

# 2.3

## Transport Sector

**Isdefe** provides engineering and consulting services for the competent bodies involved in the regulation, supervision and provision of various transport services, promoting the acquisition of new technological capabilities, improved safety and optimised operating procedures.





## ■ Traffic management

We provide technical consulting services to manage the implementation and operation of traffic management support systems, providing technical assistance to national authorities in the areas of regulation and supervision, provision of technical services and safety audits.

**Ministry of Transport, Mobility and Urban Agenda / Secretariat of State for Transport, Mobility and Urban Agenda / ENAIRE**

Isdefe provides specialised air traffic management services to Enaire:

- » Specification and pre-commissioning testing of the new version of the Automated Air Traffic Control System, SACTA-iTEC 4.1.
- » Commissioning of new versions, updates, functionalities and formats of air navigation systems.
- » Implementation of operational safety activities, SW assurance, quality management, documentation and training, associated with the development of systems
- » Performance of activities to ensure compliance with the Single European Sky directive, for the new systems and changes thereto.
- » Support in the management, control and technical and financial monitoring of the projects subsidised by ENAIRE (CINEA, PRyR, SESAR, etc.)
- » Support to the plan to develop the ENAIRE Network Systems Management Centre (SYSRED)

## 2. OUR AREAS OF ACTIVITY

- » Commissioning and staffing of the iTEC V3 Programme Air Traffic Management for the specification and development of the SACTA 5 system.
- » Participation in the development of the EUROCAE ED-133 standard, "Flight Object Interoperability"
- » Updates and improvements to ENAIRE's Voice and Data Network (REDAN).
- » Commissioning of the Voice over IP Communications System (COMET) as a contingency system at the Madrid Control Centre.
- » Commissioning of version 4.0 of the SACTA system in the control centres and main control towers on the mainland and the Balearic Islands.



### Ministry of Transport, Mobility and Urban Agenda / Secretariat of State for Transport, Mobility and Urban Agenda / Civil Aviation Directorate General (DGAC)

Isdefe collaborates with the DGAC to:

- » Define of the policy for the sector, set public prices, access for new operators and other public service obligations.
- » Prepare studies and proposals on policy and strategy in air navigation, coordinate Spain's position on civil aviation with national and international bodies, and monitor and implement the Single European Sky and its inclusion, as well as the European innovation programme SESAR 3, in national regulations.
- » Technical support to the Civil Secretariat of the Interministerial Commission for Defence and Transport, Mobility and the Urban Agenda (CIDETMA).
- » Support in the office of the Universal Safety Oversight Audit Programme (USOAP), whose ultimate goal is to promote global aviation safety through regular audits of safety oversight systems in all member states of the International Civil Aviation Organization (ICAO).

**Ministry of Transport, Mobility and the Urban Agenda / Secretariat of State for Transport, Mobility and the Urban Agenda / National Aviation Safety Agency (AESA)**

- » Collaboration in the inspection tasks to ensure compliance with operational safety regulations by air navigation service providers, air transport operators and aviation personnel.
- » Consultancy activities aimed at the continuous improvement of aviation safety (analysis of proposals to restructure airspace, reports of flight path diversions, operational safety assessments, revision of future European regulations, supervision of technical documentation, preventive planning, etc.)
- » Submission to the DGAC's USOAP Programme Office of the State responses to the Amendments to the ICAO (International Civil Aviation Organization) annexes, and submission of responses to the European Aviation Safety Agency (EASA) regarding the compliance checklists of ICAO Annex 4 (Aeronautical Charts).





## ■ Transport hubs

We support the authorities of transport management and control centers, both in the airport and port sectors, in their activities involving the specifications of information systems, verification, validation and certification of applications and equipment, systems to aid in decision-making, and we help them to develop and implement strategies to protect transport systems and facilities.

### Ministry of Transport, Mobility and Urban Agenda / Secretariat of State for Transport, Mobility and Urban Agenda / AENA

Isdefe provided technical support for activities associated with the Strategic Plan and the Operational Plan for Information Systems.

Collaboration through support services for air navigation projects:

- » Approval tests for all the equipment of the new Biometrics Framework Agreement.
- » Specification and testing of Collaborative Decision Making (CDM) procedures in the Airport Environment Cooperative System (SCENA), as well as its integration with Enaire's Automated Air Traffic Control System (SACTA).
- » Support in the definition of the necessary functional requirements that will allow Aena to operate certain airports in its network such as AOP-NOP (Airport Operations Plan-Network Operations Plan) airports, and coordination with several airports and Eurocontrol to certify them as an advanced tower.

- » Assistance in preparing the technical documentation to procure systems and services (platform for Big Data, Governance and Operation of Cybersecurity, 24/7 Systems Management and ICT field equipment, etc.).
- » Support in managing the framework agreements that provide the basis for the acquisition and installation of ICT infrastructure equipment, Data Processing Centre and airport security equipment, for the entire airport network.
- » Support to the Information Systems Plan for the Northeast Airport Group of Brazil, including the functional analysis of the operational systems to adapt them to the specific conditions of the airports in the group.

Isdefe provided technical support with mechanisms to track technological trends and innovation initiatives in the airport sector, in order to improve the efficiency of facilities, the quality of services provided, and optimise revenue. Of note are:

- » The pilot boarding projects using facial recognition at the Josep Tarradellas Barcelona-El Prat Airport, drones at Ceuta Airport to track wildlife in the area, and the remote control of jet bridges at the Seville Airport.
- » Conceptualisation, design and launch of acceleration processes by Aena Ventures, the programme that will promote initiatives that develop disruptive technologies in an innovative, sustainable and efficient manner to provide solutions to the current and future challenges facing the air transport sector.

Isdefe participated in the analysis to improve the strategy for the operation and maintenance contract of the Automated Baggage Transport System (SATE) at the Adolfo Suarez Madrid Barajas Airport.



Ministry of Transport, Mobility and Urban Agenda / Secretariat of State for Transport, Mobility and the Urban Agenda / Civil Aviation Directorate General (DGAC) and National Aviation Safety Agency (AESA)

Collaboration in the implementation of the **National Civil Aviation Security Programme (PNS)** in every airport in the national network, by:

- » Carrying out audits, inspections, tests and simulations at the different airports to ensure compliance by airport service providers with the physical security programme.
- » Development of the National Civil Aviation Training Plan (PNF).

Participation in updating the National Civil Aviation Security Plan and in organising the meetings of the National Security Committee.

Collaboration in inspection tasks to ensure compliance with the operational safety regulations by airport managers and aviation personnel:

- » Operational safety inspection of public-use airports.
- » Ongoing oversight of airport certification.
- » Preparation of the Post-COVID Airport Operational Safety Inspections Protocol.
- » Inspections of Ground Handling Agents.

Consultancy aimed at continuously improvement the security of airport environments:

- » Check of aviation easements and control of obstacles to air navigation in areas surrounding airport environments.
- » Study of authorisations for changes to the facility, operating procedures and/or organisation of airports.

Analysis of requests from companies or individuals who need authorisation to carry out activities (pyrotechnics, drone flight, captive balloons, etc.) within airport airspace.





## ■ Advanced concepts

We took part in the development of new concepts and technologies in the area of transport operations, supporting the development and introduction of regulations, promoting multimodal operations, the implementation of transport operations based on satellite navigation (GNSS), and providing technical support for the integration of unmanned aerial systems (RPAS) in unsegregated airspace.

### European Union / Single European Sky Joint Undertaking (SESAR-JU)

Coordination of the "U-Space Separation in Europe" (USEPE) project funded by SESAR, whose objective is to propose and validate solutions for the safe separation of drones in urban environments. The Consortium consists of seven partners from four countries, and the project seeks to provide separation using Machine Learning techniques while taking into account the special climatic conditions present in cities (mainly turbulent wind shear).

Collaboration within the framework of the "IFR RPAS Control in Airports and TMA" (INVIRCAT) project, funded by SESAR, whose objective is to provide means for the safe and efficient integration of RPAS (remotely piloted aircraft systems) into existing air traffic control (ATC) procedures and facilities within terminal manoeuvring areas (TMA) under instrument flight rules (IFR).

Participation as a Linked Third Party of ENAIRE in the SESAR 2020 PJ13 ERICA project, "Enable RPAS Insertion in Controlled Airspace", to analyse the capabilities of the system, both of the RPAS, as well as of the ATM service and the currently established procedures, so that the RPAS can operate safely, in nominal and emergency situations, in controlled airspace (classes A-C). Also for the development and validation of solutions that do not have a negative impact on manned air traffic.



### European Union Agency for the Space Programme (GSA)

In 2021, in line with the new EU Space Regulation and the increasing role of space in supporting EU priorities in terms of growth, competitiveness, sustainability and security, the EU decided to extend the scope of the former European GNSS Agency (GSA) to include new responsibilities. As a result, the European Union Agency for the Space Programme (EUSPA) was created on 12 May.

Isdefe has been supporting the GSA, now EUSPA, in the development of applications and the operational implementation of European navigation services (EGNOS, Galileo) and ground observation services (Copernicus) in civil aviation and drones. With regard to Galileo's Search and Rescue (SAR) service, it contributed to the development of the operational concept and standards for the remote activation capacity of emergency radio beacons (EUROCAE ED-277 MASPS for Aircraft ELT Remote Command via RLS).

In the field of drones, Isdefe participated in the development of guidance material for the use of GNSS in operations of the specific category (EUROCAE ED-301 Guidelines for the use of Multi-GNSS Solutions for UAS-Specific Category – Low Risk), as well as in the coordination and analysis of deliverables on in-flight tests of drones carried out in projects such as GAUSS and REALITY.

Various activities were conducted for EUSPA (formerly GSA) in support of the Galileo and EGNOS programmes, and strategic consulting was provided in the following areas of activity:

- » Environmental aspects supported by GNSS and Copernicus.
- » GNSS and Copernicus in aviation.
- » GNSS for drones.
- » GNSS in Search and Rescue (SAR).

