MEASURING SYSTEM, AIRCRAFT MARKINGS, HOLIDAYS

1. UNITS OF MEASUREMENT

The units of measurement used in all air-ground operations are in accordance with the ICAO Annex 5.

Some of the magnitudes in common use are included in the following table:

MAGNITUDE	UNITS IN ICAO TABLE
Altitudes, elevations and heights	Metres and feet
Distance used in navigation	Nautical miles
Relatively short distance (less than 4000 m)	Metres
Horizontal speed, including wind speed	Knots or Mach
Vertical speed	Feet per minute
Wind direction for landing and taking off	Magnetic degrees
Wind direction except for landing and taking off	True degrees
Visibility, runway visual range	Kilometres and metres when less than 5 km
Altimeter setting	Hectopascals (Milibars)
Temperature	Celsius degrees
Weight	Kilogrammes
Time	Hours and minutes

2. TEMPORAL REFERENCE SYSTEM

Universal Time Coordinated (UTC) and the Gregorian Calendar are used in the Air Navigation Services and in all documents published by the División de Información Aeronáutica unless otherwise specified.

Seasonal periods:

- Summer: From the last Sunday of March until the Saturday before the last Sunday of October.
  Local time: UTC + 2 hours.
  Islas Canarias, local time: UTC + 1 hour.
- Winter: From the last Sunday of October until the Saturday before the last Sunday of March.
  Local time: UTC + 1 hour.
  Islas Canarias, local time: UTC.
- Weekend: From Friday at 1500 UTC until Monday at 0600 UTC.

3. HORIZONTAL REFERENCE SYSTEM

The aeronautical coordinates published in AIP-SPAIN are referenced to the WGS84 geodetic system, the epoch (measurement date) is provided in the digital dataset, pursuant to the provisions of Annex 15 of the ICAO.

The area of applicability of the published geographical coordinates correspond to the area of responsibility for Spain's air traffic services.

An asterisk (*) is used to indicate coordinates that do not fulfil the quality requirements set in the Aeronautical Data Catalogue.

3.1 LOCAL HORIZONTAL REFERENCE SYSTEMS IN SPAIN.

Royal Decree 1071/2007 of 27th July, adapted from the European Commission's mandate of 1999 and which regulates the official geodetic reference system in Spain, establishes the ETRS89 (European Terrestrial Reference System 1989) system as the official geodetic reference system in Spain for geographic and cartographic referencing for both the Iberian peninsula and the Balearic Islands. The REGCAN95 system has been adopted for the Canary Islands. Both systems are associated with the GRS80 (Geodetic Reference System 1980) ellipsoid and have been implemented within the framework defined by the National Geodetic Network by Space Techniques (REGENTE), and its densifications.

Initially, considering the exactness required for the different data established in the Aeronautical Data Catalogue, ETRS89 and REGCAN95 were deemed equivalent to WGS84. However, the ongoing divergence between these systems have led to increasingly greater deviations from the exactness required for certain data, and therefore the ETRS89 and REGCAN95 systems cannot be considered valid for publishing coordinates in AIP-SPAIN.

When sending coordinates to the AIS, use WGS-84 and include as metadata the date of measurement (epoch).

4. VERTICAL REFERENCE SYSTEM

4.1 DESCRIPTION OF THE REFERENCE SYSTEM

The altimetric reference system for Spain is defined by Real Decreto 1071/2007, Article 4.1, which assigns the mean sea level marks in Alicante as the altitude reference for the peninsula and the local mareographic references for each of the islands. The sources of the altimetry references are defined and published by the Spanish National Geographic Institute. On the other hand, Article 4.2 states that the system is implemented by the lines of the High Precision Levelling Network of Spain (REDNAP).

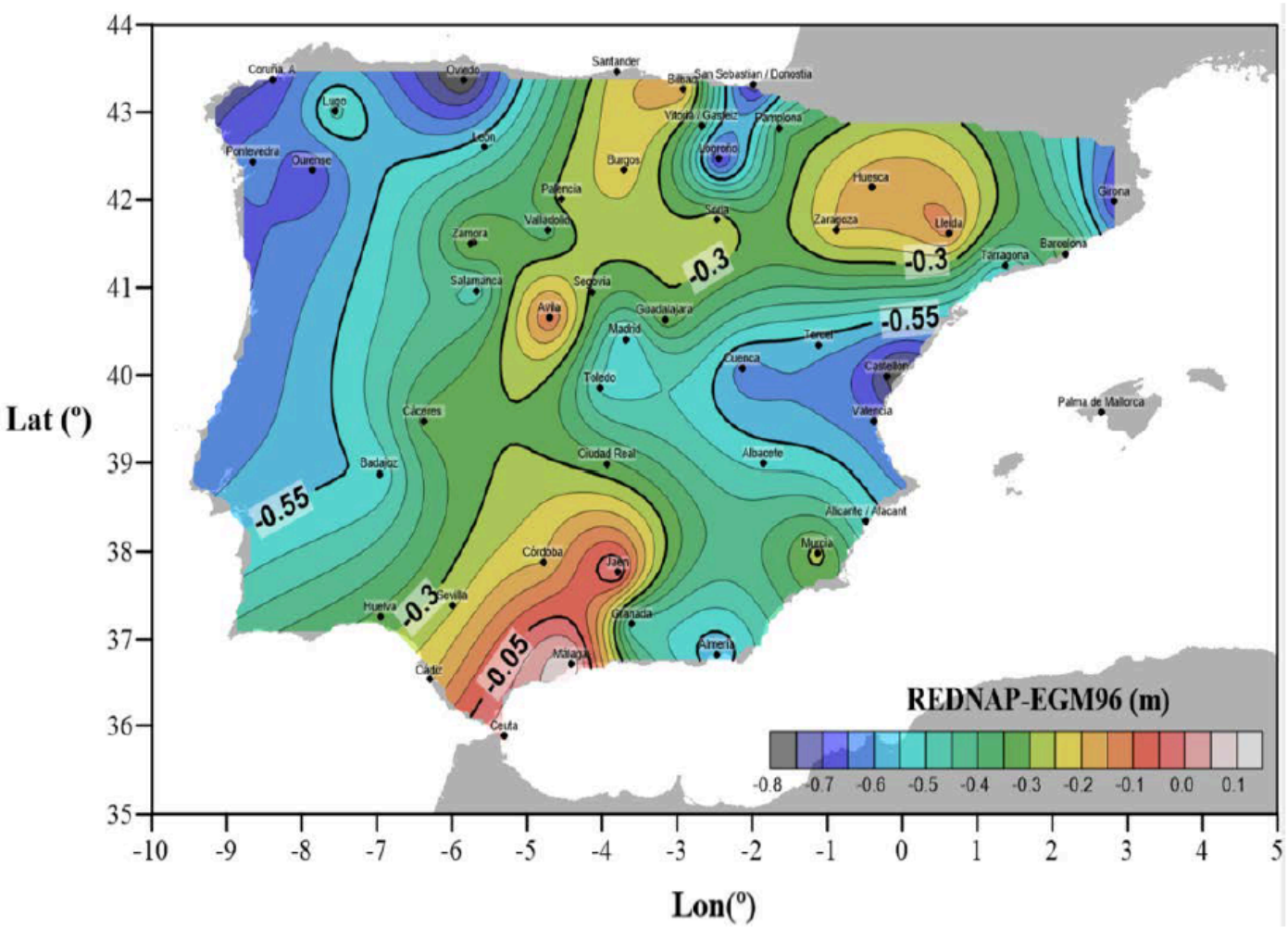
4.2 GEOID MODEL

The Spanish National Geographic Institute has embraced the EGM2008 geoid model adapted to REDNAP, commonly referred to as EGM08-REDNAP, as the reference surface for orthometric heights. REDNAP implements the altitude system that most closely corresponds to the physical reality of the terrestrial surface in Spain, which means that this reference surface is much more precise than the EGM96 model.

The geoid altitudes with respect to the reference ellipsoid (geoid undulation) provided by EGM08-REDNAP, provide the information for converting the ellipsoid altitudes, obtained via GPS with respect to the reference ellipsoid, to the orthometric heights referred to in EGM08-REDNAP. These undulations of the geoid oscillate around 50 m in Spain.

4.3 DIFFERENCES BETWEEN THE ALTITUDES REFERENCED IN EGM08-REDNAP AND THOSE REFERENCED IN EGM96

The differences between the orthometric heights referenced in EGM08-REDNAP and the orthometric heights referenced in EGM96 (that is, the differences between the undulations of both geoids) depend on the geographic location of the point under consideration. The following table and map show the undulations and undulation differences of these models in Spain's provincial capitals.



Diferencias entre la Red de Nivelación de Alta Precisión (REDNAP) y EGM96
Differences between the High Precision Levelling Network (REDNAP) and EGM96

POINT	LON_ETRS89(º)	LA_ETRS89(º)	EGM08 REDNAP (m)	EGM08 (m)	EGM96 (m)	EGM08-GM96 (m)	EGM08 REDNAP-EGM08 (m)	EGM08 REDNAP-EGM96 (m)
A Coruña	-8,39114853	43,3701264	54,421	55,0177	55,1208	-0,103	-0,597	-0,7
Albacete	-1,85574745	38,9958805	52,036	52,5115	52,5489	-0,037	0,475	-0,513
Alicante	-0,4831832	38,3454871	49,892	50,469	50,4043	0,065	-0,577	-0,512
Almería	-2,46413188	36,8389236	49,722	50,2901	50,3183	-0,028	-0,568	-0,596
Ávila	-4,69771277	40,6558696	54,37	54,95	54,454	0,496	-0,58	-0,084
Badajoz	-6,97099704	38,8787434	54,464	55,0548	55,0109	0,044	-0,591	-0,547
Barcelona	2,17634927	41,3842466	49,128	49,6857	49,4461	0,24	-0,558	-0,318

POINT	LON_ETRS89(º)	LA_ETRS89(º)	EGM08 REDNAP (m)	EGM08 (m)	EGM96 (m)	EGM08-GM96 (m)	EGM08 REDNAP-EGM08 (m)	EGM08 REDNAP-EGM96 (m)
Bilbao	-2,92390606	43,2572196	49,855	50,4934	50,0127	0,481	-0,638	-0,158
Burgos	-3,70419805	42,34113	53,477	54,0622	53,7017	0,36	-0,585	-0,225
Cáceres	-6,37121092	39,4731676	54,191	54,7216	54,5226	0,199	-0,531	-0,332
Cádiz	-6,28414575	36,5217115	44,89	45,424	45,0897	0,334	-0,534	-0,2
Castellón	-0,03688142	39,9864081	50,354	50,9131	51,1551	-0,242	-0,559	-0,801
Ceuta	-5,30675127	35,8881021	41,992	42,5239	41,9638	0,56	-0,532	0,028
Ciudad Real	-3,93131981	38,9865178	53,229	53,7677	54,0181	-0,25	-0,539	-0,789
Córdoba	-4,78032455	37,8795423	50,399	50,8762	50,6005	0,276	-0,477	-0,201
Cuenca	-2,13152306	40,0765376	52,187	52,774	52,8136	-0,04	-0,587	-0,627
Girona	2,82411899	41,9818608	49,557	50,122	50,2695	-0,148	-0,565	-0,712
Granada	-3,60001883	37,1764193	48,955	49,5324	49,4518	0,081	-0,577	-0,497
Guadalajara	-3,16210273	40,6343555	51,995	52,531	52,3056	0,225	-0,536	-0,311
Huelva	-6,95040588	37,2600411	51,87	52,4191	52,2058	0,213	-0,549	-0,336
Huesca	-0,40842276	42,1406274	50,58	51,1455	50,7443	0,401	-0,566	-0,164
Jaén	-3,7903594	37,7651913	49,632	50,1263	49,6156	0,511	-0,494	0,016
Las Palmas	-15,41336841	28,0993785	43,661	43,733	41,9132	1,82	-0,072	1,748
León	-5,56707631	42,599121	55,308	55,9328	55,8135	0,119	-0,625	-0,505
Lleida	0,62061934	41,6152736	49,435	49,9837	49,5617	0,422	-0,549	-0,127
Logroño	-2,44565538	42,4664495	51,038	51,6187	51,7645	-0,146	-0,581	-0,727
Lugo	-7,55817392	43,0091282	56,068	56,6518	56,5444	0,107	-0,584	-0,476
Madrid	-3,68760088	40,4084119	51,111	51,6641	51,6653	-0,001	-0,553	-0,554
Málaga	-4,41997511	36,7203427	47,964	48,5103	47,8644	0,646	-0,546	0,1
Melilla	-2,942281	35,294731	49,011	49,5688	49,238	0,331	-0,558	-0,227
Murcia	-1,1285408	37,9843636	50,194	50,6835	50,4676	0,216	-0,49	-0,274
Ourense	-7,86368375	42,3365492	55,738	56,3135	56,442	-0,129	-0,575	-0,704
Oviedo	-5,84372206	43,3623217	53,925	54,4997	54,7317	-0,232	-0,575	-0,807
Palencia	-4,53460106	42,0078373	53,51	54,145	53,7898	0,355	-0,635	-0,28
Palma	2,65181698	39,571147	49,039	49,4409	49,742	-0,301	-0,402	-0,703
Pamplona	-1,6451528	42,814102	49,985	50,6288	50,3554	0,273	-0,644	-0,37
Pontevedra	-8,64799018	42,4338144	55,291	55,866	55,9072	-0,041	-0,575	-0,616

POINT	LON_ETRS89(º)	LA_ETRS89(º)	EGM08 REDNAP (m)	EGM08 (m)	EGM96 (m)	EGM08-GM96 (m)	EGM08 REDNAP-EGM08 (m)	EGM08 REDNAP-EGM96 (m)
Salamanca	-5,66538084	40,9673682	55,335	55,8871	55,8178	0,069	-0,552	-0,483
San Sebastián	-1,98191785	43,3171716	48,634	49,2949	49,3848	-0,09	-0,661	-0,751
Santa Cruz	-16,24720629	28,4628541	44,031	44,1201	46,363	-2,243	-0,089	-2,332
Santander	-3,80474784	43,4629789	49,889	50,4719	50,1158	0,356	-0,583	-0,227
Segovia	-4,12524116	40,9498703	53,346	53,8959	53,6585	0,237	-0,55	-0,313
Sevilla	-5.99251368	37.3862051	49.846	50.4692	50.1048	0.364	-0.623	-0.259
Soria	-2.46624798	41.7632791	53.039	53.6243	53.2836	0.341	-0.585	-0.245
Tarragona	1.2584219	41.1191029	49.108	49.707	49.6657	0.041	-0.599	-0.558
Teruel	-1.10927177	40.3441295	52.037	52.618	52.6173	0.001	-0.581	-0.58
Toledo	-4.02431421	39.8571519	52.396	52.9415	52.9067	0.035	-0.545	-0.511
Valencia	-0.37565717	39.4753444	50.075	50.609	50.714	-0.105	-0.534	-0.639
Valladolid	-4.72334924	41.6523278	53.254	53.8839	53.6308	0.253	-0.63	-0.377
Vitoria	-2.67275685	42.8505879	50.86	51.4817	51.283	0.199	-0.622	-0.423
Zamora	-5.75494831	41.4991396	55.472	56.088	55.7578	0.33	-0.616	-0.286
Zaragoza	-0.87928652	41.6564566	49.852	50.4943	50.0495	0.445	-0.642	-0.198

5. AIRCRAFT NATIONALITY AND REGISTRATION MARKS

The nationality mark for aircraft registered in Spain is the letter group EC followed by a hyphen and a registration mark consisting of 3 letters or 2 letters and one digit, for example: EC-AUM, EC-JM7.

6. PUBLIC HOLIDAYS

Location of airports/heliports open to civil traffic and central services:

ANDALUCÍA	Algeciras (HEL), Almería, Córdoba, Granada/Federico García Lorca Granada-Jaén, Jerez, Málaga/Costa del Sol and Sevilla.
ARAGÓN	Zaragoza, Huesca/Pirineos, Teruel.
ASTURIAS	Asturias.
ILLES BALEARS	Ibiza, Menorca, Palma de Mallorca and Mallorca/Son Bonet.
CANARIAS	El Hierro, Fuerteventura, Gran Canaria, La Gomera, La Palma, Lanzarote/César Manrique Lanzarote, Tenerife Norte/Ciudad de La Laguna and Tenerife Sur.
CANTABRIA	Santander/Seve Ballesteros-Santander.
CASTILLA-LA MANCHA	Albacete, Ciudad Real.

CASTILLA Y LEÓN	Burgos/Villafría, León, Salamanca/Matacán and Valladolid/Villanubla.
CATALUÑA	Andorra-La Seu d'Urgell, Barcelona/Josep Tarradellas Barcelona-El Prat, Girona, Lleida/Alguaire, Reus, Sabadell and Serveis Generals del Circuit de Catalunya (HEL).
COMUNITAT VALENCIANA	Alicante/Alicante-Elche Miguel Hernández, Castellón and Valencia.
EXTREMADURA	Badajoz/Talavera la Real.
GALICIA	A Coruña, Santiago/Rosalía de Castro and Vigo.
COM. MADRID	Madrid/Adolfo Suárez Madrid-Barajas, Madrid/Cuatro Vientos, Madrid/Getafe, Madrid/Torrejón and Headquarters.
REGIÓN MURCIA	Murcia/Aeropuerto de la Región de Murcia, Murcia/San Javier.
C. FORAL NAVARRA	Pamplona.
PAÍS VASCO	Bilbao, San Sebastián and Vitoria.
LA RIOJA	Logroño.
CIUDAD DE CEUTA	Ceuta (HEL).
CIUDAD DE MELILLA	Melilla.

The Spanish public holidays for the year 2026 are (1):

	JAN		FEB	MAR			APR				MAY				JUN			JUL		AGO		SEP				OCT		NOV	DEC			
	01	06	28	02	19	20	02	03	06	23	01	02	27	30	04	09	24	25	28	5	15	02	08	11	15	09	12	02	07	08	25	26
Andalucía	•	•	•				•	•			•										•						•	•	•	•	•	
Aragón	•	•					•	•		•	•										•						•	•	•	•	•	
Asturias	•	•					•	•			•										•		•				•	•	•	•	•	
Illes Baleares	•	•		•			•	•	•		•										•						•			•	•	•
Canarias (2)	•	•					•	•			•			•							•						•	•		•	•	
Cantabria	•	•					•	•			•								•		•				•		•		•	•	•	
Castilla - La Mancha	•	•					•	•	•		•				•						•						•	•		•	•	
Castilla y León	•	•					•	•		•	•										•						•	•	•	•	•	
Cataluña (3)	•	•						•	•		•						•				•			•			•			•	•	•
Extremadura	•	•					•	•			•										•		•				•	•	•	•	•	
Galicia	•	•			•		•	•			•						•	•			•						•			•	•	
Com. Madrid	•	•					•	•			•	•									•						•	•	•	•	•	
Región Murcia	•	•			•		•	•			•					•					•						•		•	•	•	
C. Foral Navarra	•	•			•		•	•	•		•										•						•	•		•	•	
País Vasco	•	•			•		•	•	•		•							•			•						•			•	•	
La Rioja	•	•					•	•	•		•					•					•						•		•	•	•	
Comunitat Valenciana	•	•			•			•	•		•						•				•					•	•			•	•	
Ciudad de Ceuta	•	•					•	•			•		•							•	•	•					•			•	•	
Ciudad de Melilla	•	•				•	•	•			•		•								•						•		•	•	•	

(1) To learn which services are affected consult with the aerodrome.

(2) In addition, for the year 2026, Canarias Autonomous Region has the following local holidays in each island:

- El Hierro: 24 September.
- Fuerteventura: 18 September.
- Gran Canaria: 08 September.
- La Gomera: 05 October.
- La Palma: 05 August.
- Lanzarote and La Graciosa:15 September.
- Tenerife: 02 February.

(3) In Cataluña Autonomous Region for the year 2026:

Arán Territory: 17 June replaces to 26 December.

7. AERONAUTICAL CARTOGRAPHY USED

The basic topography used for the production of charts is provided by the Centro Nacional de Información Geográfica on digital format, BCN 200 series.

IAC and VAC charts only include obstacles exceeding 100 m in height. In addition, IAC charts also include controlling obstacles for every segment of the procedure, as far as possible. Every obstacle is depicted with its corresponding symbol and total elevation.