



Dedicated to innovation in aerospace

AEROSPACE OPERATIONS DIVISION

AIR TRAFFIC MANAGEMENT & AIRPORTS

# Airspace design and instrument flight procedures design

PRODUCTS & SERVICES



We take into consideration safety issues,  
as well as capacity and environmental issues

Safety plays an important role in airspace design, aeronautical studies and flight evaluation. For airspace and flight procedures, NLR can assist you covering the whole range of design, second opinion, validation and inspection. Whatever question you may have, we will be able to provide you with an advice or product with the highest quality and accuracy.



## All designs, assessments and verifications are performed using state-of-the-art tools

### THE SERVICES NLR IS ABLE TO PROVIDE ARE:

- **Airspace design**, to create new airspace structures, e.g. TMA, CTR or sectors, as well as modifying existing ones according to the user/customer needs and requirements.
- **Obstacle evaluation**. Aeronautical studies to assess the influence of natural and man-made objects. Evaluation can be performed for a single object (e.g. a temporary crane or a building) or for clusters of obstacles (e.g. wind parks). These studies may be some cases required by Civil Aviation Authorities to obtain permission to locate a new object.
- **Design of instrument flight procedures**, both conventional and PBN procedures according to ICAO PANS-OPS standards, PBN and RNP procedure design manuals. This service includes any flight phase, i.e. SID, STAR and approach and any method of navigation and navigation aids, i.e. VOR, ILS, baro-VNAV, GNSS based (LPV, GBAS, SBAS), etc.
- **Second opinion/verification regarding flight operations** concerning the design, ATC, capacity issues, environmental issues and safety issues.
- **Second opinion regarding airspace design** concerning the design, flight operations, capacity issues, environmental issues and safety issues.
- **Ground validation of flight procedures**, which consists of reviewing the entire instrument procedure package by an expert in procedure design and flight validation issues.
- **Flight validation and flight inspection** of instrument procedures to ensure that the appropriate radio navigation aids adequately support the procedure. Flight validation involves the verification of all obstacle and navigational data, verification of the required infrastructure and the assessment of the charting and the flyability of the procedure.

NLR has the unique in-house capability to perform a feasibility assessment of the desired solutions through real-time and fast-time simulations. Safety, environment, human factors, efficiency and capacity are checked before we design the final routes and procedure according to the appropriate legislation.

### FEATURES

In order to provide the most accurate results, all designs, assessments and verifications are performed with the use of FPDAM (Flight Procedures Design & Airspace Management) software provided by Italian engineering system technology company - IDS Ingegneria Dei Sistemi. FPDAM is the leading flight procedure design tool on the market.