WARR AD 2.1 AERODROME LOCATION INDICATOR AND NAME

WARR – SURABAYA / Juanda

WARR AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

ARP Coordinates and Site at AD……..	07 23 01 S 112 46 48 E
Direction and Distance From (City)……..	15 km SE
Elevation / Reference Temperature…….	11 ft / 32 °C
MAG VAR / Annual Change……...	1°E (2015)
AD Administration……	Airport : PT. Angkasa Pura I (Persero) ANSP : AirNav Indonesia Cabang Madya Surabaya
Address……	Airport : Juanda Airport Surabaya 61235 1A ANSP : Juanda Airport Surabaya 61235 1A
Telephone…….	Airport : (031) 2986505 (Airport Duty Ocer) (031) 2986200, (031) 2986700 ANSP : (031) 2986501 (Admin AirNav) (031) 8688587 (AD AIS Unit) (031) 2986540 (ARO)
Telefax……..	Alrport : (031) 8667506 ANSP : 8688456 (Admin AirNav), 8688536 (AD AIS Unit/ARO) 8688461 (ATFM)
Telex……..	NIL
E-mail……	Airport : sub@angkasapura1.co.id, ANSP : sub@airnavindonesia.co.id
AFTN…….	WARRZTZE, WARRZAZE, WARRZPZE
Type of Trac Permitted……..….	IFR and VFR
Remarks……	NIL

WARR AD 2.3 OPERATIONAL HOURS

AD Administration……	MON - FRI : 0000 - 0800 AD Operational : H24
Customs and Immigration……	H24
Health and Sanitation…….	H24
AIS Brieng Oce…….....	H24
ATS Reporting Oce…….....	H24
MET Brieng Oce…….....	H24
ATS……	H24
Fuelling……..	H24
Handling……	H24
Security…….	H24
De-Icing…….	NIL
Remarks……	NIL

WARR AD 2.4 HANDLING SERVICE AND FACILITIES

Cargo Handling Facilities……	Push Back Tractor : 18 / 50 / 60 Ton Fork Lift = 4500 kg High Loader = 18000 lbs Belt Loader = 1000 kgs
Fuel/Oil/Type……..	AVTUR (Jet A1), OIL - W100
Fuelling Facilities / Capacity……..	22 Hydrant Valves, 6 Servicers, 8000 kL (4 storage tank)
De-Icing Facilities……..	NIL
Hangar Space for Visiting Aircraft……..	O/R AVBL for: C212, F27, F28, B737, CN235, F100, A300
Repair Facilities for Visiting Aircraft…….....	O/R and For Minor Repair
Remarks……	NIL

WARR AD 2.5 PASSENGER FACILITIES

Hotels……	Available
Restaurant……	Available
Transportation……....	Taxi, Car Rent, Airport Bus, Airport Shuttle Bus (T1-T2)
Medical Facilities……..	First AID at Aerodrome Hospital in Town
Bank and Post Office……...	Available
Tourist Office……..	Available
Remarks……	NIL

WARR AD 2.6 RESCUE AND FIRE FIGHTING

AD Category for Fire Fighting……...	Category 8
Rescue Equipment……..	Foam Tender type 1/F1(12.500L) = 1 Car Foam Tender type 1/F2 (12.000L) = 1 Car Foam Tender type 1/F3 (11.350L) = 1 Car Foam Tender type 2/F4 (9000L) = 1 Car Nurse Tender type 4 (4000L) = 1 Car Rescue Car (RIV) DCP 250 kg = 1 Car Rubber Boat = 1 Car Ambulance (A1,A2,A3) = 3 Cars Commando Car (C1)/Main station = 1 Car Commando Car (C2)/Sub Station = 1 Car Utility Car = 1 Car Bird Strike Car = 1 Car
Capability for Removal of Disabled Aircraft….	Available Up to B747-400 ←
Remarks……	Salvage Team Available

WARR AD 2.7 SEASONAL AVAILABILITY CLEARING

Type of Clearing Equipment…….……	RWY Sweeper
Clearance……..…...	RWY, TWY, APRON
Remarks……	NIL

WARR AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATION DATA

APRON SURFACE AND STRENGTH

NORTH APRON (Terminal 1)

Surface	= RIGID
Strength	= PCN 98 R/C/X/T
Dimension	= 152 x 1229.7 M

SOUTH APRON (Terminal 2)

Parking Stand A1 – A5	
Surface	= RIGID
Strength	= PCN 73 R/C/X/U
Dimension	= 120 X 195 M
Parking push back Aircraft	
Surface	= RIGID
Strength	= PCN 73 R/C/X/U
Dimension	= 30 X 34.81 M
Parking Stand A6 – A8	
Surface	= RIGID
Strength	= PCN 73 R/C/X/U
Dimension	= 135 X 200 M
Parking Stand A9 – A14	
Surface	= RIGID
Strength	= PCN 73 R/C/X/U
Dimension	= 130 X 298 M
WEST ALARM	No parking use for aircraft
Surface	= Aspalt Concrete
Strength	= PCN 75 F/D/X/T
Dimension	= 81.20 X 223 m
EAST ALARM	Using for ISOLATED AREA
Surface	= Aspalt Concrete
Strength	= PCN 75 F/D/X/T
Dimension	= 120 X 195 m

TAXIWAY WIDTH, SURFACE, AND STRENGTH

NORTH TAXIWAYS WIDTH, SURFACE AND STRNGTH

TWY N1	= 26.5 x 203.75 M
TWY N2	= 30 x 285.75 M
TWY N3S	= 30 x 154.5 M
TWY N3N	= 30 x 235 M
TWY N4	= 30 x 220 M
TWY N5S	= 30 x 266 M
TWY N5N	= 30 x 285.75 M
TWY N6	= 30 x 535.80 M
TWY N7	= 30 x 203.75 M
TWY N8	= 26 x 26 M
TWY NP1	= 23 x 1421 M
TWY NP2	= 30 x 2853.5 M
ALL SURFACE STRENGTH EXCEPT	
N5S	= Asphalt, 147 F/B/X/T
SURFACE & PCN N5S	= Asphalt, 110 F/D/W/T

SOUTH TAXIWAYS WIDTH, SURFACE AND STRNGTH	
TWY S1	= 200 x 29 M
TWY S2	= 187 x 32 M, (FM RWY to SP1) 185 x 32 M, (FM SP 1 to APRON B & C)
TWY S3	= 221 x20 M, (FM SP1 to SP2 to NAVY Hangar) 187 x 32 M, (FM RWY to SP2)
TWY S4	= 187 x 20 M , (FM SP1 to NAVY Hangar) 187 x 32 M, (FM RWY to SP2)
TWY S5	= 200 x 29 M ←
TWY S6	= 173 x 23 M
TWY SP1	= 425 x 20 M
TWY SP2	= 3367.5 x 23 M 755 x 23 M (FM S5 to S4), 89 F/C/W/T
ALL SURFACE & STRENGTH EXCEPT S5	= Asphalt, 94 F/C/X/U
SURFACE & STRENGTH S5	= Asphalt, 89 F/C/W/T
ACL Location and Elevation……	07 23 05.70S 112 47 02.68E 2.74 M
VOR / INS Checkpoints……	NIL
Remarks……	TWY NP1 BTN N3N and N4 closed. TWY N5S available for wide body.

WARR AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKING

Use of Aircraft ID sign, TWY guide lines and visual docking / parking guidance system of Aircraft stands……	- Aircraft ID sign : Not Available - TWY Guideline : Available - Visual Docking/Parking Guidance System available at North Apron - Visual Docking/Parking Guidance System Not available at South Apron - Rename of Guidance Sign JUANDA Airport Modified as follow : * S5 (South Five) instead of fillet A (Alpha) * S4 (South Four) instead of fillet B (bravo) * MIL (Indonesian Navy Only) instead of S4 * S3 (South Three) instead of fillet C (Charlie) * S3 (South Three) instead of fillet Y (Yankee) * S2 (South Two) instead of fillet D (Delta) * S2 (South Two) instead of fillet Z (Zulu) * S1 (South One) instead of fillet E (Echo) * S6 (South Six) instead of fillet W (Whisky) : - Dimension : 23 x 172.5 m - Strength : 73 F/C/X/U

	*SP2 (South Parallel Two) instead of main taxiway *SP1 (South Parallel One) instead of Taxiway H (Hotel) / auxiliary taxiway.
RWY and TWY Marking and LGT…….	- RWY Marking : * RWY Designation (10-28) * THR, and RWY Edge Side - Touchdown I : * 150 m from beginning RWY 10, * dimension : 3 x 22.5 m - Touchdown II : * 300 m from beginning RWY 10, * dimension : 3 x 22.5 m - Aiming Point Marking : * 400 m from beginning RWY 10, * dimension : 7.5 x 45 m - Touchdown III : * 600 m from beginning RWY 10, * dimension : 3 x 22.5 m - Touchdown IV : * 750 m from beginning RWY 10, * dimension : 3 x 22.5 m - Touchdown V : * 900 m from beginning RWY 10, * dimension : 3 x 22.5 m - RWY Edge LGT : High intensity in 3 brightness - THR LGT : High intensity in 3 brightness - RWY End LGT : High intensity in 3 brightness - REIL LGT : RWY 28 only, 1flash/sec - TWY Marking : Centerline, Edge Stripes - TWY Edge LGT : Low intensity in blue color single brightness TWY Guidance LGT : Available
Stop Bars……..	Available
Remarks……	- Follow nose – wheel guidelines when taxiing on Apron, Taxiways and entry / exit RWY - Aircraft turning area shall follow guidance line - Fillet S 5 (South Five) available for aircraft with maximum wing span 44.8 m - TWY SP 2 from S 2 to S 1 available for aircraft type B 747 or similar with engine Number 1 and Number 4 should be idle. - Fillet X closed for visiting Aircraft, except NAVAL Aircraft - TWY S4 and TWY SP2 BTN S4 and S3 available for wide body Aircraft

AIRCRAFT PARKING RESTRICTIONS

1) Aircraft Parking Stand coordinates (WGS'84) on North Apron :

PARKING NUMBER	LATITUDE	LONGITUDE	REMARK
1.	07 22 35.88 S	112 48 00.23 E	B737-800/900 ER
2.	07 22 35.53 S	112 47 59.05 E	B737-800/900 ER
3.	07 22 35.39 S	112 47 57.63 E	B737-800/900 ER
4.	07 22 34.68 S	112 47 55.69 E	B737-800/900 ER
5.	07 22 35.07 S	112 47 53.29 E	B737-800/900 ER
6.	07 22 34.39 S	112 47 51.34 E	A330 Series
7.	07 22 34.07 S	112 47 49.46 E	B777 Series
8.	07 22 33.71 S	112 47 47.25 E	B747 Series
9.	07 22 33.39 S	112 47 45.31 E	A330 Series
10.	07 22 33.03 S	112 47 43.18 E	A330 Series
11.	07 22 32.65 S	112 47 40.84 E	B747 Series
12.	07 22 32.33 S	112 47 38.71 E	B737-800/900 ER
13	07 22 32.57 S	112 47 37.53 E	B737 Series
14.	07 22 31.96 S	112 47 36.45 E	B737-800/900 ER
15.	07 22 31.65 S	112 47 34.52 E	B737-800/900 ER
16.	07 22 31.34 S	112 47 32.58 E	B737-800/900 ER
17.	07 22 31.03 S	112 47 30.66 E	B737-800/900 ER
18.	07 22 30.42 S	112 47 28.76 E	B737-800/900 ER
19.	07 22 31.29 S	112 47 27.28 E	B737-800/900 ER
20.	07 22 30.14 S	112 47 26.12 E	B737-800/900 ER
21.	07 22 29.92 S	112 47 24.78 E	B737-800/900 ER
22	07 22 29.71 S	112 47 23.49 E	B737-800/900 ER
23	07 22 29.50 S	112 47 22.21 E	B737-800/900 ER
24	07 22 29.29 S	112 47 20.90 E	B737-800/900 ER
25	07 22 29.10 S	112 47 19.62 E	B737-800/900 ER
26	07 22 28.89 S	112 47 18.34 E	B737-800/900 ER
27	07 22 28.68 S	112 47 17.05 E	ATR72-600
28	07 22 32.99 S	112 47 17.00 E	B737-800/900 ER
29	07 22 33.17 S	112 47 18.13 E	B737-800/900 ER
30	07 22 33.36 S	112 47 19.27 E	B737-800/900 ER

2) Temporary Parking Stand on North Apron

4A	07 22 35.61 S	112 47 56.28 E	B737-800/900ER
4B	07 22 35.41 S	112 47 55.01 E	B737-800/900ER
5A	07 22 35.19 S	112 47 53.72 E	B737-800/900ER
5B	07 22 35.01 S	112 47 52.57 E	B737-800/900ER
6A	07 22 34.30 S	112 47 51.72 E	B737-800/900ER
10A	07 22 33.29 S	112 47 41.96 E	B737 Series
15A	07 22 32.18 S	112 47 35.10 E	B777 Series
15B	07 22 31.97 S	112 47 33.79 E	B747 Series
17A	07 22 31.55 S	112 47 31.22 E	A330 Series
17B	07 22 31.34 S	112 47 29.93 E	A330 Series
H1	07 22 29.13 S	112 47 15.85 E	Bell412
H2	07 22 30.34 S	112 47 15.63 E	Bell412
H3	07 22 31.54 S	112 47 15.41 E	Bell412
H4	07 22 32.77 S	112 47 15.19 E	Bell412

3) Aircraft Parking Stand coordinates on South Apron

PARKING NUMBER	LATITUDE	LONGITUDE	REMARK
A1	07 22 55.96 S	112 46 30.17 E	B737-800/900ER
A2	07 22 56.21 S	112 46 31.61 E	B737-800/900ER
A3	07 22 56.46 S	112 46 33.06 E	B737-800/900ER
A4	07 22 56.70 S	112 46 34.51 E	B737-800/900ER
A5	07 22 57.19 S	112 46 35.40 E	A330-200
A6	07 22 59.92 S	112 46 38.91 E	B747-400
A7	07 23 00.23 S	112 46 41.32 E	B747-400
A8	07 23 00.77 S	112 46 43.74 E	B747-400
A9	07 23 00.38 S	112 46 45.98 E	B737-800/900ER
A10	07 23 00.63 S	112 46 47.43 E	B737-800/900ER
A11	07 23 00.87 S	112 46 48.88 E	B737-800/900ER
A12	07 23 01.12 S	112 46 50.35 E	B737-800/900ER
A13	07 23 01.43 S	112 46 51.77 E	B737-800/900ER
A14	07 23 01.66 S	112 46 53.22 E	B737-800/900ER
A5T	07 22 56.94 S	112 46 35.96 E	A320/CRJ1000

WARR AD 2.10 AERODROME OBSTACLE

1) Lighting protection obstacle erected position 150 m from the end of RWY 10, 300 M South of centerline RWY height 20 M
2) Height wind sensor / telemetry of RWY 10 / 28 : 10 M, day and night marking available:
   For RWY 10 PSN 210 M FM beginning RWY 10 and 124 M FM centerline south of RWY
   For RWY 28 PSN 220 M FM beginning RWY 28 and 111 M FM centerline south of RWY
3) Wind shear antenna consists of six (6) antennas CMA. Named antenna 1 until 6, position antenna as follows :

a) Antenna 1 : 860 M West of end RWY 28 and 773 M North of extended RWY centerline height 30 M.
b) Antenna 2 : 1500 M East of beginning RWY 10 and 773 M North of RWY centerline height 30 M.
c) Antenna 3 : 775 M East of end RWY 10 and 773 M North of extended RWY centerline height 20 M.
d) Antenna 4 : 760 M West of end RWY 28 and 773 M South of extended RWY centerline height 20 M.
e) Antenna 5 : 1500 M East of beginning RWY 10 and 773 M South of RWY centerline height 20 M.
f) Antenna 6 : 775 M East of end RWY 10 and 773 M South of extended RWY centerline height 20 M.

Day and Night MARKING available.

4) Mosque dome obstacle at 07 22 34.7S 112 45 46.4E, Height 81.04 ft, Bearing 276° from RWY 10, Distance 1.17 KM

WARR AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

Associated MET Office……..	Aerodrome Meteorological and Geophysical Office JUANDA / Surabaya
Hours of Service / MET Office Outside Hours	2300–1700
Office Responsible for TAF Preparation	
Period of Validity…….….	Surabaya, 12, 14 Hours
TREND Forecasts & Interval of Issuance…..	Trend Every Half Hour 2300–1700
Briefing / Consultation Provided……	Personal Consultation
Flight Documentation - Language Used….....	Chart, Tabular Form - ENGLISH
Charts and Other Information available for Briefing or Consultation……	Streamline ISOTACH Analysis Chart, Significant Weather Frog Noses Chart, Radar Monitor
Supplementary Equipment Available For Providing Information……..	Reason Analysis TELEFAX Synergy System (every half hours)
ATS Units Provided With Information…….	TWR / APP SURABAYA
Additional Information (Limitation Of Service Etc.)……	NIL

WARR AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

1	2	3	4	5	6
Designations RWY NR	True & MAG BRG	Dimension of RWY	Strength (PCN) and Surface of RWY and SWY	THR Coordinates	THR Elevation and Highest Elevation of TDZ of Precision APP RWY
10 28	099.2° 279.2°	3000 x 45 m	Asphalt Concrete 94 F/D/X/T	07 22 39.61 S 112 46 24.57 E 07 22 55.25 S 112 48 00.97 E	11 ft (3.2 m) MSL 8 ft (2.6 m) MSL

7	8	9	10	11	12
Slope of RWY - NR	SWY Dimension	CWY Dimension	Strip Dimension	OFZ	Remarks
0.06% NIL	40 x 45 m 40 x 45 m	470 x 150 m 690 x 150 m	3200 X 300 m (Grass)	White White	RESA 90 x 90 m (Both of RWY)

WARR AD 2.13 DECLARED DISTANCES

1	2	3	4	5
RWY Designator	TORA	TODA	ASDA	LDA
10	3000 m	3470 m	3040 m	3000 m
28	3000 m	3690 m	3040 m	3000 m

WARR AD 2.14 APPROACH AND RUNWAY LIGHTING

1	2	3	4	5
RWY Designator	APCH LIGHT Type LGT LEN INTST	THR LGT Colour WBAR	VASIS (MEHT) PAPI	TDZ LGT LEN
10	PALS 900 m High Intensity In 5 Stage	Green	PAPI	NIL

28	PALS 900 m High Intensity In 5 Stage	Green	PAPI	NIL

6 RWY Centerline LGT Length Spacing Colour	7 RWY Edge LGT LEN Spacing Colour INTST	8 RWY End LGT Colour WBAR	9 SWY LGT LEN (m) Colour	10 Remarks
NIL	White 60 m High Intensity	Red	NIL	PAPI Glide Slope : RWY 10 was set 3^0 and found 3.047°
NIL	White 60 m High Intensity	Red	NIL	RWY 28 was set 3^0 and found 3.02°

WARR AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1.	ABN / IBN Location, Characteristic and Hours Operation.	2300 – 1700
2.	LDI Location and LGT Anemometer Location and LGT	Available Available
3.	TWY Edge and Centerline LGT	NIL & TWY Edge Lights Available
4.	Secondary Power Supply / Switch Over Time	Standby Generator as Secondary Power Supply to all Lighting at AD, Switch Overtime Terminal 1: 10 sec (5 X 1500 KVA), Switch Overtime Terminal 2: 10 sec (3 X 2000 KVA)
5.	Remarks	Flood Light Available

WARR AD 2.16 HELICOPTER LANDING AREA

1.	Coordinates TLOF THR FATO	NIL
2.	TLOF and / or FATO Elevation (M / FT)	NIL
3.	TLOF and FATO Area Dimensions, Surface, Strength, Marking	NIL
4.	True Bearing and Magnetic Bearing Of FATO	NIL
5.	Declared Distance Available	NIL

6.	APP and FATO Lighting	NIL
7.	Remarks	NIL

WARR AD 2.17 ATS AIRSPACE

1.	Designation and Lateral Limits	SURABAYA CTR : 07 40 00 S 112 56 00 E 07 40 00 S 112 15 00 E 07 27 00 S 112 10 E 07 25 52.32 S 112 06 09.72 E thence an arc clockwise with a radius of 40 NM centered at "SBR" VOR/DME (07 22 26.18 S 112 46 16.39E) to 07 49 38.29 S 113 15 29.89 E 07 46 00 S 113 12 00 E 07 40 00 S 112 56 00 E
2.	Vertical Limits	SFC Up To 10 000 ft
3.	Airspace Classification	C
4.	ATS Unit Call Sign Language(s)	Surabaya Director English
5.	Transition	11 000 ft / FL130
6.	Remarks	NIL

WARR AD 2.18 ATS COMMUNICATION FACILITIES

1	2	3	4	5
Service Designator	Call sign	Frequency	Hours of Operation	Remarks
APP	SURABAYA WEST CONTROL	125.1 MHz 123.55 MHz*	H - 24	*Secondary
	SURABAYA EAST CONTROL	124.0 MHz 122.85 MHZ*	H - 24	
APP	SURABAYA DIRECTOR	123.2 MHZ 124.5 MHz*	2300 - 1700	
TWR	JUANDA TOWER	118.3 MHz 118.1 MHz* ←	2300 - 1700	TWR COOR : 07 23 01.29 S 112 46 48.12 E
SMC	JUANDA GROUND	118.9 MHz 119.15 MHz* ←	2300 - 1200	1200 – 1700 Combined With JUANDA TOWER
ATIS		128.2 MHz	2300 - 1700	←

WARR AD 2.19 RADIO NAVIGATION AND LANDING AIDS

1	2	3	4	5	6	7
Type of Aid and Category	ID	Frequency	Hours of Operation	Site of Transmitting Antenna Coordinates	Elevation of DME Transmitting Antenna	Remarks
VOR/DME	SBR	113.4 MHz/ CH-81X	H – 24	07 22 26.18 S 112 46 16.39 E		VOR/DME "SBR" unusable areas beyond: 160° - 210° BLW 14000 ft. 210° - 230° BLW 11000 ft.
ILS/LLZ	ISBY	110.10 MHz	H – 24	07 22 56.83 S 112 48 10.92 E		
GP		334.40 MHz	H – 24	07 22 45.10 S 112 46 34.02 E		
OM		75 MHz	H – 24	07 22 00.84 S 112 42 25.16 E		ILS/LLZ "ISBY" for RWY 10 (category 1) located 300 M FM end of RWY 10, angle 3°.
MM		75 MHz	H – 24	07 22 34.39 S 112 45 53.36 E		
Radar Head				07 22 27.53 S 112 48 01.85 E		Coverage range : MSSR 200 NM PSR 70 NM

WARR AD 2.20 LOCAL TRAFFIC REGULATIONS

- In/out taxi procedure for North Apron are as flws:
  - Arriving ACFT: landing from RWY 10 or RWY 28 taxi to apron via TWY NP-2 and N-4 or N-5 or instructed by ATC.
  - Departing ACFT: taxi out to RWY 10 or RWY 28 via TWY N3N or N6 and NP-2 or instructed by ATC
  - TWY N3S CLSD for Taxi out from apron to RWY 10/28 and using for incoming only

WARR AD 2.21 NOISE ABATEMENT PROCEDURES

Reserved

WARR AD 2.22 FLIGHT PROCEDURES

1. Communication Procedures

All aircraft operating within JUANDA Manouvering Area shall be equipped with radio capable of conducting and maintaining two way communications

2. Communication Failure Procedures

Aircraft in emergency or experience radio communication failure, shall comply with procedures is according with ICAO standard and recommended practice

3. All aircraft operating within TMA Surabaya shall be equipped with radio transponder

4. Due to obstacle (antenna) on Radial /RDL 315 deg distance 8.77 NM SBR VOR/DME height 1013 FT on coor. 07 16 23S 112 40 37E:

1. In IMC condition using RWY 10 for all ACFT incoming shall be use the clearance limits to Nimas not below 2000ft
2. In VMC condition using RWY 10/28 for all ACFT incoming shall be use the operated circuit altitude not lower than 2000 ft (circuit altitude 2000ft)
3. Minimum vector altitude to Sub CTR for incoming traffic shall not be lower than 2000 ft

5. RADAR Procedure

1. RADAR Separation Minima be provided 5 NM within Surabaya CTR and 10 NM within Surabaya TMA.
2. RADAR Failure Procedures: In the event of discontinuation of RADAR service ACFT shall be so informed and non RADAR separation procedures will be applied.
3. Communication Failure Procedure:
   a. If any ACFT communication failure, the pilot shall squawk 7600;
   b. If any ground communication failure, the ATS units involved will follow procedures as prescribes on the Letter of Agreement (LOA)
4. ACFT Transponder Failure Procedure
   a. When an ACFT experiencing transponder failure after departure is operating or expected to operate in Surabaya TMA East, TMA West and CTR where the carriage of a functioning transponder with specified capabilities (Mode C) is mandatory, the ATS unit concerned should endeavor to provide for continuation of the flight to the aerodrome of first of intended landing in accordance with the flight plan. However, in certain traffic Situation, while en-route, continuation of the flight may not be possible, particularly when failure is detected shortly after TKOF, and the ACFT may then be required to return to the departure aerodrome or to land at the nearest suitable aerodrome acceptable to the operator concern and to ATC.
   b. In case of transponder failure, which is detected before departure from an aerodrome where it is not practicable to effect a repair, pilot shall:

      Inform ATS unit as soon as possible, preferably before submission flight plan Comply with any published procedures for seeking as exemption from the requirements for carnage of function transponder.

      If so required by the ATS authority of Juanda airport, plan to proceed as directly as possible, to the nearest suitable aerodrome where repair can be effected

6. Instrument Approach Procedure Coding Tables

a. Juanda RNAV (GNSS) RWY 10

Path Terminator	Way-point Name	Fly Over	Course / Track T° (M°)	Turn Direction	Level Contraint	Speed Contraint (knot)	Coordinates	Remark and Dist to MAPt
TF	RR401	N	009.2 ° (008°)		2500	210	07 24 50.60S 112 34 44.28 E	15.1 NM
TF	NIMAS	N	104.1° (103°)		2500	210	07 20 07.44 S 112 32 22.49 E	14.2 NM
TF	RR402	N	189.2° (188°)		2500	210	07 16 54.51S 112 36 01.52 E	15.1 NM
TF	RR403	N	099.2° (098°)		2000		07 20 52.55 S 112 35 22.91 E	11.1 NM
TF	RR404	N	099.2° (098°)		2000		07 21 41.74 S 112 40 26.91 E	6.0 NM
DF	RWY 10	Y					07 22 39.61 S 112 46 24.57 E	MAPt
	SABIT				2500			

b. Juanda RNAV (GNSS) RWY 28

Path Terminator	Way-point Name	Fly Over	Course / Track T° (M°)	Turn Direction	Level Contraint	Speed Contraint (Knot)	Coordinates	Remark and Dist to MAPt
TF	RR406	N	189.2° (188°)		2500	210	07 20 33.54S 112 58 35.74E	14.0NM
TF	SABIT	N	287.8° (286°)		2500	210	07 25 45.85S 113 01 49.39E	14.0NM
TF	RR407	N	009.2° (008°)		2500	210	07 28 29.62S 112 57 18.5°E	14.0NM
TF	RR408	N	279.2° (278°)		1650		07 24 31.58S 112 57 57.13E	10.0NM
TF	RR409	N	279.2° (278°)		1650		07 23 43.42S 112 52 59.43E	5.0NM
DF	RWY28	Y					07 22 55.25S 112 48 00.97E	MAPt
	NIMAS				2500			

7. Departure Procedure

7.1 During the flight, All departing aircraft from Juanda Airport experiencing communication failure shall follow procedures as follow:

a) Set transponder to Mode Code A/C 7600
b) After take-off follow the cleared SID following assigned RNAV departure and the current flight plan.
c) After take-off, under radar vectoring follow assigned heading and last assigned level for 2 minutes or maintain MSA, then climb to Flight Plan level and intercept Flight Plan track (as amended by ATC if applicable).

7.2 SIDs are presented in diagram matic and textual format on a chart which comprised two main elements:

a) A TRANSITION route; and
b) A DEPARTURE route

7.3 A TRANSITION starts at the end of departure route and then join the ATS route.

7.4 All departing aircraft are required to follow the appropriate TRANSITION and DEPARTURE routes as describes below:

RWY 10			
ATS ROUTE	**TRANSITION**	**TRANSITION ROUTES**	**SID RNAV 1**
W16	LASEM 5B DEP	BALMA – DORAS – ERATA – FUSAL – LASEM – CUCUT – MADIN	LASEM FIVE BRAVO DEPARTURE
W16	LASEM 5C DEP	BALMA – DORAS – ERATA – FUSAL – LASEM – CUCUT – MADIN	LASEM FIVE CHARLIE DEPARTURE
M635	SUMDI 1A DEP	ANORA – GARDA – HIDRA –IMANA – RAMPY – SUMDI	SUMDI ONE ALPHA DEPARTURE

M635	SUMDI 1B DEP	ANORA – GARDA – HIDRA –IMANA – RAMPY – SUMDI	SUMDI ONE BRAVO DEPARTURE
W31	RAMPY 2B DEP	ANORA – GARDA – HIDRA –IMANA– RAMPY	RAMPY TWO BRAVO DEPARTURE
W31	RAMPY 2C DEP	ANORA – GARDA – HIDRA –IMANA– RAMPY	RAMPY TWO CHARLIE DEPARTURE
W32	FANDO 2B DEP	ANORA – GARDA – FANDO –JORAN	FANDO TWO BRAVO DEPARTURE
W32	FANDO 2C DEP	ANORA – GARDA – FANDO	FANDO TWO CHARLIE DEPARTURE
W45 W43 / W34	ENTAS 3C DEP	ANORA – KORAL – MOSKA –NAMIA – ENTAS	ENTAS THREE CHARLIE DEPARTURE
W45 W43 / W34	ENTAS 3D DEP	ANORA – KORAL – MOSKA –NAMIA – ENTAS	ENTAS THREE DELTA DEPARTURE
W33	RABOL 3H DEP	ANORA – KORAL – MOSKA –OBELO – PASTO – RABOL	RABOL THREE HOTEL DEPARTURE
W33	RABOL 3J	ANORA – KORAL – MOSKA –OBELO – PASTO – RABOL	RABOL THREE JULIET DEPARTURE

RWY 28			
ATS ROUTE	**TRANSITION**	**TRANSITION ROUTES**	**SID RNAV 1**
W16	LASEM 5D DEP	IDEKA – JERAM – KANES –FUSAL– ROSED – LASEM– CUCUT – MADIN	LASEM FIVE DELTA DEPARTURE
W16	LASEM 5E DEP	IDEKA – JERAM– KANES – FUSAL– ROSED – LASEM– CUCUT – MADIN	LASEM FIVE ECHO DEPARTURE

M635	SUMDI 1C DEP	IDEKA – JERAM – LAMON –MATRA – NOBEL - RAMPY – SUMDI	SUMDI ONE CHARLIE DEPARTURE
M635	SUMDI 1D DEP	IDEKA – JERAM – MATRA – NOBEL – RAMPY - SUMDI	SUMDI ONE DELTA DEPARTURE
W31	RAMPY 2D DEP	IDEKA – JERAM – LAMON – MATRA – NOBEL - RAMPY	RAMPY TWO DELTA DEPARTURE
W31	RAMPY 2E DEP	IDEKA – JERAM - MATRA – NOBEL - RAMPY	RAMPY TWO ECHO DEPARTURE
W32	FANDO 2D DEP	IDEKA – JERAM – LAMON – MATRA – ODESA – PRONA – FANDO	FANDO TWO DELTA DEPARTURE
W32	FANDO 2E DEP	IDEKA – JERAM – MATRA – ODESA – PRONA – FANDO	FANDO TWO ECHO DEPARTURE
W45 W43 / W34	ENTAS 3E DEP	IDEKA – JERAM – LAMON –MATRA – ODESA – RUGAT – SOPRA – ENTAS	ENTAS THREE ECHO DEPARTURE
W45 W43 / W34	ENTAS 3F DEP	IDEKA – JERAM – MATRA – ODESA – RUGAT – SOPRA – ENTAS	ENTAS THREE FOXTROT DEPARTURE
W33	RABOL 3K DEP	IDEKA – JERAM – LAMON – MATRA – ODESA – RUGAT – SOPRA – TODAT - RABOL	RABOL THREE KILO DEPARTURE
W33	RABOL 3L DEP	IDEKA – JERAM – MATRA – ODESA – RUGAT – SOPRA – RABOL	RABOL THREE LIMA DEPARTURE

7.5

7.5 Waypoint Coordinates which are used on the SIDs RNAV-1 depicted on the following table:

RWY 10		
WAYPOINT	**LATITUDE**	**LONGITUDE**
ANORA	07 24 06.37S	112 55 19.64E
BALMA	07 07 38.18 S	112 52 26.43 E
DORAS	07 04 34.58 S	112 35 22.69 E
ERATA	07 01 23.62 S	112 17 42.01 E
FUSAL	06 57 42.31 S	112 08 20.80 E
LASEM	06 37 06.00 S	111 36 54.00 E
CUCUT	06 17 33.00 S	111 25 37.00 E
MADIN	06 17 54.00 S	110 23 00.00 E
GARDA	07 15 46.26 S	113 06 31.88 E
HIDRA	06 40 24.05 S	113 14 49.74 E
IMANA	06 30 37.25 S	113 17 07.09 E
RAMPY	06 15 00.58 S	113 20 45.64 E
IKAPI	04 57 21.69 S	113 58 36.81 E
FANDO	06 58 24.76 S	113 59 05.34 E
JORAN	06 51 57.07 S	114 18 06.45 E
KORAL	07 27 12.62 S	113 09 39.94 E
MOSKA	07 30 39.93 S	113 25 40.46 E
NAMIA	07 36 27.79 S	113 52 39.37 E
ENTAS	07 42 46.64 S	114 22 13.05 E
OBELO	07 43 36.42 S	113 37 31.34 E
PASTO	07 50 59.88 S	113 44 17.89 E
RABOL	08 01 17.12 S	113 53 44.49 E

RWY 28		
WAYPOINT	**LATITUDE**	**LONGITUDE**
IDEKA	07 21 28.54 S	112 39 06.82 E
JERAM	07 20 22.07 S	112 32 18.11 E
KANES	07 12 15.54 S	112 20 32.27 E

FUSAL	06 57 42.31 S	112 08 20.80 E
ROSED	06 46 24.87 S	111 51 06.15 E
LASEM	06 37 06.00 S	111 36 54.00 E
CUCUT	06 17 33.00 S	111 25 37.00 E
MADIN	06 17 54.00 S	110 23 00.00 E
LAMON	07 09 14.13 S	112 34 07.16 E
MATRA	07 12 04.40 S	112 51 34.92 E
NOBEL	06 48 08.56 S	113 03 46.58 E
RAMPY	06 15 00.58 S	113 20 45.64 E
IKAPI	04 57 21.69 S	113 58 36.81 E
ODESA	07 17 28.37 S	113 01 22.24 E
PRONA	07 14 21.35 S	113 10 50.23 E
FANDO	06 58 24.76 S	113 59 05.34 E
RUGAT	07 22 18.83 S	113 10 09.40 E
SOPRA	07 30 49.99 S	113 25 38.34 E
ENTAS	07 42 46.64 S	114 22 13.05 E
TODAT	07 40 02.22 S	113 34 07.22 E
RABOL	08 01 17.12 S	113 53 44.49 E

7.6 Additional elements on the SID chart include the following :

a) Vertical restriction, designed to contain aircraft in controlled airspace and to separate aircraft from obstacle and to avoid, also the degree possible, conflict with other traffic.

b) Minimum safe altitude (MSA), designed with reference to SBR VOR/DME.

7.7 Vertical Restriction

Pilot shall comply with an ATC assigned level. Pilot shall also adhere to the vertical restrictions depicted on the cleared Transition and SID RNAV-1. ATC clearance will take precedence when the ATC clearance does not allow the pilots to adhere for the vertical restriction depicted on the Transition and SID RNAV-1.

7.8 A RNAV-1 SID is planned ATC departure procedure, published

in the AIP, for the pilot's and controller's use in graphic and textual form. SID provide a transition from the terminal to the appropriate en-route structure.

Phraseology :
<Call sign> Cleared to Destination>via<Route>
<Level><SID Identifier>DEPARTURE, <Assigned Level>

7.9 SID RNAV-1 shall be issued by ATC in the following order :

- Call Sign
- Aerodrome Destination
- SID Identifier
- Assigned Level

7.10 Non compliance SID RNAV-1, departing aircraft from Juanda International Airport will be radar vectors to transition identifier.

RNAV 1 SID RWY 10

WAYPOINT DATA AND COURSES TRUE/MAGNETIC

LEG TYPE	WPT NAME	FLY OVER	TRACK (TRUE)	TRACK (MAG)	TURN DIRECTION	ALT	DIST (NM)	SPEED LIMIT
LASEM 5B TRANSITIONS								
VA		NO	99.2	98	-	+1500		
DF	BALMA	NO	-	-	LEFT	+4500	-	
TF	DORAS	NO	280.2	279	-	+8500	17.2	
TF	ERATA	NO	280.2	279	-	+11500	17.9	
TF	FUSAL	NO	291.5	290	-	+13500	10.0	
TF	LASEM	NO	303.2	302	-	+16000	37.4	
TF	CUCUT	NO	330.0	329	-	-	22.5	
TF	MADIN	NO	269.6	269	-	-	62.3	
LASEM 5C TRANSITIONS								
VA		NO	99.2	98	-	+3000		
DF	BALMA	NO	-	-	LEFT	+9000	-	
TF	DORAS	NO	280.2	279	-	+16000	17.2	

TF	ERATA	NO	280.2	279	-	+21500	17.9	
TF	FUSAL	NO	291.5	290	-	+24500	10.0	
TF	LASEM	NO	303.2	302	-	-	37.4	
TF	CUCUT	NO	330.0	329	-	-	22.5	
TF	MADIN	NO	269.6	269	-	-	62.3	
RAMPY 2B TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+1500	7.4	
TF	GARDA	NO	53.3	52	-	+4000	13.9	
TF	HIDRA	NO	13.2	12	-	11500	36.2	
TF	IMANA	NO	13.2	12	-	+13500	10	
TF	RAMPY	NO	13.1	12	-	+17000	16.0	
RAMPY 2C TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+3000	7.4	
TF	GARDA	NO	53.3	52	-	+8000	13.9	
TF	HIDRA	NO	13.2	12	-	23000	36.2	
TF	IMANA	NO	13.2	12	-	+24500	10	
TF	RAMPY	NO	13.1	12	-	-	16.0	
SUMDI 1A TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+1500	7.4	
TF	GARDA	NO	53.3	52	-	+4000	13.9	
TF	HIDRA	NO	13.2	12	-	11500	36.2	
TF	IMANA	NO	13.1	12	-	+13500	10	
TF	RAMPY	NO	13.1	12	-	+17000	16.0	
TF	SUMDI	NO	307.7	307	-	-	159.8	
SUMDI 1B TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+3000	7.4	
TF	GARDA	NO	53.3	52	-	+8000	13.9	
TF	HIDRA	NO	13.2	12	-	23000	36.2	
TF	IMANA	NO	13.1	12	-	+24500	10	

TF	RAMPY	NO	13.1	12	-	-	16.0	
TF	SUMDI	NO	307.7	307	-	-	159.8	
FANDO 2B TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+1500	7.4	
TF	GARDA	NO	53.3	52	-	+4000	13.9	
TF	FANDO	NO	71.6	71	-	+15000	55.1	
TF	JORAN	NO	71.2	70	-	+19000	20	
FANDO 2C TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+3000	7.4	
TF	GARDA	NO	53.3	52	-	+8000	13.9	
TF	FANDO	NO	71.6	71	-	+24500	55.1	
ENTAS 3C TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+1500	7.4	
TF	KORAL	NO	102.3	101	-	+4500	14.6	
TF	MOSKA	NO	102.2	101	-	+7500	16.3	
TF	NAMIA	NO	102.2	101	-	+13000	27.4	
TF	ENTAS	NO	102.1	101	-	-	30.0	
ENTAS 3D TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+3000	7.4	
TF	KORAL	NO	102.3	101	-	+8500	14.6	
TF	MOSKA	NO	102.2	101	-	+14500	16.3	
TF	NAMIA	NO	102.2	101	-	+24500	27.4	
TF	ENTAS	NO	102.1	101	-	-	30.0	
RABOL 3H TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+1500	7.4	
TF	KORAL	NO	102.3	101	-	+4500	14.6	
TF	MOSKA	NO	102.2	101	-	+7500	16.3	

TF	OBELO	NO	137.6	137	-	11500	17.5	
TF	PASTO	NO	137.6	137		13500	10	
TF	RABOL	NO	137.6	137	-	15000	13.9	
RABOL 3J TRANSITIONS								
CF	ANORA	NO	99.2	98	-	+3000	7.4	
TF	KORAL	NO	102.3	101	-	+8500	14.6	
TF	MOSKA	NO	102.2	101	-	+14500	16.3	
TF	OBELO	NO	137.6	137	-	+21000	17.5	
TF	PASTO	NO	137.6	137	-	+24500	10	
TF	RABOL	NO	137.6	137	-	-	13.9	

RNAV 1 SID RWY 28

WAYPOINT DATA AND COURSES TRUE/MAGNETIC

LEG TYPE	WPT NAME	FLY OVER	TRACK (TRUE)	TRACK (MAG)	TURN DIRECTION	ALT	DIST (NM)	SPEED LIMIT
LASEM 5D TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+1500	7.3	
TF	JERAM	NO	279.2	278	-	+2500	6.9	
TF	KANES	NO	304.6	304	-	+5500	14.2	
TF	FUSAL	NO	320.1	319	-	+9500	18.9	
TF	ROSED	NO	303.2	302	-	+12500	20.5	
TF	LASEM	NO	303.2	302	-	+17000	16.9	
TF	CUCUT	NO	330.0	329	-	-	22.5	
TF	MADIN	NO	269.6	269	-	-	62.3	
LASEM 5E TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+2500	7.3	
TF	JERAM	NO	279.2	278	-	+5000	6.9	
TF	KANES	NO	304.6	304	-	+10000	14.2	

TF	FUSAL	NO	320.1	319	-	+17000	18.9	
TF	ROSED	NO	303.2	302	-	+24500	20.5	
TF	LASEM	NO	303.2	302	-	-	16.9	
TF	CUCUT	NO	330.0	329	-	-	22.5	
TF	MADIN	NO	269.6	269	-	-	62.3	
RAMPY 2D TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+1500	7.3	
TF	JERAM	NO	279.2	278	-	+2500	6.9	
TF	LAMON	NO	9.2	8		+5500	11.2	
TF	MATRA	NO	099.3	98	-	+8500	17.6	
TF	NOBEL	NO	027.0	26	-	14000	26.7	
TF	RAMPY	NO	027.2	26	-	+21000	37.1	
RAMPY 2E TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+2500	7.3	
CF	JERAM	YES	279.2	278	-	+5000	6.9	
DF	MATRA	NO	-	-	RIGHT	+13000	-	
TF	NOBEL	NO	027.0	26	-	20000	26.7	
TF	RAMPY	NO	027.2	26	-	-	37.1	
SUMDI 1C TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+1500	7.3	
TF	JERAM	NO	279.2	278	-	+2500	6.9	
TF	LAMON	NO	009.2	8		+5500	11.2	
TF	MATRA	NO	099.3	98	-	+8500	17.6	
TF	NOBEL	NO	027.0	26	-	14000	26.7	
TF	RAMPY	NO	027.2	26	-	+21000	37.1	
TF	SUMDI		307.7	307	-	-	159.8	
SUMDI 1D TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+2500	7.3	

CF	JERAM	YES	279.2	278	-	+5000	6.9	
DF	MATRA	NO	-	-	RIGHT	+13000	-	
TF	NOBEL	NO	027.0	26	-	20000	26.7	
TF	RAMPY	NO	027.2	26	-	-	37.1	
TF	SUMDI		307.7	307	-	-	159.8	
FANDO 2D TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+1500	7.3	
TF	JERAM	NO	279.2	278	-	+2500	6.9	
TF	LAMON	NO	009.2	8	-	+5500	11.2	
TF	MATRA	NO	099.3	98	-	+8500	17.6	
TF	ODESA	NO	118.9	118	-	+10500	11.1	
TF	PRONA	NO	071.8	71	-	+13000	9.9	
TF	FANDO		071.7	71	-	-	50.6	
FANDO 2E TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+2500	7.3	
CF	JERAM	YES	279.2	278	-	+5000	6.9	
DF	MATRA	NO	-	-	RIGHT	+13000	-	
TF	ODESA	NO	118.9	118	-	+17000	11.1	
TF	PRONA	NO	078.8	78	-	+20000	9.9	
TF	FANDO		071.7	71	-	-	50.6	
ENTAS 3E TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+1500	7.3	
TF	JERAM	NO	279.2	278	-	+2500	6.9	
TF	LAMON	NO	009.2	8	-	+5500	11.2	
TF	MATRA	NO	099.3	98	-	+8500	17.6	
TF	ODESA	NO	118.9	118	-	+10500	11.1	
TF	RUGAT	NO	118.9	118	-	+13000	10	
TF	SOPRA	NO	118.9	118	-	+15000	17.6	
TF	ENTAS		102.0	101		-	57.5	

ENTAS 3F TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+2500	7.3	
CF	JERAM	YES	279.2	278	-	+5000	6.9	
DF	MATRA	NO	-	-	RIGHT	+13000	-	
TF	ODESA	NO	118.9	118	-	+17000	11.1	
TF	RUGAT	NO	118.9	118	-	+20000	10	
TF	SOPRA	NO	118.9	118	-	+24500	17.6	
TF	ENTAS		102.0	101		-	57.5	
RABOL 3K TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+1500	7.3	
TF	JERAM	NO	279.2	278	-	+2500	6.9	
TF	LAMON	NO	009.2	8	-	+5500	11.2	
TF	MATRA	NO	099.3	98	-	+8500	17.6	
TF	ODESA	NO	118.9	118	-	+10500	11.1	
TF	RUGAT	NO	118.9	118	-	+13000	10	
TF	SOPRA	NO	118.9	118	-	+15000	17.6	
TF	TODAT	NO	137.4	136	-	17000	12.5	
TF	RABOL		137.4	136	-	-	28.8	
RABOL 3L TRANSITIONS								
CF	IDEKA	NO	279.2	278	-	+2500	7.3	
CF	JERAM	YES	279.2	278	-	+5000	6.9	
DF	MATRA	NO	-	-	RIGHT	+13000	-	
TF	ODESA	NO	118.9	118	-	+17000	11.1	
TF	RUGAT	NO	118.9	118	-	+20000	10	
TF	SOPRA	NO	118.9	118	-	+24500	17.6	
TF	RABOL		137.4	136	-	-	41.2	

8. Arrival Procedure

8.1 During the flight, All arriving aircraft to Juanda International Airport which are communication failure shall follow procedures as follow:

a. Set transponder to Mode Code A/C 7600

b. If under pilot navigation, follow STAR and continue to land

c. If under radar vectoring, maintain vector for not more than 1(one) minute then track to intercept cleared or previously as signed STAR and land.

8.2 Aircraft which level is below the assigned level at the entrance way point, shall maintain its level until waypoint appropriate to its level.

8.3 STARs are presented in diagrammatic and textual form at on a chart which comprised two main elements :
a. TRANSITION route; and
b. ARRIVAL route

8.4 A TRANSITION starts at a waypoint on the ATS route and then requires VOR/DME or RNAV-I tracking to position the aircraft or the ARRIVAL route.

8.5 All arriving aircraft are required to follow the appropriate TRANSITION and ARRIVAL routes as describes below :

RWY 10			
ATS ROUTE	**TRANSITION**	**TRANSITION ROUTES**	**STAR RNAV 1**
W45 and G461	BLORA 3F ARR	"ANY" VOR/DME – "BA" NDB – SABRE – RAMAT –NIMAS	BLORA THREE FOXTROT ARRIVAL
L511	RUPKA 1A ARR	RUPKA – VOLTA – TIRUS – NIMAS	RUPKA ONE ALPHA ARRIVAL
M635	SUMDI 1E ARR	SUMDI –WILIS – TIRUS – NIMAS	SUMDI ONE ECHO ARRIVAL
W31W	KOLOT 1A ARR	IKAPI – KOLOT – TIRUS– NIMAS	KOLOT ONE ALPHA ARRIVAL
W31W	KOLOT 1B ARR	IKAPI – KOLOT – TIRUS – NIMAS	KOLOT ONE BRAVO ARRIVAL
W32N	KOLTA 1A ARR	KOLTA – BESDA – ALADA – TIRUS – NIMAS	KOLTA ONE ALPHA ARRIVAL
W32N	KOLTA 1B ARR	KOLTA – BESDA – ALADA –	KOLTA ONE BRAVO ARRIVAL

		TIRUS– NIMAS	
W43 / W34	ENTAS 3G ARR	ENTAS – OBELO – HANKA – GUNAM – FOLKA – EPAMA – RAMAT – NIMAS	ENTAS THREE GOLF ARRIVAL
W33	RABOL 3M ARR	RABOL – KORGA – HANKA – GUNAM – FOLKA – EPAMA – RAMAT – NIMAS	RABOL THREE MIKE ARRIVAL

RWY 28			
ATS ROUTE	**TRANSITION**	**TRANSITION ROUTES**	**STAR RNAV 1**
W45 and G461	BLORA 3G ARR	"ANY" VOR/DME – "BA" NDB – SABRE – BOLTA– FOLKA–GUNAM– ALONA –WAKAN –VERSA - SABIT	BLORA THREE GOLF ARRIVAL
L511	RUPKA 1B ARR	RUPKA – TIRUS GUNAM – FORTA – EMARA – DIRGA – VERSA – SABIT	RUPKA ONE BRAVO ARRIVAL
L511	RUPKA 1C ARR	RUPKA – TIRUS – GOKAM – FORTA – EMARA – DIRGA – VERSA – SABIT	RUPKA ONE CHARLIE ARRIVAL
M635	SUMDI 1F ARR	SUMDI – TIRUS– GOKAM – FORTA – EMARA – DIRGA– VERSA – SABIT	SUMDI ONE FOXTROT ARRIVAL
M635	SUMDI 1G ARR	SUMDI – TIRUS – GOKAM – FORTA – EMARA	SUMDI ONE GOLF ARRIVAL

		– DIRGA– VERSA – SABIT	
W31W	KOLOT 1C ARR	KOLOT – ROPIA – GOKAM – FORTA – EMARA – DIRGA– VERSA – SABIT	KOLOT ONE CHARLIE ARRIVAL
W31W	KOLOT 1D ARR	KOLOT – ROPIA – GOKAM – FORTA – EMARA – DIRGA– VERSA – SABIT	KOLOT ONE FOXTROT ARRIVAL
W32N	KOLTA 1C ARR	KOLTA – ROBIT – EMARA – DIRGA – VERSA – SABIT	KOLTA ONE CHARLIE ARRIVAL
W32N	KOLTA 1D	KOLTA – ROBIT – EMARA – DIRGA – VERSA – SABIT	KOLTA ONE DELTA ARRIVAL
W43 / W34	ENTAS 3H ARR	ENTAS – SAPAL – HASTA – SOPRA – VERSA – SABIT	ENTAS THREE HOTEL ARRIVAL
W43 / W34	ENTAS 3J ARR	ENTAS – SAPAL – HASTA – SOPRA – VERSA – SABIT	ENTAS THREE JULIET ARRIVAL
W33	RABOL 3N ARR	RABOL – SAPAL – HASTA – SOPRA – VERSA – SABIT	RABOL THREE NOVEMBER ARRIVAL
W33	RABOL 3P ARR	RABOL – SAPAL – HASTA – SOPRA – VERSA – SABIT	RABOL THREE PAPA ARRIVAL

Waypoint Coordinates which are used on the STAR RNAV-1 depicted on the following table :

RWY 10		
WAYPOINT	**LATITUDE**	**LONGITUDE**
“ANY” VOR/DME	06 58 28.28 S	110 22 47.94 E
“BA” NDB	06 59 33.51 S	111 25 08.26 E
SABRE	07 09 23.84 S	111 59 54.85 E
RAMAT	07 17 48.20 S	112 19 34.31 E
NIMAS	07 20 07.44 S	112 32 22.49 E
RUPKA	05 28 38.40 S	110 21 53.33 E
VOLTA	06 14 56.78 S	111 37 13.47 E
TIRUS	06 46 12.92 S	112 28 23.79 E
SUMDI	04 37 02.35 S	111 13 47.21 E
WILIS	05 54 19.70 S	111 58 20.15 E
IKAPI	04 57 21.69 S	113 58 36.81 E
KOLOT	05 52 38.11 S	112 55 33.17 E
KASOL	06 34 06.13 S	115 10 26.72 E
KOLTA	06 27 53.01 S	113 49 40.27 E
BESDA	06 34 24.29 S	113 20 52.44 E
ALADA	06 39 42.59 S	112 57 21.32 E
ENTAS	07 42 46.64 S	114 22 13.05 E
OBELO	07 43 36.42 S	113 37 31.34 E
HANKA	07 39 14.73 S	113 1502.91 E
GUNAM	07 33 16.49 S	112 44 27.89 E
FOLKA	07 30 33.15 S	112 30 35.31 E
EPAMA	07 28 03.18 S	112 17 53.08 E
RABOL	08 01 17.12 S	113 53 44.49 E
KORGA	07 55 55.64 S	113 40 42.56 E

RWY28		
WAYPOINT	**LATITUDE**	**LONGITUDE**
“ANY” VOR/DME	06 58 28.28 S	110 22 47.94 E
“BA” NDB	06 59 33.51 S	111 25 08.26 E
SABRE	07 09 23.84 S	111 59 54.85 E
BOLTA	07 28 28.80 S	112 20 03.15 E
FOLKA	07 30 33.15 S	112 30 35.31 E

GUNAM	07 33 16.49 S	112 44 27.89 E
ALONA	07 36 13.92 S	112 59 35.16 E
WAKAN	07 38 17.27 S	113 10 07.71 E
VERSA	07 28 01.13 S	113 12 20.22 E
SABIT	07 25 45.85 S	113 01 49.39 E
RUPKA	05 28 38.40 S	110 21 53.33 E
TIRUS	06 46 12.92 S	112 28 23.79 E
GOKAM	06 49 09.93 S	112 43 37.72 E
FORTA	06 53 33.74 S	113 06 25.08 E
EMARA	06 56 01.34 S	113 19 12.90 E
DIRGA	07 07 36.77 S	113 16 43.44 E
IKAPI	04 57 21.69 S	113 58 36.81 E
KOLOT	05 52 38.11 S	112 55 33.17 E
ROPIA	06 07 39.01 S	112 54 14.44 E
KOLTA	06 27 53.01 S	113 49 40.27 E
ROBIT	06 37 46.30 S	113 38 17.83 E
ENTAS	07 42 46.64 S	114 22 13.05 E
SAPAL	07 45 27.95 S	113 52 20.50 E
HASTA	07 38 51.52 S	113 40 16.85 E
SOPRA	07 30 49.99 S	113 25 38.34 E
RABOL	08 01 17.12 S	113 53 44.49 E

8.6 Additional elements on the STAR chart include the following :

a) Vertical restriction, designed to contain aircraft in controlled airspace and to separate aircraft from obstacle and to avoid, to the degree possible, conflict with departing traffic.

b) Speed restriction, designed for flow control purpose. Note that current speed procedures shall be superseded by the speed restricted depicted in the STAR RNAV-1charts.

c) Minimum safe altitude (MSA), designed for referring to Aerodrome Reference Point (ARP).

8.7 Vertical and Speed Restrictions

Pilot shall comply with an ATC assigned level. Pilot shall also adhere to the vertical and speed restrictions depicted on the

cleared Transition and STAR RNAV-1. ATC clearance will take precedence when the ATC clearance does not allow the pilots to adhere to the vertical and speed restriction depicted on the Transition and STAR RNAV-1.

8.8 STARs RNAV-1 shall be issued by ATC in the following order :
a. Call sign;
b. Aerodrome Destination;
c. Arrival identifier;
d. RWY-in-use.
Example :
(Callsign) cleared to (Aerodrome Destination) via RUPKA ONE ALPHA ARRIVAL expected **(**RWY in use).

8.9 Non compliance STAR RNAV-1, arriving aircraft to Juanda International Airport can expect radar vectors to intercept the localizer for an ILS approach after the initial approach fix on the STAR RNAV-1.

RNAV 1 STAR RWY 10

WAYPOINT DATA AND COURSES TRUE/MAGNETIC

FROM	TO	TRACK (TRUE)	TRACK (MAG)	FLY OVER	LEG TYPE	TURN DIRECTION	ALT	DIST (NM)	SPEED LIMIT
BLORA 3F TRANSITION									
	"ANY" VOR/DME				IF				
"ANY" VOR/DME	"BA" NDB	090.9	90		TF	-	-	61.9	
"BA" NDB	SABRE	105.8	105		TF	-	-	35.9	
SABRE	RAMAT	113.2	112		TF	-	5500	21.2	
RAMAT	NIMAS	100.3	99		TF	-	2500	12.9	
RUPKA 1A TRANSITION									
	RUPKA				IF				
RUPKA	VOLTA	121.6	121		TF		24500	88.1	
VOLTA	TIRUS	121.5	120		TF		5500	59.7	
TIRUS	NIMAS	173.3	172		TF		2500	34	
SUMDI 1E TRANSITION									

	SUMDI				IF				
SUMDI	WILIS	150.0	149		TF		24500	88.8	
WILIS	TIRUS	149.9	149		TF		5500	59.7	
TIRUS	NIMAS	173.3	172		TF		2500	34	
KOLOT 1A TRANSITION									
	IKAPI				IF				
IKAPI	KOLOT	228.8	228		TF		16000	83.6	
KOLOT	TIRUS	206.9	206		TF		5500	59.8	
TIRUS	NIMAS	173.3	172		TF		2500	34	
KOLOT 1B TRANSITION									
	IKAPI				IF				
IKAPI	KOLOT	228.8	228		TF		24500	83.6	
KOLOT	TIRUS	206.9	206		TF		5500	59.8	
TIRUS	NIMAS	173.3	172		TF		2500	34	
KOLTA 1A TRANSITION									
	KOLTA				IF				
KOLTA	BESDA	257.3	256		TF		-	29.4	
BESDA	ALADA	257.3	256		TF		15000	24.0	
ALADA	TIRUS	257.3	256		TF		5500	29.5	
TIRUS	NIMAS	173.3	172		TF		2500	34	
KOLTA 1B TRANSITION									
	KOLTA				IF		24500	-	
KOLTA	BESDA	257.2	256		TF		22000	29.4	
BESDA	ALADA	257.3	256		TF		15000	24	
ALADA	TIRUS	257.3	256		TF		5500	29.5	
TIRUS	NIMAS	173.3	172		TF		2500	34	
ENTAS 3G TRANSITION									
	ENTAS				IF				

ENTAS	OBELO	268.9	268		TF		16000	44.4	
OBELO	HANKA	281.0	280		TF		13000	22.7	
HANKA	GUNAM	281.0	280		TF		7500	30.9	
GUNAM	FOLKA	281.1	280		TF		7500	14.0	
FOLKA	EPAMA	281.1	280		TF		7500	12.9	
EPAMA	RAMAT	009.3	8		TF		5500	10.3	
RAMAT	NIMAS	100.3	99		TF		2500	12.9	
RABOL 3M TRANSITION									
	RABOL				IF				
RABOL	KORGA	292.4	291		TF		24500	14.0	
KORGA	HANKA	303.1	302		TF		13000	30.4	
HANKA	GUNAM	281.0	280		TF		7500	30.9	
GUNAM	FOLKA	281.1	280		TF		7500	14.0	
FOLKA	EPAMA	281.1	280		TF		7500	12.9	
EPAMA	RAMAT	009.3	8		TF		5500	10.3	
RAMAT	NIMAS	100.3	99		TF		2500	12.9	

RNAV 1 STAR RWY 28

WAYPOINT DATA AND COURSES TRUE/MAGNETIC

FROM	TO	TRACK (TRUE)	TRACK (MAG)	FLY OVER	LEG TYPE	TURN DIRECTION	ALT	DIST (NM)	SPEED LIMIT
BLORA 3G TRANSITION									
	"ANY" VOR/DME				IF				
"ANY" VOR/DME	"BA" NDB	090.9	90		TF	-	-	61.9	
"BA" NDB	SABRE	105.8	105		TF	-	24500	35.9	
SABRE	BOLTA	133.5	132		TF	-	21000	27.6	
BOLTA	FOLKA	101.2	100		TF	-	18000	10.7	

FOLKA	GUNAM	101.1	100		TF	-	13000	14.0	
GUNAM	ALONA	101.1	100		TF	-	7500	15.3	
ALONA	WAKAN	101.1	100		TF	-	7500	10.7	
WAKAN	VERSA	012.1	11		TF	-	5500	10.5	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
RUPKA 1B TRANSITION									
	RUPKA				IF				
RUPKA	TIRUS	121.6	121		TF		-	147.7	
TIRUS	GOKAM	101.0	100		TF		-	15.4	
GOKAM	FORTA	100.9	100		TF		15000	23.1	
FORTA	EMARA	100.9	100		TF		13500	13	
EMARA	DIRGA	192.1	191		TF		11000	11.8	
DIRGA	VERSA	192.1	191		TF		5500	20.8	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
RUPKA 1C TRANSITION									
	RUPKA				IF				
RUPKA	TIRUS	121.6	121		TF		-	147.7	
TIRUS	GOKAM	101.0	100		TF		22000	15.4	
GOKAM	FORTA	100.9	100		TF		21000	23.1	
FORTA	EMARA	100.9	100		TF		16500	13	
EMARA	DIRGA	192.1	191		TF		12000	11.8	
DIRGA	VERSA	192.1	191		TF		5500	20.8	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
SUMDI 1F TRANSITION									
	SUMDI				IF				
SUMDI	TIRUS	150.0	149		TF		-	148.5	
TIRUS	GOKAM	101.0	100		TF		-	15.4	

GOKAM	FORTA	100.9	100		TF		15000	23.1	
FORTA	EMARA	100.9	100		TF		13500	13	
EMARA	DIRGA	192.1	191		TF		11000	11.8	
DIRGA	VERSA	192.1	191		TF		5500	20.8	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
SUMDI 1G TRANSITION									
	SUMDI				IF				
SUMDI	TIRUS	150.0	149		TF		-	148.5	
TIRUS	GOKAM	101.0	100		TF		22000	15.4	
GOKAM	FORTA	100.9	100		TF		21000	23.1	
FORTA	EMARA	100.9	100		TF		16500	13	
EMARA	DIRGA	192.1	191		TF		12000	11.8	
DIRGA	VERSA	192.1	191		TF		5500	20.8	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
KOLOT 1C TRANSITION									
	IKAPI				IF				
IKAPI	KOLOT	228.8	228		TF		-	83.6	
KOLOT	ROPIA	185.0	184		TF		-	15	
ROPIA	GOKAM	194.3	193		TF		-	42.7	
GOKAM	FORTA	100.9	100		TF		15000	23.1	
FORTA	EMARA	100.9	100		TF		13500	13	
EMARA	DIRGA	192.1	191		TF		11000	11.8	
DIRGA	VERSA	192.1	191		TF		5500	20.8	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
KOLOT 1D TRANSITION									
	IKAPI				IF				

IKAPI	KOLOT	228.8	228		TF		-	83.6	
KOLOT	ROPIA	185.0	184		TF		-	15	
ROPIA	GOKAM	194.3	193		TF		22000	42.7	
GOKAM	FORTA	100.9	100		TF		21000	23.1	
FORTA	EMARA	100.9	100		TF		16500	13	
EMARA	DIRGA	192.1	191		TF		12000	11.8	
DIRGA	VERSA	192.1	191		TF		5500	20.8	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
KOLTA 1C TRANSITION									
	KOLTA				IF				
KOLTA	ROBIT	229.0	228		TF		-	15.0	
ROBIT	EMARA	226.2	225		TF		13500	26.3	
EMARA	DIRGA	192.1	191		TF		11000	11.8	
DIRGA	VERSA	192.1	191		TF		5500	20.8	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
KOLTA 1D TRANSITION									
	KOLTA				IF		24500	-	
KOLTA	ROBIT	229.0	228		TF		-	15.0	
ROBIT	EMARA	226.2	225		TF		16500	26.3	
EMARA	DIRGA	192.1	191		TF		12000	11.8	
DIRGA	VERSA	192.1	191		TF		5500	20.8	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
ENTAS 3H TRANSITION									
	ENTAS				IF		-		
ENTAS	SAPAL	264.8	264		TF		16000	29.8	
SAPAL	HASTA	298.7	298		TF		13000	13.7	

HASTA	SOPRA	298.8	298		TF		8500	16.6	
SOPRA	VERSA	282.0	281		TF		5500	13.5	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
ENTAS 3J TRANSITION									
	ENTAS				IF		24500		
ENTAS	SAPAL	264.8	264		TF		18000	29.8	
SAPAL	HASTA	298.7	298		TF		13000	13.7	
HASTA	SOPRA	298.8	298		TF		8500	16.6	
SOPRA	VERSA	282.0	281		TF		5500	13.5	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
RABOL 3N TRANSITION									
	RABOL				IF		-		
RABOL	SAPAL	355.0	354		TF		16000	15.8	
SAPAL	HASTA	298.7	298		TF		13000	13.7	
HASTA	SOPRA	298.8	298		TF		8500	16.6	
SOPRA	VERSA	282.0	281		TF		5500	13.5	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	
RABOL 3P TRANSITION									
	RABOL				IF		-		
RABOL	SAPAL	355.0	354		TF		18000	15.8	
SAPAL	HASTA	298.7	298		TF		13000	13.7	
HASTA	SOPRA	298.8	298		TF		8500	16.6	
SOPRA	VERSA	282.0	281		TF		5500	13.5	
VERSA	SABIT	282.1	281		TF	-	2500	10.7	

WARR AD 2.23 ADDITIONAL INFORMATION

- Between 2230 – 0200 and 0930 – 1100 daily, seasonal birds activity observed in the vicinity of aerodrome, pilots to be vigilant.

WARR AD 2.24 CHARTS RELATED TO THE AERODROME

1. WARR AD 2.24-1, AERODROME CHART-ICAO, Dated 24 DEC 15;
2. WARR AD 2.24-2, AIRCRAFT PARKING / DOCKING CHART,ICAO, Dated 09 NOV 17; ←
3. WARR AD 2.24-4,AERODROME OBSTACLE CHART,ICAO TYPE A, Dated 04 APR 13;
4. WARR AD 2.24-7A, STANDARD DEPARTURE CHART-INSTRUMENT (SID)-ICAO RWY 10, Dated 07 JAN 16;
5. WARR AD 2.24-7B, STANDARD DEPARTURE CHART-INSTRUMENT (SID)-ICAO RWY 28, Dated 07 JAN 16;
6. WARR AD 2.24-9A, STANDARD ARRIVAL CHART-INSTRUMENT (STAR)-ICAO, Dated 07 JAN 16;
7. WARR AD 2.24-9B, STANDARD ARRIVAL CHART-INSTRUMENT (STAR)-ICAO, Dated 07 JAN 16;
8. WARR AD 2.24-10, MINIMUM RADAR VECTOR ALTITUDE, Dated 05 APR 12;
9. WARR AD 2.24-11A, IAC-ICAO NDB RWY 10, Dated 18 NOV 10
10. WARR AD 2.24-11B, IAC-ICAO VOR/DME RWY 28, Dated 18 NOV 10
11. WARR AD 2.24-11C, IAC-ICAO ILS RWY 10, Dated 05 APR 12
12. WARR AD 2.24-11D, RNAV (GNSS) RWY 10 Cat A/B/C/D, Dated 24 DEC 15
13. WARR AD 2.24-11E, RNAV (GNSS) RWY 28 Cat A/B/C/D, Dated 24 DEC 15