Unlocking Winning Partnerships

01 WHAT IS WGS-84?

What is WGS-84?

The World Geodetic Surveying System of 1984 (WGS-84) is a mathematical model for an ellipsoid that represents the shape and size of the earth. The WGS-84 ellipsoid has its centre coincident with the centre of gravity of the earth, and is known as an earth centred earth fixed system. WGS-84 has become the international standard for positioning and navigation in aviation.
02 WHY CONDUCT A WGS-84 SURVEY?

Why conduct a WGS-84 survey?

Reasons why you should do a WGS-84 Survey for your airports:

1. Compliance to the ICAO regulations
2. Movement of the tectonic plate necessitate the WGS-84 being conducted to remain compliant and not compromise on safety
3. Regular check of obstructions around the airport to ensure safety and compliance
4. Calibration of instruments

The WGS-84 survey supports the implementation of the global ATM/cns (Air Traffic Management/ communication, navigation and surveillance) which includes the GNSS (Global Navigation Satellite System) Instrument Approach System. The contracting states of ICAO agreed that WGS-84 would be implemented by 1 January 1998. This statement appears as standard in the relevant ICAO Annexes. In view of ICAO’s adoption of the WGS-84 system as the Standard geodetic reference frame, it will be necessary to convert all aeronautical co-ordinate data into the WGS-84 reference system. Many countries have not been able to comply with this requirement; however efforts are ongoing to convert all the required data to WGS-84 as soon as practicable.

WGS-84
ATNS and the implementation of the WGS-84 surveying services

Over the last ten years, ATNS has successfully demonstrated that it has the capability to conduct to the ICAO WGS-84 Standards and Recommended Practices (SARP’s).

All survey data is quality controlled utilizing an electronic data quality tool set, and quality assurance is applied in accordance with ISO 9001:2000 standards.
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04 ATNS’ WGS-84 SURVEYING SERVICES

ATNS’ WGS-84 surveying services

The ATNS survey team, consisting of Registered Surveyors conduct WGS-84 surveys which exceed the minimum accuracy requirements in accordance with the ICAO Annexes 4, 11, 14 and 15 which includes the ICAO DDE 9624-AN9/47 (WGS-84 Manual) and the requirements for TAGGS (Terminal Aeronautical GNSS Geodetic Survey of the National Imagery & Mapping Agency).

- Secondary Airport Control Stations (SACS). These constitute the airport control network
- Runway entities (all runway ends, clear ways, stop ways, thresholds, displaced thresholds, touchdowns zones, runway profile points etc)
- Navigation aids (VOR, NDB, DME, VDF etc.)
- Taxiway holding points
- Parking bays
- Instrument Landing Systems (ILS)
- PAPI’s or VASI’s
05 OTHER SERVICES BY ATNS

Other Services

- Billing & Collections
- Training
- VSAT
- NAHSAT
- Procedure design
- Airspace design
- AIM Documentation
- CNS Maintenance
- Upper Airspace Management
About ATNS

ATNS, the Air Traffic and Navigation Services Company of South Africa is the sole provider of air traffic, navigation, training and associated services within South Africa and is also responsible for managing ten percent of the world’s airspace. Operating at airports and standing strong with more than 1000 dedicated, passionate people ATNS strives to continuously provide safe, orderly, expedient and efficient management of air traffic. As a globally competitive employer of choice, ATNS is committed to diversity and has achieved ranking within the top ten companies in South Africa with regards to female representation at executive levels. Our services extend beyond air traffic control services into the provision of vitally important aeronautical information used for all flight planning purposes as well as search and rescue coordination activities, and the maintenance of a reliable navigation infrastructure.

WGS-84

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References

- International Civil Aviation Organisation (ICAO)
- Regie des Aeroports du Rwanda - Rwanda
- Empresa National de Aeroportos E Seguranca 
  Aeroes LP (ASA) - Cape Verde
- North-West Province Government
- Rand Mutual Hospital
- Airports Company of South Africa (ACSA)
- Richards Bay Municipality
- FOSKOR Limited
- SAA Solutions
- South African Civil Aviation Authority (SACAA)
- Namibia CAA
- Madagascar CAA
- Ivory Coast CAA
- Kenya CAA

- Angola ENANA
- Gambia
- Grintek Electronics
- Lamsena Airport Management
- United States FAA
- Burundi
- Guinea - Bissau
- Uganda
- Matmabeng Municipality
- Ethiopia
- Maldives
- Eritrea
- Djibouti
- United Nations
- Democratic Republic of Congo (DRC)