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AIRAC AIP AMDT 001/2020
Effective Date: 27 FEB 2020
Publication Date: 16 JAN 2020

1. Amendment contents:

GEN

- GEN 0.2 - Record of AIP amendments - updated
- GEN 0.3 - Record of AIP supplements - updated
- GEN 0.4 - Checklist of AIP pages - updated
- GEN 0.5 - List of hand amendments to the AIP - updated
- GEN 2.5 - List of radio navigation aids - changed
- GEN 3.5.3 - RWY designator for AD LDZA - 05/23 changed to 04/22

ENR

- ENR 1.5.4 - RWY designator for AD LDZA - 05/23 changed to 04/22
- ENR 1.8.5.2.6 - New subtitle added
- ENR 2.1.1 - Zagreb FIR/UIR - new Zagreb ACC FREQ added
- ENR 3.1, ENR 4.1 - DBK VOR/DME coordinates changed, various changes
- ENR 3.3 - Area navigation routes - DBK VOR/DME coordinates changed, L607 - new point RAVNA added, L614 - new point KUDUL added, L868 - point ALANU withdrawn
- ENR 4.4 - Name-code designators for significant points - new points added; point ALANU withdrawn; various changes
- ENR 6 - New charts:
  - Enroute chart - ICAO - FIR Zagreb Lower airspace (ENR 6.1 -1)
  - Enroute chart - ICAO - FIR Zagreb Upper airspace (ENR 6.2 -1)
  - Free route airspace - Index chart SECSI FRA (ENR 6.11-1/2)

AD

- AD 0.6 - Table of contents to Part three - updated
- AD 1.1 - RWY designator for AD LDZA - 05/23 changed to 04/22
- LDDU AD 2.19 - DBK VOR/DME coordinates changed, various changes
- LDZA AD 2.2, 2.9, 2.10, 2.12, 2.14, 2.19, 2.20, 2.21, 2.24 - RWY designator for AD LDZA - 05/23 changed to 04/22
- LDZA AD 2.13 - Declared distances - changed; RWY designator for AD LDZA - 05/23 changed to 04/22
- LDZA AD 2.15 - Various changes; RWY designator for AD LDZA - 05/23 changed to 04/22
- LDZA AD 2.22 - SID RWY 04 - obstacles information changed; RWY designator for AD LDZA - 05/23 changed to 04/22
- LDZA AD 2.24 - Charts related to an aerodrome - New charts added on the list
- LDZA - New charts:
  - Aerodrome Chart - ICAO (LDZA AD 2.24.1 ADC -1/2)
  - Aircraft Parking/Docking Chart - ICAO (LDZA AD 2.24.2 APDC EAST -1/2)
  - Standard Departure Chart - Instrument - ICAO RWY 04 (LDZA AD 2.24.8 SID RWY 04 -1/2)
  - Standard Departure Chart - Instrument - ICAO RNAV RWY 04 (LDZA AD 2.24.8 SID RNAV RWY 04 -1/4)
  - Standard Departure Chart - Instrument - ICAO RWY 22 (LDZA AD 2.24.8 SID RWY 22 -1/2)
  - Standard Departure Chart - Instrument - ICAO RNAV RWY 22 (LDZA AD 2.24.8 SID RNAV RWY 22 -1/4)
  - Standard Arrival Chart - Instrument - ICAO RWY 04 (LDZA AD 2.24.10 STAR RWY 04 -1/2)
  - Standard Arrival Chart - Instrument - ICAO RNAV RWY 04 (LDZA AD 2.24.10 STAR RNAV RWY 04 -1/4)
  - Standard Arrival Chart - Instrument - ICAO RWY 22 (LDZA AD 2.24.10 STAR RWY 22 -1/2)

- Standard Arrival Chart - Instrument - ICAO RNAV RWY 22 (LDZA AD 2.24.10 STAR RNAV RWY 22 -1/4)
- ATC Surveillance Minimum Altitude Chart - ICAO (LDZA AD 2.24.11 ATCSMAC -1/2)
- Instrument Approach Chart - ICAO L RWY 04 (LDZA AD 2.24.12 IAC L RWY 04 -1/2)
- Instrument Approach Chart - ICAO ILS or LOC RWY 04 CAT I/II/III (LDZA AD 2.24.12 ILS or LOC RWY 04 -1/2)
- Instrument Approach Chart - ICAO L y RWY 22 (LDZA AD 2.24.12 IAC Ly RWY 22 -1/2)
- Instrument Approach Chart - ICAO L z RWY 22 (LDZA AD 2.24.12 IAC Lz RWY 22 -1/2)
- Instrument Approach Chart - ICAO ILS or LOC RWY 22 (LDZA AD 2.24.12 IAC ILS or LOC RWY 22 -1/2)
- Instrument Approach Chart - ICAO RNP RWY 04 (LDZA AD 2.24.12 IAC RNP RWY 04 -1/4)
- Instrument Approach Chart - ICAO RNP RWY 22 (LDZA AD 2.24.12 IAC RNP RWY 22 -1/4)
- Visual Operation Chart (LDZA AD 2.24.13 VOC -1/2)

• LDZD AD 2.22 - Flight procedures - SIDs: ALANU 3C, ALANU 3D, ALANU 3E, ALANU 3F, EBITA 4G, EBITA 4H, EBITA 4J, EBITA 4K, ULPIN 3C, ULPIN 3D, ULPIN 3E and ULPIN 3F withdrawn;
SIDs: PALEZ 1A, PALEZ 1B, PALEZ 1C, PALEZ 1D, RAVNA 1A, RAVNA 1B, RAVNA 1C and RAVNA 1D added;
STARs: ALANU 3A, ALANU 3B, EBITA 4F, ULPIN 3A and ULPIN 3B withdrawn;
STARs: KUDUL 1A and KUDUL 1B added

• LDZD AD 2.24 - Charts related to an aerodrome - New charts added on the list

• LDZD - New charts:
- Standard Departure Chart - Instrument - ICAO RWY 04 (LDZD AD 2.24.8 SID RWY 04 -1/2)
- Standard Departure Chart - Instrument - ICAO RNAV RWY 04 (LDZD AD 2.24.8 SID RNAV RWY 04 -1/4)
- Standard Departure Chart - Instrument - ICAO RWY 13 (LDZD AD 2.24.8 SID RWY 13 -1/2)
- Standard Departure Chart - Instrument - ICAO RNAV RWY 13 (LDZD AD 2.24.8 SID RNAV RWY 13 -1/4)
- Standard Departure Chart - Instrument - ICAO RWY 22 (LDZD AD 2.24.8 SID RWY 22 -1/2)
- Standard Departure Chart - Instrument - ICAO RNAV RWY 22 (LDZD AD 2.24.8 SID RNAV RWY 22 -1/2)
- Standard Departure Chart - Instrument - ICAO RWY 31 (LDZD AD 2.24.8 SID RWY 31 -1/2)
- Standard Departure Chart - Instrument - ICAO RNAV RWY 31 (LDZD AD 2.24.8 SID RNAV RWY 31 -1/4)
- Standard Arrival Chart - Instrument - ICAO RWY 04 &13/31 (LDZD AD 2.24.10 STAR RWY 04 & 13/31 -1/2)
- Standard Arrival Chart - Instrument - ICAO RNAV RWY 04 (LDZD AD 2.24.10 STAR RNAV RWY 04 -1/4)
- Standard Arrival Chart - Instrument - ICAO RNAV RWY 13 (LDZD AD 2.24.10 STAR RNAV RWY 13 -1/4)
- Standard Arrival Chart - Instrument - ICAO RNAV RWY 31 (LDZD AD 2.24.10 STAR RNAV RWY 31 -1/4)
- ATC Surveillance Minimum Altitude Chart - ICAO (LDZD AD 2.24.11 ATCSMAC -1/2)
- Instrument Approach Chart - ICAO VOR RWY 04 (LDZD AD 2.24.12 IAC VOR RWY 04 -1/2)
- Instrument Approach Chart - ICAO L z RWY 13 (LDZD AD 2.24.12 IAC Lz RWY 13 -1/2)
- Instrument Approach Chart - ICAO VOR RWY 13 (LDZD AD 2.24.12 IAC VOR RWY 13 -1/2)
- Instrument Approach Chart - ICAO ILS or LOC RWY 13 (LDZD AD 2.24.12 IAC ILS or LOC RWY 13 -1/2)
- Instrument Approach Chart - ICAO RNP RWY 04 (LDZD AD 2.24.12 IAC RNP RWY 04 -1/4)
- Instrument Approach Chart - ICAO RNP Y RWY 13 (LDZD AD 2.24.12 IAC RNP Y RWY 13 -1/4)
- Instrument Approach Chart - ICAO RNP Z RWY 13 (LDZD AD 2.24.12 IAC RNP Z RWY 13 -1/4)
- Instrument Approach Chart - ICAO RNP RWY 31 (LDZD AD 2.24.12 IAC RNP RWY 31 -1/4)

2. Hand corrections to the following pages:

• See GEN 0.5

3. Record entry of AMDT in GEN 0.2.

4. This AIP amendment incorporates information contained in the following publications:

NOTAM: Nil

SUP: Nil

AIC: Nil

5. Remove / insert the pages as shown in list on the next page:

Insert the following pages

GEN 0.2 - 3/4	27 FEB 2020 / 06 DEC 2019
GEN 0.3 - 1/2	27 FEB 2020 / 01 FEB 2018
GEN 0.4 - 1/2	27 FEB 2020 / 27 FEB 2020
GEN 0.4 - 3/4	27 FEB 2020 / 27 FEB 2020
GEN 0.4 - 5/6	27 FEB 2020 / 27 FEB 2020
GEN 0.4 - 7/8	27 FEB 2020 / 27 FEB 2020
GEN 0.5 - 1/2	27 FEB 2020 / 27 FEB 2020
GEN 2.5 - 1/2	27 FEB 2020 / 27 FEB 2020
GEN 3.5 - 3/4	27 FEB 2020 / 05 DEC 2019
ENR 1.5 - 1/2	08 MAR 2012 / 27 FEB 2020
ENR 1.8 - 9/10	03 JAN 2019 / 27 FEB 2020
ENR 1.8 - 11/12	27 FEB 2020 / 03 JAN 2019
ENR 2.1 - 1/2	27 FEB 2020 / 04 APR 2013
ENR 3.1 - 1/2	27 FEB 2020 / 25 APR 2019
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LDDU AD 2 - 9/10	28 MAR 2019 / 27 FEB 2020
LDDU AD 2 - 11/12	27 FEB 2020 / 28 MAR 2019
LDZA AD 2 - 1/2	27 FEB 2020 / 18 JUL 2019
LDZA AD 2 - 5/6	27 FEB 2020 / 27 FEB 2020
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LDZA AD 2 - 9/10	27 FEB 2020 / 25 APR 2019
LDZA AD 2 - 11/12	27 FEB 2020 / 27 FEB 2020
LDZA AD 2 - 13/14	27 FEB 2020 / 27 FEB 2020
LDZA AD 2 - 15/16	27 FEB 2020 / 27 FEB 2020
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LDZA AD 2 - 23/24	25 APR 2019 / 27 FEB 2020
LDZA AD 2.24.1 ADC - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.2 APDC EAST - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.8 SID RWY 04 - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.8 SID RNAV RWY 04 - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.8 SID RNAV RWY 04 - 3/4	27 FEB 2020 / 27 FEB 2020
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LDZA AD 2.24.8 SID RNAV RWY 22 - 3/4	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.10 STAR RWY 04 - 1/2	27 FEB 2020 / 27 FEB 2020
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LDZA AD 2.24.10 STAR RNAV RWY 04 - 3/4	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.10 STAR RWY 22 - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.10 STAR RNAV RWY 22 - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.10 STAR RNAV RWY 22 - 3/4	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.11 ATCSMAC - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.12 IAC L RWY 04 - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.12 IAC ILS or LOC RWY 04 - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.12 IAC Ly RWY 22 - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.12 IAC Lz RWY 22 - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.12 IAC ILS or LOC RWY 22 - 1/2	27 FEB 2020 / 27 FEB 2020
LDZA AD 2.24.12 IAC RNP RWY 04 - 1/2	27 FEB 2020 / 27 FEB 2020
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ENR 1.8 - 11/12	03 JAN 2019 / 03 JAN 2019
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ENR 3.1 - 1/2	30 JAN 2020 / 25 APR 2019
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ENR 3.3 - 15/16	01 FEB 2018 / 01 FEB 2018
ENR 3.3 - 29/30	01 FEB 2018 / 01 FEB 2018
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ENR 4.4 - 3/4	30 JAN 2020 / 30 JAN 2020
ENR 4.4 - 5/6	30 JAN 2020 / 30 JAN 2020
ENR 4.4 - 7/8	30 JAN 2020 / 30 JAN 2020
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AD 0.6 - 5/6	30 JAN 2020 / 30 JAN 2020
AD 0.6 - 7/8	30 JAN 2020 / 30 JAN 2020
AD 0.6 - 9/10	30 JAN 2020 / 30 JAN 2020
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LDDU AD 2 - 9/10	28 MAR 2019 / 12 SEP 2019
LDDU AD 2 - 11/12	12 SEP 2019 / 28 MAR 2019
LDZA AD 2 - 1/2	10 OCT 2019 / 18 JUL 2019
LDZA AD 2 - 5/6	18 JUL 2019 / 30 JAN 2020
LDZA AD 2 - 7/8	07 JAN 2016 / 31 JAN 2019
LDZA AD 2 - 9/10	10 OCT 2019 / 25 APR 2019
LDZA AD 2 - 11/12	25 APR 2019 / 10 OCT 2019
LDZA AD 2 - 13/14	23 MAY 2019 / 30 JAN 2020
LDZA AD 2 - 15/16	19 JUL 2018 / 19 JUL 2018
LDZA AD 2 - 17/18	19 JUL 2018 / 25 APR 2019
LDZA AD 2 - 19/20	25 APR 2019 / 25 APR 2019
LDZA AD 2 - 21/22	25 APR 2019 / 25 APR 2019
LDZA AD 2 - 23/24	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.1 ADC - 1/2	03 JAN 2019 / 03 JAN 2019
LDZA AD 2.24.2 APDC EAST - 1/2	18 JUL 2019 / 18 JUL 2019
LDZA AD 2.24.8 SID RWY 05 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.8 SID RNAV RWY 05 - 1/2	12 SEP 2019 / 12 SEP 2019
LDZA AD 2.24.8 SID RNAV RWY 05 - 3/4	12 SEP 2019 / 12 SEP 2019
LDZA AD 2.24.8 SID RWY 23 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.8 SID RNAV RWY 23 - 1/2	12 SEP 2019 / 12 SEP 2019
LDZA AD 2.24.8 SID RNAV RWY 23 - 3/4	12 SEP 2019 / 12 SEP 2019
LDZA AD 2.24.10 STAR RWY 05 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.10 STAR RNAV RWY 05 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.10 STAR RNAV RWY 05 - 3/4	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.10 STAR RWY 23 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.10 STAR RNAV RWY 23 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.10 STAR RNAV RWY 23 - 3/4	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.11 ATCSMAC - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.12 IAC L RWY 05 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.12 IAC ILS or LOC RWY 05 - 1/2	10 OCT 2019 / 10 OCT 2019
LDZA AD 2.24.12 IAC Ly RWY 23 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.12 IAC Lz RWY 23 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.12 IAC ILS or LOC RWY 23 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.12 IAC RNAV (GNSS) RWY 05 - 1/2	25 APR 2019 / 25 APR 2019
LDZA AD 2.24.12 IAC RNAV (GNSS) RWY 05 - 3/4	25 APR 2019 / 25 APR 2019

Insert the following pages	Remove the following pages
LDZA AD 2.24.12 IAC RNP RWY 22 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZA AD 2.24.12 IAC RNAV (GNSS) RWY 23 - 1/2 25 APR 2019 / 25 APR 2019
LDZA AD 2.24.12 IAC RNP RWY 22 - 3/4 27 FEB 2020 / 27 FEB 2020	LDZA AD 2.24.12 IAC RNAV (GNSS) RWY 23 - 3/4 25 APR 2019 / 25 APR 2019
LDZA AD 2.24.13 VOC - 1/2 27 FEB 2020 / 27 FEB 2020	LDZA AD 2.24.13 VOC - 1/2 07 NOV 2019 / 07 NOV 2019
LDZD AD 2 - 11/12 23 MAY 2019 / 27 FEB 2020	LDZD AD 2 - 11/12 23 MAY 2019 / 23 MAY 2019
LDZD AD 2 - 13/14 27 FEB 2020 / 27 FEB 2020	LDZD AD 2 - 13/14 23 MAY 2019 / 23 MAY 2019
LDZD AD 2 - 15/16 27 FEB 2020 / 27 FEB 2020	LDZD AD 2 - 15/16 23 MAY 2019 / 23 MAY 2019
LDZD AD 2 - 17/18 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.8 SID RWY 04 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.8 SID RWY 04 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.8 SID RNAV RWY 04 - 1/2 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.8 SID RNAV RWY 04 - 3/4 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.8 SID RWY 13 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.8 SID RWY 13 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.8 SID RNAV RWY 13 - 1/2 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.8 SID RNAV RWY 13 - 3/4 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.8 SID RWY22 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.8 SID RWY 22 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.8 SID RNAV RWY 22 - 1/2 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.8 SID RWY 31 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.8 SID RWY 31 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.8 SID RNAV RWY 31 - 1/2 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.8 SID RNAV RWY 31 - 3/4 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.10 STAR RWY 04&13/31 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.10 STAR RWY 04&13/31 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.10 STAR RNAV RWY 04 - 1/2 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.10 STAR RNAV RWY 04 - 3/4 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.10 STAR RNAV RWY 13 - 1/2 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.10 STAR RNAV RWY 13 - 3/4 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.10 STAR RNAV RWY 31 - 1/2 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.10 STAR RNAV RWY 31 - 3/4 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.11 ATCSMAC - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.11 ATCSMAC - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC VOR RWY 04 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC VOR RWY 04 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC Lz RWY 13 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC Lz RWY 13 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC VOR RWY 13 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC VOR RWY 13 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC ILS or LOC RWY 13 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC ILS or LOC RWY 13 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC RNP RWY 04 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC RNAV (GNSS) RWY 04 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC RNP RWY 04 - 3/4 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC RNAV (GNSS) RWY 04 - 3/4 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC RNP Y RWY 13 - 1/2 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.12 IAC RNP Y RWY 13 - 3/4 27 FEB 2020 / 27 FEB 2020	Nil
LDZD AD 2.24.12 IAC RNP Z RWY 13 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC RNAV (GNSS) RWY 13 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC RNP Z RWY 13 - 3/4 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC RNAV (GNSS) RWY 13 - 3/4 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC RNP RWY 31 - 1/2 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC RNAV (GNSS) RWY 31 - 1/2 23 MAY 2019 / 23 MAY 2019
LDZD AD 2.24.12 IAC RNP RWY 31 - 3/4 27 FEB 2020 / 27 FEB 2020	LDZD AD 2.24.12 IAC RNAV (GNSS) RWY 31 - 3/4 23 MAY 2019 / 23 MAY 2019

AIRAC AIP AMENDMENT			
NR/Year	*Publication date*	*Effective date*	*Inserted by*
010/2018	27-Sep-2018	08-Nov-2018	
011/2018	25-Oct-2018	06-Dec-2018	
012/2018	22-Nov-2018	03-Jan-2019	
013/2018	20-Dec-2018	31-Jan-2019	
001/2019	17-Jan-2019	28-Feb-2019	
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010/2019	24-Oct-2019	05-Dec-2019	
011/2019	19-Dec-2019	30-Jan-2020	
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NR/Year	*Publication date*	*Date inserted*	*Inserted by*
002/2012	13-Apr-2012	13-Apr-2012	
001/2014	22-Aug-2014	22-Aug-2014	
001/2015	01-Feb-2015	01-Feb-2015	
002/2015	01-Jun-2015	01-Jun-2015	
003/2015	11-Jun-2015	23-Jul-2015	
004/2015	26-Oct-2015	26-Oct-2015	
001/2016	22-Jan-2016	22-Jan-2016	
002/2016	15-Mar-2016	15-Mar-2016	
003/2016	02-Aug-2016	02-Aug-2016	
001/2017	06-Jan-2017	06-Jan-2017	
002/2017	06-Jul-2017	21-Jul-2017	
001/2019	02-Jul-2019	19-Jul-2019	
002/2019	20-Nov-2019	06-Dec-2019	

GEN 0.3 RECORD OF AIP SUPPLEMENTS

NR/Year	Subject	AIP Section(s) Affected	Period of Validity	Cancellation Record
010/2018	DME “JAP” CH123Y is not available due to testing	GEN 2 ENR 4 ENR 6 LDZA AD 2	27-Sep-2018 - UFN	
005/2019	LDZD - ZADAR/Zemunik Airport - Construction works North-East from the main apron	LDZD AD 2	23-May-2019 - UFN	
013/2019	LDZD - Airport ZADAR/Zemunik - Temporary suspension of RNAV (GNSS) RWY 13 and publication of trial PBN instrument flight procedures	LDZD AD 2	07-Nov-2019 - UFN	
014/2019	Replacement of RJK VOR/DME, its impact on existing LDRI and LDPL instrument flight procedures and publication of temporary LDRI instrument flight procedures	ENR 3 ENR 4 LDPL AD 2 LDRI AD 2	05-Dec-2019 - UFN	
015/2019	LDZA - Airport ZAGREB/Franjo Tuđman - Snow plan for the winter season 2019/2020	LDZA AD 2	20-Nov-2019 - 31-Mar-2020	
016/2019	AD and ATS HR SER - LDDU/LDLO/LDOS/LDPL/ LDRI/LDSB/LDZD	LDDU/LDLO/ LDOS/LDPL/ LDRI/LDSB/ LDZD AD 2	20-Nov-2019 - 28-Mar-2020	
001/2020	LDRI - Airport RIJEKA/Krk I. - Temporary suspension of RNAV (GNSS) RWY 14, RNAV (GNSS) RWY 32 and publication of trial PBN instrument flight procedures	LDRI AD 2	27-Feb-2020 - UFN	
002/2020	LDSP - Airport SPLIT/Kastela - Temporary suspension of RNAV VISUAL RWY 23 and publication of trial PBN instrument flight procedures	LDSP AD 2	27-Feb-2020 - UFN	

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GEN 0.4 CHECKLIST OF AIP PAGES

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LDZD AD 2.24.8 SID RNAV RWY 13 - 4	27 FEB 2020		
LDZD AD 2.24.8 SID RWY 22 - 1	27 FEB 2020		
LDZD AD 2.24.8 SID RWY 22 - 2	27 FEB 2020		
LDZD AD 2.24.8 SID RNAV RWY 22 - 1	27 FEB 2020		
LDZD AD 2.24.8 SID RNAV RWY 22 - 2	27 FEB 2020		
LDZD AD 2.24.8 SID RWY 31 - 1	27 FEB 2020		
LDZD AD 2.24.8 SID RWY 31 - 2	27 FEB 2020		
LDZD AD 2.24.8 SID RNAV RWY 31 - 1	27 FEB 2020		
LDZD AD 2.24.8 SID RNAV RWY 31 - 2	27 FEB 2020		
LDZD AD 2.24.8 SID RNAV RWY 31 - 3	27 FEB 2020		
LDZD AD 2.24.8 SID RNAV RWY 31 - 4	27 FEB 2020		
LDZD AD 2.24.10 STAR RWY 04 & 13/31 - 1	27 FEB 2020		
LDZD AD 2.24.10 STAR RWY 04 & 13/31 - 2	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 04 - 1	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 04 - 2	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 04 - 3	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 04 - 4	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 13 - 1	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 13 - 2	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 13 - 3	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 13 - 4	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 31 - 1	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 31 - 2	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 31 - 3	27 FEB 2020		
LDZD AD 2.24.10 STAR RNAV RWY 31 - 4	27 FEB 2020		
LDZD AD 2.24.11 ATCSMAC - 1	27 FEB 2020		
LDZD AD 2.24.11 ATCSMAC - 2	27 FEB 2020		
LDZD AD 2.24.12 IAC VOR RWY 04 - 1	27 FEB 2020		
LDZD AD 2.24.12 IAC VOR RWY 04 - 2	27 FEB 2020		
LDZD AD 2.24.12 IAC Ly RWY 13 - 1	23 MAY 2019		
LDZD AD 2.24.12 IAC Ly RWY 13 - 2	23 MAY 2019		
LDZD AD 2.24.12 IAC Lz RWY 13 - 1	27 FEB 2020		
LDZD AD 2.24.12 IAC Lz RWY 13 - 2	27 FEB 2020		
LDZD AD 2.24.12 IAC VOR RWY 13 - 1	27 FEB 2020		
LDZD AD 2.24.12 IAC VOR RWY 13 - 2	27 FEB 2020		
LDZD AD 2.24.12 IAC ILS or LOC RWY 13 - 1	27 FEB 2020		
LDZD AD 2.24.12 IAC ILS or LOC RWY 13 - 2	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP RWY 04 - 1	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP RWY 04 - 2	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP RWY 04 - 3	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP RWY 04 - 4	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP Y RWY 13 - 1	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP Y RWY 13 - 2	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP Y RWY 13 - 3	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP Y RWY 13 - 4	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP Z RWY 13 - 1	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP Z RWY 13 - 2	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP Z RWY 13 - 3	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP Z RWY 13 - 4	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP RWY 31 - 1	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP RWY 31 - 2	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP RWY 31 - 3	27 FEB 2020		
LDZD AD 2.24.12 IAC RNP RWY 31 - 4	27 FEB 2020		
LDZD AD 2.24.12 IAC L RWY 31 - 1	23 MAY 2019		
LDZD AD 2.24.12 IAC L RWY 31 - 2	23 MAY 2019		
LDZD AD 2.24.12 IAC VOR RWY 31 - 1	23 MAY 2019		
LDZD AD 2.24.12 IAC VOR RWY 31 - 2	23 MAY 2019		
LDZD AD 2.24.13 VOC - 1	23 MAY 2019		
LDZD AD 2.24.13 VOC - 2	23 MAY 2019		

GEN 0.5 LIST OF HAND AMENDMENTS TO THE AIP

AIP page(s) affected	Amendment text	Introduced by AIP AMDT number:
1	2	3
LDDU AD 2.24.1 ADC -1	Use of TWY B is prohibited to ACFT code letter E due to infrastructure restrictions.	AIRAC AIP AMDT 002/2019 (28 MAR 2019)
LDZA AD 2.24.2 APDC WEST-1 LDZA AD 2.24.4 AOC RWY 04/22 -1	MAG VAR / Annual rate of change is 4°E (2019) / 0.15° increasing.	AIRAC AIP AMDT 001/2020 (27 FEB 2020)
LDZD AD 2.24.4 AOC RWY04/22 -1 LDZD AD 2.24.4 AOC RWY13/31 -1	MAG VAR / Annual rate of change is 4°E (2019) / 0.13° increasing. RWY designator 14/32 is changed to 13/31.	AIRAC AIP AMDT 008/2019 (10 OCT 2019)
LDDU AD 2.24.1 ADC -1	RWY11/29 physical characteristics changed to: - strength (PCN) and surface of RWY and SWY is: 86 F/A/W/T ASPH - RWY dimensions are: 3230x45 M - RWY 11 slopes are: 0.5% (0 M - 510 M) 0% (510 M - 1840 M) -1.1% (1840 M - 2860 M) -0.2% (2860 M - 3230 M) - RWY 29 slopes are: 0.2% (0 M - 370 M) 1.1% (370 M - 1390 M) 0% (1390 M - 2720 M) -0.5% (2720 M - 3230 M)	AIRAC AIP AMDT 005/2019 (20 JUN 2019)
LDZA AD 2.24.2 APDC WEST -1	Marshaller for all stands. Taxiing and parking restrictions and notes - APRON WEST, under point 3.- instead of the word “marshaller” write the word: “Follow me”.	AIRAC AIP AMDT 001/2020 (27 FEB 2020)
LDDU AD 2.24.1 ADC -1	GP 11 transmitting antenna repositioned - new coordinates are: 423408.19N 0181507.94E New radio navigation aid DME IDU.	AIRAC AIP AMDT 007/2019 (12 SEP 2019)
ENR 6.4-1, ENR 6.5-1, ENR 6.7-1, ENR 6.8-1, ENR 6.9-1 and LDZA AD 2.24.2 APDC WEST -1, LDZA AD 2.24.4 AOC RWY 04/22 -1, LDZA AD 2.24.6 PATC RWY 04 -1 and LDZA AD 2.24.14 BC -1	Airport name is changed to “Zagreb/Franjo Tuđman”	AIRAC AIP AMDT 001/2020 (27 FEB 2020)
LDZD AD 2.24.1 ADC -1	New Sections S5 and S6 on Main apron.	AIRAC AIP AMDT 008/2019 (10 OCT 2019)
LDSB AD 2.24.4 AOC RWY 04/22 -1	Obstacles NR 2, 3 and 5 removed.	AIRAC AIP AMDT 009/2019 (07 NOV 2019)

AIP page(s) affected	Amendment text	Introduced by AIP AMDT number:
1	2	3
LDDU AD 2.24.1 ADC -1	Anemometer RWY 11 repositioned. Location changed to: 111 M left of RCL, distance 341 M from (after) THR 11, ICAO marked and lighted. Anemometer RWY 29 repositioned. Location changed to: 111 M right of RCL, distance 341 M from (after) THR 29, ICAO marked and lighted.	AIP AMDT 002/2019 (06 DEC 2019)
LDLO AD 2.24.1 ADC -1 LDLO AD 2.24.2 APDC -1	ARO Losinj withdrawn.	AIP AMDT 002/2019 (06 DEC 2019)
LDPL AD 2.24.1 ADC -1 LDPL AD 2.24.2 APDC -1	ARO Pula withdrawn.	AIP AMDT 002/2019 (06 DEC 2019)
ENR 6.8 -1, LDDU AD 2.24.1 ADC -1, LDDU AD 2.24.13 VOC -1, ATCSMAC, all SID, STAR and IAC charts.	DBK VOR/DME coordinates changed to: 423313.84N 0181638.79E. DBK VOR/DME elevation changed to: 550 FT.	AIRAC AIP AMDT 001/2020 (27 FEB 2020)
LDZA AD 2.24.4 AOC RWY 04/22 -1, LDZA AD 2.24.6 PATC RWY 04 -1 and LDZA AD 2.24.14 BC -1	Runway designator 05/23 changed to 04/22.	AIRAC AIP AMDT 001/2020 (27 FEB 2020)
LDZA AD 2.24.1 ADC -1	Anemometer RWY 04 - not lighted.	AIRAC AIP AMDT 001/2020 (27 FEB 2020)

GEN 2.5 LIST OF RADIO NAVIGATION AIDS

DECODE			
ID	Station name	Aid	Purpose
BO	BOKANJAC	L	A
BRC	BRAC	DME	AE
BRZ	BREZA	NDB	A
CE	CEPIN	L	AE
CRE	CRES	NDB	AE
CV	CAVTAT	L	A
DBK	DUBROVNIK	VOR/DME	AE
DVN	DRVENIK	NDB	A
GR	GRUDA	L	A
GS	PULA	L	A
HUM	BRAC	NDB	A
IDU	DUBROVNIK	DME	A
IDU	DUBROVNIK / CILIPI	LOC 11	A
IKR	RIJEKA / KRK I	LOC 14	A
IOS	OSIJEK / KLISA	LOC 29	A
IPU	PULA	LOC 27	A
ISJ	OSIJEK	DME	A
ISJ	OSIJEK	LOC 11	A
IST	SPLIT	DME	AE
IST	SPLIT / KASTELA	LOC 05	A
IZA	ZAGREB	DME	A
IZA	ZAGREB / FRANJO TUDJMAN	LOC 04	A
IZD	ZADAR / ZEMUNIK	LOC 13	A
IZG	ZAGREB / FRANJO TUDJMAN	LOC 22	A
JAP	JAPETIC	DME	AE
KAV	KAVRAN	NDB	A
KLP	KOLOCEP	NDB	A
KLS	OSIJEK	DME	AE
KO	KOZALA	L	A
LOS	LOSINJ	NDB	AE
LSJ	LOSINJ	DME	AE

ENCODE			
Station name	Aid	ID	Purpose
BARNA	VOR/DME	VBA	AE
BOKANJAC	L	BO	A
BRAC	DME	BRC	AE
BRAC	NDB	HUM	A
BREZA	NDB	BRZ	A
CAVTAT	L	CV	A
CEPIN	L	CE	AE
CRES	NDB	CRE	AE
DRVENIK	NDB	DVN	A
DUBROVNIK	DME	IDU	A
DUBROVNIK	VOR/DME	DBK	AE
DUBROVNIK / CILIPI	LOC 11	IDU	A
GRUDA	L	GR	A
JAPETIC	DME	JAP	AE
KAKMA	NDB	ZRA	A
KAVRAN	NDB	KAV	A
KOLOCEP	NDB	KLP	A
KOZALA	L	KO	A
LOSINJ	DME	LSJ	AE
LOSINJ	NDB	LOS	AE
LOSINJ	VOR/DME	NTL	AE
LUKAVEC	DME	LUK	AE
OSIJEK	DME	ISJ	A
OSIJEK	DME	KLS	AE
OSIJEK	LOC 11	ISJ	A
OSIJEK	NDB	OSJ	A
OSIJEK / KLISA	LOC 29	IOS	A
PISAROVINA	NDB	PIS	AE
PULA	L	GS	A
PULA	LOC 27	IPU	A
PULA	NDB	PLA	A

DECODE			
ID	Station name	Aid	Purpose
LUK	LUKAVEC	DME	AE
NTL	LOSINJ	VOR/DME	AE
OSJ	OSIJEK	NDB	A
PIS	PISAROVINA	NDB	AE
PLA	PULA	NDB	A
PUL	PULA	VOR/DME	AE
RI	RIJEKA	L	A
RJK	RIJEKA	VOR/DME	AE
SAL	SALI	NDB	AE
SK	S.KRALJEVEC	L	A
SPL	SPLIT	VOR/DME	AE
TNJ	TOUNJ	NDB	E
TRI	TROGIR	NDB	A
VAR	VARAZDIN	NDB	A
VBA	BARNA	VOR/DME	AE
VG	VELIKA GORICA	L	A
VL	VALTURA	L	A
VRS	VRSAR	NDB	AE
ZAG	ZAGREB	VOR/DME	AE
ZAG	ZAGREB	NDB	A
ZDA	ZADAR	VOR/DME	AE
ZK	ZADAR	L	A
ZRA	KAKMA	NDB	A

ENCODE			
Station name	Aid	ID	Purpose
PULA	VOR/DME	PUL	AE
RIJEKA	L	RI	A
RIJEKA	VOR/DME	RJK	AE
RIJEKA / KRK I	LOC 14	IKR	A
S.KRALJEVEC	L	SK	A
SALI	NDB	SAL	AE
SPLIT	VOR/DME	SPL	AE
SPLIT	DME	IST	AE
SPLIT / KASTELA	LOC 05	IST	A
TOUNJ	NDB	TNJ	E
TROGIR	NDB	TRI	A
VALTURA	L	VL	A
VARAZDIN	NDB	VAR	A
VELIKA GORICA	L	VG	A
VRSAR	NDB	VRS	AE
ZADAR	L	ZK	A
ZADAR	VOR/DME	ZDA	AE
ZADAR / ZEMUNIK	LOC 13	IZD	A
ZAGREB	DME	IZA	A
ZAGREB	NDB	ZAG	A
ZAGREB	VOR/DME	ZAG	AE
ZAGREB / FRANJO TUDJMAN	LOC 04	IZA	A
ZAGREB / FRANJO TUDJMAN	LOC 22	IZG	A

Name of station/ Location indicator	Type & frequency of observation/ automatic observing equipment	Types of MET reports & availability of trend forecasts	Observation system & site(s)	Hours of operation	Climatological information
1	2	3	4	5	6
ZAGREB/Franjo Tuđman LDZA	Half - hourly plus special observations	METAR MET REPORT SPECIAL TREND	RWY 04/22 3 transmissiometers (TDZ, MID, END) 3 scattermeters (TDZ, MID, END) 2 present weather sensors (TDZ 04, TDZ 22) 2 anemometers (TDZ 04, TDZ 22) 2 ceilometers (MM 04, MM 22) 1 remote sensor for temperature and humidity reading (TDZ 04)	H24	Aerodrome climatological tables and summaries AVBL on request.
PULA LDPL	Half - hourly plus special observations	METAR MET REPORT* SPECIAL* TREND**	RWY 09/27 2 anemometers (TDZ 09, TDZ 27) 1 ceilometer (MM 27) 1 remote sensor for temperature and humidity reading (TDZ 27) 1 scattermeter (TDZ 27) 1 present weather sensor (TDZ 27) 1 lightning sensor (MID)	H24 *AD HR SER **2 hours before AD HR SER and AD HR SER	Aerodrome climatological tables and summaries AVBL on request.
SPLIT/Kaštela LDSP	Half - hourly plus special observations	METAR MET REPORT* SPECIAL* TREND** AUTO METAR***	RWY 05/23 2 anemometers (TDZ 05, TDZ 23) 1 ceilometer (MM 05) 1 remote sensor for temperature and humidity reading (TDZ 05) 1 scattermeter (TDZ 05) 1 present weather sensor (TDZ 05) 1 lightning sensor (MID)	H24 *AD HR SER **2 hours before AD HR SER and AD HR SER ***outside AD HR SER	Aerodrome climatological tables and summaries AVBL on request.
DUBROVNIK/ Čilipi LDDU	Half - hourly plus special observations	METAR MET REPORT* SPECIAL* TREND**	RWY 11/29 1 scattermeter (TDZ 11) 2 anemometers (TDZ 11,TDZ 29) 1 ceilometer (MM 11) 1 remote sensor for temperature and humidity reading (TDZ 11)	H24 *AD HR SER **2 hours before AD HR SER and AD HR SER	Aerodrome climatological tables and summaries AVBL on request.

Name of station/ Location indicator	Type & frequency of observation/ automatic observing equipment	Types of MET reports & availability of trend forecasts	Observation system & site(s)	Hours of operation	Climatological information
1	2	3	4	5	6
ZADAR/ Zemunik LDZD	Half - hourly plus special observations	METAR MET REPORT* SPECIAL* TREND**	RWY 13/31 1 scattermeter (TDZ 13) 2 anemometers (TDZ 13, TDZ 31) 1 ceilometer (MM 13) 1 remote sensor for temperature and humidity reading (TDZ 13) RWY 04/22 1 anemometer (TDZ 04)	H24 *AD HR SER **2 hours before AD HR SER and AD HR SER	Aerodrome climatological tables and summaries AVBL on request.
RIJEKA/Krk I. LDRI	Half - hourly plus special observations	METAR MET REPORT* SPECIAL*	RWY 14/32 2 anemometers (TDZ 14, TDZ 32) 1 remote sensor for temperature and humidity reading (TDZ 14)	H24 *AD HR SER	Aerodrome climatological tables and summaries AVBL on request.
OSIJEK/Klisa LDOS	Half - hourly plus special observations	METAR MET REPORT* SPECIAL*	RWY 11/29 2 anemometers (TDZ 11, TDZ 29) 1 remote sensor for temperature and humidity reading (TDZ 29)	H24 *AD HR SER	Aerodrome climatological tables and summaries AVBL on request.
LOŠINJ/Lošinj I. LDLO	Half - hourly plus special observations	METAR MET REPORT SPECIAL	RWY 02/20 1 anemometer (300 M FM THR 02) 1 remote sensor for temperature and humidity reading (300 M FM THR 02)	AD HR SER	Aerodrome climatological tables and summaries AVBL on request.
BRAČ/Brač I. LDSB	Half - hourly plus special observations	METAR MET REPORT SPECIAL	RWY 04/22 2 anemometers (TDZ 04, TDZ 22) 1 remote sensor for temperature and humidity reading (TDZ 22)	AD HR SER	Aerodrome climatological tables and summaries AVBL on request.

AUTO METAR:
AUTO METAR reports are generated and disseminated outside aerodrome service hours according to the following terms:
The content of these reports will include all meteorological parameters which are part of METAR corresponding to ICAO Annex 3, except:

- No cloud type will be reported (TCU, CB)
- No Supplementary information on WS and state of the runway (SNOWTAM) will be reported

In the AUTO METAR report if the system has not detected any clouds, instead of using:

- NSC (no significant cloud)

the following abbreviation will be used:

- NCD (no cloud detected)

The generation of AUTO METAR is based on instrumental measurements at specific locations and algorithms only and not on human observations or measurements.

Note: When the wind speed and direction cannot be determined due to a temporary failure of the system/sensor they shall be replaced by "/////KT".

ENR 1.5 HOLDING, APPROACH AND DEPARTURE PROCEDURES

ENR 1.5.1 GENERAL

ENR 1.5.1.1 The holding, approach and departure procedures in use are based on those contained in the latest edition of ICAO Doc 8168 - Procedures for Air Navigation Services - Aircraft Operations (PANS-OPS).

ENR 1.5.1.2 The holding and approach procedures in use have been based on the values and factors contained in Parts III and IV of Vol. I of the PANS-OPS.

ENR 1.5.2 ARRIVING FLIGHTS

ENR 1.5.2.1 Within arriving segment, the pilot shall direct the aircraft from en route phase of flight to Initial Approach Fix, where approach begins. The obstacle clearance conditions shall apply identically at arriving routes as en route. When radar service is applied, the relevant ATC unit shall vector the aircraft to Initial Approach Fix or to intermediate approach segment or to the point on final approach from where the pilot can resume published instrument approach procedure. Maximum speed is limited to 250 KT IAS in all TMA areas below FL 100.

ENR 1.5.2.2 Due to the limited airspace available, it is important that the approaches to the patterns and the holding procedures be carried out as precisely as possible. Pilots are strongly requested to inform ATC if for any reason the approach and/or holding cannot be performed as required.

ENR 1.5.3 DEPARTING FLIGHTS

ENR 1.5.3.1 Start-up, push back, taxiing and routing clearance

Pilots shall, prior to a departure, request the start-up clearance in accordance with an IFR flight plan. The start-up clearance shall not be requested before it has been ascertained that the aircraft can start the engines within 5 minutes after the clearance has been issued.

If the expected departure delay is less than 20 minutes, pilots will be cleared to start the engines immediately.

If the expected departure delay exceeds 20 minutes, the controller is obliged to inform the pilot of the moment for engines to be started or about the expected delay duration.

The pilot shall receive the route clearance, together with the departure route clearance, prior to departure.

The initial flight level to which an aircraft will climb after the take off, is established in standard instrument departure, or shall be determined together with the route clearance by the relevant air traffic control unit prior to take off. Clearances for further climb depend on traffic conditions and shall be issued after the take off.

When push-back is required, such permission shall be requested from TWR. Pilots are expected to start engines during or after push-back and to comply with start-up and taxi permissions, since ATC planning is based on strict adherence to the coordinated start-up time. Any delay in start-up or taxiing shall be immediately reported to TWR.

Flight level	Airspeed	Remark
Up to FL 140 (4250 M) inclusive	170 KT for aircraft category A and B, 230 KT IAS for other categories.	The stated value shall be used unless the holding procedure is not restricted to a lower speed.
Above FL 140 (4250 M) To FL 200 (6100M) inclusive	240 KT IAS	Higher speeds, e.g. in case of severe turbulence, are only permitted with the prior consent of the responsible air traffic control unit.
Above FL 200 (6100 M)	265 KT IAS	

ENR 1.5.4 WARNING DUE TO POTENTIONAL INTERFERENCE

The following ILS/VOR instrument approach or departure procedures to/from stated RWYs at relevant aerodromes are only approved for aircraft with receivers complying with the FM immunity provisions as stated in sections 3.1.4 and 3.3.8 of Annex 10, Volume I:

LDDU

- The “IDU” ILS LOC FREQ 110.1 MHZ Instrument Approach to RWY 11.
- The “DBK” VOR FREQ 115.4 MHZ Instrument Approach to RWY 11 and Departure from RWY 11/29 for all SIDs.

LDZA

- The “IZG” ILS LOC FREQ 109.1 MHZ Instrument Approach to RWY 22.
- The “ZAG” VOR FREQ 113.7 MHZ Instrument Approach to RWY 22 and Departure from RWY 04/22 for all SIDs.

LDRI

- The “IKR” ILS LOC FREQ 108.5 MHZ Instrument Approach to RWY 14.

Remarks on potential interference when using ILS/VORs for instrument approach and departure are also depicted on relevant aerodromes’ charts (AIP Part III - Aerodromes).

e. providing directional taxi information to aircraft when requested by the pilot or deemed necessary by the controller. Such information should not be issued in the form of specific heading instructions (except in special circumstances, e.g. emergencies); and

f. providing assistance and advice to emergency vehicles.

A-SMGCS alerts

Local instructions concerning use of the A-SMGCS alerting function, where available, shall specify, inter alia;

a. the aircraft and vehicles which might trigger alerts;

b. the areas of the manoeuvring area within which the alerting function is implemented;

c. the method of displaying alerts to the controller;

d. the warning criteria for the triggering of alerts that could depend on meteorological situations or type of operation being conducted, as well as alert warning time; and

e. conditions under which the alert function may be inhibited.

In the event an alert is triggered, the controller shall, without delay, assess the situation and take appropriate action as required.

For the purpose of analysis and to improve overall safety levels, the appropriate ATS authority shall retain electronic records of all alerts triggered.

A-SMGCS identification procedures

Note. - *See PANS-ATM, 8.5, "Use of SSR transponders and ADS-B transmitters" and 8.6.2 "Identification of aircraft".*

Where A-SMGCS is used, aircraft and vehicles may be identified by the following procedures or by those contained in the PANS-ATM, 8.6.2:

a. direct recognition of the aircraft identification of a Mode S-equipped aircraft in an A-SMGCS label; and

b. direct recognition of a suitably equipped vehicle identification in an A-SMGCS label.

ENR 1.8.5.2.5 Low visibility operations

(A11 – Chapter 3 and P-ATM – Chapter 7)

Note. - *For the purpose of describing the provision of an aerodrome control service in the context of varying visibilities, the following four (4) visibility conditions, as defined in ICAO Doc 9830, Appendix A, are used. Criteria for determining the transition between visibility conditions are a function of local aerodrome and traffic characteristics and should be established by the appropriate ATS authority.*

Visibility condition 1. Visibility sufficient for the pilot to taxi and to avoid collision with other traffic on taxiways and at intersections by visual reference, and for personnel of control units to exercise control over all traffic on the basis of visual surveillance.

Visibility condition 2. Visibility sufficient for the pilot to taxi and to avoid collision with other traffic on taxiways and at intersections by visual reference, but insufficient for personnel of control units to exercise control over all traffic on the basis of visual surveillance.

Visibility condition 3. Visibility sufficient for the pilot to taxi but insufficient for the pilot to avoid collision with other traffic on taxiways and at intersections by visual reference, and insufficient for personnel of control units to exercise control over all traffic on the basis of visual surveillance. For taxiing, this is normally taken as visibilities equivalent to an RVR of less than 400 M but more than 75 M.

Visibility condition 4. Visibility insufficient for the pilot to taxi by visual guidance only. This is normally taken as an RVR of 75 M or less.

When there is a requirement for traffic to operate on the manoeuvring area in visibility insufficient for personnel of control units to exercise control over all traffic on the basis of visual surveillance, ATC shall provide pilots and vehicle drivers with instructions and information to enable them to navigate and to avoid collisions with other relevant traffic by visual reference. In visibility condition 2, such instructions and information may be derived from the use of A-SMGCS, where available.

During visibility conditions 3 and 4, A-SMGCS, where available, may be used to determine the position of aircraft and vehicles on the manoeuvring area.

Note. - *The Manual of Surface Movement Guidance and Control Systems (SMGCS) (ICAO Doc 9476) and the Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual (ICAO Doc 9830) provide guidance on surface movement guidance and control components and procedures.*

The general conditions under which the low visibility procedures (LVP) applicable to Cat II/III operations are applied shall be published in the AIP, AD 1.1.

In addition to the provisions specified in PANS-ATM, 7.12.2., provisions regarding LVP should specify:

a. the requirement to inform the flight crews that LVPs are in operation and to inform them when LVPs are cancelled;

b. applicable spacing between successive arriving and/or departing aircraft to ensure protection of the sensitive and critical areas; and

c. any ATFM measures to be implemented.

Note. - *Further information can be found in the Air Traffic Services Planning Manual (ICAO Doc 9426).*

When an ILS auto-coupled approach to a runway is being conducted outside low visibility conditions (LVP are not in force), it is possible that some disturbance of the ILS signal may occur. In cases where protection of the localizer sensitive area (LSA) cannot be provided, ATC shall inform the flight crew if the pilot requests an autoland with protection of the LSA.

ENR 1.8.5.2.6 Selection of runway-in-use

Runway-in-use shall enable the aircraft to land and take off into wind, unless different runway direction is selected because of safety, runway configuration, meteorological conditions, available instrument approach conditions or air traffic. Different direction may be selected only when tail wind component does not exceed 10 KT.

ENR 1.8.5.3 RNAV procedures

ENR 1.8.5.3.1 General

RNAV system operation

Correct operation of the aircraft RNAV system shall be established before joining and during operation on an RNAV route. This shall include confirmation that:

a. the routing is in accordance with the clearance; and

b. the RNAV navigation accuracy of the aircraft meets the navigation accuracy requirements of the RNAV route and arrival or departure procedures, as applicable.

Obstacle clearance

(A2 – Chapter 5; P-ATM – Chapters 4 and 8)

Unless an IFR aircraft is receiving navigation guidance from ATC in the form of radar vectors, the pilot is responsible for obstacle clearance. Therefore, the use of RNAV does not relieve pilots of their responsibility to ensure that any ATC clearance or instruction is safe in respect to obstacle clearance. ATC shall assign levels that are at or above established minimum flight altitudes.

ENR 1.8.5.3.2 Terminal

For operation on RNAV arrival and departure routes, where clearance is given by ATC for an RNAV procedure for which the aircraft is not approved, the pilot is to advise ATC who will then seek to provide an alternative routing.

Note. - *See ICAO Doc 7030, EUR, Item 10.1 for relevant radiotelephony (RTF) phraseology.*

Aircraft equipped with RNAV equipment having a lateral track-keeping accuracy of ±5 NM (2 SD) with an ability to determine horizontal position to an accuracy sufficient to support the track-keeping requirement and having appropriate functionality, hereafter designated as basic area navigation (B-RNAV), may use RNAV (segments) of arrival and departure routes where these meet the following criteria:

a. the B-RNAV portion of the route must:

   1. be above the appropriate minimum flight altitude (MFA) (e.g.: minimum radar vectoring altitude (MRVA) and minimum sector altitude (MSA)); and

   2. be in accordance with established PANS-OPS criteria for en-route operations; and

   3. conform to B-RNAV en-route design principles;

Note. - *For minimum flight altitudes, see ICAO Annex 11, Item 2.22.*

b. the departure procedures must be conventional (non-RNAV) up to a conventional fix (or a minimum altitude). Beyond that fix (or minimum altitude), a B-RNAV procedure can be provided in accordance with the criteria in a); and

c. the B-RNAV portion of an arrival route must terminate at a conventional fix in accordance with the criteria given in a) and b). Beyond that fix, the arrival shall be completed by a conventional (non-RNAV) procedure or by the provision of radar vectors; and

d. due regard must be taken of those operating procedures of the users which may affect system performance. Examples include, but are not limited to, initial position fixing on the runway and minimum automatic flight control system (AFCS) engagement altitudes; and

e. arrival and departure procedures, which can be flown by B-RNAV equipment, shall be identified explicitly as approved for application of B-RNAV.

ENR 1.8.5.3.3 State aircraft

(A11 – Chapter 3)

ATC procedures for State aircraft not equipped with RNAV but having a navigation accuracy meeting RNP 5

Within TMA-s, State aircraft may only be routed via the RNAV terminal area procedures if they are equipped with the appropriate RNAV equipment (ICAO Doc 7030, EUR, Item 4.1.1.5.2 and ENR 1.8.5.5.2 apply).

For such aircraft operating en route, the following procedures apply:

a. State aircraft should be routed via VOR/DME-defined ATS routes; or

b. if no such routes are available, State aircraft should be routed via conventional navigation aids, i.e. VOR/DME.

Note. - *State aircraft routed in accordance with a) or b) may require continuous radar monitoring by the ATC unit concerned.*

When the above procedures cannot be applied, the ATC unit shall provide State aircraft with radar vectors until the aircraft is capable of resuming its own navigation.

ENR 1.8.5.4 RVSM procedures

ENR 1.8.5.4.1 General

Except for operations within the airspace designated in accordance with ICAO Doc 7030, EUR, Item 9.7.1.1, only RVSM-approved aircraft and non-RVSM-approved State aircraft shall be issued an ATC clearance into RVSM airspace.

ATC clearance into RVSM airspace shall not be issued to formation flights of civil aircraft.

ENR 1.8.5.5 ATS coordination

ENR 1.8.5.5.1 Between units providing area control services

(P-ATM – Chapter 10)

If a flight should enter an adjacent area, information concerning any revision of the estimate of three minutes or more shall be forwarded to the adjacent area control center normally by telephone.

ENR 1.8.5.5.2 RNAV

(P-ATM – Chapter 11)

Aircraft experiencing degradation or failure of RNAV - computer-assisted coordination of estimate

In the case of automated messages not containing the information provided in Item 18 of the flight plan, the sending ATC unit shall inform the receiving ATC unit by supplementing the ACT message verbally with the phrase “RNAV OUT OF SERVICE” after the call sign of the aircraft concerned.

Aircraft experiencing degradation or failure of RNAV - verbal coordination of estimate

When a verbal coordination process is being used, the sending ATC unit shall include the phrase “RNAV OUT OF SERVICE” at the end of the message.

State aircraft not equipped with RNAV — computer-assisted coordination of estimate

In the case of automated messages not containing the information provided in Item 18 of the flight plan, the sending ATC unit shall inform the receiving ATC unit by supplementing the ACT message verbally with the phrase “NEGATIVE-RNAV” after the call sign of the aircraft concerned.

State aircraft not equipped with RNAV — verbal coordination of estimate

When a verbal coordination process is being used, the sending ATC unit shall include the phrase “NEGATIVE-RNAV” at the end of the message.

ENR 1.8.5.5.3 RVSM

If the receiving unit has not received a flight plan, the sending ATC unit shall verbally inform the receiving unit whether or not the aircraft is RVSM-approved.

When an automated message does not contain the information filed in Item 18 of the flight plan relevant to RVSM operations, the sending ATC unit shall inform the receiving unit of that information by supplementing the ACT message verbally, using the term “NEGATIVE RVSM” or “NEGATIVE RVSM STATE AIRCRAFT”, as applicable.

When a verbal coordination process is being used, the sending ATC unit shall include the information filed in Item 18 of the flight plan relevant to RVSM operations at the end of the verbal estimate message, using the term “NEGATIVE RVSM” or “NEGATIVE RVSM STATE AIRCRAFT”, as applicable.

When a single aircraft is experiencing an in-flight contingency that impacts on RVSM operations, the associated coordination message(s) shall be supplemented verbally by a description of the cause of the contingency.

ENR 1.8.5.6 ATS messages

ENR 1.8.5.6.1 Computer-assisted coordination

(P-ATM – Chapter 10)

ENR 2 AIR TRAFFIC SERVICES AIRSPACE

ENR 2.1 FIR, UIR, TMA AND CTA

ENR 2.1.1. ZAGREB FIR/UIR

Name Lateral limits Vertical limits Class of airspace	Unit providing service	Call sign Languages Area and conditions of use Hours of service	Frequency / Purpose	Remarks
1	2	3	4	5
ZAGREB FIR/UIR 4212N 01836E - 4125N 01819E - 4221N 01621E - along on arc of circle of 5 NM radius, clockwise centred on 4224N 01616E - 4226N 01610E - 4330N 01430E - 4432N 01320E - 4510N 01300E - 4518N 01300E - 453329N 0132314E - along the FIR BDRY ZAGREB/ LJUBLJANA to 452833N 0133505E - along the FIR BDRY ZAGREB/ LJUBLJANA - along the FIR BDRY ZAGREB/ BUDAPEST - along the FIR BDRY ZAGREB/ BEOGRAD - along the FIR BDRY ZAGREB/ SARAJEVO - along the FIR BDRY ZAGREB/ BEOGRAD to 4212N 01836E. Upper limit: UNL Lower limit: GND *Note: Portion between the points 453329N 0132314E and 452833N 0133505E not yet defined, and is subject to negotiations.*	ZAGREB ACC	ZAGREB CONTROL / ZAGREB RADAR EN, HR		Nil
		H24	122.53 MHZ / 8.33 CH	
		H24	126.635 MHZ / 8.33 CH	
		H24	127.11 MHZ / 8.33 CH	
		H24	124.375 MHZ	
		H24	125.78 MHZ / 8.33 CH	
		H24	132.34 MHZ 8.33 CH	
		H24	133.635 MHZ / 8.33 CH	
		H24	136.3 MHZ	
		H24	129.65 MHZ	
		H24	132.125 MHZ	
		H24	129.425 MHZ / ALTN FREQ	
		H24	130.215MHZ / 8.33 CH	
		H24	135.8 MHZ	
		H24	122.575 MHZ	
		H24	128.275 MHZ	
		H24	131.275 MHZ	
		H24	339.175 MHZ / UHF FREQ FOR STATE AIRCRAFT	
		H24	121.5 MHZ / EMERG FREQ	
		H24	243.0 MHZ / EMERG FREQ	
		H24	123.1 MHZ / SAR	
		H24	292.6 MHZ / MILITARY	
		H24	266.075 MHZ / MILITARY	
		H24	125.225 MHZ	
		H24	127.365 MHZ / 8.33 CH	
		H24	127.875 MHZ	
	ZAGREB FIC	ZAGREB INFORMATION EN, HR H24	135.05 MHZ / FIC	

ENR 2.1.2. CONTROL AREA (CTA) ZAGREB

Name Lateral limits Vertical limits Class of airspace	Unit providing service	Call sign Languages Area and conditions of use Hours of service	Frequency / Purpose	Remarks
1	2	3	4	5
CONTROL AREA ZAGREB CTA ZAGREB covers the airspace within the following limits: Lateral: FIR Zagreb (See remarks) Vertical: • Upper limit: FL 660 • Lower limit: 1000 FT AGL (Outside TCAs nad CTRs) CLASS OF AIRSPACE OUTSIDE OTHER REGULATED AIRSPACE: • C - above FL 115 • D - BTN FL 115 and 1000 FT AGL **UNCONTROLLED AIRSPACE** UNCONTROLLED AIRSPACE covers the airspace within the following limits: Lateral: FIR Zagreb Vertical: Above FL 660 unclassified	ZAGREB ACC	ZAGREB CONTROL / ZAGREB RADAR EN, HR H24		RVSM airspace: FL 290 - FL 410 both inclusive *The airspace where the ATS has been delegated to both Padova and Brindisi ACCs is classified according to Italian classification for the rest of the route segments. See route description - ENR 3* Outside notified hours of operation of aerodrome control tower, airspace classification of the associated control zone reverts to the classification of surrounding airspace (Uncontrolled Airspace and TMA) within which the control zone is established unless otherwise promulgated in AIP AD 2.17.
Upper limit: 1000 FT AGL Lower limit: GND Class of airspace: G (with exemption of CTRs)				

ENR 3 ATS ROUTES

ENR 3.1 LOWER ATS ROUTES

Route Designator {RNAV Type}	[Route Usage Notes]								
Significant Point Name	Significant Point Coordinates								Remarks
{RNAV Type}	Track MAG	Dist (NM)	(COP)	Upper limit / Lower limit	MOCA	Lateral limits (NM)	Direction of crusing levels ↓	Direction of crusing levels ↑	Controlling unit {Airspace classification} Remarks
A48									
▲ CRAYE (FIR BDRY)	413010N 0180745E								For continuation see AIP Italy.
(RNAV 5)	002° 183°	26.0NM		FL 305 6000 FT ALT	6000 FT ALT	10NM	Even(2)	Odd(1)	(1) NONFUA (2) NONFUA ATS has been temporary delegated to Brindisi ACC
▲ BEVIS TCP	415558N 0181140E								
(RNAV 5)	002° 182°	20.4NM		FL 205 6000 FT ALT	6000 FT ALT	10NM	Even(4)	Odd(3)	{Class D/C} (3) NONFUA (4) NONFUA
△ RIGVA	421614N 0181422E								
(RNAV 5)	002° 182°	17.1NM		FL 205 6000 FT ALT	6000 FT ALT	10NM	Even(6)	Odd(5)	{Class D/C} (5) NONFUA (6) NONFUA
△ DUBROVNIK VOR/DME (DBK)	423313.84N 0181638.79E								
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Dubrovnik APP 123.6 MHZ									

Route Designator {RNAV Type}	[Route Usage Notes]								
Significant Point Name	Significant Point Coordinates								Remarks
{RNAV Type}	Track MAG	Dist (NM)	(COP)	Upper limit / Lower limit	MOCA	Lateral limits (NM)	Direction of crusing levels ↓	Direction of crusing levels ↑	Controlling unit {Airspace classification} Remarks
A482									
▲ LOKDI (FIR BDRY)	412942N 0182022E								For continuation see AIP Serbia and Montenegro.
(RNAV 5)	269°/ 089°	9.5NM		FL 305 6000 FT ALT	6000 FT ALT	10NM	Even(2)	Odd(1)	(1) NONFUA (2) NONFUA ATS has been temporary delegated to Brindisi ACC.
▲ CRAYE (FIR BDRY)	413010N 0180745E								For continuation see AIP Italy.

ENR 3.3 AREA NAVIGATION ROUTES

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
L5					
▲ VAPUP (FIR BDRY)	430321N 0151220E				For continuation see AIP Italy.
(RNAV 5)	55.0 NM	FL 205 5000 FT ALT	Odd(1)		{Class D/C} (1) NONFUA
△ SPLIT VOR/DME (SPL)	432947.69N 0161817.00E				
(RNAV 5)	26.8 NM	FL 205 9000 FT ALT	Odd(2)		{Class C} (2) NONFUA
▲ REMPI (FIR BDRY)	434412N 0164922E				For continuation see AIP Bosnia and Herzegovina.
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Split APP 120.875 MHZ					

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
L187					
△ TIBRI TCP	422438N 0183315E				
(RNAV 5)	4.1 NM	FL 205 9000 FT ALT	Even	Odd	
△ MOKUN (FIR BDRY)	422701N 0182848E				For continuation see AIP Serbia and Montenegro
(RNAV 5)	10.92 NM	FL 205 9000 FT ALT	Even(2)	Odd(1)	{Class D/C} (1) NONFUA (2) NONFUA
△ DUBROVNIK VOR/DME (DBK)	423313.84N 0181638.79E				
(RNAV 5)	3.2 NM	FL 205 9000 FT ALT	Even(4)	Odd(3)	{Class D/C} (3) NONFUA (4) NONFUA
△ MADOS (FIR BDRY)	423609N 0181457E				For continuation see AIP Bosnia and Herzegovina.
△ TEBLI (FIR BDRY)	451205N 0164033E				For continuation see AIP Bosnia and Herzegovina.
(RNAV 5)	44.5 NM	FL 205 6000 FT ALT	Even(6)	Odd(5)	{Class D/C} (5) NONFUA (6) NONFUA
△ ZAGREB VOR/DME (ZAG)	455344.01N 0161824.11E				
(RNAV 5)	29.0 NM	FL 205 6000 FT ALT	Even(7)		{Class C} (7) NONFUA
△ OBUTI (FIR BDRY)	462242N 0161627E				For continuation see AIP Slovenia.
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Zagreb APP 120.7 MHZ; Dubrovnik APP 123.6 MHZ					

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
L604					
△ NOVLO (FIR BDRY)	451346N 0165711E				For continuation see AIP Bosnia and Herzegovina.
(RNAV 5)	48.4 NM	FL 205 6000 FT ALT	Even(1)		{Class D/C} (1) NONFUA
△ ZAGREB VOR/DME (ZAG)	455344.01N 0161824.11E				
(RNAV 5)	28.4 NM	FL 205 6000 FT ALT	Even(3)	Odd(2)	{Class D/C} (2) NONFUA (3) NONFUA
△ PETOV (FIR BDRY)	461835N 0155834E				For continuation see AIP Slovenia.
Route remarks: Controlling unit(s): Zagreb ACC 125.78 MHZ; Zagreb APP 120.7 MHZ					

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
L607					
△ DUBROVNIK VOR/DME (DBK)	423313.84N 0181638.79E				
(RNAV 5)	38.7 NM	FL 205 7000 FT ALT	Even(2)	Odd(1)	{Class D/C} (1) NONFUA (2) NONFUA
△ NERRA	425419N 0173236E				
(RNAV 5)	12.1 NM	FL 205 8000 FT ALT	Even(4)	Odd(3)	{Class C} (3) NONFUA (4) NONFUA
△ TIKSA	430103N 0171852E				
(RNAV 5)	12.8 NM	FL 205 8000 FT ALT	Even(6)	Odd(5)	{Class C} (5) NONFUA (6) NONFUA
△ SIPAL	430812N 0170425E				
(RNAV 5)	40.0 NM	FL 205 8000 FT ALT	Even(8)	Odd(7)	{Class C} (7) NONFUA (8) NONFUA
△ SPLIT VOR/DME (SPL)	432947.69N 0161817.00E				
(RNAV 5)	54.4 NM	FL 205 5000 FT ALT	Even(10)	Odd(9)	{Class D/C} (9) NONFUA (10) NONFUA
△ ZADAR VOR/DME (ZDA)	440543.16N 0152151.22E				
(RNAV 5)	34.0 NM	FL 205 8000 FT ALT	Even(12)	Odd(11)	{Class D/C} (11) NONFUA (12) NONFUA
△ RAVNA	443149N 0145130E				
(RNAV 5)	13.6 NM	FL 205 8000 FT ALT	Even(14)	Odd(13)	{Class D/C} (13) NONFUA (14) NONFUA
△ ULPIN	444213N 0143914E				
(RNAV 5)	15.7 NM	FL 205 4000 FT ALT	Even(16)	Odd(15)	{Class D/C} (15) NONFUA (16) NONFUA
△ CRES NDB (CRE)	445410.37N 0142459.57E				
(RNAV 5)	35.2 NM	FL 205 7000 FT ALT	Even(18)	Odd(17)	{Class D/C} (17) NONFUA (18) NONFUA
△ GEMKA (FIR BDRY)	452813N 0141215E				For continuation see AIP Slovenia.

Route remarks:
Controlling unit(s): Zagreb ACC 135.8 MHZ; Dubrovnik APP 123.6 MHZ; Pula APP 124.6 MHZ; Split APP 120.875 MHZ; Zadar APP 128.525 MHZ

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
L611					
△ KOFER TCP	415538N 0183949E				
(RNAV 5)	8.0 NM	FL 205 5000 FT ALT	Even		
△ VAKSU (FIR BDRY)	420051N 0183137E				For continuation see AIP Serbia and Montenegro.
(RNAV 5)	33.1 NM	FL 205 5000 FT ALT	Even(1)		{Class D/C} (1) NONFUA
△ LOKRU	422055N 0175608E				
(RNAV 5)	19.5 NM	FL 205 5000 FT ALT	Even(2)		{Class D/C} (2) NONFUA
△ AMUGO	423239N 0173502E				
(RNAV 5)	24.0 NM	FL 205 5000 FT ALT	Even(3)		{Class D/C} (3) NONFUA
△ LASDU	424701N 0170854E				
(RNAV 5)	33.2 NM	FL 205 5000 FT ALT	Even(4)		{Class D/C} (4) NONFUA
△ UVODI	430639N 0163231E				
(RNAV 5)	41.8 NM	FL 205 5000 FT ALT	Even(5)		{Class D/C} (5) NONFUA
△ UMSON	433109N 0154603E				
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Dubrovnik APP 123.6 MHZ; Split APP 120.875 MHZ					

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
L614					
△ SONIK (FIR BDRY)	442654N 0160836E				For continuation see AIP Bosnia and Herzegovina.
(RNAV 5)	27.3 NM	FL 205 9000 FT ALT		Odd(1)	{Class D/C} (1) NONFUA Unsatisfactory PUL VOR/DME coverage below FL 120.
△ PALEZ	443430N 0153159E				
(RNAV 5)	20.8 NM	FL 205 8000 FT ALT		Odd(2)	{Class D/C} (2) NONFUA
△ KUDUL	444011N 0150355E				
(RNAV 5)	50.8 NM	FL 205 8000 FT ALT		Odd(3)	{Class D/C} (3) NONFUA
△ PULA VOR/DME (PUL)	445332.52N 0135505.23E				
(RNAV 5)	35.7 NM	FL 205 5000 FT ALT	Even(4)	Odd(5)	{Class D/C} (4) NONFUA (5) NONFUA
▲ LABIN (FIR BDRY)	445909N 0130529E				For continuation see AIP Italy.
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Pula APP 124.6 MHZ					

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
L863					
▲ SIVLA (FIR BDRY)	450607N 0182254E				For continuation see AIP Bosnia and Herzegovina.
(RNAV 5)	65.0 NM	FL 205 6000 FT ALT	Even(1)		{Class D/C} (1) NONFUA
△ BARNA VOR/DME (VBA)	454452.08N 0170848.29E				
Route remarks: Controlling unit(s): Zagreb ACC 125.78 MHZ					

Route Designator {RNAV Type}	**[Route Usage Notes]**				
Significant Point Name	**Significant Point Coordinates**				**Remarks**
{RNAV Type}	**Dist (NM)**	**Upper limit / Lower limit**	**Direction of cruising levels** ↓	**Direction of cruising levels** ↑	**Controlling unit {Airspace classification} Remarks**
L868					
△ ZADAR VOR/DME (ZDA)	440543.16N 0152151.22E				
(RNAV 5)	58.6 NM	FL 205 8000 FT ALT	Even(2)	Odd(1)	{Class D/C} (1) NONFUA (2) NONFUA Unsatisfactory ZDA VOR/DME coverage below FL120.
△ GISER	450342N 0151026E				
(RNAV 5)	6.4 NM	FL 205 8000 FT ALT	Even(4)	Odd(3)	{Class D/C} (3) NONFUA (4) NONFUA
△ KULEN	450955N 0150801E				
(RNAV 5)	20.5 NM	FL 205 8000 FT ALT	Even(6)	Odd(5)	{Class D/C} (5) NONFUA (6) NONFUA
△ DARZA (FIR BDRY)	452942N 0150026E				For continuation see AIP Slovenia.
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Zadar APP 128.525 MHZ Unsatisfactory ZDA VOR/DME coverage below FL120					

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
M169					
▲ KATTI (FIR BDRY)	423028N 0160256E				For continuation see AIP Italy.
(RNAV 5)	51.1NM	FL 205 5000 FT ALT	Odd(2)	Even(1)	{Class D/C} (1) NONFUA (2) NONFUA
△ ORAKA	423213N 0171202E				
(RNAV 5)	17.0NM	FL 205 5000 FT ALT	Odd(4)	Even(3)	{Class D/C} (3) NONFUA (4) NONFUA
△ AMUGO	423239N 0173502E				
(RNAV 5)	30.8NM	FL 205 6000 FT ALT	Odd(6)	Even(5)	{Class D/C} (5) NONFUA (6) NONFUA
△ DUBROVNIK VOR/DME (DBK)	423313.84N 0181638.79E				
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Dubrovnik APP 123.6 MHZ					

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
M178					
▲ NIKOL (FIR BDRY)	441319N 0134110E				For continuation see AIP Italy.
(RNAV 5)	41.4 NM	FL 205 5000 FT ALT	Even(2)	Odd(1)	{Class D/C} (1) NONFUA (2) NONFUA
△ PULA VOR/DME (PUL)	445332.52N 0135505.23E				
(RNAV 5)	36.2 NM	FL 205 7000 FT ALT	Even(3)	Odd(4)	{Class D/C} (3) NONFUA (4) NONFUA
△ GIRDA (FIR BDRY)	452832N 0140802E				For continuation see AIP Slovenia.
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Pula APP 124.6 MHZ					

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
P735					
△ PEROT (FIR BDRY)	452402N 0190046E				For continuation see AIP Serbia and Montenegro.
(RNAV 5)	20.6NM	FL 205 5000 FT ALT		Odd(1)	{Class D/C} (1) NONFUA
△ CEPIN L (CE)	453142.33N 0183336.18E				
(RNAV 5)	20.0NM	FL 205 5000 FT ALT	Even(3)	Odd(2)	{Class D/C} (2) NONFUA (3) NONFUA
△ LAKIK	453608N 0180551E				
(RNAV 5)	40.9NM	FL 205 5000 FT ALT	Even(5)	Odd(4)	{Class D/C} (4) NONFUA (5) NONFUA
△ BARNA VOR/DME (VBA)	454452.08N 0170848.29E				
(RNAV 5)	36.3NM	FL 205 5000 FT ALT	Even(7)	Odd(6)	{Class C} (6) NONFUA (7) NONFUA
△ ZAGREB VOR/DME (ZAG)	455344.01N 0161824.11E				
(RNAV 5)	25.7NM	FL 205 8000 FT ALT	Even(9)	Odd(8)	{Class C} (8) NONFUA (9) NONFUA
△ MAGAM (FIR BDRY)	455822N 0154211E				For continuation see AIP Slovenia.
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Zagreb APP 120.7 MHZ; Osijek APP 118.8 MHZ					

Route Designator {RNAV Type}	[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates				Remarks
{RNAV Type}	Dist (NM)	Upper limit / Lower limit	Direction of cruising levels ↓	Direction of cruising levels ↑	Controlling unit {Airspace classification} Remarks
P748					
▲ AIOSA (FIR BDRY)	415542N 0171454E				For continuation see AIP Italy.
(RNAV 5)	39.7NM	FL 205 5000 FT ALT	Even(2)	Odd(1)	{Class D/C} (1) NONFUA (2) NONFUA
△ LOKRU	422055N 0175608E				
(RNAV 5)	19.6NM	FL 205 6000 FT ALT	Even(4)	Odd(3)	{Class D/C} (3) NONFUA (4) NONFUA
△ DUBROVNIK VOR/DME (DBK)	423313.84N 0181638.79E				
Route remarks: Controlling unit(s): Zagreb ACC 135.8 MHZ; Dubrovnik APP 123.6 MHZ					

ENR 4 RADIO NAVIGATION AIDS/SYSTEMS

ENR 4.1 RADIO NAVIGATION AIDS - EN-ROUTE

Name of station (VOR/VAR)	ID	Frequency (CH)	Hours of operation	Coordinates	ELEV DME antenna	Remarks
1	2	3	4	5	6	7
BARNA VOR/DME (4°E/2019)	VBA	117.4 MHZ (CH 121X)	H24	454452.08N 0170848.29E	576 FT	Coverage 80 NM, except in QDR 114°-159°. Unsatisfactory DME power density due to terrain (Flight profile: Orbit flight, radius 40NM, 5000FT QNH). FRA (AD): LDZA; FRA (I)
BRAC DME	BRC	(CH 101Y)	H24	431656.93N 0163720.83E	2564 FT	Coverage 80 NM
CEPIN L	CE	372 KHZ	H24	453142.33N 0183336.18E		Coverage 25 NM
CRES NDB	CRE	433 KHZ	H24	445410.37N 0142459.57E		Coverage 50 NM FRA (A): LDLO, LDRI; FRA (D): LDLO, LDPL, LDRI; FRA (I)
DUBROVNIK VOR/DME (4°E/2019)	DBK	115.4 MHZ (CH101X)	H24	423313.84N 0181638.79E	550 FT	MRA at 40 NM: QDR 179°- 300° 3000 FT. Coverage 80 NM - unusable between QDR 057°- 073° FRA (I)
JAPETIC DME	JAP	(CH 123Y)	H24	454440.18N 0153629.45E	2927 FT	Coverage 80 NM
LOSINJ DME	LSJ	(CH 21Y)	H24	443057.23N 0142927.66E	722 FT	Coverage 80 NM
LOSINJ NDB	LOS	429 KHZ	H24	443137.55N 0142822.25E		Range 50 NM FRA (A): LDPL, LDRI, LDZD; FRA (D): LDPL; FRA (I)
LUKAVEC DME	LUK	(CH35Y)	H24	454125.96N 0155932.90E	471 FT	Coverage 80 NM, except for reduced coverage between QDR 341°-357°
OSIJEK DME	KLS	(CH 30Y)	H24	452758.26N 0184732.16E	314 FT	Coverage 80 NM
LOSINJ VOR/DME (4° E/2019)	NTL	117.350 FT (CH 120Y)	H24	443359.44N 0142327.79E	190 FT	Coverage 80 NM, except between QDR 330°-120° where coverage is 40 NM. MRA at 40 NM: QDR 020°-120° 10000 FT QDR 120°-330° 5000 FT QDR 330°-020° 12000 FT

Name of station (VOR/VAR)	ID	Frequency (CH)	Hours of operation	Coordinates	ELEV DME antenna	Remarks
1	2	3	4	5	6	7
PISAROVINA NDB	PIS	424 KHZ	H24	453618.10N 0155038.39E		Coverage 50 NM, except between QDR 339°-049° where coverage is 40 NM
PULA VOR/DME (4°E/2019)	PUL	111.25 MHZ (CH 49Y)	H24	445332.52N 0135505.23E	215 FT	Coverage 100 NM except in QDR 309°-024°: Unsatisfactory VOR/DME PUL power density due to terrain (Flight profile: orbit flight, radius 40 NM, 3000 FT to 6500 FT QNH). FRA (A): LDLO, LDPL, LDRI; FRA (D): LDLO, LDRI; FRA (I)
RIJEKA VOR/DME (4°E/2019)	RJK	117.8 MHZ (CH 125X)	H24	451326.84N 0143401.06E	360 FT	Coverage 60 NM FRA (D): LDPL; FRA (I)
SALI NDB	SAL	421 KHZ	H24	435616.30N 0151005.19E		Coverage 30 NM FRA(A,D):LDSP; FRA (D): LDZD; FRA (I)
SPLIT VOR/DME (4°E/2019)	SPL	115.7 MHZ (CH 104X)	H24	432947.69N 0161817.00E	734 FT	Coverage 100 NM FRA (A) LDSB, LDZD; FRA (D): LDSB, LDSP, LDZD; FRA (I)
SPLIT DME	IST	(CH42X)	H24	433157.61N 0161720.86E	133 FT	Coverage 75 NM
TOUNJ NDB	TNJ	316 KHZ	H24	451453.23N 0152101.26E		Coverage 21 NM Military use.
VRSAR NDB	VRS	369 KHZ	H24	451236.66N 0133856.31E		Range 25 NM
ZADAR VOR/DME (4°E/2019)	ZDA	108.6 MHZ (CH 23X)	H24	440543.16N 0152151.22E	279 FT	Range 100 NM except in sectors QDR 334°-044° clockwise and QDR 124°-274° clockwise where coverage is reduced due to terrain FRA (D): LDSP; FRA (I)
ZAGREB VOR/DME (4°E/2019)	ZAG	113.7 MHZ (CH 84X)	H24	455344.01N 0161824.11E	420 FT	Range 100 NM FRA (D): LDZA; FRA (I)

ENR 4.4 NAME-CODE DESIGNATORS FOR SIGNIFICANT POINTS

Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
ABLAT	452326N 0133734E	P28	FRA (AD):LJPZ
ADULA	451614N 0183831E	M19, P10	LDOS SID/STAR 11/29 FRA (AD): LDOS; FRA (I)
AIOSA	415542N 0171454E	L862, P748	LDDU STAR FRA (EX) - Even FLs for all entering aircraft; Odd FLs for all exiting aircraft
ALIVO	453124N 0144421E	P151	LDRI SID 14 LDRI SID 32 FRA (D): LDRI; FRA (I) FRA(EX): 7500 ft AMSL - FL 205
AMOLU	433047N 0155458E		LDSP STAR
AMUGO	423239N 0173502E	L611, M169	LDDU SID 11 LDDU SID 29 LDDU STAR 11/29 FRA (AD): LDDU; FRA (I)
ANAKO	435129.8N 0152730.2E		STAR: LDZD RWY 31 IAP: LDZD RWY 31
ARMIX	452857N 0141604E	Y560	FRA (I) FRA (X): 7500 ft AMSL - FL 205
BABAG	452313N 0130737E	N606	
BAMRO	432112N 0163648E		LDSP SID
BAPEK	453820.0N 0155439.7E		LDZA IAP 04
BAREB	454446N 0182448E	P10, Q571	LDOS SID 11/29 FRA (EX) - Even FLs for all exiting aircraft; Odd FLs for all entering aircraft
BAXON	442459N 0132747E		FRA (X) - Odd FLs for all exiting aircraft
BEDOX	461558N 0154934E		FRA (I)
BEPTU	440115.0N 0154124.7E		STAR: LDZD RWY 31 IAP: LDZD RWY 31
BEVIS	415558N 0181140E	A48	LDDU SID 11 LDDU SID 29 LDDU STAR 11/29 FRA (EX) - Even FLs for all enternig aircraft, Odd FLs for all exiting aircraft
BIMSI	445542.4N 0143954.3E		LDRI IAP LDRI STAR 32

Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
BUGEV	452756N 0134624E	M167	FRA (EX): 7500 ft AMSL - FL 135
BUSET	453006N 0141327E		FRA (I)
CRAYE	413010N 0180745E	A48, A482, N138, W36	
DABAR	445556N 0151613E	L862, P11	FRA (I)
DAFRO	431226.9N 0163616.5E		LDSB IAP
DARZA	452942N 0150026E	L868	FRA (AD): LJLJ; FRA (I) FRA (EX): 7500 ft AMSL - FL 205
DEPET	444044N 0155810E	N748	FRA (I)
DEVUL	450749N 0162628E		FRA (I)
DEXIS	432647.7N 0160757.0E		LDSP IAP
DIDEX	455147.3N 0161508.0E		LDZA IAP 22
DIGOT	442324N 0154004E	L862, N748	FRA (I)
DINKO	440133.9N 0151632.0E		IAP: LDZD RWY 04
DIXUM	432945N 0171158E		FRA (I)
DOPUT	424410N 0175357E		LDDU SID 29
EBITA	442306N 0144609E	N606	LDLO SID/STAR/IAP FRA (AD): LDLO; FRA (I)
EDADI	435500.1N 0152257.8E		STAR: LDZD RWY 13 IAP: LDZD RWY 13
EDUGI	434727.78N 0141020.30E		FRA (X)
EKSON	453227.7N 0154548.4E		LDZA IAP 04 LDZA STAR 04
ELGUS	433252N 0145800E	M730, N748,	STAR: LDZD RWY 04, LDZD RWY 13, LDZD RWY 31 FRA (A) LDZD; FRA (I)
ERASO	423345.7N 0175547.1E		LDDU IAP LDDU STAR 11
EVINI	450112N 0145854E	M986	FRA (I)
EVUGA	431541.3N 0162030.1E		LDSP IAP LDSP STAR 23

Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
GAPRI	434141N 0154801E		LDSP SID/STAR
GEKSI	445311.7N 0133706.9E		LDPL IAP LDPL STAR 09
GELKO	445321.7N 0134408.5E		LDPL IAP
GEMKA	452813N 0141215E	L607	LDPL SID/STAR FRA (AD): LDPL; FRA (I) FRA (EX): 7500 ft AMSL - FL 205
GIRDA	452832N 0140802E	M178	LDPL SID/STAR LDRI STAR 14 LDRI STAR 32 FRA (AD): LDPL; FRA (A): LDRI, FRA (I) FRA (EX): 7500 ft AMSL - FL 205
GISAM	415507N 0174531E	N138	FRA (EX) - Even FLs for all entering aircraft; Odd FLs for all exiting aircraft
GISER	450342N 0151026E	L862, L868	FRA (I)
GODLA	454142.4N 0154308.3E		LDZA IAP 04 LDZA STAR 04
GORPA	454623N 0152112E		FRA (A): LJLJ; FRA (I)
GOTRI	431811.7N 0160821.4E		LDSP IAP LDSP STAR 05
GUBOK	450241N 0175142E	N131, Q571	FRA (I)
IBENI	440051N 0135518E	M986	FRA (E) - Even FLs for all entering aircraft
IDNUM	432307.4N 0160358.2E		LDSP IAP
IRBUL	432917.5N 0155638.4E		LDSP IAP LDSP STAR 05
IPKIS	442206N 0141803E	M986	LDLO SID/STAR FRA (AD): LDLO; FRA (I)
IRDAX	452103.8N 0143157.0E		LDRI IAP LDRI STAR 14
IXONA	445044N 0133256E		FRA (I)
KATTI	423028N 0160256E	M169	FRA (EX) - Odd FLs for all entering aircraft, Even FLs for all exiting aircraft
KEMIX	431842N 0155527E		LDSP IAP LDSP SID LDSP STAR
KENEM	433800N 0165648E	Y88	LDSP SID 05 LDSP STAR 05 LDSP STAR 23 FRA (AD): LDSP; FRA (I)

Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
KOFER	415538N 0183949E	L611	FRA (D): LYTV; FRA (I)
KONAS	450012.5N 0133646.7E		LDPL IAP LDPL STAR 09
KONUV	422609N 0182612E		FRA (I)
KOPRY	461425N 0165746E	M986	LDZA SID 04/22 FRA (EX) - Even FLs for all entering aircraft, Odd FLs for all exiting aircraft
KOREX	444616N 0154609E	L615	FRA (I)
KOTOR	452628N 0153420E	M986, T742	LDZA SID/STAR 04/22 FRA (AD): LDZA; FRA (I)
KUDUL	444011N 0150355E	L614	STAR: LDZD RWY 04, LDZD RWY 13/31 FRA (A): LDZD; FRA (I)
KULEN	450955N 0150801E	L868, M986, W45	LDPL STAR 09/27 LDRI STAR 14/32 FRA (A): LDPL, LDRI; FRA (I)
KUSIB	450853N 0162818E		FRA (I)
KUTIG	452605.5N 0183035.9E		LDOS IAP 11 LDOS STAR 11
LABIN	445909N 0130529E	L614	LDPL SID/STAR FRA (EX) - Odd FLs for all entering aircraft, Even FLs for all exiting aircraft
LAKIK	453608N 0180551E	P735, Q571	LDOS STAR 11 LDOS SID 29 FRA (AD): LDOS; FRA (I)
LANIR	444700.8N 0141626.9E		LDPL IAP LDPL STAR 27
LAPOV	450015N 0190544E	B54	
LASDU	424701N 0170854E	L611	LDDU SID 29 FRA (D): LDDU; FRA (I)
LASUL	432035N 0161256E		LDSP IAP LDSP STAR 23
LEBDI	441303.8N 0151152.9E		IAP: LDZD RWY 13
LEVPA	435957.9N 0152937.4E		IAP: LDZD RWY 31
LOKDI	412942N 0182022E	A482	
LOKRU	422055N 0175608E	L611, P748	LDDU SID 11 LDDU SID 29 LDDU STAR 11/29 FRA (D): LDDU; FRA (I)
LORVI	452948.1N 0184050.9E		LDOS IAP 11

Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
LUKAV	442126N 0150027E		STAR: LDZD RWY 13 IAP: LDZD RWY 13
LULUD	455033.13N 0154059.73E		LDZA STAR FRA (A): LDZA FRA (X): 7500 FT AMSL - FL 205
LURID	450806N 0172358E	L603	FRA (I)
MADOS	423609N 0181457E	L187	LDDU SID 11 LDDU SID 29 FRA (D): LDDU FRA (I)
MAGAM	455822N 0154211E	P735	FRA (AD): LJLJ; FRA (I) FRA (EX): 7500 ft AMSL - FL 205
MINTU	442024N 0144144E	W45	LDLO SID/STAR/IAP STAR: LDZD RWY 04, LDZD RWY 13/31 FRA (A): LDLO, LDZD; FRA (D): LDLO; FRA (I)
MODMU	430848.2N 0155520.2E		LDSP STAR 05
MOKUN	422701N 0182848E	L187	LDDU SID 11 LDDU SID 29 LDDU STAR 11/29 FRA (AD): LDDU; FRA (I)
MONFA	452914N 0131645E	M859	
MOSAV	453331N 0165557E	N131	LDZA SID 04/22 FRA (D): LDZA; FRA (I)
NAKIT	451117N 0132652E	L615, T742	LDRI SID 14 LDRI SID 32 FRA (D): LDRI; FRA (I)
NASSY	452648N 0180559E	M19, Q571	LDOS STAR 11/29 FRA (A): LDOS; FRA (I)
NEDID	442620.2N 0150725.4E		IAP: LDZD RWY 13
NEGVI	452004.7N 0142652.0E		LDRI IAP
NEKIN	462425.80N 0164212.15E		LDZA STAR
NEMEK	453429N 0151753E		FRA (I)
NERRA	425419N 0173236E	L607, P10	LDDU SID 29 LDDU STAR 11/29 FRA (A): LDDU; FRA (I)
NETKO	430230N 0173942E	P10	FRA (AD): LQMO; FRA (I)
NIGDO	450102.6N 0141554.4E		LDPL IAP LDPL STAR 27

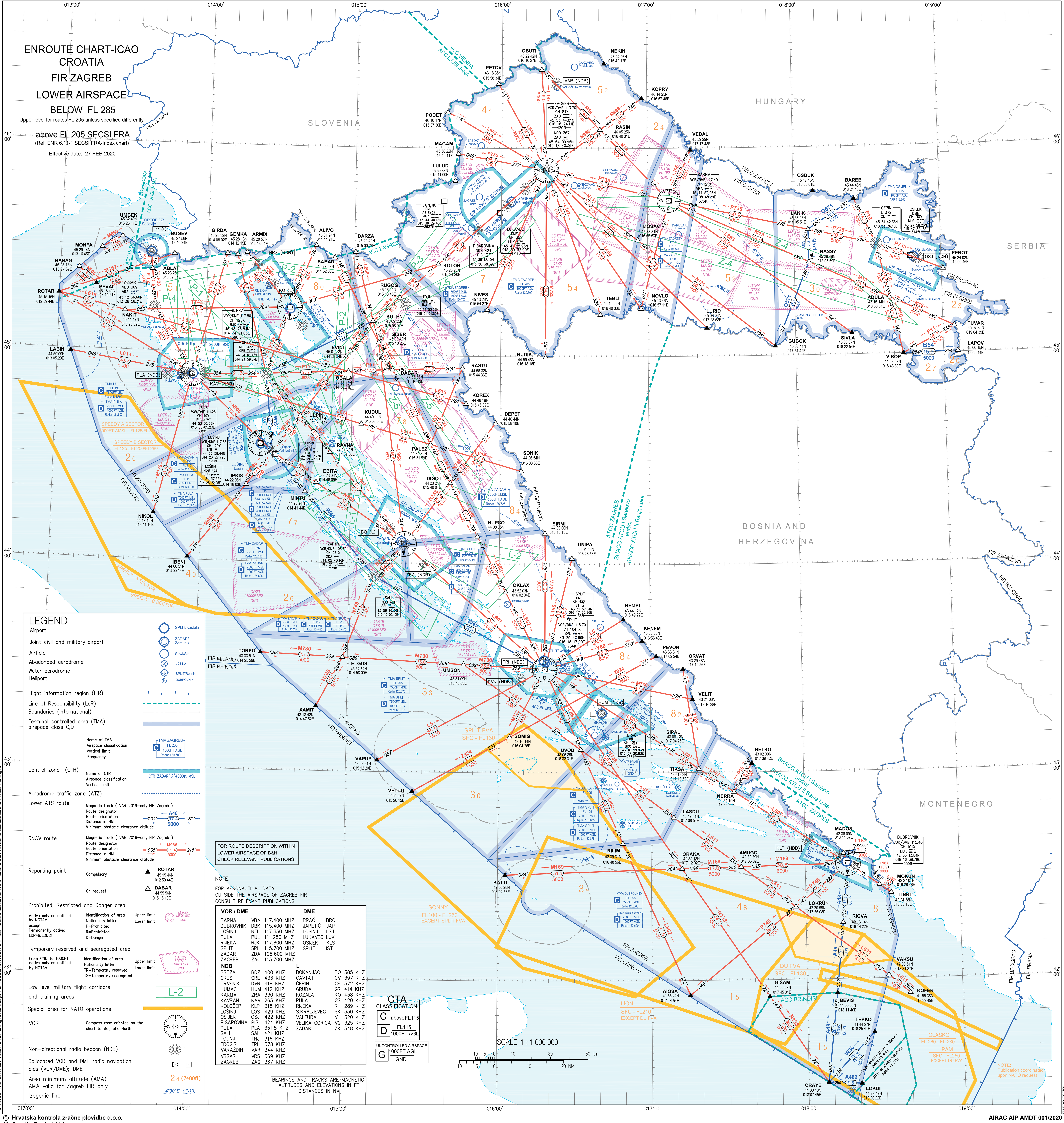
Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
NIKOL	441319N 0134110E	M178	LDLO SID/STAR FRA (E) - Even FLs for all entering aircraft
NIVES	451326N 0155427E	Y137	LDZA SID 04/22 FRA (D): LDZA; FRA (I)
NOBRU	441632.4N 0145328.9E		STAR: LDZD RWY 13 IAP: LDZD RWY 13
NOVLO	451346N 0165711E	L196, L604	FRA (I)
NUPSO	440803N 0155108E	L862	LDSP STAR 23 FRA (A): LDSP FRA (I)
NURAT	432640.8N 0162019.6E		LDSP IAP
NUSKA	450536.6N 0144154.7E		LDRI IAP
OBALA	445513N 0145821E	L615, P11	LDPL SID 27 FRA (D): LDPL; FRA (I)
OBUTI	462242N 0161627E	L187, M19	LDZA SID 04/22 FRA (A): LOWW; FRA (D): LDZA; FRA (I) FRA (EX): 4500 ft AMSL - FL 205
ODOKA	455801.1N 0161340.1E		LDZA IAP 22 LDZA STAR 22
OKLAX	435203N 0160234E	L862	LDSP STAR 05 FRA (A): LDSP; FRA (I)
OKROV	431848.1N 0154153.1E		LDSP STAR 05
OLEGU	422906.1N 0180754.0E		LDDU IAP LDDU STAR 29
ORAKA	423213N 0171202E	M169, N138	LDDU STAR 11/29 LDDU SID 29 LDSB STAR 04/22 LDSP SID 05/23 LDSP STAR 05 FRA (A): LDSB FRA (AD): LDDU, LDSP; FRA (I)
ORVAT	432948N 0171256E	Y128	FRA (I)
OSDUK	454714.91N 0180800.97E		LDOS STAR 11
OSGOL	432229N 0160332E		LDSP STAR/IAP
OSTAK	440331.0N 0150557.8E		STAR: LDZD RWY 04 IAP: LDZD RWY 04
PALEZ	443430N 0153159E	L614, L862, Y137	SID: LDZD RWY 04/22, LDZD RWY 13/31 FRA (D): LDZD; FRA (I)
PEMUD	450247.1N 0150218.3E		LDRI IAP LDRI STAR 32

Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
PEPIM	444611.0N 0133727.0E		LDPL IAP LDPL STAR 09
PERIP	430515.3N 0165031.1E		LDSB IAP LDSB STAR 04/22
PEROT	452402N 0190046E	P735	LDOS SID 11/29 FRA (D): LDOS; FRA (I)
PETOV	461835N 0155834E	L604, M725	LDZA SID/STAR 04/22 FRA (A): LDZA, LJMB; FRA (D): LJMB; FRA (I) FRA (EX): 5500 ft AMSL - FL 205
PEVAL	451841N 0131451E	N606	LDPL SID 09 LDPL SID 27 FRA (EX) - Odd FLs for all entering aircraft; Even FLs for all exiting aircraft
PEVON	433331N 0170224E	Z924	FRA (I)
PILAP	424313.8N 0175151.5E		LDDU IAP LDDU STAR 11
PIXAL	451318N 0163316E		FRA (I)
PODET	461017N 0153736E	L603	LDZA SID 04/22 FRA (D): LDZA; FRA (I) FRA (EX): 7500 ft AMSL - FL 205
RASIN	460525N 0164031E	M19, M986	LDZA SID/STAR FRA (AD): LDZA; FRA (I)
RASTU	445632N 0154436E	P11, Y137	FRA (I)
RAVNA	443149N 0145130E	L607	SID: LDZD RWY 04/22, LDZD RWY 13/31 FRA (D): LDZD; FRA(I)
REMPI	434412N 0164922E	L5	LDSP SID 05 LDSP SID 23 FRA (D): LDSP; FRA (I)
RERNA	455735.6N 0162402.7E		LDZA IAP 22 LDZA STAR 22
RIGVA	421614N 0181422E	A48	LDDU SID 11
RILIM	423931N 0164856E	L862	LDSB STAR 04/22 LDSP SID 05 LDSP STAR 05 LDSP STAR 23 FRA (A): LDSB FRA (AD): LDSP; FRA (I)
RILNO	431800N 0162121E		LDSP STAR/IAP
RIMUG	435413.2N 0152027.8E		STAR: LDZD RWY 04 IAP: LDZD RWY 04

Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
RODGO	435622.6N 0153426.9E		STAR: LDZD RWY 31 IAP: LDZD RWY 04, LDZD RWY 31
ROGOV	433113N 0154359E		LDSP SID/STAR
ROLBA	455025N 0153918E		FRA (I)
RORKA	432918.0N 0162331.0E		LDSP IAP 23 LDSP VAC
ROTAR	451546N 0125944E	L615, M167, P11	LDPL STAR LDRI STAR 14 FRA (EX) - Odd FLs for all entering aircraft, Even FLs for all exiting aircraft
RUDIK	445948N 0161818E	M725	LDZA STAR 04/22 FRA (A): LDZA; FRA (I)
RUGOG	451641N 0151845E	M986	LDRI SID 14 LDRI SID 32 FRA (D): LDRI; FRA (I)
SABAD	452757N 0145203E	L862	FRA (AD): LJLJ; FRA (I) FRA (EX): 7500 ft AMSL - FL 205
SAJLO	432005.0N 0164336.8E		LDSB IAP
SATOL	434622N 0155230E		LDSP SID
SIPAL	430812N 0170425E	L607	LDDU STAR 11 LDSB SID/STAR 04/22 LDSP SID 05 LDSP STAR 05 LDSP STAR 23 FRA (A): LDDU FRA (AD): LDSB, LDSP; FRA (I)
SIRMI	440900N 0161813E	M725	LDSP SID 05 LDSP SID 23 FRA (D): LDSP; FRA (I)
SITPA	445350.7N 0140636.9E		LDPL IAP
SIVLA	450607N 0182254E	L863	FRA (I)
SOGRA	435350.2N 0150702.6E		STAR: LDZD RWY 04 IAP: LDZD RWY 04, LDZD RWY 13, LDZD RWY 31
SOMIG	431014N 0160426E	M725, Z924	FRA (I)
SONIK	442654N 0160836E	L614	FRA (I)
SORDO	452255.7N 0141021.7E		LDRI IAP LDRI STAR 14
TAFNI	453215.6N 0155551.9E		LDZA IAP 04 LDZA STAR 04

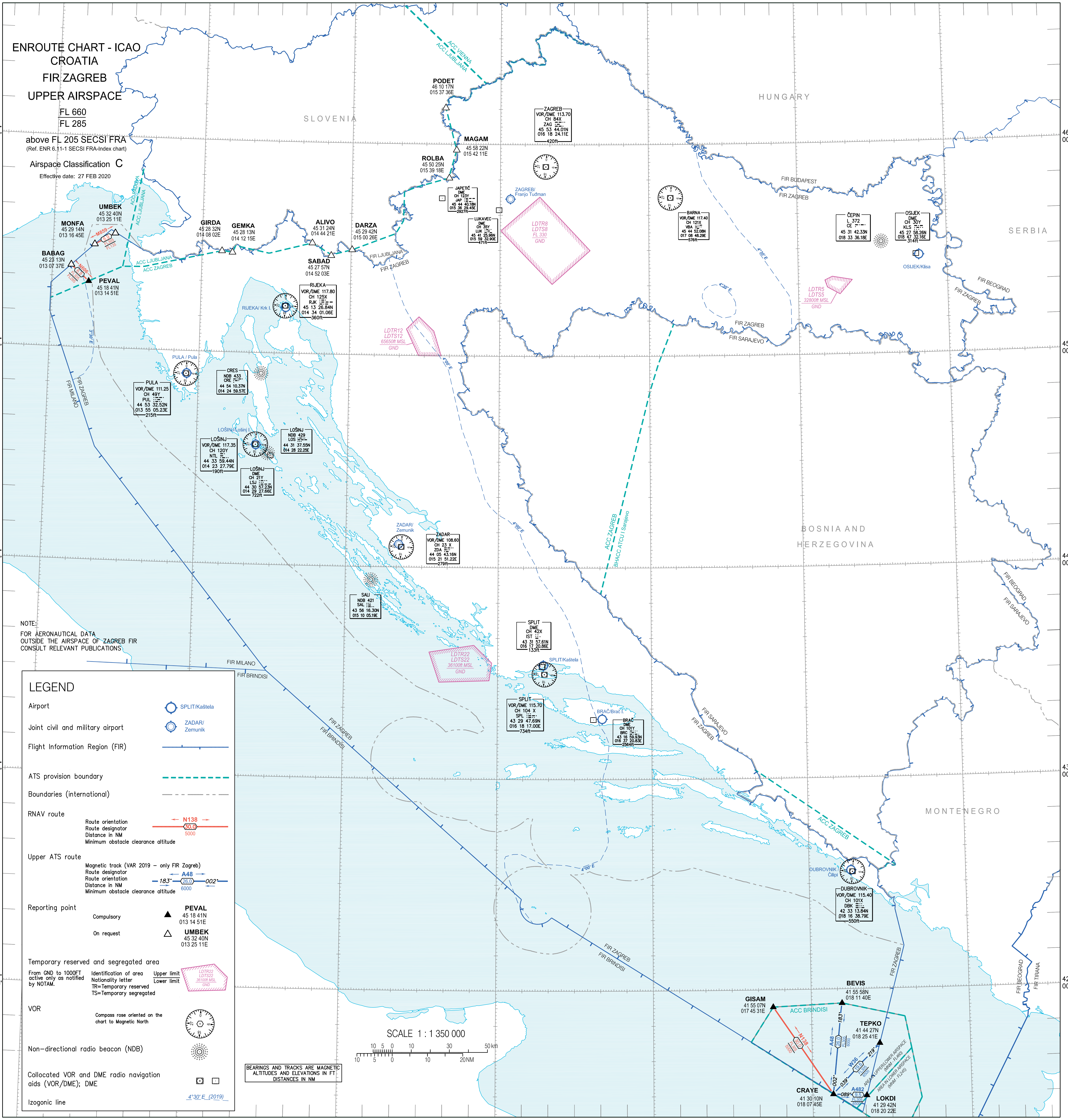
Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
TEBLI	451205N 0164033E	L187	LDZA SID/STAR 04/22 FRA (A): LDZA, LQBK; FRA (D): LQBK, LDZA; FRA (I)
TEPKO	414427N 0182541E	W36	
TIBRI	422438N 0183315E	L187	FRA (I)
TIKSA	430103N 0171852E	L607, Y128	LDDU STAR 11 FRA (A): LDDU FRA (I)
TILVO	422046N 0183327E		FRA (I)
TINBO	454903.8N 0162538.1E		LDZA IAP 22 LDZA STAR 22
TORPO	433351N 0142529E	M730	LDSP SID 05/23 LDSP STAR 05/23 FRA (EX) - Odd FLs for all entering aircraft; Even FLs for all exiting aircraft
TUPUS	451315N 0155323E		FRA (I)
TUVAR	450736N 0190439E	M19, P11	LDOS SID 11/29 LDOS STAR 29 FRA (A): LDOS; (D): LDOS/LYBE; FRA (I)
ULPIN	444213N 0143914E	L607, M986	LDLO SID/STAR FRA (AD): LDLO; FRA (I)
UMBEK	453240N 0132511E	M859	
UMSON	433109N 0154603E	L611, M730	FRA (I)
UNIPA	440146N 0162858E	L196	LDSP SID 05 LDSP SID 23 FRA (D): LDSP; FRA (I)
UVODI	430639N 0163231E	L611, L862	FRA (I)
VAKSU	420051N 0183137E	L611	FRA (I)
VANAX	460228N 0154353E		FRA (I)
VAPUP	430321N 0151220E	L5	LDSP STAR 05 LDSP STAR 23 FRA (E) - Odd FLs for all entering aircraft
VEBAL	455929N 0171748E	L196	LDZA STAR 04/22 FRA (EX) - Even FLs for all entering aircraft; Odd FLs for all exiting aircraft
VELIT	432106N 0171638E	M730	LDSP SID 05 LDSP STAR 05 LDSP STAR 23 FRA (AD): LDSP, LQMO; FRA: (I)

Name-code designator	Coordinates	ATS route or other route	Remarks
1	2	3	4
VELUG	425427N 0152615E	Z924	LDSP SID 05 LDSP SID 23 FRA (X) - Even FLs for all exiting aircraft
VIBOP	445957N 0184339E	B54, P10, P11	LDOS STAR 29 FRA (A): LDOS,LQTZ; FRA (D): LQTZ; FRA: (I)
XAMIT	431842N 0144752E	N748	FRA (X) - Odd FLs for all exiting aircraft
XOLTA	424214N 0154454E		FRA (EX) - Even FLs for all entering aircraft; Odd FLs for all exiting aircraft



VOR / DME			DME	
BARNA	VBA	117.400 MHZ	BRAČ	BRC
DUBROVNIK	DBK	115.400 MHZ	JAPETIĆ	JAP
LOŠINJ	NTL	117.350 MHZ	LOŠINJ	LSJ
PULA	PUL	111.250 MHZ	LUKAVEC	LUK
RIJEKA	RJK	117.800 MHZ	OSIJEK	KLS
SPLIT	SPL	115.700 MHZ	SPLIT	IST
ZADAR	ZDA	108.600 MHZ		
ZAGREB	ZAG	113.700 MHZ		

NDB			L		
BREZA	BRZ	400 KHZ	BOKANJAC	BO	385 KHZ
CRES	CRE	433 KHZ	CAVTAT	CV	397 KHZ
DRVENIK	DVN	418 KHZ	ČEPIN	CE	372 KHZ
HUMAC	HUM	412 KHZ	GRUDA	GR	414 KHZ
KAKMA	ZRA	330 KHZ	KOZALA	KO	438 KHZ
KAVRAN	KAV	265 KHZ	PULA	GS	420 KHZ
KOLOČEP	KLP	318 KHZ	RIJEKA	RI	289 KHZ
LOŠINJ	LOS	429 KHZ	S.KRALJEVEC	SK	350 KHZ
OSIJEK	OSJ	422 KHZ	VALTURA	VL	320 KHZ
PISAROVINA	PIS	424 KHZ	VELIKA GORICA	VG	325 KHZ
PULA	PLA	351.5 KHZ	ZADAR	ZK	348 KHZ
SALI	SAL	421 KHZ			
TOUNJ	TNJ	316 KHZ			
TROGIR	TRI	378 KHZ			
VARAŽDIN	VAR	344 KHZ			
VRSAR	VRS	369 KHZ			
ZAGREB	ZAG	367 KHZ			


ENROUTE CHART - ICAO
CROATIA
FIR ZAGREB
UPPER AIRSPACE
FL 660
FL 285
above FL 205 SECSI FRA
(Ref. ENR 6.11-1 SECSI FRA-Index chart)
Airspace Classification C
Effective date: 27 FEB 2020
SLOVENIA
HUNGARY
SERBIA
BOSNIA AND HERZEGOVINA
MONTENEGRO
ACC VIENNA
ACC LJUBLJANA
ACC PADOVA
ACC ZAGREB
ACC BRINDISI
BHACC ATCU I Sarajevo
FIR LJUBLJANA
FIR ZAGREB
FIR BUDAPEST
FIR BEOGRAD
FIR SARAJEVO
FIR MILANO
FIR BRINDISI
FIR TIRANA
PODET 46 10 17N 015 37 36E
MAGAM 45 58 22N 015 42 11E
ROLBA 45 50 25N 015 39 18E
UMBEK 45 32 40N 013 25 11E
MONFA 45 29 14N 013 16 45E
BABAG 45 23 13N 013 07 37E
PEVAL 45 18 41N 013 14 51E
GIRDA 45 28 32N 014 08 02E
GEMKA 45 28 13N 014 12 15E
ALIVO 45 31 24N 014 44 21E
SABAD 45 27 57N 014 52 03E
DARZA 45 29 42N 015 00 26E
M859 6.9 FL305 FL135
N606 6.8 FL305 FL285
ZAGREB VOR/DME 113.70 CH 84X ZAG 45 53 44.01N 016 18 24.11E 420ft
JAPETIĆ DME CH 123Y JAP 45 44 40.18N 015 36 29.45E 2927ft
LUKAVEC DME CH 35Y LUK 45 41 25.96N 015 59 32.90E 471ft
ZAGREB/ Franjo Tuđman
LDTR8 LDTS8 FL 330 GND
BARNA VOR/DME 117.40 CH 121X VBA 45 44 52.08N 017 08 48.29E 576ft
ČEPIN L 372 CE 45 31 42.33N 018 33 36.18E
OSIJEK DME CH 30Y KLS 45 27 58.26N 018 47 32.16E 314ft
OSIJEK/Klisa
LDTR5 LDTS5 32800ft MSL GND
RIJEKA VOR/DME 117.80 CH 125X RJK 45 13 26.84N 014 34 01.06E 360ft
RIJEKA/ Krk I.
LDTR12 LDTS12 65650ft MSL GND
PULA / Pula
PULA VOR/DME 111.25 CH 49Y PUL 44 53 32.52N 013 55 05.23E 215ft
CRES NDB 433 CRE 44 54 10.37N 014 24 59.57E
LOŠINJ/Lošinj I.
LOŠINJ VOR/DME 117.35 CH 120Y NTL 44 33 59.44N 014 23 27.79E 190ft
LOŠINJ NDB 429 LOS 44 31 37.55N 014 28 22.25E
LOŠINJ DME CH 21Y LSJ 44 30 57.23N 014 29 27.66E 722ft
ZADAR/ Zemunik
ZADAR VOR/DME 108.60 CH 23 X ZDA 44 05 43.16N 015 21 51.22E 279ft
SALI NDB 421 SAL 43 56 16.30N 015 10 05.19E
SPLIT DME CH 42X IST 43 31 57.61N 016 17 20.86E 133ft
SPLIT/Kaštela
LDTR22 LDTS22 36100ft MSL GND
SPLIT VOR/DME 115.70 CH 104 X SPL 43 29 47.69N 016 18 17.00E 734ft
BRAČ/Brač I.
BRAČ DME CH 101Y BRC 43 16 59.93N 016 37 20.83E 2564ft
DUBROVNIK/ Čilipi
DUBROVNIK VOR/DME 115.40 CH 101X DBK 42 33 13.84N 018 16 38.79E 550ft
GISAM 41 55 07N 017 45 31E
BEVIS 41 55 58N 018 11 40E
TEPKO 41 44 27N 018 25 41E
CRAYE 41 30 10N 018 07 45E
LOKDI 41 29 42N 018 20 22E
N138 30.0 FL305 5000
A48 26.0 FL305 6000 183° 002°
W36 19.6 FL305 6500 039° 219°
A482 9.5 FL305 6500 089°
AREA IN UPPER/LOWER AIRSPACE (MNM - FL460)
AREA IN LOWER AIRSPACE (MNM - FL245)
3°30' E
4°00' E
4°30' E
NOTE:
FOR AERONAUTICAL DATA OUTSIDE THE AIRSPACE OF ZAGREB FIR CONSULT RELEVANT PUBLICATIONS
LEGEND
Airport SPLIT/Kaštela
Joint civil and military airport ZADAR/ Zemunik
Flight Information Region (FIR)
ATS provision boundary
Boundaries (international)
RNAV route
Route orientation
Route designator
Distance in NM
Minimum obstacle clearance altitude
N138 30.0 5000
Upper ATS route
Magnetic track (VAR 2019 – only FIR Zagreb)
Route designator
Route orientation
Distance in NM
Minimum obstacle clearance altitude
A48 183° 26.0 002° 6000
Reporting point
Compulsory PEVAL 45 18 41N 013 14 51E
On request UMBEK 45 32 40N 013 25 11E
Temporary reserved and segregated area
From GND to 1000FT active only as notified by NOTAM.
Identification of area
Nationality letter
TR=Temporary reserved
TS=Temporary segregated
Upper limit
Lower limit
LDTR22 LDTS22 36100ft MSL GND
VOR
Compass rose oriented on the chart to Magnetic North
Non-directional radio beacon (NDB)
Collocated VOR and DME radio navigation aids (VOR/DME); DME
Izogonic line 4°30' E (2019)
SCALE 1 : 1 350 000
10 5 0 10 30 50 km
10 5 0 10 20NM
BEARINGS AND TRACKS ARE MAGNETIC
ALTITUDES AND ELEVATIONS IN FT
DISTANCES IN NM
013°00' 014°00' 015°00' 016°00' 017°00' 018°00' 019°00'
46° 00' 45° 00' 44° 00' 43° 00' 42° 00'
TM PROJECTION

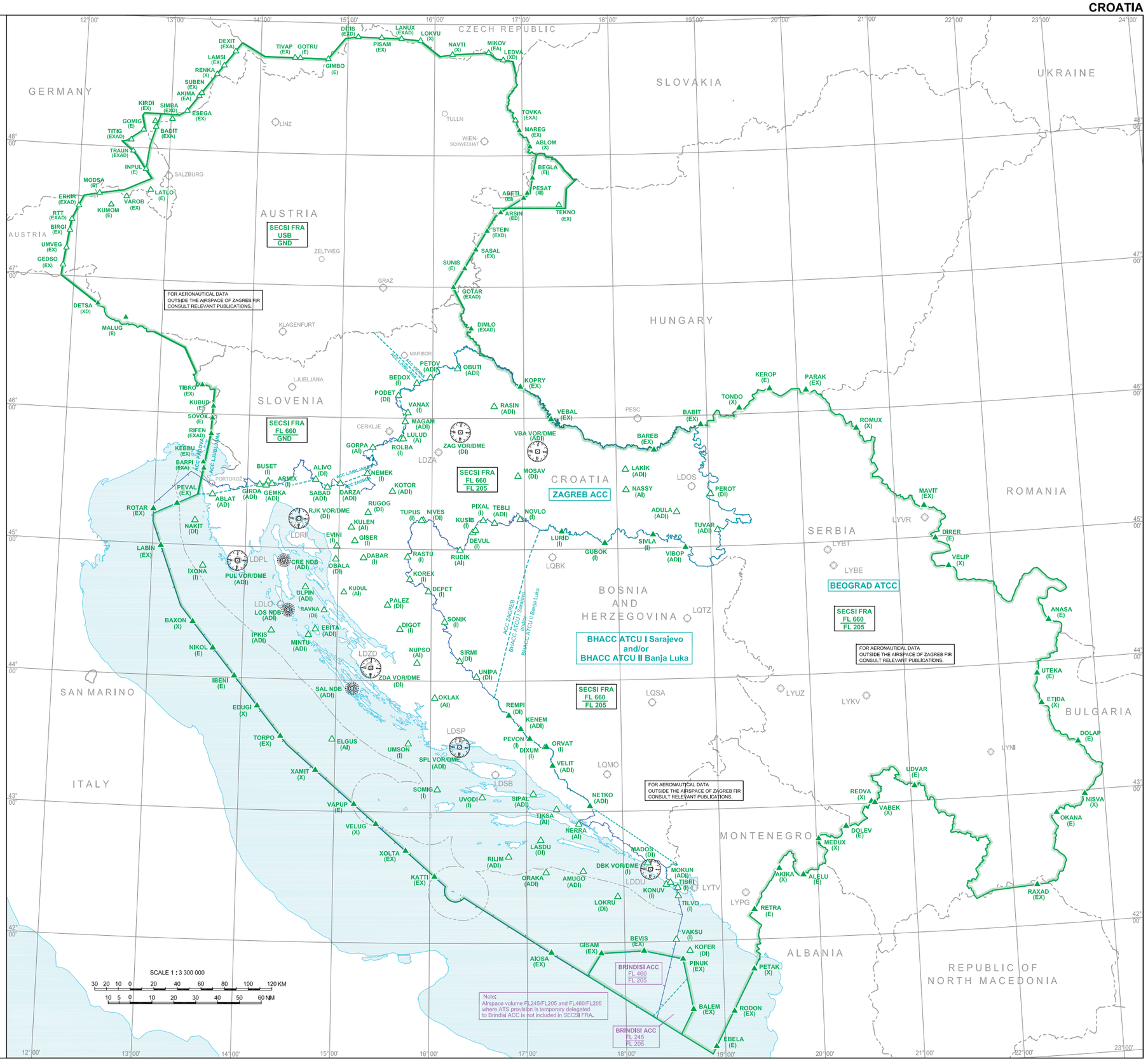
CHANGE: DBK VOR/DME coordinates and elevation changed

FREE ROUTE AIRSPACE
ZAGREB FIR

FL 660
FL 205

SECSI FRA

Effective date: 27 FEB 2020



LEGEND

FRA boundary	
Boundaries (international)	
FRA relevance	E - entry X - exit A - arrival D - departure I - intermediate
Reporting point	△ on - request ▲ compulsory
Compulsory reporting point PEVAL to entry/exit FRA	▲ PEVAL (EX)
Airport	LDSP
Joint civil and military airport	LDZD
FRA relevance	ZAG VOR DME
VOR — Compass rose oriented on the chart to Magnetic North	
Non-directional radio beacon (NDB)	
Collocated VOR and DME radio navigation aids (VOR/DME)	

CHANGE: KUDUL and RAVNA added; ELGUS and PALEZ FRA Relevance

OVA STRANICA JE NAMJERNO OSTAVLJENA PRAZNA
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AD 0.6 TABLE OF CONTENTS TO PART 3

LDDU - AIRPORT DUBROVNIK / Čilipi

LDPL - AIRPORT PULA / Pula

AD 2 Aerodromes

LDSB - AIRFIELD BRAČ / Brač I.

AD 2 Aerodromes

LDSP - AIRPORT SPLIT / Kaštela

LDZA - AIRPORT ZAGREB / Franjo Tuđman

AD 2 Aerodromes

LDZD - AIRPORT ZADAR / Zemunik

LDZD AD 2.24.12 IAC RNP Z RWY 13 - 1
LDZD AD 2.24.12 IAC RNP RWY 31 - 1
LDZD AD 2.24.12 IAC L RWY 31 - 1
LDZD AD 2.24.12 IAC VOR RWY 31 - 1
LDZD AD 2.24.13 VOC - 1

AD 1 AERODROMES/HELIPORTS INTRODUCTION

AD 1.1 AERODROME/HELIPORT AVAILABILITY AND CONDITIONS OF USE

AD 1.1.1 GENERAL CONDITIONS

The responsible authority for aerodromes and heliports in Croatia is Croatian Civil Aviation Agency (CCAA).

Civil aircraft are not permitted to land at aerodromes in Croatia other than those mentioned in this publication, except in cases of genuine emergency in flight or where special permission has been obtained from the aerodrome operator. Such aerodromes/heliports are available only for private flights and are subject to permission for use by the owner.

The Standards and Recommended Practices (SARPS) of Annex 14, Vol 1. & Vol. 2 and related ICAO documents are applied.

AD 1.1.2 USE OF MILITARY AIR BASES

Military aerodromes are those aerodromes that are managed by Croatian Ministry of Defence (MoD) (The Air Traffic Law, Article 31.).

For the use of military aerodrome or part of military aerodrome for civil operations aircraft operator shall obtain approval directly from Ministry of Defence (The Air Traffic Law, Article 33.).

AD 1.1.3 LOW VISIBILITY PROCEDURES (LVP)

AD 1.1.3.1 Introduction

The procedures and items listed below are basic information to operators and pilots concerning specific rules and regulations for LVP in Croatia including Category (CAT) II/III approach, landing and low visibility take-off (LVTO). ATC applies special safeguards and procedures for LVP that will become effective in relation to specified weather conditions. These procedures are intended to provide protection for aircraft operating in low visibility and to avoid disturbances to the ILS signals. Categories of Precision Operations are following:

- Category I (CAT I) ILS Operation - a precision instrument approach and landing with a decision height (DH) not lower than 60 M (200 FT) and a runway visual range (RVR) not less than 550 M or visibility not less than 800 M.
- Category II (CAT II) ILS Operation - a precision instrument approach and landing with DH lower than 60 M (200 FT) but not lower than 30 M (100 FT) and RVR not less than 350 M or 300 M for aircraft conducting an autoland.
- Category III A (CAT III A) ILS Operation - a precision instrument approach and landing with DH lower than 30 M (100 FT), or no decision height and RVR not less than 200 M.
- Category III B (CAT III B) ILS Operation - a precision instrument approach and landing with either DH lower than 15 M (50 FT) or without DH and an RVR less than 200 M but not less than 75 M.
- Low visibility take-off (LVTO) - a take-off on a runway where the RVR is less than 400 M.

Applicable ICAO and national documents are:

1. ICAO Annex 6 Operation of Aircraft
2. ICAO Annex 10, Volume I Aeronautical Telecommunications

3. ICAO Annex 14 Aerodromes

4. ICAO Document 4444 Air Traffic Management

5. ICAO Document 8168 PANS-OPS Aircraft Operations

6. ICAO Document 8071 Manual on Testing of Radio-Navigation Aids

7. ICAO Document 9365-AN/910 Manual of All Weather Operations (except ch.4, para 2 and ch.6, para 1)

8. ICAO Document 9476-AN/927 Manual of Surface Movement Guidance and Control System

9. EUR Document 013 European Guidance material on Aerodrome Operations under Limited Visibility Conditions

10. JAR OPS 1 Section 1. Subpart E - All Weather Operations

11. The Air Traffic Law

12. Ordinance of Rules of the Air and Air Traffic Services

AD 1.1.3.2 Procedures and deviations

The most significant provisions, procedures and deviations therefrom or additional regulations are summarised under the following items.

AD 1.1.3.2.1 Aerodrome facilities

AD 1.1.3.2.1.1 Physical characteristics

RWYs and TWYs are designed and operated in accordance with the SARPS of ICAO Annex 14 appropriate to the category of their certified operation (see AIP AD 2 of the aerodrome concerned).

RWY certified for Low Visibility Operations CAT II/III is:

- LDZA CAT II/IIIB approach and landing RWY 04
- LDZA Low visibility take-off RWY 04

AD 1.1.3.2.1.2 Obstacle Clearance Criteria and Obstacle Free Zone (OFZ)

Aerodromes and the airspace around the aerodromes are kept free of obstacles rising above the precision approach obstacle limitation surfaces as defined in ICAO Annex 14, chapter 4 (Obstacle Free Zone) and ICAO Doc. 8168 PANS-OPS, Volume II. (Obstacle Assessment Surface - OAS).

An object which penetrates one of the obstacle limitation surfaces becomes the controlling obstacle for calculating the OCA/H.

During CAT II/III Operations the OFZ is kept clear of all obstacles, such as vehicles, persons and aircraft at all times when an aircraft making an approach has passed the Outer Marker.

Equipment and installations in the vicinity of the runway, essential for air navigation purposes (e.g. GP antenna, RVR assessment units, etc.,) are of minimum mass, frangibly mounted and situated clear of the OFZ.

AD 1.1.3.2.1.3 Pre-Threshold Terrain

A Precision Approach Terrain Chart (see page AD 2.24.6 PATC of the aerodrome concerned) is provided for each runway certified for CAT II/III ILS Operations in accordance with the SARPS of ICAO Annex 4 and Annex 14.

LDDU AD 2.17 ATS AIRSPACE

1	Designation and lateral limits	CTR Dubrovnik 424230N 0180249E 423619N 0181441E along the FIR boundary Zagreb/Sarajevo 423612N 0181514E 423246N 0182545E 422447N 0182554E 423441N 0175738E 424230N 0180249E
2	Vertical limits	4000 FT ALT / GND
3	Airspace classification	D
4	ATS unit call sign Language(s)	DUBROVNIK TORANJ / DUBROVNIK TOWER Croatian, English
5	Transition altitude	10000 FT MSL
6	Remarks	Nil

LDDU AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	Call sign	Frequency	Hours of operation	Remarks
1	2	3	4	5
APP	DUBROVNIK RADAR	123.6 MHZ	H24	Primary FREQ
	DUBROVNIK RADAR	125.4 MHZ	H24	ALTN FREQ
	DUBROVNIK RADAR	121.5 MHZ	H24	EMERG FREQ
TWR	DUBROVNIK TORANJ / DUBROVNIK TOWER	129.5 MHZ	H24	Primary FREQ If no contact on TWR frequency, contact Dubrovnik Radar.
		125.4 MHZ	H24	ALTN FREQ If no contact on TWR frequency, contact Dubrovnik Radar.
ATIS	DUBROVNIK ATIS	118.425 MHZ	H24	

LDDU AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid CAT of ILS/MLS (For VOR/ILS/MLS, give VAR)	ID	Frequency	Hours of operation	Site of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
VOR/DME (4°E/2019)	DBK	115.4 MHZ CH101X	H24	423313.84N 0181638.79E	550 FT	MRA at 40NM: QDR 179°- 300° 3000FT Coverage 80 NM - unusable between QDR 057°-073°
VOR/DME (4°E/2019)	SPL	115.7 MHZ CH104X	H24	432947.69N 0161817.00E	734 FT	Range 100 NM
NDB	KLP	318 KHZ	H24	424009.42N 0180115.07E		297°MAG/11.73 NM from THR 11.
L	CV	397 KHZ	H24	423506.68N 0181245.51E		1.9 NM from THR 11 Range 15 NM
L	GR	414 KHZ	H24	423226.26N 0181914.97E		1.9 NM from THR 29 Range 15 NM- unusable between QDR 044°-089° clockwise.
LOC 11	IDU	110.1 MHZ	H24	423316.63N 0181706.77E		ILS CAT I Not usable to 17 NM outside 22° left (North) of centre line.
GP 11		334.4 MHZ	H24	423408.19N 0181507.94E		3.0°, RDH 50 FT
MM11	Dots-Dashes	75 MHZ	H24	423427.81N 0181408.83E		
DME 11	IDU	CH38X	H24	423408.19N 0181507.96E	571 FT	Collocated with GP11, Orbit flight DME 25 NM MRA: 140° - 310° 4000 FT 310° - 140° 6000 FT

LDDU AD 2.20 LOCAL AERODROME REGULATIONS

TWR directions and marshaller guidance shall be followed for entering / exiting from any of aircraft positions, ground taxiing or air taxiing of helicopters.

ATC DEP clearance and DEP INFO are available on Dubrovnik TWR FREQ 15 MIN before start up.

Pilots shall state their parking position number on initial contact with ATC.

Aircraft shall request push-back and start-up clearance after:

- push-back vehicle has been attached,

- communication with the ground crew has been established,
- aircraft is ready to commence push-back.

Push-back clearance issued by ATC shall contain runway in use.
Runway in use shall be relayed to the ground crew by the flight deck.

WARNING: Gusts, wind shear and turbulence can be expected on final approaches and on RWY 11/29 in conditions of strong north-easterly winds.

Preferential configuration/RWY in use is RWY11.

LDDU AD 2.21 NOISE ABATEMENT PROCEDURES

NOISE ABATEMENT DEPARTURE PROCEDURE RWY 29

Aircraft operators shall follow aircraft manufacturer's noise abatement recommended procedures up to FL 100, or the procedure below:

- Take-off to 1350 FT QNH
- Climb at V_2 + 10 KT
- On reaching altitude of 1350 FT QNH, adjust and maintain engine power/thrust in accordance with the noise abatement power/thrust schedule provided in the aircraft operating manual
- Maintain climb speed of V_2 + 10-20 KT with flaps and slats in the take off configuration
- At 3500 FT QNH maintain positive rate of climb, accelerate and retract flaps/slats on schedule

LDDU AD 2.22 FLIGHT PROCEDURES

LDDU AD 2.22.1 DEPARTING TRAFFIC

Transfer to Dubrovnik Radar

Pilots of departing aircraft shall remain on TWR frequency until passing 3000 FT AMSL, unless otherwise instructed by ATC.

In case of non-standard departure clearance and/or visual departure, pilots are expected to follow instruction “After passing 3000 FT AMSL, contact Dubrovnik Radar on 123.6 MHZ.”

SID RWY 11 (Preferential RWY)

Calculation of the SIDs is based on an all-engines operative minimum net climb gradient of 5.0 per cent (304 FT/NM).

SID RWY 11 (Preferential RWY)				
Designator	Route	After take off		Remarks
		Climb initially	Contact	
AMUGO3C	**AMUGO THREE CHARLIE DEPARTURE** Climb straight ahead. At GR L (2.1 DME DBK) turn RIGHT, on track 275°. Cross R-218 DBK, turn LEFT, intercept R-227 DBK. At LOKRU (19.5 DME DBK) turn RIGHT, intercept R-131 SPL, climbing to AMUGO.	8000 FT	After passing 3000 FT AMSL, contact Dubrovnik Radar on 123.6 MHZ.	
AMUGO2E	**AMUGO TWO ECHO DEPARTURE** Climb straight ahead. At GR L (2.1 DME DBK) turn RIGHT, on track 275°. After crossing QDR 198° CV L follow ATC RADAR vector to AMUGO.	8000 FT	After passing 3000 FT AMSL, contact Dubrovnik Radar on 123.6 MHZ.	Cross QDR 198° CV L at or above 5000ft.
AMUGO2F	**AMUGO TWO FOXTROT DEPARTURE** Climb straight ahead. At GR L (2.1 DME DBK) turn RIGHT, on bearing QDR 177° GR L. At 11.0 DME DBK turn RIGHT and follow ATC RADAR vector to AMUGO.	8000 FT	After passing 3000 FT AMSL, contact Dubrovnik Radar on 123.6 MHZ.	Cross 11.0 DME DBK at or above 6000ft.
LOKRU3C	**LOKRU THREE CHARLIE DEPARTURE** Climb straight ahead. At GR L (2.1 DME DBK) turn RIGHT, on track 275°. Cross R-218 DBK, turn LEFT, intercept R-227 DBK climbing to LOKRU.	8000 FT	After passing 3000 FT AMSL, contact Dubrovnik Radar on 123.6 MHZ.	

AD 2 AERODROMES

LDZA AD 2

LDZA AD 2.1 AERODROME LOCATION INDICATOR AND NAME

LDZA - AIRPORT ZAGREB / Franjo Tuđman

LDZA AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP coordinates and site at AD	454434.55N 0160407.60E on RWY centre line 1800 M NE from THR 04
2	Direction and distance from (city)	135°, 10 KM from railway station in Zagreb
3	Elevation/Reference temperature	353 FT / 28°C (JUL)
4	Geoid undulation at AD ELEV PSN	148 FT
5	MAG VAR/Annual change	4°E (2019) / 0.15° increasing
6	AD Operator, address, telephone, telefax, AFS, SITA, e-mail, URL	Post: MZLZ-Zagreb Airport Operator Ltd. Rudolfa Fizira 1 10410 Velika Gorica Croatia Phone: (+385 1) 4562113 SITA: ZAGAPXH Email: koordinatori@zag.aero URL: http://www.zagreb-airport.hr/
7	Types of traffic permitted (IFR/VFR)	IFR/VFR
8	Remarks	Nil

LDZA AD 2.3 OPERATIONAL HOURS

1	AD Operator	H24
2	Customs and immigration	H24
3	Health and sanitation	0500-2300 (0400-2200)
4	AIS Briefing Office	H24
5	ATS Reporting Office (ARO)	H24
6	MET Briefing Office	H24
7	ATS	H24
8	Fuelling	H24
9	Handling	H24
10	Security	H24
11	De-icing	H24
12	Remarks	Nil

LDZA AD 2.4 HANDLING SERVICES AND FACILITIES

1	Cargo-handling facilities	Baggage and cargo handling up to 20 T, lifting up to 5,6 M
2	Fuel/oil types	A1, AVGAS 100LL / Oil - Nil
3	Fuelling facilities/capacity	3 Fuel Trucks 60 000 L (A1) 1 Fuel Trucks 45 000 L (A1) 1 Fuel Truck 36 000 L (A1) 1 Fuel Truck 20 000 L (A1) 1 Fuel Truck 5 000 L (AVGAS 100LL)
4	De-icing facilities	4 aircraft de-icing vehicles, MAX working height 21 M.
5	Hangar space for visiting aircraft	Nil
6	Repair facilities for visiting aircraft	Available for minor repairs
7	Remarks	"ZAGREB AIRPORT HANDLING" AVBL H24 on FREQ 131.550 MHZ

LDZA 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	APRON WEST Taxiway guidance signs, guide lines and ACFT stand ID signs at apron, self manoeuvring (except PSN W2 for ACFT code letter D: push-back) and nose-in (basic), nose-out (alternative), and parallel to RWY (general aviation) stands, marshaller for all stands, stop bar markings, Follow me (see Remarks). APRON EAST Taxiway guidance signs, guide lines and ACFT stand ID signs at apron, self-manoeuvring an nose-in/push-back ACFT stands, marshaller, Visual Guidance Docking System at ACFT stands 1-8, stop bar markings, Follow me (see Remarks).
2	RWY and TWY markings and LGT	RWY-04/22: Runway designation markings, Threshold markings, Runway centre line markings, Runway side stripe markings, Touchdown zone markings, Aiming point markings, Runway turn pad marking*. TWY A Taxiway centre line markings, Runway holding position markings, Intermediate holding position markings. TWY B Taxiway centre line markings, Runway holding position markings, Intermediate holding position markings. TWY C Taxiway centre line markings, Runway holding position markings, Intermediate holding position markings. TWY D Taxiway centre line markings, Runway holding position markings, Intermediate holding position markings. TWY E Taxiway centre line markings, Runway holding position markings, Intermediate holding position markings. TWY F Taxiway intermediate holding position lights, Taxiway centre line markings, Intermediate holding position markings. TWY G Taxiway centre line markings, Intermediate holding position markings. TWY H Taxiway centre line markings, Intermediate holding position markings. TWY MC Taxiway centre line markings. TWY R Taxiway centre line markings. TWY T Taxiway centre line markings, Intermediate holding position markings.
3	Stop bars	TWY A: R LIH TWY B: R LIH TWY C: R LIH TWY D: R LIH TWY E: R LIH TWY F: R LIH - F1, F2, F3 TWY G: R LIH - Ga, Gb TWY H: R LIH TWY T: R LIH
4	Remarks	*RWY 22 turn pad restrictions: 180° turn on turn pad for aircraft with wheel base more than 25.6 M is not possible APRON EAST and WEST - Follow me available only during LVO and for ACFT code letter F.

LDZA AD 2.10 AERODROME OBSTACLES

In Area 2					
OBST ID / Designation	**OBST type**	**OBST position**	**ELEV/HGT**	**Markings/ Type, colour**	**Remarks**
a	**b**	**c**	**d**	**e**	**f**
Nil	Antenna L	Nil	361 FT(110 M) / Nil	Nil	04/APCH 22/TKOF
Nil	Antenna L	Nil	361 FT(110 M) / Nil	Nil	04/TKOF 22/APCH
Nil	Building	Nil	361 FT(110 M) / Nil	Nil	04/TKOF 22/APCH

In Area 3					
OBST ID / Designation	**OBST type**	**OBST position**	**ELEV/HGT**	**Markings/ Type, colour**	**Remarks**
a	**b**	**c**	**d**	**e**	**f**
Nil	Nil	Nil	Nil	Nil	Nil

LDZA AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	Associated MET Office	ZAGREB
2	Hours of service MET Office outside hours	H24
3	Office responsible for TAF preparation Periods of validity	ZAGREB FT (24HR)
4	Trend Forecast Interval of issuance	TREND Continuous issuance H24
5	Briefing/consultation provided	Personally in MET Office or by Phone: +385 1 6259240
6	Flight documentation Language(s) used	• Personally in MET Office or by fax (tel.: +385 1 6259 240) • Croatian, English
7	Charts and other information available for briefing or consultation	• diagnostic and prognostic surface and upper level charts • satellite images, lightning detection • meteograms
8	Supplementary equipment available for providing information	VOLMET broadcast Telefax URL:http://met.crocontrol.hr
9	ATS units provided with information	Zagreb TWR, Zagreb APP
10	Additional information (limitation of service, etc.)	Nil

LDZA AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	TRUE BRG	Dimensions of RWY (M)	Strength (PCN) and surface of RWY and SWY	THR COORD RWY End COORD THR Geoid Undulation	THR elevation and highest elevation of TDZ of precision APP RWY
1	2	3	4	5	6
04	046.79°	3252 x 45	390 M, CONC, PCN 68/R/B/W/T 106 M, CONC, PCN 54/R/A/W/T 2262 M, ASPH, PCN 54/F/A/W/T 494 M, CONC, PCN 54/R/A/W/T	454354.75N 0160307.09E Nil 148 FT	THR 353FT TDZ 353FT
22	226.81°	3252 x 45		454506.86N 0160456.75E Nil 148 FT	THR 348FT TDZ 349FT

Designations RWY NR	Slope of RWY-SWY	SWY dimensions (M)	CWY dimensions (M)	Strip dimensions (M)	OFZ	Remarks
1	7	8	9	10	11	12
04	Slope of RWY 04/22: 0%	Nil	Nil	3372 x 300	Nil	Along RWY edges and runway turn pad RWY22, paved shoulders, width 7.5M. RWY22 turn pad dimensions:length 79M and width 71M. RESA 04 Length: 240 M Width: 90 M Surface: grass RESA 22 Length: 240 M Width: 90 M Surface: grass
22		Nil	Nil		Nil	

LDZA AD 2.13 DECLARED DISTANCES

RWY Designator	TORA (M)	TODA (M)	ASDA (M)	LDA (M)	Remarks
1	2	3	4	5	6
04	3252	3252	3252	3252	Nil
	2912	Nil	Nil	Nil	Intersection TWY B
	2162	Nil	Nil	Nil	Intersection TWY C
22	3252	3252	3252	3252	Nil
	2457	Nil	Nil	Nil	Intersection TWY D
	2916	Nil	Nil	Nil	Intersection TWY E

LDZA 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 LEN / spacing / colour / INTST	RWY edge LGT LEN / spacing / colour / INTST	RWY End LGT Colour / WBAR	SWY LGT LEN (M) / Colour	Remarks
1	2	3	4	5	6	7	8	9	10
04	ILS CAT III.E4 W VRB LIH/LIL (C) 900 M to 300 M before THR 04	GRN VRB LIH/LIL	PAPI 3° 70 FT	VRB 900M from THR 04 WHI LIH	3252M 15M W*VAR LIH	3252M 60M W**VAR LIH/LIL	R VRB LIH/LIL	Nil	*W to 900M before RWY end; W/R to 300M before RWY end; R on the last 300M before RWY end **YCZ last 600M
22	CAT I (A) W VRB LIH/LIL	GRN VRB, LIH/LIL	PAPI 3° 64 FT	Nil	3252 M 15 M W*VAR LIH	3252 M, 60 M, W**VAR, LIH/LIL	RED VRB, LIH/LIL.	Nil	*W to 900 M before RWY end; W/R to 300 M before RWY end; R on the last 300 M before RWY end. **YCZ last 600 M

LDZA AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	ABN/IBN location, characteristics and hours of operation	ABN white/green on TWR HN, O/R during day
2	LDI location and LGT Anemometer location and LGT	Nil Anemometer RWY 04 - position 324 M right from RCL, distance 95 M from (before) THR04, ICAO marked. Anemometer RWY 22 - position 220 M right from RCL, distance 325 M from (after) THR22, ICAO marked and lighted.
3	TWY edge and centre line lighting	TWY A EDGE: B LIL; CL: G VRB LIH; Spacing 15 M on a straight section, 7.5 M on a curve. On TWY A on RWY exit - green/yellow coded TWY centreline lights. TWY B EDGE: B LIL TWY C EDGE: B LIL TWY D EDGE: B LIL TWY E EDGE: B LIL; CL: G VRB LIH, Spacing 15 M on a straight section, 7.5 M on a curve. On TWY E on RWY exit - green/yellow coded TWY centreline lights. TWY F EDGE: B LIL (Section between TWY B and TWY C.); CL: G VRB LIH, Spacing 15 M on a straight section, 7.5 M on a curve. TWY G EDGE: B LIL; CL: G VRB LIH TWY H EDGE: B LIL; CL: G VRB LIH TWY MC: CL: G VRB LIH, spacing 15 M on a straight section, 7.5 M on a curve.
4	Secondary power supply/switch-over time	Available. Switch-over time: 0,5 sec

5	Remarks	On RWY turn pad RWY 22, TWY edge lights: B LIL. RWY 22 turn pad marking lights are not available. WDI: At THR 04 and 22, externally lighted.

LDZA AD 2.16 HELICOPTER LANDING AREA

1	Coordinates TLOF or THR of FATO Geoid undulation	Nil
2	TLOF and/or FATO elevation M/FT	Nil
3	TLOF and FATO area dimensions, surface, strength, marking	Nil
4	True and MAG BRG of FATO	Nil
5	Declared distance available	Nil
6	APP and FATO lighting	Nil
7	Remarks	Area not defined. Parking positions are used according to Airport Authorities.

LDZA AD 2.17 ATS AIRSPACE

1	Designation and lateral limits	CTR Zagreb 455641N 0161418E 455041N 0162206E 453301N 0155442E 453838N 0154552E 455641N 0161418E
2	Vertical limits	2500 FT ALT / GND
3	Airspace classification	D
4	ATS unit call sign Language(s)	ZAGREB TOWER / ZAGREB TORANJ Croatian / English
5	Transition altitude	10000 FT MSL
6	Remarks	Excluding part of airspace ATZ Bratina, area within coordinates: 453705N 0154819E 453826N 0155024E 454008N 0154812E 453838N 0154552E 453705N 0154819E With vertical limits: GND-1000 FT AGL, classified as G class airspace.

LDZA AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	Call sign	Frequency	Hours of operation	Remarks
1	2	3	4	5
APP	ZAGREB RADAR	120.7 MHZ	H24	Primary FREQ
	ZAGREB RADAR	118.5 MHZ	H24	
	ZAGREB RADAR	121.5 MHZ	H24	EMERG VHF FREQ
	ZAGREB RADAR	243 MHZ	H24	EMERG VHF FREQ
TWR	ZAGREB TOWER / ZAGREB TORANJ	118.3 MHZ	H24	Primary FREQ
		119.125 MHZ	H24	
GND	ZAGREB GROUND	121.85 MHZ	0700-1500 (0600-1400)	For additional hours of operation, monitor ATIS. If no contact on GND FREQ, contact ZAGREB TWR on 118.300 MHz.
FIS	ZAGREB INFORMATION	135.05 MHZ	H24	
ATIS	ZAGREB ATIS	124.575 MHZ	H24	

LDZA AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid CAT of ILS/MLS (For VOR/ILS/MLS, give VAR)	ID	Frequency	Hours of operation	Site of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
VOR/DME (4°E/2019)	ZAG	113.7 MHZ CH84X	H24	455344.01N 0161824.11E	420 FT	Range 100 NM
VOR/DME (4°E/2019)	VBA	117.4 MHZ CH121X	H24	454452.08N 0170848.29E	576 FT	Coverage 80 NM, except in QDR 114°-159°. Unsatisfactory DME power density due to terrain (Flight profile: Orbit flight, radius 40NM, 5000 FT QNH).
DME	JAP	CH123Y	H24	454440.18N 0153629.45E	2927 FT	Coverage 80 NM
DME	LUK	CH35Y	H24	454125.96N 0155932.90E	471 FT	Coverage 80 NM, except for reduced coverage between QDR 341°-357°
NDB	ZAG	367 KHZ	H24	455400.95N 0161840.36E		Range 100 NM

Type of aid CAT of ILS/MLS (For VOR/ILS/MLS, give VAR)	ID	Frequency	Hours of operation	Site of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
NDB	PIS	424 KHZ	H24	453618.10N 0155038.39E		Coverage 50 NM, except between QDR 339°-049° where coverage is 40 NM.
L	SK	350 KHZ	H24	454820.96N 0160952.78E		4.75 NM from THR22 Range 25 NM
L	VG	325 KHZ	H24	454331.30N 0160231.44E		223°MAG/0.57 NM from THR 04. Range 25 NM
LOC 04	IZA	109.5 MHZ	H24	454513.99N 0160507.60E		ILS CAT III.E4
GP 04		332.6 MHZ	H24	454405.79N 0160312.42E		3°, RDH 53 FT
DME 04	IZA	109.5 MHZ CH32X	H24	454405.79N 0160312.42E	372 FT	Collocated with GP 04
OM04	Dashes-Dashes	75 MHZ	H24	454126.29N 0155924.06E		3.59 NM from THR04
MM04	Dots-Dashes	75 MHZ	H24	454331.45N 0160231.71E		0.57 NM from THR04
LOC 22	IZG	109.1 MHZ	H24	454346.87N 0160255.12E		ILS CAT I
GP 22		331.4 MHZ	H24	454503.84N 0160440.66E		3°, RDH 17 M
OM22	Dashes-Dashes	75 MHZ	H24	454820.56N 0160952.34E		4.75 NM from THR22
MM22	Dots-Dashes	75 MHZ	H24	454529.91N 0160531.84E		0.57 NM from THR22

LDZA AD 2.20 LOCAL AERODROME REGULATIONS

2.20.1 GENERAL

2.20.1.1 Advanced Surface Movement Guidance and Control System (A-SMGCS)

Croatia Control Ltd. is providing A-SMGCS service at Zagreb/Franjo Tuđman Airport, supported by 1 SMR and integrated Mode S MLAT (*Multilateration)* operative 24HR which provides aircraft position information and identification to TWR and GND.

Surveillance service for surface movement is provided according to ENR 1.6.

Aircraft Operators intending to use Zagreb/Franjo Tuđman Airport shall ensure that Mode S transponders are able to operate when the aircraft is on the ground, transmitting Mode S *squitter* and replying to Mode S addressed interrogations only.

2.20.1.2 Low Visibility Procedures (LVP)

ATC applies Low Visibility Procedures (LVP) for the purpose of ensuring safe operations during ILS Category II/III (CAT II/III) approaches and/or Low Visibility Take-Offs (LVTO).

When LVP is in operation pilots will be informed by ATIS broadcast or RTF.

During LVP runway in use is RWY04 only.

On Apron East and Apron West (during LVP) only one aircraft movement is allowed at a time.

Hourly traffic rates are anticipated in LVP- RVR less than 350 M=12 operations (ARR/DEP).

For CAT II/III training purposes sensitive area will not be protected and LOC22 will be switched off.

ARRIVALS:
Aircraft shall report when landed and shall report RWY vacated when passing the end of the colour coded yellow-green TWY CLL on TWR FREQ.
Vacating the runway available via TWY E only.
Expect stopbars on TWY F and TWY G.
„Follow me“ guidance shall be provided from stopbar F1 (entrance to Apron West) or G (entrance to Apron East). Aircraft shall report „follow me in sight“ on GND FREQ.

DEPARTURES:
Apron East (during LVP) – „Follow me“ guidance from TWY MC up to stopbar in TWY H.
Apron West (during LVP) – „Follow me“ guidance from parking position to CAT II/III holding position in TWY A (note: guidance could be ommited if ATC has visual contact with holding position CAT II/III in TWY A).
Aircraft shall report „follow me in sight“ to GND FREQ.
Intersection take-offs are not available during LVP.
Aircraft shall report „airborne“ on TWR FREQ.

2.20.2 ARRIVAL

RWY04:
-preferred exit TWY C for general and business aviation
-TWY D for all other aircraft, unless subject to restriction (note: see LDZA AD 2.8 for restrictions).

RWY22:
-preferred exit via TWY C
Aircraft unable to vacate the RWY via preferred taxiways should notify TWR.

2.20.2.1 Taxiing and Parking

For information regarding parking restrictions, docking systems and other see Aircraft Parking/Docking Chart - ICAO.
A speed-limit of MAX 30 KT will be applied on all TWY.
RWY 04: expect taxi via TWY D/E, G and MC for Apron East or TWY C/D, F for Apron West and General Aviation Apron.
RWY22: expect taxi via TWY C/B, F, G and MC for East Apron or TWY C/B to Apron West and General Aviation Apron.
Parking position number for arriving aircraft will be provided by ATC.

2.20.3 DEPARTURE

Start-up, push-back, en route clearance and taxi instructions will be provided via Zagreb TWR FREQ, except during hours of operation of Zagreb GND (as stated in LDZA AD 2.18 ATS COMMUNICATION FACILITIES).
At initial contact with active ATC FREQ departing aircraft shall advise of ATIS message received and parking position.
ATC DEP CLR will be available on Zagreb Tower/Ground FREQ 15 MIN before EOBT.
Flight crew shall request ATC DEP CLR prior to request for push back/start up.

2.20.3.1 Push back/Start up

Approval for push-back or taxi-out from a parking position must not be requested unless the push-back vehicle is attached and/or the aircraft is ready to perform the manoeuvre immediately.
Apron West and General Aviation Apron: aircraft shall not request start up clearance before it is ascertained that
start of the engine(s) can be completed within 5 minutes after the clearance has been issued.
Apron East: aircraft with CTOT are strongly advised to be ready and request push-back/start up clearance 5 minutes prior to CTOT at latest.

2.20.3.2 Deicing

Zagreb TWR/GND shall be informed as soon as possible if deicing is needed.

RWY04 deicing positions:

- Apron East: jet aircraft with fuselage engines and turbo-prop - on parking position
- West Apron: all aircraft - on parking position

RWY22 deicing position:

- all aircraft - on parking position

2.20.3.3 TAXI

Aircraft must not perform powered U-turns (180 DEG) in the apron areas.

RWY04 expect taxiing:
- from East Apron via TWY H, F and A (TWY B/C optional)
- from West and General Aviation Aprons via TWY F and A (TWY B optional)

RWY22 expect taxiing:
- from Apron East via TWY H, F and D/E
- from Apron West and General Aviation Aprons via TWY F and D/E

Aircraft requesting full RWY length for departure shall advise TWR/GND when requesting taxi clearance at the latest.

2.20.4 RESCUE AND FIRE FIGHTING SERVICE

Declared rescue and fire fighting category (CAT 8 or CAT 7 or CAT 6), which is lower than the highest available (CAT 9), implies a reduced number of professional firefighters.
For all aircraft operations, previously approved by the airport operator (based on flight schedule or “ad hoc”), the (aerodrome) rescue and fire fighting category will be aligned with the rescue and fire fighting category of the aircraft.

LDZA AD 2.21 NOISE ABATEMENT PROCEDURES

NOISE ABATEMENT DEPARTURE PROCEDURE RWY04

Aircraft operators shall follow NADP 1 noise abatement departure procedure, according to ICAO Doc. 8168 OPS/611 VOL III (PANS-OPS VOL III).

NOISE ABATEMENT DEPARTURE PROCEDURE RWY22

Aircraft operators shall follow NADP 1 noise abatement departure procedure, according to ICAO Doc. 8168 OPS/611 VOL III (PANS-OPS VOL III).

LDZA AD 2.22 FLIGHT PROCEDURES

2.22.1 LOW VISIBILITY PROCEDURES, INCLUDING CAT II/III APPROACH, LANDING AND LVTO

2.22.1.1 Criteria for the initiation and termination of Low Visibility Procedure (LVP)

The initiation of LVP will be implemented in two phases:

- The preparation phase (phase I) will be implemented when the RVR falls below 1000 M and/or the ceiling is at /or below 300 FT with downwards tendency and CAT II/III operations are anticipated. In this phase protection of sensitive areas is not yet provided.
- The operations phase (phase II) will be activated when the RVR falls below 550 M and the ceiling is at /or below 200 FT. Protection of sensitive areas is provided.

Pilots will be informed by ATIS or RTF on first contact by the following standard message:
“Low Visibility Procedures in operation.”

LVP will be terminated when the RVR is greater than 800 M and the ceiling is above 300 FT and a continuing improvement of these conditions is expected.

Pilots will be informed by RTF using the following standard message:
“Low Visibility Procedures cancelled at time...”

2.22.1.2 Description of LVP

2.22.1.2.1 CAT II/III Approach and Landing

2.22.1.2.1.1 Protection of ILS sensitive area

The protection of ILS sensitive area will be provided when an ILS landing aircraft has passed OM or 3,8 DME IZA and when an aircraft is conducting an ILS guided take-off.

ATC will provide suitable spacing between aircraft on final approach to achieve this objective.

2.22.1.2.1.2 Initiation and continuation of an ILS approach taking into account the reported RVR

A pilot may initiate an approach, regardless on whether the reported touch-down zone RVR does or does not meet the company required minimum RVR value for the touch-down zone. An approach for CAT II/III, however, must not be continued beyond the OM or 3.8 DME IZA unless the reported touchdown zone RVR is at least equal to the minimum required RVR.

When the pilot has passed the OM or 3.8 DME IZA the approach may be continued regardless of any RVR changes reported, descending to the DH. From DH the approach may be continued to the landing provided that the required contact with visual references can be established and maintained.

The OCA/H values are promulgated on the respective instrument approach charts. The fixed minimum required RVR value for CAT IIIb approach at LDZA airport is less then 200 M but not less than 75 M.

2.22.1.2.1.3 Radar vectoring and clearance for approach

Arriving aircraft shall be vectored so as to ensure the interception of the ILS RWY04 at least 10 NM from touchdown. ATC issues clearance for ILS approach regardless of the ILS category flown.

2.22.1.2.1.4 Separations

An aircraft attending to perform ILS CAT II/III approach shall not be cleared for approach before the preceding aircraft has landed.

Separation between an aircraft performing CAT II/III approach for RWY 04 and an aircraft taking off from RWY 04 shall ensure that the departing aircraft will pass over the ILS LOC antenna before the arriving aircraft reaches OM for RWY 04 or 3.8 DME IZA.

2.22.1.2.1.5 Information given to pilots

Together with approach clearance and before reaching the OM, pilots will be provided with following information:

- surface wind (direction and speed)
- actual RVR values
- any changes in the status of operation of CAT II/III facilities

2.22.1.2.1.6 Landing clearance

Landing clearance shall be delivered prior an arriving aircraft reaches OM RWY 04 or distance 3.8 DME IZA.

2.22.1.2.1.7 Information regarding malfunction and downgrading of the approach category

A change in operational status, if caused by a failure expected to last more than one hour, will be promulgated by NOTAM.

Pilots shall be informed of deficiencies that are expected to last less than one hour by ATIS or RTF.

During approach, immediately after occurrence the following information will be relayed, if necessary, together with downgrading of the approach category:

System considered	Failures to be reported by ATC	Expected effect on Flight Operations
1	2	3
ILS	ILS downgraded to CAT II	Flight operations limited to CAT II
	ILS downgraded to CAT I	Flight operations limited to CAT I
	ILS U/S	Restricted to Non Precision Approach
	OM U/S	No limitation if DME IZA available
	DME RWY 04 U/S	No limitation if OM RWY 04 available
	OM and DME IZA RWY 04 U/S	Flight operations limited to CAT I
	ILS Status monitoring system U/S	Restricted to Non Precision Approach
	Far field monitor (FFM) U/S	Flight operations limited to CAT II
	LOC sensitive area not vacated	Flight operations limited to CAT I
	LOC U/S	Flight operations limited to Non Precision Approach
	GP U/S	Restricted to Non Precision Approach
RVR	TDZ RVR U/S	No limitation if RWY mid-point and stop-end RVR available
	MID RVR U/S	No limitation if RWY TDZ and stop-end RVR available
	TDZ + MID RVR U/S	Flight operations limited to CAT I
	RVR display U/S	Flight operations limited to CAT I
Ancillary	Anemometer RWY 04 U/S	No effect, if other source is available (Anemometer RWY 22)
	Anemometers RWY 04 and RWY 22 U/S	Flight operations limited to CAT I
	Ceilometer U/S	No effect
Lighting systems	Approach lighting system U/S	Restriction depending on flight operation rules
	RWY lighting system U/S	Flight operations limited to CAT I - Daylight operations only
	RWY centerline lighting U/S	Flight operations limited to CAT I***
	RWY edge lights U/S	Flight operations limited to CAT I - Daylight operations
	TDZ lights U/S	Flight operations limited to CAT I
	TWY lights U/S	Flight operations limited to CAT I - Daylight operations only
	Stop bars U/S	Flight operations limited to CAT I
	Secondary power supply	Flight operations limited to CAT I

*** When the failure results in a spacing of serviceable lights of 15M or less, no report is required. When the failure results in a spacing of serviceable lights more than 15M and not more than 30M, a failure report is required e.g. ''Runway centreline spacing 30M''. When the failure results in a spacing of serviceable lights larger than 30M, the Runway centreline lights system must be reported as unserviceable.

***Note**: Suspension (Downgrading) of CAT II and III operations by ATC will only be announced if the NAV and MET equipment is concerned. In any other case of unserviceability, the decision to continue to operate in the prevailing circumstances rests with the pilot.*

2.22.1.2.2 Low Visibility Take-Off (LVTO)

RWY 04 is suitable for guided Low Visibility Take Off.

Pilots wishing to conduct an ILS guided take-off must inform ATC on start-up in order to ensure that protection of the localizer sensitive area is provided.

The fixed minimum required RVR value for LVTO at LDZA airport are:

- 100 M for guided LVTO
- 125 M for non-guided LVTO

2.22.1.2.2.1 Criteria for the implementation of LVP during LVTO

Normally LVP are applied for arriving and departing traffic. If LVTO only is conducted when RVR is below 400M the aircraft operator shall request LVP procedures to be provided. LVTO must be required a minimum 30 minutes in advance to permit appropriate preparations by aerodrome authority.

When Low Visibility Take-Off (LVTO) only is in operation the message should read:
"Low Visibility Take-Off Procedures in operation".

2.22.1.2.2.2 Facilities required for guided LVTO

System considered	Failures to be reported by ATC	Expected effect on Flight Operations
1	2	3
ILS	ILS LOC downgraded to CAT II	Guided Take-Off not permitted
	ILS LOC downgraded to CAT I	Guided Take-Off not permitted
	LOC U/S	Guided Take-Off not permitted
	Far field monitor (FFM) U/S	Guided Take-Off not permitted
RVR	Roll Out RVR U/S	No effect if visibility can be assessed by the pilot
	Other RVR measuring points U/S	Restriction depending on flight operation rules
	RVR display U/S	Flight operations limited to CAT I
Lighting system	RWY lighting system U/S	Flight operations limited Daylight operations
	RWY lighting SDBY power U/S	Flight operations limited Daylight operations
	RWY centre line lighting U/S	Flight operations limited to CAT I***
	RWY edge lights U/S	Flight operations limited Daylight operations
	TWY lighting system U/S	Restriction depending on flight operation rules
Ancillary	Stop bars U/S	No effect
	Ceilometer U/S	No effect
	Anemometer U/S	No effect if other sources available

*** When the failure results in a spacing of serviceable lights of 15M or less, no report is required. When the failure results in a spacing of serviceable lights more than 15M and not more than 30M, a failure report is required e.g. **"Runway centreline spacing 30M"**. When the failure results in a spacing of serviceable lights larger than 30M, the Runway centreline lights system must be reported as **unserviceable**.

2.22.2 SID RWY 04

Calculation of the SIDs is based on all-engines operative minimum net climb gradient of 3.3 per cent (201 FT/ NM).
WARNING: Close-in obstacle. Trees in front of THR22 on the left and right side of the CL. Trees altitudes are up to 425 FT.

SID RWY 04				
Designator	Route	After take off		Remarks
		Climb initially	Contact	
RASIN4C	**RASIN FOUR CHARLIE DEPARTURE** Climb inbound ZAG VOR DME. Cross ZAG VOR DME, intercept R-049 ZAG, climbing to RASIN.	6000	Zagreb Radar 120.700 MHZ	Cross ZAG VOR DME at or above 4000 FT.
VBA5C	**BARNA FIVE CHARLIE DEPARTURE** Climb straight ahead. At 3000 FT turn RIGHT to intercept R-271 VBA, climbing to VBA VOR DME.	6000	Zagreb Radar 120.700 MHZ	Cross VBA VOR DME at or above 6000 FT.
MOSAV4C	**MOSAV FOUR CHARLIE DEPARTURE** Climb straight ahead. At 3000 FT, but not after 16.0 DME LUK, turn RIGHT to intercept R-271 VBA. At 28.4 DME VBA turn RIGHT, intercept R-123 ZAG, climbing to MOSAV.	6000	Zagreb Radar 120.700 MHZ	Cross MOSAV at or above 6000 FT.
TEBLI6C	**TEBLI SIX CHARLIE DEPARTURE** Climb straight ahead. At 3000 FT, but not after 16.0 DME LUK, turn RIGHT on to bearing QDR 107° SK L to intercept R-155 ZAG, climbing to TEBLI.	6000	Zagreb Radar 120.700 MHZ	Cross TEBLI at or above FL105.
NIVES5C	**NIVES FIVE CHARLIE DEPARTURE** Climb straight ahead. At 3000 FT turn RIGHT, intercept R-199 ZAG, climbing to NIVES.	6000	Zagreb Radar 120.700 MHZ	Cross NIVES at or above FL 105.
KOTOR4R	**KOTOR FOUR ROMEO DEPARTURE** Climb straight ahead. At 3000 FT, turn RIGHT on to bearing QDM 239° PIS NDB climbing to PIS NDB. Cross PIS NDB. On QDR 225° PIS NDB climb to KOTOR.	6000	Zagreb Radar 120.700 MHZ	When on bearing QDM 239° PIS NDB cross 6.3 DME LUK at or above 5000 FT. Cross KOTOR at or above 8000 FT.
KOTOR4L (On ATC authorization only)	**KOTOR FOUR LIMA DEPARTURE** Climb straight ahead. At 4000 FT, turn LEFT, on to bearing QDM 209° PIS NDB. Cross PIS NDB. On QDR 225° PIS NDB, climb to KOTOR.	6000	Zagreb Radar 120.700 MHZ	Cross KOTOR at or above 8000 FT.
PODET5C	**PODET FIVE CHARLIE DEPARTURE** Climb straight ahead. At 4000 FT, but not after ZAG VOR DME, turn LEFT, on track 356°. Cross R-275 ZAG, turn LEFT, intercept R-296 ZAG, climbing to PODET.	6000	Zagreb Radar 120.700 MHZ	Cross PODET at or above 8000 FT.
PETOV4H (only for traffic destination LJMB)	**PETOV FOUR HOTEL DEPARTURE** Climb straight ahead. At 4000 FT, but not after ZAG VOR DME, turn LEFT on to bearing QDR 356° SK L to intercept R-327 ZAG climbing to PETOV.	6000	Zagreb Radar 120.700 MHZ	Cross PETOV at or below FL 120.
OBUTI3H	**OBUTI THREE HOTEL DEPARTURE** Climb inbound ZAG VOR DME. Cross ZAG VOR DME, intercept R-353 ZAG, climbing to OBUTI.	6000	Zagreb Radar 120.700 MHZ	Cross OBUTI at or above FL130.

2.22.3 SID RWY 22

Calculation of the SIDs is based on all-engines operative minimum net climb gradient of 3.3 per cent (201 FT/NM).

SID RWY 22				
Designator	Route	After take off		Remarks
		Climb initially	Contact	
ZAG5E	**ZAGREB FIVE ECHO DEPARTURE** Climb inbound PIS NDB. At or above 3000 FT, but not before 2.0 DME LUK (5.5 NM from THR 04), turn LEFT, intercept R-211 ZAG, climbing inbound ZAG VOR DME.	6000	Zagreb Radar 120.700 MHZ	Cross ZAG VOR DME at or above 7000 FT.
OBUTI4K	**OBUTI FOUR KILO DEPARTURE** Climb inbound PIS NDB. At or above 3000 FT, but not before 2.0 DME LUK (5.5 NM from THR04), turn LEFT, intercept R-211 ZAG, climbing inbound ZAG VOR DME. Cross ZAG VOR DME, intercept R-353 ZAG, climbing to OBUTI.	6000	Zagreb Radar 120.700 MHZ	Cross ZAG VOR DME at or above 7000 FT. Cross OBUTI at or above FL130.
VBA5E	**BARNA FIVE ECHO DEPARTURE** Climb inbound PIS NDB. At or above 3000 FT but not before 2.0 DME LUK (5.5 NM from THR 04), turn LEFT, intercept R-256 VBA, climbing to VBA VOR DME.	6000	Zagreb Radar 120.700 MHZ	Cross VBA VOR DME at or above 6000 FT.
MOSAV4D	**MOSAV FOUR DELTA DEPARTURE** Climb inbound PIS NDB. At or above 3000 FT, but not before 2.0 DME LUK (5.5 NM from THR 04), turn LEFT, intercept R-256 VBA. At 23.0 DME VBA turn RIGHT, intercept R-123 ZAG climbing to MOSAV.	6000	Zagreb Radar 120.700 MHZ	Cross MOSAV at or above 6000 FT.
TEBLI5J	**TEBLI FIVE JULIETT DEPARTURE** Climb inbound PIS NDB. At or above 4000 FT, not before 5.0 DME LUK (8.5 NM from THR 04) and not after PIS NDB turn LEFT, intercept QDR 120° PIS NDB, climbing to TEBLI.	6000	Zagreb Radar 120.700 MHZ	Cross TEBLI at or above FL105.
NIVES5D	**NIVES FIVE DELTA DEPARTURE** Climb inbound PIS NDB. At or above 4000 FT, not before 5.0 DME LUK (8.5 NM from THR 04) and not after PIS NDB turn LEFT, intercept QDR 169° PIS NDB, climbing to NIVES.	6000	Zagreb Radar 120.700 MHZ	Cross NIVES at or above FL105.
KOTOR3S	**KOTOR THREE SIERRA DEPARTURE** Climb inbound PIS NDB. On QDR 225° PIS NDB, climb to KOTOR.	6000	Zagreb Radar 120.700 MHZ	Cross KOTOR at or above 8000 FT.
PODET4F	**PODET FOUR FOXTROT DEPARTURE** Climb inbound PIS NDB. At or above 4000 FT, not before 2.0 DME LUK (5.5 NM from THR 04) and not after PIS NDB, turn RIGHT, intercept QDR 003° PIS. At 19.2 DME LUK (R-288 ZAG) turn LEFT, intercept R-296 ZAG, climbing to PODET.	6000	Zagreb Radar 120.700 MHZ	Cross PODET at or above 8000 FT.
PETOV4J (only for traffic destination LJMB)	**PETOV FOUR JULIETT DEPARTURE** Climb inbound PIS NDB. At or above 4000 FT, not before 2.0 DME LUK (5.5 NM from THR 04) and not after PIS NDB, turn RIGHT, intercept QDR 003° PIS, climbing to PETOV.	6000	Zagreb Radar 120.700 MHZ	Cross PETOV at or below FL120.
ZAG5F (On ATC authorization only)	**ZAGREB FIVE FOXTROT DEPARTURE** Climb inbound PIS NDB. At or above 4000 FT, not before 2.0 DME LUK (5.5 NM from THR 04) and not after PIS NDB, turn RIGHT, intercept R-237 ZAG, climbing inbound ZAG VOR DME.	6000	Zagreb Radar 120.700 MHZ	When on R-237 ZAG cross 18.0 DME ZAG at or above 5000 FT. Cross ZAG VOR DME at or above 7000 FT.

SID RWY 22				
Designator	**Route**	**After take off**		**Remarks**
		Climb initially	**Contact**	
OBUTI4J (On ATC authorization only)	**OBUTI FOUR JULIETT DEPARTURE** Climb inbound PIS NDB. At or above 4000 FT, not before 2.0 DME LUK (5.5 NM from THR04) and not after PIS NDB, turn RIGHT, intercept QDR 017° PIS, climbing to OBUTI.	6000	Zagreb Radar 120.700 MHZ	When on QDR 017° PIS cross 11.0 DME LUK at or above 8000 FT. Cross OBUTI at or above FL130.

2.22.4 STAR RWY 04

STAR RWY 04				
Designator	**Route**	**Descend**	**Contact**	**Remarks**
NEKIN1A	**NEKIN ONE ALPHA ARRIVAL** From NEKIN proceed on R-024 ZAG (MNM ALT 5000 FT) to ZAG VOR DME. After crossing ZAG VOR DME intercept QDM 224° SK to SK L (MNM ALT 4000 FT) and proceed on QDM 223° VG to VG L (MNM ALT 3000 FT). From VG L proceed on QDM 225° PIS to PIS NDB (MNM ALT 3000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
VBA3A	**BARNA THREE ALPHA ARRIVAL** From VBA VOR DME proceed on R-258 VBA (MNM ALT 5000 FT). After crossing 37.0 DME VBA proceed on QDM 258° PIS to PIS NDB (MNM ALT 4000 FT or 3000 FT by ATC only) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
TEBLI3B	**TEBLI THREE BRAVO ARRIVAL** From TEBLI proceed on QDM 301° PIS (MNM ALT 4000 FT). After crossing R-197 ZAG proceed on QDM 301° PIS to PIS NDB (MNM ALT 3000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
RUDIK5A	**RUDIK FIVE ALPHA ARRIVAL** From RUDIK proceed on R-176 ZAG to intercept R-300 OMA. Intercept and follow R-300 OMA (MNM ALT 5000 FT). At R-220 ZAG turn RIGHT and intercept QDM 028° PIS to PIS NDB (MNM ALT 3000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
KOTOR3A	**KOTOR THREE ALPHA ARRIVAL** From KOTOR proceed on QDM 045° PIS to PIS NDB (MNM ALT 3000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
LULUD1A	**LULUD ONE ALPHA ARRIVAL** From LULUD proceed on QDM 151° PIS (MNM ALT 5000 FT). After crossing R-242 ZAG proceed on QDM 151° PIS to PIS NDB (MNM ALT 3000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
PETOV3F	**PETOV THREE FOXTROT ARRIVAL** From PETOV proceed on QDM 184° PIS (MNM ALT 6000 FT). After crossing R-242 ZAG proceed on QDM 184° PIS to PIS NDB (MNM ALT 4000 FT or 3000 FT by ATC only) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	

2.22.5 STAR RWY 22

STAR RWY 22				
Designator	**Route**	**Descend**	**Contact**	**Remarks**
NEKIN1B	**NEKIN ONE BRAVO ARRIVAL** From NEKIN proceed on R-024 ZAG (MNM ALT 5000 FT). After crossing 25.0 DME ZAG proceed on R-024 ZAG to ZAG VOR DME (MNM ALT 4000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
VBA3B	**BARNA THREE BRAVO ARRIVAL** From VBA VOR DME proceed on R-100 ZAG (MNM ALT 5000 FT). After crossing 9.0 DME ZAG proceed on R-100 ZAG to ZAG VOR DME (MNM ALT 4000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
TEBLI3A	**TEBLI THREE ALFA ARRIVAL** From TEBLI proceed on R-155 ZAG (MNM ALT 6000 FT). After crossing 12.0 DME ZAG proceed on R-155 ZAG to ZAG VOR DME (MNM ALT 4000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
RUDIK3B	**RUDIK THREE BRAVO ARRIVAL** From RUDIK proceed on R-176 ZAG (MNM ALT 6000 FT). After crossing 12.0 DME ZAG proceed on R-176 ZAG to ZAG VOR DME (MNM ALT 4000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
KOTOR3B	**KOTOR THREE BRAVO ARRIVAL** From KOTOR proceed on QDM 045° PIS to PIS NDB (MNM ALT 4000 FT). After crossing PIS NDB proceed on R-224 ZAG to ZAG VOR DME (MNM ALT 4000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	HLDG at PIS NDB on ATC authorization only
LULUD1B	**LULUD ONE BRAVO ARRIVAL** From LULUD proceed on R-259 ZAG (MNM ALT 5500 FT). After crossing 10.0 DME ZAG proceed on R-259 ZAG to ZAG VOR DME (MNM ALT 4000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	
PETOV3G	**PETOV THREE GOLF ARRIVAL** From PETOV proceed on R-327 ZAG (MNM ALT 6000 FT). After crossing 12.0 DME ZAG proceed on R-327 ZAG to ZAG VOR DME (MNM ALT 4000 FT) and hold.	As cleared by ATC	Zagreb Radar 120.700 MHZ	

Backup device on TWR in case of a complete communication failure

In case of complete communication failure, ATC signal light gun is available on Zagreb TWR.
Pilots shall observe light signals from TWR.

LDZA AD 2.23 ADDITIONAL INFORMATION

Increased seagulls activity on and in the vicinity of aerodrome, crossing aerodrom from Čiče lake to Jakuševac in the morning and from Jakuševac to Čiče lake in the afternoon in accordance with times in following table:

During rainy days, activity possible all day long. Caution advised.

Month	Morning overflight (UTC)	Afternoon overflight (UTC)
JAN	0630 - 0800	1300 - 1530
FEB	0610 - 0800	1400 - 1600
MAR	0530 - 0730	1400 - 1600
APR	0330 - 0600	1400 - 1550
MAY	0300 - 0600	1500 - 1800
JUN	0300 - 0600	1600 - 1930
JUL	0230 - 0600	1700 - 1900
AUG	0230 - 0600	1630 - 1830
SEP	0300 - 0600	1500 - 1700
OCT	0400 - 0630	1400 - 1600
NOV	0530 - 0730	1400 - 1600
DEC	0600 - 0830	1330 - 1530

LDZA AD 2.24 CHARTS RELATED TO AN AERODROME

Name	Page
Aerodrome Chart - ICAO	LDZA AD 2.24.1 ADC -1
Aircraft Parking/Docking Chart - ICAO	LDZA AD 2.24.2 APDC EAST -1
Aircraft Parking/Docking Chart - ICAO	LDZA AD 2.24.2 APDC WEST -1
Aerodrome Ground Movement Chart – ICAO	*NOT AVBL*
Aerodrome Obstacle Chart - ICAO Type A RWY 04-22	LDZA AD 2.24.4 AOC RWY 04/22 -1
Aerodrome Terrain and Obstacle Chart – ICAO (Electronic)	*NOT AVBL*
Precision Approach Terrain Chart - ICAO RWY 04	LDZA AD 2.24.6 PATC RWY 04 -1
Area Chart - ICAO (departure and transit routes)	*NOT AVBL*
Standard Departure Chart - Instrument - ICAO RWY 04	LDZA AD 2.24.8 SID RWY 04 -1
Standard Departure Chart - Instrument - ICAO RNAV RWY 04	LDZA AD 2.24.8 SID RNAV RWY 04 -1
Standard Departure Chart - Instrument - ICAO RWY 22	LDZA AD 2.24.8 SID RWY 22 -1
Standard Departure Chart - Instrument - ICAO RNAV RWY 22	LDZA AD 2.24.8 SID RNAV RWY 22 -1
Area Chart – ICAO (arrival and transit routes)	*NOT AVBL*
Standard Arrival Chart - Instrument - ICAO RWY 04	LDZA AD 2.24.10 STAR RWY 04 -1
Standard Arrival Chart - Instrument - ICAO RNAV RWY 04	LDZA AD 2.24.10 STAR RNAV RWY 04 -1
Standard Arrival Chart - Instrument - ICAO RWY 22	LDZA AD 2.24.10 STAR RWY 22 -1
Standard Arrival Chart - Instrument - ICAO RNAV RWY 22	LDZA AD 2.24.10 STAR RNAV RWY 22 -1
ATC Surveillance Minimum Altitude Chart - ICAO	LDZA AD 2.24.11 ATCSMAC -1
Instrument Approach Chart - ICAO L RWY 04	LDZA AD 2.24.12 IAC L RWY 04 -1
Instrument Approach Chart - ICAO ILS or LOC RWY 04 CAT I/II/III	LDZA AD 2.24.12 IAC ILS or LOC RWY 04 -1
Instrument Approach Chart - ICAO L y RWY 22	LDZA AD 2.24.12 IAC Ly RWY 22 -1
Instrument Approach Chart - ICAO L z RWY 22	LDZA AD 2.24.12 IAC Lz RWY 22 -1
Instrument Approach Chart - ICAO ILS or LOC RWY 22	LDZA AD 2.24.12 IAC ILS or LOC RWY 22 -1
Instrument Approach Chart - ICAO RNP RWY 04	LDZA AD 2.24.12 IAC RNP RWY 04 -1
Instrument Approach Chart - ICAO RNP RWY 22	LDZA AD 2.24.12 IAC RNP RWY 22 -1
Visual Approach Chart - ICAO	*NOT AVBL*
Visual Operation Chart	LDZA AD 2.24.13 VOC -1
Bird concentrations	LDZA AD 2.24.14 BC -1

AERODROME CHART - ICAO

ARP
45°44' 34.55"N
016°04' 07.60"E

AD ELEV 353ft

ZAGREB ATIS 124.575 | ZAGREB TOWER 118.300 | ZAGREB GROUND 121.850

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CROATIA

CHANGE: Airport name; RWY Designator; Magnetic Variation; Magnetic Bearings; Designator for MM, GP, ILS-LOC, THR and RESA; ACL ELEV Apron West; ACL ELEV General Aviation Apron; TWY F width; Intersection take-off distances

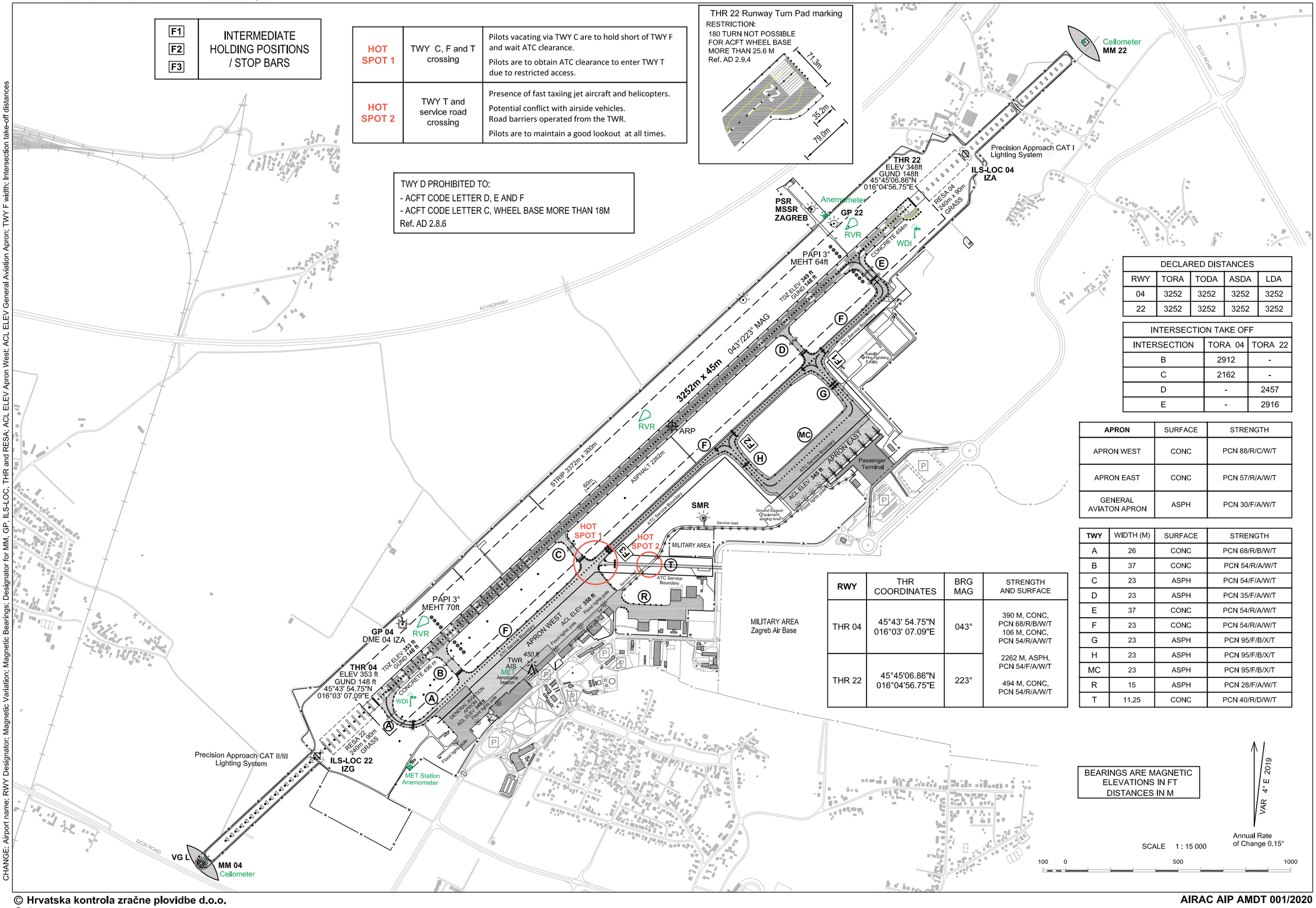
F1 F2 F3	INTERMEDIATE HOLDING POSITIONS / STOP BARS

HOT SPOT 1	TWY C, F and T crossing	Pilots vacating via TWY C are to hold short of TWY F and wait ATC clearance. Pilots are to obtain ATC clearance to enter TWY T due to restricted access.
HOT SPOT 2	TWY T and service road crossing	Presence of fast taxiing jet aircraft and helicopters. Potential conflict with airside vehicles. Road barriers operated from the TWR. Pilots are to maintain a good lookout at all times.

TWY D PROHIBITED TO:
- ACFT CODE LETTER D, E AND F
- ACFT CODE LETTER C, WHEEL BASE MORE THAN 18M

Ref. AD 2.8.6

THR 22 Runway Turn Pad marking
RESTRICTION:
180 TURN NOT POSSIBLE FOR ACFT WHEEL BASE MORE THAN 25.6 M
Ref. AD 2.9.4



DECLARED DISTANCES				
RWY	TORA	TODA	ASDA	LDA
04	3252	3252	3252	3252
22	3252	3252	3252	3252

INTERSECTION TAKE OFF		
INTERSECTION	TORA 04	TORA 22
B	2912	-
C	2162	-
D	-	2457
E	-	2916

APRON	SURFACE	STRENGTH
APRON WEST	CONC	PCN 88/R/C/W/T
APRON EAST	CONC	PCN 57/R/A/W/T
GENERAL AVIATON APRON	ASPH	PCN 30/F/A/W/T

TWY	WIDTH (M)	SURFACE	STRENGTH
A	26	CONC	PCN 68/R/B/W/T
B	37	CONC	PCN 54/R/A/W/T
C	23	ASPH	PCN 54/F/A/W/T
D	23	ASPH	PCN 35/F/A/W/T
E	37	CONC	PCN 54/R/A/W/T
F	23	CONC	PCN 54/R/A/W/T
G	23	ASPH	PCN 95/F/B/X/T
H	23	ASPH	PCN 95/F/B/X/T
MC	23	ASPH	PCN 95/F/B/X/T
R	15	ASPH	PCN 28/F/A/W/T
T	11.25	CONC	PCN 40/R/D/W/T

RWY	THR COORDINATES	BRG MAG	STRENGTH AND SURFACE
THR 04	45°43' 54.75"N 016°03' 07.09"E	043°	390 M, CONC, PCN 68/R/B/W/T 106 M, CONC, PCN 54/R/A/W/T
THR 22	45°45'06.86"N 016°04'56.75"E	223°	2262 M, ASPH, PCN 54/F/A/W/T 494 M, CONC, PCN 54/R/A/W/T

BEARINGS ARE MAGNETIC
ELEVATIONS IN FT
DISTANCES IN M

VAR 4° E 2019
Annual Rate of Change 0.15°

SCALE 1 : 15 000

100 0 500 1000

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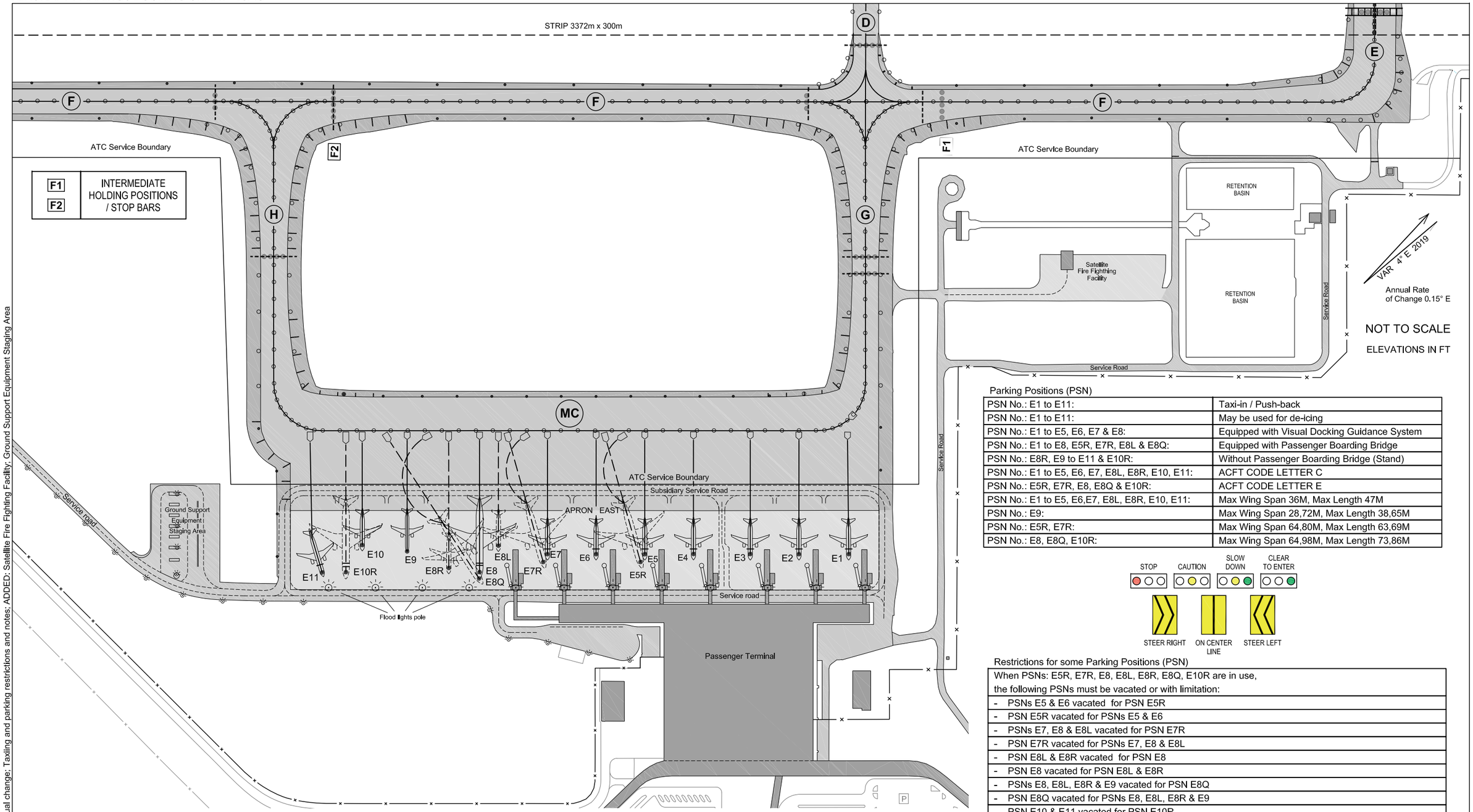
AIRCRAFT PARKING / DOCKING CHART - ICAO

APRON EAST / ACL ELEV 345 FT



F1 F2	INTERMEDIATE HOLDING POSITIONS / STOP BARS

Parking Positions (PSN)

PSN No.: E1 to E11:	Taxi-in / Push-back
PSN No.: E1 to E11:	May be used for de-icing
PSN No.: E1 to E5, E6, E7 & E8:	Equipped with Visual Docking Guidance System
PSN No.: E1 to E8, E5R, E7R, E8L & E8Q:	Equipped with Passenger Boarding Bridge
PSN No.: E8R, E9 to E11 & E10R:	Without Passenger Boarding Bridge (Stand)
PSN No.: E1 to E5, E6, E7, E8L, E8R, E10, E11:	ACFT CODE LETTER C
PSN No.: E5R, E7R, E8, E8Q & E10R:	ACFT CODE LETTER E
PSN No.: E1 to E5, E6,E7, E8L, E8R, E10, E11:	Max Wing Span 36M, Max Length 47M
PSN No.: E9:	Max Wing Span 28,72M, Max Length 38,65M
PSN No.: E5R, E7R:	Max Wing Span 64,80M, Max Length 63,69M
PSN No.: E8, E8Q, E10R:	Max Wing Span 64,98M, Max Length 73,86M

Restrictions for some Parking Positions (PSN)

When PSNs: E5R, E7R, E8, E8L, E8R, E8Q, E10R are in use, the following PSNs must be vacated or with limitation:
- PSNs E5 & E6 vacated for PSN E5R
- PSN E5R vacated for PSNs E5 & E6
- PSNs E7, E8 & E8L vacated for PSN E7R
- PSN E7R vacated for PSNs E7, E8 & E8L
- PSN E8L & E8R vacated for PSN E8
- PSN E8 vacated for PSN E8L & E8R
- PSNs E8, E8L, E8R & E9 vacated for PSN E8Q
- PSN E8Q vacated for PSNs E8, E8L, E8R & E9
- PSN E10 & E11 vacated for PSN E10R
- PSN E10R vacated for PSN E10 & E11
- Western part of service road must be vacated at the entrance/exit of ACFT to/from E11

CHANGE: Airport name: Magnetic variation annual change; Taxiing and parking restrictions and notes; ADDED: Satellite Fire Fighting Facility; Ground Support Equipment Staging Area

PARKING POSITIONS AND INS / REFERENCE POINTS PASSENGER TERMINAL APRON EAST

PSN NR	INS COORDINATES	PSN NR	INS COORDINATES
E1	454434.23N 0160448.45E	E8L	454427.51N 0160437.74E
E2	454433.25N 0160446.96E	E8	454426.59N 0160437.91E
E3	454432.29N 0160445.51E	E8R	454426.07N 0160436.88E
E4	454431.18N 0160443.81E	E8Q	454426.44N 0160438.08E
E5	454430.22N 0160442.36E	E9	454425.60N 0160435.17E
E5R	454429.97N 0160442.45E	E10	454424.85N 0160433.65E
E6	454429.26N 0160440.90E	E10R	454423.96N 0160433.92E
E7	454428.30N 0160439.44E	E11	454423.48N 0160433.21E
E7R	454428.05N 0160439.54E		

TAXIING AND PARKING RESTRICTIONS AND NOTES: APRON EAST (E) IN FRONT OF NEW PASSENGER TERMINAL

Enter / Exit to from Apron

1. During the daylight:

   RWY04 - entrance via TXY G, exit via TXY H
   RWY22 - entrance via TXY H, exit via TXY G

2. Entrance to Apron is via TWY G during the night and LVO.
3. Exit from Apron is via TWY H during the night and LVO.

Apron TWY

1. Apron TWY is MC.

Taxiing on Apron

1. Parking position number for inbound traffic is provided by ATC.
2. Adhere strictly to the yellow taxi guide line, Visual Docking Guidance System or manual parking/docking.
   For other restrictions adhere strictly to Zagreb Tower instructions and Follow me guidance.
3. The movement of more than one aircraft on the apron at the same time is allowed in conditions other than LVO, when the aircraft are at a safe distance from each other, regarding restrictions for PSN and as regulated by airport. Simultaneous movement of two ACFT code letter "E" is prohibited on three adjacent PSNs:
   - two in direction of ACFT push-back, and
   - one in direction of ACFT taxi.
4. During LVO movement on the apron is restricted to one aircraft and follow me guidance is provided for inbound and outbound traffic.
5. Mandatory notification of stand position number to ATC with start up / push-back request.

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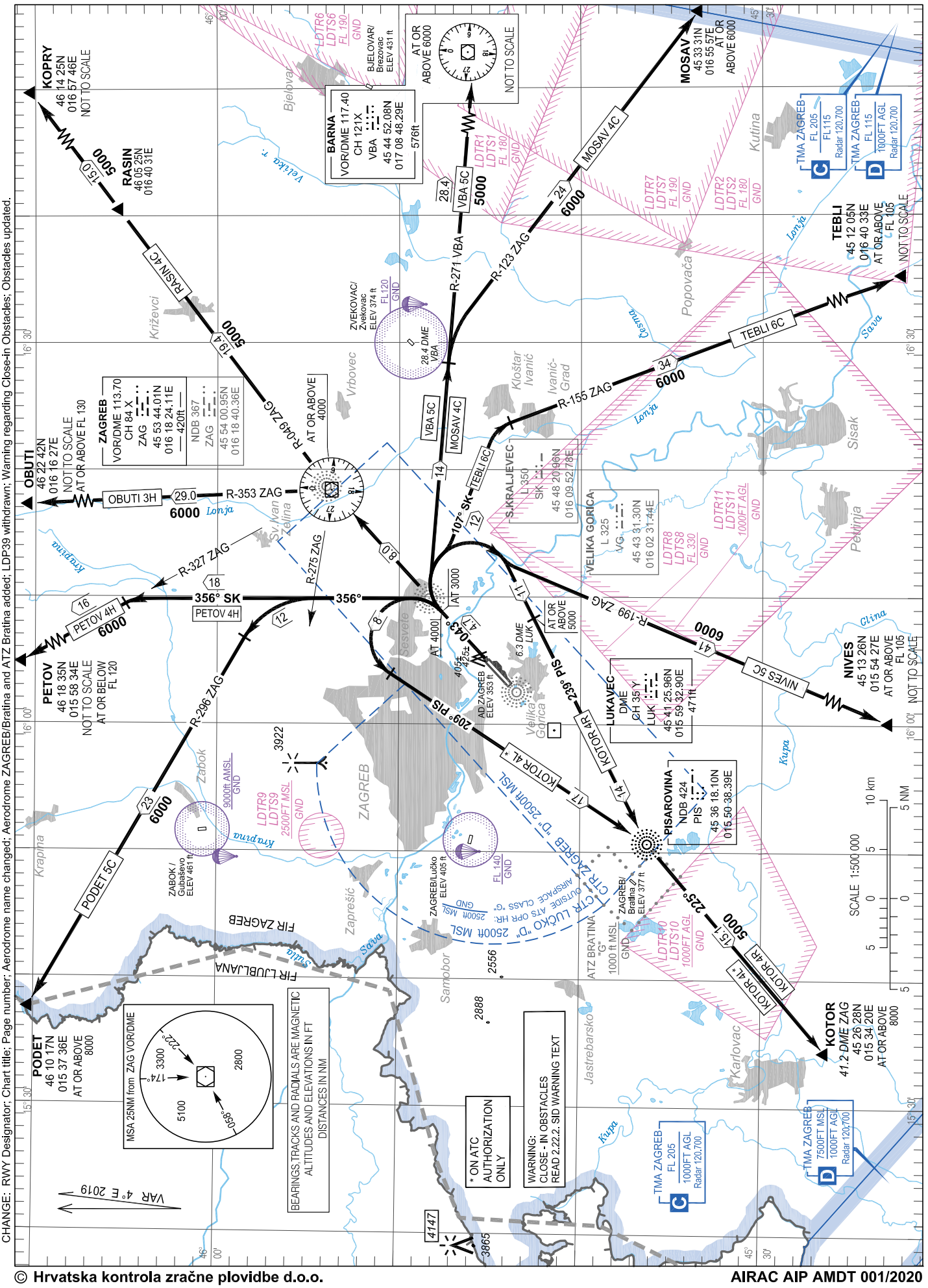
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZAGREB ATIS	124.575
ZAGREB TOWER	118.300
ZAGREB RADAR	120.700

ZAGREB / Franjo Tuđman
CROATIA
RWY 04



CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn; Warning regarding Close-in Obstacles; Obstacles updated.

OVA STRANICA JE NAMJERNO OSTAVLJENA PRAZNA
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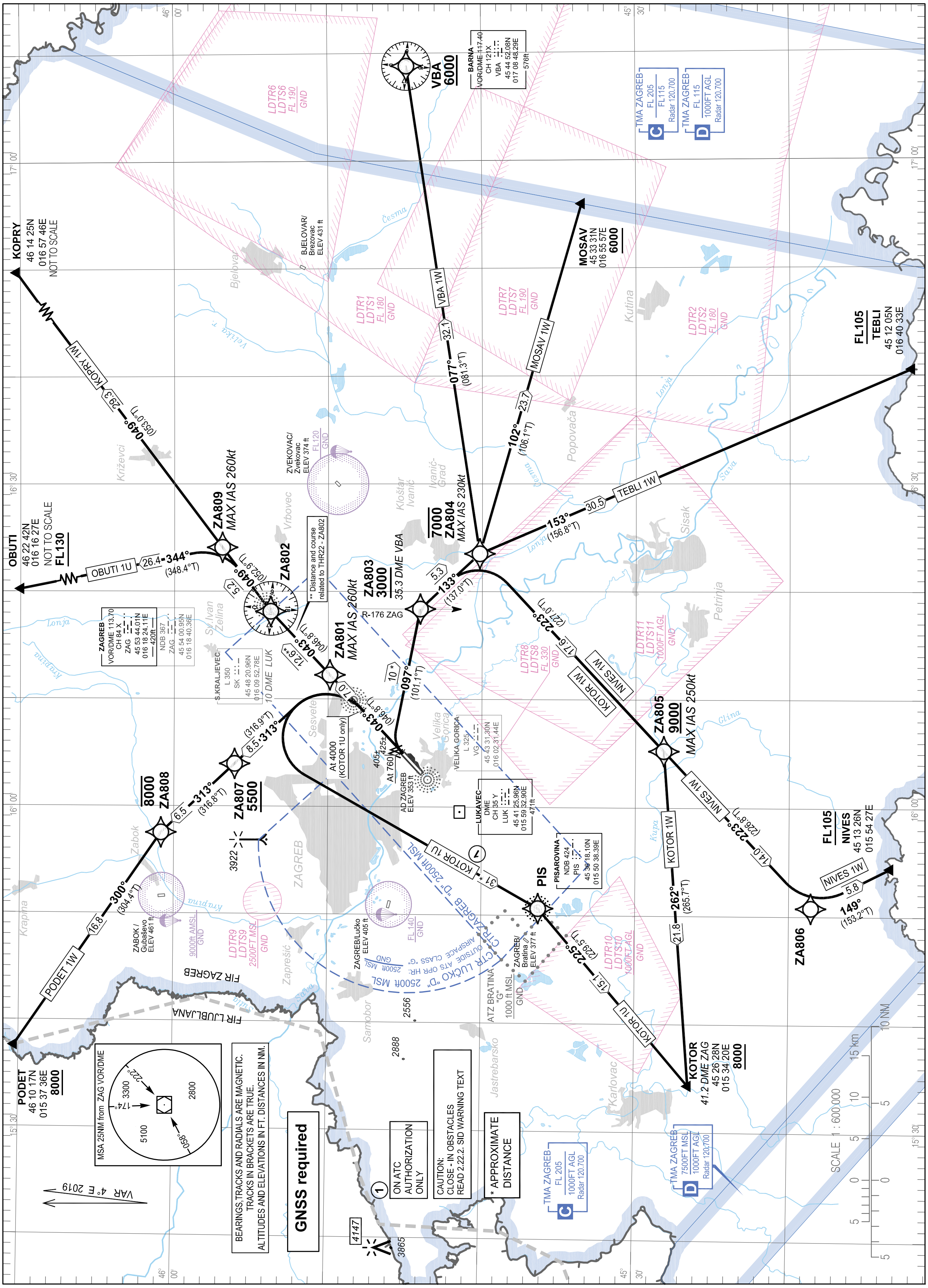
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZAGREB ATIS	124.575
ZAGREB TOWER	118.300
ZAGREB RADAR	120.700

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 04

CHANGE: RWY Designator; Chart title; Page number; Aerodrome ZAGREB/Bratina and ATZ Bratina added; Aerodrome name changed; Warning regarding Close-in Obstacles; Obstacles updated.



ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 04

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 6000 FT and contact Zagreb Radar on 120.700 MHZ.

CAUTION: Close-in obstacles. Read 2.22.2. SID warning text.

WARNING
Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID PODET 1W only:
Climb straight ahead to SK L (10.0 DME LUK). At SK L (10.0 DME LUK) turn LEFT climbing on track 313°. On passing 5500 FT AMSL proceed via RNAV SID PODET 1W or according to ATC instruction. MNM PDG 6.0% (365 FT/NM) to 5500 FT AMSL.

LDZA RNAV STANDARD INSTRUMENT DEPARTURE RWY 04

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	PODET 1W	CF	ZA801	-	043° (046.8°T)	4.00°E	7.0	-	-	-260	MNM PDG 6.0% (365 FT/NM) to 5500 FT AMSL	RNAV 1
020		TF	ZA807	-	313° (316.9°T)	4.00°E	8.5	-	+5500	-		
030		TF	ZA808	-	313° (316.8°T)	4.00°E	6.5	-	-8000	-		
040		TF	PODET	-	300° (304.4°T)	4.00°E	16.8	-	+8000	-		

LDZA RNAV STANDARD INSTRUMENT DEPARTURE RWY 04

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	OBUTI 1U	CF	ZA802	-	043° (046.8°T)	4.00°E	12.6	-	-	-	-	RNAV 1
020		TF	ZA809	-	049° (052.9°T)	4.00°E	5.2	-	-	-260		
030		TF	OBUTI	-	344° (348.4°T)	4.00°E	26.4	-	+FL130	-		
010	KOPRY 1W	CF	ZA802	-	043° (046.8°T)	4.00°E	12.6	-	-	-	-	RNAV 1
020		TF	ZA809	-	049° (052.9°T)	4.00°E	5.2	-	-	-260		
030		TF	KOPRY	-	049° (053.0°T)	4.00°E	29.3	-	-	-		

CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; Warning regarding Close-in Obstacles; Obstacles updated.

WARNING

Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SIDs VBA 1W, MOSAV 1W, TEBLI 1W, NIVES 1W and KOTOR 1W only:

Climb straight ahead. At 760 FT AMSL turn RIGHT climbing on track 097°. Cross 35.3 DME VBA (R-176 ZAG) at or above 3000FT AMSL. After passing 35.3 DME VBA (R-176 ZAG) proceed via RNAV SID flight procedure filed in FPL or according to ATC instruction. MNM PDG 4.0% (243 FT/NM) to 1900 FT AMSL.

LDZA RNAV STANDARD INSTRUMENT DEPARTURE RWY 04

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	VBA 1W	CA	-	-	043° (046.8°T)	4.00°E	-	-	@760	-	MNM PDG 4.0% (243 FT/NM) to 1900 FT AMSL	RNAV 1
020		CF	ZA803	-	097° (101.1°T)	4.00°E	-	-	+3000	-		
030		TF	ZA804	-	133° (137.0°T)	4.00°E	5.3	-	-7000	-230		
040		TF	VBA	-	077° (081.3°T)	4.00°E	32.1	-	+6000	-		
010	MOSAV 1W	CA	-	-	043° (046.8°T)	4.00°E	-	-	@760	-	MNM PDG 4.0% (243 FT/NM) to 1900 FT AMSL	RNAV 1
020		CF	ZA803	-	097° (101.1°T)	4.00°E	-	-	+3000	-		
030		TF	ZA804	-	133° (137.0°T)	4.00°E	5.3	-	-7000	-230		
040		TF	MOSAV	-	102° (106.1°T)	4.00°E	23.7	-	+6000	-		
010	TEBLI 1W	CA	-	-	043° (046.8°T)	4.00°E	-	-	@760	-	MNM PDG 4.0% (243 FT/NM) to 1900 FT AMSL	RNAV 1
020		CF	ZA803	-	097° (101.1°T)	4.00°E	-	-	+3000	-		
030		TF	ZA804	-	133° (137.0°T)	4.00°E	5.3	-	-7000	-230		
040		TF	TEBLI	-	153° (156.8°T)	4.00°E	30.5	-	+FL105	-		
010	NIVES 1W	CA	-	-	043° (046.8°T)	4.00°E	-	-	@760	-	MNM PDG 4.0% (243 FT/NM) to 1900 FT AMSL	RNAV 1
020		CF	ZA803	-	097° (101.1°T)	4.00°E	-	-	+3000	-		
030		TF	ZA804	-	133° (137.0°T)	4.00°E	5.3	-	-7000	-230		
040		TF	ZA805	-	223° (227.0°T)	4.00°E	17.6	-	+9000	-250		
050		TF	ZA806	-	223° (226.8°T)	4.00°E	14.0	-	-	-		
060		TF	NIVES	-	149° (153.2°T)	4.00°E	5.8	-	+FL105	-		
010	KOTOR 1W	CA	-	-	043° (046.8°T)	4.00°E	-	-	@760	-	MNM PDG 4.0% (243 FT/NM) to 1900 FT AMSL	RNAV 1
020		CF	ZA803	-	097° (101.1°T)	4.00°E	-	-	+3000	-		
030		TF	ZA804	-	133° (137.0°T)	4.00°E	5.3	-	-7000	-230		
040		TF	ZA805	-	223° (227.0°T)	4.00°E	17.6	-	+9000	-250		
050		TF	KOTOR	-	262° (265.7°T)	4.00°E	21.8	-	-	-		

CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; Warning regarding Close-in Obstacles; Obstacles updated.

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 04

WARNING
Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID KOTOR 1U only:
Climb straight ahead. At 4000 FT AMSL turn LEFT climbing to PIS NDB. On passing 5500 FT AMSL proceed via RNAV SID KOTOR 1U or according to ATC instruction.

LDZA RNAV STANDARD INSTRUMENT DEPARTURE RWY 04

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	KOTOR 1U	CA	-	-	043° (046.8°T)	4.00°E	-	-	@4000	-	On ATC authorization only	RNAV 1
020		DF	PIS	-	-	4.00°E	-	L	-	-		
030		TF	KOTOR	-	225° (229.5°T)	4.00°E	15.1	-	+8000	-		

Waypoint coordinates		
Waypoint name	WGS-84 latitude	WGS-84 longitude
KOPRY	461425N	0165746E
KOTOR	452628N	0153420E
MOSAV	453331N	0165557E
NIVES	451326N	0155427E
OBUTI	462242N	0161627E
PODET	461017N	0153736E
TEBLI	451205N	0164033E
PIS	453618.10N	0155038.39E
VBA	454452.08N	0170848.29E
ZA801	454953.6N	0161214.1E
ZA802	455344.7N	0161807.9E
ZA803	454401.4N	0161822.2E
ZA804	454009.7N	0162330.6E
ZA805	452810.0N	0160514.7E
ZA806	451834.1N	0155046.6E
ZA807	455603.8N	0160357.0E
ZA808	460049.7N	0155731.4E
ZA809	455653.0N	0162405.1E

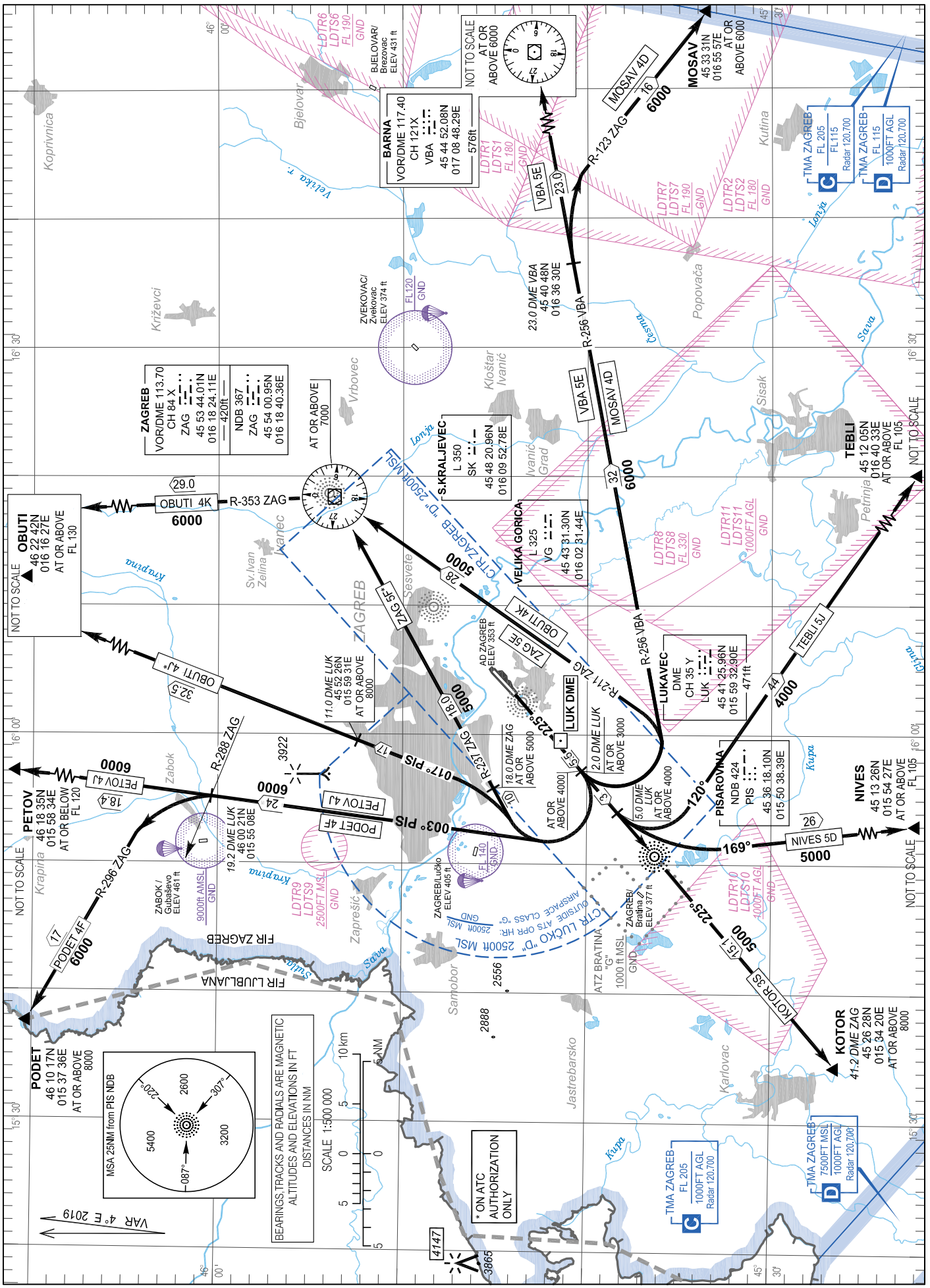
CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; Warning regarding Close-in Obstacles; Obstacles updated.

STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZAGREB ATIS 124.575
ZAGREB TOWER 118.300
ZAGREB RADAR 120.700

ZAGREB / Franjo Tuđman
CROATIA
RWY 22



CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn.

OVA STRANICA JE NAMJERNO OSTAVLJENA PRAZNA
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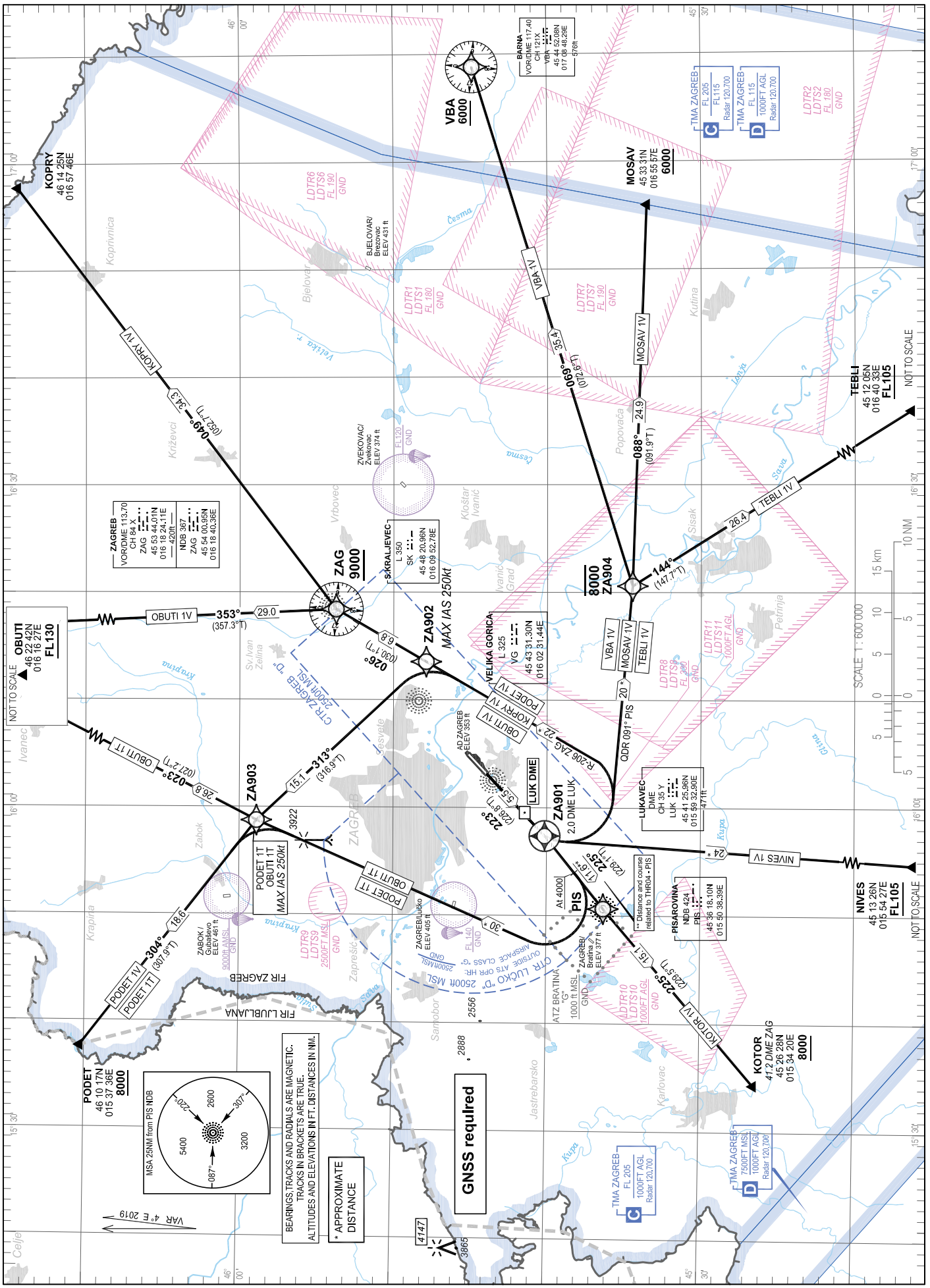
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZAGREB ATIS	124.575
ZAGREB TOWER	118.300
ZAGREB RADAR	120.700

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 22



CHANGE: RWY Designator; Title; Page number name; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added.

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 22

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 6000 FT and contact Zagreb Radar on 120.700 MHZ.

WARNING

Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SIDs PODET 1V, OBUTI 1V and KOPRY 1V only:

Climb straight ahead to 2.0 DME LUK (ZA901). At 2.0 DME LUK (ZA901) turn LEFT climbing to intercept and follow R-206 ZAG. On passing 3000 FT AMSL proceed via RNAV SID flight procedure filed in FPL or according to ATC instruction.

LDZA RNAV STANDARD INSTRUMENT DEPARTURE RWY 22

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	PODET 1V	CF	ZA901	Y	223° (226.8°T)	4.00°E	5.5	-	-	-	MNM PDG 4.0% (243 FT/NM) to 2300 FT AMSL due to G class airspace	RNAV 1
020		DF	ZA902	-	-	4.00°E	-	L	-	-250		
030		TF	ZA903	-	313° (316.9° T)	4.00°E	15.1	-	-	-		
040		TF	PODET	-	304° (307.9°T)	4.00°E	18.6	-	+8000	-		
010	OBUTI 1V	CF	ZA901	Y	223° (226.8°T)	4.00°E	5.5	-	-	-	MNM PDG 4.0% (243 FT/NM) to 2300 FT AMSL due to G class airspace	RNAV 1
020		DF	ZA902	-	-	4.00°E	-	L	-	-250		
030		TF	ZAG	-	026° (030.1° T)	4.00°E	6.8	-	+9000	-		
040		TF	OBUTI	-	353° (357.3°T)	4.00°E	29.0	-	+FL130	-		
010	KOPRY 1V	CF	ZA901	Y	223° (226.8°T)	4.00°E	5.5	-	-	-	MNM PDG 4.0% (243 FT/NM) to 2300 FT AMSL due to G class airspace	RNAV 1
020		DF	ZA902	-	-	4.00°E	-	L	-	-250		
030		TF	ZAG	-	026° (030.1° T)	4.00°E	6.8	-	+9000	-		
040		TF	KOPRY	-	049° (052.7°T)	4.00°E	34.3	-	-	-		

CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added.

WARNING

Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SIDs VBA 1V, MOSAV 1V and TEBLI 1V only:

Climb straight ahead to 2.0 DME LUK (ZA901). At 2.0 DME LUK (ZA901) turn LEFT climbing to intercept and follow bearing QDR 091° PIS NDB. On passing 3000 FT AMSL proceed via RNAV SID flight procedure filed in FPL or according to ATC instruction.

LDZA RNAV STANDARD INSTRUMENT DEPARTURE RWY 22

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	VBA 1V	CF	ZA901	Y	223° (226.8°T)	4.00°E	5.5	-	-	-	MNM PDG 4.0% (243 FT/NM) to 2300 FT AMSL due to G class airspace	RNAV 1
020		DF	ZA904	-	-	4.00°E	-	L	-8000	-		
030		TF	VBA	-	069° (072.6°T)	4.00°E	35.4	-	+6000	-		
010	MOSAV 1V	CF	ZA901	Y	223° (226.8°T)	4.00°E	5.5	-	-	-	MNM PDG 4.0% (243 FT/NM) to 2300 FT AMSL due to G class airspace	RNAV 1
020		DF	ZA904	-	-	4.00°E	-	L	-8000	-		
030		TF	MOSAV	-	088° (091.9°T)	4.00°E	24.9	-	+6000	-		
010	TEBLI 1V	CF	ZA901	Y	223° (226.8°T)	4.00°E	5.5	-	-	-	MNM PDG 4.0% (243 FT/NM) to 2300 FT AMSL due to G class airspace	RNAV 1
020		DF	ZA904	-	-	4.00°E	-	L	-8000	-		
030		TF	TEBLI	-	144° (147.7°T)	4.00°E	26.4	-	+FL105	-		

CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added.

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 22

LDZA RNAV STANDARD INSTRUMENT DEPARTURE RWY 22

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	PODET 1T	CA	-	-	223° (226.8°T)	4.00°E	-	-	@4000	-	MNM PDG 6.7% (407 FT/NM) to 5000 FT AMSL	RNAV 1
020		DF	ZA903	-	-	4.00°E	-	R	-	-250		
030		TF	PODET	-	304° (307.9°T)	4.00°E	18.6	-	+8000	-		
010	OBUTI 1T	CA	-	-	223° (226.8°T)	4.00°E	-	-	@4000	-	MNM PDG 6.7% (407 FT/NM) to 5000 FT AMSL	RNAV 1
020		DF	ZA903	-	-	4.00°E	-	R	-	-250		
030		TF	OBUTI	-	023° (027.2°T)	4.00°E	26.8	-	+FL130	-		
010	NIVES 1V	CF	ZA901	Y	223° (226.8°T)	4.00°E	5.5	-	+2500	-	MNM PDG 6.4% (389 FT/NM) to 2500 FT AMSL	RNAV 1
020		DF	NIVES	-	-	4.00°E	-	L	+FL105	-		
010	KOTOR 1V	CF	PIS	-	225° (229.1°T)	4.00°E	11.6	-	-	-	-	RNAV 1
030		TF	KOTOR	-	225° (229.5°T)	4.00°E	15.1	-	+8000	-		

Waypoint coordinates		
Waypoint name	WGS-84 latitude	WGS-84 longitude
KOPRY	461425N	0165746E
KOTOR	452628N	0153420E
MOSAV	453331N	0165557E
NIVES	451326N	0155427E
OBUTI	462242N	0161627E
PODET	461017N	0153736E
TEBLI	451205N	0164033E
PIS	453618.10N	0155038.39E
VBA	454452.08N	0170848.29E
ZAG	455344.01N	0161824.11E
ZA901	454007.9N	0155722.9E
ZA902	454752.4N	0161331.9E
ZA903	455852.9N	0155844.4E
ZA904	453427.5N	0162035.1E

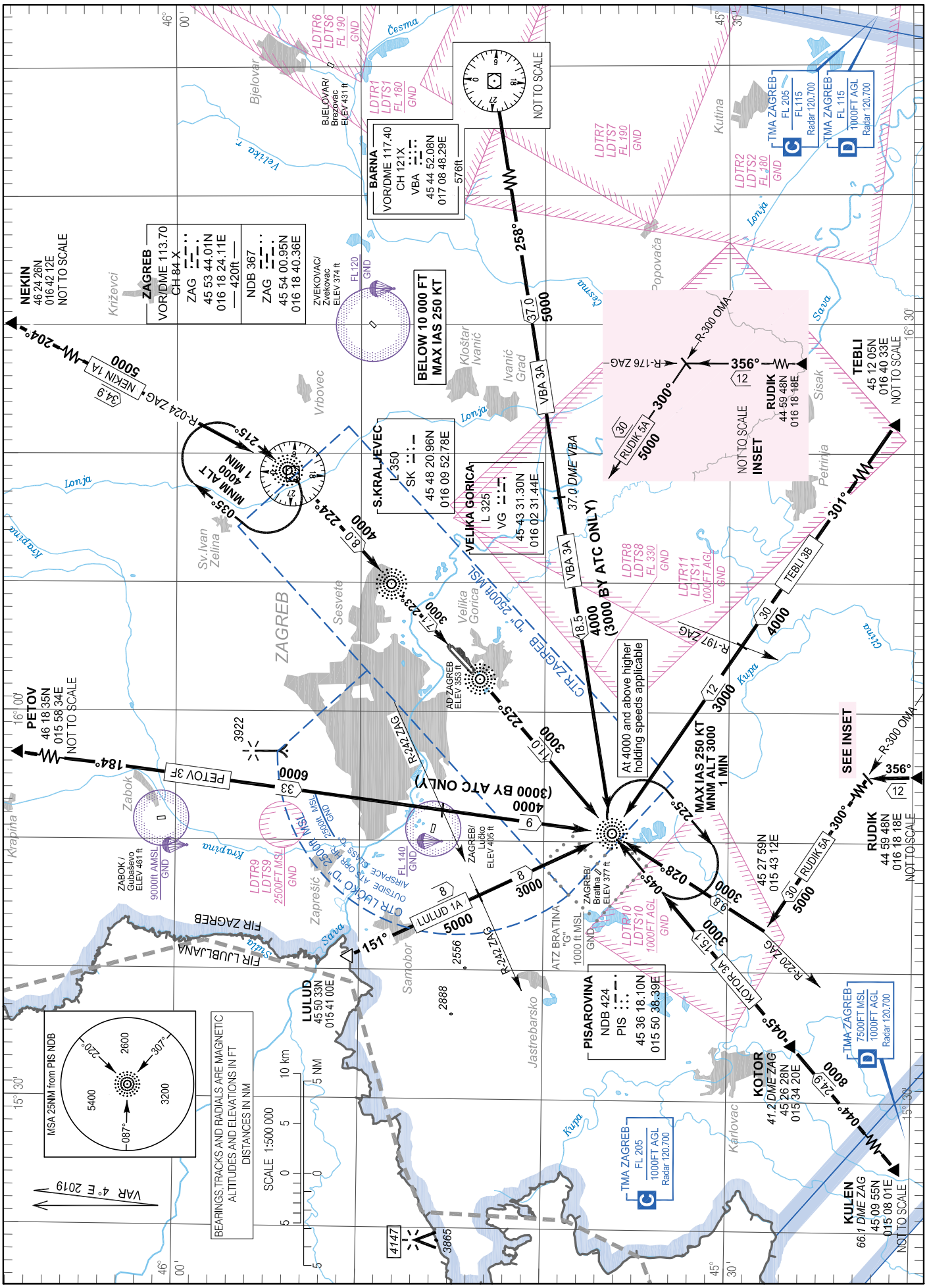
CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added.

STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO

TRANSITION ALTITUDE
10 000

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
RWY 04



CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed: Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn.

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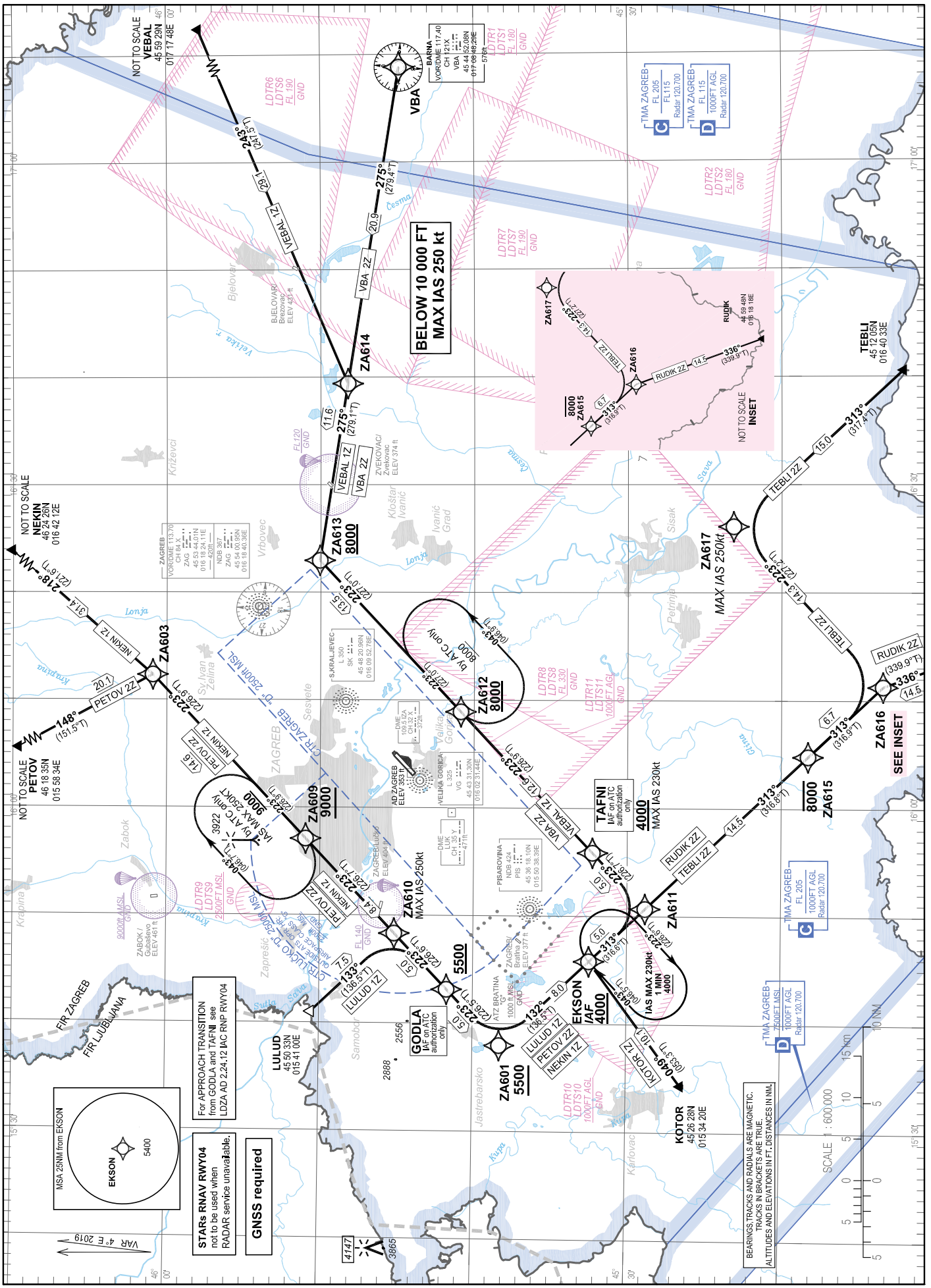
STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO

TRANSITION ALTITUDE
10 000

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 04



CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn; IAC title renamed.

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 04

LDZA RNAV STANDARD ARRIVAL RWY 04

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	VEBAL 1Z	IF	VEBAL	-	-	4.00°E	-	-	-	-	-	
020		TF	ZA614	-	243° (247.5°T)	4.00°E	29.1	-	-	-	-	
030		TF	ZA613	-	275° (279.1°T)	4.00°E	11.6	-	+8000	-	-	
040		TF	ZA612	-	223° (227.0°T)	4.00°E	13.5	-	+8000	-	-	RNAV 1
050		TF	TAFNI	-	223° (226.9°T)	4.00°E	12.6	-	+4000	-230	IAF on ATC authorization only	
060		TF	ZA611	-	223° (226.7°T)	4.00°E	5.0	-	-	-	-	
070		TF	EKSON	-	313° (316.6°T)	4.00°E	5.0	-	+4000	-	IAF	
010	VBA 2Z	IF	VBA	-	-	4.00°E	-	-	-	-	-	
020		TF	ZA614	-	275° (279.4°T)	4.00°E	20.9	-	-	-	-	
030		TF	ZA613	-	275° (279.1°T)	4.00°E	11.6	-	+8000	-	-	
040		TF	ZA612	-	223° (227.0°T)	4.00°E	13.5	-	+8000	-	-	RNAV 1
050		TF	TAFNI	-	223° (226.9°T)	4.00°E	12.6	-	+4000	-230	IAF on ATC authorization only	
060		TF	ZA611	-	223° (226.7°T)	4.00°E	5.0	-	-	-	-	
070		TF	EKSON	-	313° (316.6°T)	4.00°E	5.0	-	+4000	-	IAF	
010	TEBLI 2Z	IF	TEBLI	-	-	4.00°E	-	-	-	-	-	
020		TF	ZA617	-	313° (317.4°T)	4.00°E	15.0	-	-	-250	-	
030		TF	ZA616	-	223° (227.2°T)	4.00°E	14.3	-	-	-	-	
040		TF	ZA615	-	313° (316.9°T)	4.00°E	6.7	-	-8000	-	-	RNAV 1
050		TF	ZA611	-	313° (316.8°T)	4.00°E	14.5	-	-	-	-	
060		TF	EKSON	-	313° (316.6°T)	4.00°E	5.0	-	+4000	-	IAF	
010	RUDIK 2Z	IF	RUDIK	-	-	4.00°E	-	-	-	-	-	
020		TF	ZA616	-	336° (339.9°T)	4.00°E	14.5	-	-	-	-	
030		TF	ZA615	-	313° (316.9°T)	4.00°E	6.7	-	-8000	-	-	RNAV 1
040		TF	ZA611	-	313° (316.8°T)	4.00°E	14.5	-	-	-	-	
050		TF	EKSON	-	313° (316.6°T)	4.00°E	5.0	-	+4000	-	IAF	

CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn; IAC title renamed.

LDZA RNAV STANDARD ARRIVAL RWY 04

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	KOTOR 1Z	IF	KOTOR	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	EKSON	-	049° (053.3°T)	4.00°E	10.1	-	+4000	-	IAF	
010	LULUD 1Z	IF	LULUD	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA610	-	133° (136.5°T)	4.00°E	7.5	-	-	-250	-	
030		TF	GODLA	-	223° (226.6°T)	4.00°E	5.0	-	+5500	-	IAF on ATC authorization only	
040		TF	ZA601	-	223° (226.5°T)	4.00°E	5.0	-	+5500	-	-	
050		TF	EKSON	-	132° (136.5°T)	4.00°E	8.0	-	+4000	-	IAF	
010	PETOV 2Z	IF	PETOV	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA603	-	148° (151.5°T)	4.00°E	20.1	-	-	-	-	
030		TF	ZA609	-	223° (226.9°T)	4.00°E	14.6	-	+9000	-	-	
040		TF	ZA610	-	223° (226.7°T)	4.00°E	8.4	-	-	-250	-	
050		TF	GODLA	-	223° (226.6°T)	4.00°E	5.0	-	+5500	-	IAF on ATC authorization only	
060		TF	ZA601	-	223° (226.5°T)	4.00°E	5.0	-	+5500	-	-	
070		TF	EKSON	-	132° (136.5°T)	4.00°E	8.0	-	+4000	-	IAF	
010	NEKIN 1Z	IF	NEKIN	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA603	-	218° (221.6°T)	4.00°E	31.4	-	-	-	-	
030		TF	ZA609	-	223° (226.9°T)	4.00°E	14.6	-	+9000	-	-	
040		TF	ZA610	-	223° (226.7°T)	4.00°E	8.4	-	-	-250	-	
050		TF	GODLA	-	223° (226.6°T)	4.00°E	5.0	-	+5500	-	IAF on ATC authorization only	
060		TF	ZA601	-	223° (226.5°T)	4.00°E	5.0	-	+5500	-	-	
070		TF	EKSON	-	132° (136.5°T)	4.00°E	8.0	-	+4000	-	IAF	

IAF on ATC authorization only: For APPROACH TRANSITION from TAFNI and GODLA see LDZA AD 2.24.12 IAC RNP RWY 04

CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn; IAC title renamed.

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 04

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
EKSON	HM	043° (046.5°T)	1MIN / -	R	4000	-	230	4.00°E	-	RNAV 1
ZA612	HM	223° (227.0°T)	1MIN / -	L	8000	-	-	4.00°E	HLDG by ATC only	RNAV 1
ZA609	HM	223° (226.9°T)	1MIN / -	R	9000	-	250	4.00°E	HLDG by ATC only	RNAV 1

Waypoint coordinates

Waypoint name	WGS-84 latitude	WGS-84 longitude
LULUD	455033N	0154100E
EKSON	453227.7N	0154548.4E
TAFNI	453215.6N	0155551.9E
GODLA	454142.4N	0154308.3E
KOTOR	452628N	0153420E
NEKIN	462426N	0164212E
PETOV	461835N	0155834E
RUDIK	445948N	0161818E
TEBLI	451205N	0164033E
VEBAL	455929N	0171748E
VBA	454452.08N	0170848.29E
ZA601	453815.9N	0153757.8E
ZA603	460054.6N	0161219.5E
ZA609	455056.0N	0155705.8E
ZA610	454508.5N	0154819.2E
ZA611	452849.7N	0155041.5E
ZA612	454051.7N	0160854.5E
ZA613	455003.0N	0162257.1E
ZA614	454813.7N	0163923.8E
ZA615	451816.2N	0160448.1E
ZA616	451324.2N	0161115.8E
ZA617	452308.1N	0162606.2E

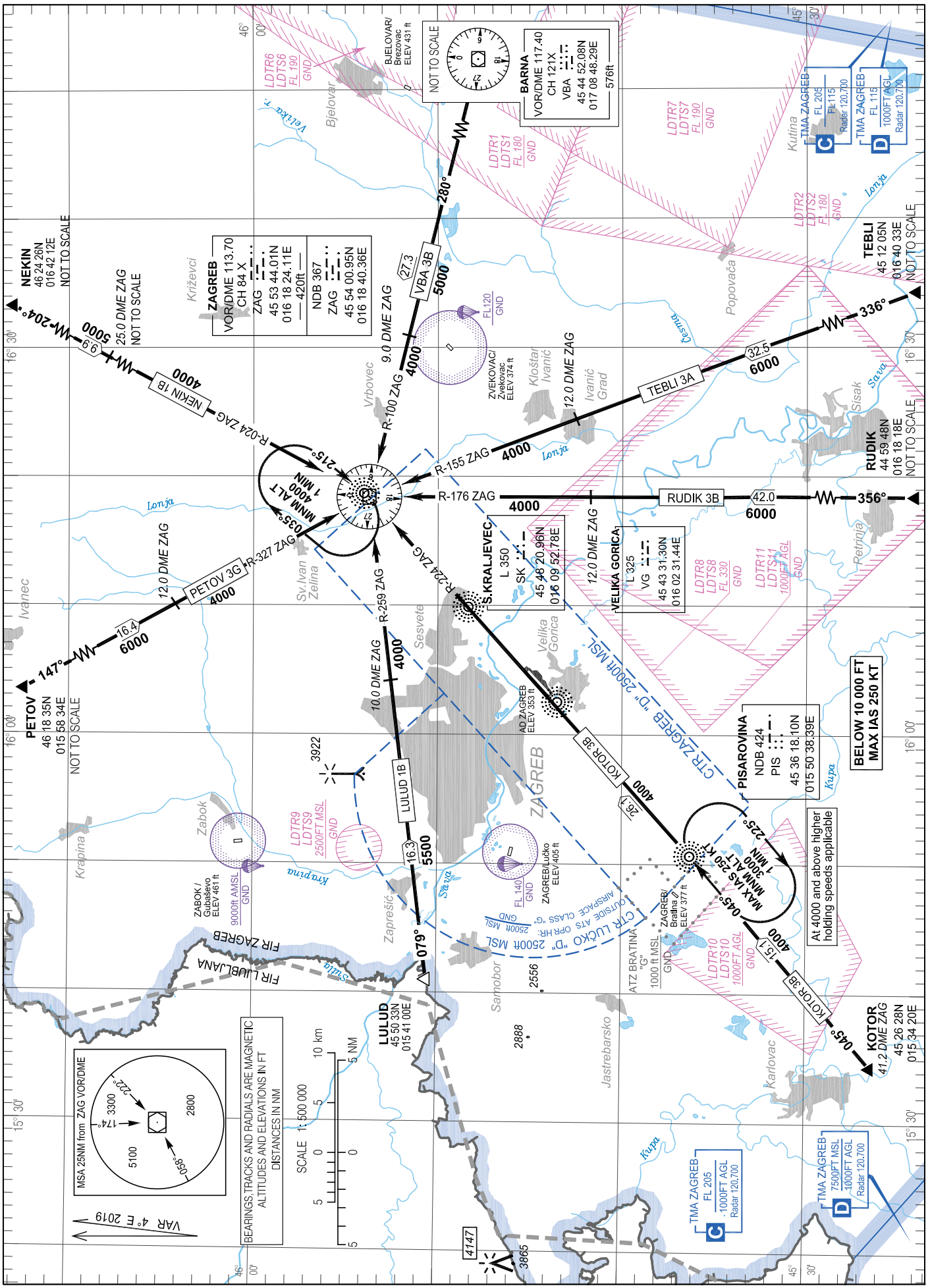
CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn; IAC title renamed.

STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO

TRANSITION ALTITUDE
10 000

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
RWY 22



CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn.

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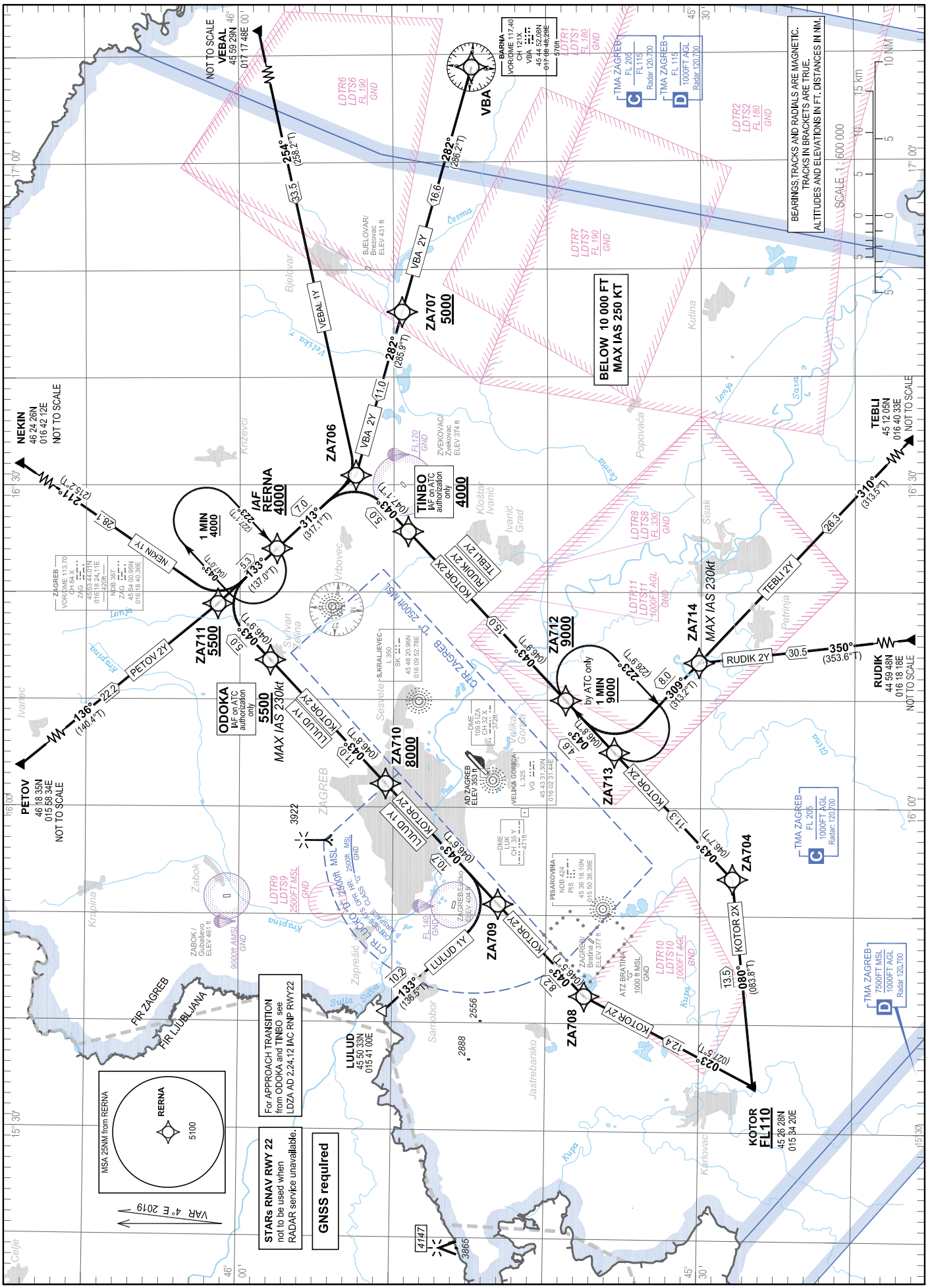
STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO

TRANSITION ALTITUDE
10 000

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 22



CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn; IAC title renamed.

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 22

LDZA RNAV STANDARD ARRIVAL RWY 22

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	PETOV 2Y	IF	PETOV	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA711	-	136° (140.4°T)	4.00°E	22.2	-	+5500	-	-	
030		TF	RERNA	-	133° (137.0°T)	4.00°E	5.3	-	+4000	-	IAF	
010	NEKIN 1Y	IF	NEKIN	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA711	-	211° (215.2°T)	4.00°E	28.1	-	+5500	-	-	
030		TF	RERNA	-	133° (137.0°T)	4.00°E	5.3	-	+4000	-	IAF	
010	VEBAL 1Y	IF	VEBAL	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA706	-	254° (258.2°T)	4.00°E	33.5	-	-	-	-	
030		TF	RERNA	-	313° (317.1°T)	4.00°E	7.0	-	+4000	-	IAF	
010	VBA 2Y	IF	VBA	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA707	-	282° (286.2°T)	4.00°E	16.6	-	+5000	-	-	
030		TF	ZA706	-	282° (285.9°T)	4.00°E	11.0	-	-	-	-	
040		TF	RERNA	-	313° (317.1°T)	4.00°E	7.0	-	+4000	-	IAF	
010	TEBLI 2Y	IF	TEBLI	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA714	-	310° (313.5°T)	4.00°E	26.3	-	-	-230	-	
030		TF	ZA713	-	309° (313.2°T)	4.00°E	8.0	-	-	-	-	
040		TF	ZA712	-	043° (046.8°T)	4.00°E	4.6	-	+9000	-	-	
050		TF	TINBO	-	043° (046.9°T)	4.00°E	15.0	-	+4000	-	IAF on ATC authorization only	
060		TF	ZA706	-	043° (047.1°T)	4.00°E	5.0	-	-	-	-	
070		TF	RERNA	-	313° (317.1°T)	4.00°E	7.0	-	+4000	-	IAF	

CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn; IAC title renamed.

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 22

LDZA RNAV STANDARD ARRIVAL RWY 22

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	RUDIK 2Y	IF	RUDIK	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA714	-	350° (353.6°T)	4.00°E	30.5	-	-	-230	-	
030		TF	ZA713	-	309° (313.2°T)	4.00°E	8.0	-	-	-	-	
040		TF	ZA712	-	043° (046.8°T)	4.00°E	4.6	-	+9000	-	-	
050		TF	TINBO	-	043° (046.9°T)	4.00°E	15.0	-	+4000	-	IAF on ATC authorization only	
060		TF	ZA706	-	043° (047.1°T)	4.00°E	5.0	-	-	-	-	
070		TF	RERNA	-	313° (317.1°T)	4.00°E	7.0	-	+4000	-	IAF	
010	KOTOR 2X	IF	KOTOR	-	-	4.00°E	-	-	+FL110	-	-	RNAV 1
020		TF	ZA704	-	080° (083.8°T)	4.00°E	13.5	-	-	-	-	
030		TF	ZA713	-	043° (046.7°T)	4.00°E	11.3	-	-	-	-	
040		TF	ZA712	-	043° (046.8°T)	4.00°E	4.6	-	+9000	-	-	
050		TF	TINBO	-	043° (046.9°T)	4.00°E	15.0	-	+4000	-	IAF on ATC authorization only	
060		TF	ZA706	-	043° (047.1°T)	4.00°E	5.0	-	-	-	-	
070		TF	RERNA	-	313° (317.1°T)	4.00°E	7.0	-	+4000	-	IAF	
010	KOTOR 2Y	IF	KOTOR	-	-	4.00°E	-	-	+FL110	-	-	RNAV 1
020		TF	ZA708	-	023° (027.5°T)	4.00°E	12.4	-	-	-	-	
030		TF	ZA709	-	043° (046.5°T)	4.00°E	8.2	-	-	-	-	
040		TF	ZA710	-	043° (046.6°T)	4.00°E	10.7	-	+8000	-	-	
050		TF	ODOKA	-	043° (046.8°T)	4.00°E	11.0	-	+5500	-230	IAF on ATC authorization only	
060		TF	ZA711	-	043° (046.9°T)	4.00°E	5.0	-	+5500	-	-	
070		TF	RERNA	-	133° (137.0°T)	4.00°E	5.3	-	+4000	-	IAF	

CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn; IAC title renamed.

ZAGREB / Franjo Tuđman
CROATIA
RNAV RWY 22

LDZA RNAV STANDARD ARRIVAL RWY 22

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	LULUD 1Y	IF	LULUD	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZA709	-	133° (136.5°T)	4.00°E	10.2	-	-	-	-	
030		TF	ZA710	-	043° (046.6°T)	4.00°E	10.7	-	+8000	-	-	
040		TF	ODOKA	-	043° (046.8°T)	4.00°E	11.0	-	+5500	-230	IAF on ATC authorization only	
050		TF	ZA711	-	043° (046.9°T)	4.00°E	5.0	-	+5500	-	-	
060		TF	RERNA	-	133° (137.0°T)	4.00°E	5.3	-	+4000	-	IAF	

IAF on ATC authorization only: For APPROACH TRANSITION from ODOKA and TINBO see LDZA AD 2.24.12 IAC RNP RWY 22

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
RERNA	HM	223° (227.1°T)	1MIN / -	R	4000	-	-	4.00°E	-	RNAV 1
ZA712	HM	043° (046.8°T)	1MIN / -	R	9000	-	-	4.00°E	HLDG by ATC only	RNAV 1

Waypoint coordinates

Waypoint name	WGS-84 latitude	WGS-84 longitude
LULUD	455033N	0154100E
ODOKA	455801.1N	0161340.1E
KOTOR	452628N	0153420E
NEKIN	462426N	0164212E
PETOV	461835N	0155834E
RERNA	455735.6N	0162402.7E
RUDIK	445948N	0161818E
TEBLI	451205N	0164033E
TINBO	454903.8N	0162538.1E
VEBAL	455929N	0171748E
VBA	454452.08N	0170848.29E
ZA704	452754.1N	0155326.4E
ZA706	455228.0N	0163052.5E
ZA707	454927.1N	0164604.1E
ZA708	453730.0N	0154230.8E
ZA709	454308.4N	0155101.1E
ZA710	455030.0N	0160211.0E
ZA711	460125.9N	0161854.6E
ZA712	453848.4N	0160957.1E
ZA713	453537.7N	0160507.4E
ZA714	453008.1N	0161327.7E

CHANGE: RWY Designator; Chart title; Page number; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn; IAC title renamed.

ATC SURVEILLANCE MINIMUM ALTITUDE CHART - ICAO

TRANSITION ALTITUDE
10 000

AD ELEV 353

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA

GENERAL INFORMATION:

1. ATC SURVEILLANCE BASED ON RADAR SYSTEM.
2. BELOW THE RADAR MINIMUM ALTITUDE, IFR FLIGHTS WILL BE NORMALLY CLEARED ON PUBLISHED IFR PROCEDURES ONLY.
3. MINIMUM ALTITUDES ARE REFERRED TO ZAGREB QNH AND ARE INDICATED IN FT MSL.
4. THE AREAS DEPICTED AND ASSOCIATED MINIMUM ALTITUDES ARE ESTABLISHED BY APPLYING APPROPRIATE BUFFER AND OBSTACLE CLEARANCE OF AT LEAST 1000 FT, PLUS ADDITIONAL BUFFER OF 500 FT FOR THE LOWER LIMIT OF THE CONTROLLED AIRSPACE IN FIR ZAGREB.
5. ONLY SIGNIFICANT OBSTACLES AND DOMINANT SPOT ELEVATIONS SHOWN.
6. THIS CHART SHOULD ONLY BE USED FOR THE CROSS-CHECKING OF ASSIGNED ALTITUDES WHILST UNDER RADAR CONTROL.

ALTITUDES AND ELEVATIONS IN FT
DISTANCES IN NM

SCALE 1 : 650 000
5 0 5 10 15 km
5 0 5 10NM

VAR 4° E 2019

CHANGE: RUGOG Added; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn.

ZAGREB / Franjo Tuđman
CROATIA

LIST OF COORDINATES FOR
MINIMUM VECTORING ALTITUDE SECTORS

	WGS-84 latitude	WGS-84 longitude
SECTOR 1	454852N	0160942E
	454945N	0161108E
	455117N	0161243E
	455344N	0161824E
	455041N	0162206E
	453301N	0155442E
	453838N	0154552E
	454245N	0155218E
	454650N	0160246E
	454852N	0160942E

	WGS-84 latitude	WGS-84 longitude
SECTOR 2	454852N	0160942E
	455211N	0160942E
	455501N	0161138E
	460057N	0162106E
	455734N	0162538E
	455344N	0161824E
	455117N	0161243E
	454945N	0161108E
	454852N	0160942E

	WGS-84 latitude	WGS-84 longitude
SECTOR 3	462220N	0164846E
	along FIR BDRY Zagreb - Budapest	
	460715N	0171052E
	455046N	0170045E
	455013N	0163712E
	452239N	0155435E
	453238N	0153245E
	453845N	0154243E
	454041N	0154723E
	454245N	0155218E
	453838N	0154552E
	453301N	0155442E
	455041N	0162206E
	455344N	0161824E
	460525N	0164031E
	461222N	0163758E
	462220N	0164846E

	WGS-84 latitude	WGS-84 longitude
SECTOR 4	462249N	0161811E
	along FIR BDRY Zagreb - Ljubljana	
	along FIR BDRY Zagreb - Budapest	
	462220N	0164846E
	461222N	0163758E
	460525N	0164031E
	455734N	0162538E
	460057N	0162106E
	455501N	0161138E
	455211N	0160942E
	455711N	0160942E
	460051N	0160942E
	460537N	0161435E
	462043N	0162324E
	462249N	0161811E

	WGS-84 latitude	WGS-84 longitude
SECTOR 5	462249N	0161811E
	462043N	0162324E
	460537N	0161435E
	460051N	0160942E
	455711N	0160942E
	454852N	0160942E
	454650N	0160246E
	454245N	0155218E
	454041N	0154723E
	455227N	0154805E
	454748N	0155616E
	455010N	0160157E
	455150N	0160348E
	462242N	0161627E
	along FIR BDRY Zagreb - Ljubljana	
	462249N	0161811E

	WGS-84 latitude	WGS-84 longitude
SECTOR 6	462242N	0161627E
	455150N	0160348E
	455010N	0160157E
	454748N	0155616E
	455227N	0154805E
	460541N	0154848E
	461017N	0153736E
	along FIR BDRY Zagreb - Ljubljana	
	462242N	0161627E

	WGS-84 latitude	WGS-84 longitude
SECTOR 7	461017N	0153736E
	460541N	0154848E
	454646N	0154744E
	454103N	0154257E
	453837N	0153707E
	453820N	0152607E
	454358N	0153506E
	455049N	0153506E
	along FIR BDRY Zagreb - Ljubljana	
	461017N	0153736E

	WGS-84 latitude	WGS-84 longitude
SECTOR 8	455049N	0153506E
	454358N	0153506E
	453313N	0151757E
	along FIR BDRY Zagreb - Ljubljana	
	455049N	0153506E

	WGS-84 latitude	WGS-84 longitude
SECTOR 9	455046N	0170045E
	451111N	0164948E
	along FIR BDRY Zagreb - Sarajevo	
	450749N	0162628E
	452239N	0155435E
	455013N	0163712E
	455046N	0170045E

	WGS-84 latitude	WGS-84 longitude
SECTOR 10	450749N	0162628E
	along FIR BDRY Zagreb - Sarajevo	
	451031N	0154640E
	452710N	0151943E
	along FIR BDRY Zagreb - Ljubljana	
	453313N	0151757E
	453820N	0152607E
	453845N	0154243E
	453238N	0153245E
	450749N	0162628E

	WGS-84 latitude	WGS-84 longitude
SECTOR 11	452710N	0151943E
	451031N	0154640E
	along FIR BDRY Zagreb - Sarajevo	
	450414N	0154529E
	452527N	0151100E
	along FIR BDRY Zagreb - Ljubljana	
	452710N	0151943E

	WGS-84 latitude	WGS-84 longitude
SECTOR 12	453837N	0153707E
	454103N	0154257E
	454646N	0154744E
	454041N	0154723E
	453845N	0154243E
	453837N	0153707E

	WGS-84 latitude	WGS-84 longitude
SECTOR 13	460715N	0171052E
	along FIR BDRY Zagreb - Budapest	
	455553N	0172323E
	450912N	0170950E
	along FIR BDRY Zagreb - Sarajevo	
	451111N	0164948E
	455046N	0170045E
	460715N	0171052E

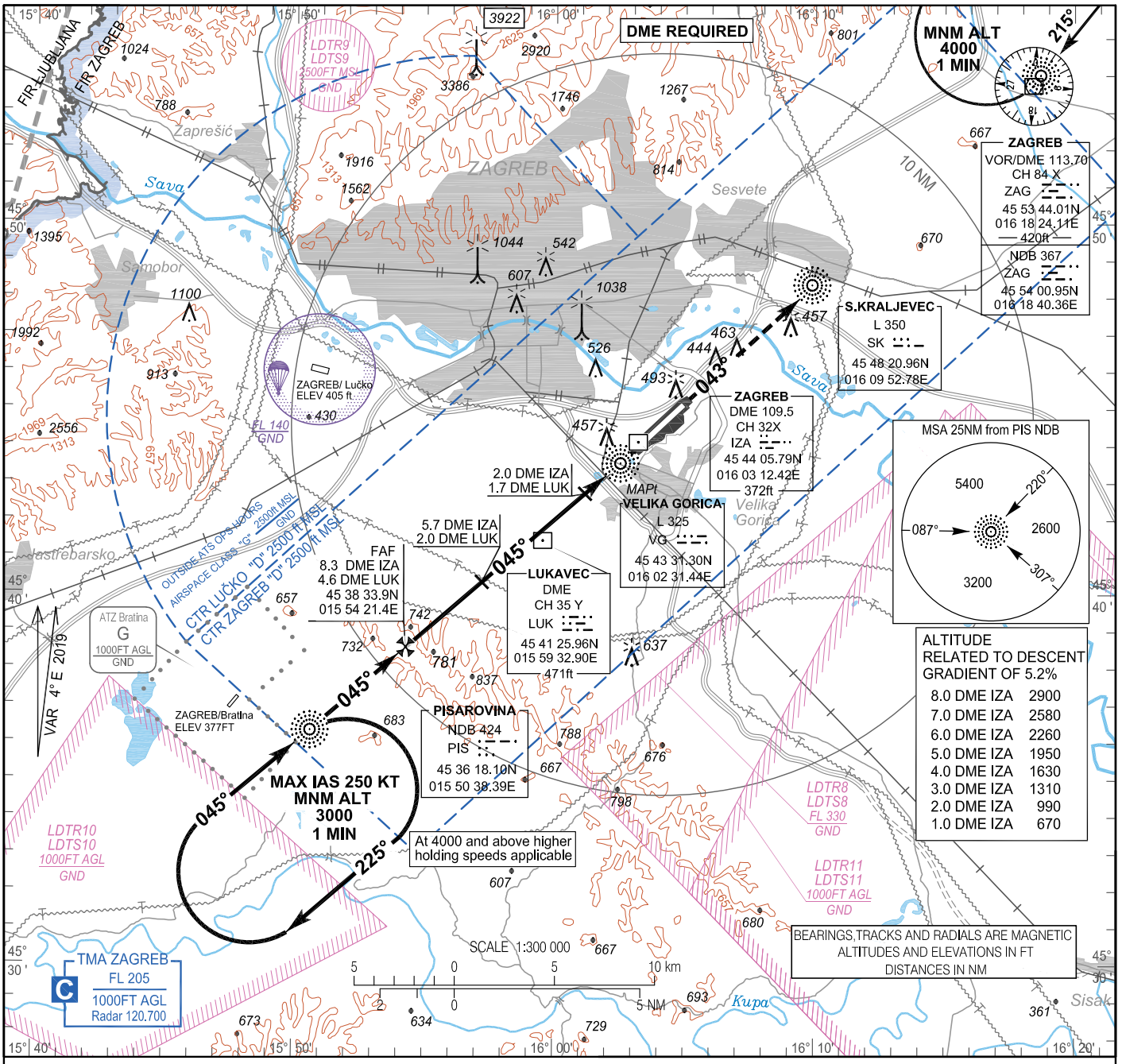
CHANGE: RUGOG Added; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added; LDP39 withdrawn.

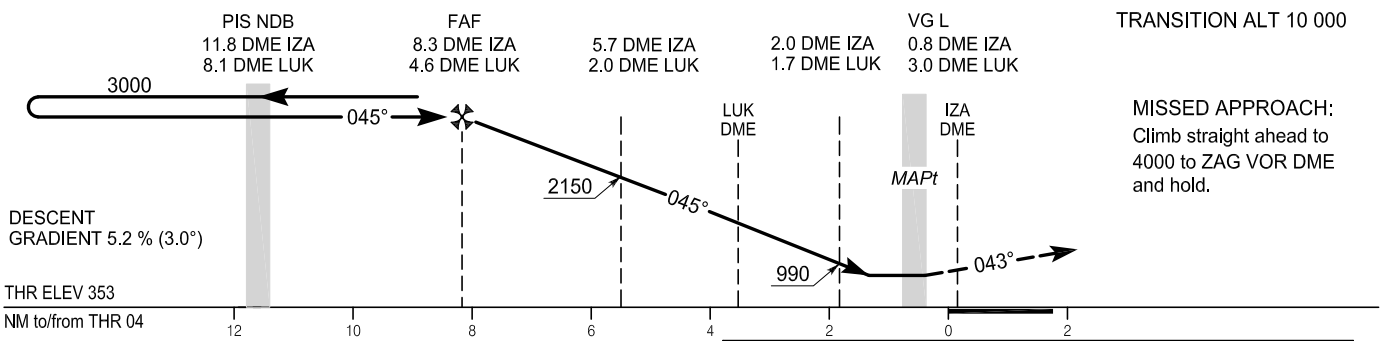
INSTRUMENT APPROACH
CHART-ICAO

AD ELEV 353
HEIGHTS RELATED
TO THR 04 ELEV 353

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
L RWY 04





OCA(H)	A	B	C	D
Straight-in Approach	710(360)			
Circling	830 (480)	850 (500)	950 (600)	1050 (700)

PIS NDB - VG L DISTANCE - 11.0NM						
TIMING NOT AUTHORIZED FOR DEFINING THE MAPt						
GS(kt)	70	90	100	120	140	160
min : sec	9:26	7:20	6:36	5:30	4:43	4:07
Rate of descent (ft / min)	369	474	527	632	737	843

MAPt at VG L
Note: Circling for ACFT CAT B, C and D NW of aerodrome NA

CHANGE: RWY Designator; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added.

AERONAUTICAL DATABASE REQUIREMENTS			
Conventional procedure essential fixes/points			
LDZA L RWY 04			
Final approach descent angle:		3.01°	
Fix identification	Coordinates	True bearing or ARC distance providing track	True bearing or distance providing intersection
IAF (PIS NDB)	See LDZA AD 2.19	-	-
FAF	45 38 33.9N 015 54 21.4E	049.06° (L VG)	8.31 DME IZA 4.63 DME LUK
SDF	45 40 18.5N 015 57 13.4E	049.06° (L VG)	5.65 DME IZA 1.98 DME LUK
SDF	45 42 41.9N 016 01 09.9E	049.06° (L VG)	2.00 DME IZA 1.70 DME LUK
MAPt (VG L)	See LDZA AD 2.19	-	-

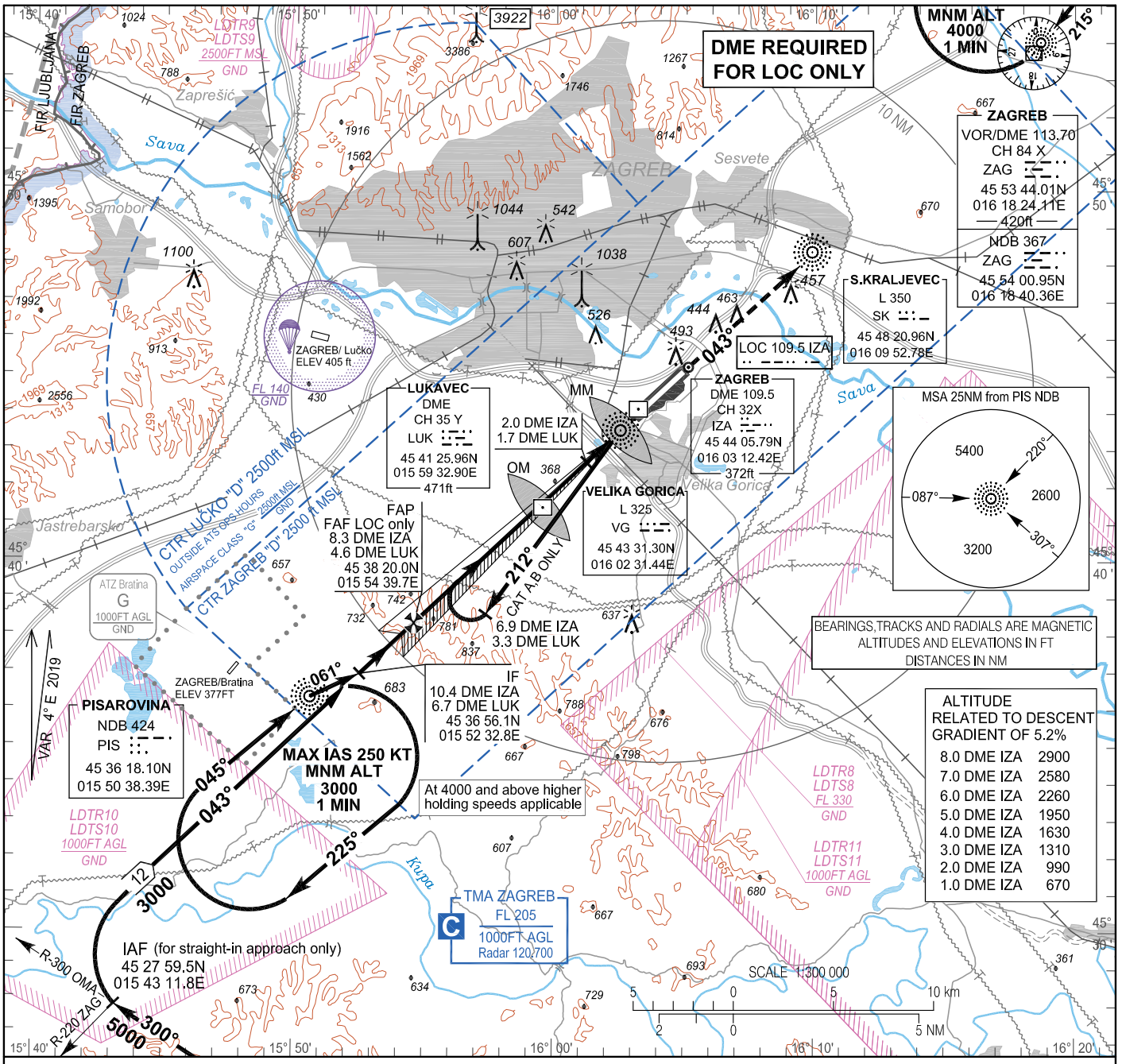
CHANGE: RWY Designator; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added.

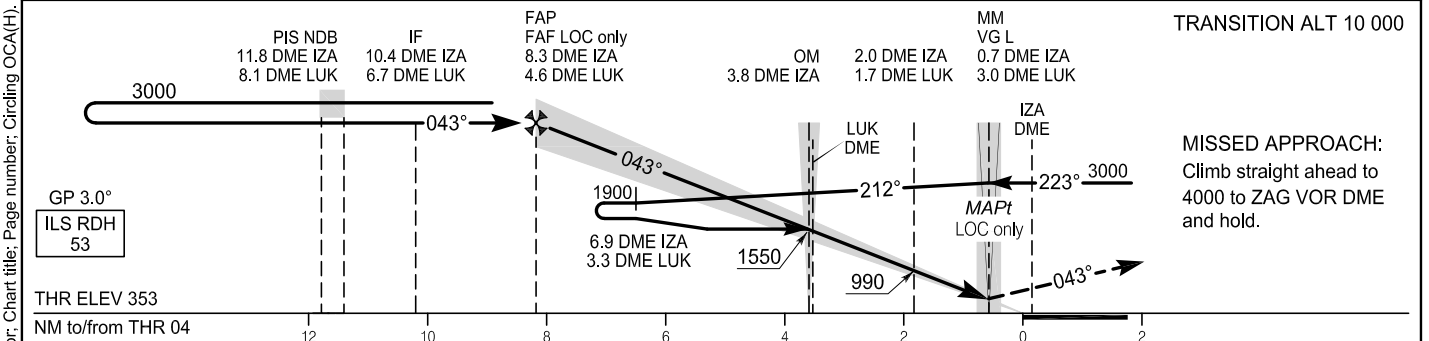
INSTRUMENT APPROACH CHART-ICAO

AD ELEV 353
HEIGHTS RELATED TO THR 04 ELEV 353

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
ILS or LOC RWY 04 CAT I/II/III





OCA(H)		A	B	C	D
Straight-in Approach	ILS CAT I press. altim.	491 (138)	498 (145)	508 (155)	518 (165)
	ILS CAT II radio. altim.	403 (50)	413 (60)	426 (73)	439 (86)
	LOC only	680 (327)			
Circling		830 (480)	850 (500)	950 (600)	1050 (700)

ILS CAT IIIb (MNM RVR 75m) approved

GS (kt)	70	90	100	120	140	160
Rate of descent (ft / min)	369	474	527	632	737	843

Note: Circling for ACFT CAT B, C and D NW of aerodrome NA

CHANGE: RWY Designator; Chart title; Page number; Circling OCA(H).

AERONAUTICAL DATABASE REQUIREMENTS			
Conventional procedure essential fixes/points			
LDZA ILS or LOC only RWY04			
LOC only - final approach descent angle:		3.01°	
Fix identification	Coordinates	True bearing or ARC distance providing track	True bearing or distance providing intersection
IAF (PIS NDB)	See LDZA AD 2.19	-	-
IAF (for straight-in approach only)	45 27 59.5N 015 43 11.8E	303.94° (OMA VOR)	224.00° (ZAG VOR)
IF	45 36 56.0N 015 52 32.8E	046.79° (IZA LOC)	10.35 DME IZA 6.66 DME LUK
FAP / FAF LOC only	45 38 20.0N 015 54 39.7E	046.79° (IZA LOC)	8.31 DME IZA 4.62 DME LUK
SDF LOC only (OM)	See LDZA AD 2.19	046.79° (IZA LOC)	3.76 DME IZA
SDF LOC only	45 42 39.7N 016 01 13.1E	046.79° (LOC IZA)	2.00 DME IZA 1.70 DME LUK
MAPt LOC only (MM)	See LDZA AD 2.19	046.79° (IZA LOC)	0.74 DME IZA 2.96 DME LUK

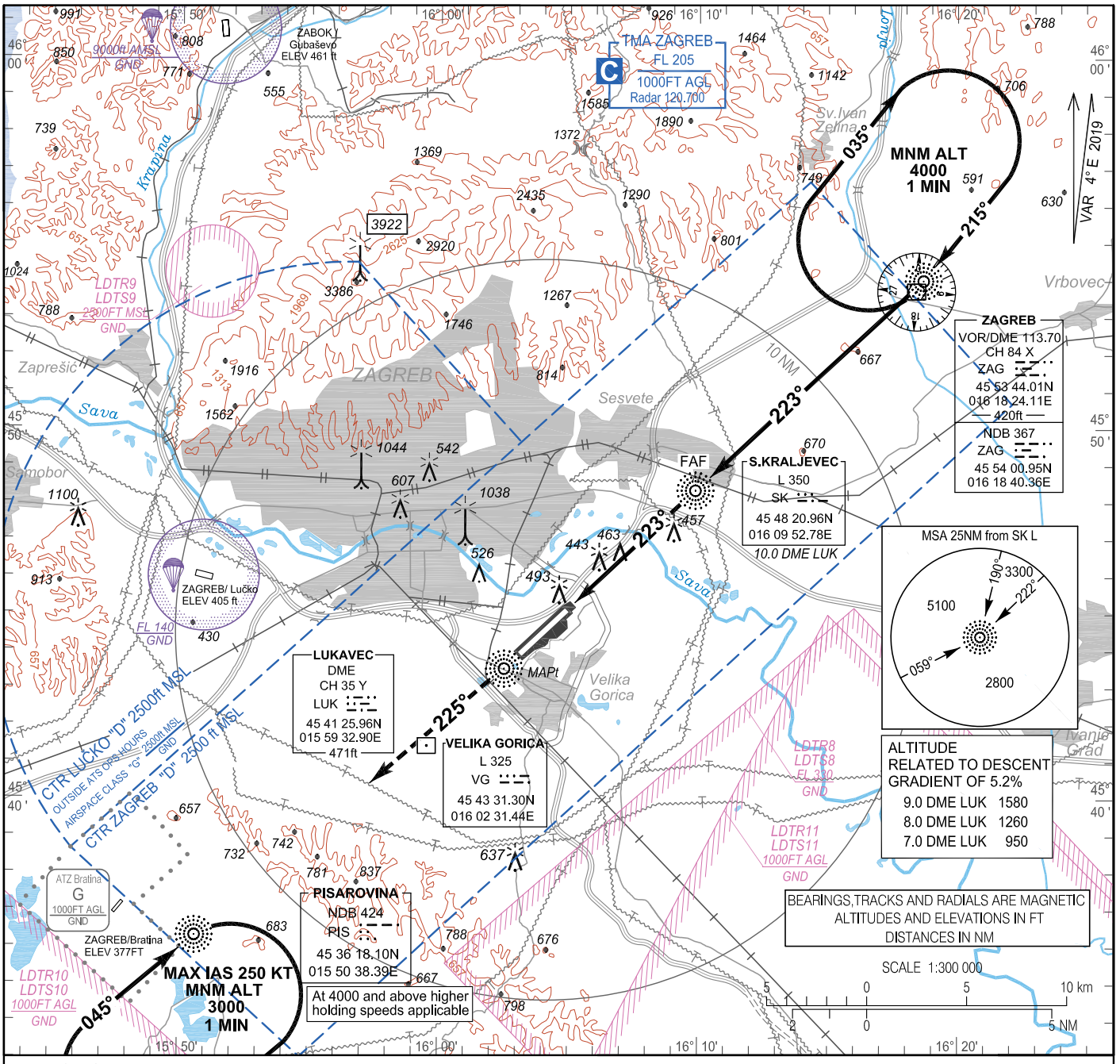
CHANGE: RWY Designator; Chart title; Page number; Circling OCA(H).

INSTRUMENT APPROACH CHART-ICAO

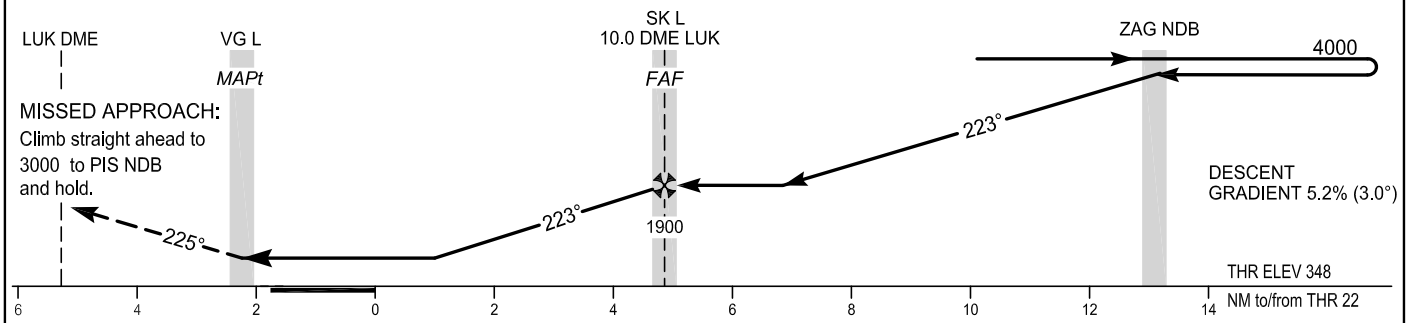
AD ELEV 353
HEIGHTS RELATED TO AD ELEV 353

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
L y RWY 22



TRANSITION ALT 10 000



OCA(H)	A	B	C	D
Straight-in Approach	750 (397)			
Circling	860(507)	890(537)	990(637)	1090(737)

FAF to MAPt - 7.06 NM
TIMING NOT AUTHORIZED FOR DEFINING THE MAPt

GS (kt)	70	90	100	120	140	160
min : sec	6:03	4:42	4:14	3:32	3:02	2:39
Rate of descent (ft / min)	369	474	527	632	737	843

Note: Circling for ACFT CAT B, C and D NW of aerodrome NA

CHANGE: RWY Designator; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added; Visual surface segment removed.

AERONAUTICAL DATABASE REQUIREMENTS			
Conventional procedure essential fixes/points			
LDZA L y RWY 22			
Final approach descent angle:		2.99°	
Fix identification	Coordinates	True bearing or ARC distance providing track	True bearing or distance providing intersection
IAF / IF (ZAG NDB)	See LDZA AD 2.19	-	-
FAF (SK L)	See LDZA AD 2.19	226.88° (VG L)	10.01 DME LUK
MAPt (VG L)	See LDZA AD 2.19	-	-

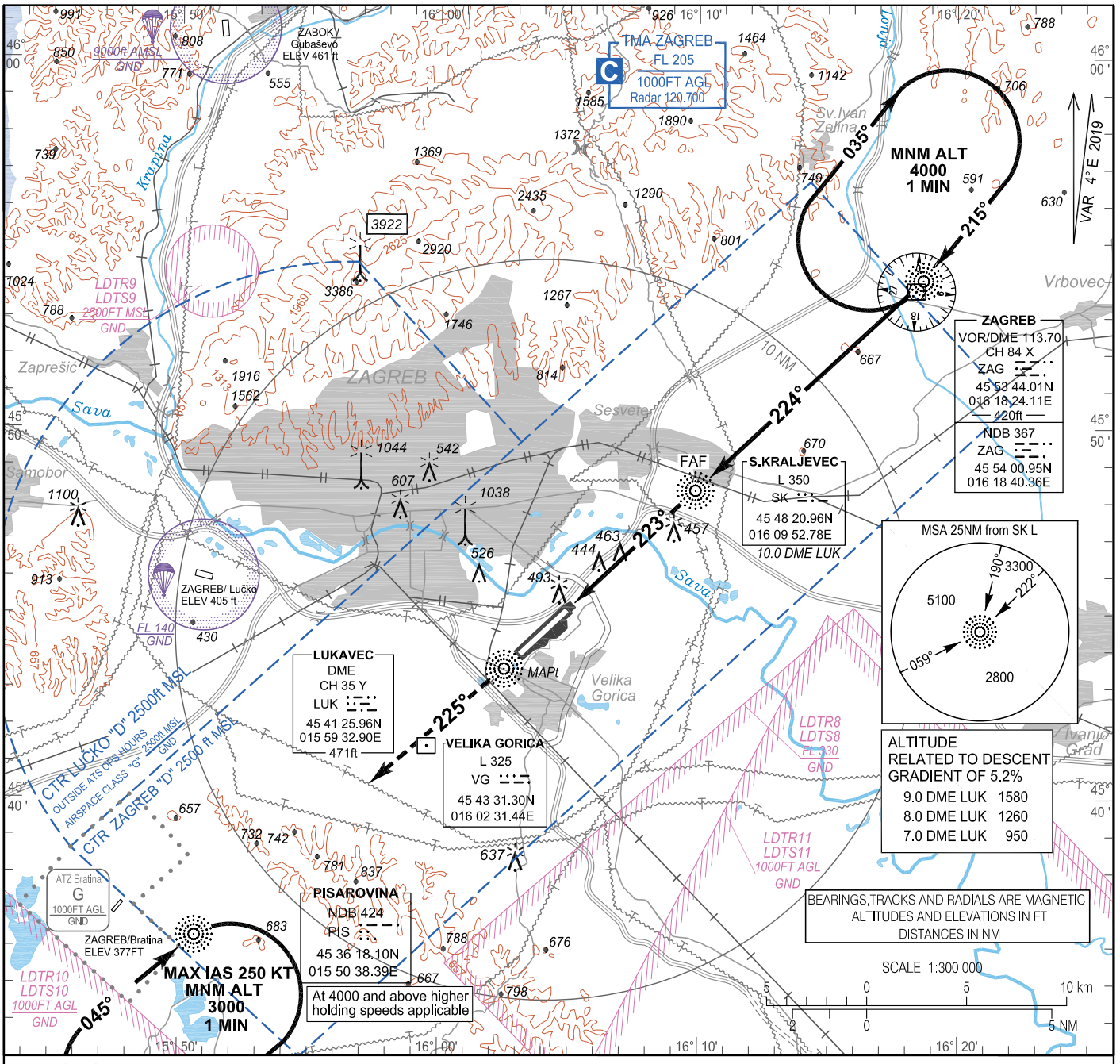
CHANGE: RWY Designator; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added; Visual surface segment removed.

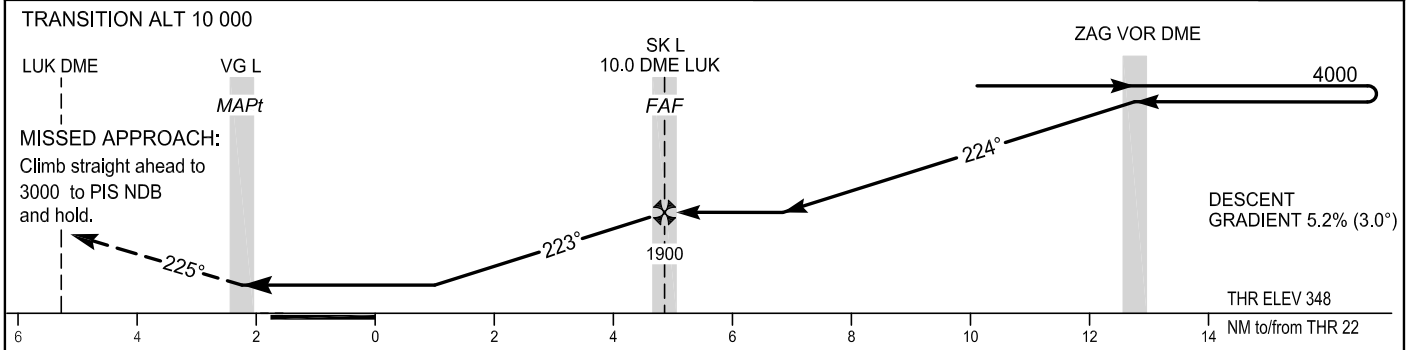
INSTRUMENT APPROACH CHART-ICAO

AD ELEV 353
HEIGHTS RELATED TO AD ELEV 353

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
L z RWY 22





OCA(H)	A	B	C	D
Straight-in Approach	750 (397)			
Circling	860(507)	890(537)	990(637)	1090(737)

FAF to MAPt - 7.06 NM
TIMING NOT AUTHORIZED FOR DEFINING THE MAPt

GS (kt)	70	90	100	120	140	160
min : sec	6:03	4:42	4:14	3:32	3:02	2:39
Rate of descent (ft / min)	369	474	527	632	737	843

Note: Circling for ACFT CAT B, C and D NW of aerodrome NA

CHANGE: RWY Designator; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added; Visual surface segment removed.

AERONAUTICAL DATABASE REQUIREMENTS			
Conventional procedure essential fixes/points			
LDZA L z RWY 22			
Final approach descent angle:		2.99°	
Fix identification	Coordinates	True bearing or ARC distance providing track	True bearing or distance providing intersection
IAF / IF (ZAG VOR DME)	See LDZA AD 2.19	-	-
FAF (SK L)	See LDZA AD 2.19	226.88° (VG L)	10.01 DME LUK
MAPt (VG L)	See LDZA AD 2.19	-	-

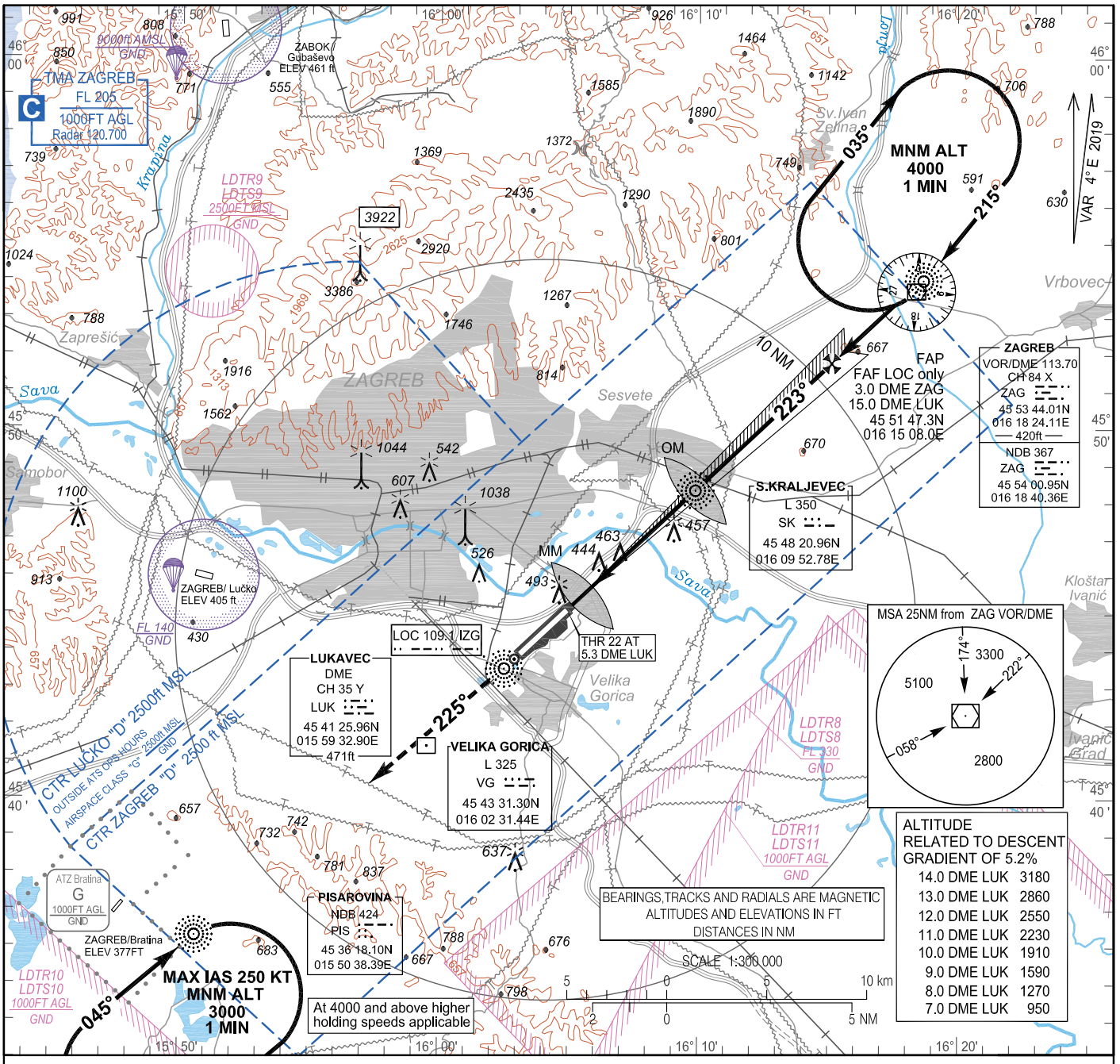
CHANGE: RWY Designator; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added; Visual surface segment removed.

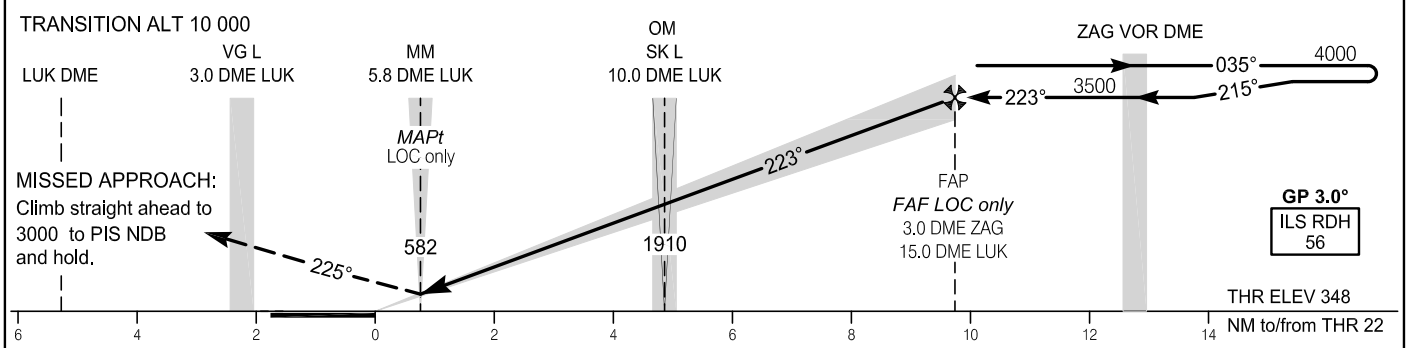
INSTRUMENT APPROACH CHART-ICAO

AD ELEV 353
HEIGHTS RELATED TO THR 22 ELEV 348

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
ILS or LOC RWY 22





OCA(H)		A	B	C	D
Straight-in Approach	ILS CAT I press. altim.	489 (141)	496 (148)	506 (158)	516 (168)
	LOC only	730(377)			
Circling		860 (507)	890 (537)	990 (637)	1090 (737)

GS (kt)	70	90	100	120	140	160
Rate of descent (ft / min)	369	474	527	632	737	843

Note: Circling for ACFT CAT B, C and D NW of aerodrome NA

CHANGE: RWY Designator; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added; Obstacle 418 FT removed.

AERONAUTICAL DATABASE REQUIREMENTS			
Conventional procedure essential fixes/points			
LDZA ILS or LOC RWY 22			
LOC only final approach descent angle: 2.99°			
Fix identification	Coordinates	True bearing or ARC distance providing track	True bearing or distance providing intersection
IAF / IF (ZAG VOR DME)	See LDZA AD 2.19	-	-
FAP / FAF LOC only	45 51 47.3N 016 15 08.0E	226.81° (IZG LOC)	3.00 DME ZAG 15.04 DME LUK
SDF LOC only (OM)	See LDZA AD 2.19	226.81° (IZG LOC)	10.00 DME LUK
MAPt LOC only (MM)	See LDZA AD 2.19	226.81° (IZG LOC)	5.84 DME LUK

CHANGE: RWY Designator; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added; Obstacle 418 FT removed.

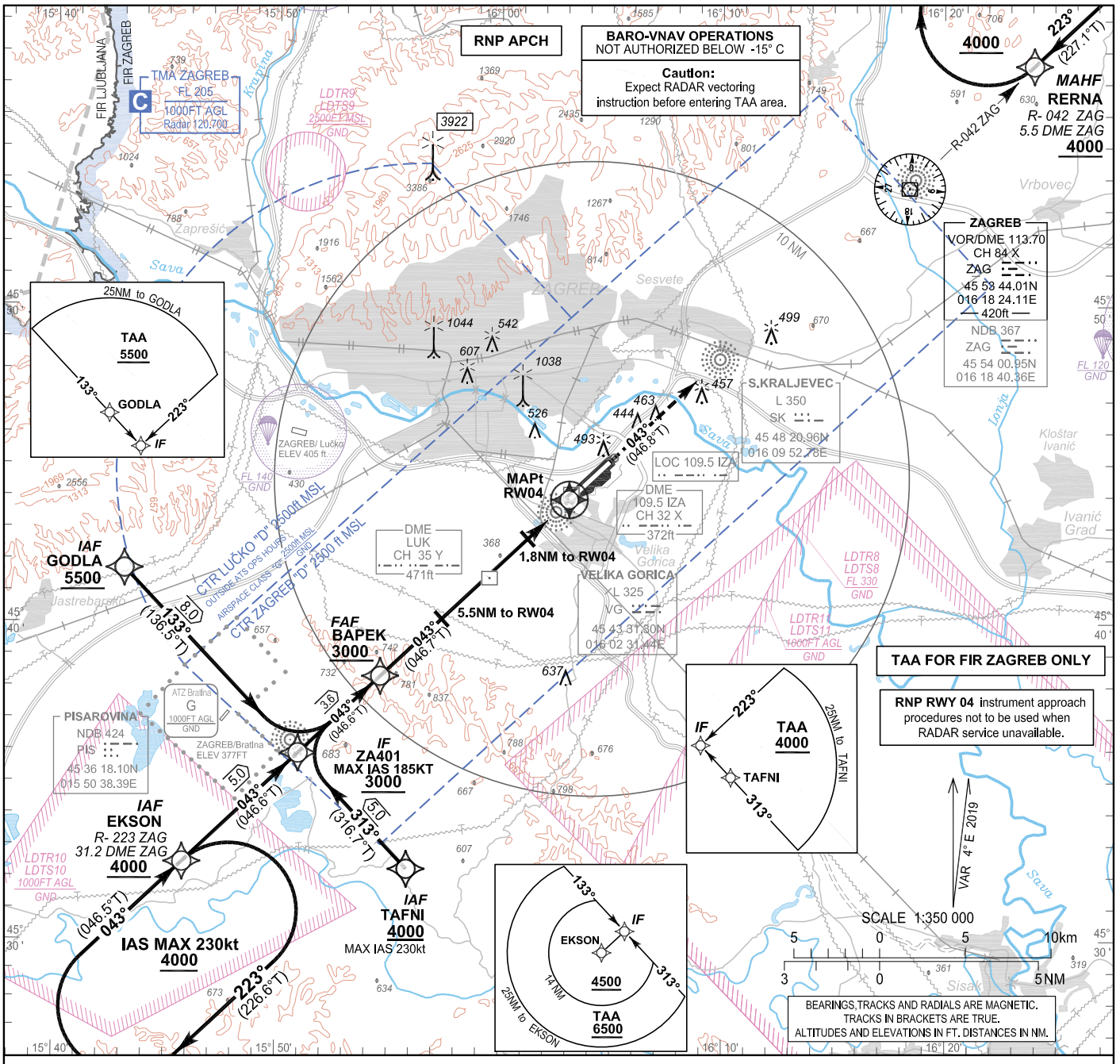
INSTRUMENT APPROACH
CHART-ICAO

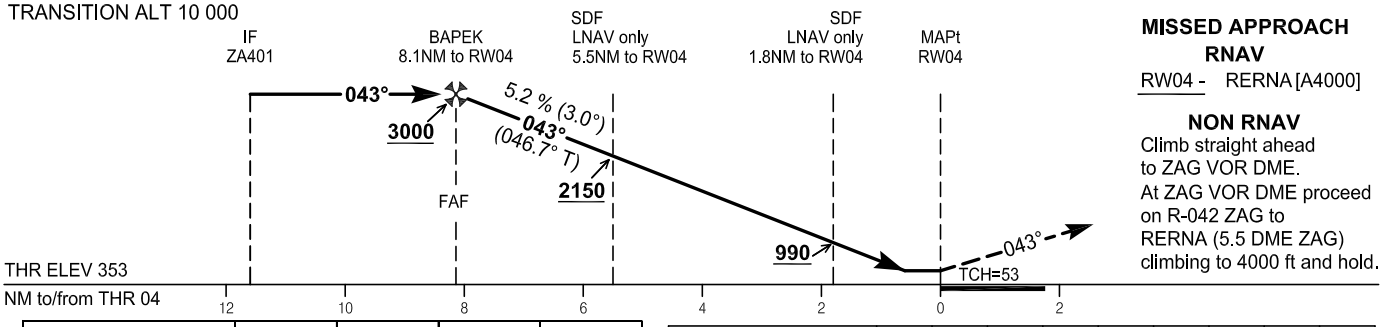
AD ELEV 353
HEIGHTS RELATED
TO THR 04 ELEV 353

SBAS
CH:95327
E04A

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
RNP RWY 04





MISSED APPROACH
RNAV
RW04 - RERNA [A4000]

NON RNAV
Climb straight ahead
to ZAG VOR DME.
At ZAG VOR DME proceed
on R-042 ZAG to
RERNA (5.5 DME ZAG)
climbing to 4000 ft and hold.

OCA(H)		A	B	C	D
Straight-in approach	LNAV	710 (357)			
	LNAV/VNAV	610 (257)			620 (267)
	LPV	610 (257)			620 (267)
CIRCLING		860 (507)	890 (537)	990 (637)	1090 (737)

Note: Circling for ACFT CAT B, C and D NW of aerodrome NA

DIST THR / RW04	NM	8	7	6	5	4	3	2	1
Altitude	ft	2950	2640	2320	2000	1680	1360	1040	730

Timing not authorized for defining the MAPt							
GS	kt	80	100	120	140	160	180
BAPEK -RW04 (8.1NM)	min:sec	6:05	4:52	4:03	3:28	3:02	2:42
Rate of descent (5.2%)	ft/min	425	531	637	743	849	955

CHANGE: RWY Designator; FAS Data Block; RW04 instead of RW05; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGREB/Bratina and ATZ Bratina added.

Coding elements for FAS Data Block

Input data

Operation Type	0
SBAS Provider	1 (EGNOS)
Airport Identifier	LDZA
Runway	04
Runway Letter	0 (None)
Approach Performance Designator	0
Route Indicator	
Reference Path Data Selector	0
Reference Path Identifier	E04A
LTP/FTP Latitude	454354.7490N
LTP/FTP Longitude	0160307.0885E
LTP/FTP Ellipsoidal Height (metres)	152.6
FPAP Latitude	454507.2300N
Delta FPAP Latitude (seconds)	72.4810
FPAP Longitude	0160457.3140E
Delta FPAP Longitude (seconds)	110.2255
Threshold Crossing Height	53.0
TCH Units Selector	0 (feet)
Glidepath Angle (degrees)	3.00
Course Width (metres)	105.00
Length Offset (metres)	16
HAL (metres)	40.0
VAL (metres)	50.0

Output data

Data Block	10 01 1A 04 0C 04 00 00 01 34 30 05 FA 40 A0 13 A1 85 E3 06 F6 19 42 36 02 23 5D 03 12 02 2C 01 64 02 C8 FA 44 FF A0 EB
Calculated CRC Value	44FFA0EB

Required Additional Data

ICAO Code	LD
LTP/FTP Orthometric Height (metres)	107.5

CHANGE: RWY Designator; FAS Data Block; RW04 instead of RW05; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added.

LDZA RNP RWY04

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	GODLA	-	-	4.00°E	-	-	+5500	-	-	-	RNP APCH
020	IF	TF	ZA401	-	133° (136.5°T)	4.00°E	8.0	-	+3000	-185	-	-	
010	IAF	IF	EKSON	-	-	4.00°E	-	-	+4000	-	-		RNP APCH
020	IF	TF	ZA401	-	043° (046.6°T)	4.00°E	5.0	-	+3000	-185	-		
010	IAF	IF	TAFNI	-	-	4.00°E	-	-	+4000	-230	-	-	RNP APCH
020	IF	TF	ZA401	-	313° (316.7°T)	4.00°E	5.0	-	+3000	-185	-	-	

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	ZA401	-	-	4.00°E	-	-	+3000	-185	-	-	RNP APCH
020	FAF	TF	BAPEK	-	043° (046.6°T)	4.00°E	3.6	-	+3000	-	-	-	
030	MAPt	TF	RW04	Y	043° (046.7°T)	4.00°E	8.1	-	-	-	3.0 / 53.0	-	
040	MAHF	TF	RERNA	-	043° (046.8°T)	4.00°E	20.0	-	4000	-	-	-	
050	MAHF	HM	RERNA	-	223° (227.1°T)	4.00°E	1 MIN	R	4000	-	-	Holding above 4000ft on ATC clearance only	RNAV 1

RNAV HOLDING tabular description

Waypoint name	Path Term-inator	Inbound course °M (°T)	Leg time/ distance NM	Turn direction	Minimum altitude FT	Maximum altitude FT	Speed limit MAX IAS	Magnetic variation	Remarks	NAV SPEC
EKSON	HM	043° (046.5°T)	1MIN / -	R	4000	-	230 KT	4°E	-	RNAV 1
RERNA	HM	223° (227.1°T)	1MIN / -	R	4000	-	-	4°E	-	

Waypoint coordinates

Waypoint name	WGS-84 Latitude	WGS-84 Longitude
GODLA	454142.4N	0154308.3E
EKSON	453227.7N	0154548.4E
TAFNI	453215.6N	0155551.9E
ZA401	453553.8N	0155058.8E
BAPEK	453820.0N	0155439.7E
RW04	454354.75N	0160307.09E
RERNA	455735.6N	0162402.7E

CHANGE: RWY Designator; FAS Data Block; RW04 instead of RW05; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added.

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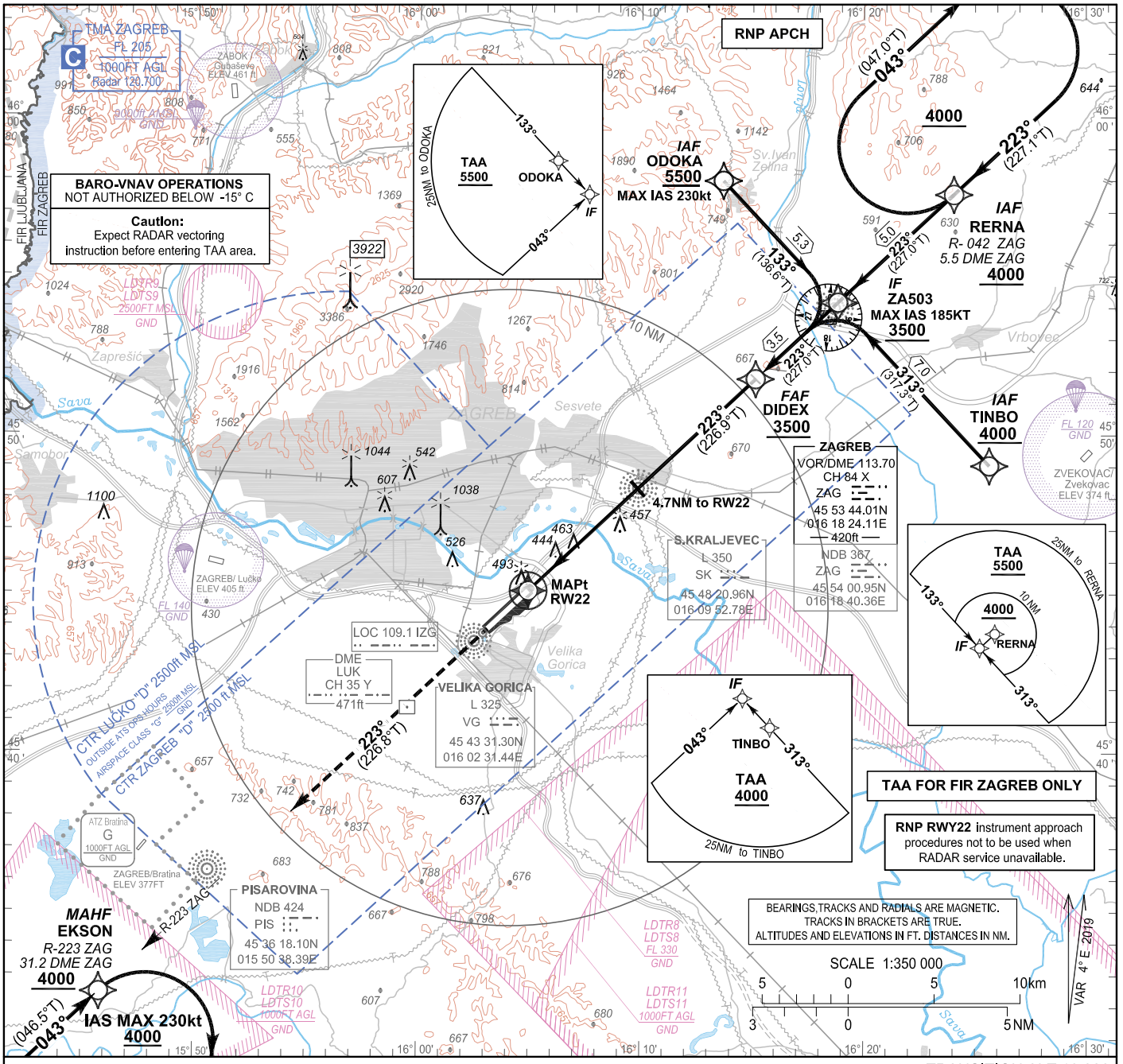
INSTRUMENT APPROACH
CHART-ICAO

AD ELEV 353
HEIGHTS RELATED
TO THR 22 ELEV 348

SBAS
CH: 90041
E22A

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA
RNP RWY 22



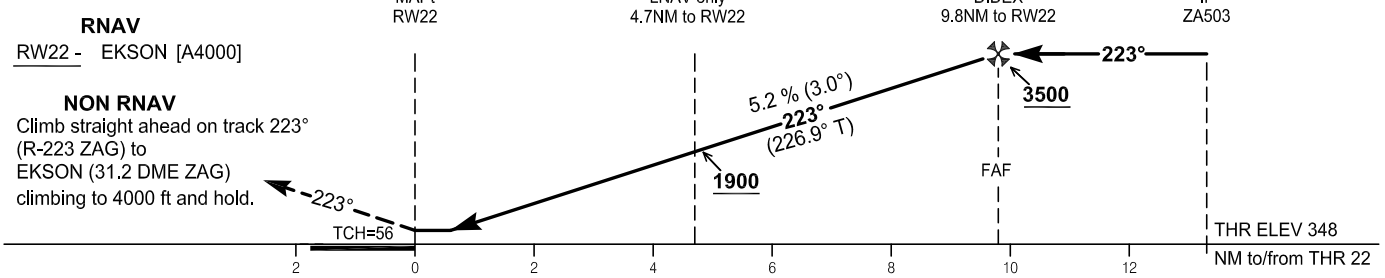
MISSED APPROACH

RNAV

RW22 - EKSON [A4000]

NON RNAV

Climb straight ahead on track 223° (R-223 ZAG) to EKSON (31.2 DME ZAG) climbing to 4000 ft and hold.



OCA(H)		A	B	C	D
Straight-in approach	LNAV	740 (392)			
	LNAV/VNAV	630 (282)	640 (292)	650 (302)	660 (312)
	LPV	630 (282)	640 (292)	650 (302)	660 (312)
CIRCLING		860 (507)	890 (537)	990 (637)	1090 (737)

Note: Circling for ACFT CAT B, C and D NW of aerodrome NA

DIST THR / RW22	NM	9	8	7	6	5	4	3	2	1
Altitude	ft	3270	2950	2630	2310	1990	1680	1360	1040	720

Timing not authorized for defining the MAPt							
GS	kt	80	100	120	140	160	180
DIDEX -RW22 (9.8NM)	min:sec	7:21	5:53	4:54	4:12	3:41	3:16
Rate of descent (5.2%)	ft/min	425	531	637	743	849	955

CHANGE: RWY Designator; FAS Data Block; RW22 instead of RW23; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added; Obstacle 418 FT removed.

ZAGREB / Franjo Tuđman
CROATIA
RNP RWY 22

Coding elements for FAS Data Block

Input data

Operation Type	0
SBAS Provider	1 (EGNOS)
Airport Identifier	LDZA
Runway	22
Runway Letter	0 (None)
Approach Performance Designator	0
Route Indicator	
Reference Path Data Selector	0
Reference Path Identifier	E22A
LTP/FTP Latitude	454506.8620N
LTP/FTP Longitude	0160456.7540E
LTP/FTP Ellipsoidal Height (metres)	151.3
FPAP Latitude	454353.6385N
Delta FPAP Latitude (seconds)	-73.2235
FPAP Longitude	0160305.4000E
Delta FPAP Longitude (seconds)	-111.3540
Threshold Crossing Height	56.0
TCH Units Selector	0 (feet)
Glidepath Angle (degrees)	3.00
Course Width (metres)	105.00
Length Offset (metres)	48
HAL (metres)	40.0
VAL (metres)	50.0

Output data

Data Block	10 01 1A 04 0C 16 00 00 01 32 32 05 5C 74 A2 13 64 DE E6 06 E9 19 F1 C3 FD 0C 9A FC 30 02 2C 01 64 06 C8 FA 5C 95 B3 2D
Calculated CRC Value	5C95B32D

Required Additional Data

ICAO Code	LD
LTP/FTP Orthometric Height (metres)	106.2

CHANGE: RWY Designator; FAS Data Block; RW22 instead of RW23; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added; Obstacle 418 removed.

CHANGE: RWY Designator; FAS Data Block; RW22 instead of RW23; Chart title; Page number; LDP39 withdrawn; Aerodrome name changed; Aerodrome ZAGRBE/Bratina and ATZ Bratina added; Obstacle 418 FT removed.

LDZA RNP RWY22

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	ODOKA	-	-	4.00°E	-	-	+5500	-230	-	-	RNP APCH
020	IF	TF	ZA503	-	133° (136.6°T)	4.00°E	5.3	-	+3500	-185	-	-	
010	IAF	IF	RERNA	-	-	4.00°E	-	-	+4000	-	-	-	RNP APCH
020	IF	TF	ZA503	-	223° (227.0°T)	4.00°E	5.0	-	+3500	-185	-	-	
010	IAF	IF	TINBO	-	-	4.00°E	-	-	+4000	-	-	-	RNP APCH
020	IF	TF	ZA503	-	313° (317.3°T)	4.00°E	7.0	-	+3500	-185	-	-	

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	ZA503	-	-	4.00°E	-	-	+3500	-185	-	-	RNP APCH
020	FAF	TF	DIDEX	-	223° (227.0°T)	4.00°E	3.5	-	+3500	-	-	-	
030	MAPt	TF	RW22	Y	223° (226.9°T)	4.00°E	9.8	-	-	-	3.0 / 56.0	-	
040	MAHF	TF	EKSON	-	223° (226.8°T)	4.00°E	18.5	-	4000	-	-	-	
050	MAHF	HM	EKSON	-	043° (046.5°T)	4.00°E	1 MIN	R	4000	-230	-	Holding above 4000ft on ATC clearance only	RNAV 1

RNAV HOLDING tabular description

Waypoint name	Path Term-inator	Inbound course °M (°T)	Leg time/ distance NM	Turn direction	Minimum altitude FT	Maximum altitude FT	Speed limit MAX IAS	Magnetic variation	Remarks	NAV SPEC
EKSON	HM	043° (046.5°T)	1MIN / -	R	4000	-	230 KT	4°E	-	RNAV 1
RERNA		223° (227.1°T)	1MIN / -	R	4000	-	-	4°E	-	

Waypoint coordinates

Waypoint name	WGS-84 Latitude	WGS-84 Longitude
ODOKA	455801.1N	0161340.1E
RERNA	455735.6N	0162402.7E
TINBO	454903.8N	0162538.1E
ZA503	455412.2N	0161850.0E
DIDEX	455147.3N	0161508.0E
RW22	454506.86N	0160456.75E
EKSON	453227.7N	0154548.4E

OVA STRANICA JE NAMJERNO OSTAVLJENA PRAZNA
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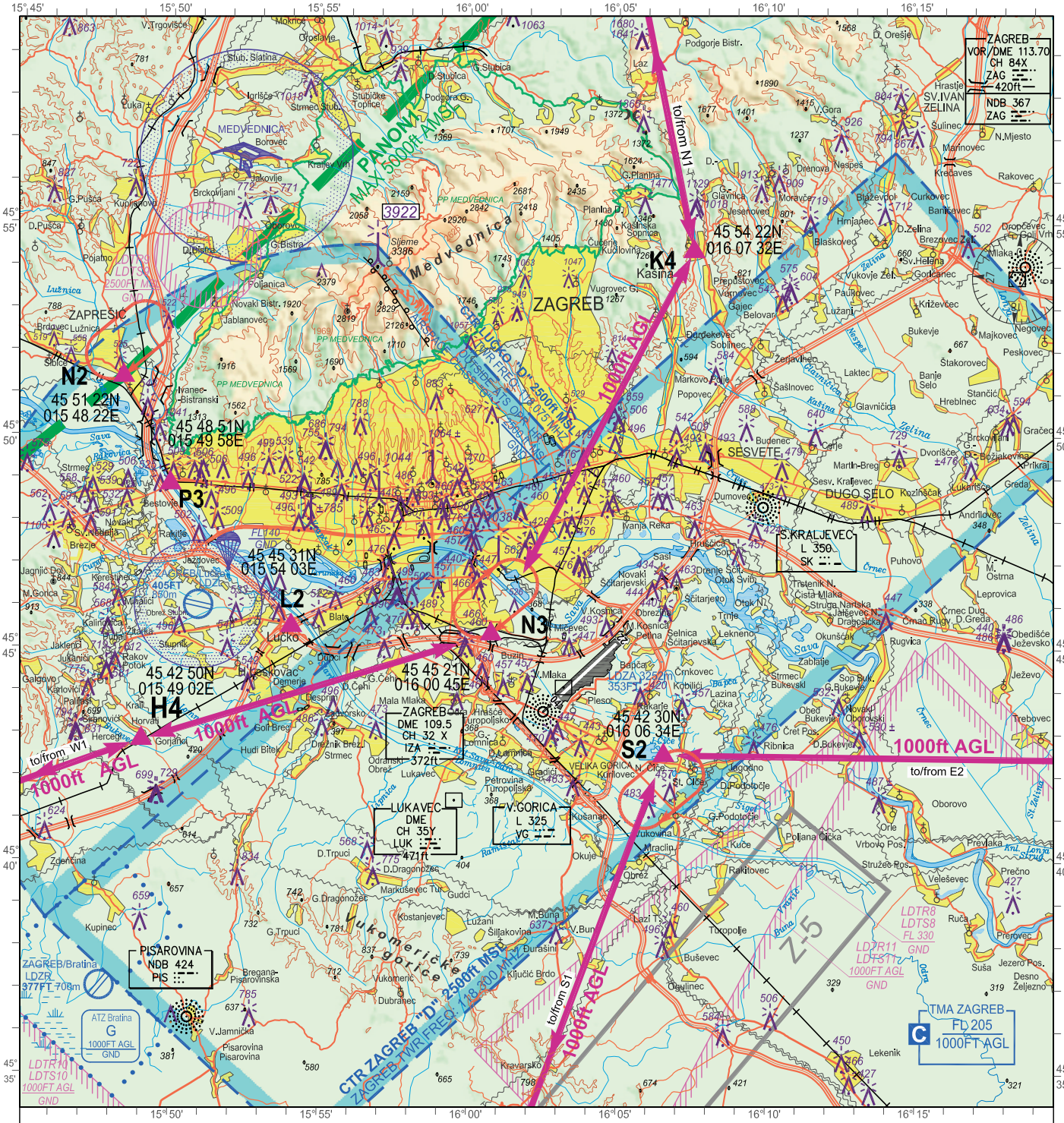
VISUAL OPERATION CHART

AD ELEV 353ft

ARP
45°44'34.55"N
016°04'07.60"E

ZAGREB ATIS	124.575
ZAGREB RADAR	120.700
ZAGREB TOWER	118.300

ZAGREB / Franjo Tuđman
CROATIA



Reporting Point	Coordinates		Definition
E2	45 42 23N	016 23 37E	Town Ivanić - Grad
K4	45 54 22N	016 07 32E	Village Kašina
N1	46 02 57N	016 05 04E	Town Zlatar Bistrica
N2	45 51 22N	015 48 22E	Town Zaprešić
N3	45 45 21N	016 00 45E	Marshaling yard
S1	45 29 07N	015 59 31E	Village Pokupsko
S2	45 42 30N	016 06 34E	Lake Čiče
W1	45 40 19N	015 39 04E	Town Jastrebarsko

SCALE 1:250 000

km 0 5 10

NM 0 5

Two-way radio communication required.
Contact Tower normally at reporting points or any other point but not later than 5min prior to entering CTR.

Meteorological conditions:
VFR: VMC conditions within airspace of CONTROL ZONE CLASS D
- flight visibility: 5 km
- ground visibility: 5 km
- minimum ceiling: 1500 ft

ATTENTION:
For latest information consult relevant publications, and NOTAMs!
Prominent transmission lines data not complete!
No guarantee for the completeness and accuracy of obstacles!

ALTITUDES AND ELEVATIONS IN FT

ELEVATION TINTS

(m)	ft
(1200)	3937
(800)	2625
(400)	1313
(0)	0

VAR 4° E 2019

Change: RWY Designator.

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LDZD AD 2.20 LOCAL AERODROME REGULATIONS

ATC DEP clearance and DEP INFO are available on Zadar TWR FREQ 15 MIN before start up.

1. WARNING:
Gusts, wind shear and turbulence can be expected on final approaches and on RWY 13/31 in conditions of strong north-easterly winds.

Gusts, wind shear and turbulence can be expected on final approach to/climb out from RWY 04 in conditions of strong north-easterly winds.

2. WARNING:
Following parts of manoeuvring area are not visible from ATC TWR and surveillance EQPT is limited:

- Part of RWY13/31 around the intersection of TWY C, D, E and RWY,
- TWY C, D and E,
- RWY holding positions on TWY B, C, D and E,
- Part of TWY H BTN TWY B and F,
- Junction of TWY A and H.

Due to view limitations of the manoeuvring area from Zadar TWR and complex aerodrome layout special attention from pilots and vehicle drivers is advised.

Additional position reports may be required by ATC. Pilots and vehicle drivers shall comply with ATC clearances and instructions and adhere to the signs and markings.

TAXIING PROCEDURES
Minimum power settings are to be used when taxiing on apron and away from parking stand.
A slow taxi speed on apron is required.
Arrivals:
“Follow me” guidance is mandatory for all arriving aircraft when entering apron from TWY G or TWY K.

Departures:
All parking positions are self-manoeuvring for departure, under marshaller guidance or supervision.

LDZD AD 2.21 NOISE ABATEMENT PROCEDURES

NIL

LDZD AD 2.22 FLIGHT PROCEDURES

SID RWY 04

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 description of the route.

SID RWY 04				
Designator	Route	After take off		Remarks
		Climb initially	Contact	
RAVNA1A	RAVNA ONE ALPHA DEPARTURE Climb straight ahead. At 730 FT turn RIGHT inbound ZDA VOR/DME. At ZDA VOR/DME continue climb on R-316 to RAVNA.			Cross ZDA VOR/DME at or above 6000 FT. Cross RAVNA at or above 8000 FT. If unable, contact ATC.
PALEZ1A	PALEZ ONE ALPHA DEPARTURE Climb straight ahead. At 730 FT turn RIGHT inbound ZDA VOR/DME. Cross ZDA VOR/DME, intercept R-010 ZDA climbing to PALEZ.			Cross ZDA VOR/DME at or above 6000 FT. Cross PALEZ at or above 8000 FT. If unable, contact ATC.
SAL 2L	SALI TWO LIMA DEPARTURE Climb straight ahead. At 730 FT turn LEFT, climbing to SAL NDB.			
SPL4F	SPLIT FOUR FOXTROT DEPARTURE Climb straight ahead. At 730 FT turn RIGHT inbound ZRA NDB. Cross R-117 ZDA, turn LEFT, intercept R-127 ZDA, climbing to SPL VOR DME.			

SID RWY 13

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 description of the route.

SID RWY 13				
Designator	Route	After take off		Remarks
		Climb initially	Contact	
RAVNA1B	RAVNA ONE BRAVO DEPARTURE MNM PDG 4.5% (274 FT/NM) to 5700 FT. Climb on R-127 ZDA. At 3.0 DME ZDA turn RIGHT climbing inbound ZDA VOR/DME. Cross ZDA VOR/DME, intercept R-316 ZDA climbing to RAVNA.			Cross ZDA VOR/DME at or above 6000 FT. Cross RAVNA at or above 8000 FT.
PALEZ1B	PALEZ ONE BRAVO DEPARTURE MNM PDG 6.0% (365 FT/NM) to 7800 FT. Climb on R-127 ZDA. At 3.0 DME ZDA turn RIGHT climbing inbound ZDA VOR/DME. Cross ZDA VOR/DME, intercept R-010 ZDA climbing to PALEZ.			Cross ZDA VOR/DME at or above 6000 FT. Cross PALEZ at or above 8000 FT.
SAL4D	SALI FOUR DELTA DEPARTURE Climb on R-127 ZDA to SPL VOR/DME. At 3.0 DME ZDA turn RIGHT, climbing to SAL NDB.			

SID RWY 13				
Designator	Route	After take off		Remarks
		Climb initially	Contact	
SPL4D	SPLIT FOUR DELTA DEPARTURE Climb on R-127 ZDA to SPL VOR DME.			

SID RWY 22

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 description of the route.

SID RWY 22				
Designator	Route	After take off		Remarks
		Climb initially	Contact	
RAVNA1C	RAVNA ONE CHARLIE DEPARTURE Climb on R-221 ZDA. At 5.0 DME ZDA turn RIGHT on 006° to intercept R-316 ZDA and continue climb to RAVNA.			Cross RAVNA at or above 8000 FT. If unable, contact ATC.
PALEZ1C	PALEZ ONE CHARLIE DEPARTURE Climb on R-221 ZDA. At 5.0 DME ZDA turn RIGHT direct to BO L (MAX IAS 250 KT during turn). Cross BO L and continue on QDR 021° BO climbing to PALEZ.			Cross BO L at or above 6000 FT. Cross PALEZ at or above 8000 FT. If unable, contact ATC.
SAL3M	SALI THREE MIKE DEPARTURE Climb on R-218 ZDA direct to SAL NDB.			
SPL3G	SPLIT THREE GOLF DEPARTURE Climb on R-221 ZDA. At 5.0 DME ZDA turn LEFT, inbound ZRA NDB. Cross R-137 ZDA turn RIGHT, intercept R-127 ZDA, climbing to SPL VOR DME.			

SID RWY 31

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 description of the route.

SID RWY 31				
Designator	Route	After take off		Remarks
		Climb initially	Contact	
RAVNA1D	RAVNA ONE DELTA DEPARTURE Climb straight ahead. At 6.2 DME ZDA turn RIGHT, intercept R-316 ZDA climbing to RAVNA.			Cross RAVNA at or above 8000 FT.
PALEZ1D	PALEZ ONE DELTA DEPARTURE MNM PDG 5.6% (341 FT/NM) to 7800 FT. Climb straight ahead. At 6.2 DME ZDA turn LEFT inbound ZDA VOR/DME. Cross ZDA VOR/DME, intercept R-010 ZDA climbing to PALEZ.			Cross ZDA VOR/DME at or above 6000 FT. Cross PALEZ at or above 8000 FT.
SAL 3E	SALI THREE ECHO DEPARTURE Climb straight ahead. At BO L (6.2 DME ZDA) turn LEFT, climbing to SAL NDB.			

SID RWY 31				
Designator	Route	After take off		Remarks
		Climb initially	Contact	
SPL5E	SPLIT FIVE ECHO DEPARTURE Climb straight ahead. At BO L (6.2 DME ZDA) turn LEFT inbound ZRA NDB. Cross ZRA NDB, intercept R-127 ZDA, climbing to SPL VOR DME.			

STAR RWY 04 & RWY 13/31

STAR RWY 04 & RWY 13/31				
Designator	**Route**	**Descend**	**Contact**	**Remarks**
LOS6A	**LOSINJ SIX ALPHA ARRIVAL** From LOS NDB proceed on QDM 110° LOS (MNM ALT 6000 FT) to intercept 22.0 DME ZDA on R-312 ZDA (MNM ALT 6000 FT) and hold.	As cleared by ATC		
KUDUL1A	**KUDUL ONE ALPHA ARRIVAL** From KUDUL proceed on R-336 ZDA inbound ZDA VOR/DME (MNM ALT 7400 FT). At 24.0 DME ZDA turn RIGHT and intercept ARC 22.0 DME ZDA (MNM ALT 6100 FT). After crossing R-317 ZDA continue on ARC 22.0 DME ZDA (MNM ALT 6000 FT) to LUKAV and hold.	As cleared by ATC		
KUDUL1B	**KUDUL ONE BRAVO ARRIVAL** From KUDUL proceed on R-336 ZDA inbound ZDA VOR/DME (MNM ALT 7400 FT). Cross 24.0 DME ZDA and continue on R-336 ZDA (MNM ALT 6500 FT). Cross 10.0 DME ZDA and continue on R-336 ZDA to ZDA VOR/DME (MNM ALT 3000 FT). After crossing ZDA VOR/DME turn LEFT on R-132 ZDA to ZRA NDB (MNM ALT 3000 FT) and hold.	As cleared by ATC		
MINTU3E	**MINTU THREE ECHO ARRIVAL** From MINTU proceed on QDM 136° SAL to SAL NDB (MNM ALT 3000 FT).	As cleared by ATC		
SPL6B	**SPLIT SIX BRAVO ARRIVAL** From SPL VOR DME proceed on R-307 SPL (MNM ALT 5000 FT). After crossing 30.4 DME SPL / 24.0 DME ZDA proceed on R-307 SPL to ZRA NDB (MNM ALT 3000 FT) and hold.	As cleared by ATC		

Backup device on TWR in case of a complete communication failure

In case of complete communication failure, ATC signal light gun is available on Zadar TWR.
Pilots shall observe light signals from TWR.

LDZD AD 2.23 ADDITIONAL INFORMATION

Sea gulls on and in the vicinity of RWY. Caution advised.

LDZD AD 2.24 CHARTS RELATED TO AN AERODROME

Name	Page
Aerodrome Chart - ICAO	LDZD AD 2.24.1 ADC -1
Aircraft Parking/Docking Chart – ICAO	LDZD AD 2.24.2 APDC -1
Aerodrome Ground Movement Chart – ICAO	*NOT AVBL*
Aerodrome Obstacle Chart - ICAO Type A - RWY04-22	LDZD AD 2.24.4 AOC RWY 04/22 -1
Aerodrome Obstacle Chart - ICAO Type A - RWY13/31	LDZD AD 2.24.4 AOC RWY 13/31 -1
Aerodrome Terrain and Obstacle Chart – ICAO (Electronic)	*NOT AVBL*
Precision Approach Terrain Chart – ICAO	*NOT AVBL*
Area Chart – ICAO (departure and transit routes)	*NOT AVBL*
Standard Departure Chart - Instrument - ICAO RWY 04	LDZD AD 2.24.8 SID RWY 04 -1
Standard Departure Chart - Instrument - ICAO RNAV RWY 04	LDZD AD 2.24.8 SID RNAV RWY 04 -1
Standard Departure Chart - Instrument - ICAO RWY 13	LDZD AD 2.24.8 SID RWY 13 -1
Standard Departure Chart - Instrument - ICAO RNAV RWY 13	LDZD AD 2.24.8 SID RNAV RWY 13 -1
Standard Departure Chart - Instrument - ICAO RWY 22	LDZD AD 2.24.8 SID RWY 22 -1
Standard Departure Chart - Instrument - ICAO RNAV RWY 22	LDZD AD 2.24.8 SID RNAV RWY 22 -1
Standard Departure Chart - Instrument - ICAO RWY 31	LDZD AD 2.24.8 SID RWY 31 -1
Standard Departure Chart - Instrument - ICAO RNAV RWY 31	LDZD AD 2.24.8 SID RNAV RWY 31 -1
Area Chart – ICAO (arrival and transit routes)	*NOT AVBL*
Standard Arrival Chart - Instrument - ICAO RWY 04 & RWY 13/31	LDZD AD 2.24.10 STAR RWY 04 & 13/31 -1
Standard Arrival Chart - Instrument - ICAO RNAV RWY 04	LDZD AD 2.24.10 STAR RNAV RWY 04 -1
Standard Arrival Chart - Instrument - ICAO RNAV RWY 13	LDZD AD 2.24.10 STAR RNAV RWY 13 -1
Standard Arrival Chart - Instrument - ICAO RNAV RWY 31	LDZD AD 2.24.10 STAR RNAV RWY 31 -1
ATC Surveillance Minimum Altitude Chart - ICAO	LDZD AD 2.24.11 ATCSMAC -1
Instrument Approach Chart - ICAO VOR RWY 04	LDZD AD 2.24.12 IAC VOR RWY 04 -1
Instrument Approach Chart - ICAO L y RWY 13	LDZD AD 2.24.12 IAC Ly RWY 13 -1
Instrument Approach Chart - ICAO L z RWY 13	LDZD AD 2.24.12 IAC Lz RWY 13 -1
Instrument Approach Chart - ICAO VOR RWY 13	LDZD AD 2.24.12 IAC VOR RWY 13 -1
Instrument Approach Chart - ICAO ILS or LOC RWY 13	LDZD AD 2.24.12 IAC ILS or LOC RWY 13 -1
Instrument Approach Chart - ICAO RNP RWY 04	LDZD AD 2.24.12 IAC RNP RWY 04 -1
Instrument Approach Chart - ICAO RNP Y RWY 13	LDZD AD 2.24.12 IAC RNP Y RWY 13 -1
Instrument Approach Chart - ICAO RNP Z RWY 13	LDZD AD 2.24.12 IAC RNP Z RWY 13 -1
Instrument Approach Chart - ICAO RNP RWY 31	LDZD AD 2.24.12 IAC RNP RWY 31 -1
Instrument Approach Chart - ICAO L RWY 31	LDZD AD 2.24.12 IAC L RWY 31 -1

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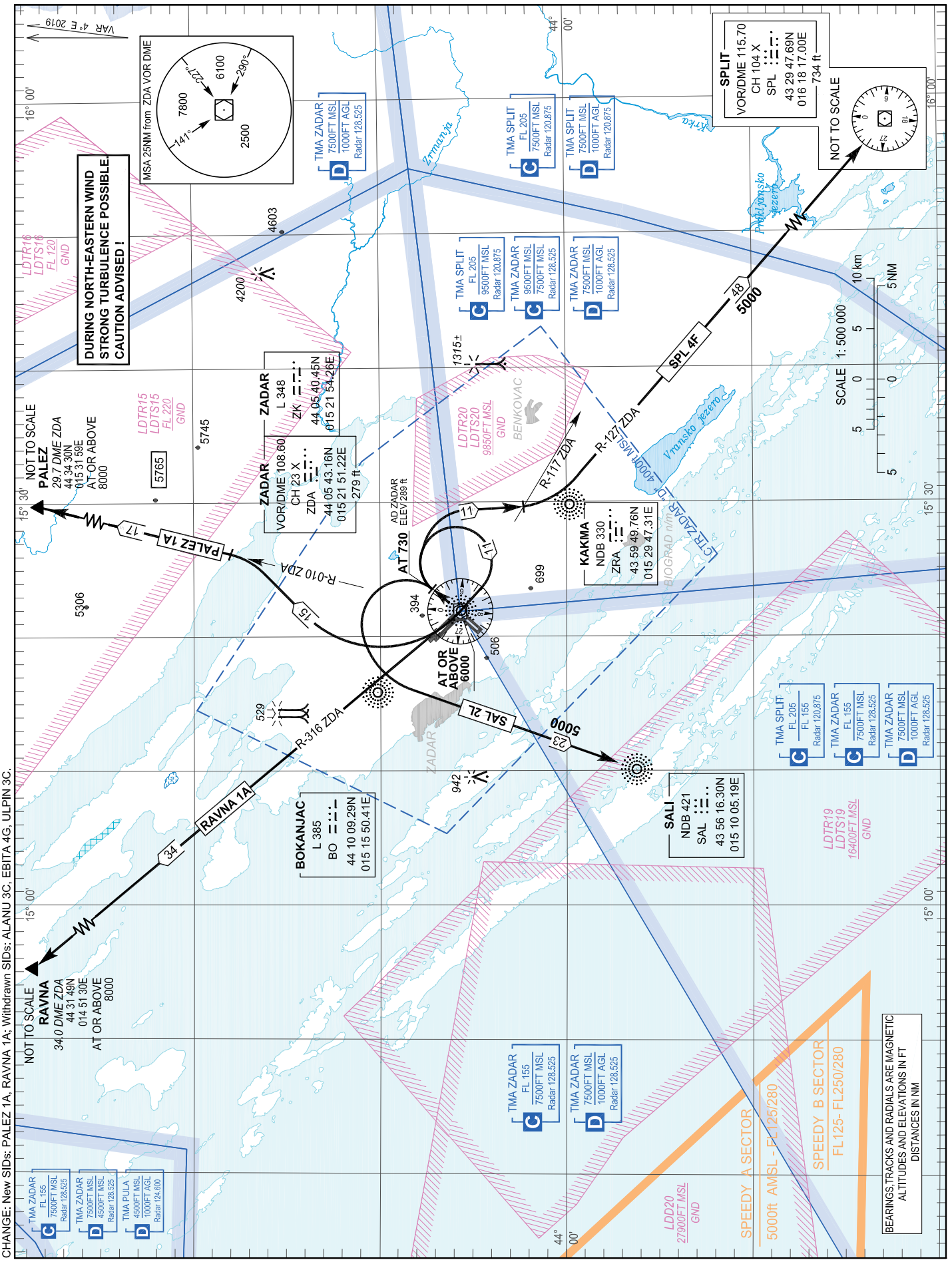
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR TOWER 123.700
ZADAR RADAR 128.525

ZADAR / Zemunik
CROATIA
RWY 04



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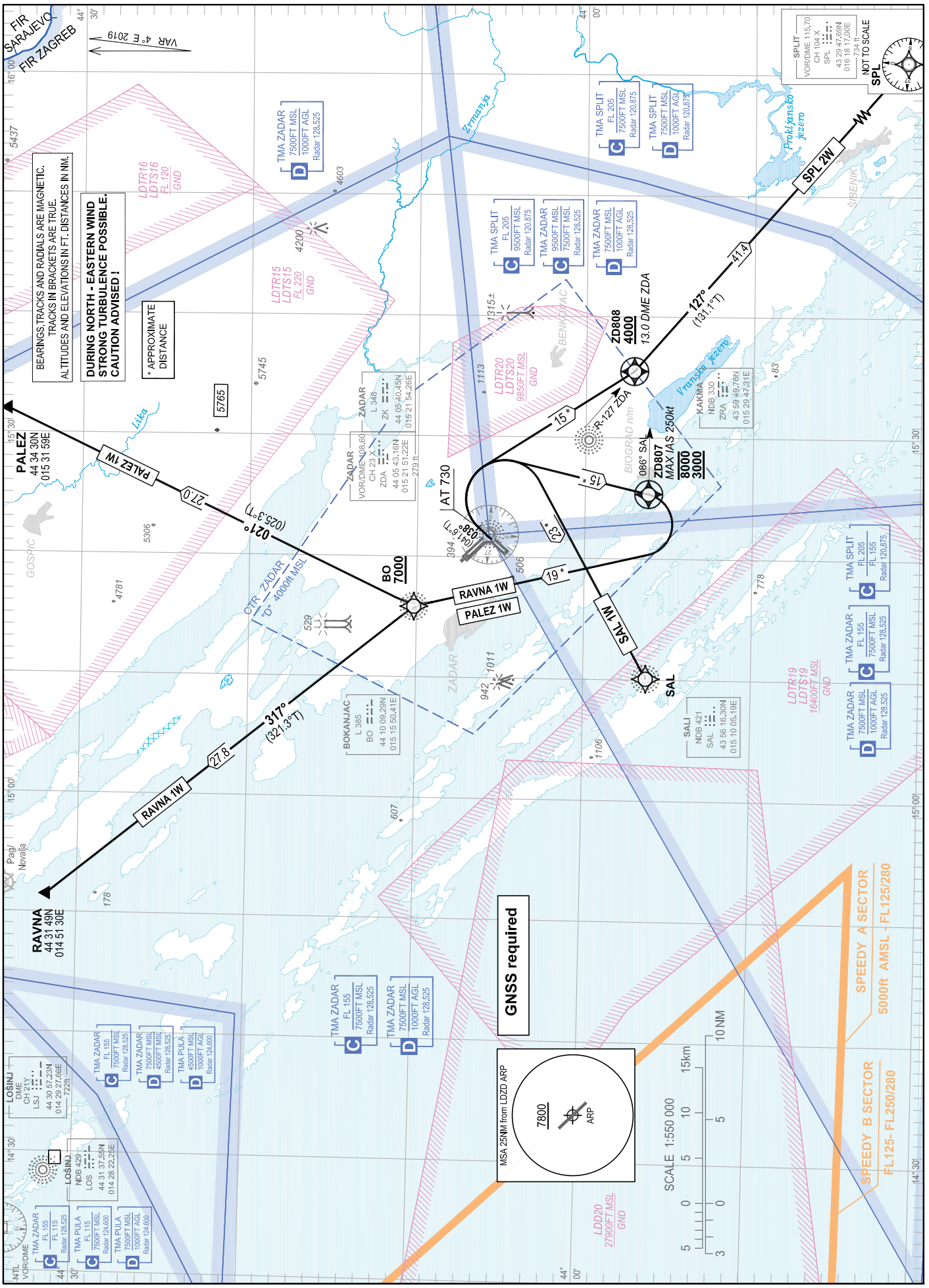
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR TOWER 123.700
ZADAR RADAR 128.525

ZADAR / Zemunik
CROATIA
RNAV RWY 04



CHANGE: New chart

ZADAR / Zemunik
CROATIA
RNAV RWY 04

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.

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SIDs PALEZ 1W, RAVNA 1W only:
Climb straight ahead. At 730 FT AMSL turn RIGHT climbing on track 190°. Cross QDR 086° SAL at or above 3000 FT AMSL, but at or below 8000 FT AMSL. After crossing QDR 086° SAL, proceed via RNAV SID flight procedure filed in FPL or according to ATC instruction. MAX IAS 250 KT.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 04

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	RAVNA 1W	CA	-	-	038° (041.6°T)	4.00°E	-	-	@730	-	-	RNAV 1
020		DF	ZD807	Y	-	4.00°E	-	R	-8000 +3000	-250		
030		DF	BO	-	-	4.00°E	-	R	+7000	-		
040		TF	RAVNA	-	317° (321.3°T)	4.00°E	27.8	-	-	-		
010	PALEZ 1W	CA	-	-	038° (041.6°T)	4.00°E	-	-	@730	-	-	RNAV 1
020		DF	ZD807	Y	-	4.00°E	-	R	-8000 +3000	-250		
030		DF	BO	-	-	4.00°E	-	R	+7000	-		
040		TF	PALEZ	-	021° (025.3°T)	4.00°E	27.0	-	-	-		

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID SAL 1W only:
Climb straight ahead. At 730 FT AMSL turn RIGHT direct to SAL NDB.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 04

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	SAL 1W	CA	-	-	038° (041.6°T)	4.00°E	-	-	@730	-	-	RNAV 1
020		DF	SAL	-	-	4.00°E	-	R	-	-		

CHANGE: New chart

ZADAR / Zemunik
CROATIA
RNAV RWY 04

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID SPL 2W only:
Climb straight ahead. At 730 FT AMSL turn RIGHT climbing to intercept and follow R-127 ZDA. Cross 13.0 DME ZDA at or above 4000 FT AMSL. After crossing 13.0 DME ZDA, proceed via RNAV SID SPL 2W or according to ATC instruction.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 04

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	SPL 2W	CA	-	-	038° (041.6°T)	4.00°E	-	-	@730	-	-	RNAV 1
020		DF	ZD808	Y	-	4.00°E	-	R	+4000	-		
030		TF	SPL	-	127° (131.1°T)	4.00°E	41.4	-	-	-		

Waypoint coordinates		
Waypoint name	WGS-84 latitude	WGS-84 longitude
BO	441009.29N	0151550.41E
SAL	435616.30N	0151005.19E
SPL	432947.69N	0161817.00E
RAVNA	443149N	0145130E
PALEZ	443430N	0153159E
ZD807	435613.6N	0152520.6E
ZD808	435708.8N	0153529.4E

CHANGE: New chart

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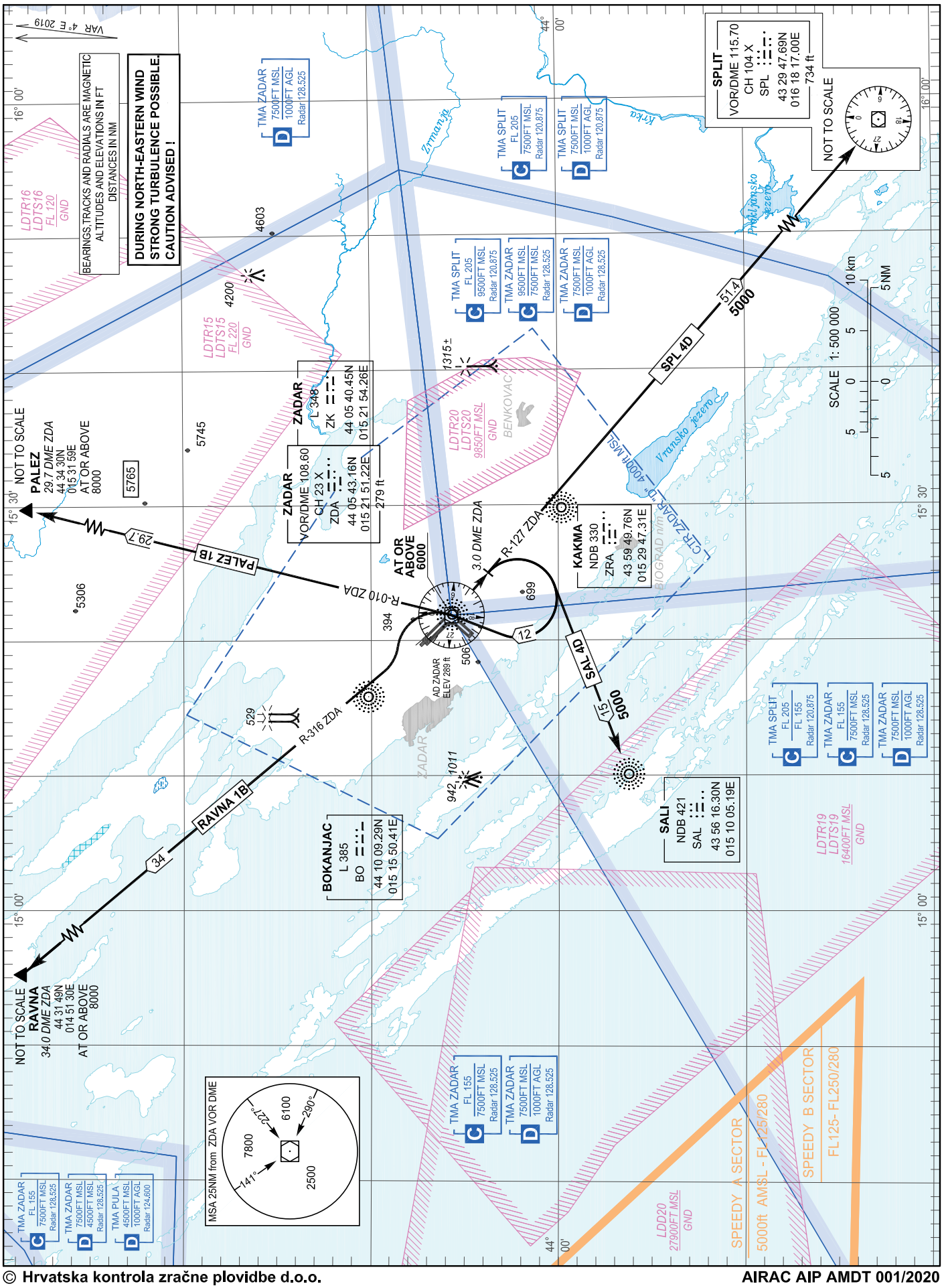
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR TOWER 123.700
ZADAR RADAR 128.525

ZADAR / Zemunik
CROATIA
RWY 13



CHANGE: New SIDs: PALEZ 1B, RAVNA 1B; Withdrawn SIDs: ALANU 3D, EBITA 4H, ULPIN 3D.

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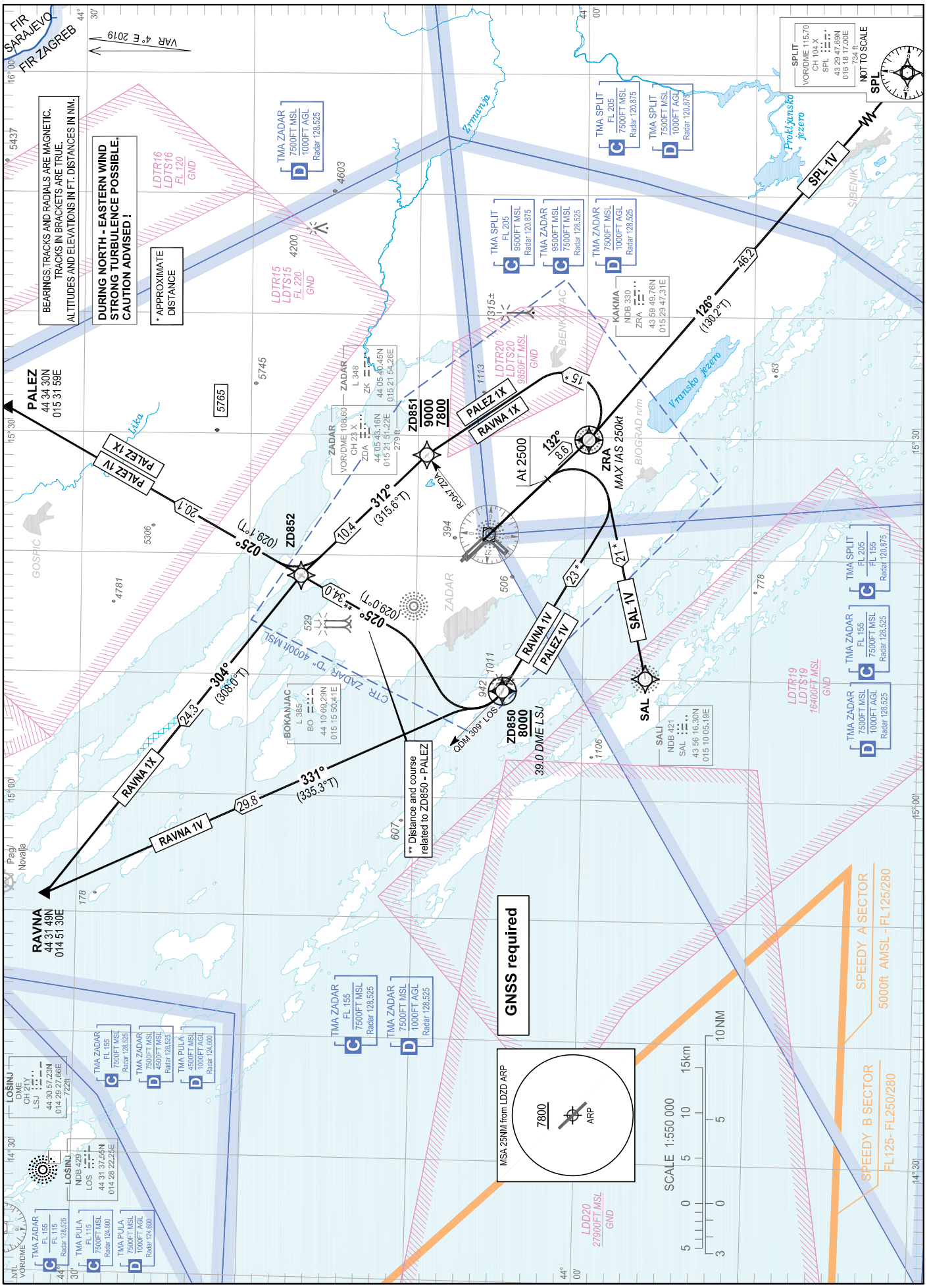
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR TOWER 123.700
ZADAR RADAR 128.525

ZADAR / Zemunik
CROATIA
RNAV RWY 13



CHANGE: New chart

ZADAR / Zemunik
CROATIA
RNAV RWY 13

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.

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SIDs PALEZ 1V, RAVNA 1V only:
Climb straight ahead. At 2500 FT AMSL turn RIGHT climbing to intercept and follow QDM 309° LOS. Cross 39.0 DME LSJ at or above 8000 FT AMSL. After crossing 39.0 DME LSJ, proceed via RNAV SID flight procedure filed in FPL or according to ATC instruction.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 13

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	RAVNA 1V	CA	-	-	132° (135.7°T)	4.00°E	-	-	@2500	-	-	
020		DF	ZD850	Y	-	4.00°E	-	R	+8000	-		RNAV 1
030		TF	RAVNA	-	331° (335.3°T)	4.00°E	29.8	-	-	-		
010	PALEZ 1V	CA	-	-	132° (135.7°T)	4.00°E	-	-	@2500	-	-	
020		DF	ZD850	Y	-	4.00°E	-	R	+8000	-		RNAV 1
030		TF	PALEZ	-	025° (029.0°T)	4.00°E	34.0	-	-	-		

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID SPL 1V only:
Climb straight ahead to ZRA NDB. From ZRA NDB intercept and follow R-126 ZDA climbing to SPL VOR DME. On passing 4000 FT AMSL proceed via RNAV SID SPL 1V or according to ATC instruction.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 13

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	SPL 1V	CF	ZRA	Y	132° (135.8°T)	4.00°E	8.6	-	-	-	-	
020		TF	SPL	-	126° (130.2°T)	4.00°E	46.2	-	-	-		RNAV 1

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID SAL 1V only:
Climb straight ahead. At 2500 FT AMSL turn RIGHT direct to SAL NDB.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 13

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	SAL 1V	CA	-	-	132° (135.7°T)	4.00°E	-	-	@2500	-	-	
020		DF	SAL	-	-	4.00°E	-	R	-	-		RNAV 1

CHANGE: New chart

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SIDs PALEZ 1X, RAVNA 1X only:
Climb straight ahead. At ZRA NDB turn LEFT climbing on track 312°. Cross R-047 ZDA at or above 7800 FT AMSL, but at or below 9000 FT AMSL. After crossing R-047 ZDA, proceed via RNAV SID flight procedure filed in FPL or according to ATC instruction. MAX IAS 250 KT. MNM PDG 5.0% (304 FT/NM) to 7800 FT AMSL.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 13

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	RAVNA 1X	CF	ZRA	Y	132° (135.8°T)	4.00°E	8.6	-	-	-250	MNM PDG 5.0% (304 FT/NM) to 7800 FT AMSL	
020		DF	ZD851	-	-	4.00°E	-	L	-9000 +7800	-		
030		TF	ZD852	-	312° (315.6°T)	4.00°E	10.4	-	-	-		RNAV 1
040		TF	RAVNA	-	304° (308.0°T)	4.00°E	24.3	-	-	-		
010	PALEZ 1X	CF	ZRA	Y	132° (135.8°T)	4.00°E	8.6	-	-	-250	MNM PDG 5.0% (304 FT/NM) to 7800 FT AMSL	
020		DF	ZD851	-	-	4.00°E	-	L	-9000 +7800	-		
030		TF	ZD852	-	312° (315.6°T)	4.00°E	10.4	-	-	-		RNAV 1
040		TF	PALEZ	-	025° (029.1°T)	4.00°E	20.1	-	-	-		

Waypoint coordinates		
Waypoint name	WGS-84 latitude	WGS-84 longitude
SAL	435616.30N	0151005.19E
SPL	432947.69N	0161817.00E
ZRA	435949.76N	0152947.31E
RAVNA	443149N	0145130E
PALEZ	443430N	0153159E
ZD850	440447.4N	0150854.4E
ZD851	440929.7N	0152823.5E
ZD852	441654.5N	0151815.9E

CHANGE: New chart

OVA STRANICA JE NAMJERNO OSTAVLJENA PRAZNA
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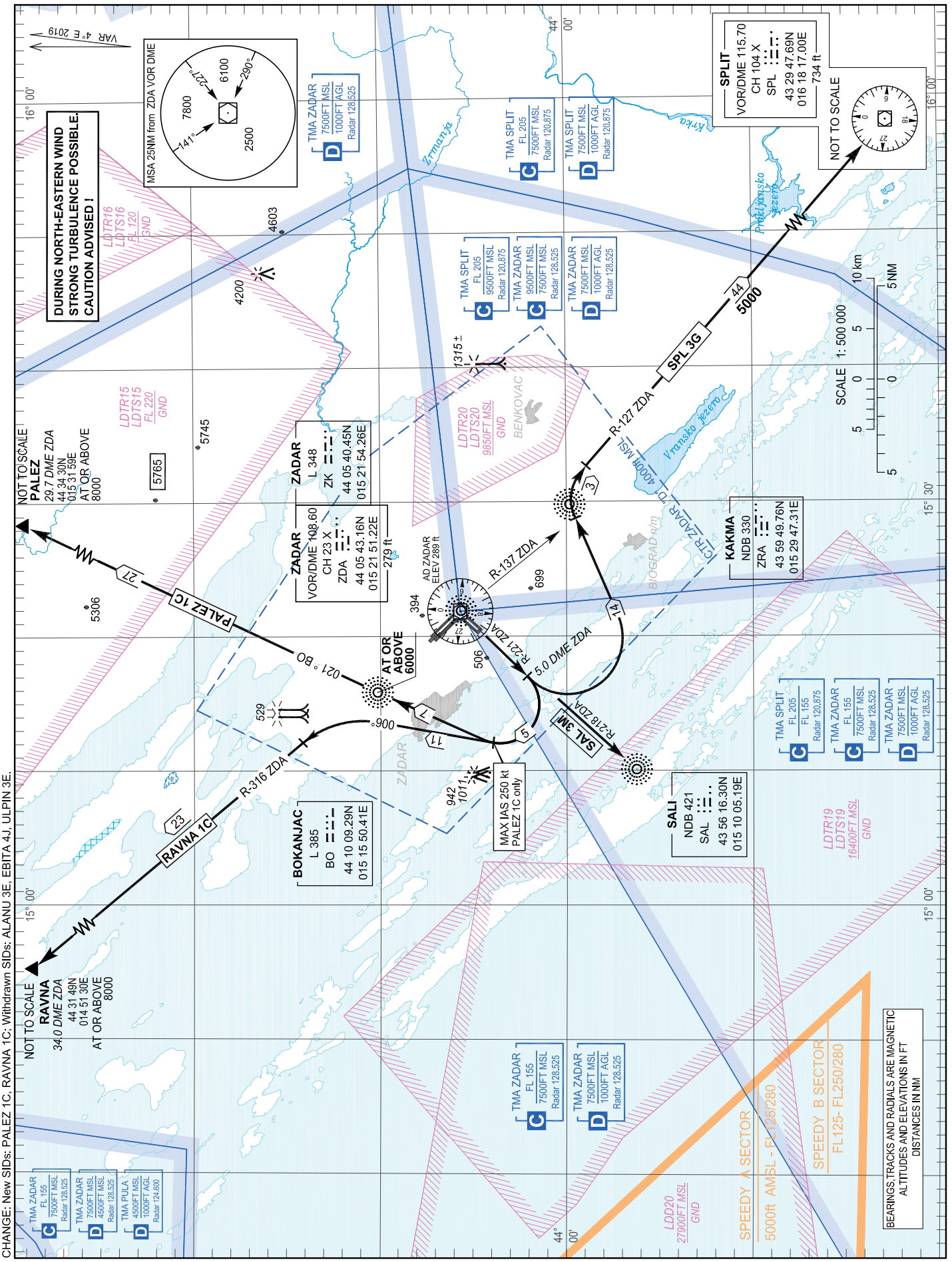
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR TOWER 123.700
ZADAR RADAR 128.525

ZADAR / Zemunik
CROATIA
RWY 22



CHANGE: New SIDs: PALEZ 1C, RAVNA 1C; Withdrawn SIDs: ALANU 3E, EBITA 4J, ULPIN 3E.

OVA STRANICA JE NAMJERNO OSTAVLJENA PRAZNA
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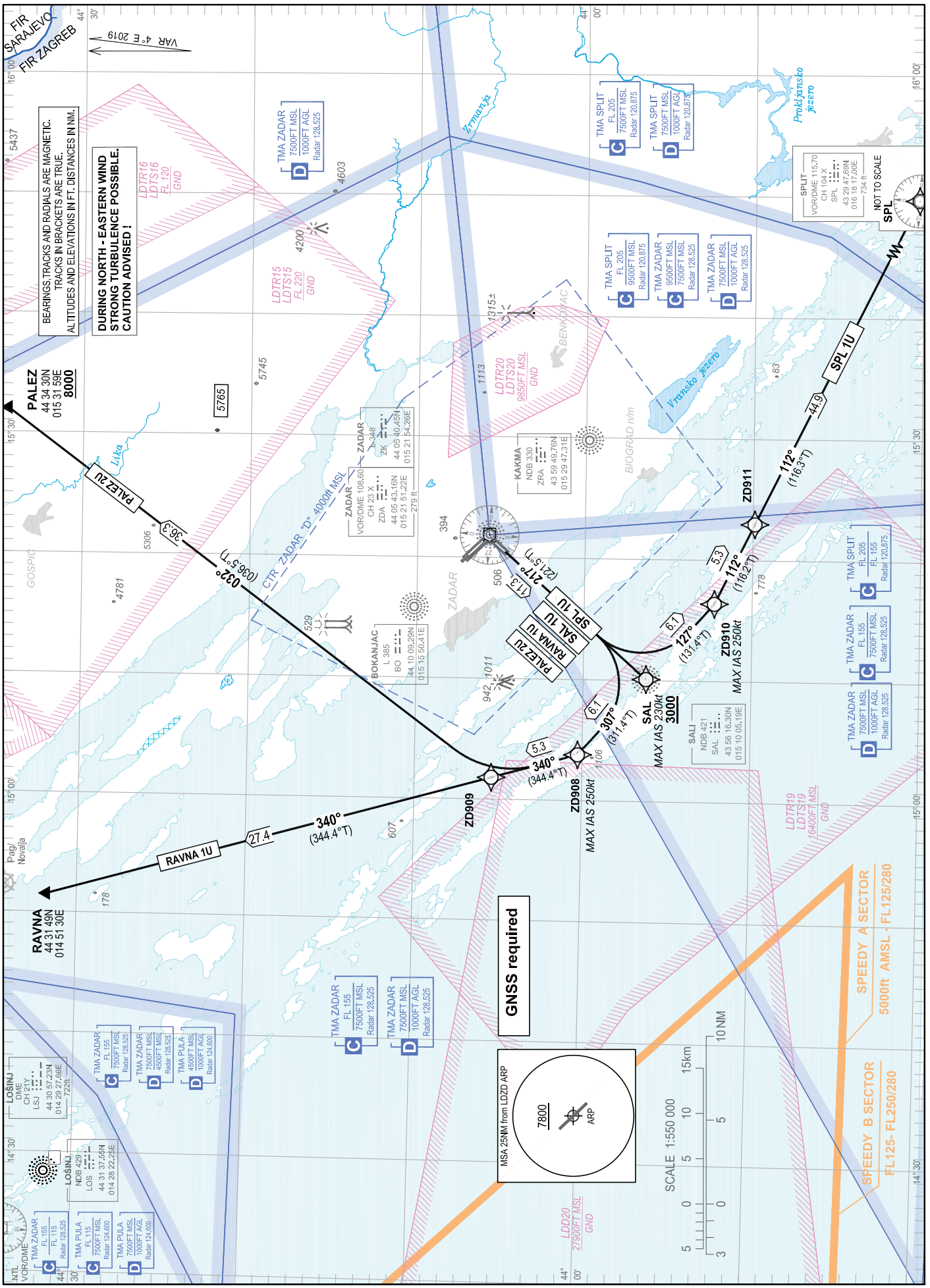
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR TOWER 123.700
ZADAR RADAR 128.525

ZADAR / Zemunik
CROATIA
RNAV RWY 22



CHANGE: New chart

ZADAR / Zemunik
CROATIA
RNAV RWY 22

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.

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SIDs PALEZ 2U, RAVNA 1U, SPL 1U only:
Climb straight ahead. Cross SAL NDB at or above 3000 FT AMSL. After crossing SAL NDB, proceed via RNAV SID flight procedure filed in FPL or according to ATC instruction. MAX IAS 230 KT.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 22

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	RAVNA 1U	CF	SAL	-	217° (221.5°T)	4.00°E	11.3	-	+3000	-230	-	
020		TF	ZD908	-	307° (311.4°T)	4.00°E	6.1	-	-	-250		
030		TF	ZD909	-	340° (344.4°T)	4.00°E	5.3	-	-	-		RNAV 1
040		TF	RAVNA	-	340° (344.4°T)	4.00°E	27.4	-	-	-		
010	PALEZ 2U	CF	SAL	-	217° (221.5°T)	4.00°E	11.3	-	+3000	-230	-	
020		TF	ZD908	-	307° (311.4°T)	4.00°E	6.1	-	-	-250		
030		TF	ZD909	-	340° (344.4°T)	4.00°E	5.3	-	-	-		RNAV 1
040		TF	PALEZ	-	032° (036.5°T)	4.00°E	36.3	-	+8000	-		
010	SAL 1U	CF	SAL	-	217° (221.5°T)	4.00°E	11.3	-	+3000	-	-	RNAV 1
010	SPL 1U	CF	SAL	-	217° (221.5°T)	4.00°E	11.3	-	+3000	-230	-	
020		TF	ZD910	-	127° (131.4°T)	4.00°E	6.1	-	-	-250		
030		TF	ZD911	-	112° (116.2°T)	4.00°E	5.3	-	-	-		RNAV 1
040		TF	SPL	-	112° (116.3°T)	4.00°E	44.9	-	-	-		

Waypoint coordinates

Waypoint name	WGS-84 latitude	WGS-84 longitude
SAL	435616.30N	0151005.19E
SPL	432947.69N	0161817.00E
RAVNA	443149N	0145130E
PALEZ	443430N	0153159E
ZD908	440016.8N	0150346.6E
ZD909	440524.4N	0150147.8E
ZD910	435215.5N	0151622.9E
ZD911	434954.3N	0152258.7E

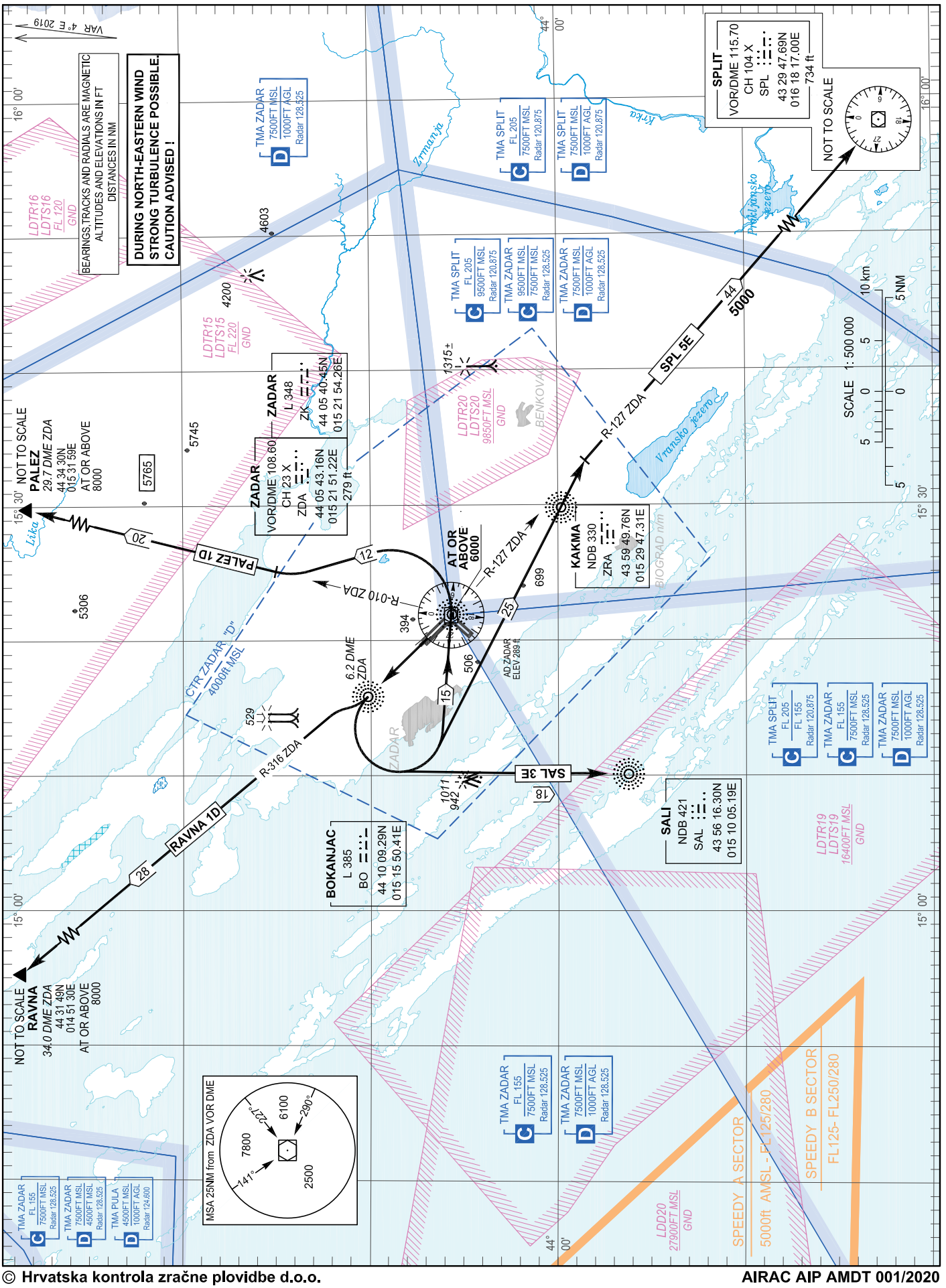
CHANGE: New chart

STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR TOWER 123.700
ZADAR RADAR 128.525

ZADAR / Zemunik
CROATIA
RWY 31



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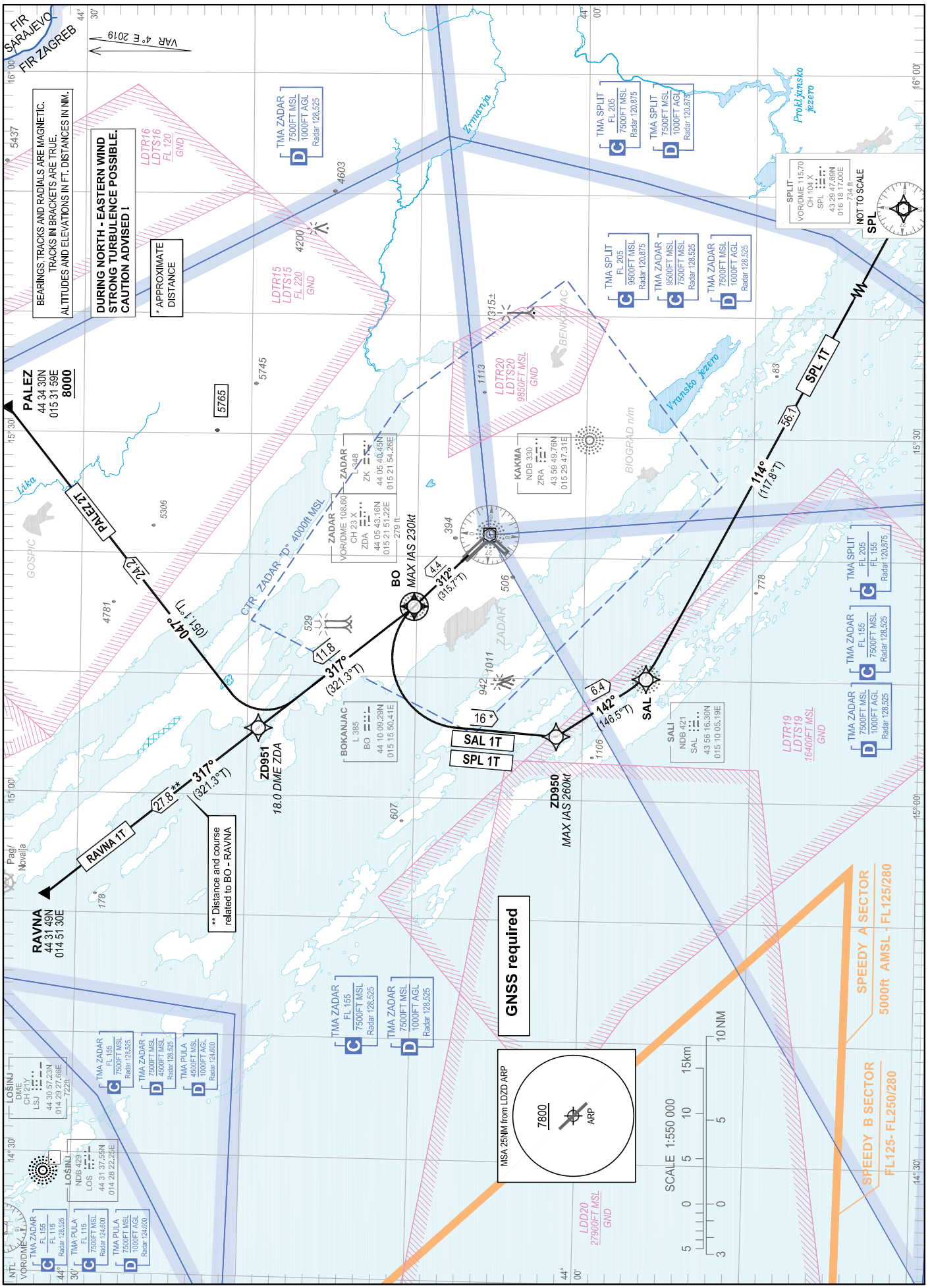
STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR TOWER 123.700
ZADAR RADAR 128.525

ZADAR / Zemunik
CROATIA
RNAV RWY 31



CHANGE: New chart

ZADAR / Zemunik
CROATIA
RNAV RWY 31

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.

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID RAVNA 1T only:
Climb straight ahead to BO L. At BO L proceed on bearing QDR 317° BO to RAVNA. On passing 6000 FT AMSL proceed via RNAV SID RAVNA 1T or according to ATC instruction.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 31

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	RAVNA 1T	CF	BO	Y	312° (315.7°T)	4.00°E	4.4	-	-	-	-	RNAV 1
020		TF	RAVNA	-	317° (321.3°T)	4.00°E	27.8	-	-	-		

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID PALEZ 2T only:
Climb straight ahead to BO L. MAX IAS 230 KT. At BO L proceed on bearing QDR 317° BO to 18.0 DME ZDA. At 18.0 DME ZDA turn RIGHT on track 047° to PALEZ. On passing 7800 FT AMSL proceed via RNAV SID PALEZ 2T or according to ATC instruction. MNM PDG 6.1% (371 FT/NM) to 7800 FT AMSL. Cross PALEZ at or above 8000 FT AMSL.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 31

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	PALEZ 2T	CF	BO	Y	312° (315.7°T)	4.00°E	4.4	-	-	-230	MNM PDG 6.1% (371 FT/NM) to 7800 FT AMSL	RNAV 1
020		TF	ZD951	-	317° (321.3°T)	4.00°E	11.8	-	-	-		
030		TF	PALEZ	-	047° (051.1°T)	4.00°E	24.2	-	+8000	-		

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID SPL 1T only:
Climb straight ahead to BO L. MAX IAS 230 KT. At BO L turn LEFT climbing direct to SAL NDB. MAX IAS 260 KT. After crossing SAL NDB, proceed via RNAV SID SPL 1T or according to ATC instruction.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 31

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	SPL 1T	CF	BO	Y	312° (315.7°T)	4.00°E	4.4	-	-	-230	-	RNAV 1
020		DF	ZD950	-	-	4.00°E	-	L	-	-260		
030		TF	SAL	-	142° (146.5°T)	4.00°E	6.4	-	-	-		
040		TF	SPL	-	114° (117.8°T)	4.00°E	56.1	-	-	-		

CHANGE: New chart

WARNING: Back-up conventional (NON-RNAV) procedure, in case of loss of RNAV 1 capability or RNAV system failure, below minimum radar vectoring altitude for RNAV SID SAL 1T only:
Climb straight ahead to BO L. MAX IAS 230 KT. At BO L turn LEFT climbing direct to SAL NDB. MAX IAS 260 KT.

LDZD RNAV STANDARD INSTRUMENT DEPARTURE RWY 31

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	SAL 1T	CF	BO	Y	312° (315.7°T)	4.00°E	4.4	-	-	-230	-	RNAV 1
020		DF	ZD950	-	-	4.00°E	-	L	-	-260		
030		TF	SAL	-	142° (146.5°T)	4.00°E	6.4	-	-	-		

Waypoint coordinates		
Waypoint name	WGS-84 latitude	WGS-84 longitude
BO	441009.29N	0151550.41E
SAL	435616.30N	0151005.19E
SPL	432947.69N	0161817.00E
RAVNA	443149N	0145130E
PALEZ	443430N	0153159E
ZD950	440134.5N	0150513.7E
ZD951	441920.2N	0150534.2E

CHANGE: New chart

OVA STRANICA JE NAMJERNO OSTAVLJENA PRAZNA
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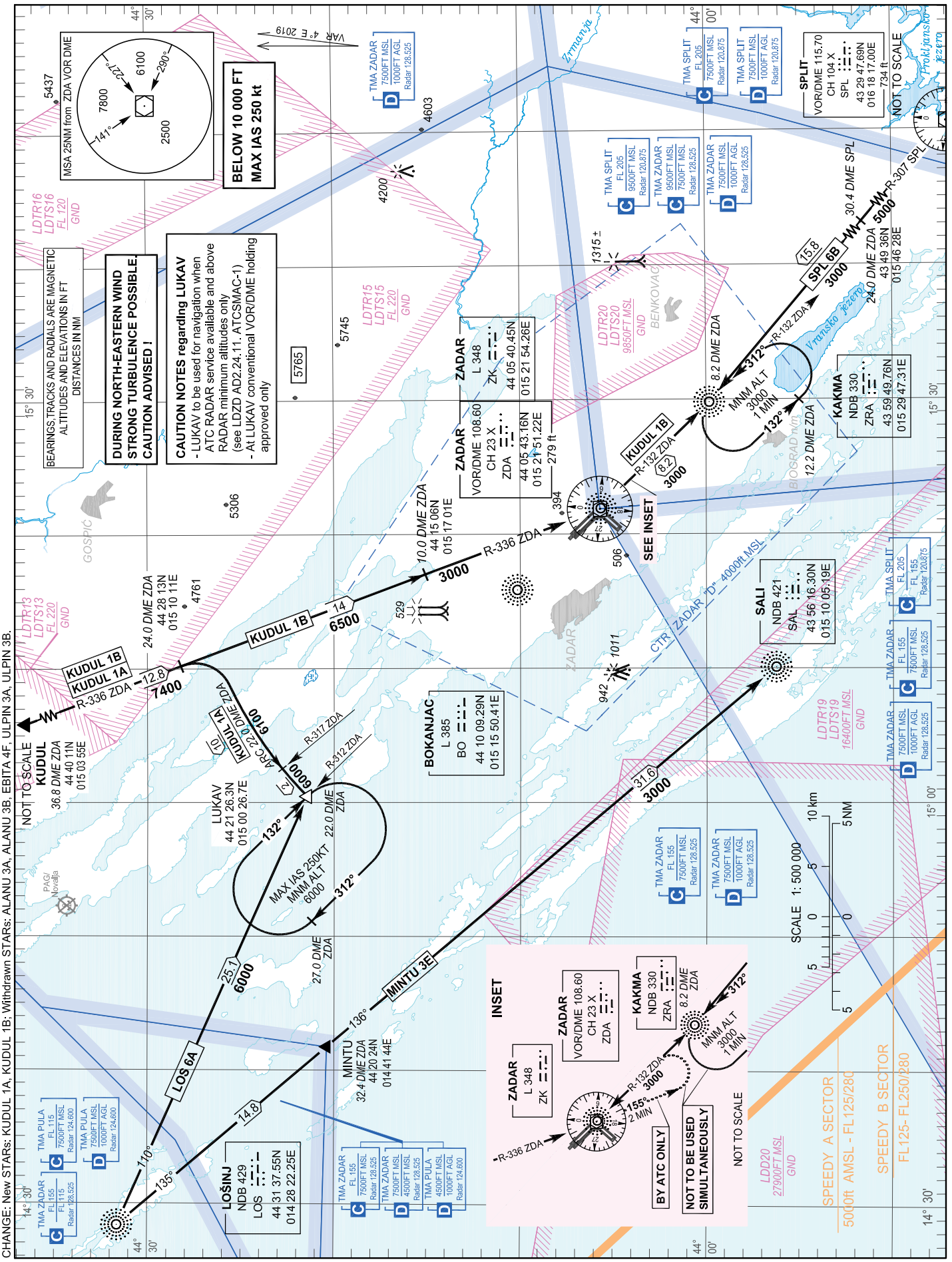
STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
RWY 04 & RWY 13/31



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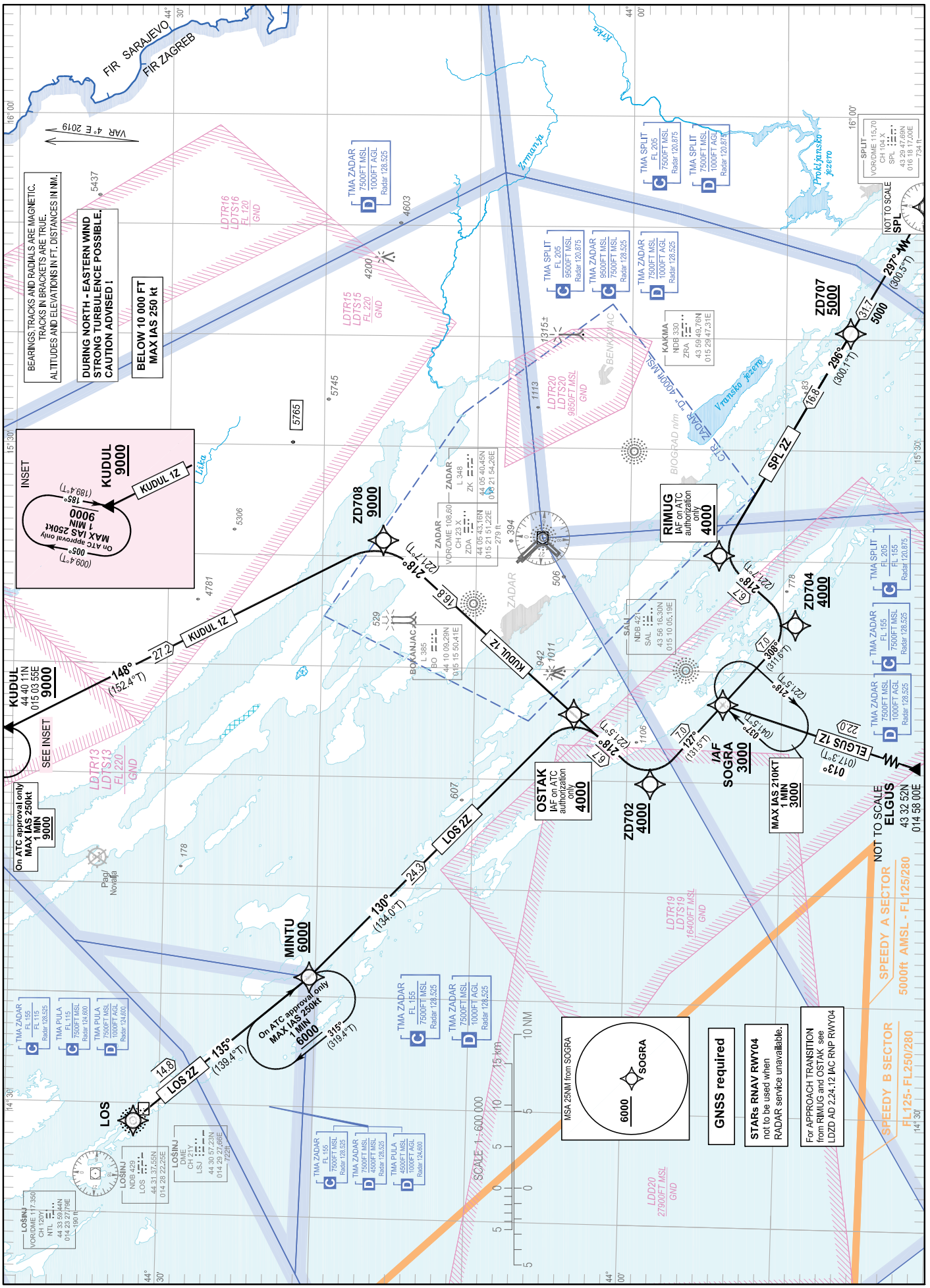
STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
RNAV RWY 04



CHANGE: New chart

ZADAR / Zemunik
CROATIA
RNAV RWY 04

LDZD RNAV STANDARD ARRIVAL RWY 04

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	LOS 2Z	IF	LOS	-	-	4.00°E	-	-	-	-	-	
020		TF	MINTU	-	135° (139.4°T)	4.00°E	14.8	-	+6000	-	-	
030		TF	OSTAK	-	130° (134.0°T)	4.00°E	24.3	-	+4000	-	IAF on ATC authorization only	RNAV 1
040		TF	ZD702	-	218° (221.5°T)	4.00°E	6.7	-	+4000	-	-	
050		TF	SOGRA	-	127° (131.5°T)	4.00°E	7.0	-	+3000	-	IAF	
010	KUDUL 1Z	IF	KUDUL	-	-	4.00°E	-	-	+9000	-	-	
020		TF	ZD708	-	148° (152.4°T)	4.00°E	27.2	-	+9000	-	-	
030		TF	OSTAK	-	218° (221.7°T)	4.00°E	16.8	-	+4000	-	IAF on ATC authorization only	RNAV 1
040		TF	ZD702	-	218° (221.5°T)	4.00°E	6.7	-	+4000	-	-	
050		TF	SOGRA	-	127° (131.5°T)	4.00°E	7.0	-	+3000	-	IAF	
010	SPL 2Z	IF	SPL	-	-	4.00°E	-	-	-	-	-	
020		TF	ZD707	-	297° (300.5°T)	4.00°E	31.7	-	+5000	-	-	
030		TF	RIMUG	-	296° (300.1°T)	4.00°E	16.8	-	+4000	-	IAF on ATC authorization only	RNAV 1
040		TF	ZD704	-	218° (221.7°T)	4.00°E	6.7	-	+4000	-	-	
050		TF	SOGRA	-	308° (311.6°T)	4.00°E	7.0	-	+3000	-	IAF	
010	ELGUS 1Z	IF	ELGUS	-	-	4.00°E	-	-	-	-	-	
020		TF	SOGRA	-	013° (017.3°T)	4.00°E	22.0	-	+3000	-	IAF	RNAV 1

IAF on ATC authorization only: For APPROACH TRANSITION from RIMUG and OSTAK see LDZD AD 2.24.12 IAC RNP RWY 04

CHANGE: New chart

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
MINTU	HM	135° (139.4°T)	1 MIN / -	R	6000	-	250	4.00°E	On ATC approval only	RNAV 1
KUDUL	HM	185° (189.4°T)	1 MIN / -	R	9000	-	250	4.00°E	On ATC approval only	RNAV 1
SOGRA	HM	037° (041.5°T)	1 MIN / -	R	3000	-	210	4.00°E	-	RNAV 1

Waypoint coordinates		
Waypoint name	WGS-84 latitude	WGS-84 longitude
LOS	443137.55N	0142822.25E
SPL	432947.69N	0161817.00E
ELGUS	433252N	0145800E
MINTU	442024N	0144144E
OSTAK	440331.0N	0150557.8E
RIMUG	435413.2N	0152027.8E
SOGRA	435350.2N	0150702.6E
KUDUL	444011N	0150355E
ZD702	435828.7N	0145947.5E
ZD704	434911.7N	0151417.2E
ZD707	434549.7N	0154033.0E
ZD708	441604.3N	0152126.9E

CHANGE: New chart

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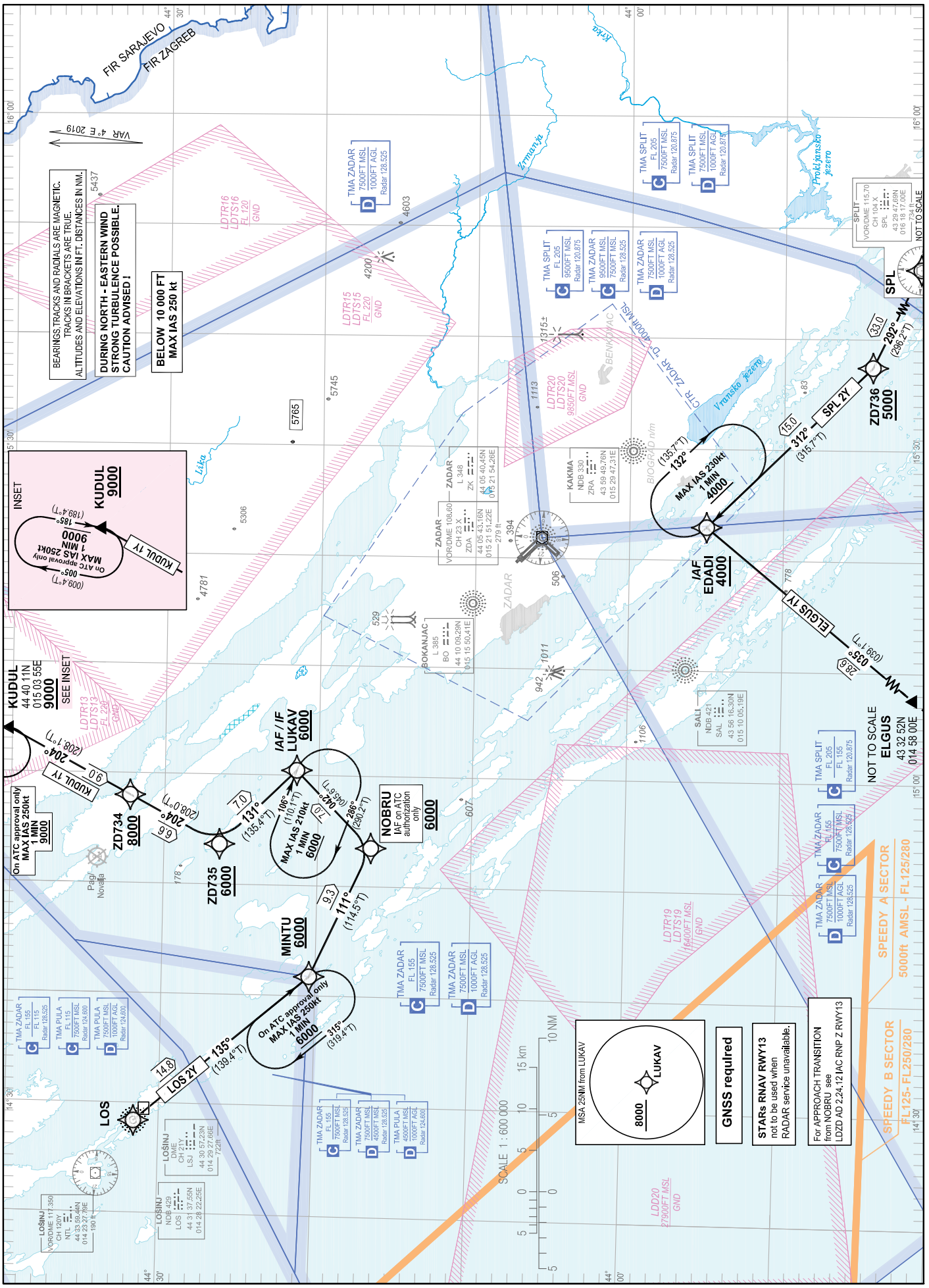
STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
RNAV RWY 13



CHANGE: New chart

ZADAR / Zemunik
CROATIA
RNAV RWY 13

LDZD RNAV STANDARD ARRIVAL RWY 13

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	LOS 2Y	IF	LOS	-	-	4.00°E	-	-	-	-	-	
020		TF	MINTU	-	135° (139.4°T)	4.00°E	14.8	-	+6000	-	-	
030		TF	NOBRU	-	111° (114.5°T)	4.00°E	9.3	-	+6000	-	IAF on ATC authorization only for RNP Z RWY 13	RNAV 1
040		TF	LUKAV	-	042° (045.6°T)	4.00°E	7.0	-	+6000	-	IAF/IF	
010	KUDUL 1Y	IF	KUDUL	-	-	4.00°E	-	-	+9000	-	-	
020		TF	ZD734	-	204° (208.1°T)	4.00°E	9.0	-	+8000	-	-	
030		TF	ZD735	-	204° (208.0°T)	4.00°E	6.6	-	+6000	-	-	RNAV 1
040		TF	LUKAV	-	131° (135.4°T)	4.00°E	7.0	-	+6000	-	IAF	
010	SPL 2Y	IF	SPL	-	-	4.00°E	-	-	-	-	-	
020		TF	ZD736	-	292° (296.2°T)	4.00°E	33.0	-	+5000	-	-	RNAV 1
030		TF	EDADI	-	312° (315.7°T)	4.00°E	15.0	-	+4000	-	IAF	
010	ELGUS 1Y	IF	ELGUS	-	-	4.00°E	-	-	-	-	-	
020		TF	EDADI	-	035° (039.1°T)	4.00°E	28.6	-	+4000	-	IAF	RNAV 1

IAF on ATC authorization only: For APPROACH TRANSITION from NOBRU see LDZD AD 2.24.12 IAC RNP Z RWY 13

CHANGE: New chart

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
MINTU	HM	135° (139.4°T)	1 MIN / -	R	6000	-	250	4.00°E	On ATC approval only	RNAV 1
KUDUL	HM	185° (189.4°T)	1 MIN / -	R	9000	-	250	4.00°E	On ATC approval only	RNAV 1
EDADI	HM	312° (315.7°T)	1 MIN / -	R	4000	-	230	4.00°E	-	RNAV 1
LUKAV	HM	106° (110.1°T)	1 MIN / -	R	6000	-	210	4.00°E	-	RNAV 1

Waypoint coordinates		
Waypoint name	WGS-84 latitude	WGS-84 longitude
EDADI	435500.1N	0152257.8E
LOS	443137.55N	0142822.25E
SPL	432947.69N	0161817.00E
ELGUS	433252N	0145800E
LUKAV	442126.3N	0150026.7E
MINTU	442023.9N	0144144.5E
NOBRU	441632.4N	0145328.9E
KUDUL	444011N	0150355E
ZD734	443215.3N	0145759.7E
ZD735	442623.5N	0145338.5E
ZD736	434416.3N	0153727.1E

CHANGE: New chart

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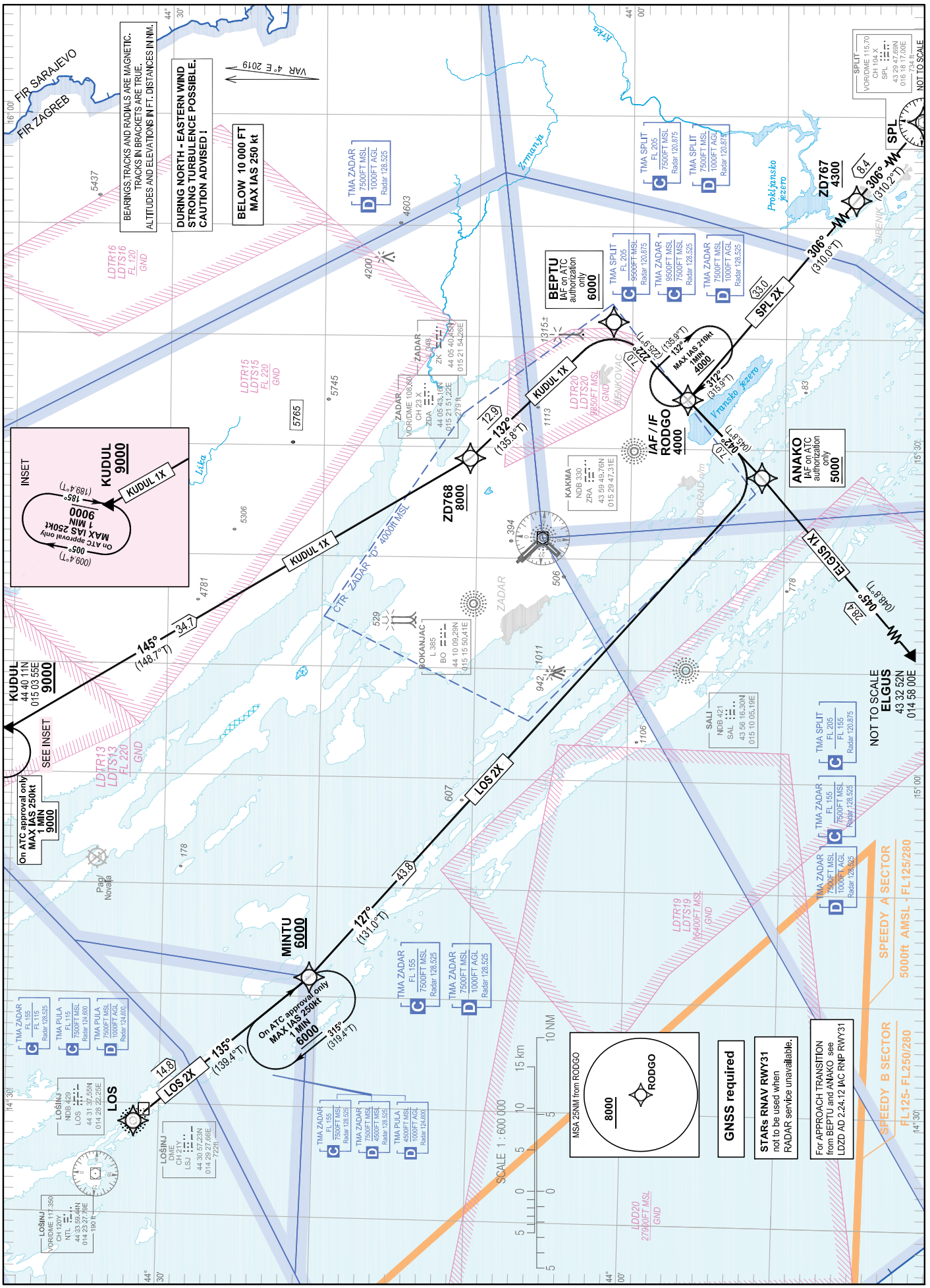
STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO

TRANSITION ALTITUDE
10 000

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
RNAV RWY 31



CHANGE: New chart

ZADAR / Zemunik
CROATIA
RNAV RWY 31

LDZD RNAV STANDARD ARRIVAL RWY 31

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	LOS 2X	IF	LOS	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	MINTU	-	135° (139.4°T)	4.00°E	14.8	-	+6000	-	-	
030		TF	ANAKO	-	127° (131.0°T)	4.00°E	43.8	-	+5000	-	IAF on ATC authorization only	
040		TF	RODGO	-	042° (045.8°T)	4.00°E	7.0	-	+4000	-	IAF/IF	
010	KUDUL 1X	IF	KUDUL	-	-	4.00°E	-	-	+9000	-	-	RNAV 1
020		TF	ZD768	-	145° (148.7°T)	4.00°E	34.7	-	+8000	-	-	
030		TF	BEPTU	-	132° (135.8°T)	4.00°E	12.9	-	+6000	-	IAF on ATC authorization only	
040		TF	RODGO	-	222° (225.9°T)	4.00°E	7.0	-	+4000	-	IAF/IF	
010	SPL 2X	IF	SPL	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ZD767	-	306° (310.2°T)	4.00°E	8.4	-	+4300	-	-	
030		TF	RODGO	-	306° (310.0°T)	4.00°E	33.0	-	+4000	-	IAF	
010	ELGUS 1X	IF	ELGUS	-	-	4.00°E	-	-	-	-	-	RNAV 1
020		TF	ANAKO	-	045° (048.8°T)	4.00°E	28.4	-	+5000	-	IAF on ATC authorization only	
030		TF	RODGO	-	042° (045.8°T)	4.00°E	7.0	-	+4000	-	IAF/IF	

IAF on ATC authorization only: For APPROACH TRANSITION from BEPTU and ANAKO see LDZD AD 2.24.12 IAC RNP RWY 31

CHANGE: New chart

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
MINTU	HM	135° (139.4°T)	1 MIN / -	R	6000	-	250	4.00°E	On ATC approval only	RNAV 1
KUDUL	HM	185° (189.4°T)	1 MIN / -	R	9000	-	250	4.00°E	On ATC approval only	RNAV 1
RODGO	HM	312° (315.9°T)	1 MIN / -	R	4000	-	210	4.00°E	-	RNAV 1

Waypoint coordinates

Waypoint name	WGS-84 latitude	WGS-84 longitude
LOS	443137.55N	0142822.25E
SPL	432947.69N	0161817.00E
ANAKO	435129.8N	0152730.2E
BEPTU	440115.0N	0154124.7E
ELGUS	433252N	0145800E
MINTU	442023.9N	0144144.5E
KUDUL	444011N	0150355E
RODGO	435622.6N	0153426.9E
ZD767	433513.2N	0160925.7E
ZD768	441029.1N	0152858.8E

CHANGE: New chart

OVA STRANICA JE NAMJERNO OSTAVLJENA PRAZNA
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ATC SURVEILLANCE MINIMUM ALTITUDE CHART - ICAO

TRANSITION ALTITUDE
10 000

AD ELEV 289

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR/ Zemunik
CROATIA

SCALE 1 : 650 000
5 0 5 10 15 km
5 0 5 10NM

ALTITUDES AND ELEVATIONS IN FT
DISTANCES IN NM

VAR 4° E 2019

CHANGE: Significant points KUDUL and RAVNA added

GENERAL INFORMATION:

1. ATC SURVEILLANCE BASED ON RADAR SYSTEM.
2. BELOW THE RADAR MINIMUM ALTITUDE, IFR FLIGHTS WILL BE NORMALLY CLEARED ON PUBLISHED IFR PROCEDURES ONLY.
3. MINIMUM ALTITUDES ARE REFERRED TO ZADAR QNH AND ARE INDICATED IN FT MSL.
4. THE AREAS DEPICTED AND ASSOCIATED MINIMUM ALTITUDES ARE ESTABLISHED BY APPLYING APPROPRIATE BUFFER AND OBSTACLE CLEARANCE OF AT LEAST 1000 FT, PLUS ADDITIONAL BUFFER OF 500 FT FOR THE LOWER LIMIT OF THE CONTROLLED AIRSPACE IN FIR ZAGREB.
5. ONLY SIGNIFICANT OBSTACLES AND DOMINANT SPOT ELEVATIONS SHOWN.
6. THIS CHART SHOULD ONLY BE USED FOR THE CROSS-CHECKING OF ASSIGNED ALTITUDES WHILST UNDER RADAR CONTROL.

	WGS-84 latitude	WGS-84 longitude
SECTOR 1	445403N	0154522E
	along the FIR boundary Zagreb/Sarajevo	
	441003N	0161628E
	440821N	0155450E
	440658N	0155423E
	440839N	0154357E
	441032N	0154206E
	441046N	0153945E
	441327N	0154431E
	441512N	0154545E
	441524N	0154358E
	441857N	0154713E
	444241N	0152957E
	445334N	0152156E
	445403N	0154522E

	WGS-84 latitude	WGS-84 longitude
SECTOR 2	445308N	0150900E
	445314N	0151136E
	445023N	0151320E
	444829N	0151343E
	444320N	0151011E
	443915N	0150547E
	443807N	0150724E
	443644N	0150024E
	443855N	0144908E
	445308N	0150900E

	WGS-84 latitude	WGS-84 longitude
SECTOR 3	445314N	0151136E
	445334N	0152156E
	444241N	0152957E
	443422N	0152442E
	443107N	0151720E
	443807N	0150724E
	443915N	0150547E
	444320N	0151011E
	444829N	0151343E
	445023N	0151320E
	445314N	0151136E

	WGS-84 latitude	WGS-84 longitude
SECTOR 4	443855N	0144908E
	443644N	0150024E
	443807N	0150724E
	443107N	0151720E
	442827N	0151354E
	442600N	0151216E
	443013N	0150438E
	443142N	0145830E
	443438N	0145159E
	443855N	0144908E

	WGS-84 latitude	WGS-84 longitude
SECTOR 5	443438N	0145159E
	443142N	0145830E
	443013N	0150438E
	442600N	0151216E
	442137N	0151329E
	441716N	0152046E
	441615N	0152305E
	441228N	0152844E
	441539N	0152018E
	442231N	0150912E
	442339N	0150758E
	442923N	0145907E
	443127N	0145656E
	443438N	0145159E

	WGS-84 latitude	WGS-84 longitude
SECTOR 6	443855N	0144908E
	443438N	0145159E
	443127N	0145656E
	442923N	0145907E
	442339N	0150758E
	442231N	0150912E
	441539N	0152018E
	441228N	0152844E
	441138N	0153056E
	441046N	0153945E
	441032N	0154206E
	440839N	0154357E
	440658N	0155423E
	440241N	0155301E
	440448N	0155049E
	440617N	0154708E
	440709N	0153951E
	440638N	0153321E
	441214N	0152135E
	441445N	0151322E
	442021N	0150548E
	443508N	0144545E
	443542N	0144440E
	443824N	0144824E
	443855N	0144908E

	WGS-84 latitude	WGS-84 longitude
SECTOR 7	444241N	0152957E
	441857N	0154713E
	441524N	0154358E
	441512N	0154545E
	441327N	0154431E
	441046N	0153945E
	441138N	0153056E
	441228N	0152844E
	441615N	0152305E
	441716N	0152046E
	442137N	0151329E
	442600N	0151216E
	442827N	0151354E
	443107N	0151720E
	443422N	0152442E
	444241N	0152957E

	WGS-84 latitude	WGS-84 longitude
SECTOR 8	443542N	0144440E
	443508N	0144545E
	442021N	0150548E
	441837N	0145357E
	441140N	0144747E
	440728N	0145750E
	440735N	0150505E
	440644N	0150638E
	440650N	0151747E
	440543N	0152151E
	440629N	0152405E
	440114N	0153113E
	435747N	0153754E
	435218N	0154922E
	434902N	0154806E
	434530N	0154643E
	433700N	0153833E
	433902N	0141944E
	440926N	0134535E
	442050N	0141447E
	442024N	0144144E
	443542N	0144440E

	WGS-84 latitude	WGS-84 longitude
SECTOR 9	442021N	0150548E
	441445N	0151322E
	441019N	0151934E
	440653N	0152518E
	440629N	0152405E
	440543N	0152151E
	440650N	0151747E
	440644N	0150638E
	440735N	0150505E
	440728N	0145750E
	441140N	0144747E
	441837N	0145357E
	442021N	0150548E

	WGS-84 latitude	WGS-84 longitude
SECTOR 10	441445N	0151322E
	441214N	0152135E
	440638N	0153321E
	440709N	0153951E
	440617N	0154708E
	440448N	0155049E
	440241N	0155301E
	435846N	0155146E
	435700N	0155113E
	435218N	0154922E
	435747N	0153754E
	440114N	0153113E
	440629N	0152405E
	440653N	0152518E
	441019N	0151934E
	441445N	0151322E

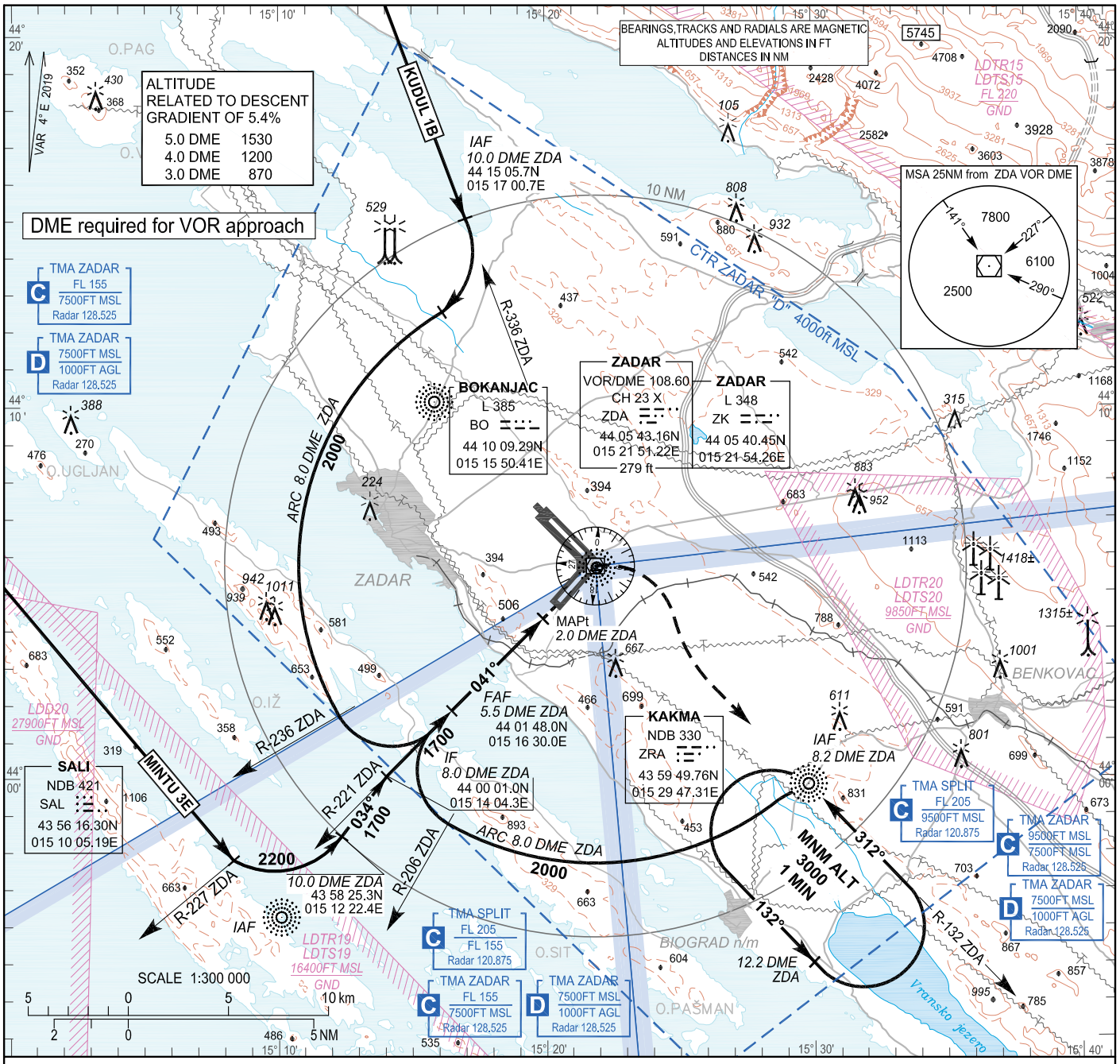
CHANGE: Significant points KUDUL and RAVNA added

INSTRUMENT APPROACH
CHART-ICAO

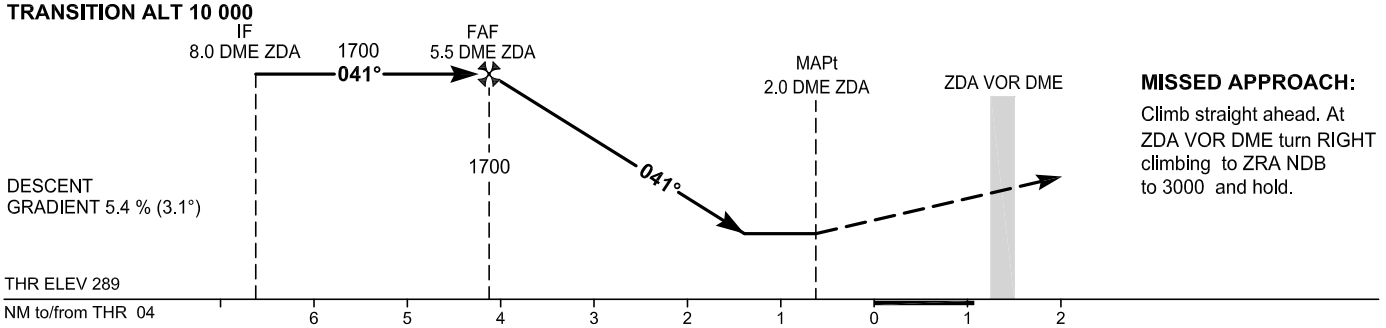
AD ELEV 289
HEIGHTS RELATED
TO THR 04 ELEV 289

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
VOR RWY 04



TRANSITION ALT 10 000



MISSED APPROACH:
Climb straight ahead. At ZDA VOR DME turn RIGHT climbing to ZRA NDB to 3000 and hold.

OCA(H)	A	B	C	D
Straight - in Approach	810 (521)			
Circling	1020 (731)		1170 (881)	

TIMING NOT AUTHORIZED FOR DEFINING THE MAPt						
GS(kt)	70	90	100	120	140	160
Rate of descent (ft /min)	380	490	550	660	770	870
MAPt at 2.0 DME ZDA						

CHANGE: Initial segment via KUDUL 1B added; Initial segment via: ALANU 3B, EBITA 4F, ULPIN 3B withdrawn; ADR table updated.

AERONAUTICAL DATABASE REQUIREMENTS			
Conventional procedure essential fixes/points			
VOR RWY04			
Final approach descent angle:	3.11°		
Fix identification	Coordinates	True bearing or ARC distance providing track	True bearing or distance providing intersection
IAF (via KUDUL)	44 15 05.7N 015 17 00.7E	339.64° (from ZDA VOR)	10.00 DME ZDA
IAF (SAL NDB)	See LDZD AD 2.19	-	-
IAF (ZRA NDB)	See LDZD AD 2.19	-	-
IF	44 00 01.0N 015 14 04.3E	ARC 8.00 DME ZDA	224.61° (from ZDA VOR)
FAF	44 01 48.0N 015 16 30.0E	224.61° (from ZDA VOR)	5.50 DME ZDA
MAPt	44 04 17.7N 015 19 54.3E	224.61° (from ZDA VOR)	2.00 DME ZDA
TP (ZDA VOR DME)	See LDZD AD 2.19	-	-

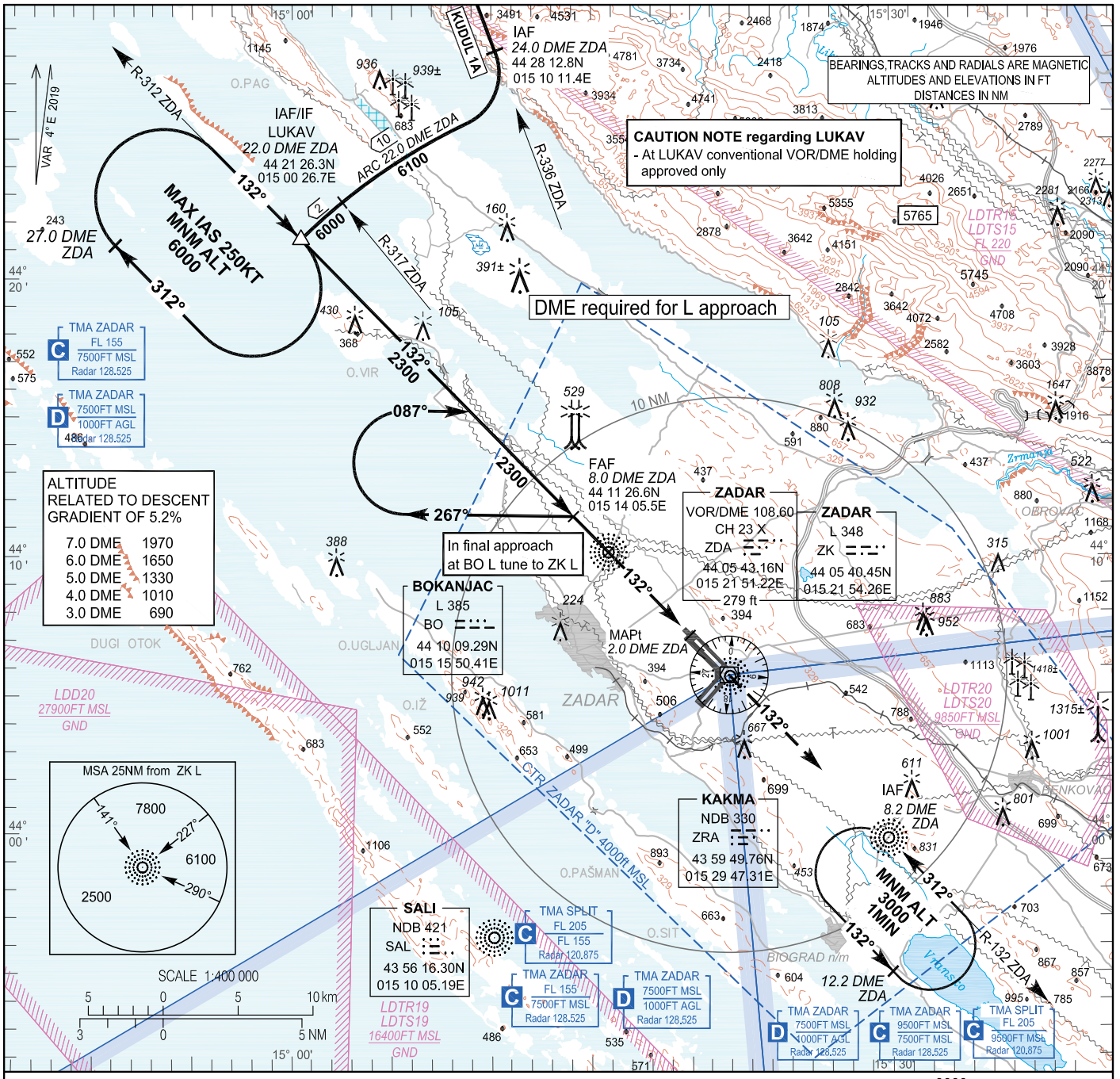
CHANGE: Initial segment via KUDUL 1B added; Initial segment via: ALANU 3B, EBITA 4F, ULPIN 3B withdrawn; ADR table updated.

INSTRUMENT APPROACH
CHART-ICAO

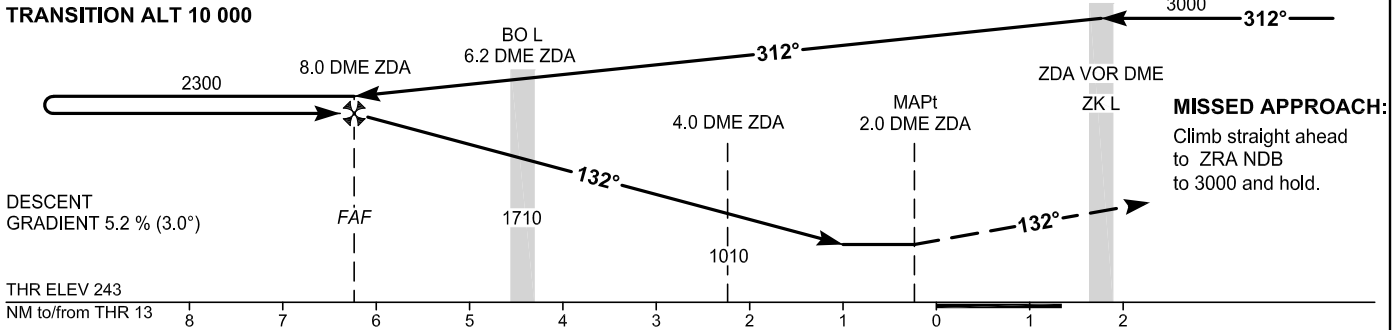
AD ELEV 289
HEIGHTS RELATED
TO THR 13 ELEV 243

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
L z RWY 13



TRANSITION ALT 10 000



MISSED APPROACH:
Climb straight ahead
to ZRA NDB
to 3000 and hold.

OCA(H)	A	B	C	D
Straight - in Approach	630 (387)			
Circling	1020 (731)		1170 (881)	

BO L - MAPt - 4.2 NM						
TIMING NOT AUTHORIZED FOR DEFINING THE MAPt						
GS(kt)	70	90	100	120	140	160
min : sec	3:36	2:48	2:31	2:06	1:48	1:35
Rate of descent (ft /min)	370	470	530	640	740	850
MAPt at 2.0 DME ZDA						

CHANGE: Initial segment via KUDUL 1A added; ADR table updated.

AERONAUTICAL DATABASE REQUIREMENTS			
Conventional procedure essential fixes/points			
L z RWY13			
Final approach descent angle: 3.03°			
Fix identification	Coordinates	True bearing or ARC distance providing track	True bearing or distance providing intersection
IAF (VIA KUDUL)	44 28 12.8N 015 10 11.4E	339.64° (from ZDA VOR)	24.00 DME ZDA
IAF / IF (LUKAV)	44 21 26.3N 015 00 26.7E	315.72° (from ZDA VOR)	22.00 DME ZDA
IAF (ZRA NDB)	See LDZD AD 2.19	-	-
IAF - *by ATC only* (ZDA VOR DME)	See LDZD AD 2.19	-	-
FAF	44 11 26.6N 015 14 05.5E	135.68° (BO L)	8.00 DME ZDA
SDF (BO L)	See LDZD AD 2.19	-	-
MAPt	44 07 08.9N 015 19 54.6E	135.70° (ZK L)	2.00 DME ZDA

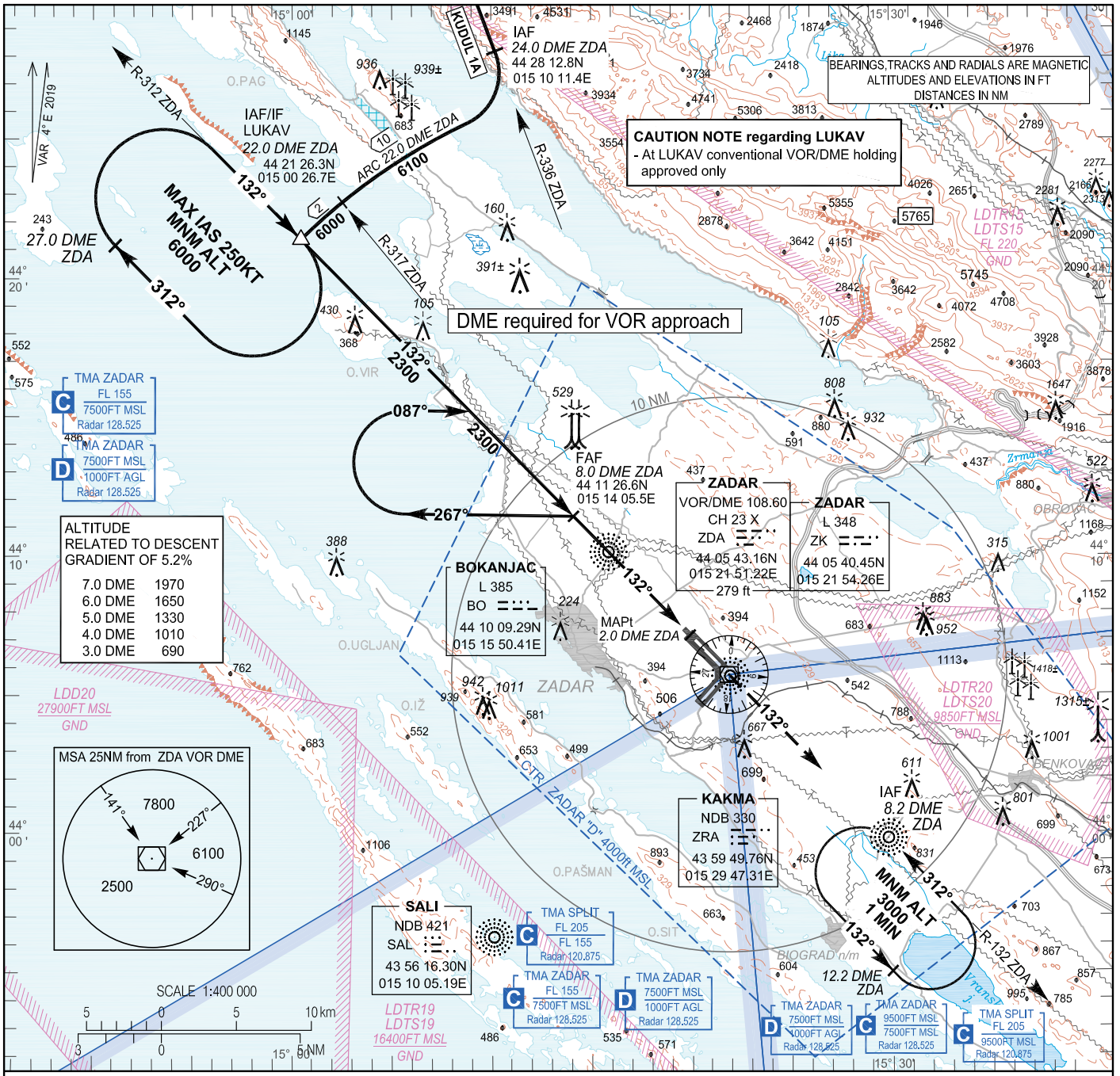
CHANGE: Initial segment via KUDUL 1A added; ADR table updated.

INSTRUMENT APPROACH
CHART-ICAO

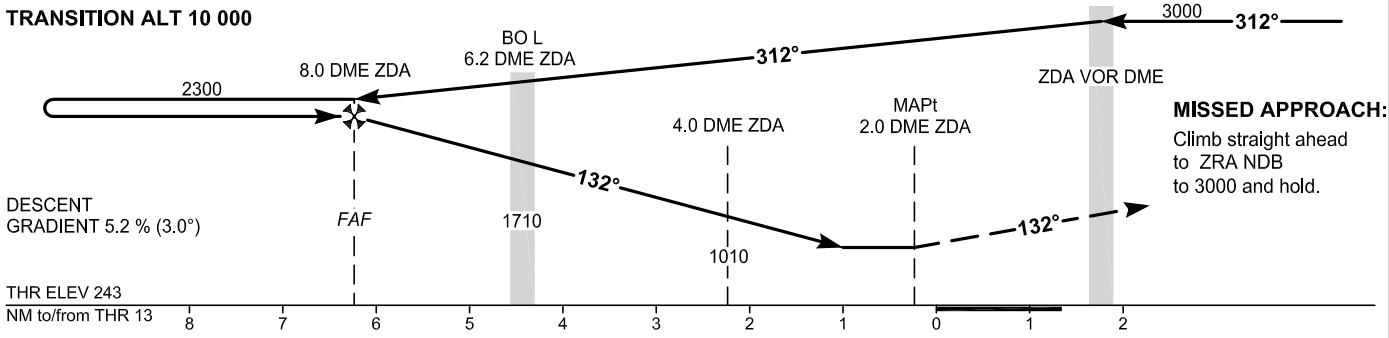
AD ELEV 289
HEIGHTS RELATED
TO THR 13 ELEV 243

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
VOR RWY 13



TRANSITION ALT 10 000



MISSED APPROACH:
Climb straight ahead
to ZRA NDB
to 3000 and hold.

OCA(H)	A	B	C	D
Straight - in Approach	630 (387)			
Circling	1020 (731)		1170 (881)	

BO L - MAPt - 4.2 NM						
TIMING NOT AUTHORIZED FOR DEFINING THE MAPt						
GS(kt)	70	90	100	120	140	160
min : sec	3:36	2:48	2:31	2:06	1:48	1:35
Rate of descent (ft /min)	370	470	530	640	740	850
MAPt at 2.0 DME ZDA						

CHANGE: Initial segment via KUDUL 1A added; ADR table updated.

AERONAUTICAL DATABASE REQUIREMENTS			
Conventional procedure essential fixes/points			
VOR RWY13			
Final approach descent angle: 3.03°			
Fix identification	Coordinates	True bearing or ARC distance providing track	True bearing or distance providing intersection
IAF (VIA KUDUL)	44 28 12.8N 015 10 11.4E	339.64° (from ZDA VOR)	24.00 DME ZDA
IAF / IF (LUKAV)	44 21 26.3N 015 00 26.7E	315.72° (from ZDA VOR)	22.00 DME ZDA
IAF (ZRA NDB)	See LDZD AD 2.19	-	-
IAF - *by ATC only* (ZDA VOR DME)	See LDZD AD 2.19	-	-
FAF	44 11 26.6N 015 14 05.5E	315.72° (from ZDA VOR)	8.00 DME ZDA
SDF (BO L)	See LDZD AD 2.19	315.72° (from ZDA VOR)	6.20 DME ZDA
SDF	44 08 35.0N 015 17 58.4E	315.72° (from ZDA VOR)	4.00 DME ZDA
MAPt	44 07 09.1N 015 19 54.8E	315.72° (from ZDA VOR)	2.00 DME ZDA

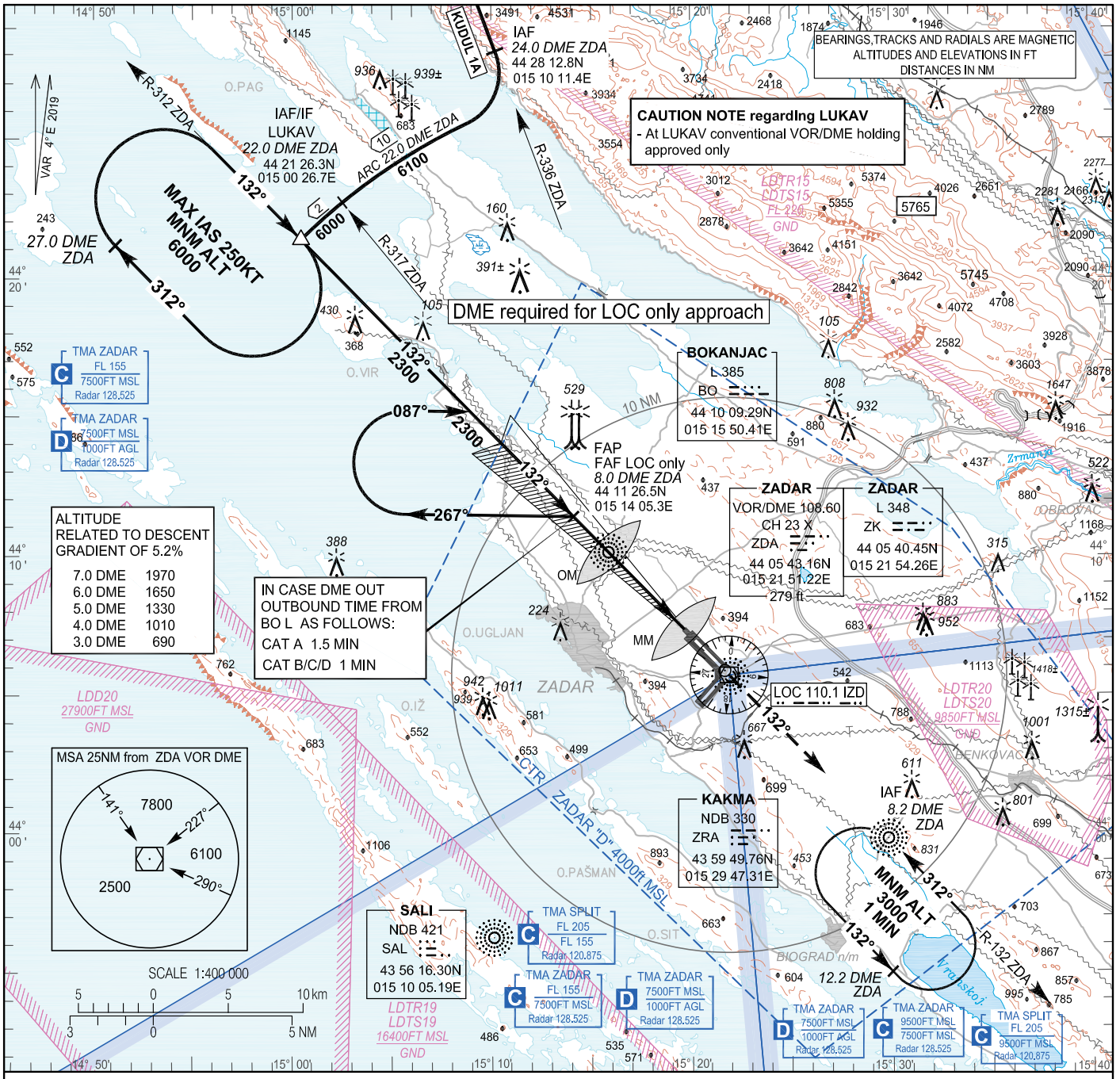
CHANGE: Initial segment via KUDUL 1A added; ADR table updated.

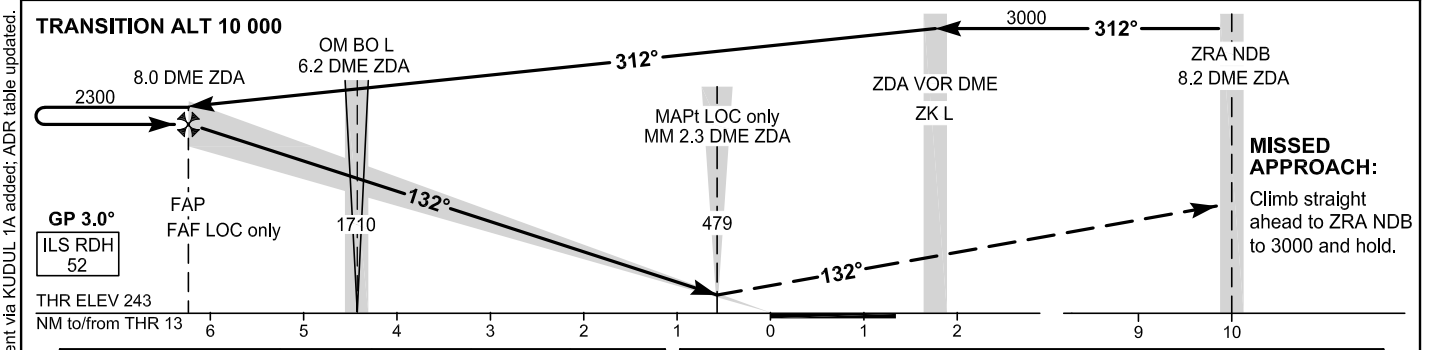
INSTRUMENT APPROACH CHART-ICAO

AD ELEV 289
HEIGHTS RELATED TO THR 13 ELEV 243

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
ILS or LOC RWY 13





OCA(H)		A	B	C	D
Straight-in Approach	ILS CAT I press. altim.	427(184)	437(194)	447(204)	457(214)
	LOC only	560(317)			
CIRCLING		1020(731)		1170(881)	

GS(kt)	70	90	100	120	140	160
Rate of descent (ft / min)	370	470	530	640	740	850

CHANGE: Initial segment via KUDUL 1A added; ADR table updated.

AERONAUTICAL DATABASE REQUIREMENTS			
Conventional procedure essential fixes/points			
ILS or LOC RWY13			
LOC only - final approach descent angle: 3.03°			
Fix identification	Coordinates	True bearing or ARC distance providing track	True bearing or distance providing intersection
IAF (VIA KUDUL)	44 28 12.8N 015 10 11.4E	339.64° (from ZDA VOR)	24.00 DME ZDA
IAF / IF (LUKAV)	44 21 26.3N 015 00 26.7E	315.72° (from ZDA VOR)	22.00 DME ZDA
IAF (ZRA NDB)	See LDZD AD 2.19	-	-
IAF - *by ATC only* (ZDA VOR DME)	See LDZD AD 2.19	-	-
FAP / FAF LOC only	44 11 26.5N 015 14 05.3E	135.69° (IZD LOC)	8.00 DME ZDA
SDF LOC only (OM)	See LDZD AD 2.19	135.69° (IZD LOC)	6.19 DME ZDA
MAPt LOC only (MM)	See LDZD AD 2.19	135.69° (IZD LOC)	2.34 DME ZDA

CHANGE: Initial segment via KUDUL 1A added; ADR table updated.

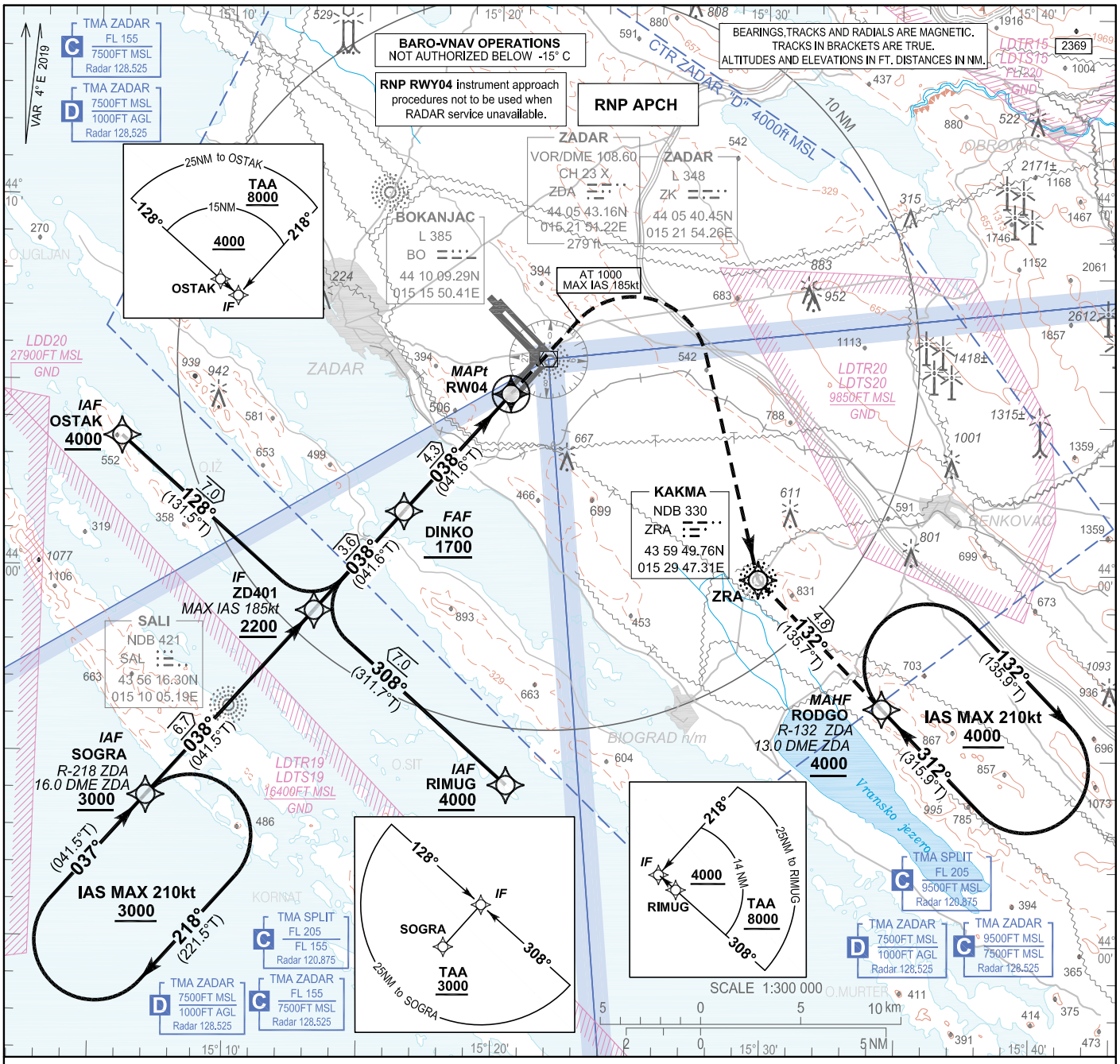
INSTRUMENT APPROACH
CHART-ICAO

AD ELEV 289
HEIGHTS RELATED
TO THR 04 ELEV 289

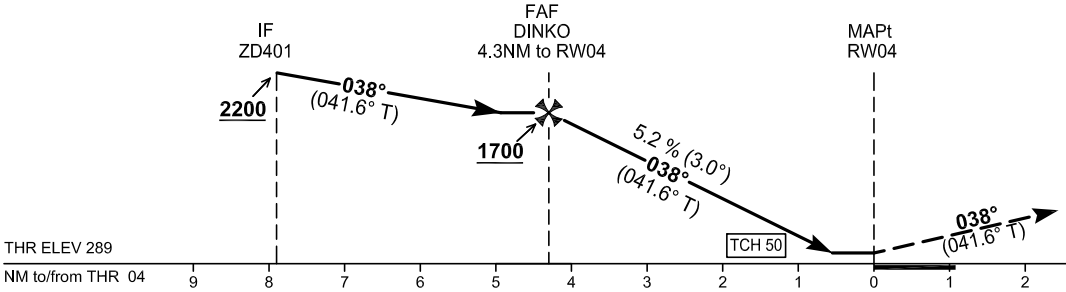
SBAS
CH: 52290
E04A

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
RNP RWY 04



TRANSITION ALT 10 000



MISSED APPROACH:
RNAV
RW04 - [M038; A1000; R;]
→ZRA [L; -K185] - RODGO [A4000]
NON RNAV
Climb straight ahead on course 038°.
At 1000ft turn RIGHT to ZRA NDB.
MAX IAS185kt during turn.
From ZRA NDB proceed climbing on QDR 132° ZRA to RODGO at 4000 and hold.

OCA(H)		A	B	C	D
Straight-in approach	LNAV	660 (371)			
	LNAV/VNAV	550 (261)	560 (271)	570 (281)	580 (291)
	LPV	540 (251)		550 (261)	560 (271)
CIRCLING		1020 (731)		1170 (881)	

DIST THR / RW04	NM	4	3	2	1
Altitude	ft	1610	1290	980	660

Timing not authorized for defining the MAPt							
GS	kt	80	100	120	140	160	180
DINKO - RW04 (4.3NM)	min:sec	3:14	2:35	2:09	1:51	1:37	1:26
Rate of descent (5.2%)	ft/min	425	531	637	743	849	955

CHANGE: Page number and chart title; MNM ALT at OSTAK and RIMUG; TAA OSTAK and RIMUG

ZADAR / Zemunik
CROATIA
RNP RWY 04

Coding elements for FAS Data Block

Input data

Operation Type	0
SBAS Provider	1
Airport Identifier	LDZD
Runway	04
Runway Direction	0
Approach Performance Designator	0
Route Indicator	
Reference Path Data Selector	0
Reference Path Identifier	E04A
LTP/FTP Latitude	440445.8130N
LTP/FTP Longitude	0152028.1870E
LTP/FTP Ellipsoidal Height (metres)	130.5
FPAP Latitude	440534.1085N
Delta FPAP Latitude (seconds)	48.2955
FPAP Longitude	0152127.7285E
Delta FPAP Longitude (seconds)	59.5415
Threshold Crossing Height	50.0
TCH Units Selector	0
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 04 1A 04 0C 04 00 00 01 34 30 05 EA B4 EA 12 36 6E 95 06 19 19 4F 79 01 2B D1 01 F4 01 2C 01 64 00 C8 FA 79 74 59 BA
Calculated CRC Value	797459BA

Required Additional Data

ICAO Code	LD
LTP/FTP Orthometric Height (metres)	88.0
FPAP Orthometric Height (metres)	82.9

CHANGE: Page number and chart title; MNM ALT at OSTAK and RIMUG; TAA OSTAK and RIMUG

LDZD RNP RWY04

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	RIMUG	-	-	4.00°E	-	-	+4000	-	-	-	RNP APCH
020	IF	TF	ZD401	-	308° (311.7° T)	4.00°E	7.0	-	+2200	-185KT	-	-	
010	IAF	IF	SOGRA	-	-	4.00°E	-	-	+3000	-	-		RNP APCH
020	IF	TF	ZD401	-	038° (041.5° T)	4.00°E	6.7	-	+2200	-185KT	-	-	
010	IAF	IF	OSTAK	-	-	4.00°E	-	-	+4000	-	-		RNP APCH
020	IF	TF	ZD401	-	128° (131.5° T)	4.00°E	7.0	-	+2200	-185KT	-	-	

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	ZD401	-	-	4.00°E	-	-	+2200	-185KT	-	-	RNP APCH
020	FAF	TF	DINKO	-	038° (041.6°T)	4.00°E	3.6	-	+1700	-	-	-	
030	MAPt	CF	RW04	Y	038° (041.6°T)	4.00°E	4.3	-	-	-	3.0 / 50.0	-	
040	-	CA	-	-	038° (041.6°T)	4.00°E	-	-	1000	-	-	RIGHT turn at ALT 1000	
050	-	DF	ZRA	-	-	4.00°E	-	R	-	-185	-	-	
060	MAHF	TF	RODGO	-	132° (135.7°T)	4.00°E	4.8	-	4000	-	-	-	
070	MAHF	HM	RODGO	-	312° (315.9°T)	4.00°E	1 MIN	R	4000	-210	-	Holding above 4000 on ATC clearance only	RNAV 1

RNAV HOLDING tabular description

Waypoint name	Path Term-inator	Inbound course °M (°T)	Leg time/ distance NM	Turn direction	Minimum altitude FT	Maximum altitude FT	Speed limit MAX IAS	Magnetic variation	Remarks	NAV SPEC
SOGRA	HM	037° (041.5°T)	1MIN / -	R	3000	-	210KT	4°E	-	RNAV 1
RODGO	HM	312° (315.9°T)	1MIN / -	R	4000	-	210KT	4°E	-	

Waypoint coordinates		
Waypoint name	WGS-84 latitude	WGS-84 longitude
ZRA	435949.76N	0152947.31E
DINKO	440133.9N	0151632.0E
OSTAK	440331.0N	0150557.8E
RIMUG	435413.2N	0152027.8E
RODGO	435622.6N	0153426.9E
SOGRA	435350.2N	0150702.6E
RW04	440445.81N	0152028.19E
ZD401	435852.3N	0151313.4E

CHANGE: Page number and chart title; MNM ALT at OSTAK and RIMUG; TAA OSTAK and RIMUG

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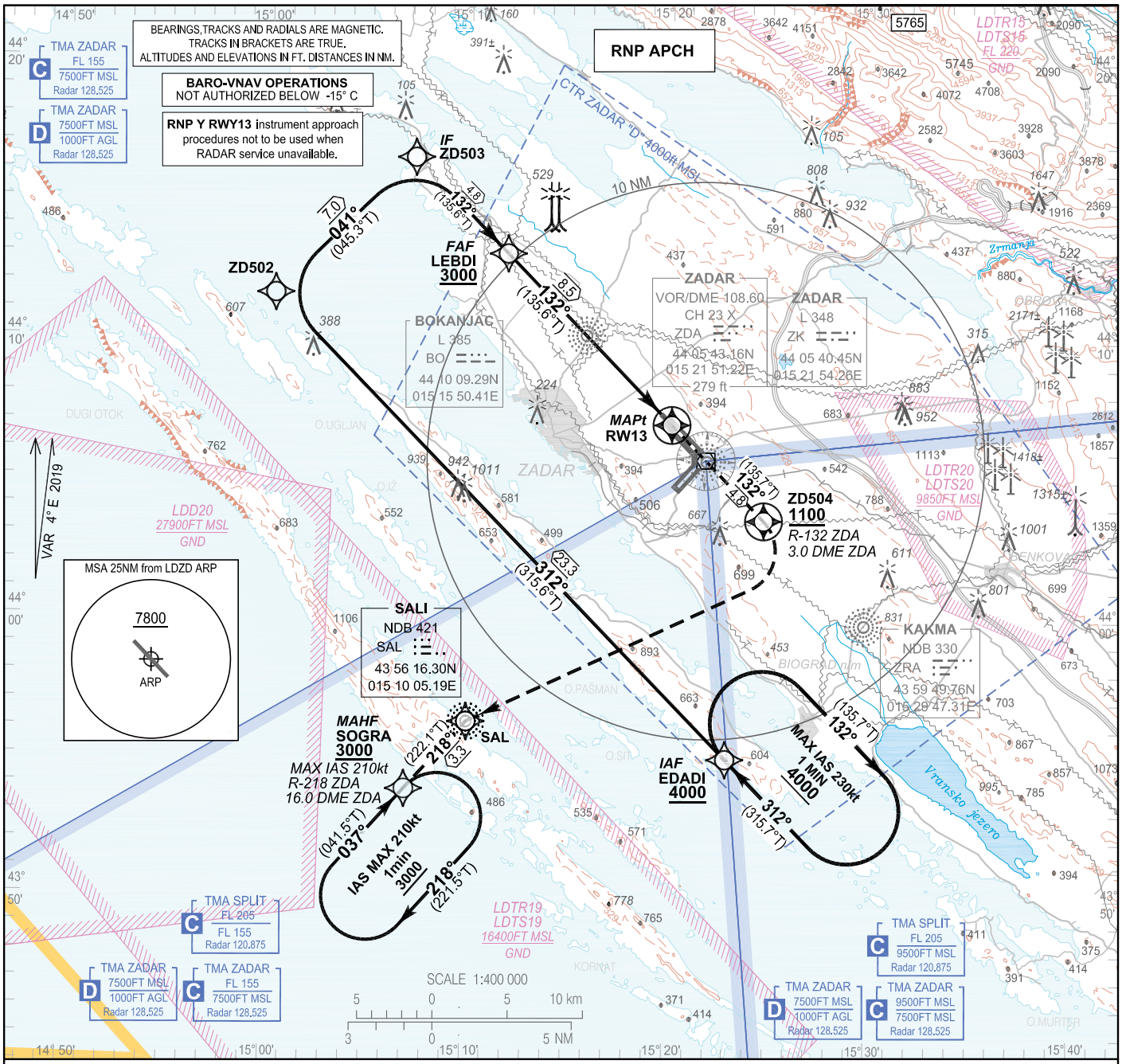
INSTRUMENT APPROACH
CHART-ICAO

AD ELEV 289
HEIGHTS RELATED
TO THR 13 ELEV 243

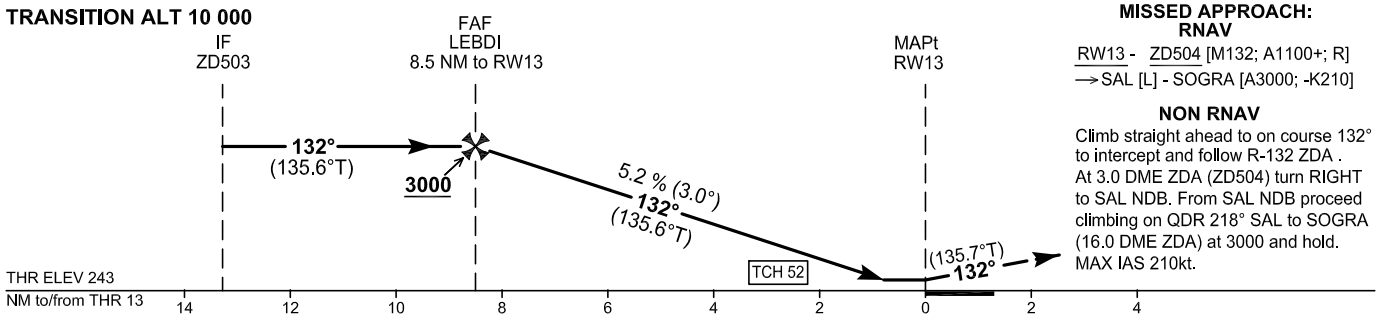
SBAS
CH: 63362
E13B

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
RNP Y RWY 13



TRANSITION ALT 10 000



MISSED APPROACH:
RNAV
RW13 - ZD504 [M132; A1100+; R]
→SAL [L] - SOGRA [A3000; -K210]

NON RNAV
Climb straight ahead to on course 132° to intercept and follow R-132 ZDA . At 3.0 DME ZDA (ZD504) turn RIGHT to SAL NDB. From SAL NDB proceed climbing on QDR 218° SAL to SOGRA (16.0 DME ZDA) at 3000 and hold. MAX IAS 210kt.

OCA(H)		A	B	C	D
Straight-in approach	LNAV	600 (357)			
	LNAV/VNAV	500 (257)			520 (277)
	LPV	500 (257)			
CIRCLING		1020 (731)		1170 (881)	

DIST THR / RW13	NM	8	7	6	5	4	3	2	1
Altitude	ft	2840	2520	2200	1880	1570	1250	930	610

Timing not authorized for defining the MAPt							
GS	kt	80	100	120	140	160	180
LEBDI - RW13 (8.5NM)	min:sec	6:23	5:06	4:15	3:39	3:11	2:50
Rate of descent (5.2%)	ft/min	425	531	637	743	849	955

CHANGE: New chart

ZADAR / Zemunik
CROATIA
RNP Y RWY 13

Coding elements for FAS Data Block

Input data

Operation Type	0
SBAS Provider	1 (EGNOS)
Airport Identifier	LDZD
Runway	13
Runway Letter	0 (None)
Approach Performance Designator	0
Route Indicator	Y
Reference Path Data Selector	0
Reference Path Identifier	E13B
LTP/FTP Latitude	440658.9785N
LTP/FTP Longitude	0152008.4970E
LTP/FTP Ellipsoidal Height (metres)	116.5
FPAP Latitude	440559.8450N
Delta FPAP Latitude (seconds)	-59.1335
FPAP Longitude	0152128.6020E
Delta FPAP Longitude (seconds)	80.1050
Threshold Crossing Height	52.0
TCH Units Selector	0 (feet)
Glidepath Angle (degrees)	3.00
Course Width (metres)	105.00
Length Offset (metres)	56
HAL (metres)	40.0
VAL (metres)	50.0

Output data

Data Block	10 04 1A 04 0C 0D C8 00 02 33 31 05 45 C5 EE 12 62 D4 94 06 8D 18 05 32 FE D2 71 02 08 02 2C 01 64 07 C8 FA 88 B0 ED 78
Calculated CRC Value	88B0ED78

Required Additional Data

ICAO Code	LD
LTP/FTP Orthometric Height (metres)	74.0

CHANGE: New chart

LDZD RNP Y RWY 13

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	EDADI	-	-	4.00°E	-	-	+4000	-	-	-	RNP APCH
020	-	TF	ZD502	-	312° (315.6° T)	4.00°E	23.3	-	-	-	-	-	
030	IF	TF	ZD503	-	041° (045.3° T)	4.00°E	7.0	-	-	-	-	-	

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	ZD503	-	-	4.00°E	-	-	-	-	-	-	RNP APCH
020	FAF	TF	LEBDI	-	132° (135.6°T)	4.00°E	4.8	-	+3000	-	-	-	
030	MAPt	TF	RW13	Y	132° (135.6°T)	4.00°E	8.5	-	-	-	3.0 / 52.0	-	
040	-	CF	ZD504	Y	132° (135.7°T)	4.00°E	4.8	-	+1100	-	-	-	
050	-	DF	SAL	-	-	4.00°E	-	R	-	-	-	-	
060	MAHF	TF	SOGRA	-	218° (222.1°T)	4.00°E	3.3	-	3000	-210	-	-	
070	MAHF	HM	SOGRA	-	037° (041.5°T)	4.00°E	1 MIN	R	3000	-210	-	Holding above 3000 FT on ATC clearance only	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
EDADI	HM	312° (315.7°T)	1 MIN / -	R	4000	-	230	4.00°E	-	RNAV 1
SOGRA	HM	037° (041.5)	1 MIN / -	R	3000	-	210	4.00°E	-	RNAV 1

Waypoint coordinates

Waypoint name	WGS-84 latitude	WGS-84 longitude
SAL	435616.30N	0151005.19E
EDADI	435500.1N	0152257.8E
LEBDI	441303.8N	0151152.9E
SOGRA	435350.2N	0150702.6E
RW13	440658.98N	0152008.50E
ZD502	441134.6N	0150019.4E
ZD503	441628.8N	0150713.5E
ZD504	440334.2N	0152445.6E

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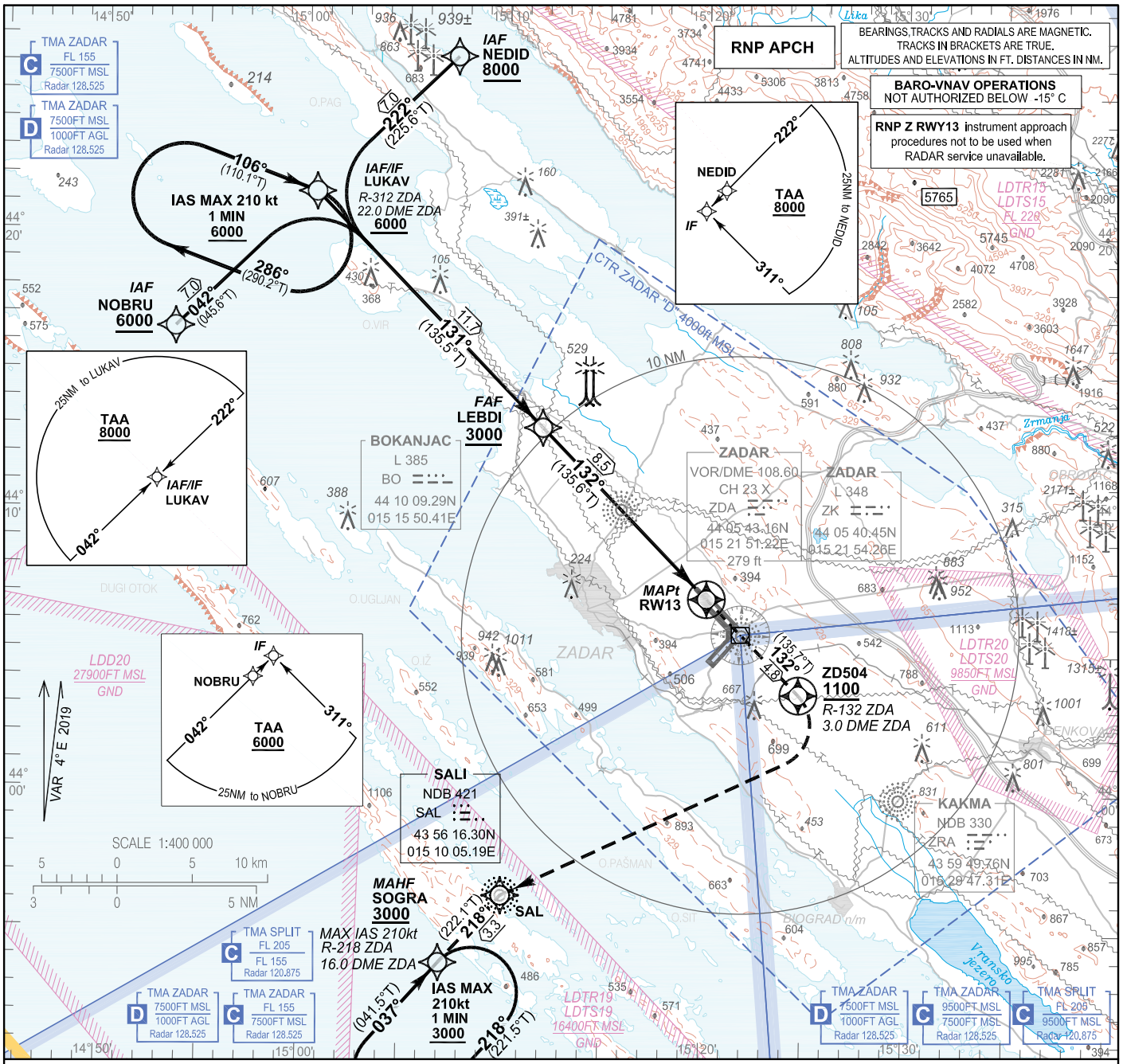
INSTRUMENT APPROACH
CHART-ICAO

AD ELEV 289
HEIGHTS RELATED
TO THR 13 ELEV 243

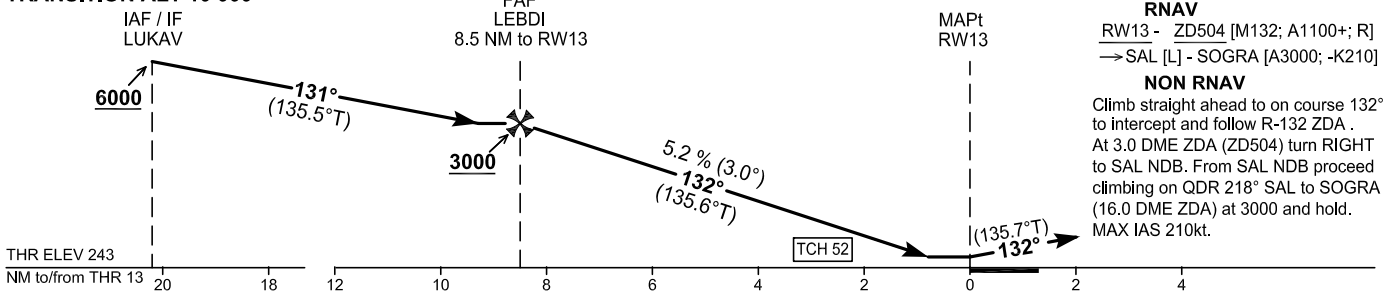
SBAS
CH: 77391
E13A

ZADAR RADAR 128.525
ZADAR TOWER 123.700

ZADAR / Zemunik
CROATIA
RNP Z RWY 13



TRANSITION ALT 10 000



MISSED APPROACH:
RNAV
RW13 - ZD504 [M132; A1100+; R]
→SAL [L] - SOGRA [A3000; -K210]
NON RNAV
Climb straight ahead to on course 132° to intercept and follow R-132 ZDA . At 3.0 DME ZDA (ZD504) turn RIGHT to SAL NDB. From SAL NDB proceed climbing on QDR 218° SAL to SOGRA (16.0 DME ZDA) at 3000 and hold. MAX IAS 210kt.

OCA(H)		A	B	C	D
Straight-in approach	LNAV	600 (357)			
	LNAV/VNAV	500 (257)			520 (277)
	LPV	500 (257)			
CIRCLING		1020 (731)		1170 (881)	

DIST THR / RW13	NM	8	7	6	5	4	3	2	1
Altitude	ft	2840	2520	2200	1880	1570	1250	930	610

Timing not authorized for defining the MAPt							
GS	kt	80	100	120	140	160	180
LEBDI - RW13 (8.5NM)	min:sec	6:23	5:06	4:15	3:39	3:11	2:50
Rate of descent (5.2%)	ft/min	425	531	637	743	849	955

CHANGE: Page number and chart title; LUKAV holding MAX IAS; Missed approach segment; FAS Data Block

Coding elements for FAS Data Block

Input data	
Operation Type	0
SBAS Provider	1 (EGNOS)
Airport Identifier	LDZD
Runway	13
Runway Letter	0 (None)
Approach Performance Designator	0
Route Indicator	Z
Reference Path Data Selector	0
Reference Path Identifier	E13A
LTP/FTP Latitude	440658.9785N
LTP/FTP Longitude	0152008.4970E
LTP/FTP Ellipsoidal Height (metres)	116.5
FPAP Latitude	440559.8450N
Delta FPAP Latitude (seconds)	-59.1335
FPAP Longitude	0152128.6020E
Delta FPAP Longitude (seconds)	80.1050
Threshold Crossing Height	52.0
TCH Units Selector	0 (feet)
Glidepath Angle (degrees)	3.00
Course Width (metres)	105.00
Length Offset (metres)	56
HAL (metres)	40.0
VAL (metres)	50.0

Output data	
Data Block	10 04 1A 04 0C 0D D0 00 01 33 31 05 45 C5 EE 12 62 D4 94 06 8D 18 05 32 FE D2 71 02 08 02 2C 01 64 07 C8 FA D0 80 51 3F
Calculated CRC Value	D080513F

Required Additional Data	
ICAO Code	LD
LTP/FTP Orthometric Height (metres)	74.0

CHANGE: Page number and chart title; LUKAV holding MAX IAS; Missed approach segment; FAS Data Block

LDZD RNP Z RWY 13

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	NOBRU	-	-	4.00°E	-	-	+6000	-	-	-	RNP APCH
020	IF	TF	LUKAV	-	042° (045.6° T)	4.00°E	7.0	-	+6000	-	-	-	
010	IAF/IF	IF	LUKAV	-	-	4.00°E	-	-	+6000	-	-	-	RNP APCH
010	IAF	IF	NEDID	-	-	4.00°E	-	-	+8000	-	-	-	RNP APCH
020	IF	TF	LUKAV	-	222° (225.6° T)	4.00°E	7.0	-	+6000	-	-	-	

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	LUKAV	-	-	4.00°E	-	-	+6000	-	-	-	RNP APCH
020	FAF	TF	LEBDI	-	131° (135.5°T)	4.00°E	11.7	-	+3000	-	-	-	
030	MAPt	TF	RW13	Y	132° (135.6°T)	4.00°E	8.5	-	-	-	3.0 / 52.0	-	
040	-	CF	ZD504	Y	132° (135.7°T)	4.00°E	4.8	-	+1100	-	-	-	
050	-	DF	SAL	-	-	4.00°E	-	R	-	-	-	-	
060	MAHF	TF	SOGRA	-	218° (222.1°T)	4.00°E	3.3	-	3000	-210	-	-	
070	MAHF	HM	SOGRA	-	037° (041.5°T)	4.00°E	1 MIN	R	3000	-210	-	Holding above 3000 FT on ATC clearance only	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
LUKAV	HM	106° (110.1° T)	1 MIN / -	R	6000	-	210	4.00°E	-	RNAV 1
SOGRA	HM	037° (041.5°T)	1 MIN / -	R	3000	-	210	4.00°E	-	RNAV 1

Waypoint coordinates

Waypoint name	WGS-84 latitude	WGS-84 longitude
SAL	435616.30N	0151005.19E
LEBDI	441303.8N	0151152.9E
LUKAV	442126.3N	0150026.7E
NEDID	442620.2N	0150725.4E
NOBRU	441632.4N	0145328.9E
SOGRA	435350.2N	0150702.6E
RW13	440658.98N	0152008.50E
ZD504	440334.2N	0152445.6E

CHANGE: Page number and chart title; LUKAV holding MAX IAS; Missed approach segment; FAS Data Block

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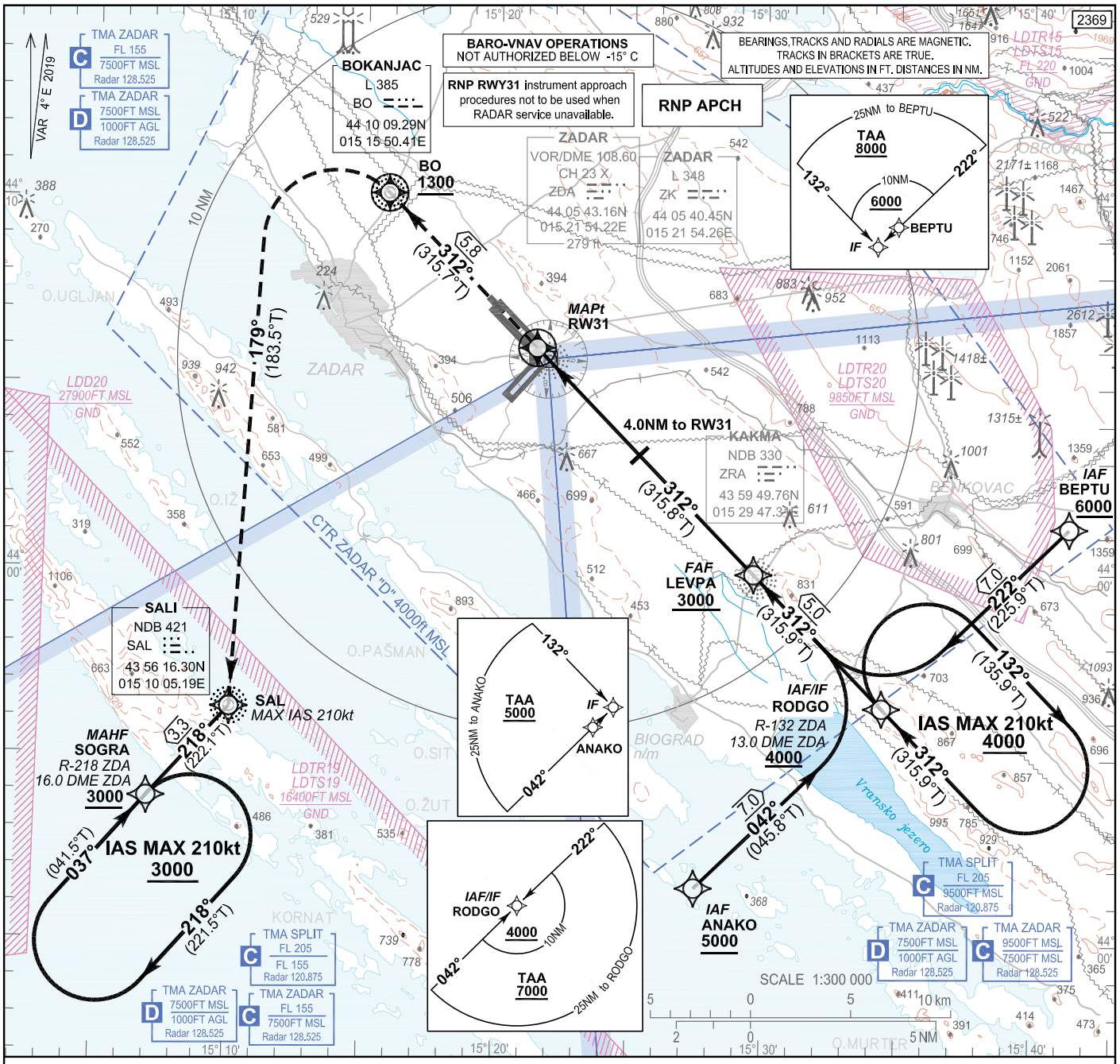
INSTRUMENT APPROACH
CHART-ICAO

AD ELEV 289
HEIGHTS RELATED
TO THR 31 ELEV 258

SBAS
CH: 52358
E31A

ZADAR RADAR 128.525
ZADAR TOWER 123.700

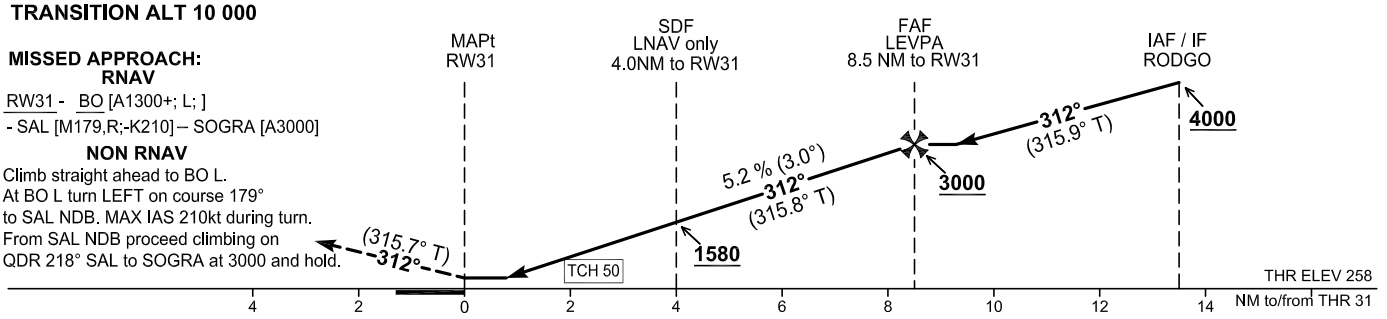
ZADAR / Zemunik
CROATIA
RNP RWY 31



TRANSITION ALT 10 000

MISSED APPROACH:
RNAV
RW31 - BO [A1300+; L;]
- SAL [M179,R;-K210] – SOGRA [A3000]

NON RNAV
Climb straight ahead to BO L.
At BO L turn LEFT on course 179°
to SAL NDB. MAX IAS 210kt during turn.
From SAL NDB proceed climbing on
QDR 218° SAL to SOGRA at 3000 and hold.



OCA(H)		A	B	C	D
Straight-in approach	LNAV	600 (342)			
	LNAV/VNAV	510 (252)			520 (262)
	LPV	510 (252)			
CIRCLING		1020 (731)		1170 (881)	

DIST THR / RW31	NM	8	7	6	5	4	3	2	1
Altitude	ft	2890	2540	2220	1900	1580	1260	950	630

Timing not authorized for defining the MAPt							
GS	kt	80	100	120	140	160	180
LEVPA - RW31 (8.5NM)	min:sec	6:23	5:06	4:15	3:39	3:11	2:50
Rate of descent (5.2%)	ft/min	425	531	637	743	849	955

CHANGE: Page number and chart title

ZADAR / Zemunik
CROATIA
RNP RWY 31

Coding elements for FAS Data Block

Input data	
Operation Type	0
SBAS Provider	1 (EGNOS)
Airport Identifier	LDZD
Runway	31
Runway Letter	0 (None)
Approach Performance Designator	0
Route Indicator	
Reference Path Data Selector	0
Reference Path Identifier	E31A
LTP/FTP Latitude	440601.2885N
LTP/FTP Longitude	0152126.6465E
LTP/FTP Ellipsoidal Height (metres)	121.3
FPAP Latitude	440659.1180N
Delta FPAP Latitude (seconds)	57.8295
FPAP Longitude	0152008.3090E
Delta FPAP Longitude (seconds)	-78.3375
Threshold Crossing Height	50.0
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 04 1A 04 0C 1F 00 00 01 31 33 05 91 02 ED 12 ED 36 97 06 BD 18 CB C3 01 FD 9B FD F4 01 2C 01 64 00 C8 FA 9F E2 2F 84
Calculated CRC Value	9FE22F84
Required Additional Data	
ICAO Code	LD
LTP/FTP Orthometric Height (metres)	78.8

CHANGE: Page number and chart title

LDZD RNP RWY31

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	BEPTU	-	-	4.00°E	-	-	+6000	-	-	-	RNP APCH
020	IF	TF	RODGO	-	222° (225.9° T)	4.00°E	7.0	-	+4000	-	-	-	
010	IAF/IF	IF	RODGO	-	-	4.00°E	-	-	+4000	-	-		RNP APCH
010	IAF	IF	ANAKO	-	-	4.00°E	-	-	+5000	-	-	-	RNP APCH
020	IF	TF	RODGO	-	042° (045.8° T)	4.00°E	7.0	-	+4000	-	-	-	

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	RODGO	-	-	4.00°E	-	-	+4000	-	-	-	RNP APCH
020	FAF	TF	LEVPA	-	312° (315.9°T)	4.00°E	5.0	-	+3000	-	-	-	
030	MAPt	TF	RW31	Y	312° (315.8°T)	4.00°E	8.5	-	-	-	3.0 / 50.0	-	
040	-	TF	BO	Y	312° (315.7°T)	4.00°E	5.8	-	+1300	-	-	-	
050	-	CF	SAL	-	179° (183.5° T)	4.00°E	-	L	-	-210	-	True course 183.48° T	
060	MAHF	TF	SOGRA	-	218° (222.1°T)	4.00°E	3.3	-	3000	-	-	-	
070	MAHF	HM	SOGRA	-	037° (041.5°T)	4.00°E	1 MIN	R	3000	-210	-	Holding above 3000 on ATC clearance only	RNAV 1

RNAV HOLDING tabular description

Waypoint name	Path Term-inator	Inbound course °M (°T)	Leg time/ distance NM	Turn direction	Minimum altitude FT	Maximum altitude FT	Speed limit MAX IAS	Magnetic variation	Remarks	NAV SPEC
RODGO	HM	312° (315.9°T)	1MIN / -	R	4000	-	210KT	4°E	-	RNAV 1
SOGRA	HM	037° (041.5°T)	1MIN / -	R	3000	-	210KT	4°E	-	

Waypoint coordinates

Waypoint name	WGS-84 latitude	WGS-84 longitude
BO	441009.29N	0151550.41E
SAL	435616.30N	0151005.19E
ANAKO	435129.8N	0152730.2E
BEPTU	440115.0N	0154124.7E
LEVPA	435957.9N	0152937.4E
RODGO	435622.6N	0153426.9E
SOGRA	435350.2N	0150702.6E
RW31	440601.29N	0152126.65E

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