ΕΝΑΙRe

Version 2.7

GUIDE TO FLIGHT PLAN COMPLETION (FPL MESSAGES) IN ICARO XXI FOR UAS OPERATIONS

Version 2.8

ΕΝΑΙRe

Change control

The following table shows at least the last three modifications made to this document.

Edition	Date	Affected pages	Changes
2.7	01st /04/2024	5	Minimum Flight Plan submission time added.
		5	Other ANSPs in addition to ENAIRE are added.
		12, 13	Data format in Item 15 changed.
		14, 15	Express UAS mass in grams for Item 18.
2.8	07/08/2024	4	Flight Plan becomes optional.
		7, 11	Municipality is added.
		12	Item 15 requirements are changed.
		14, 15	Change of data distribution in item 18.

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INTRODUCTION

This **guide** explains **how to complete a Flight Plan or FPL for civil drone (UAS) operations** which, pursuant to applicable legislation, may be required by the ATS provider for any flight in controlled airspace and uncontrolled airspace. The provisions of ENR 1.10 AIP SPAIN regarding the submission and acceptance of flight plans shall also be taken into account. The use of the ICARO XXI system, accessible via the Internet, is considered for this guide.

In order to enter a Flight Plan or FPL message, the UAS Operator must have a username and password to access ICARO XXI, to which end the "PV Internet"[1] functionality necessary for its completion must have been previously requested from the AIS (ENAIRE Aeronautical Information Service).

It is very important to enter the information exactly as indicated throughout the guide in order for the Flight Plan to be accepted by the system.

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[1] We recommend the use of Chrome as the Internet browser for ICARO XXI or the use of the mobile application.

<u>NOTE:</u> In the event that the operation of the drone involves several flights or involves ground refuelling or battery recharging or exchange operations, **the same Flight Plan may be used for said operations** provided that the **duration of such grounding does not exceed 20 minutes**. If the day of flight (DOF) is the same, it is important to remember that the ARCID field of Item 7 must be different. It should also be noted that, according to the AIP Spain publication in force, **the flight plan may be submitted up to 120 hours (5 days) before the EOBT (liftoff or takeoff time in the case of a UAS flight), and a minimum of 60 minutes before the EOBT.**

ITEM 7 (Indicative)

The flight call sign[2] (not to be confused with the telephony call sign or designator, which may or may not coincide with the flight call sign) may be the aircraft registration number in the case of UAS registered in the *Civil Aircraft Registration Register*, or the flight call sign chosen by the UAS Operator in the Aeronautical Safety Study (EAS/EARO) coordinated with the appropriate Air Navigation Service Provider (ANSP) Safety Division.

<u>NOTE:</u> **Whenever several flight plans are submitted, different ARCIDs shall be indicated.** For example: Flight plan 1 with call sign ARGOS01, Flight plan 2 with call sign ARGOS02, etc.

ITEM 8 (Flight Rules and Type of Flight)

- We will enter the corresponding **flight rules** which, as a general rule, shall be visual flight rules (VFR), due to which said item shall contain the **letter V**.

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[2] The UAS Flight Call Sign shall contain a maximum of 7 characters, of which the first 3 to 6 characters must be letters of the English alphabet designating the **UAS Operator** and the last 1 to 2 characters must be a numerical figure between 1 and 99 designating the **flight number**.

- As regards **type of flight**, said item shall generally contain the **letter G**, corresponding to a **general aviation** operation.

ITEM 9 (Aircraft)

- **No.**: In this field we will enter the UAS number, which will generally be **1**.
- **Type:** Indicate One of the following ICAO designators[3] for UAS, **FFLO**[4] (fixed wing) o **VFHC**[5] (rotary wing and VTOL), which requires providing additional information in **ITEM 18**, as explained below.
- **Wake**: In all cases of UAS with MTOM <150 kg[6] it will be a light wake, due to which we will enter **L** in this field.

ITEM 10 (Equipment and Capacities)

- **COM Equipment**: We will enter **V**, which corresponds to the availability of VHF (V) aeronautical band communications equipment, as required for operations in controlled airspace.
- **SSR Equipment**: Indicate the SSR equipment with which the aircraft is equipped. If none is available, we will enter **N**.
- **ADS Equipment**: It can be left empty or, if ADS equipment is available, we will indicate what type it is.

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[3] ICAO Document 8643, Aircraft Type Designators, Special Designators.
[4] Forward flight lift only
[5] Vertical flight and hover capability
[6] For drones with MTOM >150 kg, we will enter the wake type pursuant to ICAO document 4444, Procedures for Air Navigation Services. L: 7,000 kg or less. M: less than 136,000 kg and more than 7,000 kg. H: 136,000 kg or less.

ITEM 13 (Departure)

- **ADEP**: Considering the special characteristics of UASs, when departing from a location that does not correspond to an aerodrome with an ICAO code listed in Doc 7910, we will enter **ZZZZ** in this item.

- **EOBT**: UAS liftoff/takeoff time (**ATTENTION:** indicate **UTC** time, not local time).

- **ARO Office**: By entering **ZZZZ** in the previous ADEP field, we must also enter the municipality where UAS liftoff/takeoff will take place in the **DEP field of ITEM 18**. **Not complying with these requirements might result in rejection of the FPL.**

Upon completing the DEP field, a pop-up window like the one below allows the UAS Operator to designate the ARO Office to which the FPL message will be sent for acceptance, modification or rejection.

pop-up window like the one below allows the UAS Operator to designate the ARO Office to which the FPL message will be sent for acceptance, modification or rejection.

To select the ARO office to which we want the Flight Plan to be sent for validation, select the ARO office corresponding to the area over which most of the operation will take place from the drop-down menu according to the following distribution:

- GCFV Office: Island of Fuerteventura and its vicinity.

- GCGM Office: Island of La Gomera and its vicinity.

- GCHI Office: Island of El Hierro and its vicinity.

- GCLA Office: Island of La Palma and its vicinity.

- GCLP Office: Island of Gran Canaria and its vicinity.

- GCRR Office: Island of Lanzarote and its vicinity.

- GCTS Office: Island of Tenerife and its vicinity.

- GECE Office: Ceuta and its vicinity.

- GEML Office: Melilla and its vicinity.

- LEAB Office: Provinces of Albacete and Cuenca.

- LEAL Office: Province of Alicante.

- LEAM Office: Province of Almería.

- LEAS Office: Autonomous Community of Asturias.

- LEBA Office: Province of Córdoba.

- LEBB Office: Province of Vizcaya.

- LEBG Office: Provinces of Burgos and Palencia.

- LEBZ Office: Provinces of Badajoz and Cáceres.

- LECH Office: Province of Castellón.

- **LECU Office:** Provinces of Ávila, Guadalajara, **Madrid**, Segovia and Toledo.

- LEDA Office: Province of Lérida.

- LEGE Office: Province of Gerona.

- LEGR Office: Provinces of Granada and Jaén.

- LEHC Office: Province of Huesca.

- LEIB Office: Island of Ibiza and its vicinity.

- LEJR Office: Province of Cádiz.

- **LELL Office:** Province of **Barcelona.**

- LELN Office: Province of León.

- LEMG Office: Province of Málaga.

- LEMH Office: Island of Menorca and its vicinity.

- LEPA Office: Island of Mallorca and its vicinity.

- LEPP Office: Province of Navarre.

- LEMI Office: Province of Murcia.

- LERJ Office: Autonomous Community of La Rioja and province of Soria.

- LERL Office: Province of Ciudad Real.

- LERS Office: Province of Tarragona.

- LESA Office: Provinces of Salamanca and Zamora.

- LESO Office: Province of Guipúzcoa.

- LEST Office: Provinces of La Coruña and Lugo.

- LEVC Office: Provinces of Teruel and Valencia.

- LEVD Office: Province of Valladolid.

- LEVT Office: Province of Álava.

- LEVX Office: Provinces of Orense and Pontevedra.

- LEXJ Office: Autonomous Community of Cantabria.

- LEZG Office: Province of Zaragoza.

- LEZL Office: Provinces of Huelva and Seville.

NOTE: In the case of military controlled airspace, the ARO office must be chosen according to its area. See Annex 1.

Once the ARO Office to which the FPL message will be sent has been selected,

The ADEP is not in the ICARO system. Select destiny ARO ICARO office

⦿ ARO office ICARO [OFICINA LECU ⌄]

ITEM13 of the FPL will be completed.

▸ FLIGHT DATA

▸ Departure Data   13

ADEP: [ZZZZ] 🔍   EOBT: [13] : [00] (hh:mm)

ARO Office: [OFICINA LECU ⌄]

Likewise, <u>the UAS Operator must notify the corresponding ARO office of the beginning and the end of the flight by telephone</u>, similarly to VFR operations, to prevent the Alert Service's actions from being triggered.

<u>NOTE:</u> **telephone contact with the ARO office is different from that of the ATS units, so under no circumstances ATS units will be contacted with this purpose.** The ARO offices at each aerodrome have defined opening hours and these are not always 24h[7]. This must be considered in the flight planning and when planning the flight and when completing the FPL message sufficiently in advance, as it will be the staff of these ARO offices, working **during the opening hours of their specific ARO office**, who will review and accept the Flight Plan, validating the FPL message sent by the UAS Operator. Therefore, regardless of the minimum advance time with respect to the EOBT with which it is officially possible to send a Flight Plan or FPL message for validation, the particular opening hours of the ARO office must be considered, since the ARO office will not process or validate flight plans outside its opening hours.

Therefore, if a Flight Plan needs to be finalised and the office is closed, the nearest operational office should be contacted. For example: The Madrid–Cuatro Vientos (LECU) ARO office has the same opening hours as said aerodrome:

3. HORARIO DE OPERACIÓN	OPERATIONAL HOURS
Aeropuerto: CIV: V: 0700-SS; I: 0800-SS. AD cerrado el 1er domingo de cada mes por exhibición aérea de la Fundación Infante de Orleans, excepto enero y agosto con el horario siguiente: V: 1100-1200; I: 1200-1300. Excepto para aeronaves de estado, vuelos hospital y emergencias. MIL: MON a FRI de orto a ocaso EXC festivos, otros horarios bajo petición PPR. SAT, SUN y festivos bajo petición para ACFT con base en LEVS PPR, resto de ACFT PPR 48 HR. (1)	**Airport:** CIV: V: 0700-SS; I: 0800-SS. AD closed due to air exhibition of the Infante de Orleans Foundation, the 1st Sunday of every month except January and August during the following hours: V: 1100-1200; I: 1200-1300. Except emergency, hospital and State flights. MIL: MON to FRI sunrise to sunset EXC holidays, other times on request PPR. SAT, SUN and holidays on request: PPR for ACFT based in LEVS, other ACFT PPR 48 HR. (1)
Aduanas e Inmigración: HR AD. Para vuelos fuera del Espacio Schengen, se debe enviar listado de pasajeros y tripulación con 48 horas de antelación a la dirección de correo electrónico mcvaro@aena.es.	**Customs and Immigration:** HR AD. For flights outside the Schengen Area, a list of passengers and aircrew should be sent 48 hours in advance to the email address mcvaro@aena.es.
Servicios médicos y de sanidad: No.	**Health and Sanitation:** No.
AIS/ARO/OPV: HR AD.	**AIS/ARO/OPV:** HR AD.
Información MET: CIV: HR AD. MIL: HR AD. Otros horarios según necesidad de la unidad, MAX 2130 UTC.	**MET briefing:** CIV: HR AD. MIL: HR AD. Other hours depending on the needs of office, MAX 2130 UTC.

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[7] **The opening hours of the ARO offices are available in the** <u>AIP</u>, under the AD (aerodrome) section.

ITEM 16 (Alternative Destination and Aerodromes)

- **ADES**: Similarly to ITEM 13, if no arrival is made at an aerodrome with its own ICAO code listed in ICAO Doc 7910, we will enter **ZZZZ** in this item.

  By entering ZZZZ in this ADES field, you must also complete the **DEST field of ITEM 18** by entering the municipality where the descent/landing of the UAS will take place. This will normally be the same reference as the one entered in the DEP field.

- **EET Total**: Total duration of the flight/operation in hh:mm format
- **ALTN**: In general, an alternate destination aerodrome for the operation of a VFR flight should not be entered, then this field may be left empty.

↗ ROUTE	15

Route:

Cruising Speed: `K0020`
Cruising Level `S0009`

ITEM 15 (Route)

- **Speed**: Average speed of the UAS in kilometres/hour format (e.g.: K0040 is 40 km/h) or in knots (e.g.: N0175 is 175 knots TAS)

- **Level**: One of the following options may be considered:
  - Flight level with the letter F (e.g.: F095 stands for flight level 95)
  - Standardised metric level in tens of metres with the letter S[8] (e.g.: S0012 stands for 120 metres AGL)
  - Altitude in hundreds of feet with the letter A (e.g.: A065 stands for altitude of 6,500 ft)
  - Altitude in tens of metres with the letter M (e.g.: M0045 stands for altitude of 450 m).
  - **Not complying with these requirements might result in rejection of the FPL.**

- **Route**: In the Route field, if no points, routes, aerodromes and/or radio aids declared in AIP are to be overflown, we will enter a succession of at least 4 points of a closed polygon (the first and last point must be the same) of **the minimum possible extension or area covering the entire UAS operation zone**.

  The points will be entered in geographical coordinates, in sexagesimal system, separated by blank spaces and using the following format:
  - 6 digits indicating latitude in degrees, minutes and seconds.
  - The letter "N" or "S", whichever corresponds to latitude.
  - 7 digits indicating longitude in degrees, minutes and seconds, filling in zeros where necessary.
 - The letter "W" or "E", whichever corresponds to longitude.

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[8] This will be the preferred system for entering the maximum AGL of the UAS operation and shall never exceed the value contained in the Operator's coordinated and authorised Aeronautical Safety Study.

For example: "Getafe", can be covered by a rectangle defined by:

402200N 0033201W 402201N 0033102W 402102N 0033103W 402103N 0033204W 402200N 0033201W
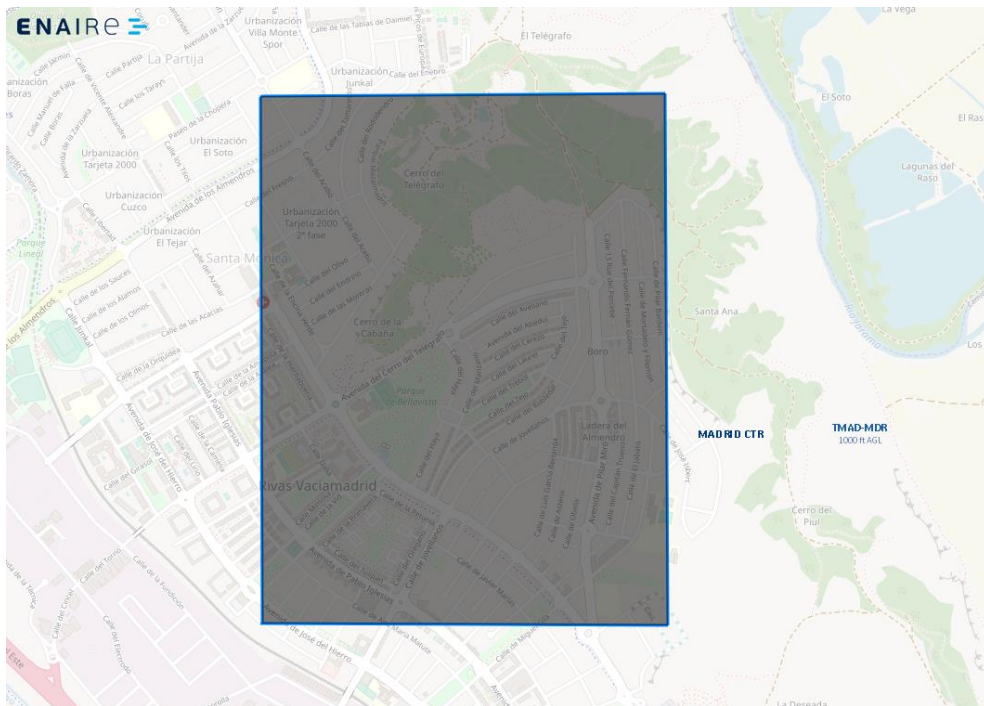
The area of the polygon defined by these Route points (in the example, a rectangle given by 5 points, where the first and last coincide) will appear drawn on the ATC controller screen, hence the importance of defining it correctly. The area depicted cannot exceed an accuracy of 1.8 km (1 nautical mile) on a map of the Earth's surface. This, however, is sufficient for the ATC controller to know the location where the UAS operation is taking place and to be able to measure distances from it to other traffic that is equipped with a transponder and visible on its radar screen.

Standard ICAO nomenclatures, such as distance and course to a VOR station or to a given point, are also permitted for the Route. Passing altitudes may also be recorded at each point along the route, as for any flight other than a UAS flight.

If alerts are generated by the ICARO XXI interface indicating that the route is incorrect, these alerts can be ignored and proceed with the creation of the Flight Plan.

ITEM 18 (Other Data)

The items that must be completed for UAS operations are listed below:

- **DEP**: Already mentioned in ITEM 13.

- **DEST**: Already mentioned in ITEM 13.

- **OPR**: Full name of the UAS Operator responsible for the operation. It must coincide with the name appearing in the list of UAS Operators authorised by AESA.

- **TYP**: The drone type will be indicated using one of the following options:
    - DRONE UAS MULTICOPTER
    - DRONE UAS FIXED WING
    - DRONE UAS VTOL

- **RMK**: This field shall contain everything related to the operational Flight Plan that helps to identify its working area, as well as the development of the operation as such. This field is limited to 400 characters in ICARO XXI and additionally applies an AFTN restriction of 69 characters per line. The **drone weight (in grams, with no dots nor comas), ATS provider reference** assigned to the operation and the associated NOTAM code, if required, shall be indicated. **Not complying with these requirements might result in rejection of the FPL.**

    o   RMK: MTOM(g) + ATS REFERENCE + NOTAM.

    o   Example RMK: MTOM 1300g REF 0001/2023 PLANEA D1500/23.

ITEM 19 (Supplementary Information)

The fields of this item that must be completed are indicated below:

- **Persons on board**: Since it is an unmanned aircraft, in this box we will enter the number 0. In doing so, ICARO XXI will automatically replace this numerical value with the text TBN (to be notified).

- **Autonomy**: The total autonomy of the UAS shall be provided in[9] hh:mm format

- **Pilot in command**: Name of the pilot in command of the UAS

- **Aircraft colour and markings**: Other markings (colours or similar) of the UAS to aid identification, in clear text.

- **Observations**: the **contact telephone number** of the UAS Operator or the UAS operation pilot, must be included. On the contrary, the FPL could be rejected. Other data associated with the operation may be of help. **Not complying with these requirements might result in rejection of the FPL.**

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[9] The range entered here shall always be greater than the total flight duration entered in the EET field of ITEM 16.

OTHER TYPES OF MESSAGES (CHG, CNL, DLA)

In addition to the FPL messages for notifying a Flight Plan, there are also Change–type messages (CHG), which allow us to change some parameters of the FPL already entered and even accepted by the ARO Office; Delay–type messages (DLA), which allow us to delay its start time (EOBT); or that which is most useful to the UAS Operator to cancel a Flight Plan or replace it with another one with different parameters, the Cancel message (CNL) which, by entering the ARCID of the original FPL, allows us to issue a request for its cancellation. Once cancelled, the system will allow us to introduce a new FPL with the same Call Sign as the one just cancelled.

ANNEX I: LIST OF AIR BASES

- LEAB: Los Llanos, Albacete.
- LEAO: Almagro, Ciudad Real.
- LEBT: Bétera, Valencia.
- LEBZ: Talavera la Real, Badajoz.
- LECV: Coronel Maté, Colmenar Viejo, Madrid.
- LEEC: El Copero, Sevilla.
- LEGA: Armilla, Granada.
- LEGT: Getafe, Madrid.
- LELC: San Javier, Murcia.
- LELN: León.
- LELO: Agoncillo, Logroño, La Rioja.
- LEMO: Morón, Sevilla.
- LERI: Alcantarilla, Murcia.
- LERT: Rota, Cádiz.
- LESA: Matacán, Salamanca.
- LETO: Torrejón de Ardoz, Madrid.
- LEVD: Villanubla, Valladolid.
- LEZG: Zaragoza.