MIDANPIRG ATM SG/4 Meeting

Sudan

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Sudan Airspace Restructure

Presentation Outline

- ATS Routes improvements implemented

- ATS Routes planned for implementation

- Challenges delaying ATS Routes Implementation, if any

- AIDC/OLDI implementation Status

- Other implemented or planned ATM Operational Improvements

- Brief regarding the ongoing ATM projects/initiatives

- Lessons Learned

- Thoughts/Recommendations

ATS Routes improvements implemented

- The air lines requested improvement on the RNAV network with creation of new routes ,more direct and fitting their particular needs which include:-
    - Save flight time and fuel consumption by reducing distance
    - Have several flight planning options.
    - Improve flight plan adherence by formalizing direct routes usually cleared by ATCOs.
    -ATCOs reported too many Planes converge to the same VOR creating major hotspots.
- SCAA has established and implemented a project of design safe and efficient new structure for Sudan air space, involves :-
1- New Khartoum Terminal Maneuvering Area (TMA)
2- New military area P10
3- New Airspace classification
4- New RNAV routes Network.

- New RNAV routes have been established in the restructure of Sudan Air space
- 42 new RNAV routes added:
    - 12 routes unidirectional,
    - only one route deletion : B612 between ORNAT and DELAM (Due to P10B).
- New RNAV routes have been implemented on 26th of April 2018.
- The New network shorten the flight plan by on average 13NM or 4000NM/day.
- As Aircraft with new flight plans would foresee shorter distance ,they would also take less fuel ,and because they are lighter they would spare 7000 kg/day.
- Depending on the fuel price , the expected benefits of the change are the following:

	Reduce Fuel (Kg/Year)	Reduced CO2 (kg/Year)	Yearly Saving ($/Year) (kerosene : 1.4$/gallon)	Yearly Saving ($/Year) (kerosene : 3$/gallon)
Benefits Traffic 2016	8900000	28000000	4000000 $	8600000 $
Benefits Traffic 2026	11900000	83000000	11900000 $	25500000 $

ATS Routes planned for implementation

- Provide details regarding the planned routes highlighting the expected dates and estimated benefits.
- Phase one of Sudan Airspace restructure and the new RNAV implemented on 26th of April 2018 and these are tow example of the direct route benefits

- Direct Track Egypt – Chad
  - 90 NM shorter
  - 6 Aircraft /day
  - saving 540 NM/day

  Direct Track Egypt – Ethiopia
  - 33 NM shorter
  - 50 Aircraft/day
  - saving 1650 NM/day

- Highlight the envisaged challenges that may delay implementation
- Although Sudan airspace is in a geostrategic location in the region , but this advantage requires a close cooperation and collaboration with neighboring flight information regions belongs to different ICAO regions with variable regional air navigation plan requirements And different challenges .
- SCAA still waiting for Egypt response to the requested new Boundary transfer points.

AIDC/OLDI implementation Status

- SCAA singed a 10 years contract with Thales for the ATM system (Top Sky 2012) upgrade and maintenance to cover ICAO/MID Global Air Navigation Plan and ASBU requirements.

- SCAA ATM system is ready for ADIC with the AFI region adjacent members.

- Our ATM system (Top Sky 2012) is ready for OLDI implementation but the challenge is still in network solutions with the adjacent centers

Other implemented or planned ATM Operational Improvements

- **Instrument Flight Procedure Design**
- **Goal:**

     - To have an autonomous IFPD Production

- **Procedure Design Unit (Creation)**
  - -4 procedure designers
  - -Initially trained in ENAC
  - - Tutorial by CGX AERO (9nAirports)
  - - IFPD Software
  - -Design data base
  - - Automatic charting tool
  - - Data Survey for 11 Airport started in 2012.

- **SID/STAR Phraseology**

     - ICAO SID/STAR Phraseology has been adopted as local procedures and implemented with the new RNAV Procedures 2017.

# Brief regarding the ongoing ATM projects/initiatives

- Conventional Airspace modification, (in progress).
-VOR/DME new installation for 5 Aerodromes (in progress)
- New ILS installation for HSSS and HSPN Airports (in progress).
- CVOR/DME renewal for HSMR , HSFS and HSOB (in progress).
- Local VHF renewal for 5 Airports (in progress).
- New Extended VHF installation in 3 airports (in progress).
- 17 ADS-B network installation and operation will complete by end of2018.
- (in progress).

Lessons Learned

- So it is necessary to increase capacity and efficiency of airspace, but with regard to safety and environment, which should be maintained or improving. The main way to reduce the environmental impact is to reduce aircraft fuel consumption. Achieving this goal, as quickly and easily, begin at the flight routes.
- If the aircraft flew directly between two points, it would save an appreciable amount of miles and so tons of fuel. The consequence is, nowadays very popular, reducing CO_2 emissions

Fuel carried= fuel burned
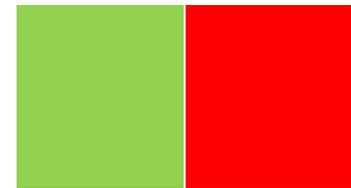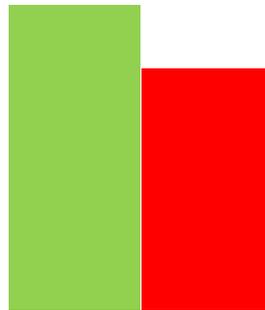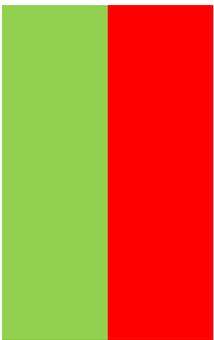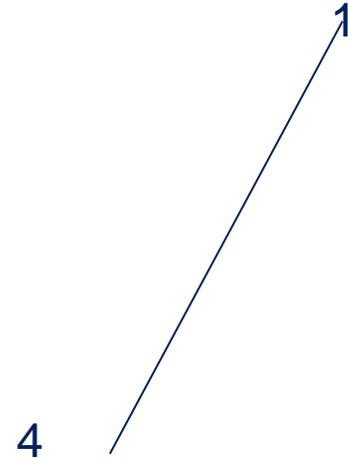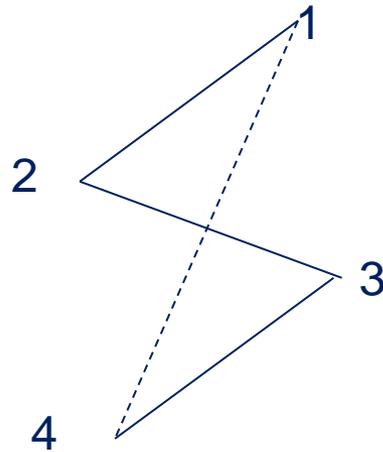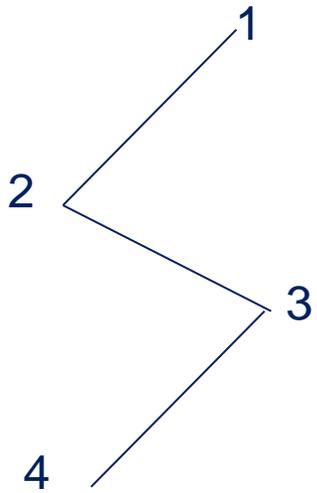
Thoughts/Recommendations

Coordination and collaboration

highly recommended for the purpose of harmonization and regionalization of implementation.

Thank you