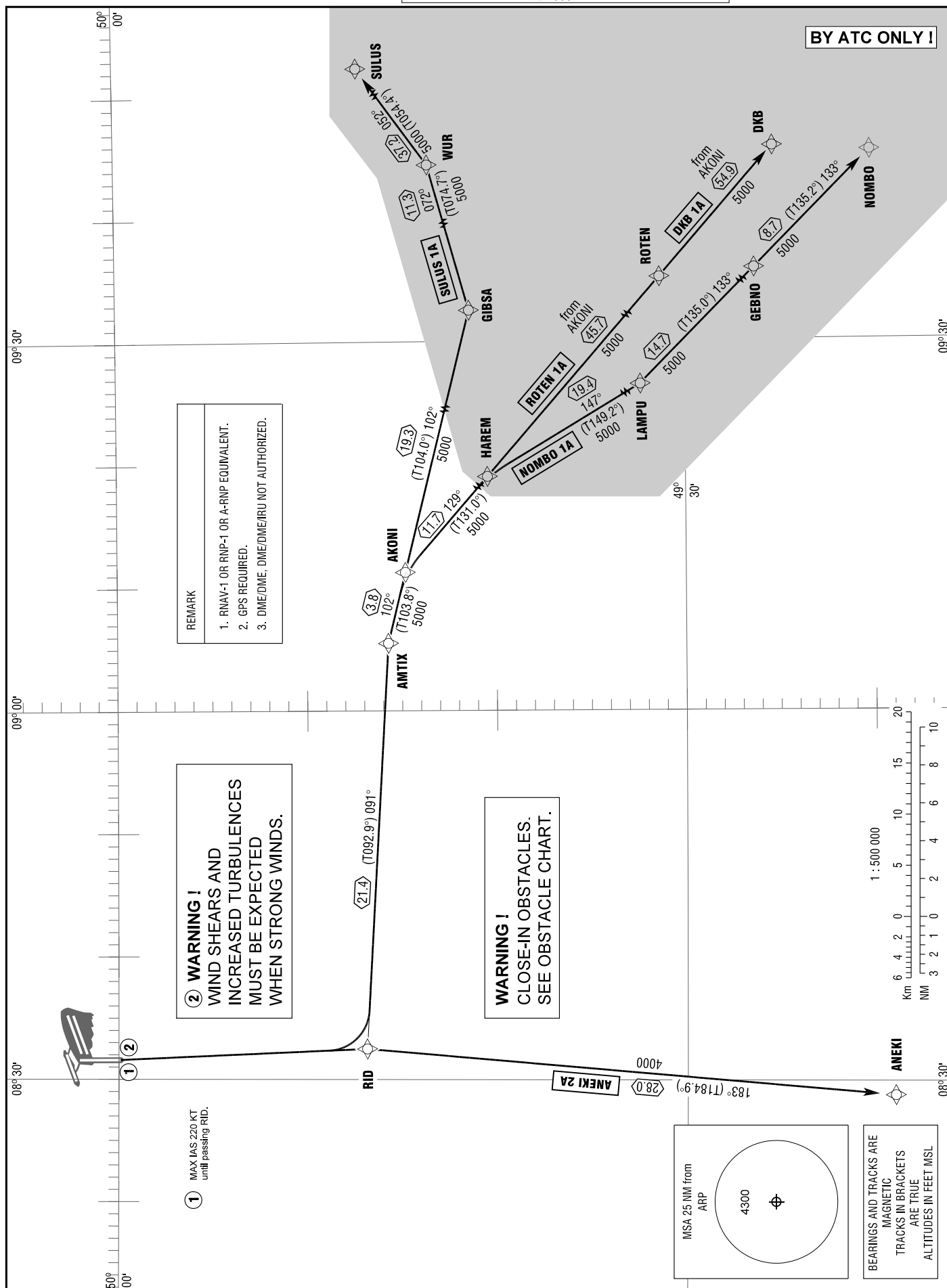
STANDARD DEPARTURE
CHART - INSTRUMENT
RNAV (GPS)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	GROUND	121.800
DELIVERY (Initial Call)	121.900	TOWER	119.900
APRON	121.750	LANGEN RADAR	136.125
	121.850		
	121.950		

FRANKFURT MAIN (EAST)
RWY 18

Correction: Page number, note & speed restriction modified.



Designator	Route			After Take-Off				Remarks Text Page	
				Climb to		Contact			
ANEKI 2A	ANEKI TWO ALPHA Climb on RWY heading to 800; direct to RID, to ANEKI.			4000 ft		Langen Radar 136.125 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		By ATC only	
Recommen- ded Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direc- tion	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV- Specification
VA	-	-	-	(T179.6) 178	-	-	A800+	-	refer to chart
DF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	-	220-	refer to chart
TF	ANEKI	N 49 19 02.18 E 008 28 49.54	-	(T184.9) 183	28.0	-	-	-	refer to chart

Designator	Route			After Take-Off				Remarks Text Page	
				Climb to		Contact			
DKB 1A	DINKELSBUEHL ONE ALPHA Climb on RWY heading to 800; direct to RID, to AMTIX, to AKONI, to DKB.			4000 ft		Langen Radar 136.125 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		1. By ATC only 2. Only for flights terminating within EDMM FIR.	
Recommen- ded Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direc- tion	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV- Specification
VA	-	-	-	(T179.6) 178	-	-	A800+	-	refer to chart
DF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	-	220-	refer to chart
TF	AMTIX	N 49 45 43.59 E 009 05 29.55	-	(T092.9) 091	21.4	-	-	-	refer to chart
TF	AKONI	N 49 44 48.46 E 009 11 15.15	-	(T103.8) 102	3.8	-	-	-	refer to chart
TF	DKB	N 49 08 33.91 E 010 14 17.90	-	(T131.0) 129	54.9	-	-	-	refer to chart

Designator	Route			After Take-Off				Remarks Text Page	
				Climb to		Contact			
NOMBO 1A	NOMBO ONE ALPHA Climb on RWY heading to 800; direct to RID, to AMTIX, to AKONI, to HAREM, to LAMPU, to GEBNO, to NOMBO.			4000 ft		Langen Radar 136.125 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		1. By ATC only 2. Not for flights terminating within EDDN area or EDMM FIR.	
Recommen- ded Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direc- tion	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV- Specification
VA	-	-	-	(T179.6) 178	-	-	A800+	-	refer to chart
DF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	-	220-	refer to chart
TF	AMTIX	N 49 45 43.59 E 009 05 29.55	-	(T092.9) 091	21.4	-	-	-	refer to chart
TF	AKONI	N 49 44 48.46 E 009 11 15.15	-	(T103.8) 102	3.8	-	-	-	refer to chart
TF	HAREM	N 49 37 06.39 E 009 24 52.43	-	(T131.0) 129	11.7	-	-	-	refer to chart
TF	LAMPU	N 49 20 24.35 E 009 40 04.97	-	(T149.2) 147	19.4	-	-	-	refer to chart
TF	GEBNO	N 49 10 00.08 E 009 55 56.25	-	(T135.0) 133	14.7	-	-	-	refer to chart
TF	NOMBO	N 49 03 48.56 E 010 05 16.56	-	(T135.2) 133	8.7	-	-	-	refer to chart

STANDARD DEPARTURE
ROUTES - INSTRUMENT (SID)
RNAV (GPS)

FRANKFURT MAIN
RWY 18

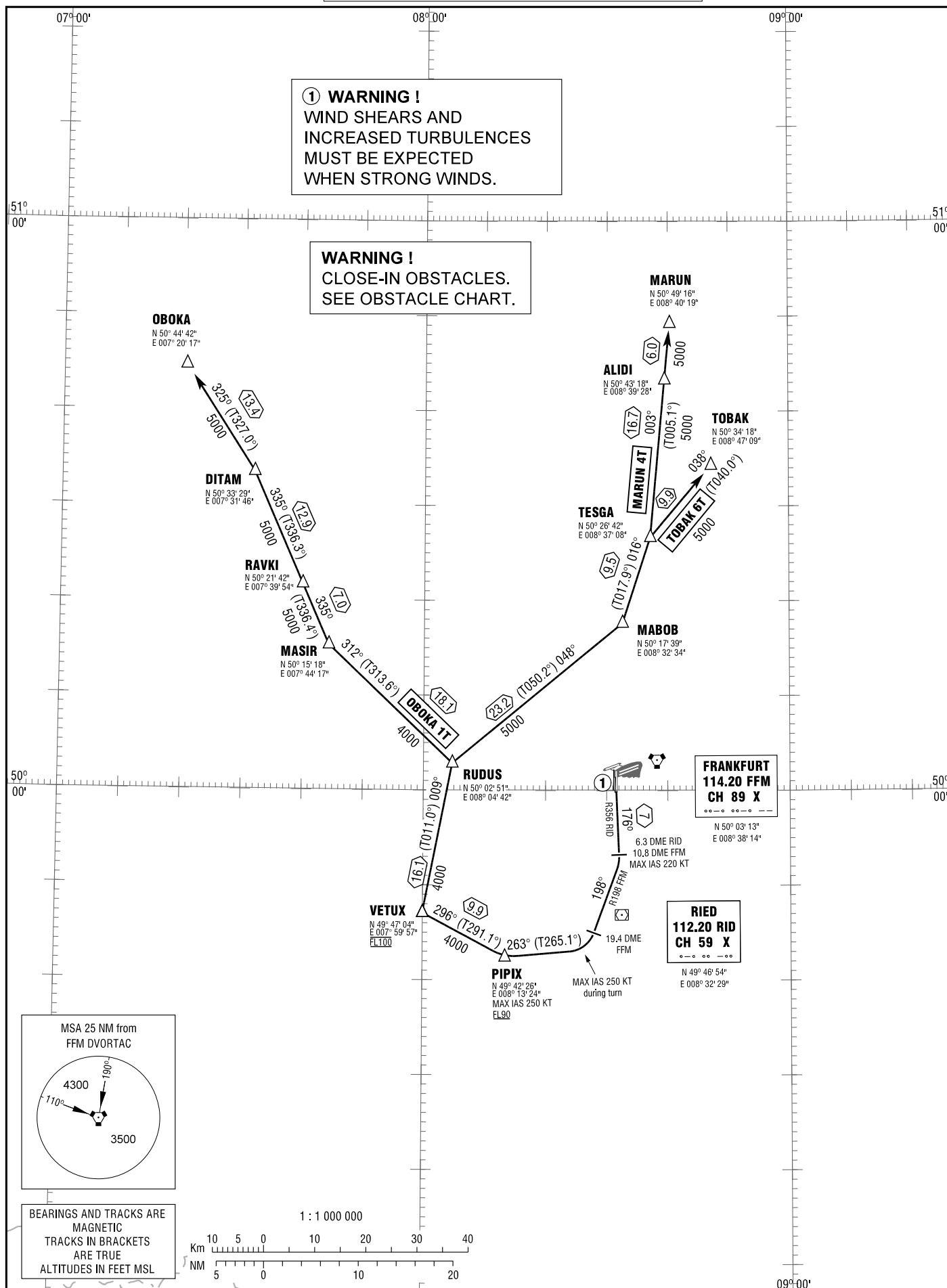
Designator	Route			After Take-Off				Remarks Text Page	
				Climb to		Contact			
ROTEN 1A	ROTEN ONE ALPHA Climb on RWY heading to 800; direct to RID, to AMTIX, to AKONI, to ROTEN.			4000 ft		Langen Radar 136.125 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		1. By ATC only 2. Only for flights terminating within EDDN area.	
Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV-Specification
VA	-	-	-	(T179.6) 178	-	-	A800+	-	refer to chart
DF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	-	220-	refer to chart
TF	AMTIX	N 49 45 43.59 E 009 05 29.55	-	(T092.9) 091	21.4	-	-	-	refer to chart
TF	AKONI	N 49 44 48.46 E 009 11 15.15	-	(T103.8) 102	3.8	-	-	-	refer to chart
TF	ROTEN	N 49 14 38.78 E 010 03 54.15	-	(T131.0) 129	45.7	-	-	-	refer to chart
Designator	Route			After Take-Off				Remarks Text Page	
				Climb to		Contact			
SULUS 1A	SULUS ONE ALPHA Climb on RWY heading to 800; direct to RID, to AMTIX, to AKONI, to GIBSA, to WUR, to SULUS.			4000 ft		Langen Radar 136.125 Contact Langen Radar when advised by Tower! (Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.)		By ATC only	
Recommended Path Terminator	Waypoint Identifier	Coordinates	Fly Over	(True Track°) Mag Track°	Distance (NM)	Turn Direction	Altitude (ft) / Flight Level	Speed Limit (kt IAS)	NAV-Specification
VA	-	-	-	(T179.6) 178	-	-	A800+	-	refer to chart
DF	RID	N 49 46 54.09 E 008 32 29.35	-	-	-	-	-	220-	refer to chart
TF	AMTIX	N 49 45 43.59 E 009 05 29.55	-	(T092.9) 091	21.4	-	-	-	refer to chart
TF	AKONI	N 49 44 48.46 E 009 11 15.15	-	(T103.8) 102	3.8	-	-	-	refer to chart
TF	GIBSA	N 49 40 05.56 E 009 40 03.14	-	(T104.0) 102	19.3	-	-	-	refer to chart
TF	WUR	N 49 43 03.11 E 009 56 49.20	-	(T074.7) 072	11.3	-	-	-	refer to chart
TF	SULUS	N 50 04 30.69 E 010 43 43.71	-	(T054.4) 052	37.2	-	-	-	refer to chart

STANDARD DEPARTURE
CHART - INSTRUMENT
(SID)

TRANSITION
ALTITUDE 5000
VAR 2° E

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900	TOWER	121.850		119.900
(Initial Call)		LANGEN RADAR	121.950		136.125

FRANKFURT MAIN
RWY 18
TANGO



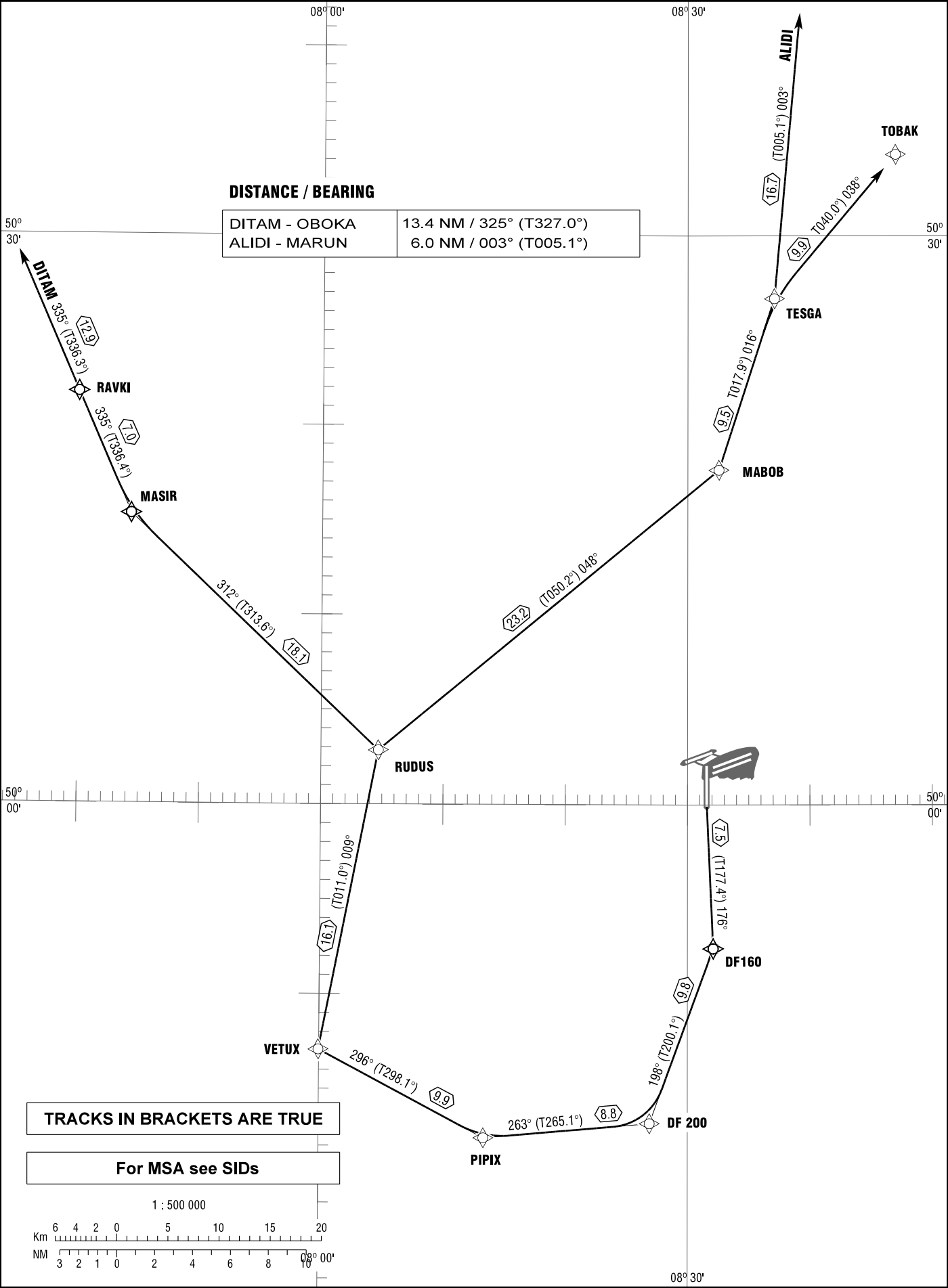
Correction: Page number, procedure.

FRANKFURT MAIN
RWY 18
TANGO

ATIS	118.725	APRON	121.750	GROUND	121.800
DELIVERY	121.900		121.850	TOWER	119.900
(Initial Call)			121.950	LANGEN RADAR	136.125

TRANSITION
ALTITUDE 5000
VAR 2° E

GPS / FMS RNAV DEPARTURE
CHART - INSTRUMENT
(OVERLAY)



STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 18
SIDs with Route Designator **SIERRA**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
OBOKA 1S	OBOKA ONE SIERRA On RWY track to 800; RT, on R222 FFM to 14.0 DME FFM; RT, on R301 RID to 16.0 DME RID (crossing R174 TAU; crossing R244 FFM); RT, on track 318° to MASIR (Δ); RT, on track 335° via RAVKI (Δ) to DITAM (Δ); LT, on track 325° to OBOKA (Δ). Cross 10.0 DME FFM MAX 220 KIAS. GPS/FMS RNAV: [A800+] - DF197[R] - DF156[K220-] - DF164[R] - KUPIP[R] - MASIR[R] - RAVKI - DITAM[L] - OBOKA.	4000 ft	Langen Radar 120.150*	1. By ATC only. 2. Will only be assigned when Landing Direction is 25. 3. After 16.0 DME RID (crossing R174 TAU; crossing R244 FFM) BRNAV equipment necessary. 4. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
DKB 8S	DINKELSBUEHL EIGHT SIERRA On RWY track to 800 or 12.0 DME RID (crossing R223 FFM), whichever is later; LT (MAX IAS 220 KT until established on track 117°), on track 117° to AMTIX (Δ); LT, on track 102° to AKONI (Δ); RT, on track 129° to DKB (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF158[K220-; L] - DF159[A2500+] - AMTIX[L] - AKONI[R] - DKB.		Langen Radar 136.125*	1. PDG 9.3% / 570ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up and expect routing via SID DKB L. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Only for flights terminating within EDMM FIR.
MARUN 5S	MARUN FIVE SIERRA On RWY track to 800; RT, on R222 FFM to 14.0 DME FFM; RT, on R301 RID to 16.0 DME RID (crossing R174 TAU; crossing R244 FFM); RT, on track 022° to TABUM (Δ); LT, on track 017° to LIKSI (Δ); LT, on track 015° via LORPA (Δ) to MARUN (Δ). Cross 10.0 DME FFM MAX 220 KIAS. GPS/FMS RNAV: [A800+] - DF197[R] - DF156[K220-] - DF164[R] - KUPIP[R] - TABUM[L] - LIKSI[L] - LORPA - MARUN.		Langen Radar 120.150*	1. By ATC only. 2. After 16.0 DME RID (crossing R174 TAU; crossing R244 FFM) BRNAV equipment necessary. 3. Will only be assigned when Landing Direction is 25.
NOMBO 8S	NOMBO EIGHT SIERRA On RWY track to 800 or 12.0 DME RID (crossing R223 FFM), whichever is later; LT (MAX IAS 220 KT until established on track 117°), on track 117° to AMTIX(Δ); LT, on track 102° to AKONI (Δ); RT, on track 129° to HAREM (Δ); RT, on track 147° to LAMPU (Δ); LT, on track 133° via GEBNO (Δ) to NOMBO (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF158[K220-; L] - DF159[A2500+] - AMTIX[L] - AKONI[R] - HAREM[R] - LAMPU[L] - GEBNO - NOMBO.		Langen Radar 136.125*	1. PDG 9.3% / 570 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up and expect routing via SID NOMBO L. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Not for flights terminating within EDDN Area or EDMM FIR. 4. Not for propeller-driven aircraft. These flights shall file SID RATIM.
RATIM 5S	RATIM FIVE SIERRA On RWY track to 800 or 12.0 DME RID (crossing R223 FFM), whichever is later; LT (MAX IAS 220 KT until established on track 117°), on track 117° to AMTIX (Δ); LT, on track 102° via AKONI(Δ) to RATIM (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF158[K220-; L] - DF159[A2500+] - AMTIX[L] - AKONI - RATIM.			1. PDG 9.3% / 570ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up and expect ALTN Routing by ATC. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Only for propeller-driven aircraft (MAX RFL 230) instead of SID NOMBO. 4. Not for flights terminating within EDDN Area or EDMM FIR.
ROTEN 7S	ROTEN SEVEN SIERRA On RWY track to 800 or 12.0 DME RID (crossing R223 FFM), whichever is later; LT (MAX IAS 220 KT until established on track 117°), on track 117° to AMTIX (Δ); LT, on track 102° to AKONI (Δ); RT, on track 129° to ROTEN (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF158[K220-; L] - DF159[A2500+] - AMTIX[L] - AKONI[R] - ROTEN.			1. PDG 9.3% / 570 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up and expect routing via SID ROTEN L. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Only for flights terminating within EDDN Area.

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

FRANKFURT MAIN
RWY 18
SIDs with Route Designator **ROMEO & SIERRA**

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
SULUS 8S	SULUS EIGHT SIERRA On RWY track to 800 or 12.0 DME RID (crossing R223 FFM), whichever is later; LT (MAX IAS 220 KT until established on track 117°), on track 117° to AMTIX (Δ); LT, on track 102° via AKONI (Δ) to GIBSA (Δ); LT, on track 072° to WUR (Δ); LT, on track 052° to SULUS (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF158[K220-; L] - DF159[A2500+] - AMTIX[L] - AKONI - GIBSA[L] - WUR[L] - SULUS.	4000 ft	Langen Radar 136.125*	1. PDG 9.3% / 570 ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up and expect routing via SID SULUS L. 2. After crossing R200 FFM BRNAV equipment necessary. 3. Not for flights destination EDDN.
TOBAK 7S	TOBAK SEVEN SIERRA On RWY track to 800; RT, on R222 FFM to 14.0 DME FFM; RT, on R301 RID to 16.0 DME RID (crossing R174 TAU; crossing R244 FFM); RT, on track 022° to TABUM (Δ); RT, on track 040° to TESGA (Δ); LT, on track 038° to TOBAK (Δ). Cross 10.0 DME FFM MAX 220 KIAS. GPS/FMS RNAV: [A800+] - DF197[R] - DF156 [K220-] - DF164[R] - KUPIP[R] - TABUM[R] - TESGA[L] - TOBAK.		Langen Radar 120.150*	1. By ATC only. 2. After 16.0 DME RID (crossing R174 TAU; crossing R244 FFM) BRNAV equipment necessary. 3. Will only be assigned when Landing Direction is 25. 4. Not for flights continuing via Z10.
ULKIG 2S	ULKIG TWO SIERRA On RWY track to 800; RT, on R222 FFM to 20.6 DME FFM; RT, on track 282° via DONAB (Δ) and SOBRA (Δ) to ULKIG (Δ). Cross 10.0 DME FFM MAX 220 KIAS. GPS/FMS RNAV: [A800+] - DF197[R] - DF156 [K220-] - DF201[R] - DONAB - SOBRA - ULKIG.			1. By ATC only. 2. For flights intending to proceed at FL 250 or above via Y180/Y181. Flights have to be able to cross RUDOT at FL 240 or above. If unable to comply, flight plan shall read RUDOT FL 220 - Y180 - NISIV - UY180 - DIK RFL. 3. After 20.6 DME FFM BRNAV equipment necessary.
OBOKA 1R	OBOKA ONE ROMEO On RWY track to 800 or 12.0 DME RID (crossing R223 FFM), whichever is later; LT, (MAX IAS 220 KT until established on track 117°), on track 117°. When crossing R200 FFM, LT on track 088° to TUKRU (Δ); LT on track 012° to MTR (Δ); LT, on track 287° via ODAGA (Δ) to KUSOM (Δ); LT, on track 251° to GUBAX (Δ); RT, on track 293° to RAVKI (Δ); RT, on track 335° to DITAM (Δ); LT, on track 325° to OBOKA (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF158[K220-; L] - DF159[A2500+] - DF168[L] - TUKRU[L] - MTR[L] - ODAGA - KUSOM[L] - GUBAX[R] - RAVKI[R] - DITAM[L] - OBOKA.			1. By ATC only. 2. PDG 9.3% / 570ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 3. After R200 FFM BRNAV equipment necessary. 4. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
MARUN 3R	MARUN THREE ROMEO On RWY track to 800 or 12.0 DME RID (crossing R223 FFM), whichever is later; LT, (MAX IAS 220 KT until established on track 117°), on track 117°. When crossing R200 FFM, LT on track 088° to TUKRU (Δ); LT on track 012° to MTR (Δ); LT, on track 350° to TOBAK (Δ); LT, on track 342° via APROX (Δ) to MARUN (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF158[K220-; L] - DF159[A2500+] - DF168[L] - TUKRU[L] - MTR[L] - TOBAK[L] - APROX - MARUN.			1. By ATC only. 2. PDG 9.3% / 570ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 3. After R200 FFM BRNAV equipment necessary.
TOBAK 3R	TOBAK THREE ROMEO On RWY track to 800 or 12.0 DME RID (crossing R223 FFM), whichever is later; LT, (MAX IAS 220 KT until established on track 117°), on track 117°. When crossing R200 FFM, LT on track 088° to TUKRU (Δ); LT on track 012° to MTR(Δ); LT, on track 350° to TOBAK (Δ). Cross R200 FFM at 2500 or above. GPS/FMS RNAV: [A800+] - DF158[K220-; L] - DF159[A2500+] - DF168[L] - TUKRU[L] - MTR[L] - TOBAK.			1. By ATC only. 2. PDG 9.3% / 570ft/NM until passing 2500 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 3. After R200 FFM BRNAV equipment necessary. 4. Not for flights continuing via Z10.

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 18
SIDs with Route Designator **LIMA**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
ANEKI 9L	ANEKI NINE LIMA On RWY track to 800; on R356 RID to RID (Δ) (MAX IAS 220 KT); RT, on R183 RID to ANEKI (Δ). GPS/FMS RNAV: [A800+] - RID[K220-; R] - ANEKI.	4000 ft	Langen Radar 136.125*	
OBOKA 1L	OBOKA ONE LIMA On RWY track to 800; on R356 RID to 7.0 DME RID (10.2 DME FFM) (MAX IAS 220 KT); RT, on track 238° to XAMUB (Δ); RT, on track 319° to MASIR (Δ); RT, on track 335° via RAVKI (Δ) to DITAM (Δ); LT, on track 325° to OBOKA (Δ). Cross 7.0 DME RID north of RID at 2000 or above. GPS/FMS RNAV: [A800+] - DF160[K220-; A2000+; R] - XAMUB[R] - MASIR[R] - RAVKI - DITAM[L] - OBOKA.		Langen Radar 120.150*	1. Will only be assigned by ATC when Landing Direction is 25. 2. PDG 4.6% / 280ft/NM until passing 2000 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 3. After 7.0 DME RID north of RID (10.2 DME FFM) BRNAV equipment necessary. 4. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
DKB 6L	DINKELSBUEHL SIX LIMA On RWY track to 800; on R356 RID to 3.0 DME RID; LT, (MAX IAS 220 KT until established on R091 RID) on R091 RID to AMTIX (Δ); RT, on track 102° to AKONI (Δ); RT, on track 129° to DKB (Δ). GPS/FMS RNAV: [A800+] - RID[K220-; L] - AMTIX[R] - AKONI[R] - DKB.		Langen Radar 136.125*	1. Only for flights terminating within EDMM FIR. 2. After AMTIX BRNAV equipment necessary.
NOMBO 8L	NOMBO EIGHT LIMA On RWY track to 800; on R356 RID to 3.0 DME RID; LT, (MAX IAS 220 KT until established on R091 RID) on R091 RID to AMTIX (Δ); RT, on track 102° to AKONI (Δ); RT, on track 129° to HAREM (Δ); RT, on track 147° to LAMPU (Δ); LT, on track 133° via GEBNO (Δ) to NOMBO (Δ). GPS/FMS RNAV: [A800+] - RID[K220-; L] - AMTIX[R] - AKONI[R] - HAREM[R] - LAMPU[L] - GEBNO - NOMBO.			1. After AMTIX BRNAV equipment necessary. 2. Not for flights terminating within EDDN Area or EDMM FIR. 3. Not for propeller-driven aircraft. These flights shall file SID RATIM S.
ROTEN 5L	ROTEN FIVE LIMA On RWY track to 800; on R356 RID to 3.0 DME RID; LT, (MAX IAS 220 KT until established on R091 RID) on R091 RID to AMTIX (Δ); RT, on track 102° to AKONI (Δ); RT, on track 129° to ROTEN (Δ). GPS/FMS RNAV: [A800+] - RID[K220-; L] - AMTIX[R] - AKONI[R] - ROTEN.			1. Only for flights terminating within EDDN Area. 2. After AMTIX BRNAV equipment necessary.

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

FRANKFURT MAIN
RWY 18
SIDs with Route Designator **LIMA**

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2				
Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.				
Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
SULUS 8L	SULUS EIGHT LIMA On RWY track to 800; on R356 RID to 3.0 DME RID; LT, (MAX IAS 220 KT until established on R091 RID)on R091 RID to AMTIX (Δ); RT, on track 102° via AKONI (Δ) to GIBSA (Δ); LT, on track 072° to WUR (Δ); LT, on track 052° to SULUS (Δ). GPS/FMS RNAV: [A800+] - RID[K220-; L] - AMTIX[R] - AKONI - GIBSA[L] - WUR[L] - SULUS.	4000 ft	Langen Radar 136.125*	After AMTIX BRNAV equipment necessary.
ULKIG 1L	ULKIG ONE LIMA On RWY track to 800; on R356 RID to 6.3 DME RID (10.8 DME FFM), (MAX IAS 220 KT); RT, on R198 outbound FFM to 19.4 DME FFM; RT, (MAX IAS 250 KT during turn) on track 263° to PIPIX (Δ); RT, (MAX IAS 250 KT during turn) on track 282° to GISNO (Δ); RT, (MAX IAS 250 KT during turn) on track 318° to ULKIG (Δ). GPS/FMS RNAV: [A800+] - DF160[K220-; R] - DF200[K250-; R] - PIPIX[K250-; R] - GISNO[K250-; R] - ULKIG.			1. For flights intending to proceed at FL 250 or above via Y180/Y181. Flights have to be to cross RUDOT at FL 240 or above. If unable to comply, flight plan shall read RUDOT FL 220 - Y180 - NISIV - UY180 - DIK RFL. 2. After 19.4 DME FFM BRNAV equipment necessary.
* Departure frequency may deviate from the frequency published. Check ATIS for current departure frequency.				

STANDARD DEPARTURE
ROUTES - INSTRUMENT
(SID)

FRANKFURT MAIN
RWY 18
SIDs with Route Designator **TANGO**

For Operational Runway Use Concept see AD 2 EDDF 5-7-1 and 5-7-2

Pilots of GPS/FMS-RNAV-equipped aircraft shall, if possible, use the supplementary GPS/FMS RNAV procedures which are described following the text "GPS / FMS RNAV:" and charted in addition on "CHART - INSTRUMENT (OVERLAY)". When using these supplementary GPS/FMS RNAV procedures, the pilot shall check and ensure that the underlying conventional flight procedures are adhered to by monitoring the information of the ground-based navigation aids. The ground-based navigation aids required for the use of the respective conventional flight procedure and the associated aircraft equipment shall remain in operation at all times.

Designator	Route	After Take-Off		Remarks
		Climb to	Contact	
1	2	3	4	5
OBOKA 1T	OBOKA ONE TANGO On RWY track to 800; on R356 RID to 6.3 DME RID north of RID (10.8 DME FFM) (MAX 220 KIAS); RT, on R198 FFM to 19.4 DME FFM; RT, (MAX 250 KIAS during turn) on track 263° to PIPIX (Δ); RT, (MAX 250 KIAS during turn) on track 296° to VETUX (Δ); RT, on track 009° to RUDUS(Δ); LT, on track 312° to MASIR (Δ); RT, on track 335° via RAVKI (Δ) to DITAM (Δ); LT, on track 325° to OBOKA (Δ). Cross PIPIX at or above FL90. Cross VETUX at FL100. GPS/FMS RNAV: [A800+] - DF160[K220-; R] - DF200[K250-; R] - PIPIX[K250-; FL90+; R] - VETUX[FL100; R] - RUDUS[L] - MASIR[R] - RAVKI - DITAM[L] - OBOKA.	4000 ft	Langen Radar 136.125*	1. PDG 5.7% / 345ft/NM until passing FL 90 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 19.4 DME FFM BRNAV equipment necessary. 3. Flights have to be able to cross OBOKA at FL 170 or above. If unable to comply, advise EDDF DELIVERY prior to start-up.
MARUN 4T	MARUN FOUR TANGO On RWY track to 800; on R356 RID to 6.3 DME RID north of RID (10.8 DME FFM) (MAX 220 KIAS); RT, on R198 FFM to 19.4 DME FFM; RT, (MAX 250 KIAS during turn) on track 263° to PIPIX (Δ); RT, (MAX 250 KIAS during turn) on track 296° to VETUX (Δ); RT, on track 009° to RUDUS(Δ); RT, on track 048° to MABOB (Δ); LT, on track 016° to TESGA (Δ); LT, on track 003° via ALIDI (Δ) to MARUN (Δ). Cross PIPIX at or above FL90. Cross VETUX at FL100. GPS/FMS RNAV: [A800+] - DF160[K220-; R] - DF200[K250-; R] - PIPIX[K250-; FL90+; R] - VETUX[FL100; R] - RUDUS[R] - MABOB[L] - TESGA[L] - ALIDI - MARUN.			1. PDG 5.7% / 345ft/NM until passing FL 90 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 19.4 DME FFM BRNAV equipment necessary.
TOBAK 6T	TOBAK SIX TANGO On RWY track to 800; on R356 RID to 6.3 DME RID north of RID (10.8 DME FFM) (MAX 220 KIAS); RT, on R198 FFM to 19.4 DME FFM; RT, (MAX 250 KIAS during turn) on track 263° to PIPIX(Δ); RT, (MAX 250 KIAS during turn) on track 296° to VETUX (Δ); RT, on track 009° to RUDUS(Δ); RT, on track 048° to MABOB (Δ); LT, on track 016° to TESGA (Δ); RT, on track 038° to TOBAK (Δ). Cross PIPIX at or above FL90. Cross VETUX at FL100. GPS/FMS RNAV: [A800+] - DF160[K220-; R] - DF200[K250-; R] - PIPIX[K250-; FL90+; R] - VETUX[FL100; R] - RUDUS[R] - MABOB[L] - TESGA[R] - TOBAK.			1. PDG 5.7% / 345ft/NM until passing FL 90 due to airspace structure. If unable to comply, advise EDDF DELIVERY prior to start-up. 2. After 19.4 DME FFM BRNAV equipment necessary. 3. Not for flights continuing via Z10.

* Departure frequency may deviate from the frequency published.
Check ATIS for current departure frequency.

Contact LANGEN RADAR when advised by Tower!

WAY POINT LIST

FRANKFURT MAIN

GPS/FMS RNAV TRANSITION TO FINAL APPROACH (OVERLAY TO RADAR VECTOR PATTERN)

Route Description

CODING

DISPLAY

KERAX 07N

KERAX		N 50 28 30.00	E 009 34 55.00	N 50 28.5	E 009 34.9
GED	L	N 50 24 43.01	E 009 14 56.99	N 50 24.7	E 009 14.9
DF437	R	N 50 16 16.51	E 009 06 46.81	N 50 16.3	E 009 06.8
DF439	F090+	N 50 06 46.17	E 008 26 32.79	N 50 06.8	E 008 26.5
DF444	L	N 49 57 35.68	E 007 48 56.19	N 49 57.6	E 007 48.9
DF454	L	N 49 52 55.42	E 007 51 42.06	N 49 52.9	E 007 51.7
DF452	A5000+	N 49 55 46.15	E 008 03 17.06	N 49 55.8	E 008 03.3

FINAL APPROACH 07L [ILS/DME Z - ILS/DME Y - GLS Z - GLS Y]

KERAX 07S

KERAX		N 50 28 30.00	E 009 34 55.00	N 50 28.5	E 009 34.9
EBIPA	L	N 50 22 53.01	E 009 31 17.61	N 50 22.9	E 009 31.3
INBOS	R	N 49 56 06.03	E 009 37 26.97	N 49 56.1	E 009 37.4
PSA	R	N 49 51 44.07	E 009 20 53.97	N 49 51.7	E 009 20.9
CHA		N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4
DF635	L	N 49 58 56.74	E 008 43 00.98	N 49 58.9	E 008 43.0
DF636	F080+	N 49 55 36.32	E 008 29 08.06	N 49 55.6	E 008 29.1
DF644	R	N 49 47 17.60	E 007 55 01.26	N 49 47.3	E 007 55.0
DF654	R	N 49 51 57.93	E 007 52 16.05	N 49 52.0	E 007 52.3
ROBSA	A4000+	N 49 57 40.69	E 008 15 33.95	N 49 57.7	E 008 15.6

FINAL APPROACH 07R [ILS/DME Z - LOC-DME Z- RNAV (GPS) Z - GLS Z - GLS Y]

LOMPO A4000+ N 49 57 59.15 E 008 15 36.27 N 49 58.0 E 008 15.6

FINAL APPROACH 07C [ILS/DME - LOC-DME - RNAV (GPS) Z - GLS Z - GLS Y]

ROLIS 07N

ROLIS		N 50 26 06.37	E 007 49 30.55	N 50 26.1	E 007 49.5
ETARU	L	N 50 17 08.00	E 008 06 44.00	N 50 17.1	E 008 06.7
DF432	R	N 50 12 24.45	E 008 23 19.43	N 50 12.4	E 008 23.3
DF439	F090+; R	N 50 06 46.17	E 008 26 32.79	N 50 06.8	E 008 26.5
DF444	L	N 49 57 35.68	E 007 48 56.19	N 49 57.6	E 007 48.9
DF454	L	N 49 52 55.42	E 007 51 42.06	N 49 52.9	E 007 51.7
DF452	A5000+	N 49 55 46.15	E 008 03 17.06	N 49 55.8	E 008 03.3

FINAL APPROACH 07L [ILS/DME Z - ILS/DME Y - GLS Z - GLS Y]

ROLIS 07S

ROLIS		N 50 26 06.37	E 007 49 30.55	N 50 26.1	E 007 49.5
OSPUL		N 50 15 49.00	E 008 02 14.96	N 50 15.8	E 008 02.2
DF632	L	N 50 01 15.32	E 008 20 31.73	N 50 01.3	E 008 20.5
FFM	L	N 50 03 13.47	E 008 38 13.53	N 50 03.2	E 008 38.2
DF623	R	N 50 10 00.24	E 009 07 26.93	N 50 10.0	E 009 07.4
DF613	R	N 50 05 18.10	E 009 10 05.71	N 50 05.3	E 009 10.1
DF636	F080+	N 49 55 36.32	E 008 29 08.06	N 49 55.6	E 008 29.1
DF644	R	N 49 47 17.60	E 007 55 01.26	N 49 47.3	E 007 55.0
DF654	R	N 49 51 57.93	E 007 52 16.05	N 49 52.0	E 007 52.3
ROBSA	A4000+	N 49 57 40.69	E 008 15 33.95	N 49 57.7	E 008 15.6

FINAL APPROACH 07R [ILS/DME Z - LOC-DME Z- RNAV (GPS) Z - GLS Z - GLS Y]

LOMPO A4000+ N 49 57 59.15 E 008 15 36.27 N 49 58.0 E 008 15.6

FINAL APPROACH 07C [ILS/DME - LOC-DME - RNAV (GPS) Z - GLS Z - GLS Y]

FRANKFURT MAIN

WAY POINT LIST

GPS/FMS RNAV TRANSITION TO FINAL APPROACH (OVERLAY TO RADAR VECTOR PATTERN)

Route Description

CODING

DISPLAY

UNOKO 07N

UNOKO		N 50 27 17.00	E 007 13 38.00	N 50 27.3	E 007 13.6
IBVIL	R	N 50 26 04.00	E 007 22 09.00	N 50 26.1	E 007 22.2
MANUV	L	N 50 17 44.00	E 007 27 32.00	N 50 17.7	E 007 27.5
RAMOB	L	N 50 06 41.00	E 007 41 02.00	N 50 06.7	E 007 41.0
DF431	L	N 50 04 39.51	E 007 51 26.29	N 50 04.7	E 007 51.4
DF432	R	N 50 12 24.45	E 008 23 19.43	N 50 12.4	E 008 23.3
DF439	F090+; R	N 50 06 46.17	E 008 26 32.79	N 50 06.8	E 008 26.5
DF444	L	N 49 57 35.68	E 007 48 56.19	N 49 57.6	E 007 48.9
DF454	L	N 49 52 55.42	E 007 51 42.06	N 49 52.9	E 007 51.7
DF452	A5000+	N 49 55 46.15	E 008 03 17.06	N 49 55.8	E 008 03.3

FINAL APPROACH 07L [ILS/DME Z - ILS/DME Y - GLS Z - GLS Y]

UNOKO 07S

UNOKO		N 50 27 17.00	E 007 13 38.00	N 50 27.3	E 007 13.6
IBVIL	R	N 50 26 04.00	E 007 22 09.00	N 50 26.1	E 007 22.2
MANUV	L	N 50 17 44.00	E 007 27 32.00	N 50 17.7	E 007 27.5
RAMOB	L	N 50 06 41.00	E 007 41 02.00	N 50 06.7	E 007 41.0
DF631	L	N 50 00 22.36	E 008 12 44.13	N 50 00.4	E 008 12.7
FFM	L	N 50 03 13.47	E 008 38 13.53	N 50 03.2	E 008 38.2
DF623	R	N 50 10 00.24	E 009 07 26.93	N 50 10.0	E 009 07.4
DF613	R	N 50 05 18.10	E 009 10 05.71	N 50 05.3	E 009 10.1
DF636	F080+	N 49 55 36.32	E 008 29 08.06	N 49 55.6	E 008 29.1
DF644	R	N 49 47 17.60	E 007 55 01.26	N 49 47.3	E 007 55.0
DF654	R	N 49 51 57.93	E 007 52 16.05	N 49 52.0	E 007 52.3
ROBSA	A4000+	N 49 57 40.69	E 008 15 33.95	N 49 57.7	E 008 15.6

FINAL APPROACH 07R [ILS/DME Z - LOC-DME Z- RNAV (GPS) Z - GLS Z - GLS Y]

LOMPO A4000+ N 49 57 59.15 E 008 15 36.27 N 49 58.0 E 008 15.6

FINAL APPROACH 07C [ILS/DME - LOC-DME - RNAV (GPS) Z - GLS Z - GLS Y]

PSA 07N

PSA		N 49 51 44.07	E 009 20 53.97	N 49 51.7	E 009 20.9
DF436	L	N 50 13 52.15	E 009 16 55.31	N 50 13.9	E 009 16.9
DF437	L	N 50 16 16.51	E 009 06 46.81	N 50 16.3	E 009 06.8
DF439	F090+	N 50 06 46.17	E 008 26 32.79	N 50 06.8	E 008 26.5
DF444	L	N 49 57 35.68	E 007 48 56.19	N 49 57.6	E 007 48.9
DF454	L	N 49 52 55.42	E 007 51 42.06	N 49 52.9	E 007 51.7
DF452	A5000+	N 49 55 46.15	E 008 03 17.06	N 49 55.8	E 008 03.3

FINAL APPROACH 07L [ILS/DME Z - ILS/DME Y - GLS Z - GLS Y]

PSA 07S

PSA		N 49 51 44.07	E 009 20 53.97	N 49 51.7	E 009 20.9
CHA		N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4
DF635	L	N 49 58 56.74	E 008 43 00.98	N 49 58.9	E 008 43.0
DF636	F080+	N 49 55 36.32	E 008 29 08.06	N 49 55.6	E 008 29.1
DF644	R	N 49 47 17.60	E 007 55 01.26	N 49 47.3	E 007 55.0
DF654	R	N 49 51 57.93	E 007 52 16.05	N 49 52.0	E 007 52.3
ROBSA	A4000+	N 49 57 40.69	E 008 15 33.95	N 49 57.7	E 008 15.6

FINAL APPROACH 07R [ILS/DME Z - LOC-DME Z- RNAV (GPS) Z - GLS Z - GLS Y]

LOMPO A4000+ N 49 57 59.15 E 008 15 36.27 N 49 58.0 E 008 15.6

FINAL APPROACH 07C [ILS/DME - LOC-DME - RNAV (GPS) Z - GLS Z - GLS Y]

WAY POINT LIST

FRANKFURT MAIN

GPS/FMS RNAV TRANSITION TO FINAL APPROACH (OVERLAY TO RADAR VECTOR PATTERN)

Route Description

CODING

DISPLAY

KERAX 25N

KERAX		N 50 28 30.00	E 009 34 55.00	N 50 28.5	E 009 34.9
GED		N 50 24 43.01	E 009 14 56.99	N 50 24.7	E 009 14.9
DF408	L	N 50 18 42.35	E 008 49 09.87	N 50 18.7	E 008 49.2
DF411	F090+; L	N 50 12 56.53	E 008 52 30.83	N 50 12.9	E 008 52.5
DF416	R	N 50 19 45.52	E 009 21 52.29	N 50 19.8	E 009 21.9
DF426	R	N 50 15 03.04	E 009 24 30.17	N 50 15.1	E 009 24.5
DF422	A5000+	N 50 09 37.00	E 009 01 02.37	N 50 09.6	E 009 01.0
FINAL APPROACH 25R [ILS/DME Z - ILS/DME Y - GLS Z - GLS Y]					

KERAX 25S

KERAX		N 50 28 30.00	E 009 34 55.00	N 50 28.5	E 009 34.9
EBIPA	L	N 50 22 53.01	E 009 31 17.61	N 50 22.9	E 009 31.3
DF617	F080+; R	N 50 03 01.29	E 009 35 52.20	N 50 03.0	E 009 35.9
CHA	R	N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4
DF606	R	N 49 56 42.71	E 008 54 43.24	N 49 56.7	E 008 54.7
DF610	F080+; R	N 50 01 45.80	E 008 55 00.29	N 50 01.8	E 008 55.0
DF616	L	N 50 09 21.68	E 009 27 40.21	N 50 09.4	E 009 27.7
DF626	L	N 50 14 04.23	E 009 25 02.97	N 50 14.1	E 009 25.0
LEDKI	A4000+	N 50 06 14.76	E 008 51 21.21	N 50 06.2	E 008 51.4
FINAL APPROACH 25L [ILS/DME Z - LOC-DME Z - RNAV (GPS) Z - GLS Z - GLS Y]					
REDGO	A4000+	N 50 06 33.03	E 008 51 22.94	N 50 06.6	E 008 51.4
FINAL APPROACH 25C [ILS/DME - LOC-DME - RNAV (GPS) Z - GLS Z - GLS Y]					

ROLIS 25N

ROLIS		N 50 26 06.37	E 007 49 30.55	N 50 26.1	E 007 49.5
ETARU	R	N 50 17 08.00	E 008 06 44.00	N 50 17.1	E 008 06.7
DF403	L	N 50 05 48.13	E 008 22 30.06	N 50 05.8	E 008 22.5
DF411	F090+	N 50 12 56.53	E 008 52 30.83	N 50 12.9	E 008 52.5
DF416	R	N 50 19 45.52	E 009 21 52.29	N 50 19.8	E 009 21.9
DF426	R	N 50 15 03.04	E 009 24 30.17	N 50 15.1	E 009 24.5
DF422	A5000+	N 50 09 37.00	E 009 01 02.37	N 50 09.6	E 009 01.0
FINAL APPROACH 25R [ILS/DME Z - ILS/DME Y - GLS Z - GLS Y]					

ROLIS 25S

ROLIS		N 50 26 06.37	E 007 49 30.55	N 50 26.1	E 007 49.5
OSPUL	L	N 50 15 49.00	E 008 02 14.96	N 50 15.8	E 008 02.2
DF402	L	N 50 04 22.92	E 008 16 17.48	N 50 04.4	E 008 16.3
DF601	F090+; L	N 49 56 22.09	E 008 32 18.66	N 49 56.4	E 008 32.3
DF610	F080+	N 50 01 45.80	E 008 55 00.29	N 50 01.8	E 008 55.0
DF616	L	N 50 09 21.68	E 009 27 40.21	N 50 09.4	E 009 27.7
DF626	L	N 50 14 04.23	E 009 25 02.97	N 50 14.1	E 009 25.0
LEDKI	A4000+	N 50 06 14.76	E 008 51 21.21	N 50 06.2	E 008 51.4
FINAL APPROACH 25L [ILS/DME Z - LOC-DME Z - RNAV (GPS) Z - GLS Z - GLS Y]					
REDGO	A4000+	N 50 06 33.03	E 008 51 22.94	N 50 06.6	E 008 51.4
FINAL APPROACH 25C [ILS/DME - LOC-DME - RNAV (GPS) Z - GLS Z - GLS Y]					

FRANKFURT MAIN

WAY POINT LIST

GPS/FMS RNAV TRANSITION TO FINAL APPROACH (OVERLAY TO RADAR VECTOR PATTERN)

Route Description

CODING

DISPLAY

UNOKO 25N

UNOKO		N 50 27 17.00	E 007 13 38.00	N 50 27.3	E 007 13.6
IBVIL	R	N 50 26 04.00	E 007 22 09.00	N 50 26.1	E 007 22.2
MANUV	L	N 50 17 44.00	E 007 27 32.00	N 50 17.7	E 007 27.5
RAMOB	L	N 50 06 41.00	E 007 41 02.00	N 50 06.7	E 007 41.0
DF401	L	N 49 59 35.51	E 007 56 57.90	N 49 59.6	E 007 57.0
DF411	F090+	N 50 12 56.53	E 008 52 30.83	N 50 12.9	E 008 52.5
DF416	R	N 50 19 45.52	E 009 21 52.29	N 50 19.8	E 009 21.9
DF426	R	N 50 15 03.04	E 009 24 30.17	N 50 15.1	E 009 24.5
DF422	A5000+	N 50 09 37.00	E 009 01 02.37	N 50 09.6	E 009 01.0

FINAL APPROACH 25R [ILS/DME Z - ILS/DME Y - GLS Z - GLS Y]

UNOKO 25S

UNOKO		N 50 27 17.00	E 007 13 38.00	N 50 27.3	E 007 13.6
IBVIL	R	N 50 26 04.00	E 007 22 09.00	N 50 26.1	E 007 22.2
MANUV	L	N 50 17 44.00	E 007 27 32.00	N 50 17.7	E 007 27.5
RAMOB	L	N 50 06 41.00	E 007 41 02.00	N 50 06.7	E 007 41.0
DF601	F090+; L	N 49 56 22.09	E 008 32 18.66	N 49 56.4	E 008 32.3
DF610	F080+	N 50 01 45.80	E 008 55 00.29	N 50 01.8	E 008 55.0
DF616	L	N 50 09 21.68	E 009 27 40.21	N 50 09.4	E 009 27.7
DF626	L	N 50 14 04.23	E 009 25 02.97	N 50 14.1	E 009 25.0
LEDKI	A4000+	N 50 06 14.76	E 008 51 21.21	N 50 06.2	E 008 51.4

FINAL APPROACH 25L [ILS/DME Z - LOC-DME Z - RNAV (GPS) Z - GLS Z - GLS Y]

REDGO A4000+ N 50 06 33.03 E 008 51 22.94 N 50 06.6 E 008 51.4

FINAL APPROACH 25C [ILS/DME - LOC-DME - RNAV (GPS) Z - GLS Z - GLS Y]

PSA 25N

PSA		N 49 51 44.07	E 009 20 53.97	N 49 51.7	E 009 20.9
DF406	L	N 50 21 44.19	E 009 15 29.62	N 50 21.7	E 009 15.5
DF407	L	N 50 23 41.55	E 009 10 32.11	N 50 23.7	E 009 10.5
DF408	L	N 50 18 42.35	E 008 49 09.87	N 50 18.7	E 008 49.2
DF411	F090+; L	N 50 12 56.53	E 008 52 30.83	N 50 12.9	E 008 52.5
DF416	R	N 50 19 45.52	E 009 21 52.29	N 50 19.8	E 009 21.9
DF426	R	N 50 15 03.04	E 009 24 30.17	N 50 15.1	E 009 24.5
DF422	A5000+	N 50 09 37.00	E 009 01 02.37	N 50 09.6	E 009 01.0

FINAL APPROACH 25R [ILS/DME Z - ILS/DME Y - GLS Z - GLS Y]

PSA 25S

PSA		N 49 51 44.07	E 009 20 53.97	N 49 51.7	E 009 20.9
CHA		N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4
DF606	R	N 49 56 42.71	E 008 54 43.24	N 49 56.7	E 008 54.7
DF610	F080+; R	N 50 01 45.80	E 008 55 00.29	N 50 01.8	E 008 55.0
DF616	L	N 50 09 21.68	E 009 27 40.21	N 50 09.4	E 009 27.7
DF626	L	N 50 14 04.23	E 009 25 02.97	N 50 14.1	E 009 25.0
LEDKI	A4000+	N 50 06 14.76	E 008 51 21.21	N 50 06.2	E 008 51.4

FINAL APPROACH 25L [ILS/DME Z - LOC-DME Z - RNAV (GPS) Z - GLS Z - GLS Y]

REDGO A4000+ N 50 06 33.03 E 008 51 22.94 N 50 06.6 E 008 51.4

FINAL APPROACH 25C [ILS/DME - LOC-DME - RNAV (GPS) Z - GLS Z - GLS Y]

WAY POINT LIST

FRANKFURT MAIN

GPS/FMS RNAV TRANSITION TO FINAL APPROACH (OVERLAY TO RADAR VECTOR PATTERN)

Additional Way Points

IDENT	CODING		DISPLAY	
DF409	N 50 10 13.28	E 008 40 59.94	N 50 10.2	E 008 41.0
DF410	N 50 11 33.83	E 008 46 39.57	N 50 11.6	E 008 46.7
DF412	N 50 14 18.94	E 008 58 22.44	N 50 14.3	E 008 58.4
DF413	N 50 15 41.04	E 009 04 14.39	N 50 15.7	E 009 04.2
DF414	N 50 17 02.83	E 009 10 06.68	N 50 17.0	E 009 10.1
DF415	N 50 18 24.33	E 009 15 59.31	N 50 18.4	E 009 16.0
DF421	N 50 08 14.74	E 008 55 11.27	N 50 08.2	E 008 55.2
DF423	N 50 10 58.96	E 009 06 53.81	N 50 11.0	E 009 06.9
DF424	N 50 12 20.62	E 009 12 45.59	N 50 12.3	E 009 12.8
DF425	N 50 13 41.98	E 009 18 37.71	N 50 13.7	E 009 18.6
DF441	N 50 01 51.75	E 008 06 20.69	N 50 01.9	E 008 06.3
DF442	N 50 00 26.69	E 008 00 32.17	N 50 00.4	E 008 00.5
DF443	N 49 59 01.33	E 007 54 44.01	N 49 59.0	E 007 54.7
DF453	N 49 54 20.93	E 007 57 29.38	N 49 54.3	E 007 57.5
DF609	N 50 00 32.41	E 008 49 49.47	N 50 00.5	E 008 49.8
DF611	N 50 02 34.21	E 008 58 24.59	N 50 02.6	E 008 58.4
DF612	N 50 03 56.30	E 009 04 14.88	N 50 03.9	E 009 04.2
DF613	N 50 05 18.10	E 009 10 05.71	N 50 05.3	E 009 10.1
DF614	N 50 06 39.59	E 009 15 56.87	N 50 06.7	E 009 15.9
DF615	N 50 08 00.79	E 009 21 48.37	N 50 08.0	E 009 21.8
DF621	N 50 07 16.07	E 008 55 44.60	N 50 07.3	E 008 55.7
DF622	N 50 08 38.31	E 009 01 35.59	N 50 08.6	E 009 01.6
DF623	N 50 10 00.24	E 009 07 26.93	N 50 10.0	E 009 07.4
DF624	N 50 11 21.87	E 009 13 18.60	N 50 11.4	E 009 13.3
DF625	N 50 12 43.20	E 009 19 10.62	N 50 12.7	E 009 19.2
DF640	N 49 52 59.30	E 008 18 18.40	N 49 53.0	E 008 18.3
DF641	N 49 51 32.73	E 008 12 22.52	N 49 51.5	E 008 12.4
DF642	N 49 50 07.98	E 008 06 35.09	N 49 50.1	E 008 06.6
DF643	N 49 48 42.94	E 008 00 48.00	N 49 48.7	E 008 00.8
DF651	N 49 56 13.49	E 008 09 38.78	N 49 56.2	E 008 09.6
DF652	N 49 54 48.60	E 008 03 50.85	N 49 54.8	E 008 03.8
DF653	N 49 53 23.41	E 007 58 03.28	N 49 53.4	E 007 58.1
RIPKU	N 49 59 49.32	E 009 19 27.09	N 49 59.8	E 009 19.5

FRANKFURT MAIN

WAY POINT LIST

STAR RNAV (GPS) Rwy 07 / 25

Way Points

IDENT	CODING		DISPLAY	
ETARU	N 50 17 08.00	E 008 06 44.00	N 50 17.1	E 008 06.7
GEDSI	N 50 17 02.85	E 009 07 30.45	N 50 17.0	E 009 07.5
IBLUS	N 49 53 48.13	E 008 05 41.10	N 49 53.8	E 008 05.7
IBVIL	N 50 26 04.00	E 007 22 09.00	N 50 26.1	E 007 22.2
KERAX	N 50 28 30.00	E 009 34 55.00	N 50 28.5	E 009 34.9
KUGUK	N 49 57 57.76	E 009 01 15.37	N 49 58.0	E 009 01.3
MANUV	N 50 17 44.00	E 007 27 32.00	N 50 17.7	E 007 27.5
ORVIV	N 50 10 59.99	E 009 00 46.36	N 50 11.0	E 009 00.8
RAMOB	N 50 06 41.00	E 007 41 02.00	N 50 06.7	E 007 41.0
REDLI	N 50 01 13.79	E 007 48 02.75	N 50 01.2	E 007 48.0
ROKIM	N 50 00 06.55	E 008 03 03.98	N 50 00.1	E 008 03.1
ROLIS	N 50 26 06.37	E 007 49 30.55	N 50 26.1	E 007 49.5
ULNOK	N 49 50 56.63	E 008 25 07.05	N 49 50.9	E 008 25.1
UNOKO	N 50 27 17.00	E 007 13 38.00	N 50 27.3	E 007 13.6
DF950	N 49 50 10.14	E 008 40 23.48	N 49 50.2	E 008 40.4
DF951	N 50 04 15.66	E 008 00 29.42	N 50 04.3	E 008 00.5

WAY POINT LIST

FRANKFURT MAIN

CODING

DISPLAY

RNAV (GPS) -Z Approach RWY 25L from CHA

CHA (IAF)	N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4
DF289 (IF)	N 50 07 19.26	E 008 55 55.34	N 50 07.3	E 008 55.9
LEDKI (FAF)	N 50 06 14.76	E 008 51 21.21	N 50 06.2	E 008 51.4
RW25L (MAPt)	N 50 02 24.19	E 008 35 11.51	N 50 02.4	E 008 35.2
DF290 (MATF)	N 50 01 13.69	E 008 30 16.69	N 50 01.2	E 008 30.3
DF291 (MATF)	N 49 59 42.65	E 008 27 04.53	N 49 59.7	E 008 27.1
CHA (MAHF)	N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4

RNAV (GPS) -Z Approach RWY 25L from MTR

MTR (IAF)	N 50 16 34.59	E 008 50 55.05	N 50 16.6	E 008 50.9
DF289 (IF)	N 50 07 19.26	E 008 55 55.34	N 50 07.3	E 008 55.9
LEDKI (FAF)	N 50 06 14.76	E 008 51 21.21	N 50 06.2	E 008 51.4
RW25L (MAPt)	N 50 02 24.19	E 008 35 11.51	N 50 02.4	E 008 35.2
DF290 (MATF)	N 50 01 13.69	E 008 30 16.69	N 50 01.2	E 008 30.3
DF291 (MATF)	N 49 59 42.65	E 008 27 04.53	N 49 59.7	E 008 27.1
CHA (MAHF)	N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4

RNAV (GPS) -Z Approach RWY 25C from CHA

CHA (IAF)	N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4
DF281 (IF)	N 50 07 35.08	E 008 55 46.82	N 50 07.6	E 008 55.8
REDGO (FAF)	N 50 06 33.03	E 008 51 22.94	N 50 06.6	E 008 51.4
RW25C (MAPt)	N 50 02 42.46	E 008 35 13.13	N 50 02.7	E 008 35.2
FW (MATF)	N 50 00 17.84	E 008 25 46.39	N 50 00.3	E 008 25.8
DF282 (MATF)	N 49 59 00.91	E 008 20 46.40	N 49 59.0	E 008 20.8
TAU (MATF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8
MTR (MAHF)	N 50 16 34.59	E 008 50 55.05	N 50 16.6	E 008 50.9

RNAV (GPS) -Z Approach RWY 25C from MTR

MTR (IAF)	N 50 16 34.59	E 008 50 55.05	N 50 16.6	E 008 50.9
DF281 (IF)	N 50 07 35.08	E 008 55 46.82	N 50 07.6	E 008 55.8
REDGO (FAF)	N 50 06 33.03	E 008 51 22.94	N 50 06.6	E 008 51.4
RW25C (MAPt)	N 50 02 42.46	E 008 35 13.13	N 50 02.7	E 008 35.2
FW (MATF)	N 50 00 17.84	E 008 25 46.39	N 50 00.3	E 008 25.8
DF282 (MATF)	N 49 59 00.91	E 008 20 46.40	N 49 59.0	E 008 20.8
TAU (MATF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8
MTR (MAHF)	N 50 16 34.59	E 008 50 55.05	N 50 16.6	E 008 50.9

FRANKFURT MAIN

WAY POINT LIST

CODING			DISPLAY	
RNAV (GPS) -Z Approach RWY 07C from RID				
RID (IAF)	N 49 46 54.09	E 008 32 29.35	N 49 46.9	E 008 32.5
DF271 (TF)	N 49 52 11.23	E 008 13 38.87	N 49 52.2	E 008 13.6
DF272 (IF)	N 49 56 54.57	E 008 11 06.51	N 49 56.9	E 008 11.1
LOMPO (FAF)	N 49 57 59.15	E 008 15 36.27	N 49 58.0	E 008 15.6
RW07C (MAPt)	N 50 01 57.42	E 008 32 04.67	N 50 02.0	E 008 32.1
FR (MATF)	N 50 03 56.56	E 008 41 00.56	N 50 03.9	E 008 41.0
DF273 (MATF)	N 50 05 34.58	E 008 48 24.46	N 50 05.6	E 008 48.4
TAU (MAHF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8
RNAV (GPS) -Z Approach RWY 07C from TAU				
TAU (IAF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8
DF270 (TF)	N 50 01 37.47	E 008 08 34.14	N 50 01.6	E 008 08.6
DF272 (IF)	N 49 56 54.57	E 008 11 06.51	N 49 56.9	E 008 11.1
LOMPO (FAF)	N 49 57 59.15	E 008 15 36.27	N 49 58.0	E 008 15.6
RW07C (MAPt)	N 50 01 57.42	E 008 32 04.67	N 50 02.0	E 008 32.1
FR (MATF)	N 50 03 56.56	E 008 41 00.56	N 50 03.9	E 008 41.0
DF273 (MATF)	N 50 05 34.58	E 008 48 24.46	N 50 05.6	E 008 48.4
TAU (MAHF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8
RNAV (GPS) -Z Approach RWY 07R from RID				
RID (IAF)	N 49 46 54.09	E 008 32 29.35	N 49 46.9	E 008 32.5
DF276 (TF)	N 49 51 55.61	E 008 13 47.22	N 49 51.9	E 008 13.8
DF277 (IF)	N 49 56 38.73	E 008 11 15.03	N 49 56.6	E 008 11.3
ROBSA (FAF)	N 49 57 40.69	E 008 15 33.95	N 49 57.7	E 008 15.6
RW07R (MAPt)	N 50 01 39.15	E 008 32 03.03	N 50 01.7	E 008 32.1
FFM (MATF)	N 50 03 13.47	E 008 38 13.53	N 50 03.2	E 008 38.2
DF278 (MATF)	N 50 03 21.16	E 008 50 38.21	N 50 03.4	E 008 50.6
RID (MAHF)	N 49 46 54.09	E 008 32 29.35	N 49 46.9	E 008 32.5
RNAV (GPS) -Z Approach RWY 07R from TAU				
TAU (IAF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8
DF275 (TF)	N 50 01 21.85	E 008 08 42.57	N 50 01.4	E 008 08.7
DF277 (IF)	N 49 56 38.73	E 008 11 15.03	N 49 56.6	E 008 11.3
ROBSA (FAF)	N 49 57 40.69	E 008 15 33.95	N 49 57.7	E 008 15.6
RW07R (MAPt)	N 50 01 39.15	E 008 32 03.03	N 50 01.7	E 008 32.1
FFM (MATF)	N 50 03 13.47	E 008 38 13.53	N 50 03.2	E 008 38.2
DF278 (MATF)	N 50 03 21.16	E 008 50 38.21	N 50 03.4	E 008 50.6
RID (MAHF)	N 49 46 54.09	E 008 32 29.35	N 49 46.9	E 008 32.5

WAY POINT LIST

FRANKFURT MAIN

CODING

DISPLAY

RNAV (GPS) -Y Approach RWY 25L from KUGUK

KUGUK (IAF)	N 49 57 57.76	E 009 01 15.37	N 49 58.0	E 009 01.3
DF907 (TF)	N 50 00 52.03	E 008 57 56.67	N 50 00.9	E 008 57.9
DF901 (IF)	N 50 03 37.88	E 008 52 09.99	N 50 03.6	E 008 52.2
TITUT (FAF)	N 50 04 07.82	E 008 42 26.99	N 50 04.1	E 008 42.4
RW25L (MAPt)	N 50 02 24.19	E 008 35 11.51	N 50 02.4	E 008 35.2
DF290 (MATF)	N 50 01 13.69	E 008 30 16.69	N 50 01.2	E 008 30.3
DF291 (MATF)	N 49 59 42.65	E 008 27 04.53	N 49 59.7	E 008 27.1
CHA (MAHF)	N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4

RNAV (GPS) -Y Approach RWY 25L from ORVIV

ORVIV (IAF)	N 50 10 59.99	E 009 00 46.36	N 50 11.0	E 009 00.8
DF902 (TF)	N 50 05 05.64	E 008 59 00.09	N 50 05.1	E 008 59.0
DF901 (IF)	N 50 03 37.88	E 008 52 09.99	N 50 03.6	E 008 52.2
TITUT (FAF)	N 50 04 07.82	E 008 42 26.99	N 50 04.1	E 008 42.4
RW25L (MAPt)	N 50 02 24.19	E 008 35 11.51	N 50 02.4	E 008 35.2
DF290 (MATF)	N 50 01 13.69	E 008 30 16.69	N 50 01.2	E 008 30.3
DF291 (MATF)	N 49 59 42.65	E 008 27 04.53	N 49 59.7	E 008 27.1
CHA (MAHF)	N 49 55 15.97	E 009 02 23.32	N 49 55.3	E 009 02.4

RNAV (GPS) -Y Approach RWY 25C from KUGUK

KUGUK (IAF)	N 49 57 57.76	E 009 01 15.37	N 49 58.0	E 009 01.3
DF907 (TF)	N 50 00 52.03	E 008 57 56.67	N 50 00.9	E 008 57.9
DF901 (IF)	N 50 03 37.88	E 008 52 09.99	N 50 03.6	E 008 52.2
RATRU (FAF)	N 50 04 25.99	E 008 42 28.17	N 50 04.4	E 008 42.5
RW25C (MAPt)	N 50 02 42.46	E 008 35 13.13	N 50 02.7	E 008 35.2
FW (MATF)	N 50 00 17.84	E 008 25 46.39	N 50 00.3	E 008 25.8
DF282 (MATF)	N 49 59 00.91	E 008 20 46.40	N 49 59.0	E 008 20.8
TAU (MATF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8
MTR (MAHF)	N 50 16 34.59	E 008 50 55.05	N 50 16.6	E 008 50.9

RNAV (GPS) -Y Approach RWY 25C from ORVIV

ORVIV (IAF)	N 50 10 59.99	E 009 00 46.36	N 50 11.0	E 009 00.8
DF902 (TF)	N 50 05 05.64	E 008 59 00.09	N 50 05.1	E 008 59.0
DF901 (IF)	N 50 03 37.88	E 008 52 09.99	N 50 03.6	E 008 52.2
RATRU (FAF)	N 50 04 25.99	E 008 42 28.17	N 50 04.4	E 008 42.5
RW25C (MAPt)	N 50 02 42.46	E 008 35 13.13	N 50 02.7	E 008 35.2
FW (MATF)	N 50 00 17.84	E 008 25 46.39	N 50 00.3	E 008 25.8
DF282 (MATF)	N 49 59 00.91	E 008 20 46.40	N 49 59.0	E 008 20.8
TAU (MATF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8
MTR (MAHF)	N 50 16 34.59	E 008 50 55.05	N 50 16.6	E 008 50.9

FRANKFURT MAIN

WAY POINT LIST

CODING

DISPLAY

| RNAV (GPS) -Y Approach RWY 07C from ULNOK

ULNOK (IAF)	N 49 50 56.63	E 008 25 07.05	N 49 50.9	E 008 25.1
DF914 (TF)	N 49 52 41.87	E 008 22 05.51	N 49 52.7	E 008 22.1
DF920 (IF)	N 49 57 08.27	E 008 20 47.33	N 49 57.1	E 008 20.8
TIXAK (FAF)	N 50 00 10.92	E 008 24 40.81	N 50 00.2	E 008 24.7
RW07C (MAPt)	N 50 01 57.42	E 008 32 04.67	N 50 02.0	E 008 32.1
FR (MATF)	N 50 03 56.56	E 008 41 00.56	N 50 03.9	E 008 41.0
DF273 (MATF)	N 50 05 34.58	E 008 48 24.46	N 50 05.6	E 008 48.4
TAU (MAHF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8

| RNAV (GPS) -Y Approach RWY 07C from IBLUS

IBLUS (IAF)	N 49 53 48.13	E 008 05 41.10	N 49 53.8	E 008 05.7
DF911 (TF)	N 49 55 50.21	E 008 14 52.55	N 49 55.8	E 008 14.9
DF920 (IF)	N 49 57 08.27	E 008 20 47.33	N 49 57.1	E 008 20.8
TIXAK (FAF)	N 50 00 10.92	E 008 24 40.81	N 50 00.2	E 008 24.7
RW07C (MAPt)	N 50 01 57.42	E 008 32 04.67	N 50 02.0	E 008 32.1
FR (MATF)	N 50 03 56.56	E 008 41 00.56	N 50 03.9	E 008 41.0
DF273 (MATF)	N 50 05 34.58	E 008 48 24.46	N 50 05.6	E 008 48.4
TAU (MAHF)	N 50 15 01.67	E 008 09 45.09	N 50 15.0	E 008 09.8

RNAV (GPS) -Y Approach RWY 07R from ULNOK

ULNOK (IAF)	N 49 50 56.63	E 008 25 07.05	N 49 50.9	E 008 25.1
DF914 (TF)	N 49 52 41.87	E 008 22 05.51	N 49 52.7	E 008 22.1
DF910 (IF)	N 49 57 13.87	E 008 21 12.88	N 49 57.2	E 008 21.2
BOGVO (FAF)	N 49 59 52.61	E 008 24 39.00	N 49 59.9	E 008 24.6
RW07R (MAPt)	N 50 01 39.15	E 008 32 03.03	N 50 01.7	E 008 32.1
FFM (MATF)	N 50 03 13.47	E 008 38 13.53	N 50 03.2	E 008 38.2
DF278 (MATF)	N 50 03 21.16	E 008 50 38.21	N 50 03.4	E 008 50.6
RID (MAHF)	N 49 46 54.09	E 008 32 29.35	N 49 46.9	E 008 32.5

RNAV (GPS) -Y Approach RWY 07R from IBLUS

IBLUS (IAF)	N 49 53 48.13	E 008 05 41.10	N 49 53.8	E 008 05.7
DF911 (TF)	N 49 55 50.21	E 008 14 52.55	N 49 55.8	E 008 14.9
DF910 (IF)	N 49 57 13.87	E 008 21 12.88	N 49 57.2	E 008 21.2
BOGVO (FAF)	N 49 59 52.61	E 008 24 39.00	N 49 59.9	E 008 24.6
RW07R (MAPt)	N 50 01 39.15	E 008 32 03.03	N 50 01.7	E 008 32.1
FFM (MATF)	N 50 03 13.47	E 008 38 13.53	N 50 03.2	E 008 38.2
DF278 (MATF)	N 50 03 21.16	E 008 50 38.21	N 50 03.4	E 008 50.6
RID (MAHF)	N 49 46 54.09	E 008 32 29.35	N 49 46.9	E 008 32.5

WAY POINT LIST

FRANKFURT MAIN

GPS/FMS RNAV DEPARTURE ROUTES (OVERLAY)

IDENT	CODING		DISPLAY	
DF132	N 50 06 59.33	E 008 19 21.15	N 50 07.0	E 008 19.4
DF133	N 50 01 50.16	E 008 26 48.51	N 50 01.8	E 008 26.8
DF134	N 50 01 43.74	E 008 31 07.58	N 50 01.7	E 008 31.1
DF135	N 50 01 27.97	E 008 31 16.42	N 50 01.5	E 008 31.3
DF136	N 50 00 39.99	E 008 17 01.06	N 50 00.7	E 008 17.0
DF137	N 49 57 57.32	E 008 31 42.44	N 49 58.0	E 008 31.7
DF138	N 49 58 20.23	E 008 25 21.28	N 49 58.3	E 008 25.4
DF139	N 50 03 24.72	E 008 38 13.20	N 50 03.4	E 008 38.2
DF140	N 50 03 07.29	E 008 38 14.76	N 50 03.1	E 008 38.2
DF141	N 50 01 04.48	E 008 30 07.43	N 50 01.1	E 008 30.1
DF142	N 50 00 30.73	E 008 29 48.78	N 50 00.5	E 008 29.8
DF143	N 49 58 57.86	E 008 28 56.99	N 49 59.0	E 008 28.9
DF144	N 50 02 52.17	E 008 35 56.35	N 50 02.9	E 008 35.9
DF145	N 50 02 36.37	E 008 36 04.62	N 50 02.6	E 008 36.1
DF146	N 50 06 01.22	E 008 38 02.59	N 50 06.0	E 008 38.0
DF149	N 50 04 21.87	E 008 42 38.57	N 50 04.4	E 008 42.6
DF150	N 50 00 36.89	E 008 45 06.26	N 50 00.6	E 008 45.1
DF151	N 50 03 27.31	E 008 50 36.96	N 50 03.5	E 008 50.6
DF152	N 50 04 13.99	E 008 42 28.83	N 50 04.2	E 008 42.5
DF153	N 49 50 28.89	E 008 41 25.87	N 49 50.5	E 008 41.4
DF154	N 49 58 42.14	E 008 35 39.28	N 49 58.7	E 008 35.7
DF156	N 49 56 02.20	E 008 27 27.91	N 49 56.0	E 008 27.5
DF157	N 49 47 27.96	E 008 40 20.26	N 49 47.5	E 008 40.3
DF158	N 49 58 00.01	E 008 31 34.98	N 49 58.0	E 008 31.6
DF159	N 49 56 58.59	E 008 34 25.12	N 49 57.0	E 008 34.4
DF160	N 49 52 25.15	E 008 32 05.82	N 49 52.4	E 008 32.1
DF162	N 50 00 35.24	E 008 29 46.50	N 50 00.6	E 008 29.8
DF163	N 49 55 55.41	E 008 27 16.79	N 49 55.9	E 008 27.3
DF164	N 49 51 44.07	E 008 21 02.23	N 49 51.7	E 008 21.0
DF165	N 50 00 08.58	E 008 29 42.70	N 50 00.1	E 008 29.7
DF166	N 49 57 17.64	E 008 29 19.80	N 49 57.3	E 008 29.3
DF168	N 49 56 20.97	E 008 36 10.06	N 49 56.3	E 008 36.2
DF169	N 50 03 52.23	E 009 17 00.22	N 50 03.8	E 009 17.0
DF172	N 49 54 52.57	E 008 26 57.96	N 49 54.9	E 008 27.0
DF180	N 49 54 18.73	E 008 26 42.24	N 49 54.3	E 008 26.7
DF197	N 49 58 46.72	E 008 31 34.61	N 49 58.8	E 008 31.6
DF198	N 49 45 03.68	E 008 27 57.13	N 49 45.1	E 008 28.0
DF200	N 49 43 12.05	E 008 26 54.46	N 49 43.2	E 008 26.9
DF201	N 49 47 15.18	E 008 14 22.30	N 49 47.3	E 008 14.4
DF233	N 50 01 59.94	E 008 25 16.70	N 50 02.0	E 008 25.3
DF234	N 50 01 35.45	E 008 30 35.37	N 50 01.6	E 008 30.6
DF235	N 50 01 21.77	E 008 30 51.74	N 50 01.3	E 008 30.9
DF236	N 50 01 25.88	E 008 23 24.39	N 50 01.4	E 008 23.4
DF238	N 50 07 42.53	E 008 15 55.85	N 50 07.7	E 008 15.9
DF980	N 50 01 20.75	E 008 30 46.00	N 50 01.3	E 008 30.8
DF999	N 50 01 39.03	E 008 30 47.83	N 50 01.7	E 008 30.8

FRANKFURT MAIN

WAY POINT LIST

GPS/FMS RNAV DEPARTURE ROUTES (OVERLAY)

IDENT	CODING		DISPLAY	
ADEVO	N 49 57 06.20	E 008 20 24.69	N 49 57.1	E 008 20.4
AGOLO	N 50 12 00.40	E 009 40 34.27	N 50 12.0	E 009 40.6
AKONI	N 49 44 48.46	E 009 11 15.15	N 49 44.8	E 009 11.3
ALIDI	N 50 43 18.06	E 008 39 28.17	N 50 43.3	E 008 39.5
AMTIX	N 49 45 43.59	E 009 05 29.55	N 49 45.7	E 009 05.5
ANEKI	N 49 19 02.18	E 008 28 49.54	N 49 19.0	E 008 28.8
APROX	N 50 43 30.87	E 008 42 57.08	N 50 43.5	E 008 43.0
DITAM	N 50 33 29.20	E 007 31 46.42	N 50 33.5	E 007 31.8
DKB	N 49 08 33.91	E 010 14 17.90	N 49 08.6	E 010 14.3
DONAB	N 49 49 15.89	E 008 01 44.83	N 49 49.3	E 008 01.7
ESUPI	N 50 03 30.40	E 008 07 15.95	N 50 03.5	E 008 07.3
GEBNO	N 49 10 00.08	E 009 55 56.25	N 49 10.0	E 009 55.9
GIBSA	N 49 40 05.56	E 009 40 03.14	N 49 40.1	E 009 40.1
GISNO	N 49 45 55.53	E 007 51 26.46	N 49 45.9	E 007 51.4
GUBAX	N 50 17 25.00	E 007 54 40.32	N 50 17.4	E 007 54.7
HAREM	N 49 37 06.39	E 009 24 52.43	N 49 37.1	E 009 24.9
KOMIB	N 50 04 24.10	E 010 14 33.75	N 50 04.4	E 010 14.6
KUPIP	N 49 56 26.82	E 008 09 37.02	N 49 56.4	E 008 09.6
KUSOM	N 50 22 53.65	E 008 21 57.23	N 50 22.9	E 008 22.0
LAMPU	N 49 20 24.35	E 009 40 04.97	N 49 20.4	E 009 40.1
LIKSI	N 50 28 23.50	E 008 30 16.44	N 50 28.4	E 008 30.3
LISKU	N 50 02 50.58	E 008 16 38.23	N 50 02.8	E 008 16.6
LORPA	N 50 43 32.42	E 008 37 32.69	N 50 43.5	E 008 37.5
MABOB	N 50 17 39.02	E 008 32 33.74	N 50 17.7	E 008 32.6
MARUN	N 50 49 16.20	E 008 40 18.99	N 50 49.3	E 008 40.3
MASIR	N 50 15 17.69	E 007 44 16.54	N 50 15.3	E 007 44.3
MTR	N 50 16 34.59	E 008 50 55.05	N 50 16.6	E 008 50.9
NOMBO	N 49 03 48.56	E 010 05 16.56	N 49 03.8	E 010 05.3
OBOKA	N 50 44 41.51	E 007 20 16.97	N 50 44.7	E 007 20.3
ODAGA	N 50 19 36.08	E 008 37 07.96	N 50 19.6	E 008 37.1
OKTUM	N 50 11 58.63	E 010 00 38.11	N 50 12.0	E 010 00.6
PABVI	N 49 53 05.98	E 008 22 22.99	N 49 53.1	E 008 22.4
PIPIX	N 49 42 25.94	E 008 13 23.62	N 49 42.4	E 008 13.4
RATIM	N 49 41 35.32	E 009 31 00.40	N 49 41.6	E 009 31.0
RAVKI	N 50 21 41.99	E 007 39 53.65	N 50 21.7	E 007 39.9
RID	N 49 46 54.09	E 008 32 29.35	N 49 46.9	E 008 32.5
ROSIG	N 49 46 06.01	E 008 21 33.92	N 49 46.1	E 008 21.6
ROTEN	N 49 14 38.78	E 010 03 54.15	N 49 14.6	E 010 03.9
ROXAP	N 49 54 54.71	E 008 21 50.89	N 49 54.9	E 008 21.8
RUDUS	N 50 02 51.32	E 008 04 41.77	N 50 02.9	E 008 04.7
SIVDO	N 49 53 26.07	E 008 15 56.78	N 49 53.4	E 008 15.9
SOBRA	N 49 51 39.00	E 007 46 32.00	N 49 51.6	E 007 46.5
SULUS	N 50 04 30.69	E 010 43 43.71	N 50 04.5	E 010 43.7
TABUM	N 50 17 27.33	E 008 24 18.21	N 50 17.5	E 008 24.3
TESGA	N 50 26 41.64	E 008 37 07.94	N 50 26.7	E 008 37.1
TOBAK	N 50 34 17.93	E 008 47 08.81	N 50 34.3	E 008 47.1
TUKRU	N 49 56 23.72	E 008 43 15.90	N 49 56.4	E 008 43.3
ULKIG	N 49 52 11.00	E 007 43 10.00	N 49 52.2	E 007 43.2
VETUX	N 49 47 04.06	E 007 59 56.83	N 49 47.1	E 007 59.9
VFM	N 49 57 42.58	E 008 28 16.39	N 49 57.7	E 008 28.3
WUR	N 49 43 03.11	E 009 56 49.20	N 49 43.1	E 009 56.8
XAMUB	N 49 47 39.01	E 008 19 40.42	N 49 47.7	E 008 19.7

THRESHOLD COORDINATES

DER	THR	CODING		DISPLAY	
RWY 18		N 49 59 54.53	E 008 31 34.62	N 49 59.9	E 008 31.6
	RWY 25C	N 50 02 42.46	E 008 35 13.13	N 50 02.7	E 008 35.2
	RWY 25L	N 50 02 24.19	E 008 35 11.51	N 50 02.4	E 008 35.2
	RWY 07R	N 50 01 39.15	E 008 32 03.03	N 50 01.7	E 008 32.1
	RWY 07C	N 50 01 57.42	E 008 32 04.67	N 50 02.0	E 008 32.1