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**HRVATSKA KONTROLA
ZRAČNE PLOVIDBE**

Hrvatska kontrola zračne plovidbe d.o.o.
Služba zrakoplovnog informiranja (AIM/AIS)
Rudolfa Fizira 2
10410 Velika Gorica, p.p. 103
Hrvatska

AIRAC AIP SUP 012/2023

Na snazi od: 30-Nov-2023

Vrijedi do: UFN

Datum izdavanja: 19-Oct-2023

LDLO - Aerodrom LOŠINJ/Lošinj I. - Probni zrakoplovni navigacijski postupci

Ovaj AIRAC AIP SUP sadrži sljedeće probne zrakoplovne navigacijske postupke:

- SID RNAV RWY 02 (LDLO AD 2.24.8 SID RNAV RWY 02 CAT A & B -1);
- SID RNAV RWY 20 (LDLO AD 2.24.8 SID RNAV RWY 20 CAT A & B -1);
- STAR RNAV RWY 02 (LDLO AD 2.24.10 STAR RNAV RWY 02 CAT A & B -1);
- STAR RNAV RWY 20 (LDLO AD 2.24.10 STAR RNAV RWY 20 CAT A & B -1);
- RNP RWY 02 (LDLO AD 2.24.12 IAC RNP RWY 02 -1);
- RNP RWY 20 (LDLO AD 2.24.12 IAC RNP RWY 20 (LPV&LNAV/VNAV only) -1).

Postupci će se koristiti samo u svrhu letne validacije od strane onih operatora koje je odobrila Hrvatska kontrola zračne plovidbe d.o.o., i u skladu s dobivenim odobrenjem Pula i Lošinj ATC-a.

Visual Segment Surface (VSS) penetration:

RWY 20		
Instrument flight procedure	Minima	ACFT CAT
RNP RWY 20 (LPV, LNAV/VNAV only)	LNAV/VNAV	A/B
	LPV	A/B

Upišite AIRAC AIP SUP 012/2023 u GEN 0.3.

REF AIP: LDLO AD 2

OVA STRANICA JE NAMJERNO OSTAVLJENA PRAZNA

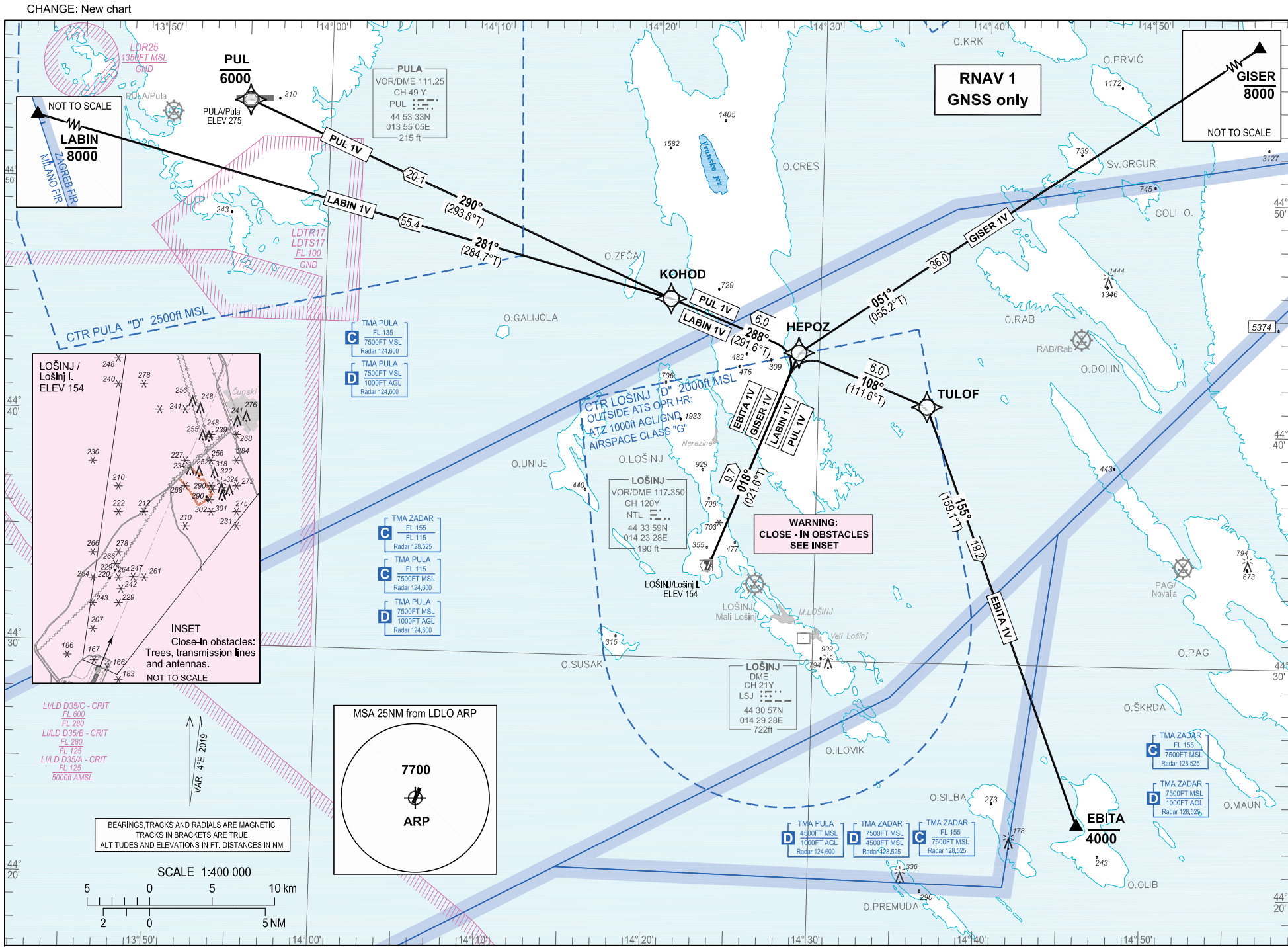
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

LOŠINJ TOWER 120.300

PULA RADAR 124.600
127.675

LOŠINJ / Lošinj I.
CROATIA
RNAV Rwy 02 CAT A & B



LOŠINJ / Lošinj I.
CROATIA
RNAV RWY 02 CAT A & B

GENERAL INFORMATION AND REQUIREMENTS FOR ALL SIDs

- Calculation of the SIDs is based on an all-engines operative minimum net climb gradient of 6.4 per cent (389 FT/NM). Assume minimum net climb gradient of 3.3 per cent (201 FT/NM) after passing 800 ft.

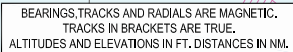
- After take-off, climb initially to 4000 FT. After passing 1000 FT, contact Pula Radar on 124.600 MHZ

- Caution: Close-in obstacles. See inset on the chart.

LDLO RNAV STANDARD INSTRUMENT DEPARTURE RWY 02												
Proposed tabular description for navigation database coding												
Serial number	Route	Path descriptor	Waypoint name	Flyover	Course °M (°T)	Magnetic variation	Distance (NM)	Turn direction	Altitude (ft)	Speed (kt)	Remarks	NAV SPEC
010	LABIN 1V	CF	HEPOZ	-	018° (021.6°T)	4°E	9.7	-	-	-	-	RNAV 1
020		TF	KOHOD	-	288° (291.6°T)	4°E	6.0	L	-	-		
030		TF	LABIN	-	281° (284.7°T)	4°E	55.4	-	-8000	-		
010	PUL 1V	CF	HEPOZ	-	018° (021.6°T)	4°E	9.7	-	-	-	-	RNAV 1
020		TF	KOHOD	-	288° (291.6°T)	4°E	6.0	L	-	-		
030		TF	PUL	-	290° (293.8°T)	4°E	20.1	-	-6000	-		
010	GISER 1V	CF	HEPOZ	-	018° (021.6°T)	4°E	9.7	-	-	-	-	RNAV 1
020		TF	GISER	-	051° (055.2°T)	4°E	36.0	-	-8000	-		
010	EBITA 1V	CF	HEPOZ	-	018° (021.6°T)	4°E	9.7	-	-	-	-	RNAV 1
020		TF	TULOF	-	108° (111.6°T)	4°E	6.0	R	-	-		
030		TF	EBITA	-	155° (159.1°T)	4°E	19.2	-	-4000	-		

Waypoint coordinates		
Waypoint name	WGS-84 latitude	WGS-84 longitude
EBITA	442306N	0144609E
GISER	450342N	0151026E
HEPOZ	444316.2N	0142845.6E
KOHOD	444528.7N	0142055.9E
LABIN	445909N	0130529E
PUL	445332.52N	0135505.23E
TULOF	444103.3N	0143634.6E

LOSINJ / Losinj I.
CROATIA



AIRAC AIP SUP 012/2023

LOŠINJ / Lošinj I.
CROATIA
RNAV RWY 20 CAT A & B

GENERAL INFORMATION AND REQUIREMENTS FOR ALL SIDs

- Calculation of the SIDs is based on an all-engines operative minimum net climb gradient of 3.3 per cent (201 FT/NM). Where a greater climb gradient for a specific SID (or part of SID) is necessary, this is indicated in the tabular description of the route.

- After take-off, climb initially to 4000 FT. After passing 1000 FT, contact Pula Radar on 124.600 MHZ

LDLO RNAV STANDARD INSTRUMENT DEPARTURE RWY 20

Proposed tabular description for navigation database coding

Serial number	Route	Path descriptor	Waypoint name	Flyover	Course °M (°T)	Magnetic variation	Distance (NM)	Turn direction	Altitude (ft)	Speed (kt)	Remarks	NAV SPEC		
010	LABIN 1U	CF	BURQE	-	198°	4°E	9.0	-	-	-	MNM PDG 3.4% until passing 1300 ft	RNAV 1		
					(201.6°T)									
020		TF	LO803	-	297°	4°E	19.2	R	-	-				
					(300.9°T)									
030		TF	LO804	-	306°	4°E	21.7	-	-	-				
					(310.1°T)									
040	TF	LABIN	-	293°	4°E	21.7	-	-8000	-					
				(297.5°T)										
010	PUL 1U	CF	BURQE	-	198°	4°E	9.0	-	-	-	MNM PDG 3.4% until passing 1300 ft	RNAV 1		
					(201.6°T)									
020		TF	LO803	-	297°	4°E	19.2	R	-	-				
					(300.9°T)									
030		TF	PUL	-	354°	4°E	18.3	-	-6000	-				
					(358.2°T)									
010	GISER 1U	CF	BURQE	-	198°	4°E	9.0	-	-	-			-	RNAV 1
					(201.6°T)									
020		TF	LO802	-	108°	4°E	3.5	L	-	-				
					(111.5°T)									
030		TF	GISER		036°	4°E	51.8	-	-8000	-				
					(040.0°T)									
010	EBITA 1U	CF	BURQE	-	198°	4°E	9.0	-	-	-	-	RNAV 1		
					(201.6°T)									
020		TF	LO802	-	108°	4°E	3.5	L	-	-				
					(111.5°T)									
030		TF	EBITA	-	090°	4°E	16.3	-	-4000	-				
					(093.6°T)									

Waypoint coordinates

Waypoint name	WGS-84 latitude	WGS-84 longitude
BURQE	442526.2N	0141853.5E
EBITA	442306N	0144609E
GISER	450342N	0151026E
LABIN	445909N	0130529E
PUL	445332.52N	0135505.23E
LO802	442409.4N	0142324.8E
LO803	443514.6N	0135554.0E
LO804	444911.9N	0133234.6E

STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO

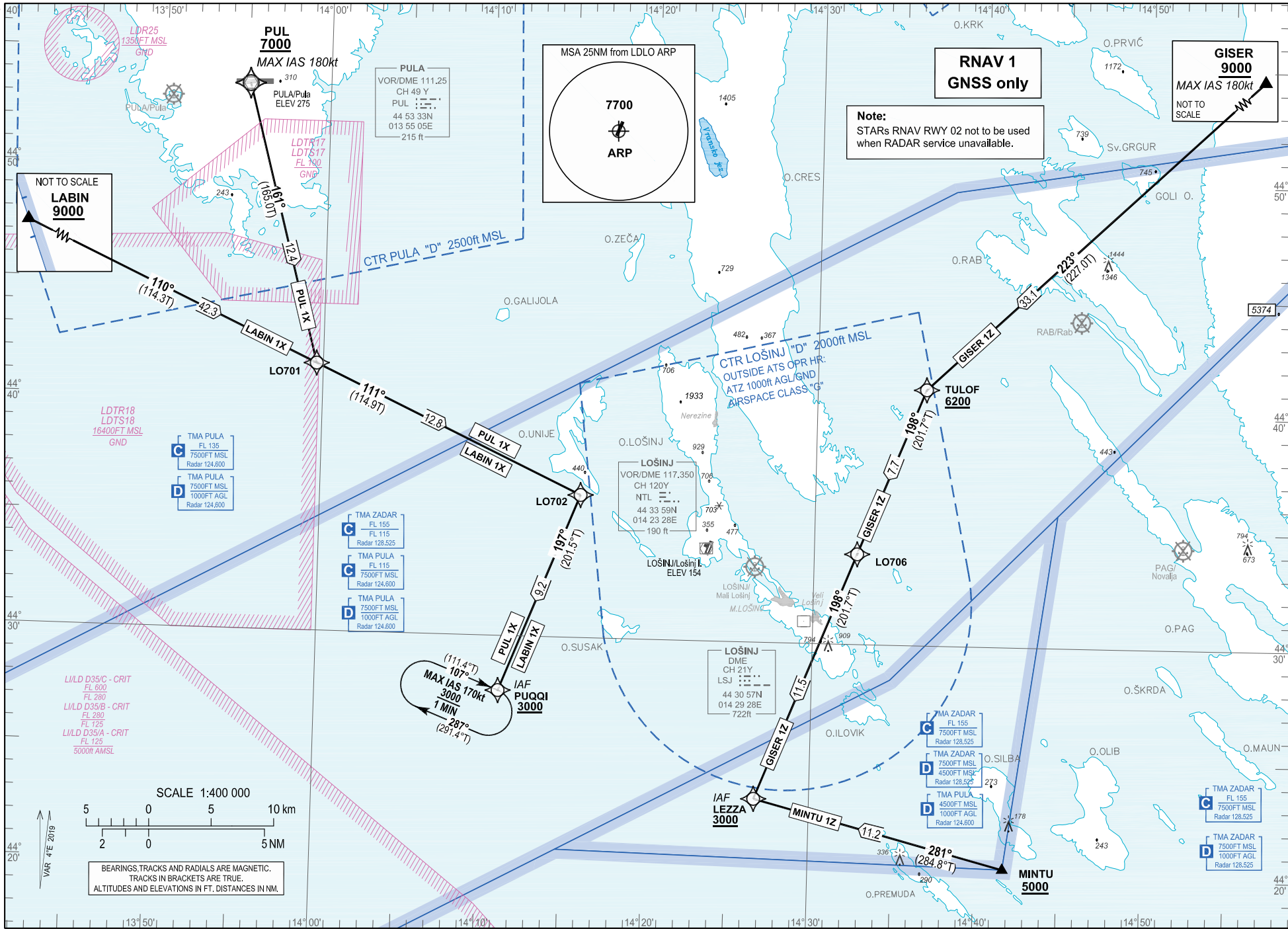
TRANSITION ALTITUDE
10 000

LOŠINJ TOWER 120.300

PULA RADAR 124.600
127.675

LOŠINJ / Lošinj I.
CROATIA
RNAV RWY 02 CAT A & B

CHANGE: New chart

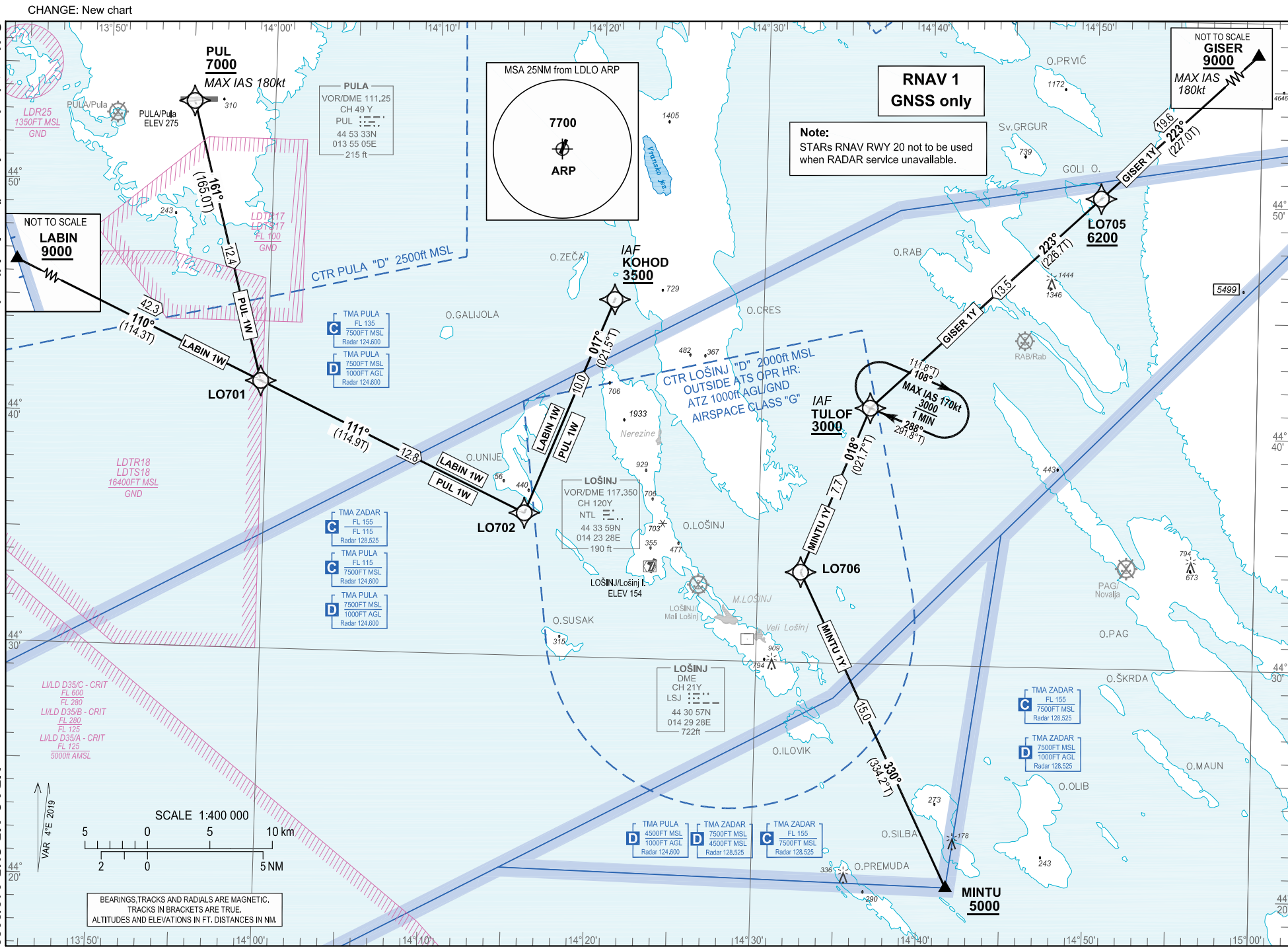


LOŠINJ / Lošinj I.
CROATIA
RNAV RWY 02 CAT A & B

LDLO RNAV STANDARD ARRIVAL RWY 02												
Proposed tabular description for navigation database coding												
Serial number	Route	Path descriptor	Waypoint name	Flyover	Course °M (°T)	Magnetic variation	Distance (NM)	Turn direction	Altitude (ft)	Speed (kt)	Remarks	NAV SPEC
010	LABIN 1X	IF	LABIN	-	-	4°E	-	-	+9000	-	-	RNAV 1
020		TF	LO701	-	110° (114.3°T)	4°E	42.3	-	-	-	-	
030		TF	LO702	-	111° (114.9°T)	4°E	12.8	-	-	-	-	
040		TF	PUQQI	-	197° (201.5°T)	4°E	9.2	-	+3000	-	IAF	
010	PUL 1X	IF	PUL	-	-	4°E	-	-	+7000	-180	-	RNAV 1
020		TF	LO701	-	161° (165.0°T)	4°E	12.4	-	-	-	-	
030		TF	LO702	-	111° (114.9°T)	4°E	12.8	-	-	-	-	
040		TF	PUQQI	-	197° (201.5°T)	4°E	9.2	-	+3000	-	IAF	
010	GISER 1Z	IF	GISER	-	-	4°E	-	-	+9000	-180	-	RNAV 1
020		TF	TULOF	-	223° (227.0°T)	4°E	33.1	-	+6200	-	-	
030		TF	LO706	-	198° (201.7°T)	4°E	7.7	-	-	-	-	
040		TF	LEZZA	-	198° (201.7°T)	4°E	11.5	-	+3000	-	IAF	
010	MINTU 1Z	IF	MINTU	-	-	4°E	-	-	+5000	-	-	RNAV 1
020		TF	LEZZA	-	281° (284.8°T)	4°E	11.2	-	+3000	-	IAF	
RNAV HOLDING tabular description												
Waypoint name	Path descriptor	Inbound course °M (°T)	Leg time/ distance (NM)	Turn direction	Minimum altitude (ft)	Maximum altitude (ft)	Speed limit MAX IAS (kt)	Magnetic variation	Remarks	NAV SPEC		
PUQQI	HM	107° (111.4°T)	1 MIN -	R	3000	-	170	4°E		RNAV 1		
Waypoint coordinates												
Waypoint name	WGS-84 latitude		WGS-84 longitude									
GISER	450342N		0151026E									
LABIN	445909N		0130529E									
LEZZA	442313.8N		0142640.5E									
MINTU	442024N		0144144E									
PUL	445332.52N		0135505.23E									
PUQQI	442738.0N		0141105.9E									
TULOF	444103.3N		0143634.6E									
LO701	444132.6N		0135935.7E									
LO702	443609.4N		0141547.0E									
LO706	443354.0N		0143235.3E									

CHANGE:New chart

LOSINJ / Losinj I.
CROATIA
RNAV Rwy 20 CAT A & B



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AIRAC AIP SUP 012/2023

LOŠINJ / Lošinj I.
CROATIA
RNAV RWY 20 CAT A & B

LDLO RNAV STANDARD ARRIVAL RWY 20												
Proposed tabular description for navigation database coding												
Serial number	Route	Path descriptor	Waypoint name	Flyover	Course °M (°T)	Magnetic variation	Distance (NM)	Turn direction	Altitude (ft)	Speed (kt)	Remarks	NAV SPEC
010	LABIN 1W	IF	LABIN	-	-	4°E	-	-	+9000	-	-	RNAV 1
020		TF	LO701	-	110° (114.3°T)	4°E	42.3	-	-	-	-	
030		TF	LO702	-	111° (114.9°T)	4°E	12.8	-	-	-	-	
040		TF	KOHOD	-	017° (021.5°T)	4°E	10.0	L	+3500	-	IAF	
010	PUL 1W	IF	PUL	-	-	4°E	-	-	+7000	-180		RNAV 1
020		TF	LO701	-	161° (165.0°T)	4°E	12.4	-	-		-	
030		TF	LO702	-	111° (114.9°T)	4°E	12.8	-	-	-	-	
040		TF	KOHOD	-	017° (021.5°T)	4°E	10.0	L	+3500	-	IAF	
010	GISER 1Y	IF	GISER	-	-	4°E	-	-	+9000	-180	-	RNAV 1
020		TF	LO705	-	223° (227.0°T)	4°E	19.6	-	+6200	-	-	
030		TF	TULOF	-	223° (226.7°T)	4°E	13.5	-	+3000	-	-	
010	MINTU 1Y	IF	MINTU	-	-	4°E	-	-	+5000	-	-	RNAV 1
020		TF	LO706	-	330° (334.2°T)	4°E	15.0	-	-	-	-	
030		TF	TULOF	-	018° (021.7°T)	4°E	7.7	-	+3000	-	IAF	
RNAV HOLDING tabular description												
Waypoint name	Path descriptor	Inbound course °M (°T)	Leg time/ distance (NM)	Turn direction	Minimum altitude (ft)	Maximum altitude (ft)	Speed limit MAX IAS (kt)	Magnetic variation	Remarks	NAV SPEC		
TULOF	HM	288°	1 MIN	R	3000	-	170	4°E		RNAV 1		
		(291.8°T)	-									
Waypoint coordinates												
Waypoint name	WGS-84 latitude		WGS-84 longitude									
GISER	450342N		0151026E									
KOHOD	444528.7N		0142055.9E									
LABIN	445909N		0130529E									
MINTU	442024N		0144144E									
PUL	445332.52N		0135505.23E									
TULOF	444103.3N		0143634.6E									
LO701	444132.6N		0135935.7E									
LO702	443609.4N		0141547.0E									
LO705	445018.2N		0145019.5E									
LO706	443354.0N		0143235.3E									

CHANGE: New chart

LOŠINJ / Lošinj I.
CROATIA
RNP RWY 02

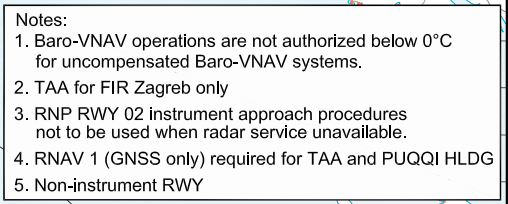
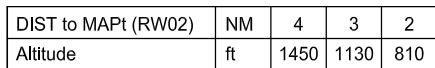


Diagram illustrating the beam path for LEZZA and IF. The path starts at LEZZA, goes 3000 units to IF, then 198° to a point 25NM to LEZZA, and finally 288° back to LEZZA. A TAA of 7400 is indicated.

MISSED APPROACH:
Continuous climb to 3000.
Climb straight ahead to LO401.
Turn right to LO402.
Turn right to LEZZA to initiate
another approach.



GS	kt	70	80	90	100	110	120	130
FAF - MAPt (4.8NM)	min:sec	4:07	3:36	3:12	2:53	2:37	2:24	2:13
Rate of descent (5.2%)	ft/min	372	425	478	531	584	637	690

OCA(H)		A	B
Straight - in approach	LNAV	610 (481)	700 (571)
	LNAV/VNAV	532 (403)	608 (479)
	LPV	544 (415)	554 (425)

LOŠINJ / Lošinj I.
CROATIA
RNP RWY 02

Coding elements for FAS Data Block

Input data	
Operation Type	0
SBAS Provider	1 (EGNOS)
Airport Identifier	LDLO
Runway	02
Runway Letter	0 (None)
Approach Performance Designator	0
Route Indicator	
Reference Path Data Selector	0
Reference Path Identifier	E02A
LTP/FTP Latitude	443348.4070N
LTP/FTP Longitude	0142330.5865E
LTP/FTP Ellipsoidal Height (metres)	81.9
FPAP Latitude	443439.4700N
Delta FPAP Latitude (seconds)	51.0630
FPAP Longitude	0142358.8375E
Delta FPAP Longitude (seconds)	28.2510
Threshold Crossing Height	40.0
TCH Units Selector	0 (feet)
Glidepath Angle (degrees)	3.00
Course Width (metres)	105.00
Length Offset (metres)	0
HAL (metres)	40.0
VAL (metres)	50.0
Output data	
Data Block	10 0F 0C 04 0C 02 00 00 01 32 30 05 EE E2 1F 13 35 22 2D 06 33 17 EE 8E 01 B6 DC 00 90 01 2C 01 64 00 C8 FA 32 0E A5 D6
Calculated CRC Value	320EA5D6
Required Additional Data	
ICAO Code	LD
LTP/FTP Orthometric Height (metres)	39.2

LDLO RNP RWY 02

Proposed tabular description for navigation database coding - APPROACH TRANSITION

Serial number	Fix	Path descriptor	Waypoint name	Flyover	Course °M (°T)	Magnetic Variation	Distance (NM)	Turn direction	Altitude (ft)	Speed (kt)	VPA/TCH (°/ft)	Remarks	NAV SPEC
010	IAF	IF	LEZZA	-	-	4°E	-	-	+3000	-	-	-	RNP APCH
020	IF	TF	BURQE	-	288° (291.6° T)	4°E	6.0	-	+2300	-	-	-	
010	IAF/IF	IF	BURQE	-	-	4°E	-	-	+2300	-	-	-	
010	IAF	IF	PUQQI	-	-	4°E	-	-	+3000	-	-	-	
020	IF	TF	BURQE	-	107° (111.4° T)	4°E	6.0	-	+2300	-	-	-	

Proposed tabular description for navigation database coding - FINAL TRANSITION

Serial number	Fix	Path descriptor	Waypoint name	Flyover	Course °M (°T)	Magnetic Variation	Distance (NM)	Turn direction	Altitude (ft)	Speed (kt)	VPA/TCH (°/ft)	Remarks	NAV SPEC
010	IF	IF	BURQE	-	-	4°E	-	-	+2300	-	-	-	RNP APCH
020	FAF	TF	MIJJA	-	018° (021.5°T)	4°E	4.2	-	+1700	-	-	-	
030	MAPt	TF	RW02	Y	018° (021.5°T)	4°E	4.8	-	-	-	3.0 / 40	-	
040	MATF	TF	LO401	-	018° (021.6°T)	4°E	4.0	-	-	-	-	-	
050	MATF	TF	LO402	-	108° (111.6°T)	4°E	6.0	R	-	-	-	-	
060	-	TF	LEZZA	-	198° (201.7°T)	4°E	13.0	R	@3000	-	-	-	

RNAV HOLDING tabular description

Waypoint name	Path descriptor	Inbound course °M (°T)	Leg time/ distance (NM)	Turn direction	Minimum altitude (ft)	Maximum altitude (ft)	Speed limit MAX IAS (kt)	Magnetic variation	Remarks	NAV SPEC
PUQQI	HM	107° (111.4°T)	1 MIN / -	R	3000	-	170	4°E	-	RNAV 1

Waypoint coordinates

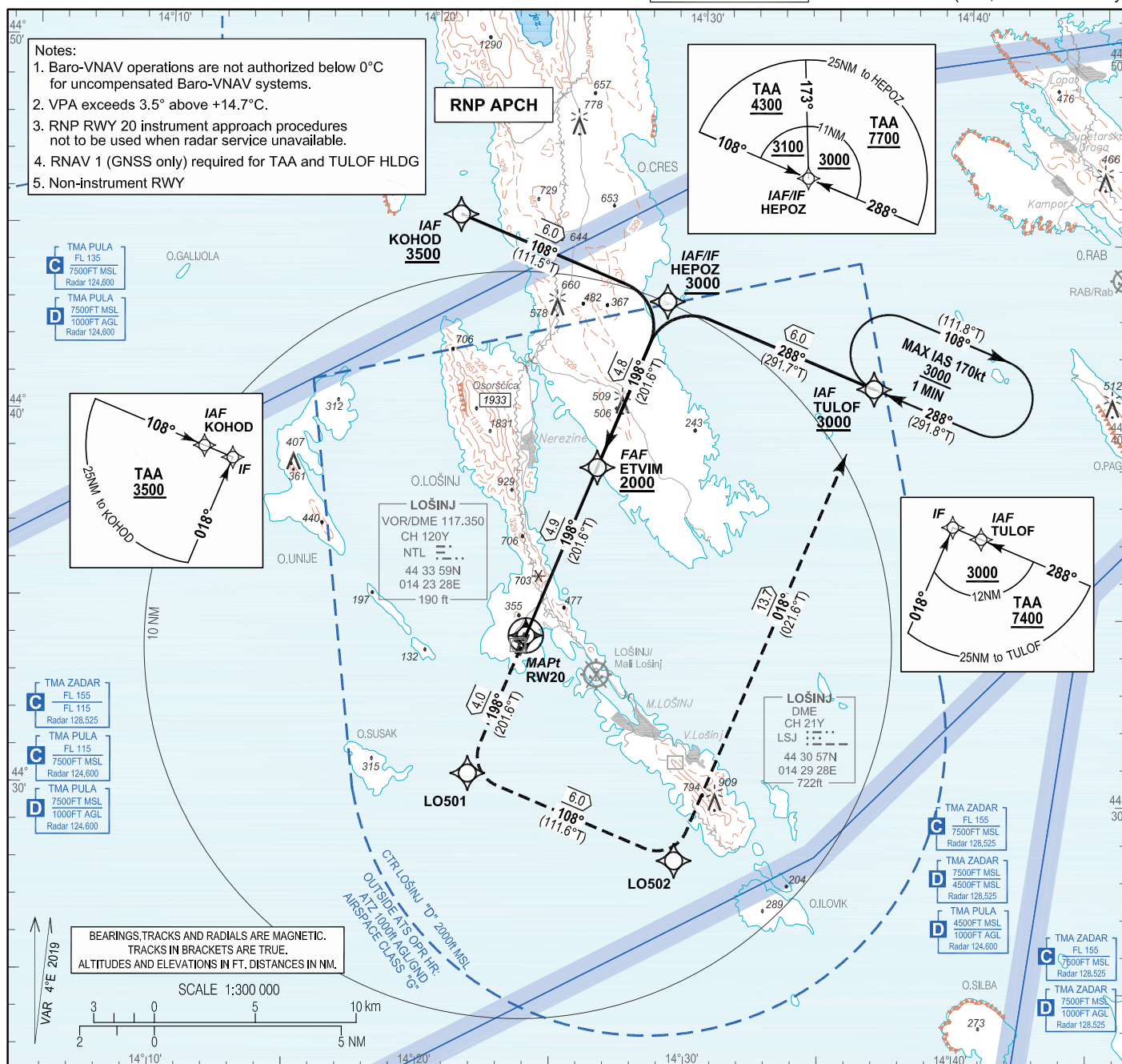
Waypoint name	WGS-84 latitude	WGS-84 longitude
LEZZA	442313.8N	0142640.5E
PUQQI	442738.0N	0141105.9E
BURQE	442526.2N	0141853.5E
MIJJA	442920.0N	0142102.3E
RW02	443348.41N	0142330.59E
LO401	443731.6N	0142534.2E
LO402	443518.8N	0143322.5E

CHANGE: New chart

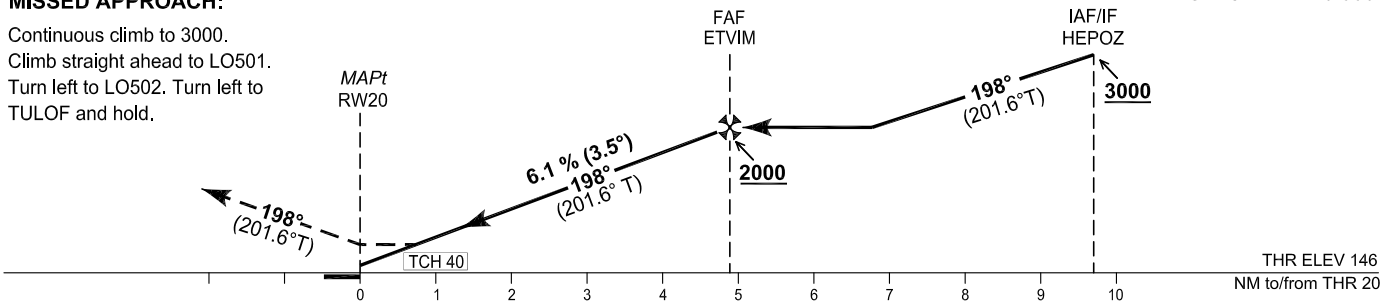
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INSTRUMENT APPROACH
CHART-ICAOAD ELEV 154
HEIGHTS RELATED
TO THR 20 ELEV 146SBAS
CH: 83074
E20APULA RADAR 124.600
127.675
LOSINJ TOWER 120.300LOŠINJ / Lošinj I.
CROATIA

RNP RWY 20 (LPV, LNAV/VNAV only)

**MISSED APPROACH:**

Continuous climb to 3000.
Climb straight ahead to LO501.
Turn left to LO502. Turn left to
TULOF and hold.

TRANSITION ALT 10 000

DIST from MAPt (RW20)	NM	4	3	2
Altitude	ft	1680	1300	930

Timing not authorized for defining the MAPt								
GS	kt	70	80	90	100	110	120	130
FAF - MAPt (4.9NM)	min:sec	4:11	3:40	3:15	2:56	2:40	2:26	2:15
Rate of descent (6.1%)	ft/min	434	495	557	619	681	743	805

OCA(H)		A	B
Straight - in approach	LNAV/VNAV	843 (697)	856 (710)
	LPV	843 (697)	856 (710)

CHANGE: New chart

LOŠINJ / Lošinj I.
CROATIA
RNP RWY 20 (LPV, LNAV/VNAV only)

Coding elements for FAS Data Block

Input data	
Operation Type	0
SBAS Provider	1 (EGNOS)
Airport Identifier	LDLO
Runway	20
Runway Letter	0 (None)
Approach Performance Designator	0
Route Indicator	
Reference Path Data Selector	0
Reference Path Identifier	E20A
LTP/FTP Latitude	443415.1610N
LTP/FTP Longitude	0142345.3865E
LTP/FTP Ellipsoidal Height (metres)	87.2
FPAP Latitude	443324.0965N
Delta FPAP Latitude (seconds)	-51.0645
FPAP Longitude	0142317.1415E
Delta FPAP Longitude (seconds)	-28.2450
Threshold Crossing Height	40.0
TCH Units Selector	0 (feet)
Glidepath Angle (degrees)	3.50
Course Width (metres)	105.00
Length Offset (metres)	0
HAL (metres)	40.0
VAL (metres)	50.0
Output data	
Data Block	10 0F 0C 04 0C 14 00 00 01 30 32 05 F2 B3 20 13 D5 95 2D 06 68 17 0F 71 FE 56 23 FF 90 01 5E 01 64 00 C8 FA 58 33 3D 9E
Calculated CRC Value	58333D9E
Required Additional Data	
ICAO Code	LD
LTP/FTP Orthometric Height (metres)	44.5

LDLO RNP RWY 20

Proposed tabular description for navigation database coding - APPROACH TRANSITION

Serial number	Fix	Path descriptor	Waypoint name	Flyover	Course °M (°T)	Magnetic Variation	Distance (NM)	Turn direction	Altitude (ft)	Speed (kt)	VPA/TCH (°/ft)	Remarks	NAV SPEC
010	IAF	IF	KOHOD	-	-	4°E	-	-	+3500	-	-	-	RNP APCH
020	IF	TF	HEPOZ	-	108° (111.5° T)	4°E	6.0	-	+3000	-	-	-	
010	IAF/IF	IF	HEPOZ	-	-	4°E	-	-	+3000	-	-	-	
010	IAF	IF	TULOF	-	-	4°E	-	-	+3000	-	-	-	
020	IF	TF	HEPOZ	-	288° (291.7° T)	4°E	6.0	-	+3000	-	-	-	

Proposed tabular description for navigation database coding - FINAL TRANSITION

Serial number	Fix	Path descriptor	Waypoint name	Flyover	Course °M (°T)	Magnetic Variation	Distance (NM)	Turn direction	Altitude (ft)	Speed (kt)	VPA/TCH (°/ft)	Remarks	NAV SPEC
010	IF	IF	HEPOZ	-	-	4°E	-	-	+3000	-	-	-	RNP APCH
020	FAF	TF	ETVIM	-	198° (201.6°T)	4°E	4.8	-	+2000	-	-	-	
030	MAPt	TF	RW20	Y	198° (201.6°T)	4°E	4.9	-	-	-	3.5 / 40	-	
040	MATF	TF	LO501	-	198° (201.6°T)	4°E	4.0	-	-	-	-	-	
050	MATF	TF	LO502	-	108° (111.6°T)	4°E	6.0	L	-	-	-	-	
060	MAHF	TF	TULOF	-	018° (021.6°T)	4°E	13.7	L	@3000	-	-	-	
070	MAHF	HM	TULOF	-	288° (291.8°T)	4°E	1 MIN	R	@3000	-170	-	-	RNAV 1

RNAV HOLDING tabular description

Waypoint name	Path descriptor	Inbound course °M (°T)	Leg time/ distance (NM)	Turn direction	Minimum altitude (ft)	Maximum altitude (ft)	Speed limit MAX IAS (kt)	Magnetic variation	Remarks	NAV SPEC
TULOF	HM	288° (291.8°T)	1 MIN / -	R	3000	-	170	4°E	-	RNAV 1

Waypoint coordinates

Waypoint name	WGS-84 latitude	WGS-84 longitude
KOHOD	444528.7N	0142055.9E
TULOF	444103.3N	0143634.6E
HEPOZ	444316.2N	0142845.6E
ETVIM	443847.5N	0142616.2E
RW20	443415.16N	0142345.39E
LO501	443032.0N	0142142.0E
LO502	442819.4N	0142929.6E

CHANGE: New chart

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