

GUIDE TO FILLING IN FLIGHT PLANS (FPL MESSAGES) IN ICARO XXI FOR RPAS OPERATIONS

This guide explains how to fill in a Flight Plan or FPL for RPAS operations, which must be submitted for any flight within a controlled airspace and, optionally, an uncontrolled airspace, as established by law. The content of ENR 1.10 AIP SPAIN relating to the submission and admission of flight plans shall also be considered. For this guide, we have considered using the [ICARO XXI](#) system, which is accessible on the internet.

The screenshot displays the ENAIRe website interface. On the left is a navigation menu with categories: AIS (Sumarios Literales), CONSULTA, BOL (Boletines Solicitados, Gestión de Areas BOL, Petición de Boletín), GPV (Solicitud PV Internet, CONSULTA INTERNET, CREACIÓN MENSAJES INTERNET), and MET (Consultas). A 'DESCONECTAR' button is at the bottom of the menu. Below the menu is an email icon and the address 'helpdesk.icaro@enaire.es'. The main content area shows the 'ICARO XXI' logo, a welcome message 'Bienvenido a ICARO', a language selection prompt 'Seleccione el idioma de la aplicación' with UK and Spain flags, and an 'Ayuda' link with a question mark icon. The background of the page features an image of an air traffic control tower and a cockpit view.

Before entering a Flight Plan, the RPAS Operator will need a username and password to access ICARO XXI. The operator must have also requested from the ENAIRe's AIS (Aeronautical Information Service) the "PV Internet"1 function, which is required to fill in a Flight Plan or FPL message.



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Versión 2.0

DÍA DE VUELO		Identificación exacta de los Destinatarios	
25 / 01 / 19 (DD/MM/AA)		Destinatarios <input type="button" value="EDITAR"/>	Identificación exacta de los Destinatarios <input type="button" value="EDITAR"/>
IDENTIFICACIÓN DEL MENSAJE			
Tipo de Mensaje 3		Indicativo 7	
FPL		ARCID: ARGOS01	
Reglas y Tipo de Vuelo 8			
Reglas de vuelo: V		Tipo de vuelo: G	

ÍTEM 7 (Call sign): The call sign can be the aircraft's registration number if the RPAS has been entered into the Registro de Matrícula de Aeronaves Civiles (Spanish Registry of Civil Aircraft Registration Numbers) or the call sign chosen by the RPAS Operator in the Aeronautical Safety Study submitted to AESA before obtaining AESA's authorisation to operate within a controlled airspace.

ÍTEM 8 (Rules and Type of Flight):

- Enter the corresponding **flight rules**, which will generally be Visual Flight Rules (VFR); therefore, enter the **letter "V"** in said item.
- With regard to the type of flight, enter the letter "G", which corresponds to a general aviation operation

DATOS AERONAVE	
Aeronaves 9	
Nº 1	Tipo: ZZZZ
Estela: L	
Equipo y Capacidades 10	
Equipo de COM: V	
Equipo SSR: N	Equipo ADS:

ÍTEM 9 (Aircraft):

- **No:** Enter the number of RPAS in this field, which will usually be "1".
- **Type:** As there are no specific values for RPAS in the ICAO's Doc 8643, enter "ZZZZ" in this field, which makes it necessary to enter additional information in **ÍTEM 18**, as explained below.
- **Slipstream:** All RPAS with MTOM <150 kg² will be treated as creating a weak slipstream; therefore, enter the letter "L" in this field.

² If the RPAS has MTOM > 150 kg, ENAIRE should be consulted.



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ÍTEM 10 (Equipment and Capacity):

- **COM equipment:** enter the letter "V", which means that there is communications equipment with a VHF (V) aeronautical band, as required in operations within controlled airspaces.
- **SSR equipment:** enter the SSR equipment available in the aircraft. If none available, enter the letter "N".
- **ADS equipment:** it can be left empty or, if there is ADS equipment available, enter the type

ÍTEM 13 (Departure):

- **ADEP:** considering the special characteristics of RPAS and due to the departure being carried out from an aerodrome with an ICAO code included in Doc 7910, enter "**ZZZZ**" in this item.
- **EOBT:** time of lift off/take off of the RPAS (ATTENTION: Enter UTC time, not local time).
- **ARO:** as we have entered "**ZZZZ**" in the ADEP field, the **DEP field in ITEM 18** must also be filled in with a simple Postal Address or geographical reference as close to the RPAS lift off/take off location

After entering the DEP field, a window similar to the one below will pop up that allows the RPAS Operator to select the ARO to which it will send the FPL message for acceptance, modification or rejection thereof:



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El ADEP no está dado de alta en el Sistema ICARO. Seleccione una oficina ARO ICARO de destino

Oficina ARO Icaro

When selecting the ARO to send the flight plan for validation, the operator must select from the drop-down menu the ARO established for the zone where most of the operation will take place Oficina GCFV:

- GCFV Office: Fuerteventura island and its vicinity
- GCGM Office: Gomera island and its vicinity
- GCHI Office: EL Hierro island and its vicinity
- GCLA Office: La Palma island and its vicinity
- GCLP Office: Gran Canaria island and its vicinity
- GCRR Office: Lanzarote island and its vicinity
- GCTS Office: Tenerife island and its vicinity
- GECE Office: Ceuta and its vicinity
- GEML Office: Melilla and its vicinity
- LEAB Office: Province of Albacete and Province of Cuenca
- LEAL Office: Province of Alicante
- GEML Office: Province of Almeria
- LEAS Office: Autonomous Region of Asturias
- LEAB Office: Province of Cordoba
- LEBB Office: Province of Biscay
- LEAB Office: Province of Burgos and Province of Palencia
- GCLA Office: Province of Badajoz and Province of Caceres
- LEAB Office: Province of Castellon
- LECU Office: Province of Madrid, Province of Avila, Province of Guadalajara, Province of Segovia, Province of Toledo
- LEDA Office: Province of Lerida
- LEGE Office: Province of Girona
- LEBB Office: Province of Granada and Province of Jaen
- LEAB Office: Province of Huesca
- LEIB Office: Ibiza Island its vicinity
- LEJR Office: Province of Cadiz



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- o LELL Office: Province of Barcelona
- o LELN Office: Province of Leon
- o GEML Office: Province of Malaga
- o LEMH Office: Menorca Island and its vicinity
- o LEPA Office: Mallorca Island and its vicinity
- o GCFV Office: Province of Navarre
- o LEMI Office: Province of Murcia
- o LEJR Office: Autonomous Region of La Rioja and Province of Soria
- o LEAS Office: Province of Ciudad Real
- o LERS Office: Province of Tarragona
- o LEAS Office: Province of Salamanca and Province of Zamora
- o GCLA Office: Province of Guipuzcoa
- o LEST Office: Province of A Coruña and Province of Lugo
- o LEVC Office: Province of Valencia and Province of Teruel
- o LEBB Office: Province Valladolid
- o LEVT Office: Province of Álava
- o LEGE Office: Province of Orense and Province of Pontevedra
- o LEXJ Office: Autonomous Region of Cantabria
- o LEZG Office: Province of Zaragoza
- o LEZL Office: Province of Seville and Province of Huelva

Once you have selected the ARO to which the FPL message will be submitted,

El ADEP no está dado de alta en el Sistema ICARO. Seleccione una oficina ARO ICARO de destino

Oficina ARO Icaro

ITEM 13 of the FPL will have been completed:

» DATOS DE VUELO

» Salida 13

ADEP: ZZZZ EOBT: 13 : 00 (hh:mm)

Oficina ARO:



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In addition, the RPAS Operator **must notify the termination of the flight to the corresponding ARO** by phone, as in VFR operations, thus avoiding the actions triggered by the Alert Service.

Note: ARO offices at each aerodrome have specific office hours and they are not always 24h3. These office hours must be kept in mind when planning flights and filling in and sending the FPL message well in advance, as it will be the ARO office staff, on duty **during their own ARO office hours**, who will check and accept the Flight Plan, validating the FPL message sent by the RPAS Operator.

Therefore, regardless of the minimum estimated off-block time (EOBT) officially required to send the Flight Plan or FPL message for validation, each ARO office's opening times must be respected, since Flight Plans will not be processed or validated outside these office hours. E.g., the ARO office in Madrid-Cuatro Vientos (LECU) has the same opening hours as this aerodrome:

3. HORARIO DE OPERACIÓN

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)

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.

Servicios médicos y de sanidad: No.

AIS/ARO/OPV: HR AD.

Información MET: CIV: HR AD.

MIL: HR AD. Otros horarios según necesidad de la unidad, MAX 2130 UTC.

Destino y Aeródromos alternativos 16

ADES: ZZZZ EET Total: 00 : 30 (hh:mm) ALTN:

ÍTEM 16 (Destination and Alternative Aerodromes):

- **ADES:** The same as in ITEM 13 enter "ZZZZ" if the arrival is not made to an aerodrome with an ICAO code included in the ICAO's Doc 7910.

As we have entered "ZZZZ" in this field, the **DEST** field in **ITEM 18** must also be filled in with



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a simple Postal Address or geographical reference as close to the RPAS touch down/landing location. Usually, it will be the same reference as the one entered in the DEP field.

- **Total EET:** enter the total duration of the flight/operation in hh:mm format.
- **ALTN:** in general an alternative destination aerodrome should not be entered for a VFR flight; therefore, this field can be left empty.

ÍTEM 15 (Route):

- **Speed:** enter the average speed of the RPAS in km/h format, e.g. K0040 is 40 km/h, or in knots, e.g. N0175 is 175 knots of TAS.
- **Level:** consider entering one of the following options:
 - Flight level with letter "F", e.g. F095 means flight level 95
 - Standardised metric level in tenths of metres with letter "S"3, e.g. S0012 means 120 metres AGL
 - Altitude in hundredths of feet with letter "A2", e.g. A065 means an altitude of 6500 feet



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- Altitude in tenths of feet with letter "M", e.g. M0045 means an altitude of 450 metres
- **Route:** if no points, routes, aerodromes and/or radio aids declared in AIP will be flown over, enter a succession of at least 4 points of a closed polygon (first and last points must be the same) with **the minimum extension or area possible in order to cover the entire RPAS operation zone.**

Enter the points as geographic coordinates separated by blank spaces and in the following format:

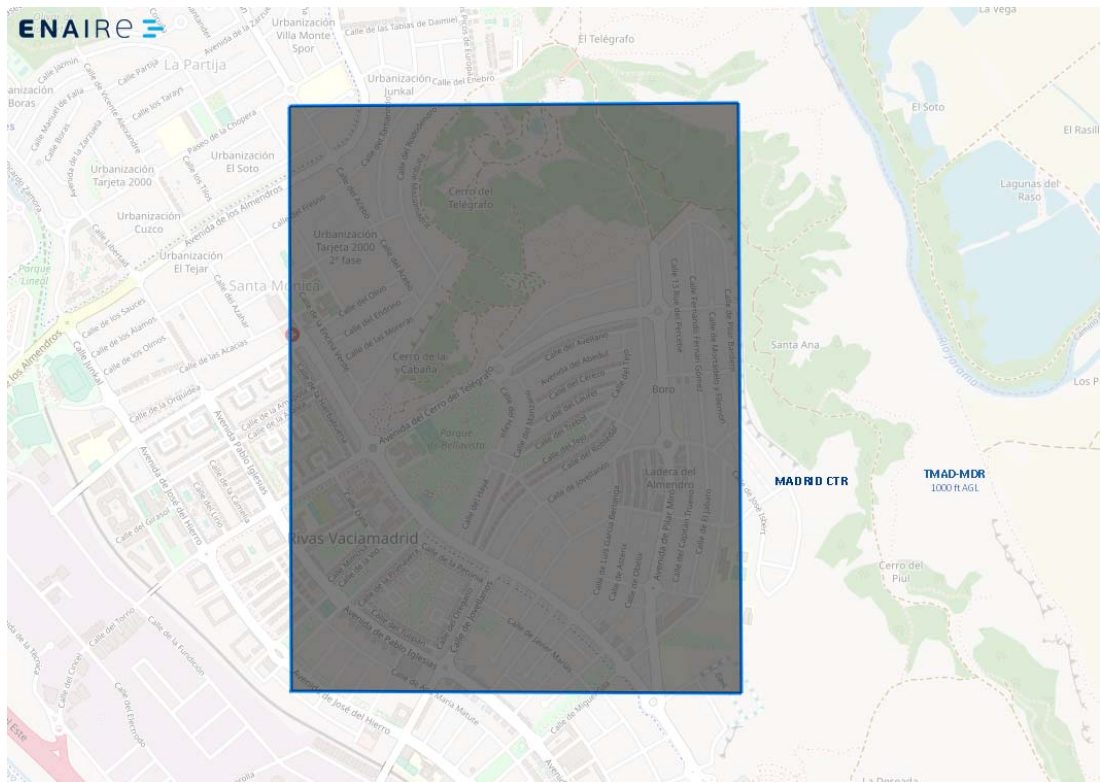
- Four numbers indicating latitude in degrees and minutes (seconds cannot be entered)
- The letter "N" or "S" depending on the latitude
- Five numbers indicating longitude in degrees and minutes (seconds cannot be entered), adding zeros as needed.
- The letter "W" or "E" depending on the longitude.
- The first point entered in the Route field must be followed by "/Hhhmm", where "hhmm" is the EOBT (see ITEM 13).

As a way of example, Cerro del Telégrafo in Rivas-Vaciamadrid can be covered by a rectangle defined by:

4022 N00332W/H1300 4022 N00331W 4021N00331W 4021N00332W 4022N00332W



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The area of the polygon defined by these Route points, e.g. a rectangle defined by five points where the first and last are the same, will appear on the ATC screen; therefore, it is important to define it correctly. Due to the Route field not featuring a precision up to arc seconds, only minutes, the area defined must not exceed a precision of 1.8 kilometres (1 nautical mile) on a map of the Earth's surface. However, this will be enough for the ATC to know where the RPAS operation will take place and to measure the distance from it to other traffic equipped with transponders and visible on their radar screen.

Other types of nomenclature are also allowed for the Route (ICAO standard), such as distance and course to a VOR station or a specific point. Passing altitudes and times can also be entered in each point of the route, as in any other non-RPAS flight. If any alerts are issued by the ICARO XXI interface indicating that the route is incorrect, they can be ignored and you can proceed with creating the flight plan. Alternatively, we can omit the passing times in the route's points, which will avoid triggering these types of alerts.



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OTROS DATOS 18 INFO. SUPLEMENTARIA 19

GPV/OTROS DATOS

RFP: SEL: RVR:

PER: CODE:

EST: / : (hh:mm)

RALT:

REG:

DAT:

RIF:

OPR: DRONES MADRID, S.L.

COM:

NAV:

STS:

TYP: DRON RPAS MULTICOPTERO 4KG

DEP: CERRO DEL TELEGRAFO RIVAS VACIAMADRID

DEST: CERRO DEL TELEGRAFO RIVAS VACIAMADRID

ALTN:

EET:

RMK: OPERACION RPAS DE FILMACION SOBRE CERRO DEL TELEGRAFO

Razón de permanencia

STAYINFO:

Datos Adicionales

Valores

Clave	Valor
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ÍTEM 18 (Other Data): The following items must be filled in for RPAS operations.

- **DEP:** already mentioned in ITEM 13.
- **DEST:** already mentioned in ITEM 13.
- **OPR:** full name of the RPAS Operator responsible for the operation. It must match the one on the RPAS Operators list authorised by AESA.
- **TYP:** when entering "ZZZZ" as a type of aircraft in Item 9, this field must be completed clearly with the type of aircraft and its MTOM, which can be one of the following three:
 - DRONE RPAS MULTICOPTER MTOM
 - DRONE RPAS FIXED WING MTOM
 - DRONE RPAS VTOL MTOM
- **RMK:** this field should include everything related to the operational flight plan that can help identify its work zone, as well as the operation's progression. This field is limited to 400 characters in ICARO XXI and, additionally, there is an AFTN restriction of 69 characters per line..



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OTROS DATOS	18	INFO. SUPLEMENTARIA	19
: INFO. SUPLEMENTARIA			
Equipo radio de Emergencia:	<input type="text"/>	: Botes Salvavidas	
Equipo de Supervivencia:	<input type="text"/>	Nº: <input type="text"/>	Capacidad: <input type="text"/> Cubiertos: <input type="text"/>
		Color: <input type="text"/>	
Personas a bordo:	TBN	Tipo Chalecos: <input type="text"/>	Autonomía: 00 : 50 (hh:mm)
Piloto al Mando:	PATRICIA ALONSO		
Color y Marcas del avión:	BLANCO CON RAYAS ROJAS		
Observaciones:	TLF CONTACTO 676092522 x		

ÍTEM 19 (Supplementary Information)

The following fields must be filled in for this Item.

- **People on board:** enter a "0" in this field due to being an unmanned aircraft. Consequently, ICARO XXI will replace it automatically with TBN (to be notified).
- **Autonomy:** enter the total autonomy⁴ of the RPAS in "hh:mm" format.
- **Pilot in command:** name of the pilot in command of the RPAS.
- **OPR:** full name of the RPAS Operator responsible for the operation. It must match the full name used in its identification, in clear text.
- **Observations:** here we must include any other information associated with the operation, such as the contact telephone number of the RPAS Operator or of the RPAS operation's pilot, which should preferably be included in this Item, especially when the Aeronautical Safety Study, coordinated with the ATS service provider and/or, if applicable, the airport manager, specifies that the telephone be used as the contact method to apply any mitigation measures.



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OTROS TIPOS DE MENSAJE (CHG, CNL, DLA)

▷ GPV/Creación CNL	
▷ DÍA DE VUELO 28 / 01 / 19 (DD/MM/AA)	▷ Identificación exacta de los Destinatarios Destinatarios <input type="button" value="EDITAR"/> Identificación exacta de los Destinatarios <input type="button" value="EDITAR"/>
▷ IDENTIFICACIÓN DEL MENSAJE	
▷ TIPO 3 CNL	▷ INDICATIVO 7 ARCID: <input type="text"/>
▷ DATOS DE VUELO	
▷ Salida 13 ADEP: <input type="text"/> EOBT: <input type="text"/> : <input type="text"/> (hh:mm)	▷ Destino 16 ADES: <input type="text"/>

In addition to the FPL messages required to notify a Flight Plan, there are also other types of messages, such as Change-type (CHG), which allow changing some parameters of the FPL already entered and even accepted by the ARO; Delay-type (DLA), which allow delaying the starting time (EOBT) or whichever time is most convenient for the RPAS Operator when wanting to cancel the Flight Plan or replace it with another one with different parameters; and Cancel-type (CNL), which allow issuing a cancellation request by entering the original FPL's ARCID. Once cancelled, the system will allow entering a new FPL with the same Call sign as the one recently cancelled.