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Restructuring Sudan Airspace Successful Real-Time Simulations

Real-Time simulations took place on Eurocat-X simulator in Khartoum from September 25 to October 5. The set of 6 various exercises was assessed by two different groups of active controllers, in pretty good conditions. The main components of the project have been evaluated. Feedback and comments from participants are definitely useful prior to the implementation phase.

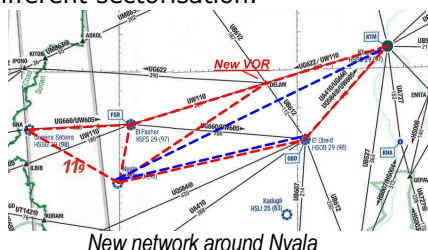
Real-Time Simulations

Real time simulations (RTS) represent the backbone of the Sudan airspace restructuring project.



Actually this phase of the project started before two months by receiving data from the CGX-DSNA services project team concerning the new networks for scenario 1 and scenario 2 and the objectives of each exercise that will be run through these networks.

Our colleague Mohamed Zein Elabdien, who is the one of the Sudanese project team and the system administrator inserts all data concerning the networks of the both scenarios in the system and create six different exercises harmonize with the objectives determined by the CGX-DSNA services project team and create proposal for the different sectorisation.



All of us, the French and Sudanese team, appreciate his efforts in inserting these data in the system and his proficiency in developing these

exercises and ability to modify any exercise when requested by the CGX-DSNA services project team.

On September 25 we start our RTS in Khartoum ACC simulator (Eurocat-X simulator) with the presents of eight senior ATCOs.

Each ATCO simulates in the position of the executive and planner for these six different exercises with different sectorisation.

The main objective of the RTS is that the ATCOs be familiar with the new networks for both scenarios and monitor the flow of traffic in the lower and upper airspace, and also be familiar with different concept of unilateral routes, duplicated route and new routes, and how to deal with the free route airspace.



And after that provide the project teams with their feedbacks and comments so as to be additional opinions and values for project teams to make any possible amendments to achieve the objectives and goals of the project.

Each exercise preceded by short briefing and followed by debriefing, and during these exercises we apply the standard phraseology and correct vectoring to solve any conflict.

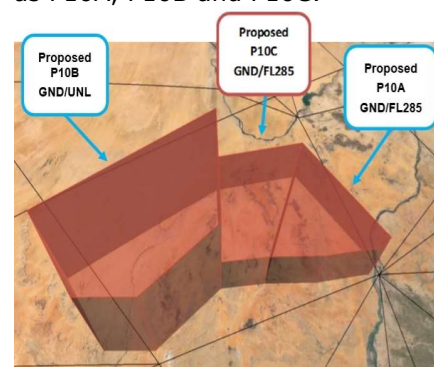
After five working days the SCAA and French teams notice that the

eight ATCOs were familiar with the new networks and they are capable to provide their comments and feedbacks to the project team.



So we gave another opportunity for additional six controllers, so we can obtain more different opinions and feedbacks from these different controllers.

On October 5 afternoon we conduct the debriefing for all the participating ATCOs, and during this meeting the ATCOs wrote their feedbacks and comments in the questionnaire prepared by the CGX-DSNA services project team. Through discussions the ATCOs gave also their opinion and remarks on different aspect of the networks and also extensive discussions about the prohibited areas P10A, P10B and P10C.



All these feedbacks and comments will be considered and taken into account during the final scenario for Sudan airspace so as to meet the needs of the controllers and airlines and to accommodate the traffic growth for the coming years and finally obtain safe and efficiently airspace.

Nagi Mohamed
- SCAA Team Expert -

French Trainer point of view

The Sudanese airspace restructuring project continues to move forward. The last test before the start of implementation has just been held in Khartoum from 25 September to 5 October 2016, with Real Time Simulations (RTS).



This restructuring project is very ambitious and has several objectives:

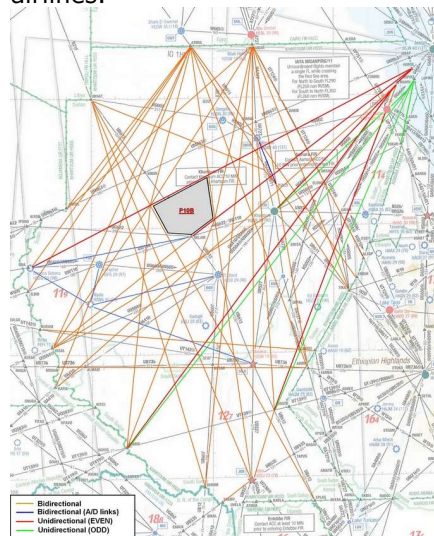
1. The need to cope with the significant increase in air traffic in the next ten years (doubled).
2. To facilitate traffic management by air traffic controllers.
3. To offer to airlines shorter available routes to save fuel.
4. To improve the management of the Sudanese sky between civil and military through Flexible Use of Airspace (FUA), so that each party finds an advantage.

All this requires changing the route network and for a small part in modifying space management rules between civilians and military authorities.

Two situations were submitted to Sudanese controllers who evaluated with great motivation these amendments.

Scenario #1: Totally independent of neighboring countries, which does not alter the exchange points at FIR boundaries. The change applies only within the Sudanese area. It has the advantage of being implemented more quickly, but the gain compared to the current situation is far less than that ob-

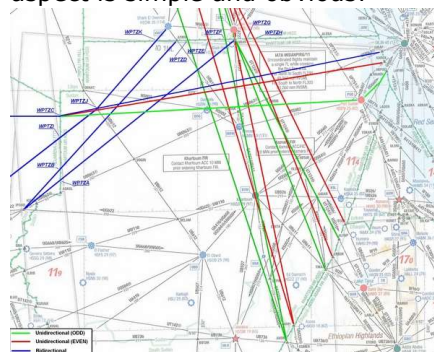
tained with the other scenario, since traffic must be merged over the current reporting points at the boundary. Furthermore, the distance gains are much lower for airlines.



Scenario 1 chart

Scenario #2: Without a doubt the most interesting, because it truly separates opposing traffic into two distinct streams, greatly reducing the workload to change flight levels for example. On the routes concerned there is no opposing traffic.

It allows the creation of new more direct flying routes for companies. Also if one examines the current aerial maps we can see that it is the missing link to connect existing roads north and south of Sudan (Egypt, Ethiopia)! The technical aspect is simple and obvious!



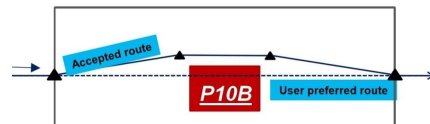
Scenario 2 chart

FUA: during these simulations controllers could finger the benefits of FUA. What is it? Simply coordination between civilian and military. Everyone finds an advantage...

- For military: areas can be larger and closer to the starting points.

They keep the priority of use within the zones, they simply allow civilians to move into areas when they are not active.

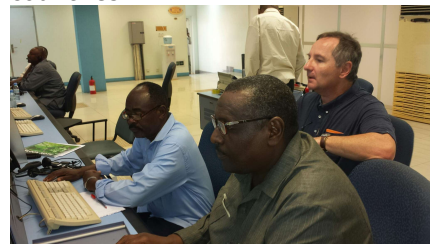
- For civilians: they can enter in military areas when not active (after coordination!).



All the controllers involved in this experiment adhere without hesitation scenario #2.

On the other hand these same controllers could finger the great interest of FUA, but also a new concept in the area ... the Free Route! Sudan could be the first country in this region to introduce this popular airline concept!

This phase of real-time simulations is completed, a final proposal should be proposed after analysis, taking into account the necessary changes occurred during the experiment and possible constraints related to the needs of neighboring countries.



Then comes the place of the final project implementation phase that will calmly deal with the next ten years!

Lionel Montmartin
- French ACC training expert -



Upcoming events

- **October 16 to 18:**
- 3rd Workshop in Khartoum (PBN, GNSS Procedures, project progress review).
- **October 20:** Steering Committee in Khartoum.
- **October/November:** Preparation of the Implementation Plan, updating of LOAs and Operations Manual.