

## For the pilot

All controlled airspace above FL 145 will be surveillance controlled from December 5th. This means:

- To fly in Windhoek TMA and above FL145 in Namibian FIR your aircraft must be transponder equipped
- The airspace below FL145 is not surveillance airspace. This includes the TMA:s. So expect traditional procedural control in the TMA:s
- When entering surveillance airspace you will be informed of this via the phrase "identified" to clarify that the controller has identified you and will provide surveillance control. You will also be informed when surveillance service is terminated, for example when you enter the TMA.
- The minimum surveillance separation used above FL145 is 10 NM

## In the future

This year's launch of surveillance control in the Namibian airspace above FL145 is only the first step. Further steps on the way forward include:

- Launch of surveillance operations in Windhoek TMA is expected in the third quarter of 2012
- After that surveillance operations will be launched in Walvis Bay TMA

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## Namibian FIR

**Surveillance controlled  
from December 5<sup>th</sup> 2011**



History will be written at the beginning of December 2011 when the Air Traffic Control Centre at Eros airport start operating as a surveillance control centre for the Namibian FIR above FL145 using state of the art equipment.

## Equipment

To make Namibian airspace surveillance controlled the Namibian Government has invested in state of the art equipment. The main components are:

### Radar

A co-mounted primary and Mode-S secondary radar is placed on the Hosea Kutako International airport. With a range of more than 400 km it covers a good portion of central Namibian airspace. It is able to detect aircraft with and without transponder.



### Wide Area Multilateration

The radar is supplemented by a WAM system. WAM is a technique where interrogators and receivers communicate with aircraft. Signals received from aircraft are timed and calculated mathematically and as a result the aircrafts position can be determined.

WAM equals or outperforms Secondary Surveillance Radar (SSR) in terms of accuracy, probability of detection, and update rate. It works with aircraft transponders, Mode A, C and S and with ADS-B.



The system in Namibia is the world's largest WAM solution. It covers more than 825,000 square kilometres and is the first of its kind in the world for country-wide air traffic services use.

### Eurocat-X

The Namibian controllers will get the information from radar and WAM presented in a Thales Eurocat-X system. In the world today more than 50 countries on five continents are working with Thales on more than 1700 controllers work stations.



## ICAO support

To manage the transfer from procedural control to surveillance control the NDCA (Namibian Directorate of Civil Aviation) searched assistance from ICAO (the International Civil Aviation Organization). A team of six controllers from Sweden were recruited.



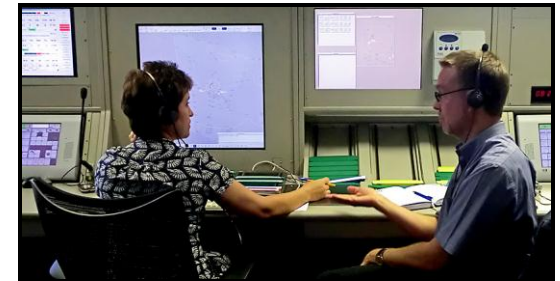
The ICAO team have been working in close cooperation with the NDCA in preparing the technical equipment, in reviewing the regulatory framework and in training and validation of the first team of surveillance controllers.

## Training

The first team of surveillance controllers are all experienced with many years of work in Namibian airspace. They have been on radar training abroad, most of them in South Africa or in Singapore. The ICAO team has provided the training to handle the Eurocat-X system.

## Validation

To ensure that operations will start with a high level of safety, the performances of the controllers have been validated by the ICAO team, in a simulator where normal and abnormal situations can be simulated.



## Words from the CATCO

*"It is a great privilege to be the manager of an organisation that is doing this historical technological leap.*

*A lot of work has been done to make this project work and to achieve its goals. Without naming anyone I'd like to give my high appreciation for a very good work by everyone involved.*

*From December the 5<sup>th</sup> Namibian Air Traffic Control will be working with equipment and methods that are on a very high standard.*

*It is encouraging to hear that countries of great abilities in aviation think that we have a window of opportunity on the entire globe to be a worldwide consultant and training base for the usage of Wide Area Multilateration, as we are the first country to do so."*

**Mr Victor Likando**  
**Chief Air Traffic Controller**

