



# CONSULTANCY OFFICE

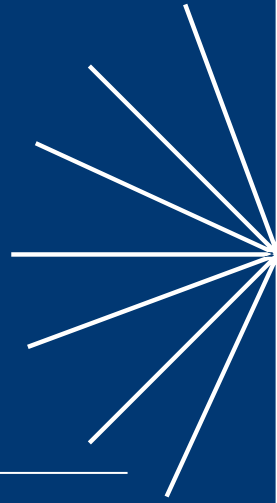
*Since 2013*



Founded by



# SUMMARY



01

---

ABOUT US

02

---

AVIATION SAFETY

ICAO Standards Compliance Safety Oversight -  
Capacity building  
METEOR - The Safety Oversight platform  
Safety Management System

03

---

AIR TRANSPORT ANALYSIS

Air Transport Data (ATD)  
ATD Analytics

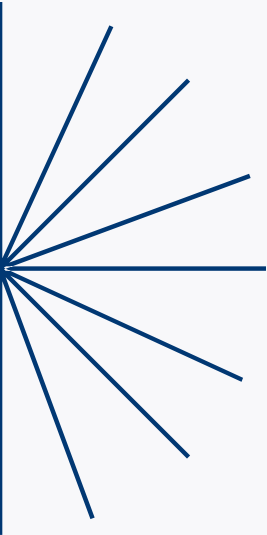
04

---

AIR NAVIGATION AND OPERATIONS OPTIMISATION

Sustainable Airspace Design with DIADEME  
ELVIRA® - Safety & Environmental management Tool  
AFIS and General Aviation Airfields  
Flight Inspection  
Calibration using a Drone  
Operational Training, ATC Supervisor Training

# ABOUT US



To serve the balanced development of a sustainable and resilient Air Transport.

Founded by the Direction Générale de l'Aviation Civile (DGAC) and the Ecole Nationale de l'Aviation Civile (ENAC), FRACS is the expertise and consultancy office of the French civil aviation.

FRACS provides worldwide consultancy services, and operational solutions to aviation clients : civil aviation authorities, airlines, air navigation services providers, airport authorities.

FRACS' domains of expertise are: regulation and safety oversight, Air Transport Data Analysis, ATM operations optimisation, innovative solutions and operational training to meet ICAO and EASA standards, reach capacity building strategic goals and reinforce operational performance.

The company relies on 11,500 experts operating on the five continents mostly in the fields of air traffic control, certification, supervision and regulation.

Our experts are in-house professionals and provide on-demand consultancy. They have an extensive experience in international affairs through their participation in projects and high-level committees (ICAO, CANSO, EUROCONTROL).

For more information, please consult our website on [www.fracs.aero](http://www.fracs.aero)

# AVIATION SAFETY

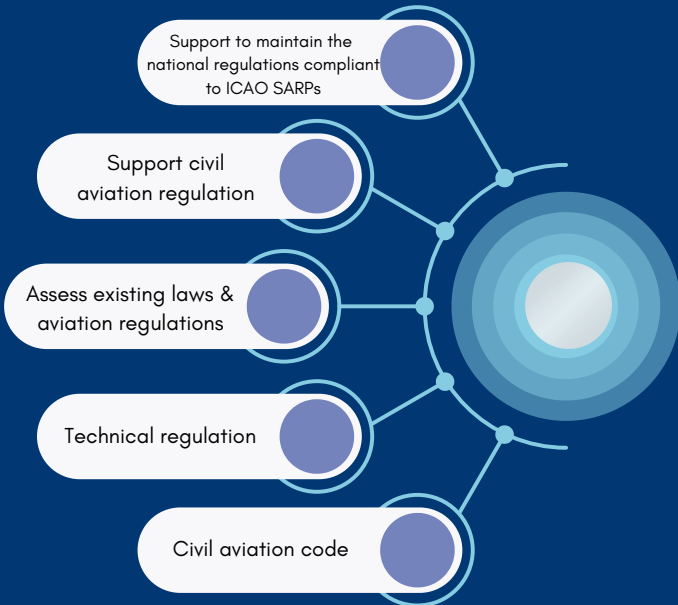
## ICAO Standards Compliance

Maintain regulation in line with ICAO Standards

### YOUR NEEDS



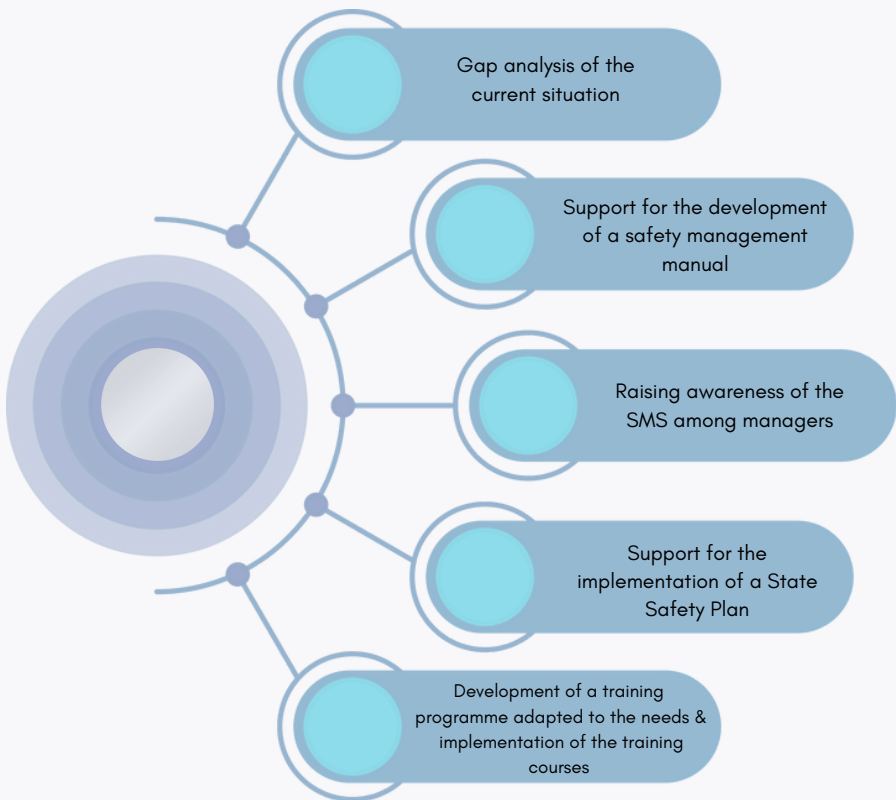
### OUR OFFER



# AVIATION SAFETY

## Safety Management System

Design, improve and implement an ICAO compliant SMS  
A tailor-made support at each stage



# AVIATION SAFETY

## Safety Oversight - Capacity Building

Support implementation of an effective, high performing safety system



### INSTITUTIONAL FRAMEWORK

Support for a better organisation of the Civil Aviation Authority to fulfil its safety oversight obligations

Support to help to set up an operators safety oversight plan and associated procedures

### INSPECTOR'S ACTIVITIES

Development of adapted material needed to conduct surveillance audits: surveillance manuals, checklists...

Tailor-made training for the inspectors(Theoretical and OJT)



# AVIATION SAFETY

## METEOR - The Safety Oversight Platform

### Main functionalities

Managing document exchanges

Certificate requests, derogations, approvals...

Discussions on surveillance acts

Audit preparation, planning of dates, reports

Discussions on surveillance acts

Submission of corrective action plan...

Communication

General information to the organisation, dashboards, FAQ

### METEOR in short



### How does it work?

METEOR is an **online platform** accessible via any browser

**No** software or hardware **installation**

No technical administration

The application is **adaptable** to your organization

Data is stored on a **secure server**.



# AIR TRANSPORT ANALYSIS

## Air Transport Data ATD Analytics

Check the Past - Predict the Future



### 3 DATA BASES

#### Airlines

Detailed information from around the world since 1980: traffic data, financial results and fleets

#### Airports

3,000 airports worldwide, collected from various sources since 1970: passengers, aircraft movements, freight

#### Traffic flows

Country-to-country and city-to-city data for over 193 countries since 1970



**3,000** AIRPORTS

**200** COUNTRIES

**600** AIRLINES

**40 - 50** YEARS FOR THE OLDEST

Collected from different sources, including our own surveys

Annual subscription to one or more domains

Data upon request services

“

*Quick access to reliable data is paramount to VINCI Airports' traffic analysts. This is why we regularly rely on the databases provided by France Aviation Civile Services. We are very satisfied with the responsiveness of their team and the quality of the data provided.*

VINCI Airports

”

# AIR TRANSPORT ANALYSIS

## Air Transport Data

### ATD Analytics

Check the Past - Predict the Future

Acces and analyse the worldwide traffic on the web

We developed ATD Analytics e-platform to support analysis of the current traffic, based on ATD "traffic flows" database.



Passenger, Movements and  
Cargo traffic

Yearly passengers worldwide  
from 2010

Monthly Passenger, Movements,  
and Cargo traffic from January  
2019



Historical data since **2010**  
**Collected** and not calculated data  
**Analysis** and **comparison** mode  
Available **24/7**  
New type of **graphs**  
Based on the **traffic flows** bases

“

*The Route Development Department at Montpellier Méditerranée Airport has been using ATD Analytics since late 2022. The tool easily provides insights into traffic flows for most air routes from French airports, with a historical data range spanning several years for most markets. Comparing volumes is made possible through simple queries. We are fully satisfied with the tool and wholeheartedly recommend it.*

**Montpellier Méditerranée Airports**

”



# AIR NAVIGATION AND OPERATIONS OPTIMISATION

## Sustainable Airspace Design with DIADEME

What is DIADEME ?

An innovative and forward-looking tool developed by FRACS to meet customer expectations. DIADEME is a fully collaborative and online platform. DIADEME is a tool used to optimise monitoring of airspace performance: Safety, Capacity, Noise, Gas emissions



Support for Sustainable Airspace Design and Optimisation

Performance Analysis  
Safety, Capacity, Environment

Remotely accessible  
Interfacable with external tools  
Adaptable

Usable for experimentations,  
demonstration or training purpose

CONOPS definition

Safety Studies

Operational  
documentation  
update

Fast-time & Real\_time  
Simulation (FTS & RTS)

Simulator Training  
& OJT

A COMPREHENSIVE APPROACH  
FROM GAP ANALYSIS TO  
IMPLEMENTATION



# AIR NAVIGATION AND OPERATIONS OPTIMISATION

## Sustainable Airspace Design with DIADEME

NEW CONCEPTS

REAL CHANGE MANAGEMENT AND KNOWLEDGE TRANSFER

PBN, RNAV & unidirectional routes

Free Routes

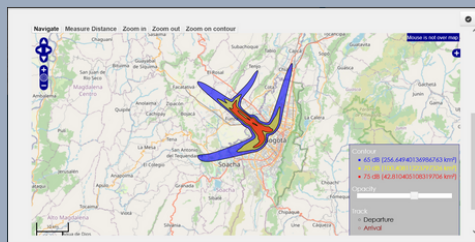
Continuous Climb & Descent Operations (CDO & CCO)

Flexible Use of Airspace

Customised approach

Fully integrated team

Awareness program for all stakeholders



### OUR MOST RECENT ACHIEVEMENTS

#### COLOMBIA

14 viable operational scenarios  
Deliver new concept of operations

#### BOLIVIA

Migration from procedure to radar control  
Maximise benefits of new Radar

#### SUDAN

New Airspace  
Safer / Efficient / Cost Effective / with increased environmental performance

#### VIETNAM

GAP Analysis  
New concept of operations  
Efficiency and capacity gains

# AIR NAVIGATION AND OPERATIONS OPTIMISATION

## ELVIRA® the Safety & Environmental management Tool

ELVIRA® is an automated Tool to :  
Record, Replay and Analyse  
Air Traffic  
with Communication records



### 1 Detect & Analyse

- Loss of separation / safety nets
- Runway incursion
- Non-compliant approach
- Aircraft counting

**1**

### 2 Optimise Environment

- Continuous descent operations
- Environmental protected volumes
- Dispersion envelopes

**2**

### 3 Monitor Sensor's Performance

- Sensors' validation
- A-SMGCS reliability and accuracy in operating conditions

**3**

### 4 Analyse your Performance

- Automatic Reports
- In-depth Analysis

**4**

### In-depth Analysis

- Immediately & Remotely
- Accuracy & Reliability
- Time & cost saving

### ELVIRA® is :

- Easy to use & to install on each PC
- Available in English and French

### A user community

- Continuous improvement

# AIR NAVIGATION AND OPERATIONS OPTIMISATION

## ELVIRA® the Safety and Environmental management Tool



“

*My team is enthusiastic to use ELVIRA® for A-SMGCS analysis.*

*ELVIRA® is very useful to calculate the performance of new A-SMGCS systems, independent from the radar manufacturer, both during commissioning and in operation.*

**Skeyes, Radar Surveillance Supervisor,  
Belgium**

*ELVIRA® is the centerpiece of Safety Management System in France and of Environmental Analysis and Studies.*

**DSNA, CDG Airport, Safety Manager,  
France**

”



# AIR NAVIGATION & OPERATIONS OPTIMISATION

## General aviation Airfields

### OUR OFFER

We offer to take on the role of your **SMS manager** and be responsible for the tracking of **regulatory conformity**. We provide **training to maintain your skills**, either face-to-face or remotely with highly experienced experts. We carry out **audits SMS, ANSP**, etc... and accompany you in the search for the right corrective solutions and conforming with regulations.



### OUR REFERENCES

Wallis & Futuna airfield

Amiens airport

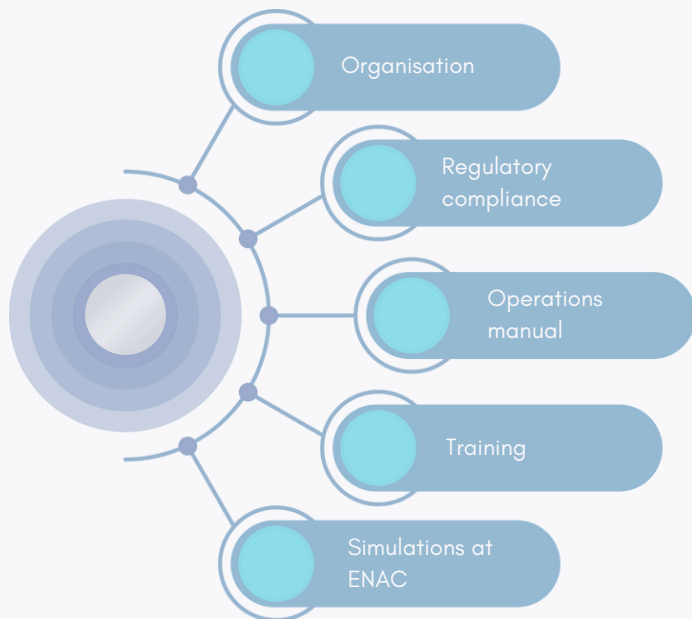
Vannes airport

Candillargues airfield

# AIR NAVIGATION & OPERATIONS OPTIMISATION

## Focus AFIS

IMPLEMENTATION OF A FULL  
AFIS PROVISION STRUCTURE



Tailor-made Solutions

**FRACS & ENAC** are committed to providing you with efficient and flexible on-site solutions to meet **your needs** and to comply with **ICAO** and **National** or **Regional** regulations.





# AIR NAVIGATION & OPERATIONS OPTIMISATION

## Flight Inspection

### OUR OFFER

With DSNA, the French ANSP, we propose flight inspection services of ILS, VOR, DME, TACAN and GNSS, VHF, UHF, radar, PAPI and RF jamming search, with 2 Beechcraft 200.

The team gathers more than 1 900 hours flight inspection / year.



High accuracy  
positioning system

Ground assistance  
to optimise equipment  
settings

Efficiency and  
reliability

ICAO compliance

Knowledge  
transfer



**Benefit** from our Flight inspection services  
Embark your engineer in the Beechcraft 200  
during the flight inspection

# AIR NAVIGATION & OPERATIONS OPTIMISATION

## Flight Inspection

OUR OFFER AND REFERENCES



Flight inspections



Training Activities



“

*OACA praises the professionalism of the crew members.*

*OACA appreciated the systematic presence of an inspector on the ground, facilitating exchanges between OACA maintenance teams and the crew in order to optimise equipment settings.*

**OACA, Director of Air Navigation Equipment, Tunisia**

”



#Safety #Environment #Playback #Accuracy

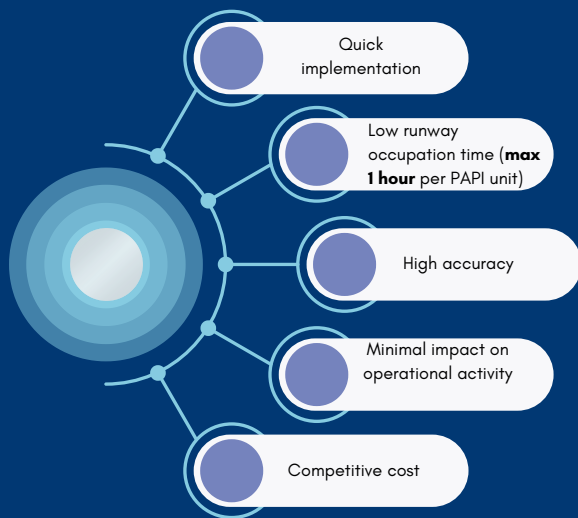
# AIR NAVIGATION & OPERATIONS OPTIMISATION

## Calibration using a Drone

A SIMPLE, EFFICIENT AND COMPETITIVE SOLUTION

FRACS offers you an innovative method THE DRONE, approved by STAC for PAPI Calibration

Automatic detection of the color transition in real time, by image processing algorithms **Advantage: Allows real-time adjustment of the PAPI**



A tailor-made offer that adapts to your structure and needs: either through the provision of services, or through the implementation of a turnkey solution.

our approach: we design your customized project together.



“

*"We appreciated the professionalism and the good mood of your two technicians."*

**Cédric DE BOYSSON, Technical Manager**

Tarbes Lourdes Pyrénées aéroport

”



Drone equipped with **ADS-B RTH auto**

Visual flight within the SI scenario  
Drone evolution **area adjustable**  
Drone and **fragible** material

# AIR NAVIGATION & OPERATIONS OPTIMISATION

## Operational Training, ATC supervisor Training

Leading edged theoretical and operational training thanks to an ENAC + FRACS cooperation

Management of psychological and relational aspects

Current technical knowledge standards for supervisor systems in use

The latest updates to aviation law, search and rescue procedures, air traffic flow and capacity management ATFCM, Collaborative decision-making (CDM), dynamic airspace management

Cross-cultural awareness training (ATCo - ATSEP) to enhance operational room / technical supervision coordination

Management of emergency procedures and unusual situations

In partnership with



# AIR NAVIGATION AND OPERATIONS OPTIMISATION

## Operational Training, ATC supervisor Training

### OUR OFFER

3 customised training courses : Initial, Refresher and Advanced designed to meet ongoing as well as future demands

The courses can be delivered on-site or at ENAC headquarters in Toulouse, France with a visit from a French Area Control Centre.



INDONESIA

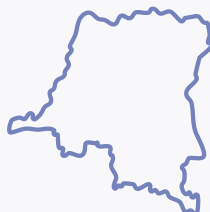
SUDAN



DEMOCRATIC  
REPUBLIC OF THE  
CONGO



SAUDI ARABIA



Organisational **diagnosis** & **Creation** of an organisational blueprint for **customised** training.

Specific exercises like the **Supervisor Manual Customisation** Workshop

This level of design detail has paid off immensely for trainees.

“

*The training is a success thanks to the complementarity between the excellence of ENAC pedagogy and high-level expertise of FRACS.*

**Deputy Director of Kinshasa-Ndili International Airport,  
Democratic Republic of Congo**

”

# OUR PERMANENT TEAM



Marc ALVAREZ  
Project Manager  
marc.alvarez@fracs.aero



Jean-Pierre ASSEMAT  
ATD Manager  
jean-pierre.assemat@fracs.aero



Théo CASTEX  
ATD Sales Representative  
theo.castex@fracs.aero



Clémence CHAMBAUD  
Database administrator  
clemence.chambaud@fracs.aero



Elodie de CAZENOVE  
Chief Operational Officer  
elodie.de-cazenove@fracs.aero



Marie JAIL  
Project Manager  
marie.jail@fracs.aero



Mélanie ROQUEFERE  
Project and expert coordinator  
melanie.roquefere@fracs.aero



Morgan SIMORRE  
ATD Expert  
morgan.simorre@fracs.aero



Andréa VAYSSE-GARCIA  
Administrative Executive  
andrea.vaysse-garcia@fracs.aero



Audrey WEIGEL  
Financial Director  
audrey.weigel@fracs.aero



Farid ZIZI  
Executive Director  
zizi.farid@fracs.aero

## CONTACT

7 Avenue Edouard Belin  
31400, Toulouse  
(+33) 5 62 17 45 64  
contact@fracs.aero

[www.fracs.aero](http://www.fracs.aero)

  @fracs\_aero

