GOBIERNO DE ESPAÑA
MINISTERIO DE TRANSPORTES, MOVILIDAD Y AGENDA URBANA

AESA AGENCIA ESTATAL DE SEGURIDAD AÉREA

Aeronautical studies in Spain

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ICAO OLS Symposium 2021-10-12

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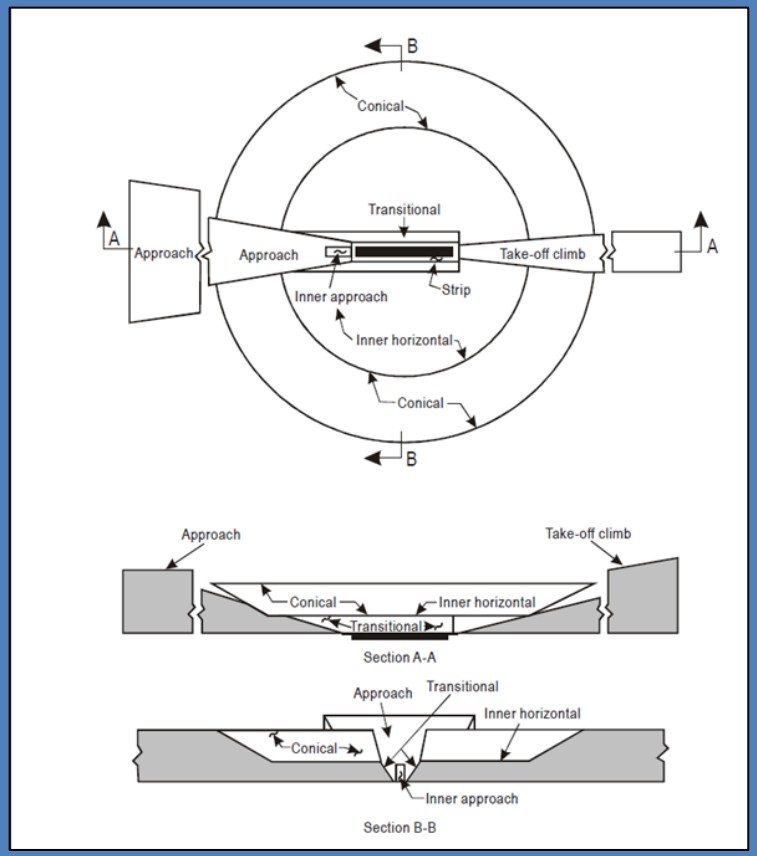
DECREE 584/1972 ON AERONAUTICAL EASEMENTS

CAA approval is required for:

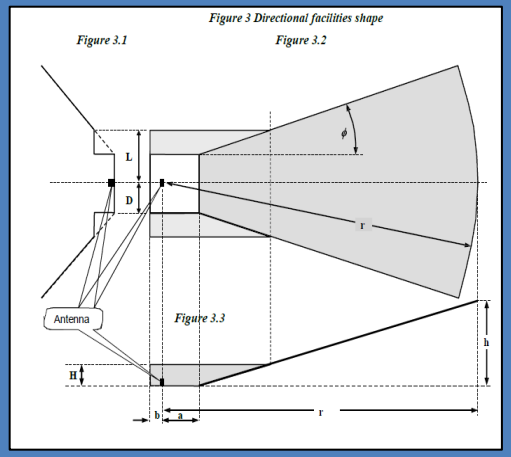
- any object located within the protection areas
- obstacles higher than 100m at any place in the country

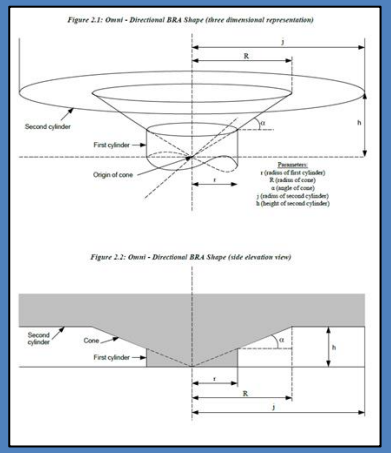
Protection surfaces based on ICAO documents

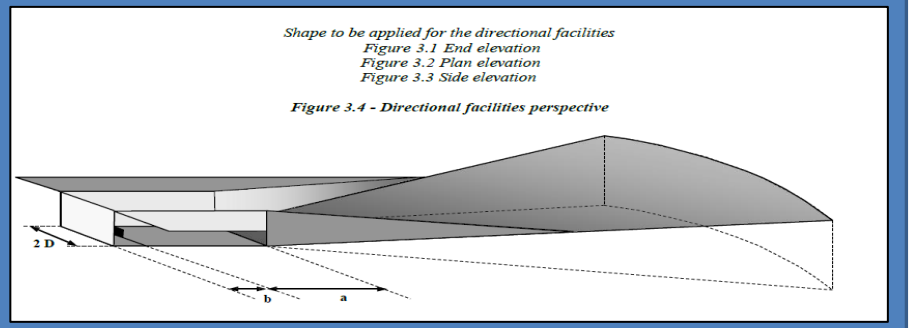
ANNEX 14



EUR DOC 015

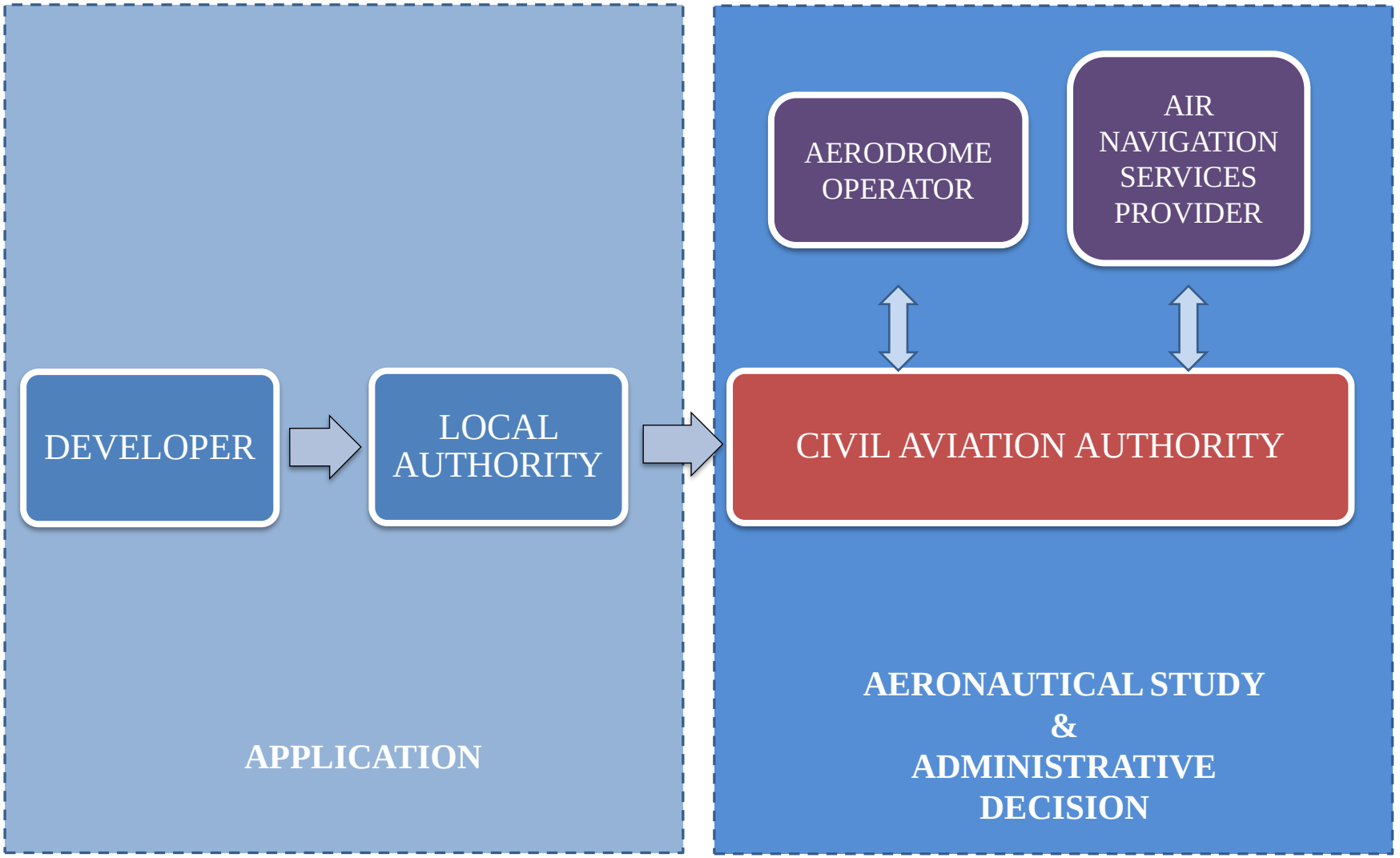






PROTECTION SURFACES AVAILABLE IN DIFFERENT FORMATS

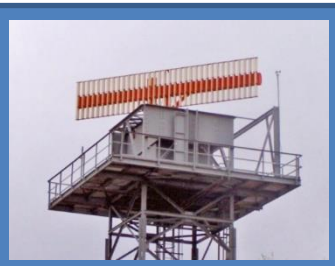
2. Stakeholders and process



2. Stakeholders and process

OBSTACLE LIMITATION SURFACE	CLEARANCE (M)
INNER HORIZONTAL	-15
DME	5
RADAR	-10

AERONAUTICAL STUDY

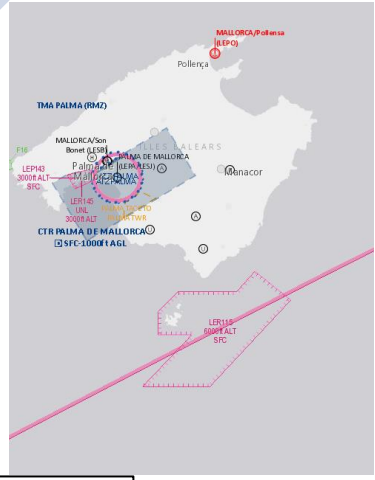


DATA → PROCEDURES EVALUATION → OUTCOME

AIP Spain
Aeronautical Information Service

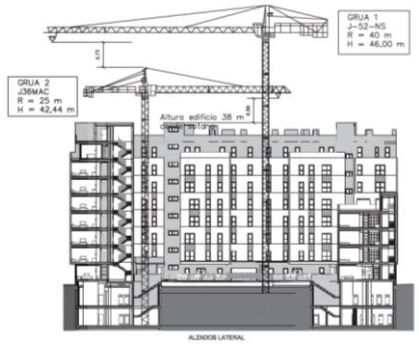
LEPA/LESJ | PALMA DE MALLORCA

AD 2 LEPA LESJ	Aerodrome data.
AD 2 10 LEPA LESJ	Item 10: AERODROME OBSTACLES.
AD 2 LEPA LESJ ADC 1	ADC 1 & 2
AD 2 LEPA LESJ PDC 1	PDC 1
AD 2 LEPA LESJ GMC 1 1	GMC 1.1 - EAST CONFIGURATION
AD 2 LEPA LESJ GMC 1 2	GMC 1.2 - WEST CONFIGURATION
AD 2 LEPA LESJ AOC 1	AOC/1 - RWY 06L
AD 2 LEPA LESJ AOC 2	AOC/2 - RWY 06R



Object Data:

- ✓ Coordinates
- ✓ Elevation
- ✓ Geometry



DATA → PROCEDURES EVALUATION → OUTCOME

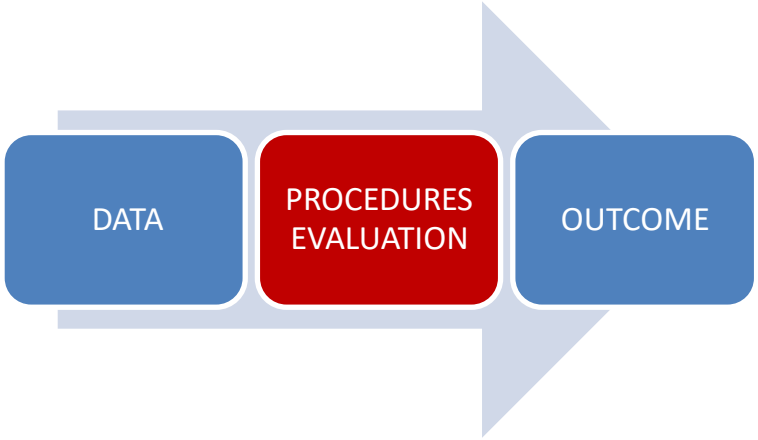
Aeronautical study with regard to flight operations covers:

IFR

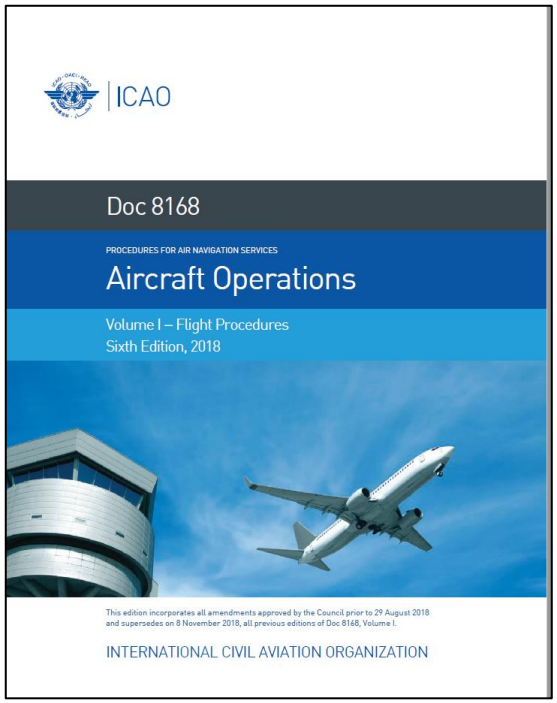
VFR

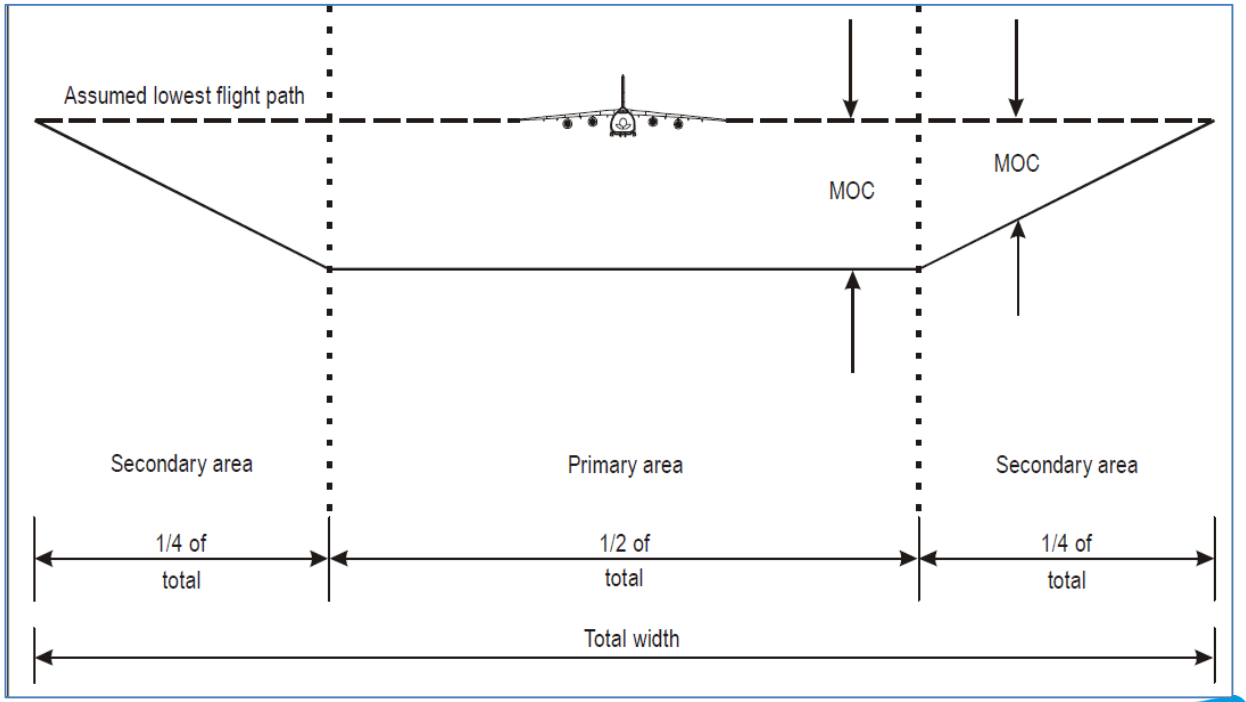
* Only studied normal operations

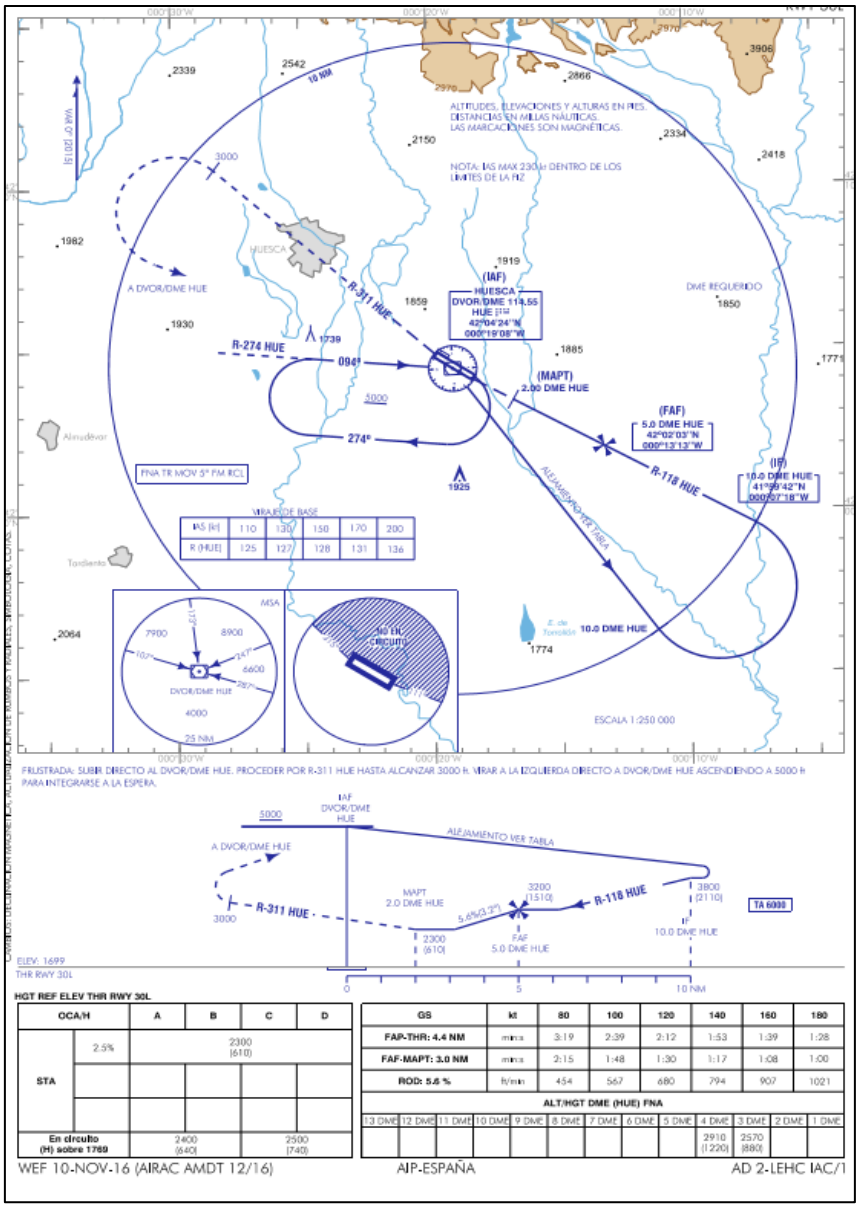
Procedures conducted under INSTRUMENT FLIGHT RULES



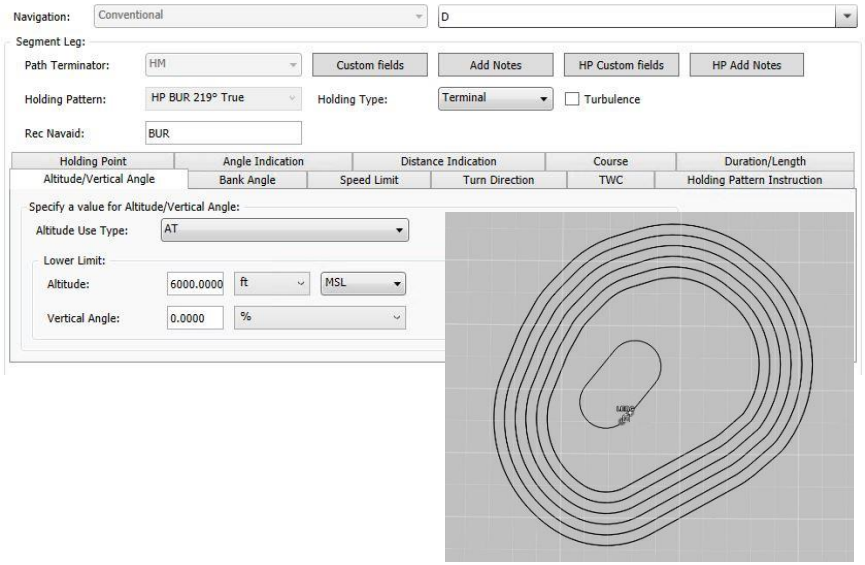
- DOC 8168 OPS 611



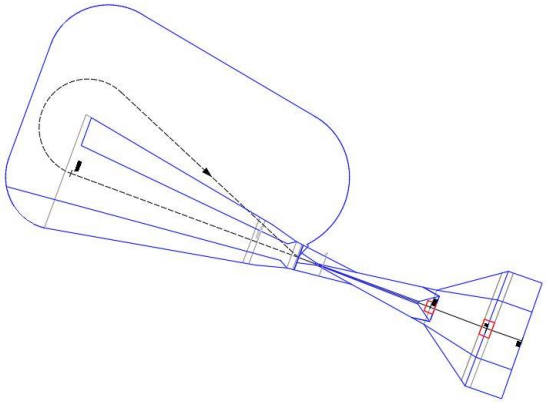




Dedicated software



CAD software



➢ QUANTITATIVE ANALYSIS

5 LOCATION OF THE INSTALLATION

The request shows the installation of the wind farm in the municipality of Granadilla de Abona (Tenerife). The data provided are:

Id	Reference	Zone	UTM_X	UTM_Y	GND ELEV	HGT	TOTAL ELEV (m)

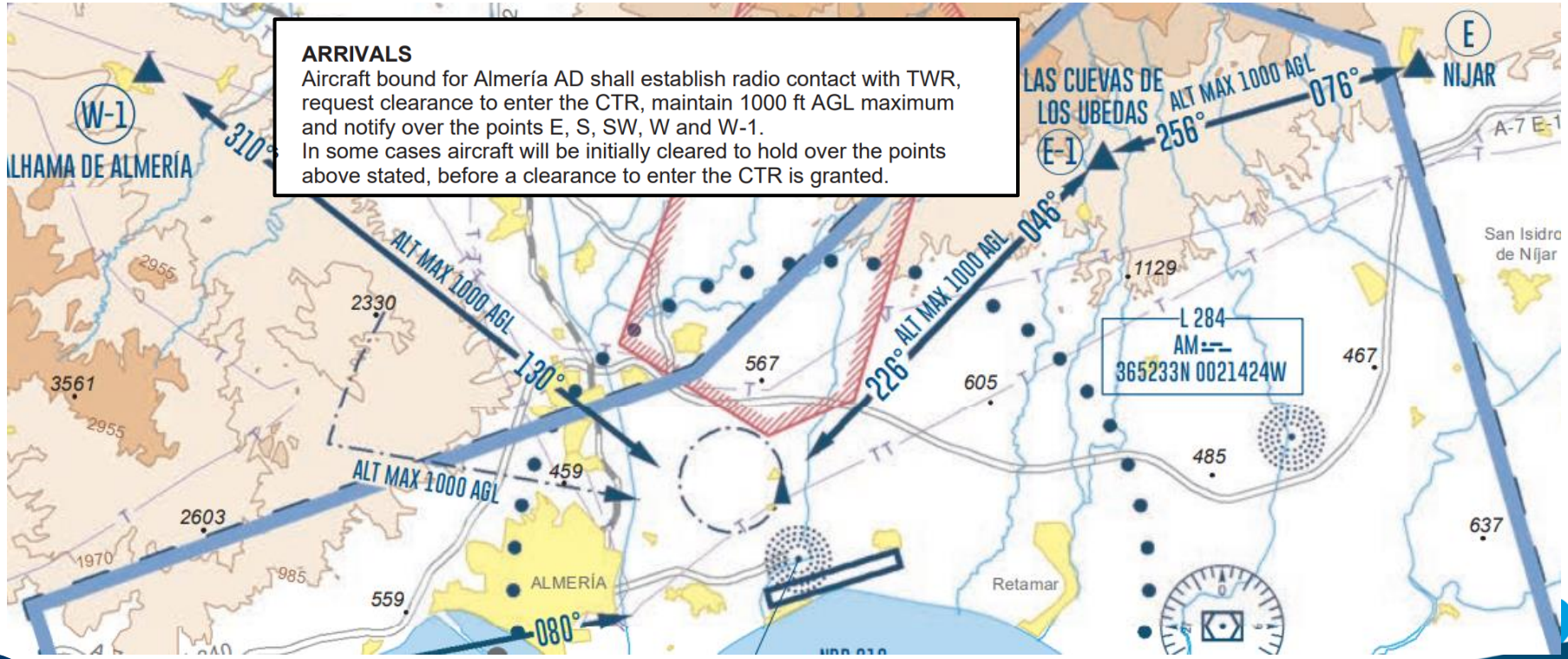
AIP-Spain Chart	RWY	Procedure	Overflown (YES/NO)	Segment	Obstacle (ft/m)	MOC (ft/m)	Minimum Altitud (ft/m)	Clearance (ft/m)	Impact (YES/NO)	Obs Max Alt (ft/m)
AD 2-GCTS IAC 1	07	ILS Z	YES	Missed Approach	Wind Farm 827 / 252[3]	98 / 30	997 / 304	72 / 22	NO	899 / 274
			YES	MSA DVOR/DME TFS	Wind Farm 1457 / 444[4]	1968 / 600	4000 / 1219	575 / 175	NO	2032 / 619
			YES	Holding DVOR/DME TFS 074°	See (STAR 1.1) Holding DVOR/DME TFS 074°					
			NO	Rest of segments	-	-	-	-	-	-
AD 2-GCTS IAC 2	07	ILS Y	YES	Initial Approach	Wind Farm 1224 / 373[5]	984 / 300	3800 / 1158	1592 / 485	NO	2816 / 858
			YES	Missed Approach	Wind Farm 827 / 252[3]	98 / 30	997 / 304	72 / 22	NO	899 / 274
			YES	MSA_NDB TES	Wind Farm 1578 / 481[6]	1968 / 600	5700 / 1737	2154 / 657	NO	3732 / 1138
			YES	Holding NDB TES 275°	See (STAR 1.1) Holding NDB TES 275°					

Figure 2 Location of Obstacle and Tenerife Sur/Reina Sofía Airport

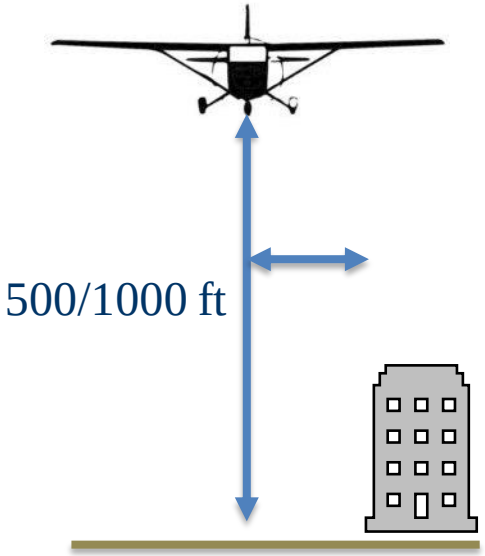
Procedures conducted under VISUAL FLIGHT RULES

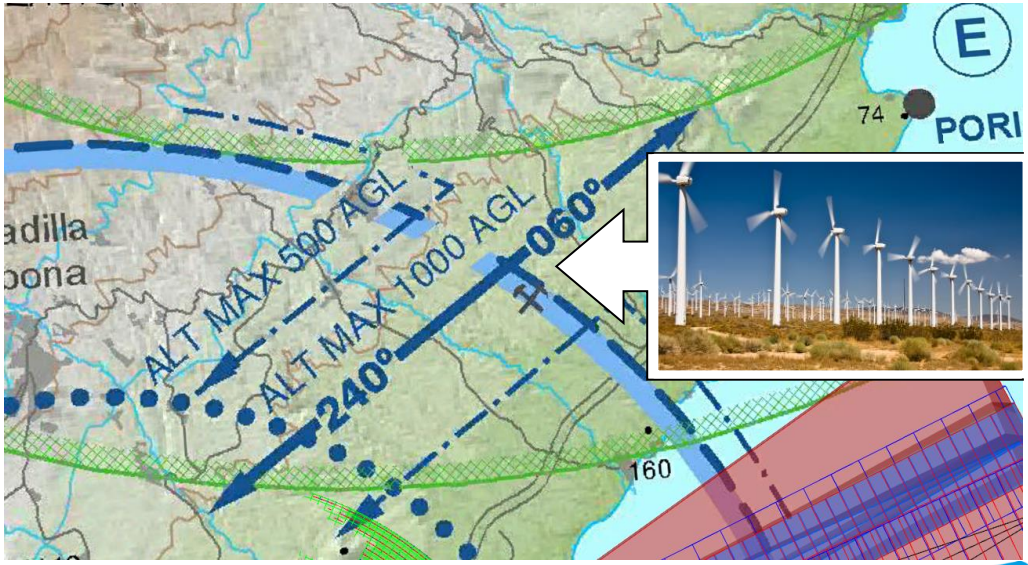
DATA → PROCEDURES EVALUATION → OUTCOME

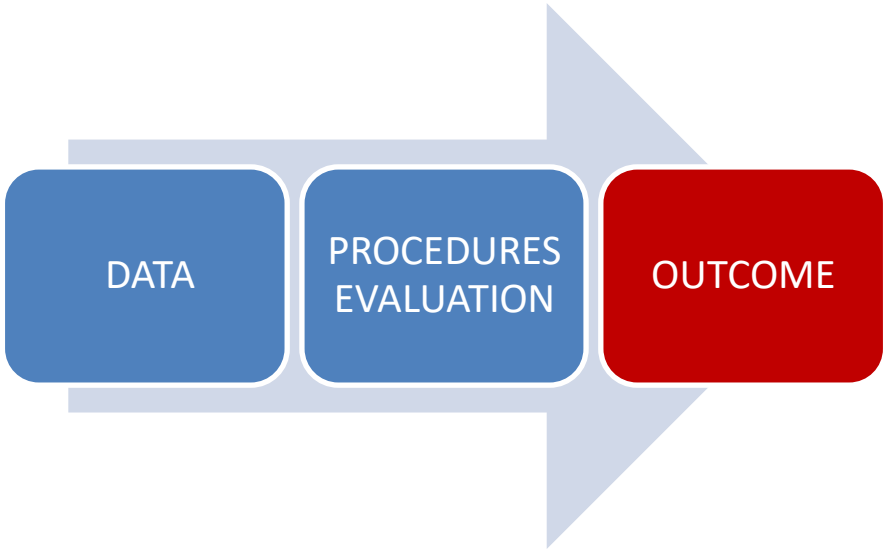
- VAC – Visual Approach Charts



- VFR Principle: “See and Avoid”
- ICAO Annex 2. Rules of the air.
  Mínimum separation from obstacles
- Qualitative assessment







- Impact on flight operations
- Mitigation measures
- Acceptance

Key Points

- ✓ National regulation on obstacle control
- ✓ Specialist engineers for IFR assessments
- ✓ Automation of the processes

Thank you for your attention

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