AIR TRAFFIC & NAVIGATION SERVICES

ATNS

ATNS PRODUCT BROCHURE

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About ATNS

ATNS

Air Traffic and Navigation Services SOC Limited (ATNS) provides air traffic, navigation, training and associated services within South Africa. ATNS is responsible for approximately 10% of the world's airspace via Air Traffic Control throughout South Africa and a large part of Southern Indian and Atlantic Ocean.

Vision

Be the **preferred supplier** of Air Traffic Management solutions and associated services to the African Continent and selected international markets.

Mission

Provide safe, expeditious and efficient Air Traffic Management solutions and associated services.

ATNS operates from nine ACSA and 12 other aerodromes. As a globally competitive employer of choice, ATNS is committed to diversity and has achieved ranking within the top 10 companies in South Africa with regards to female representation at executive levels.


System
Position
Radar
2016 / 11 / 24
12:07:56
TIMER 1
PLOT
VEL
SRP
HIST
SSR All
Label
Normal
PROACTIVE
ZSSBI
PREA 5654
1215
130

Billings and collections management

ATNS operates from nine ACSA and 12 other aerodromes. As a globally competitive employer of choice, ATNS is committed to diversity and has achieved ranking within the top 10 companies in South Africa with regards to female representation at executive levels.

Billing and collections management allows all players in the aviation industry, excluding airlines, to accurately and effectively receive their fees for a variety of customisable services. These include tariff collection, movements, distance, weight, aircraft type, country and more.

We understand your business and do not place any restrictions on how you utilise your money – in fact, we never touch the fees; we simply assist you with the billing and collection.

As an ANSP, ATNS has the most up-to-date infrastructure, which allows us to monitor all movements. Simultaneously, our relationships with users are such that we can collect tariffs accurately and timeously, allowing you to compete in the marketplace, enable better planning and adequately fund your operations.

Air Traffic Flow Management

Air Traffic Flow Management (ATFM) is a service offered by ATNS to **contribute to a safe, orderly and expeditious flow of air traffic**. ATFM aims to balance the expected traffic demand against the available capacity.

ATNS's Central Airspace Management Unit is responsible for a number of services including Air Traffic Flow Management (ATFM), Flexible Use of Airspace (FUA), Aeronautical Information Management (AIM), as well as managing Airport Slot Coordination.

Air Traffic Flow Management:

- Balances the traffic demand against the available capacity of any given airspace at any given time.
- Allows for the available capacity of airspace sectors and routes to be accurately and properly managed.
- Contributes to the minimisation of congestion and smooth air traffic flow Air traffic flow and capacity management has become a vital part of Air Traffic Management in exploiting the full capacity of the air transport system without running the risk of infringing on the safety caused by overload situations.


MAFIKENG
O.R. TAMBO
HARTBEESFONTEIN
RENOSTERKOP
LEEUKOP

Benefits of Air Traffic Flow Management

To ensure ATFM is functioning properly, ATNS's Central Airspace Management Unit works in conjunction with airlines and Airport Slot Coordination in **planning traffic six months in advance**, which entails collaborative decision making involving stakeholders. Currently ATNS is the only ASP on the Continent with such a service, and can provide this service to any Air Navigation Service Provider (ANSP) or aviation company.

The benefits of ATFM include:

Alleviation of congestion and delays

Reduction in holding, reduced fuel burn and greater efficiency

Efficient flight planning

Smoother flow of air traffic


GRAND CENTRAL

WGS-84 Surveying and Obstacle Evaluation

The World Geodetic System of 1984 (WGS84 provides the aviation industry with a standard coordinate reference framework for the Earth ensuring and accurate database of information that is the base for all charting, obstacles evaluation and Instrument Flight Procedure design.

The ATNS Survey team has the infrastructure and equipment to conduct WGS-84 Aerodrome and Obstacle Surveys that meet or exceed the minimum accuracy requirement in accordance with ICAO Standards and recommended practices, taking into consideration customer requirements.

ATNS also provides consultations services, as well as raw data for proposed development that may interfere with the safe air navigation service provision

Evaluations of proposed or existing structures and developments are conducted in terms of:

- Protection of navigational aids (Radar, ILS, VOR, Communications etc) including the impact on the signal in space
- ICAO Obstacle free surfaces
- All Instrument Approach Procedures

ATNS is able to provide WGS-84 and Obstacle Evaluation Services withain South Africa and a full, up-to-date and accurate service outside the country.

By integrating high-tech survey techniques, from field surveys to software postprocessing, highly comprehensive reports have been generated. These reports and data sets can also be **tailor-made to suit client requirements** through the provision of a wide range of CAD and GIS formats.

Airspace Design

The demand for navigable airspace is ever increasing. As the aviation industry grows, more aircraft use the available airspace, and more routes are required but air traffic needs to be accommodated in a finite amount of available airspace. Airspace design provides the solution by working to **design more efficient routes** that **maximise the available space safely and efficiently**.

Airspace design at ATNS

Within ATNS, our systems have grown to a point where we can effectively create more clearly defined routes within available airspace. ATNS's airspace design function plans towards the future, with the aim of creating **sustainable airspace management** and **ensuring safe and efficient air traffic management** for decades to come.

We can provide other Air Navigation Services Providers (ANSPs) with an airspace design service, or with assistance in reaching the required levels of competence to implement Performance-based Navigation (PBN).

In support of the ICAO PBN roadmap, ATNS is currently ahead of requirements and can provide conventional as well as purely satellite-based navigation services to all aircraft that are appropriately equipped.

Airspace Design

ATNS offers, among others, the following airspace design services:

- Educating the region about implementation and exploring options to meet PBN demands.
- Assisting with implementation of PBN.
- Aroviding consultation services.
- Airspace review to accommodate future traffic growth.
- Assisting with reviewing existing airspace.
- Future planning for increased air traffic capacity.

Safety and innovation in airspace design

Airspace design allows airspace routes to be pre-defined, leading to a reduction in conflict. Applying the PBN concept, aircraft are assigned to designated routes allowing airlines and ANSPs to **move away from the traditional navigation routes**, which were limited and restricted to following ground-based beacons. Simultaneously, it is possible to better monitor significantly more routes and aircraft, as the **satellite technology allows for clearer visuals and more accurate monitoring**.

ATNS is currently at the forefront of technological development, systems and procedures, as we possess the **most up-to-date technologies**. Our flagship project in terms of PBN and airspace design exists at King Shaka International Airport, where all equipment, procedures and training is in full compliance with the ICAO PBN roadmap and satellite technology.

Centralised Aeronautical Database (CAD)

Central Aeronautical Database (CAD)

CAD is a centralised, digital secure repository for aeronautical information.

It provides registered users with access to aeronautical information which is **integrity and quality assured** to facilitate safety of air navigation.

About CAD

Part of our mandate has been to transition from the traditional paper product-centric AIS system to a data-centric Centralised Aeronautical Information Management System (CAD), allows all systems to function smoothly and in conjunction with one another.

In keeping with the ICAO AIS to AIM Roadmap, ATNS has acquired a system similar to the European AIS Database (EAD) which is currently used by Eurocontrol and the European ATM community. In this way, we can ensure that South Africa, and in time the whole of Africa, is aligned with global technologies and initiatives.

CAD applications

CAD Basic

Web-presence for airline operators, pilots and the general aviation public. Users can log into the CAD system via Internet Explorer where they can extract the information they need directly.

SDO Static Data Operation

User-friendly interface allowing for easy insertion of information into the database.

GT Graphic Tools

GIS visualisation of static and dynamic aeronautical information and airspace design.

smart AIP

Aeronautical Information Publication.

PAMS Published AIP Management System

(document management system for aeronautical documents and charts):

A library of all aeronautical documents (AIC's, supplements, AIP's and AIP amendments). All countries loaded into the CAD can be found and accessed with ease.

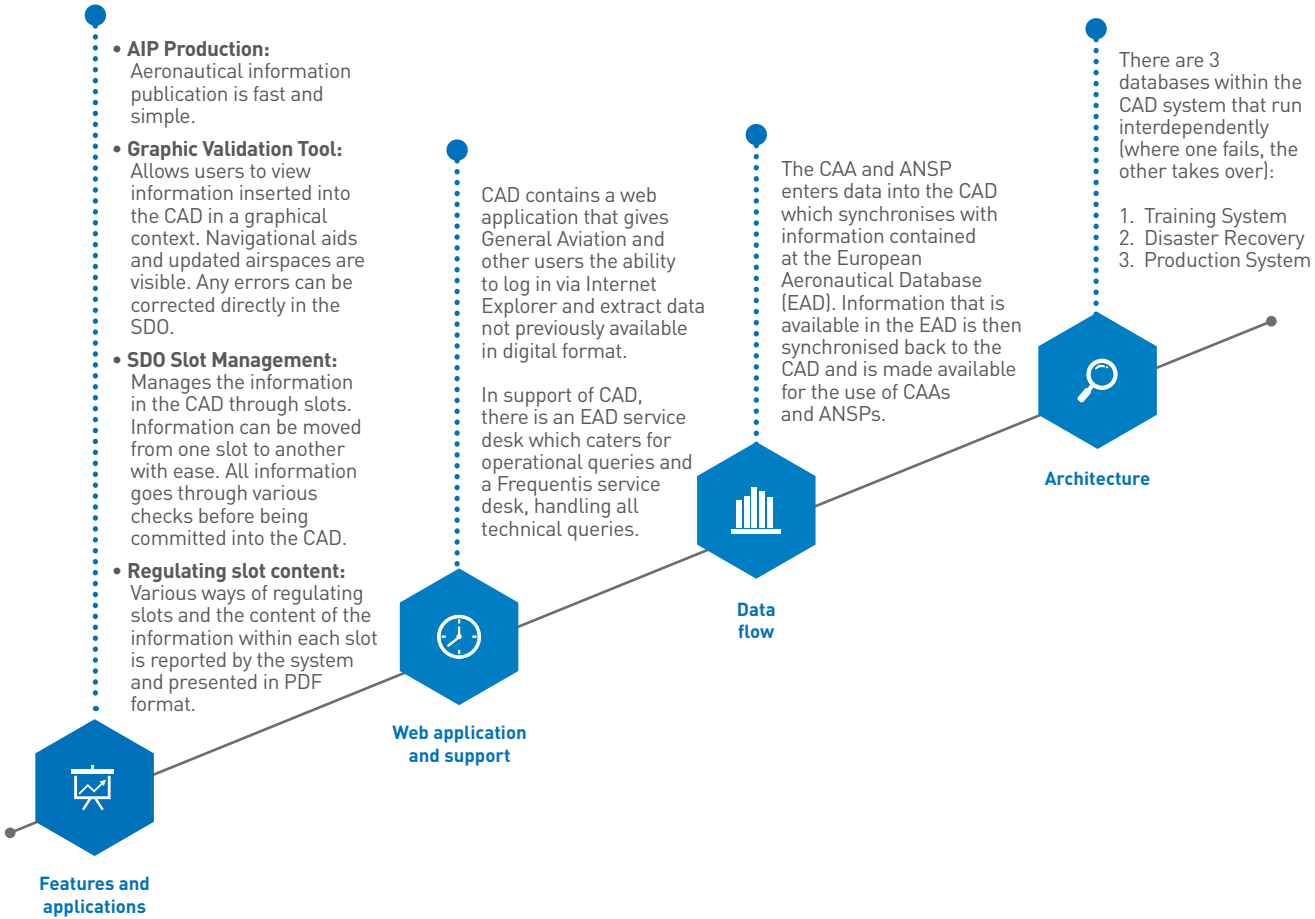
Smart Charting

Aeronautical Chart Production.

CAD Basic

Allows users to integrate into the CAD system with new/existing systems.

CAD architecture and features




Innovative, transformative
and sustainable
AIR TRAFFIC & NAVIGATION SERVICES
ATNS
INTERNATIONAL

Information sharing is no longer confined to specific systems and can be defined to other aviation subsystems using the appropriate exchange model.

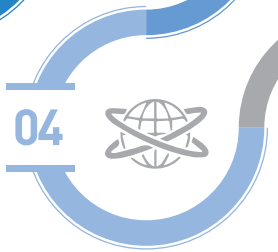
Instant access to aeronautical data not previously accessible in digital format (topographical and obstacle data) through a direct network connection or through an internet-based interface.

A database of validated Statistic Data (aerodromes, NAV-aids and routes).

Reporting functionalities and upload and download management for aeronautical data.

Application of multiple rules for data validation.

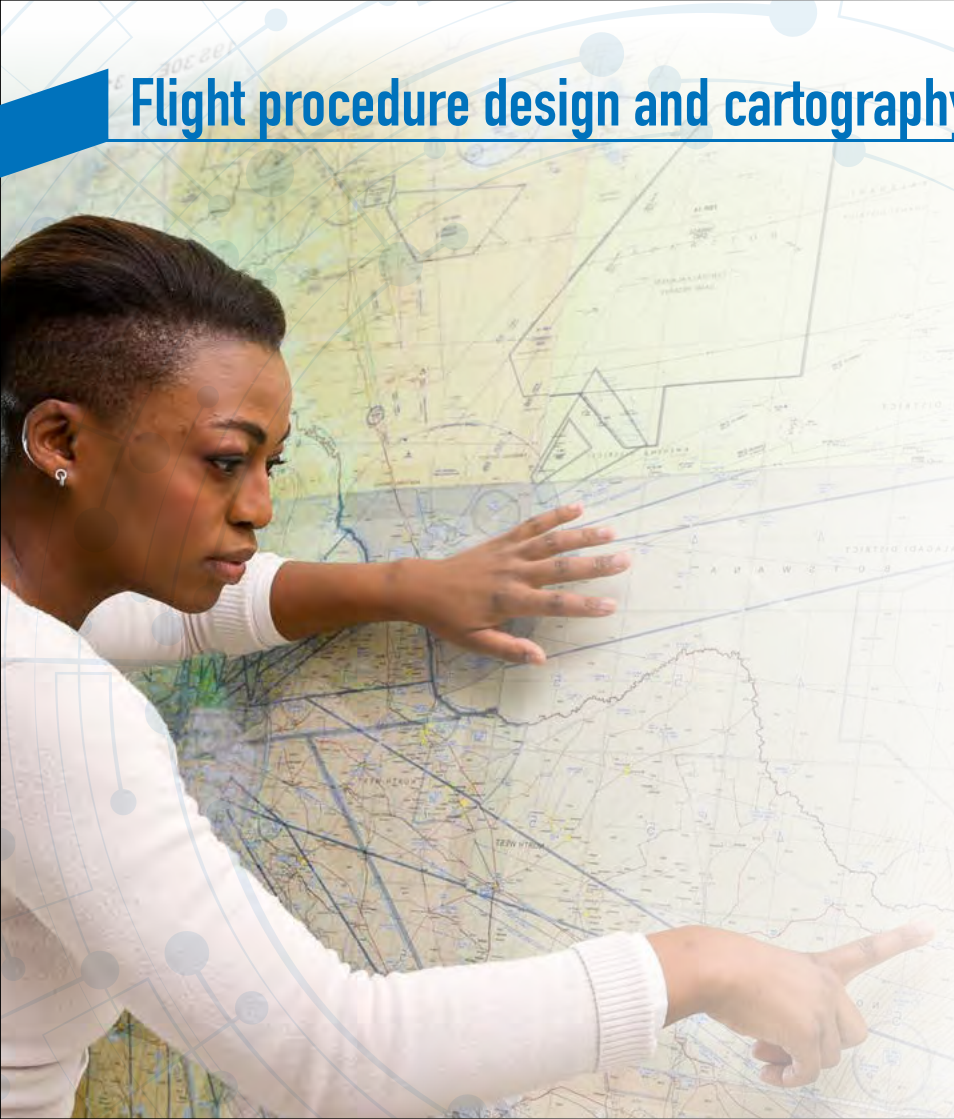
Worldwide data maintenance via Slot Management with standardised AIXM-based Data Exchange.



Key among the benefits of implementing CAD is the definition of data providers and users.

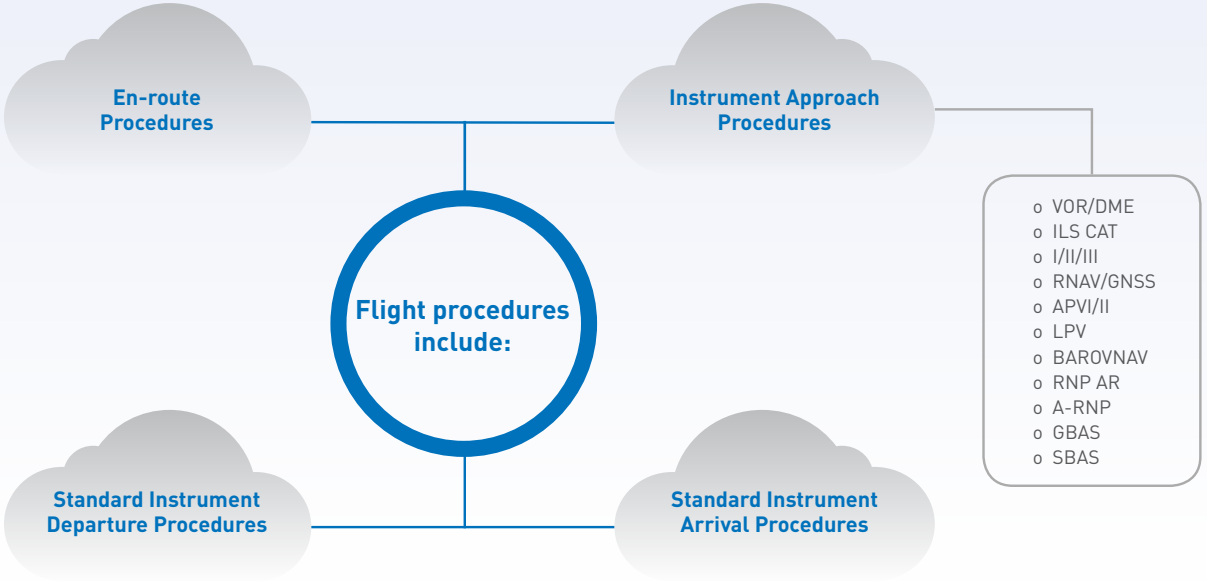
- Providers: Data Originators, Air Navigation Service Providers and State Civil Aviation Authorities
- Users: Aircraft Operators, Airport Operators, Developers, Military and General Aviation

Flight procedure design and cartography



Ensuring **high standards** of safety while working towards **sustainable growth** in the aviation industry requires **expert**, **well-structured** planning coupled with **world-class** knowledge management.

Flight procedure design allows for each phase of an aircraft's flight plan to be designed according to specific criterion and protected through **obstacle analysi**s and appropriate clearance altitudes to **provide the safest, most efficient instrument flight procedure possible**. The full design is then translated into a usable instrument **flight procedure chart** overlaid on accurate map information.



Features of flight procedure design and cartography

Performance-based Navigation (PBN) defines performance requirements for aircraft navigating on an ATS route, terminal procedure or in a designated airspace. It is ICAO's effort and objective to redefine the regional differences of various Area Navigation (RNAV) and Required Navigation Performance (RNP) specifications into a globally harmonised set of PBN applications.

Working in conjunction with airspace design, flight procedure design allows ATNS to consider the technological capabilities of each individual aircraft, the prevalence of satellite-based navigation aids versus ground-based navigation aids and additional factors to increase the scope of safe navigation and implementation of PBN.

This allows ATNS to offer consultation services to other Air Navigation Services Providers (ANSPs) for flight procedure design and cartography services, facilitating the implementation of PBN in line with the ICAO PBN Roadmap.

Features of flight procedure design include:

- Non-precision Instrument Approach Procedures design including Global Navigation Satellite System procedure (e.g. VOR/DME, NDB, Localizer and GNSS)
- Precision Instrument Approach Procedure design (e.g. ILS)
- Approaches with Vertical Guidance (e.g. SBAS/BAROVNAV)
- Standard Arrival Route (STAR) and Standard Instrument Departure (SID) Procedure design
- Air Route (including RNAV) and Airspace design
- ICAO Annex 14 Obstacle Evaluations
- Obstacle and building restrictions on and in the vicinity of airport
- Aviation consulting relating to procedure and airspace design

ATNS provides a full spectrum of design capabilities, from conventional non-precision approach charts, precision approach charts, standard arrival and standard departure charts through to GNSS and RNP instrument procedure charts.

ATNS has upgraded software systems to state-of-the-art world-used software and increased staff numbers to provide **the most efficient and up-to-date service available**.

ATNS has included the latest regional navigational specifications as determined by the International Civil Aviation Authority, and is exceeding the regional PBN targets.

At King Shaka International Airport, ATNS has successfully implemented a purely satellite-based navigation system, **completely independent of conventional navigational aids**.

Benefits of flight procedure design and cartography

- Enhanced efficiency
- Fuel savings
- Reduced track miles
- Reduced CO2 emissions
- Increases in capacity
- Reduction in noise pollution
- Increased safety
- Frequency time elimination
- Enhanced predictability
- Reduction in radio transmissions

ATNS Aviation Training Academy (ATA)

The ATNS Aviation Training Academy (ATA) is a unique organisation in terms of the training on offer. Not only do we provide Air Traffic Services and Engineering Training to our staff members, but also provide a wide range of aviation-related and safety-related courses throughout the continent and into selected markets. The ATNS ATA is a **fully accredited training organisation** offering courses **registered on the National Qualifications Framework**.

Rewards and recognition

As true testament to our maintenance of the highest training and quality standards the ATNS ATA has been awarded IATA's Worldwide Top Regional Training Partner for five consecutive years as well as being designated an ICAO Regional Training Centre of Excellence (RTCE). In 2016 the Academy was recognised as a Premier Circle Member by IATA. In 2017 ATNS ATA received prestigious recognition from IATA for its contribution towards the development of Aviation Personnel.

Over and above the ATNS ATA being an IATA Regional Training Partner (RTP) for the AFI region, it is also an IATA Authorised Training Centre (ATC) and a TRAINAIR PLUS full member. The Academy is accredited by the Transport Education Training Authority and the South African Qualifications Authority. The quality of products delivered at the ATA are done within the ambit of ISO 9001:2008 compliance.

Capabilities

The ATNS ATA utilises computer-based training, radar simulators, engineering laboratories as well as 3D aerodrome simulators to the highest industry and safety standards.

We employ renowned training instructors and coaches both internationally and nationally to give our students and partners the best in both technical knowledge and practical expertise across a range of fields.

Facilities

The ATNS ATA is a vibrant meeting place for global aviation students. As one of the leading aviation academies, the ATNS ATA is committed to producing graduates of the highest calibre.

Our facilities include:

- Classrooms and an auditorium
- Modern surveillance training facility (CAATS)
- Internet café
- Student lounge
- Prayer facilities
- Cafeteria
- A dedicated Course Development Unit
- Multiple 3D Aerodrome Simulators (360 degrees and desktop)

Accommodation

Staying at selected, approved guest lodges is a convenient way to be close to the Academy campus and a great way to meet fellow students. The ATNS ATA uses an array of accommodation facilities through partnering with local guest lodges.

Transportation

Transport for students staying at our approved guest lodges to and from the ATNS ATA is provided.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Training partnerships

ATNS ATA partners with organisations to provide access to the **best available skills, knowledge and assessments**. ATNS ATA can assist with:

- Customised courses;
- Defining and developing succession plans;
- Evaluation of existing corporate programmes;
- Manpower requirements;
- Performance management;
- Recruitment and selection of new personnel; and
- Training needs assessments.

International students

To ensure our international students have a training and study experience worth remembering our visiting students are encouraged to ensure they have valid visas.

Visa requirements

Requirements for visitor's visas differ from country to country and the requirements are subject to change. You can find all the information you need, including whether you require a visa to travel to South Africa by visiting www.dha.gov.za.

Some of our satisfied customers

- Angola
- Namibia
- Botswana
- Seychelles
- Burundi
- Sierra Leone
- Ghana
- Sudan
- Lesotho
- Swaziland
- Liberia
- Tanzania
- Mauritius
- Uganda
- Mozambique
- Zambia

We are accredited with the following Institutions of Higher Learning for the provision of industry experience:

- Cape Peninsula University of Technology
- Central University of Technology
- Durban University of Technology
- Nelson Mandela Metropolitan University
- University of Johannesburg

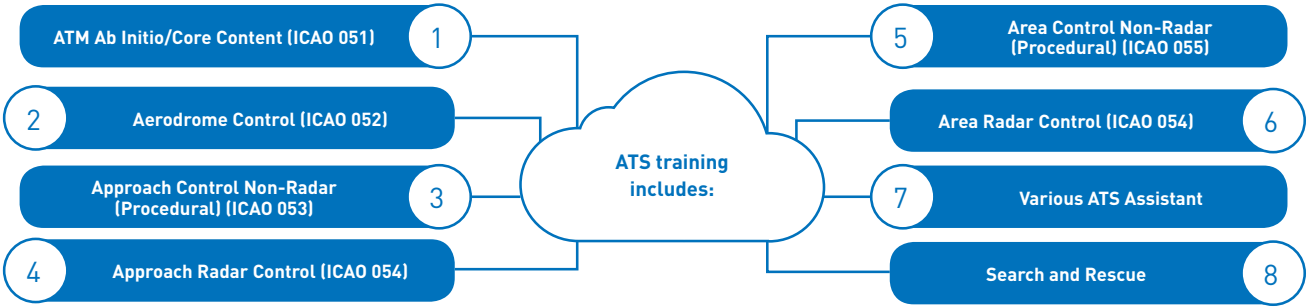
ATNS ATA Courses

ATNS ATA Courses

The ATNS ATA offers a full range of courses in Air Traffic Services, Engineering and related training.

Air Traffic Services Training comprises regulatory courses for anyone required to be accredited by Civil Aviation Authorities, non-regulated courses and Management and Development courses.

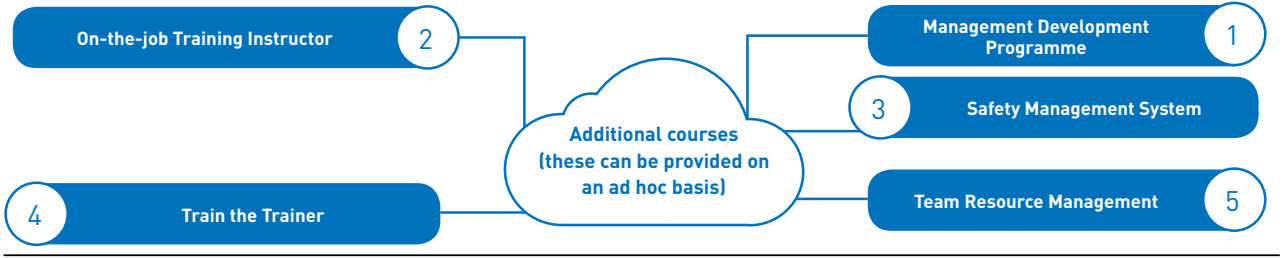
The ATA has a dedicated Course Development Unit that is capacitated to develop or tailor your course to your specifications. Courses are developed in accordance with the ICAO TRAINAIR Plus methodology.

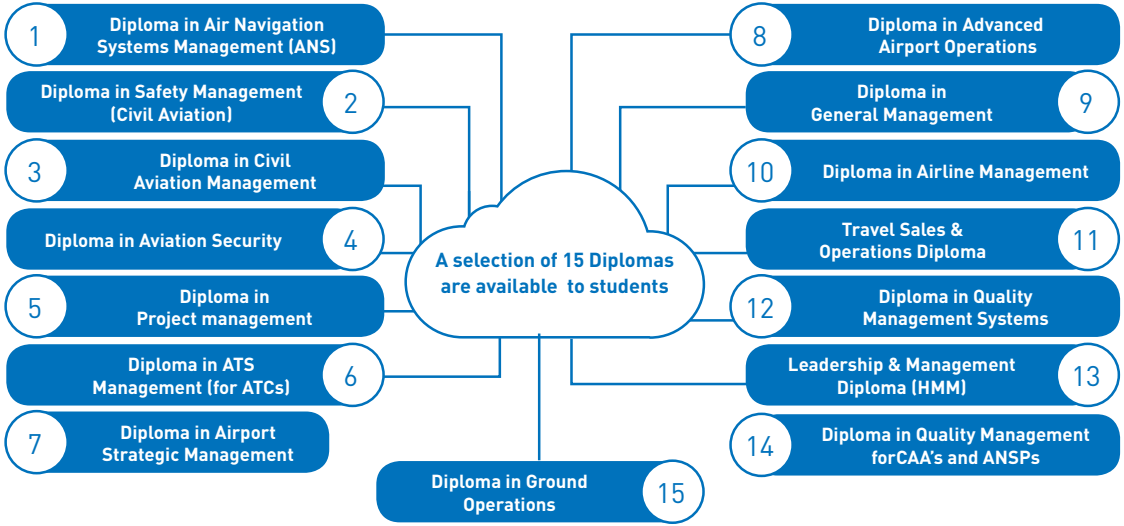


Our **Engineering courses** cover a variety of system concepts and specialised equipment related to Communication, Navigation and Surveillance (CNS) and information technology.

Additional courses and diplomas IATA

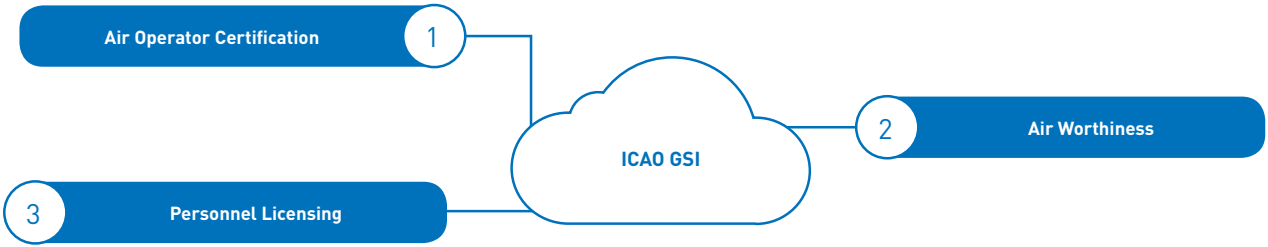
The ATA is an approved IATA Regional Training Partner and authorised training center providing IATA management-related courses. There is a total of four courses to be completed per IATA Diploma – one prerequisite course which is a required course and three other elective courses. Within the respective IATA Diploma outline, participants have a maximum period of three years to complete the Diploma.



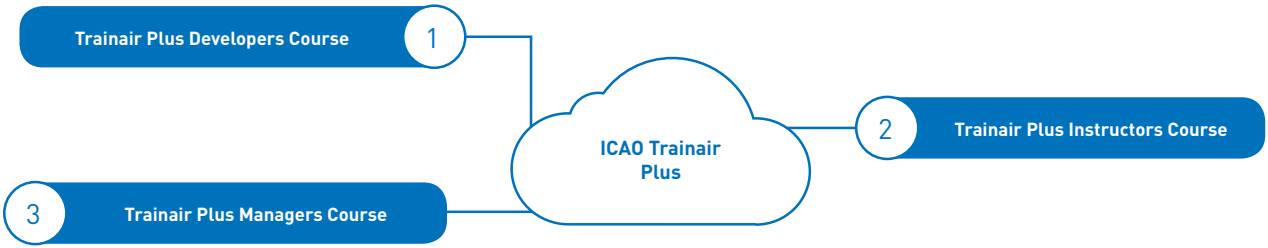


ICAO GSI

In accordance with aviation legislation and Civil Aviation Authority requirements, ATNS ATA offers three Government Safety Inspector courses on behalf of ICAO, providing safety inspectors across the region with the requisite knowledge to complete all related activities:



ATNS ATA training model is unique, and we source the best local and international expertise for each module which means our training offering is always up-to-date, relevant and of the highest possible standard.



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