## ENR 4 – AIDES / SYSTÈMES DE RADIONAVIGATION /
*RADIONAVIGATION AIDS / SYSTEM*

### ENR 4.1 AIDES DE RADIONAVIGATION DE ROUTE / *RADIONAVIGATION AIDS- EN ROUTE*

| **Nom de la station**<br>*Name of station* | **ID** | **FREQ**<br>(CANAL) | **HOR** | **Coordonnées**<br>*Coordinates* | **Situation / ALT**<br>*Location / ALT* | **Observations**<br>*Remarks* |
|---|---|---|---|---|---|---|
| **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| **AGADIR/ AL MASSIRA** | | | | | | |
| DVOR/DME | ADM | 117,2 MHz<br>(CH 119X) | H24 | 30 19 19N<br>009 23 00W | ALT : 90 m | 2700 m RWY centre<br>1100 m THR 27 |
| NDB | ALS | 396 KHz | H24 | 30 19 13N<br>009 19 10W | | 8850 m RWY centre<br>7250 m THR 27 |
| NDB | AML | 402 KHz | H24 | 30 19 25N<br>009 27 17W | | 4150 m RWY centre<br>2550 m THR 09 |
| **AGADIR / INEZGANE** | | | | | | |
| NDB | AZR | 371 KHz | H24 | 30 22 09N<br>009 27 08W | | Antenna HGT: 27,40 m<br>Range : 50 NM |
| **AL HOCEIMA /<br>Chérif EL Idrissi** | | | | | | |
| VOR/DME | ALM | 115 MHz<br>(CH 97X) | H24 | 35 11 28N<br>003 50 30W | ALT : 0 m | DIST/THR: 17281 m<br>Range : 200 NM<br>DME PWR: 1 KW |
| L | ALU | 401 KHz | H24 | 35 10 52N<br>003 50 40W | | |
| **BENGUERIR** | | | | | | |
| VOR/DME | BGR | 115,400 MHz<br>(CH 101X) | H24 | 32 09 28N<br>007 52 51W | ALT : 450 m | |
| **BÉN-MELLAL** | | | | | | |
| DVOR/DME | BML | 113,100 MHz<br>(CH 78X) | H24 | 32 25 00.75 N<br>006 17 52.88 W | ALT : 540 m | • PWR DVOR : 100W<br>• PWR DME: 1KW |
| **BENSLIMANE** | | | | | | |
| VOR/DME | BNS | 117,450 MHz<br>(CH 121Y) | H24 | 33 38 31N<br>007 12 29W | ALT : 210 m | |
| L | CAE | 275 KHz | H24 | 33 36 57N<br>007 06 49W | | |
| **BOUARFA** | | | | | | |
| VOR/DME | BRF | 117,0 MHz<br>(CH 117X) | H24 | 32 30 51N<br>002 01 50W | ALT : 1110 m | |
| **CAP SPARTEL** | | | | | | |
| NDB (marin) | SP | 312,6 KHz | Toutes les 6 sec /<br>*EV 6 sec* | 35 47 00N<br>005 55 24W | | Wave length: 959,6 m<br>Range : 200 NM |
| **CASABLANCA /<br>MOHAMMED V** | | | | | | |
| DVOR/DME | CBL | 115,1 MHz<br>(CH 98X) | H24 | 33°25'13.82 N<br>007°36'21.72 W | ALT 180 m | |
| VOR/DME | SLK | 112,500 MHz<br>(CH 72X) | H24 | 33 06 56N<br>007 30 22W | ALT : 300 m | |
| DME | CBA | 116,9 MHz<br>(CH 116X) | H24 | 33 31 17N<br>007 40 38w | ALT : 120 m | |
| NDB | NSR | 282 KHz | H24 | 33 16 24N<br>007 33 19W | | OM ILS 35R/17L |
| NDB | NUA | 255 KHz | H24 | 33 25 48N<br>007 36 33W | | DIST/THR17L: 5804 m |
| NDB | SAK | 413 KHz | | 33 31 17N<br>007 40 38W | ALT : 120 m | Antenna HGT : 13,11 m |

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| **DAKHLA**<br>DVOR/DME | DKH | 115,8 MHz<br>(CH 105X) | H24 | 23 44 41N<br>015 55 11W | ALT : 30 m | Antenna HGT : 13 m |
| **DAOURAT**<br>L | CSD | 345 KHz | H24 | 32 56 01N<br>008 03 54W | | |
| **EL HANK**<br>NDB (marin) | HA | 301 KHz | Cadence<br>EM 2m<br>EV 6 MIN<br>Arrêt<br>4 MIN /<br>*Rate EM 2m*<br>*EV 6 MIN*<br>*Stop 4 MIN* | 33 36 51N<br>007 39 54W | | Longueur d'onde : 999,6 m<br>Portée : 100 NM<br>modulation FREQ : 846 Hz<br>*Wave length : 999,6 m*<br>*Range : 100 NM*<br>*FREQ modulation : 846 Hz* |
| **ESSAOUIRA / Mogador**<br>VOR/DME<br><br>DVOR/DME | ESS<br><br>MGR | 112,7 MHz<br>(CH 74X)<br><br>109,0 MHz<br>(CH 27X) | H24<br><br>H24 | 31 24 04N<br>009 41 13W<br><br>31 23 47.84 N<br>009 41 04.41 W | ALT : 120 m<br><br>ALT : 120 m | Antenna HGT : 8,91m |
| **ERRACHIDIA /**<br>**Moulay Ali Chérif**<br>VOR/DME<br><br><br><br>L | ERA<br><br><br><br>KSR | 117,1 MHz<br>(CH 118X)<br><br><br><br>293 KHz | H24<br><br><br><br>H24 | 31 55 27N<br>004 21 38W<br><br><br><br>31 55 31N<br>004 21 44W | ALT : 1020 m | DIST/THR 31: 3035 m<br>DME PWR : 1 KW<br>VOR PWR : 100 W<br>Range : 200 NM<br>DIST/THR 31: 2940 m<br>PWR : 25 W |
| **FES / SAISS**<br>VOR/DME<br><br><br>L | FES<br><br><br>FEZ | 115,7 MHz<br>(CH 104X)<br><br><br>315 KHz | H24<br><br><br>H24 | 33 55 39N<br>005 00 49W<br><br><br>33 55 37N<br>004 53 27W | ALT : 570 m | <br><br><br>DIST/THR 27 : 6439 m |
| **GUELMIME**<br>VOR/DME | GLM | 114,3 MHz<br>(CH 90X) | H24 | 29 00 38N<br>010 04 09W | ALT : 330 m | Exploitant / *Operator* :<br>ONDA / FRA |
| **IFRANE**<br>NDB | IFN | 409 KHz | H24 | 33 30 00N<br>005 09 38W | ALT : 1680 m | Range : 10NM |
| **KENITRA**<br>NDB | CNL | 380 KHz | H24 | 34 17 14N<br>006 37 14W | | Exploitant / *Operator* :<br>Royal Air Forces |
| **LAAYOUNE /**<br>**Hassan 1er**<br>VOR/DME | LAY | 112,1 MHz<br>(CH 58X) | H24 | 27 08 34N<br>013 13 05W | ALT : 60 m | Antenna HGT : 7 m |

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| **MARRAKECH / Ménara**<br>VOR/DME | MAK | 113,3 MHz<br>(CH 80X) | H24 | 31 36 46N<br>008 06 11W | ALT : 450 m | |
| L | CNZ | 267 KHz | H24 | 31 36 02N<br>007 57 52W | | |
| **MEKNES**<br>VOR | MKS | 116,3 MHz | H24 | 33 52 37,31N<br>005 30 54,11W | ALT : 600 m | Operator :<br>Royal Air Forces |
| **NADOR / EL AROUI**<br>DVOR/DME | ARI | 116,0 MHz<br>(CH 107X) | H24 | 34 59 12N<br>003 01 45W | ALT : 180 m | VOR PWR : 100 W<br>DME PWR : 1 KW |
| **OUARZAZATE**<br>DVOR/DME | OZT | 116,7 MHz<br>(CH 114X) | H24 | 30 56 24N<br>006 54 16W | ALT : 1170 m | 1116 m THR 30 / 307 m<br>North side RCL<br>DME Range: 200 NM<br>PWR: 1 KW |
| L | ORZ | 384 KHz | H24 | 30 55 38N<br>006 52 57W | | |
| **OUJDA / Angads**<br>VOR/DME | OJD | 117,5 MHz<br>(CH 122X) | H24 | 34 46 24N<br>001 57 01W | ALT : 480 m | |
| VOR/DME | VDO | 115,65 MHz<br>(CH 103Y) | H24 | 34 48 57N<br>001 57 38W | ALT : 480 m | DIST/THR 13 : 1004 m<br>VOR PWR: 100 W<br>DME PWR: 1000 W |
| **OUKACHA**<br>NDB (marin) | AK | 305,7 KHz | H24 | 33 36 51N<br>007 33 54W | | Wave length : 981,3 m<br>Range : 20 NM<br>FREQ Modulation : 950 Hz |
| **RABAT / Salé**<br>DVOR/DME | RBT | 116,5 MHz<br>(CH 112X) | H24 | 34 03 00N<br>006 44 47W | ALT : 90 m | |
| L | SBI | 332 KHz | H24 | 34 10 35N<br>006 39 51W | | DIST/THR 21: 14300 m |
| **SIDI SLIMANE**<br>VOR/DME | SMN | 115,5 MHz<br>(CH 102X) | H24 | 34 14 15N<br>006 01 33W | ALT : 0 m | Operator :<br>Royal Air Forces<br>ALT : 7m |
| **SMARA**<br>DVOR/DME | SMR | 108,2 MHz<br>(CH 19X) | | 26 43 51,42N<br>011 41 12,35W | ALT : 180 m | Exploitant / operator<br>Royal Air Forces |
| L | SMA | 401 KHz | | 26 44 31,13N<br>011 41 16,02W | -- | |

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| **TANGER / Ibn Batouta** | | | | | | |
| DVOR/DME | TNR | 108,050 MHz<br>(CH 17Y) | H24 | 35 44 03,04N<br>005 55 09,26W | ALT : 30 m | DVOR et DME TNR inutilisables entre RDL 310° et RDL 340° au-dessous. de 6000FT AMSL /<br>*DVOR and DME TNR not usable between RDL 310° and RDL 340° below 6000FT AMSL* |
| L | TAN | 374 KHz | H24 | 35 43 16N<br>005 48 17W | | Antenna HGT: 27,40 m<br>PWR : 50 W |
| **TAN-TAN /** Plage Blanche<br>DVOR/DME | TNN | 112,3 MHz<br>(CH 70X) | H24 | 28 25 42N<br>011 10 23W | ALT : 210 m | DIST/THR 03 :1179.43 m<br>VOR PWR : 50 W<br>DME PWR : 1000 W |
| NDB | TNA | 274 KHz | H24 | 28 25 52N<br>011 10 17W | | Antenna HGT: 10,4 m |
| **TETOUAN /** Saniat R'mel<br>DVOR/DME | TTN | 117,3 MHz<br>(CH 120X) | H24 | 35 35 51N<br>005 19 08W | ALT : 0 m | Antenna HGT: 8,73 m |
| **ZAGORA (El Faija)**<br>NDB | FJA | 420 KHz | H24 | 30 15 57N<br>005 51 00W | NIL | NIL |