



Ministry of Civil Aviation
Egyptian Holding Company for Airports and Air Navigation
National Air Navigation Services Company (NANSC)

Simulation study for DME/DME Coverage at Sharm El Sheikh and Hurghada Airports



Table of Contents

1	DME/DME Coverage for SHARM EL SHEIKH airport.....	1
1.1	The coverage of current DME systems	1
1.2	The coverage of current DME systems with DME system at NEOM airport	6
1.3	The coverage of current DME systems with the Planned new DME system	11
	at El Tour airport and DME system at NEOM airport.	11
2	DME/DME Coverage for HURGHADA airport.....	16
2.1	The coverage of current DME systems	16
2.2	The coverage of current DME systems with DME system at NEOM airport ...	21
2.3	The coverage of current DME systems with the Planned new DME system at ElTour airport and the DME system at NEOM airport.	26

1 DME/DME Coverage for SHARM EL SHEIKH airport

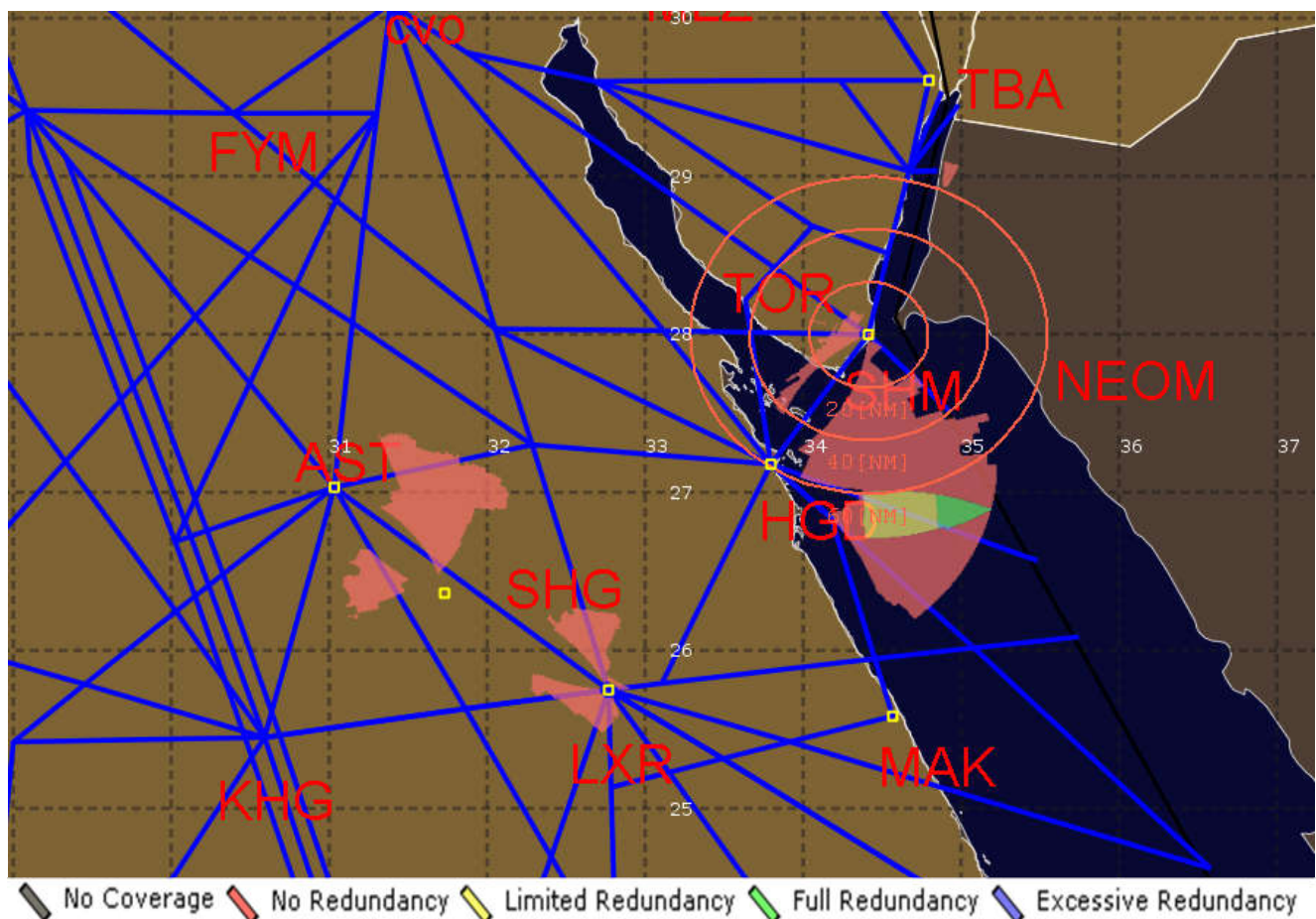
DME/DME coverage for Sharm El Sheikh airport is achieved by using the current DME systems in Egypt and Saudi Arabia and Planned DME systems as follow:

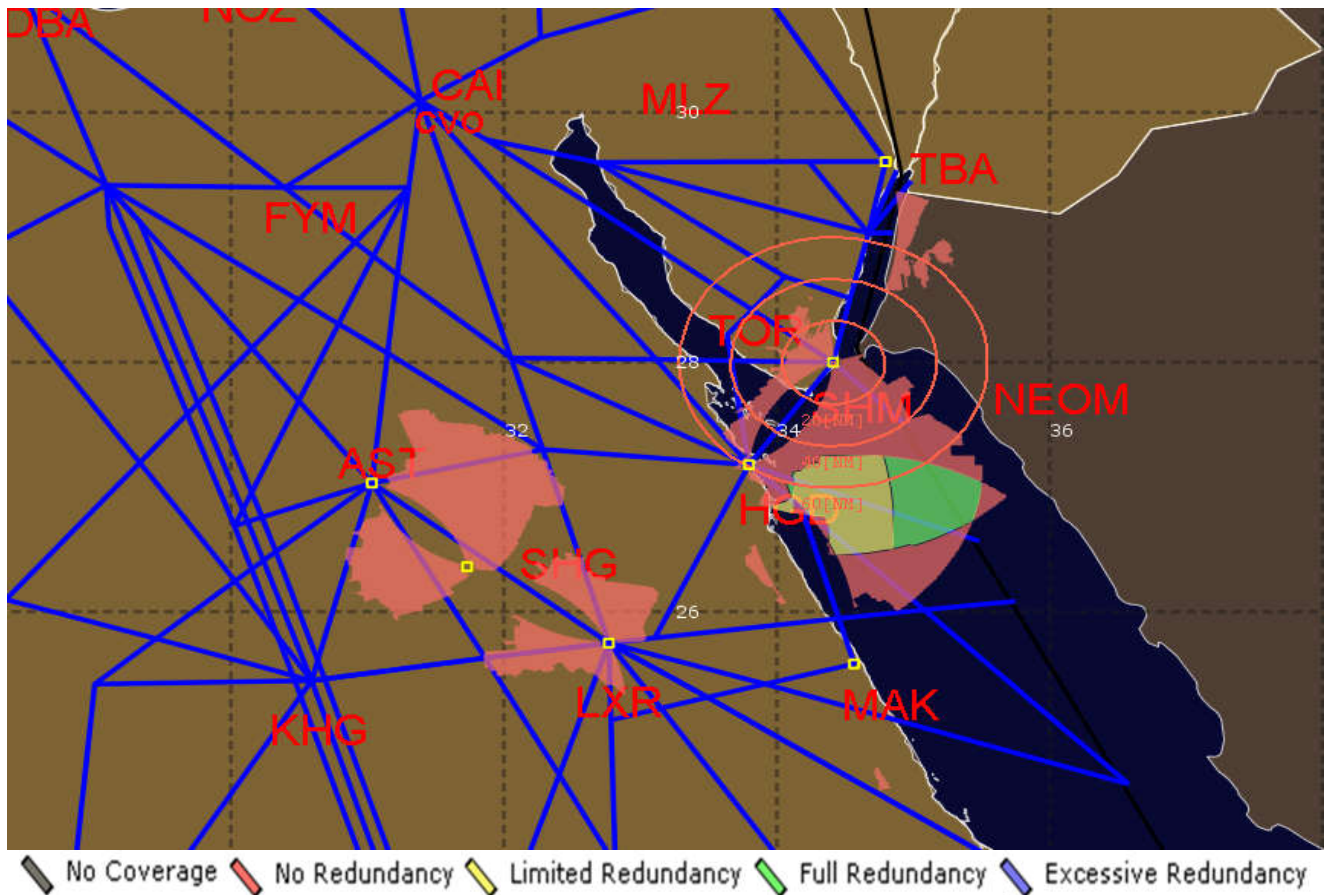
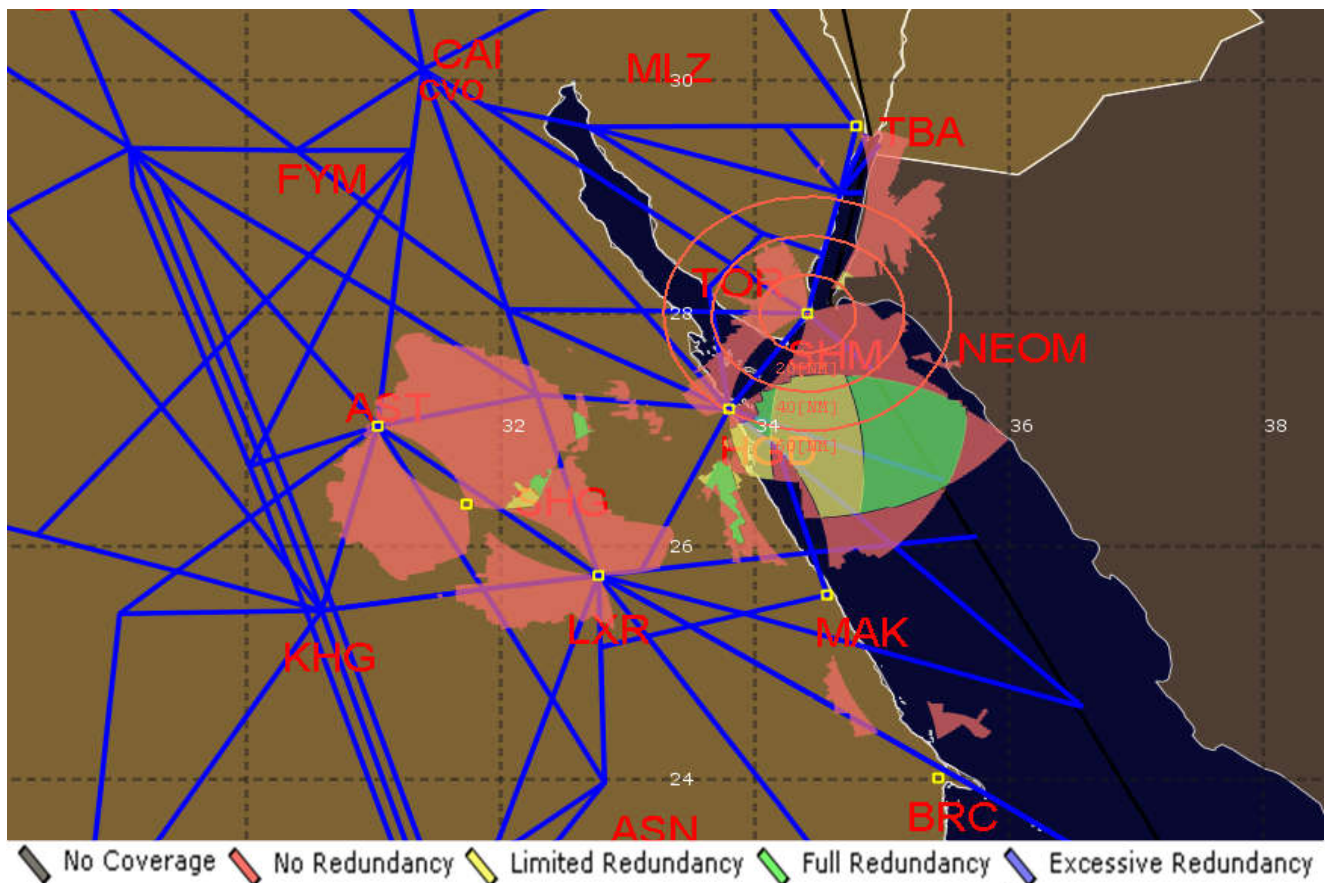
- 1- The current DME systems in Egypt
- 2- The current DME systems in Egypt with the DME system at NEOM airport (Saudi Arabia)
- 3- The current DME systems in Egypt with the Planned new DME system at ELTOUR airport and the DME system at NEOM airport (Saudi Arabia)

Note: The selected airport is highlighted by red rings at 20NM, 40NM, and 60NM to show the DME/DME coverage range.

1.1 The coverage of current DME systems

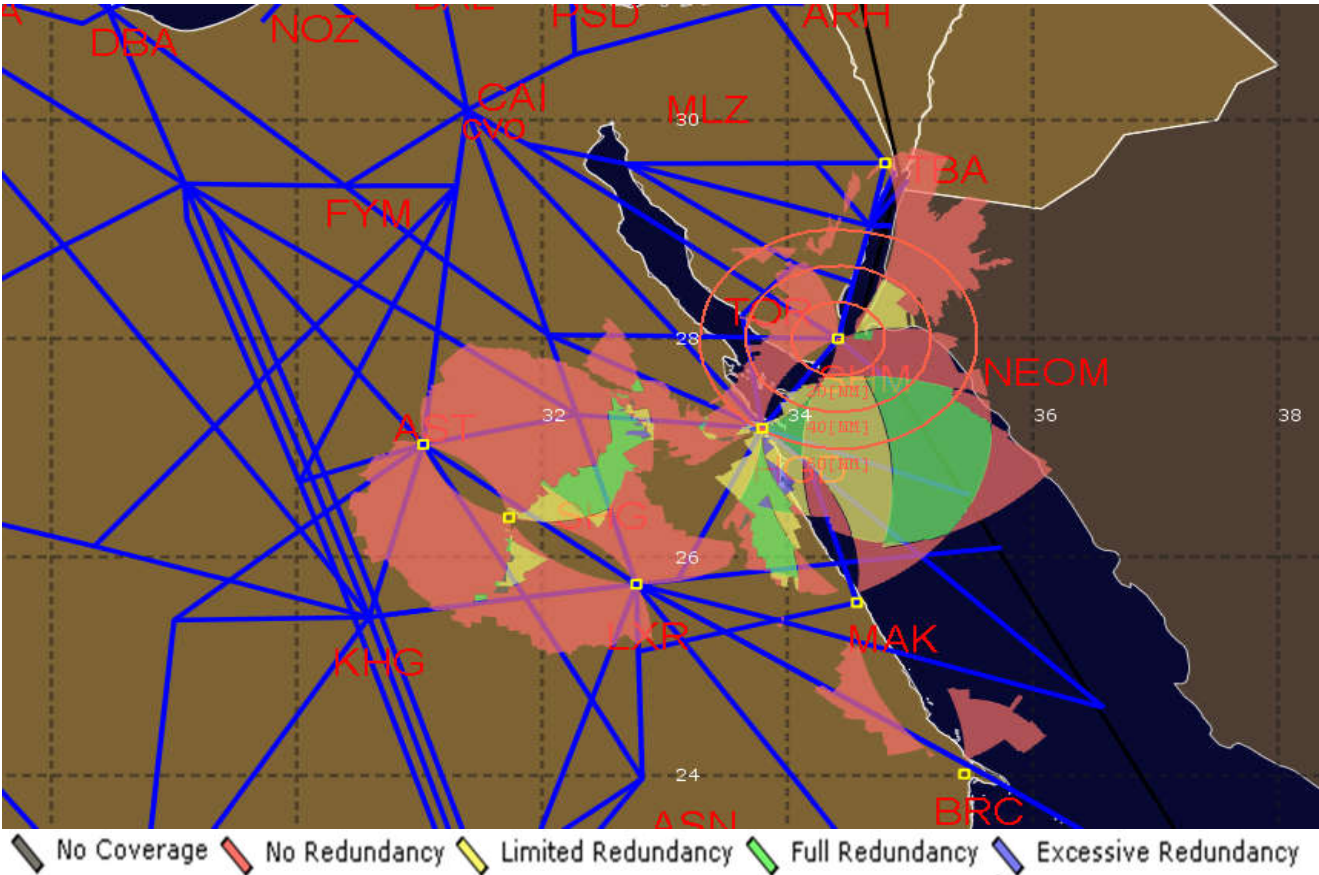
At FL40



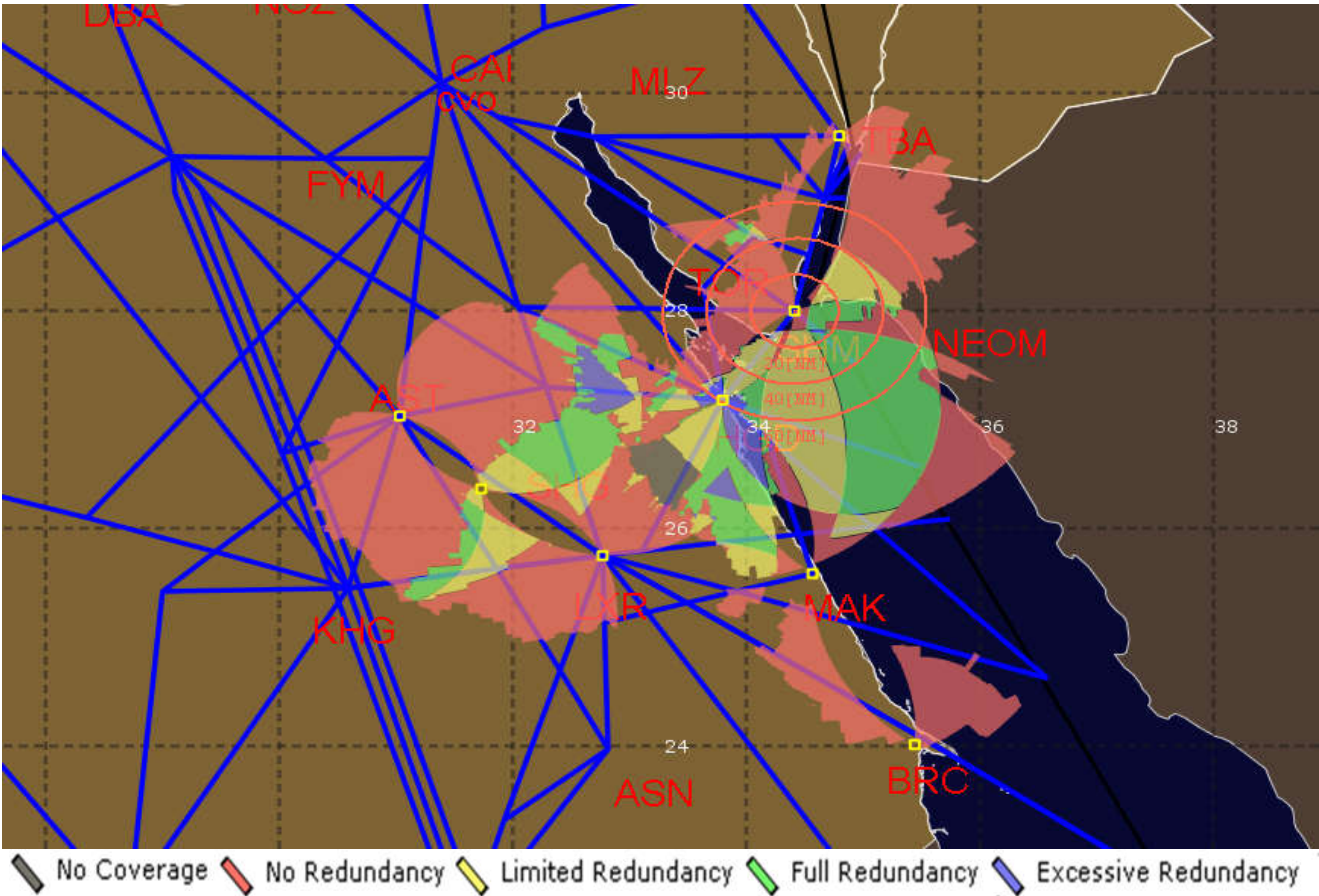
At FL60**At FL80**



At FL100

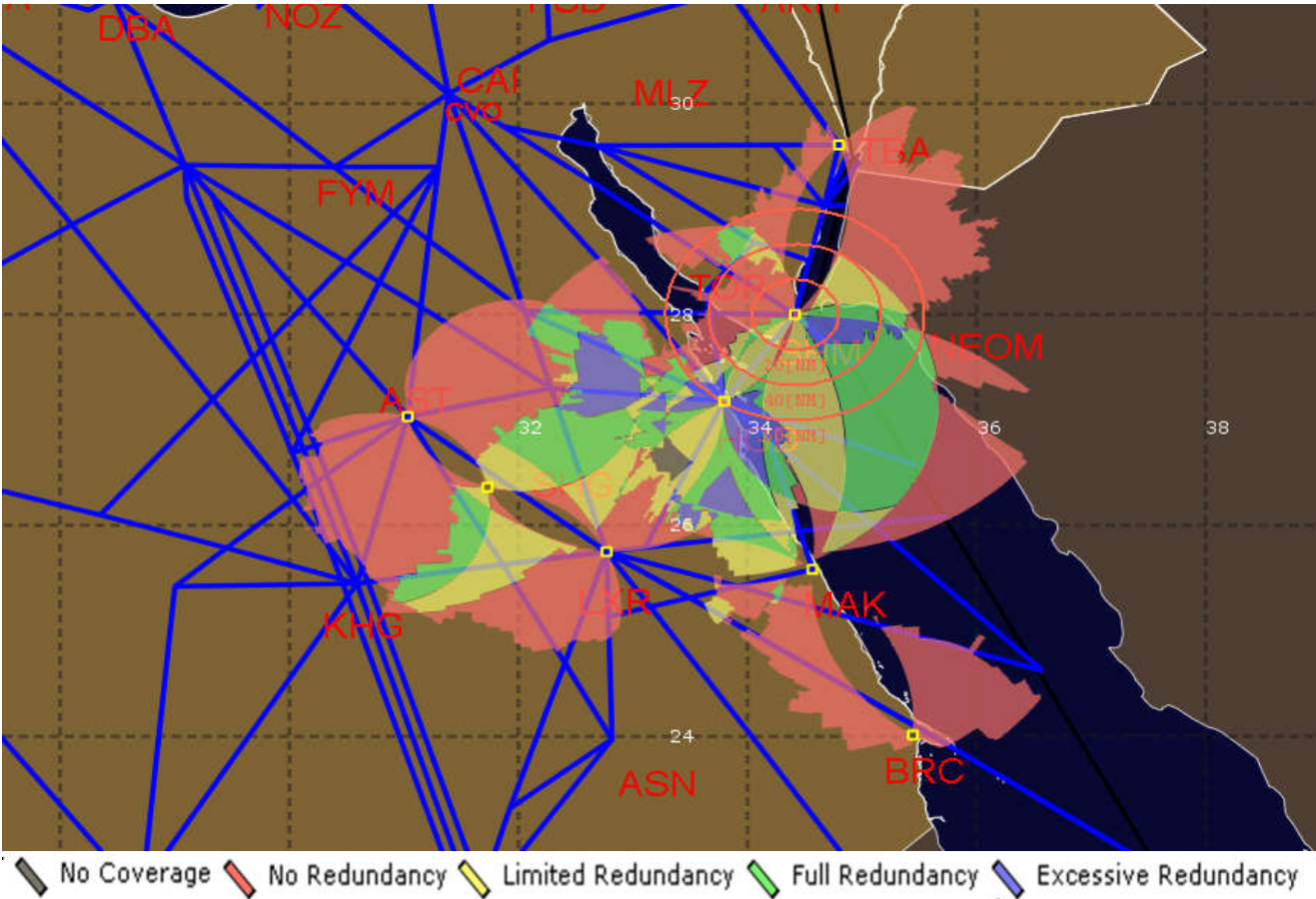


At FL120

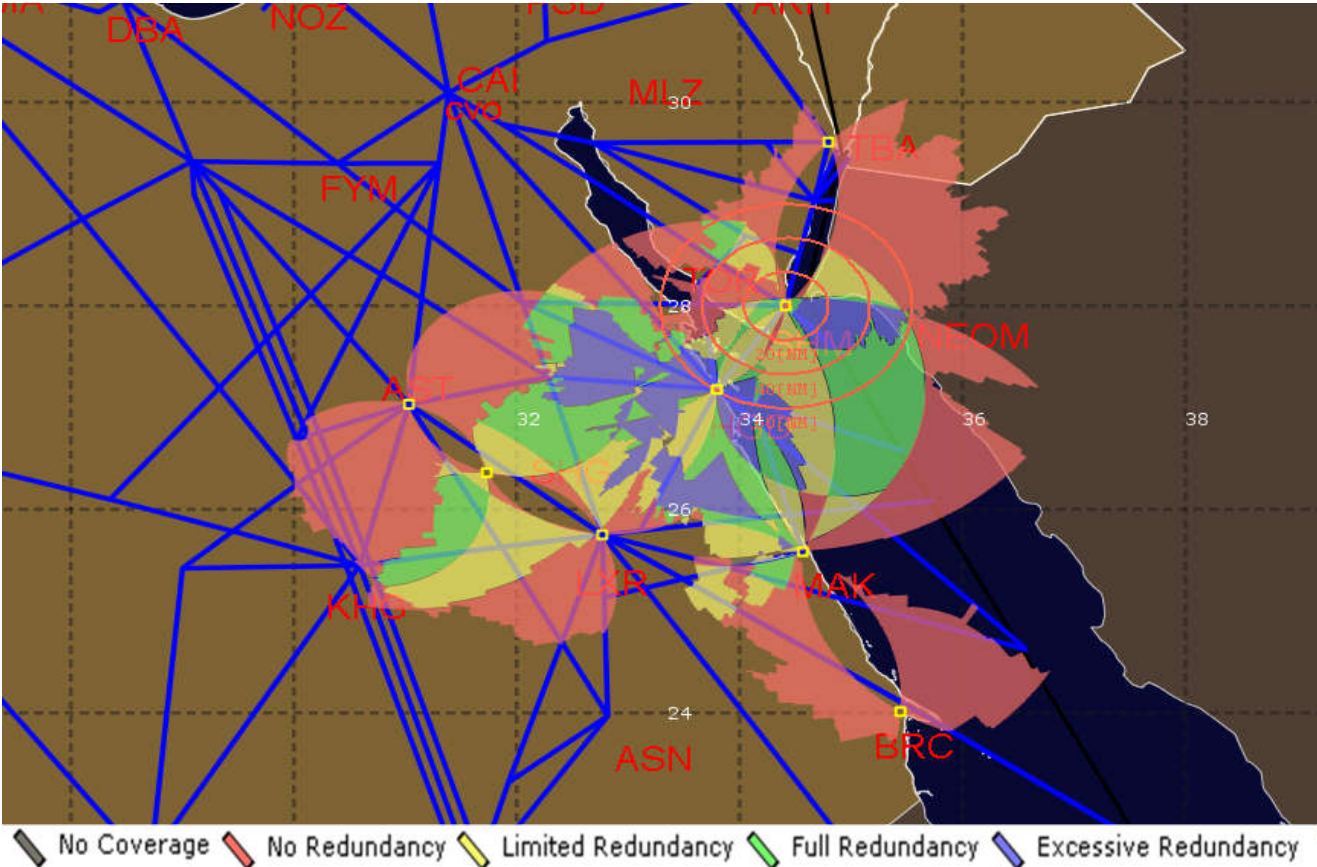




At FL140

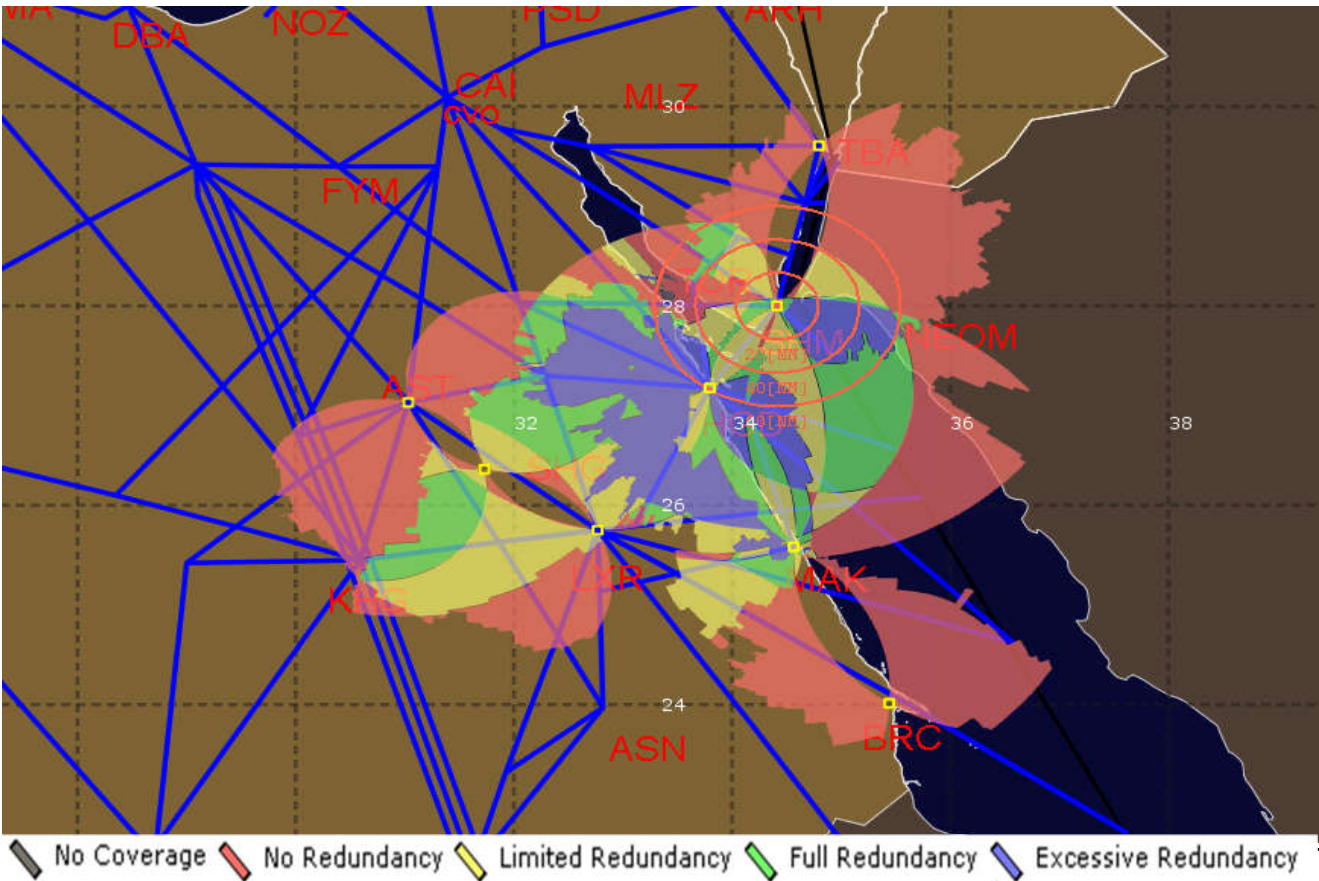


At FL160

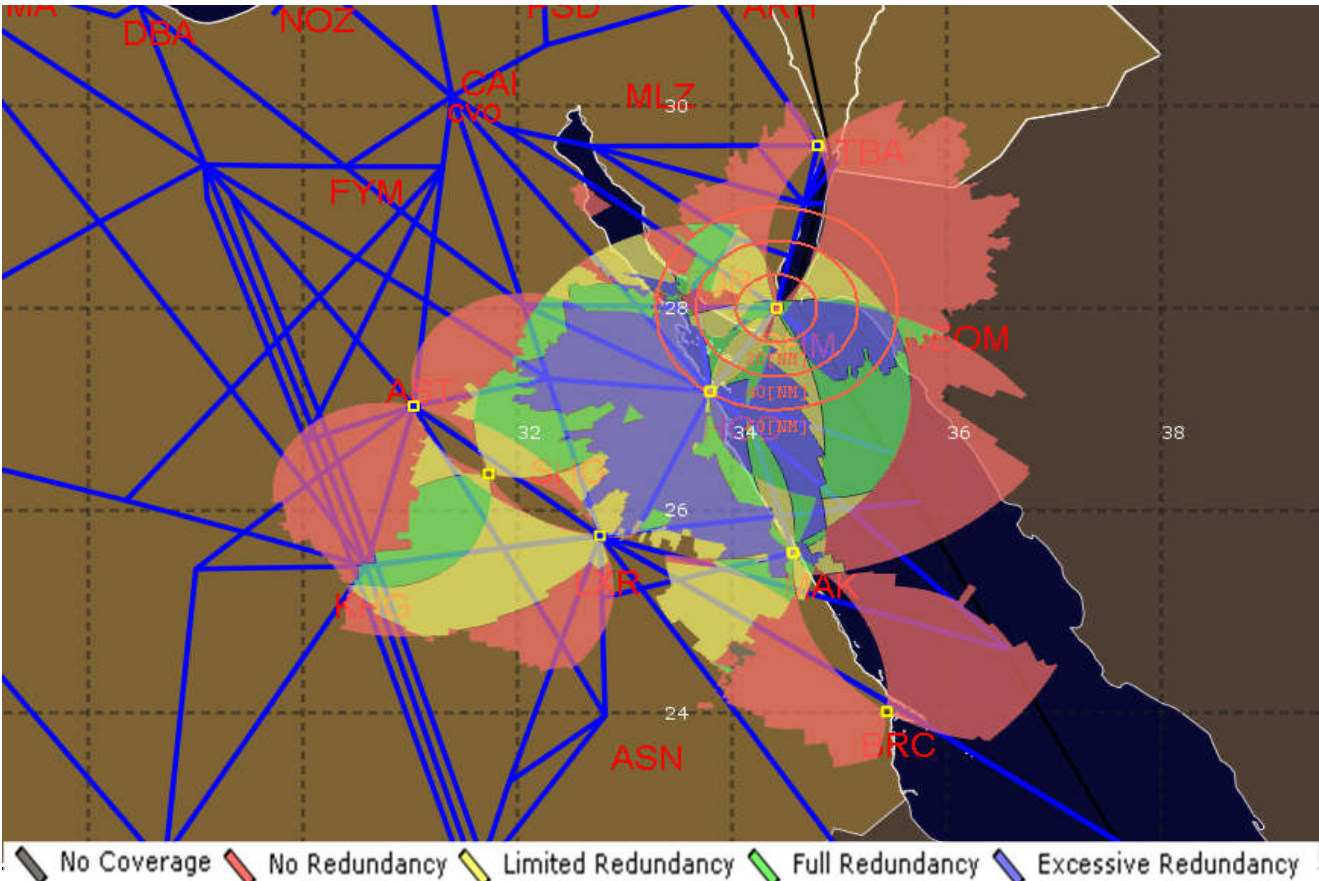




At FL180



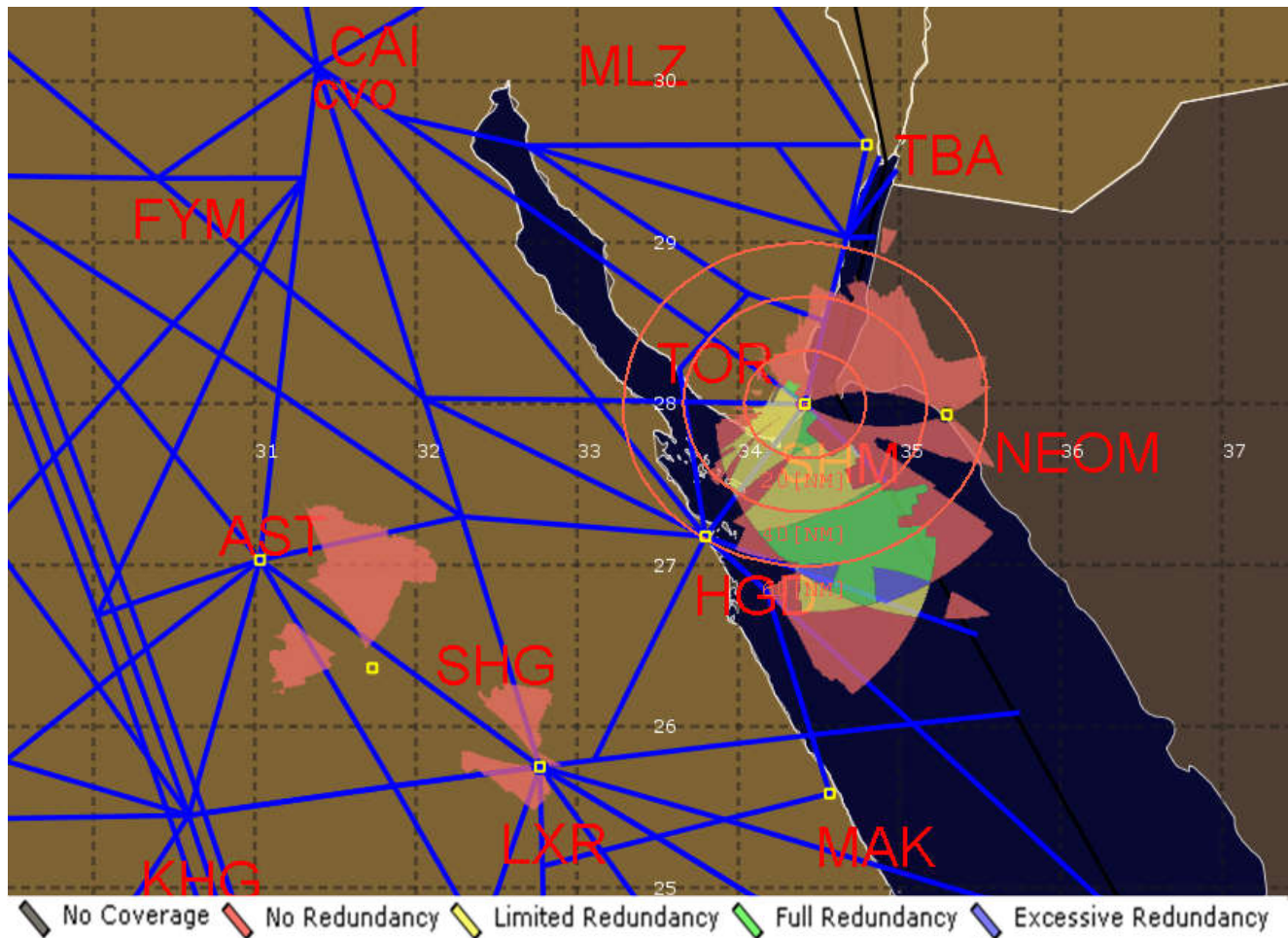
At FL200



Conclusion

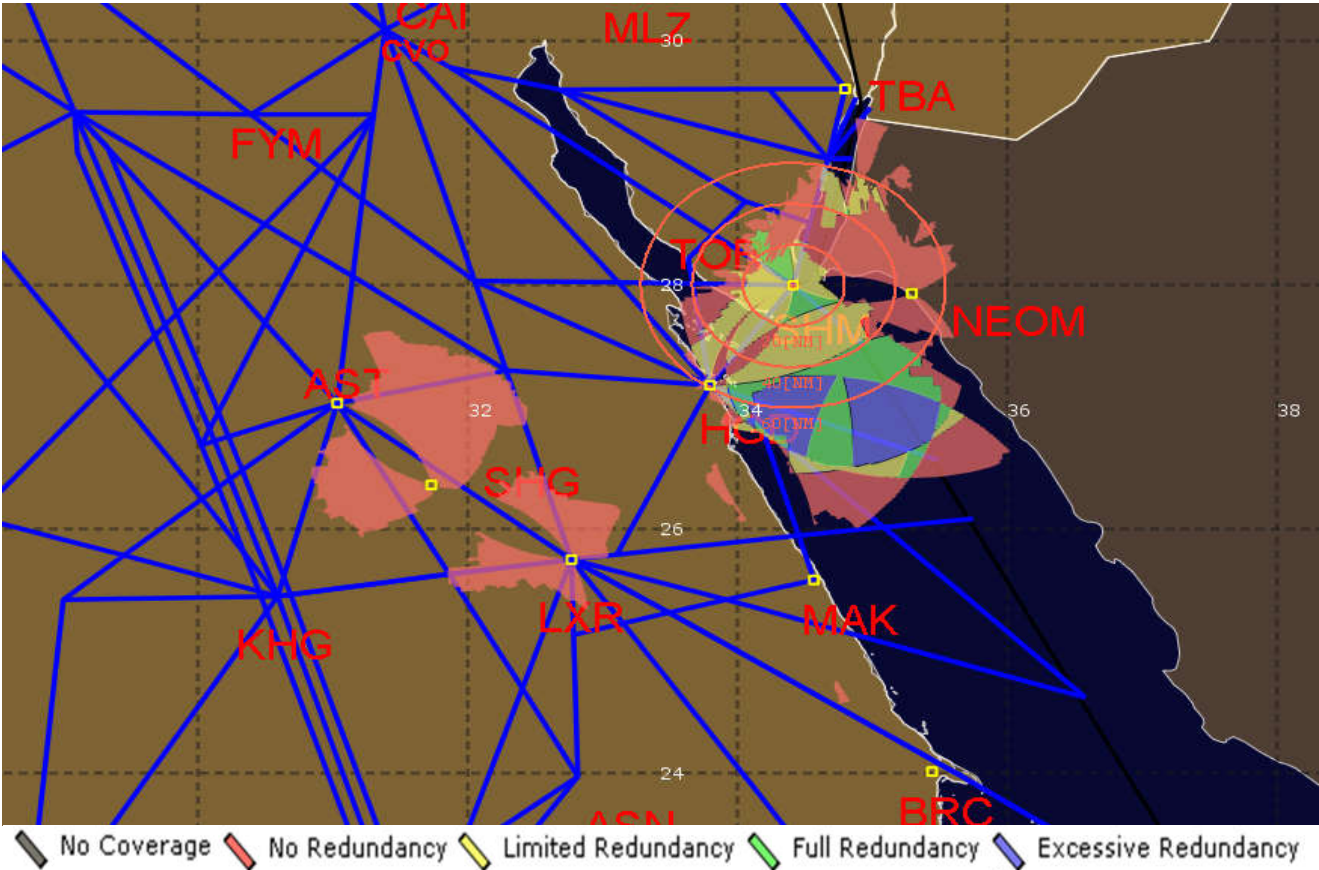
The current DME systems in Egypt at **FL12 and above** achieve partial DME/DME coverage for SHARM EL SHEIKH airport till range of 40 NM (there are lack of coverage at the route from SHARM to TABA airport).

1.2 The coverage of current DME systems with DME system at NEOM airport At FL40

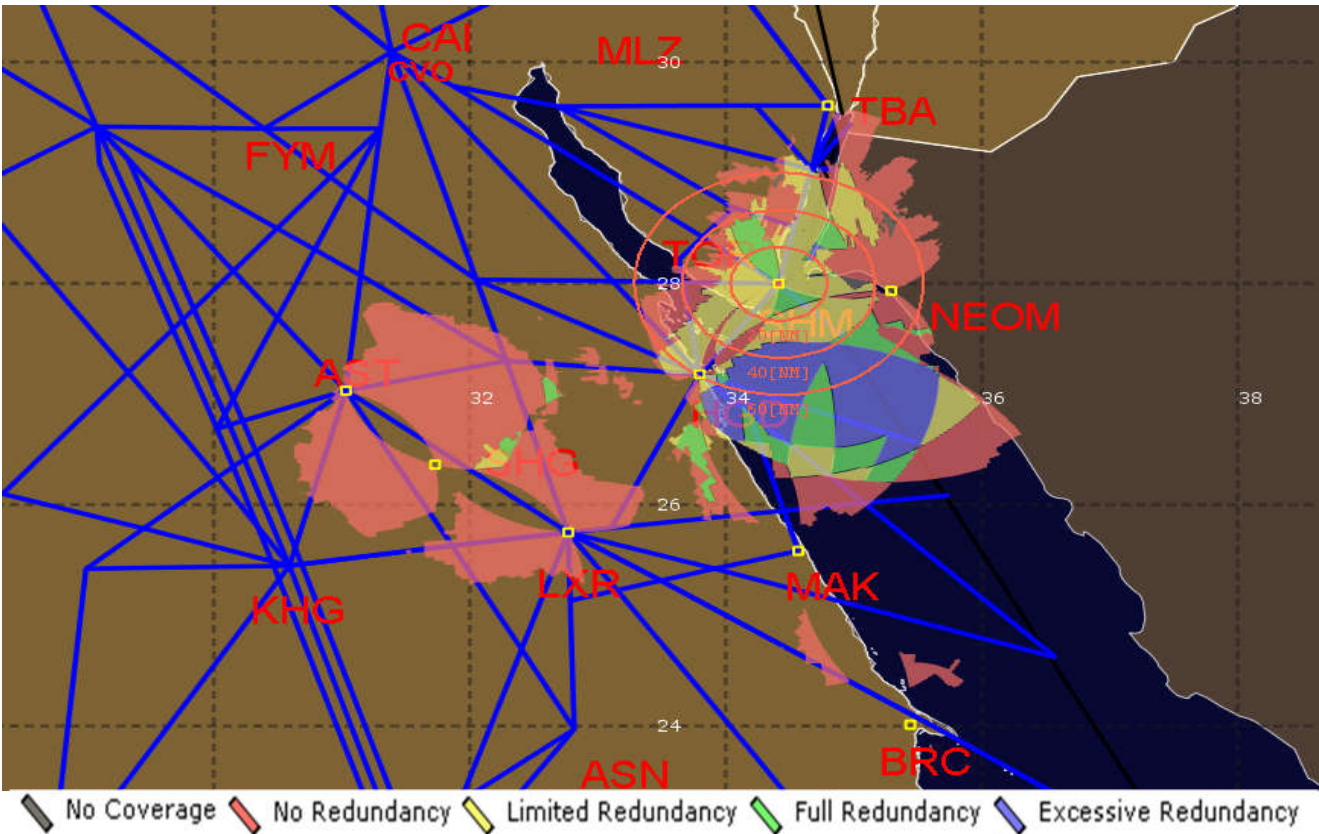




At FL60

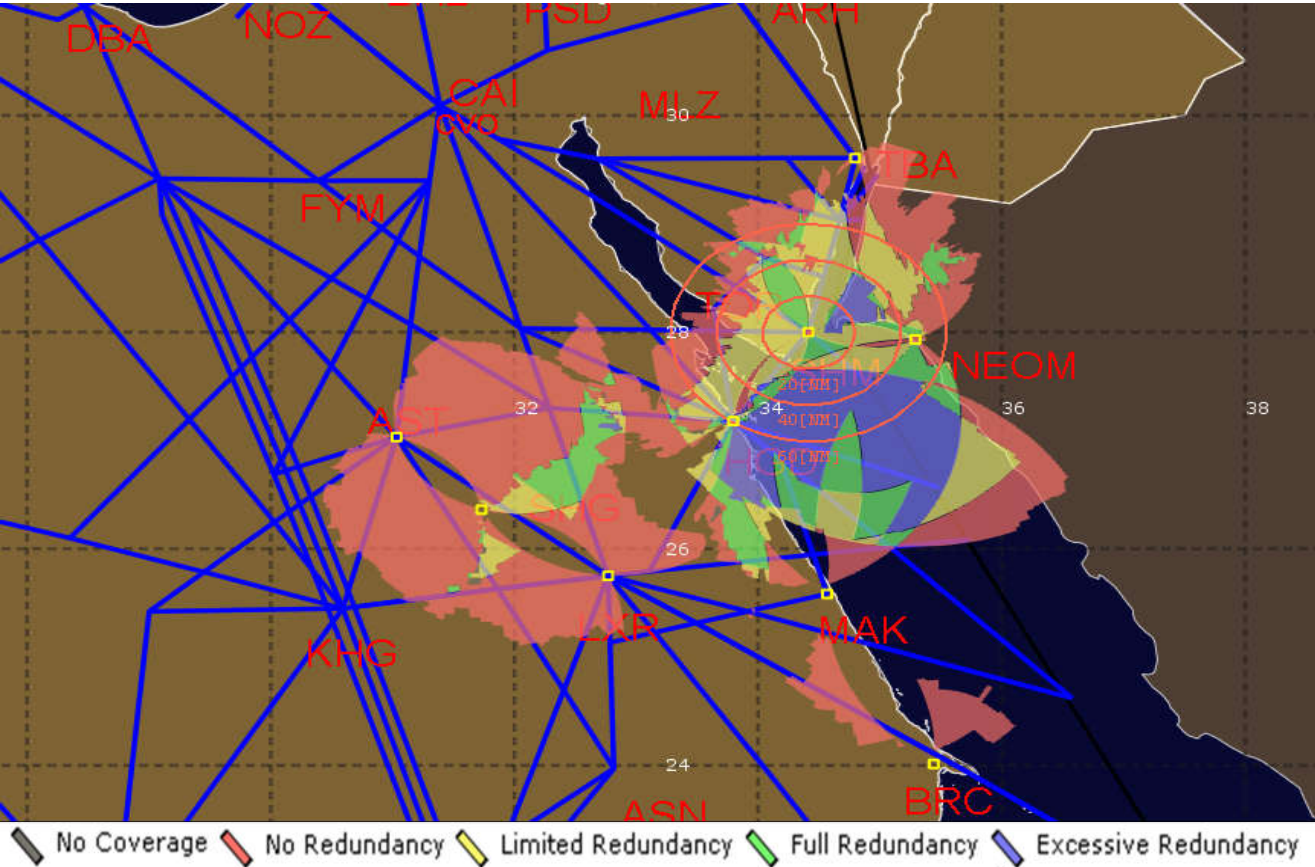


At FL80

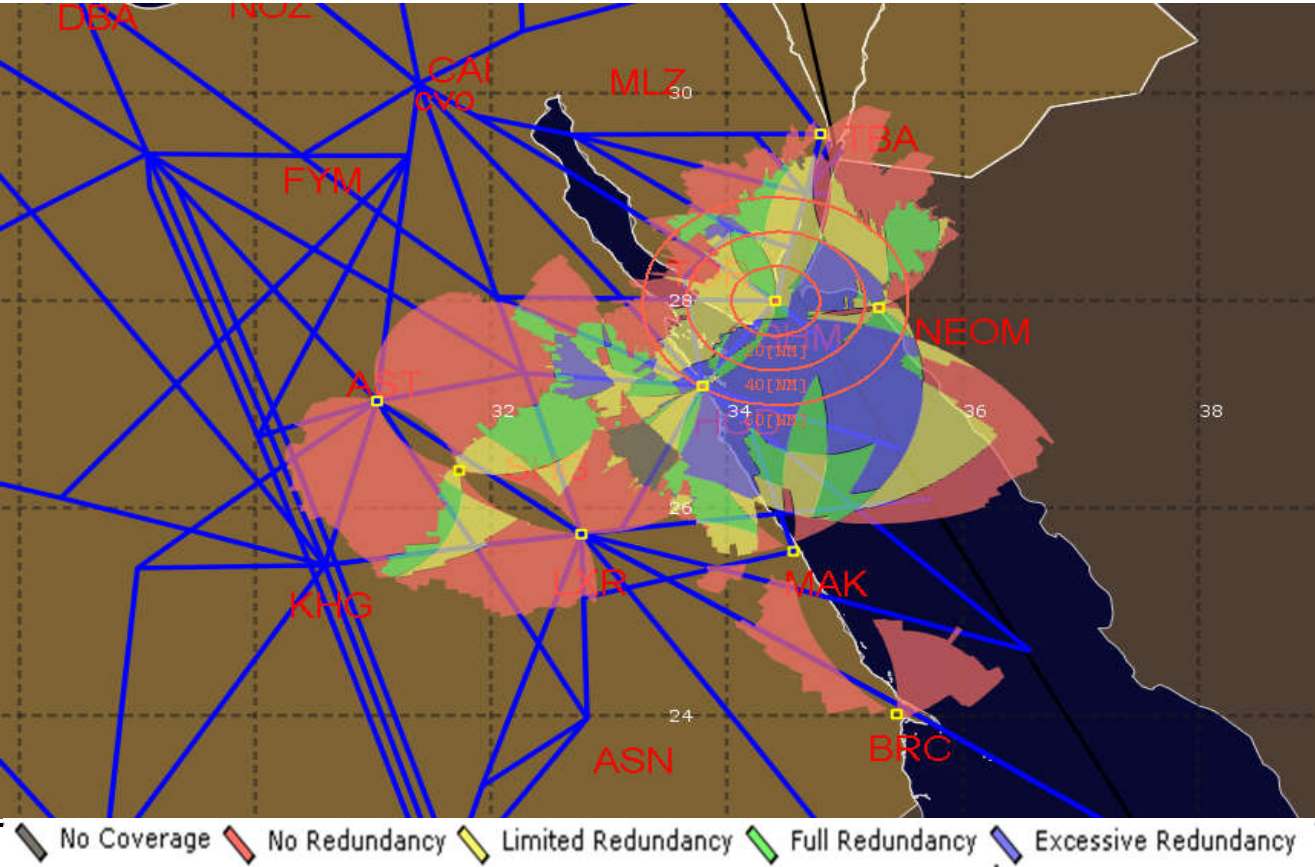




At FL100

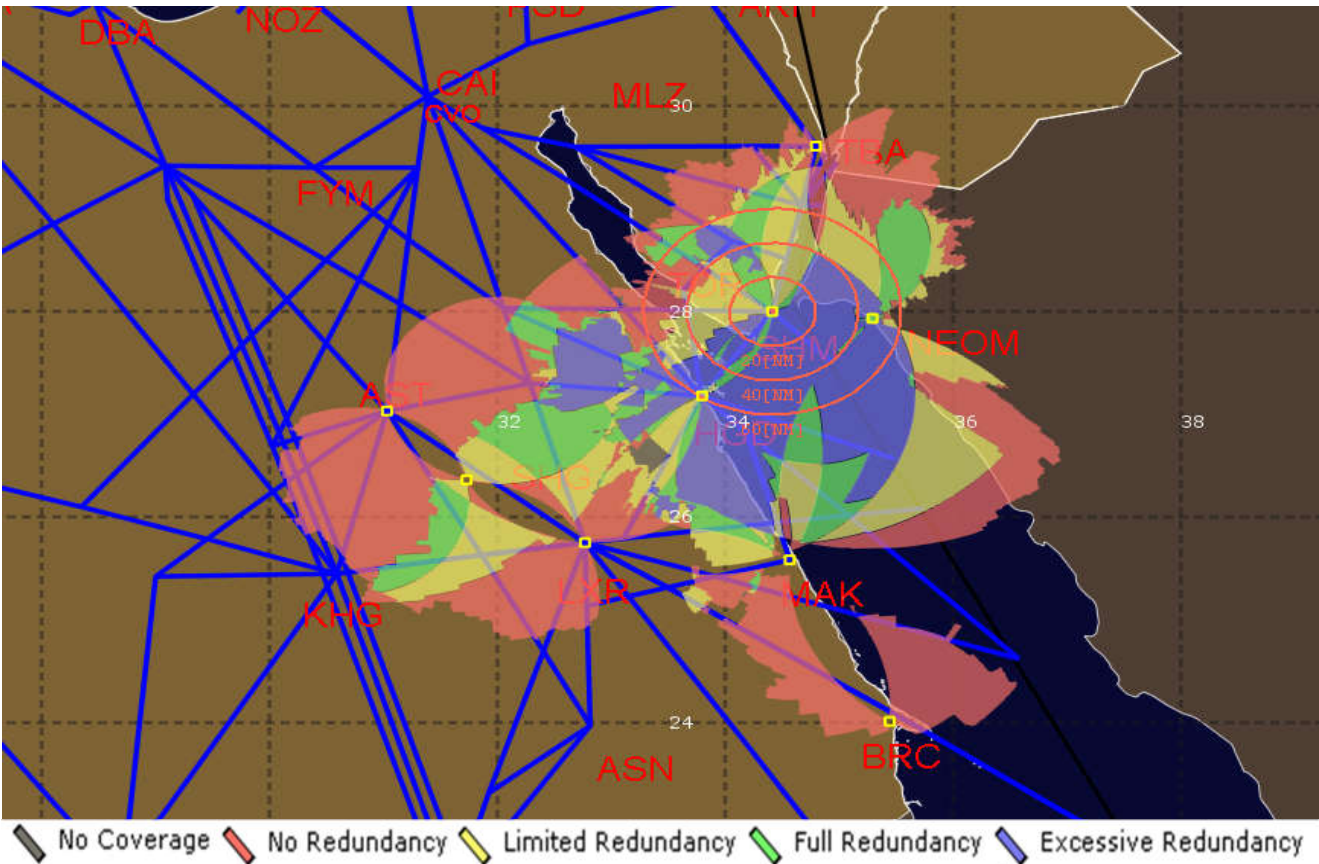


At FL120

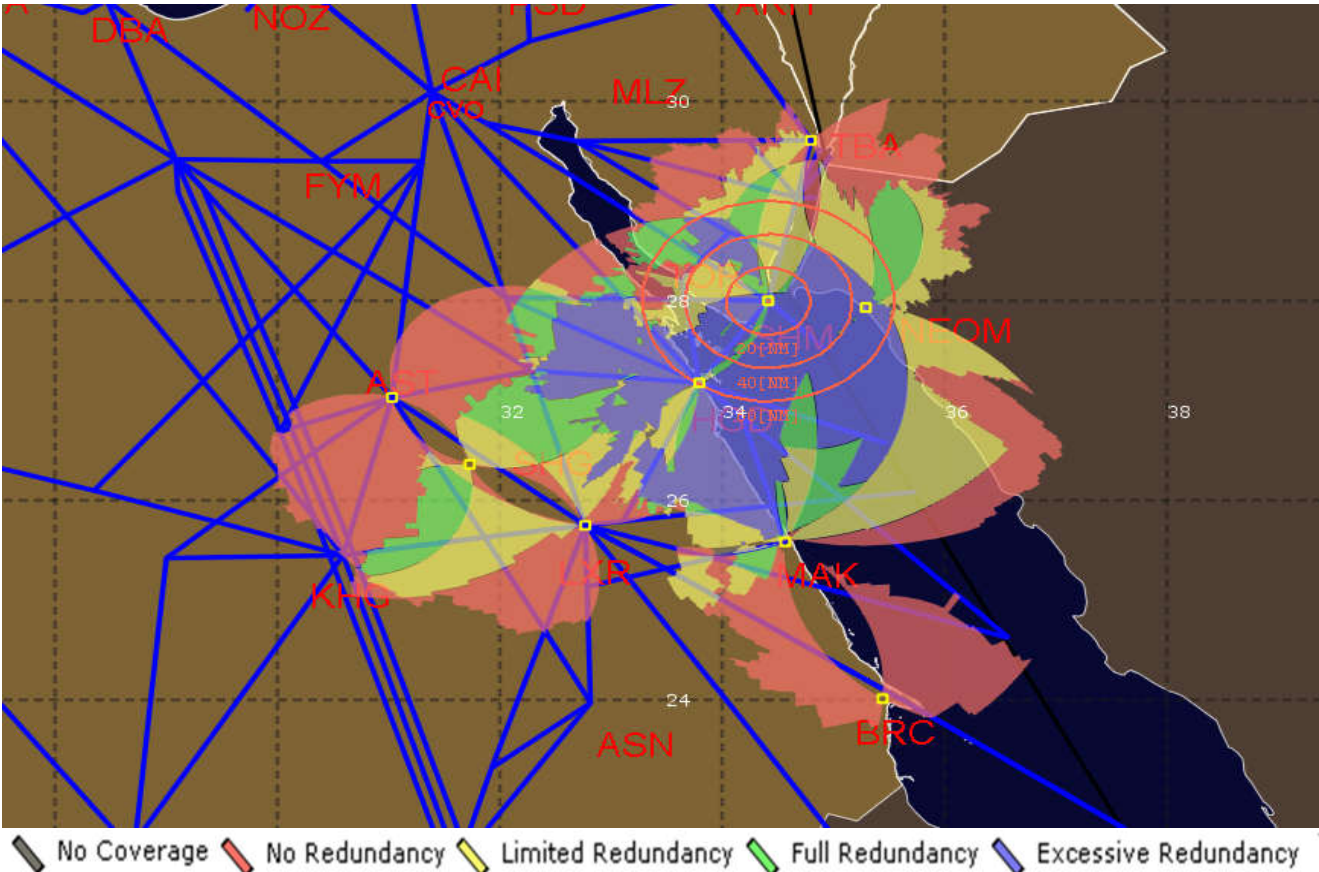




At FL140

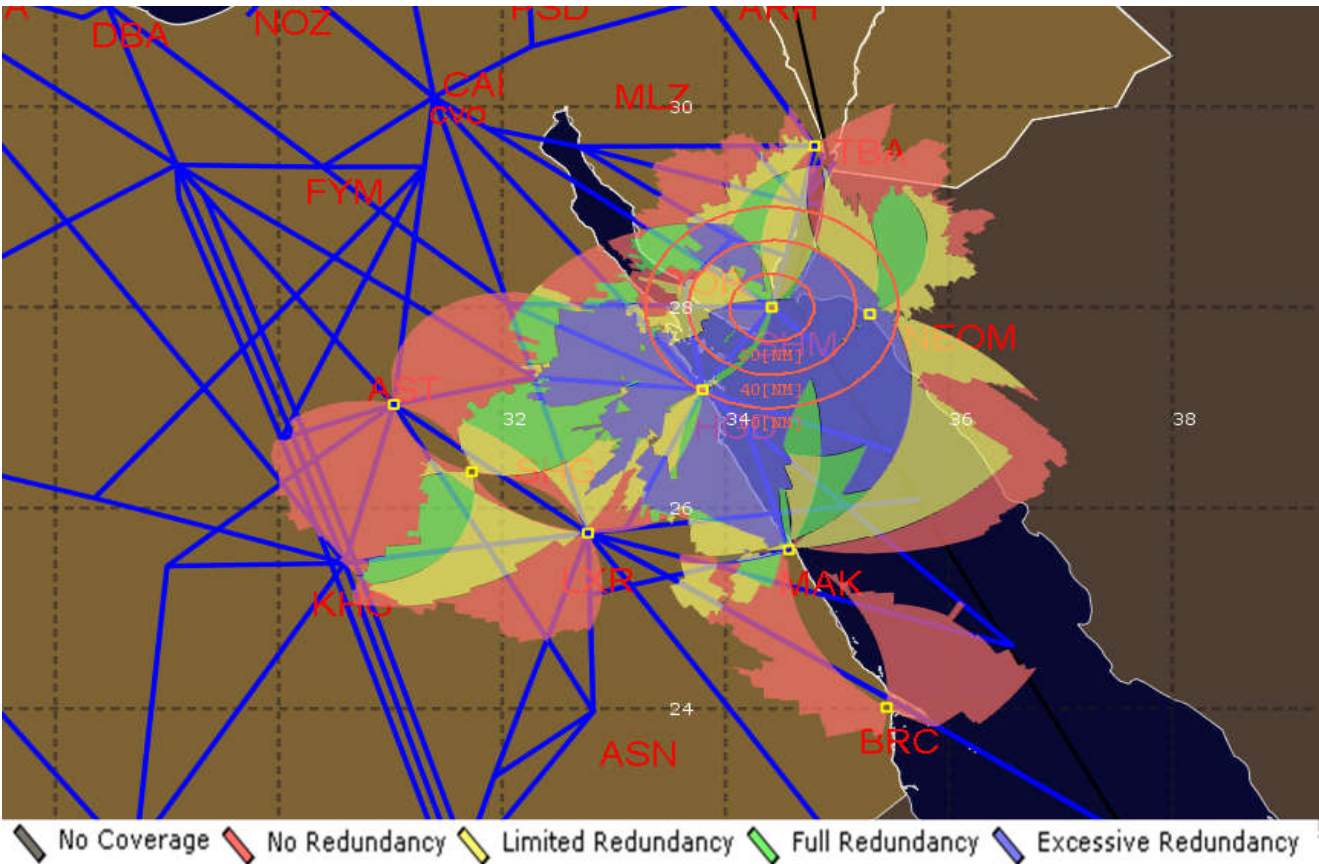


At FL160

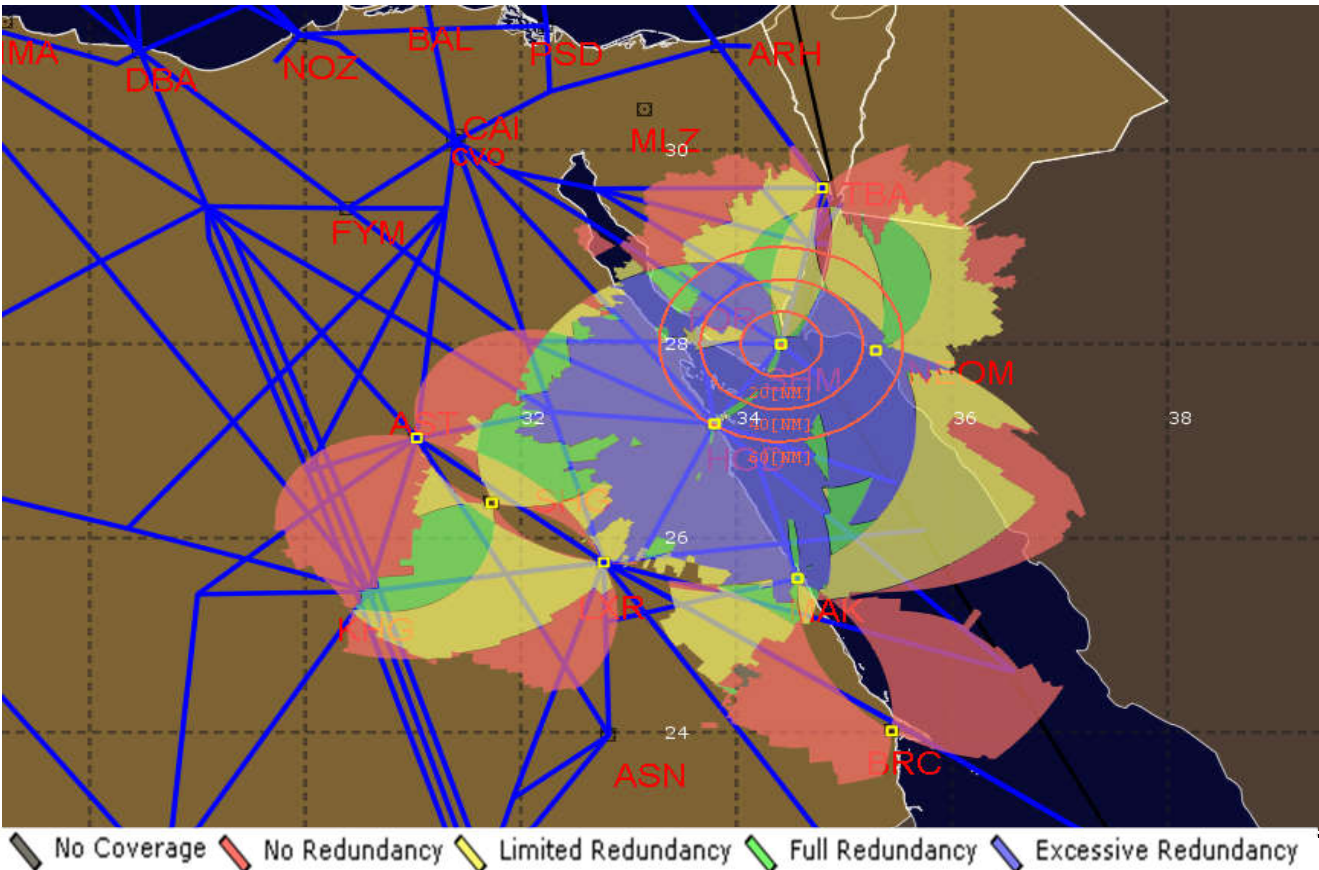




At FL180



At FL200

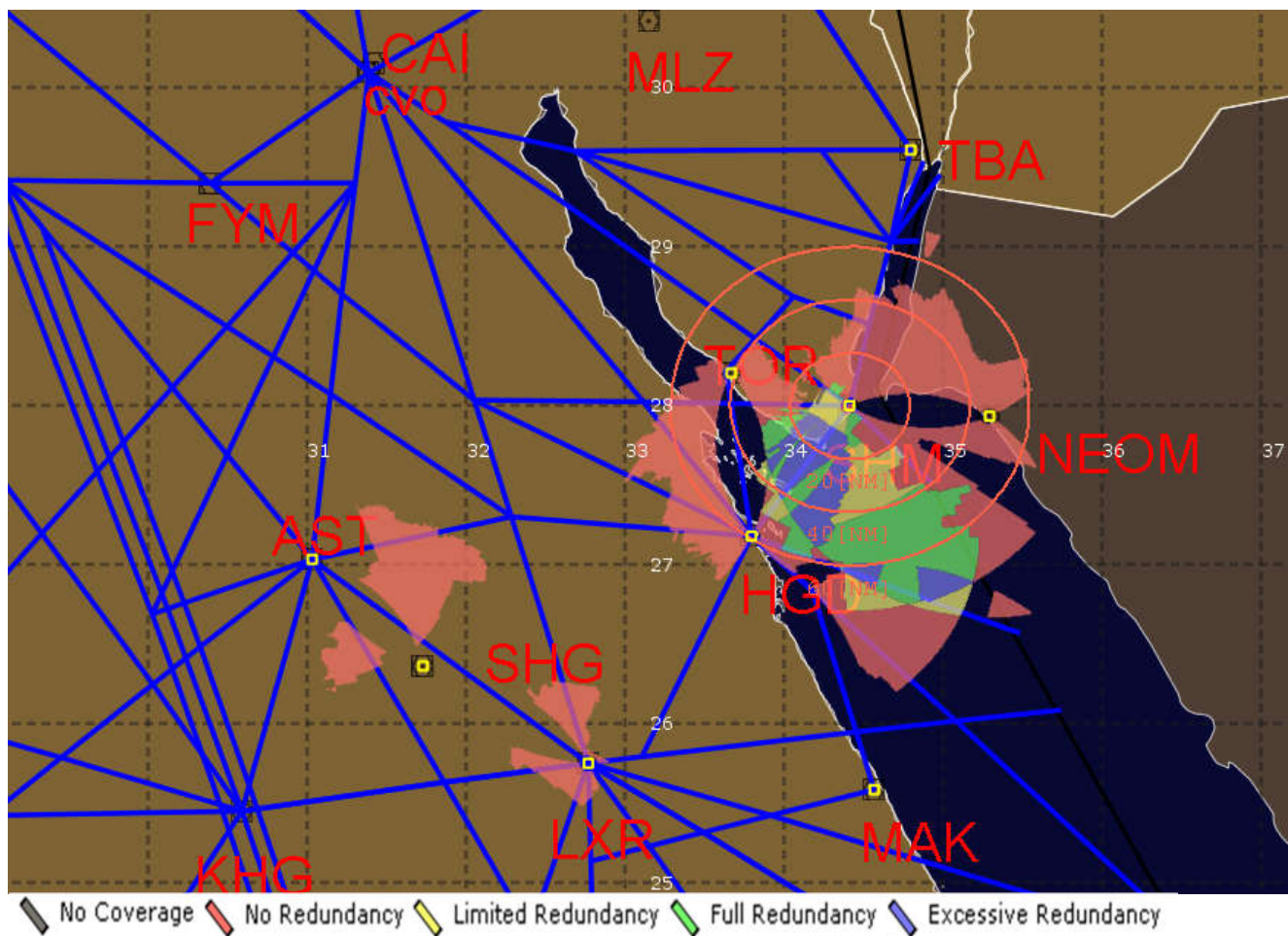


Conclusion

The current DME systems in Egypt with DME system at NEOM airport (Saudi Airport) at FL10 and above achieve DME/DME full coverage for SHARM EL SHEIKH airport till range of 40 NM.

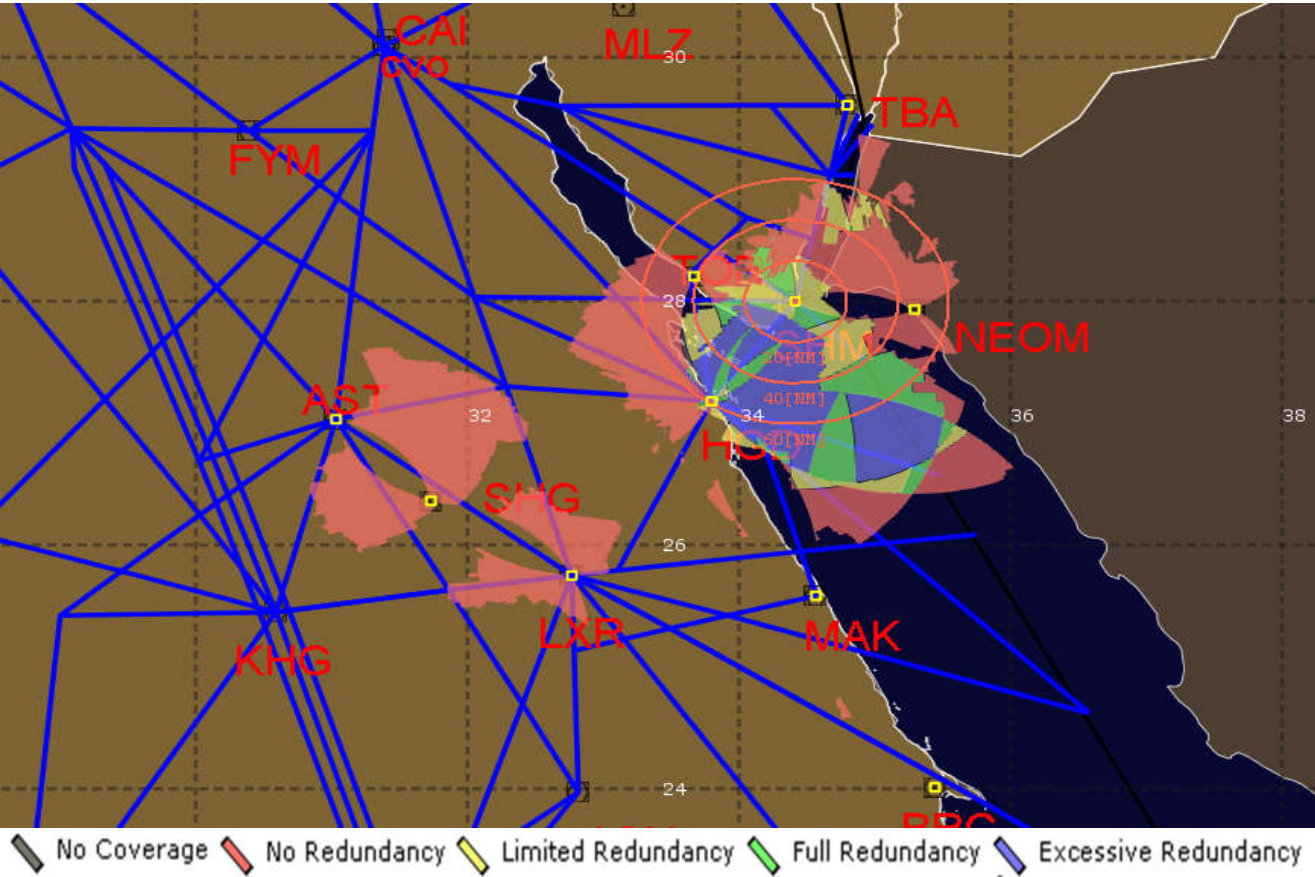
- 1.3 The coverage of current DME systems with the Planned new DME system at El Tour airport and DME system at NEOM airport.

At FL40

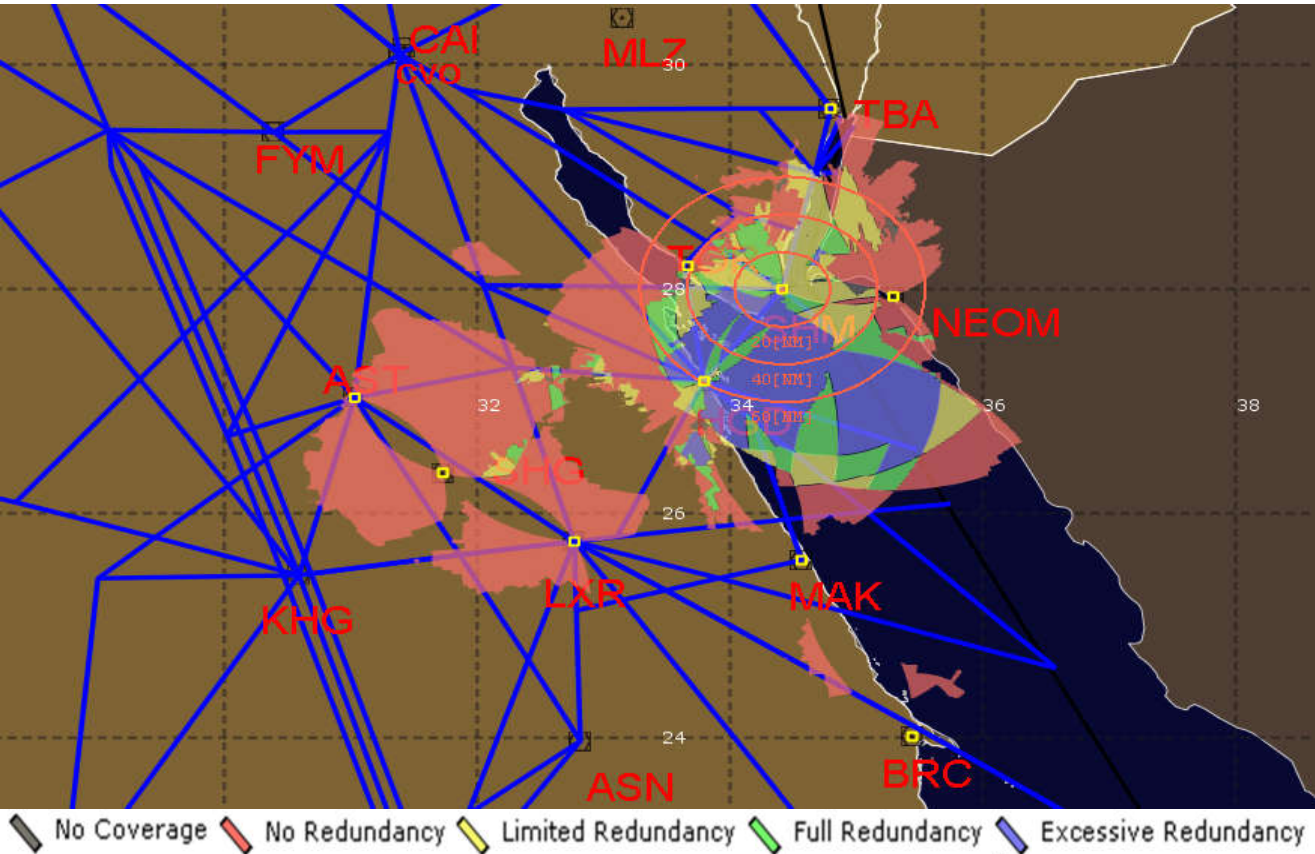




At FL60

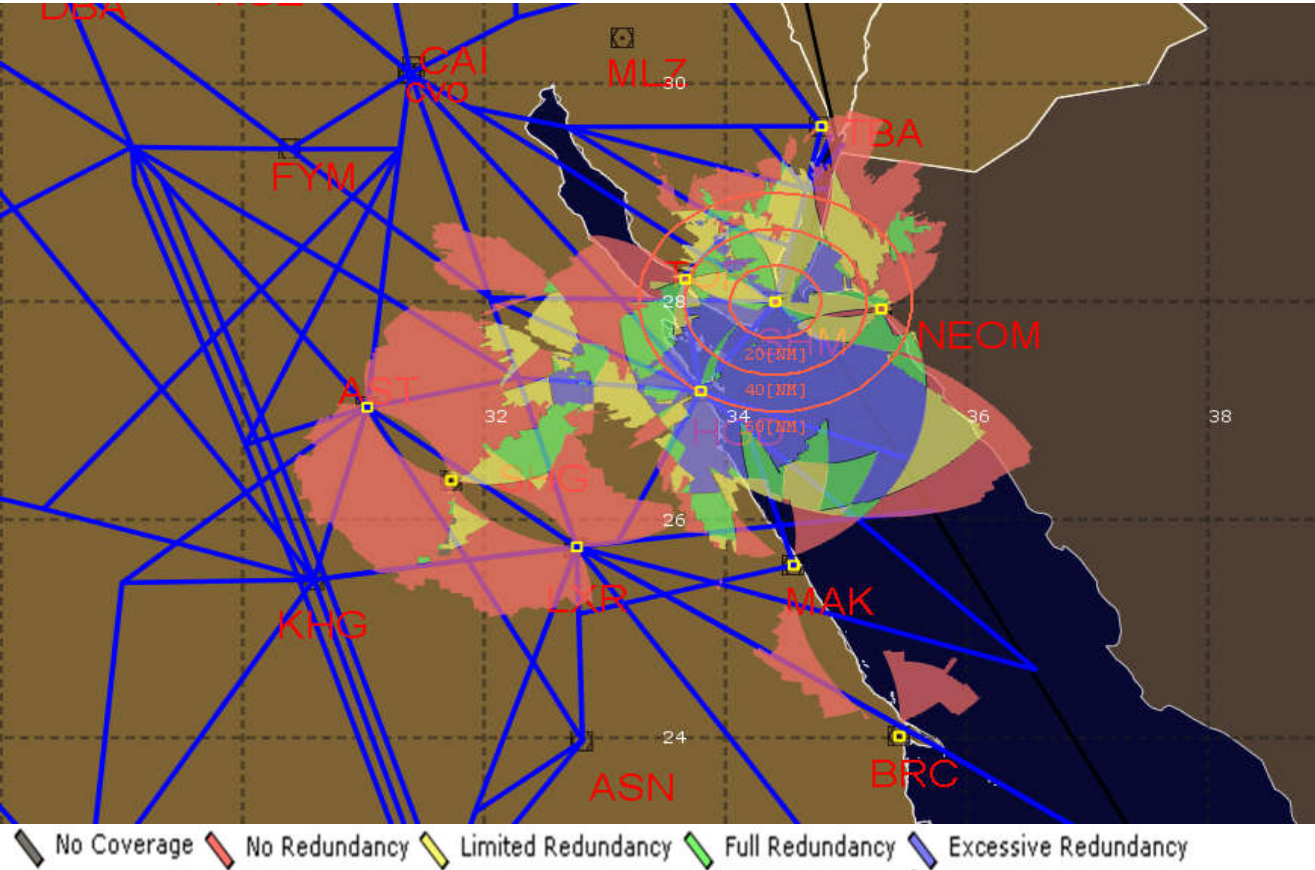


At FL80

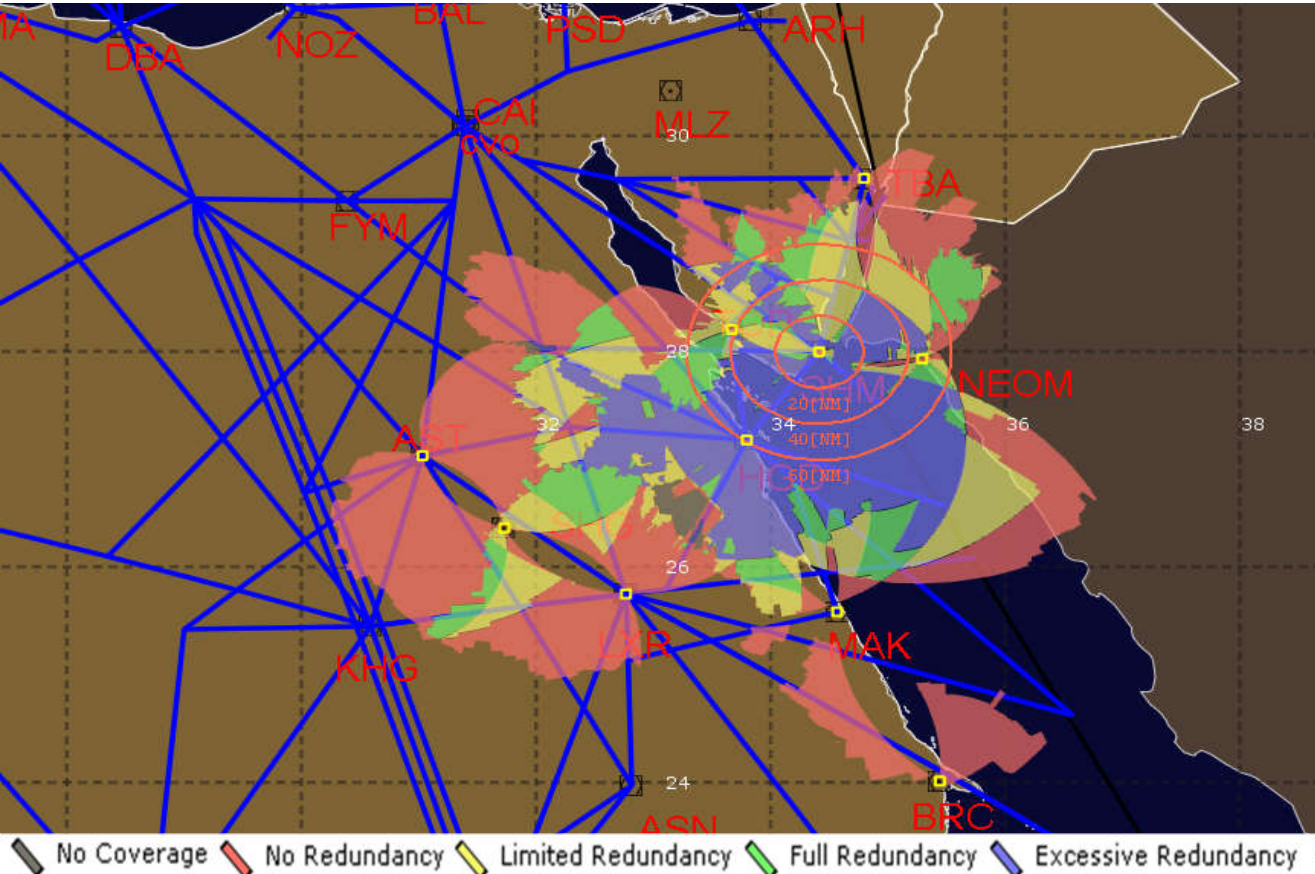




At FL100

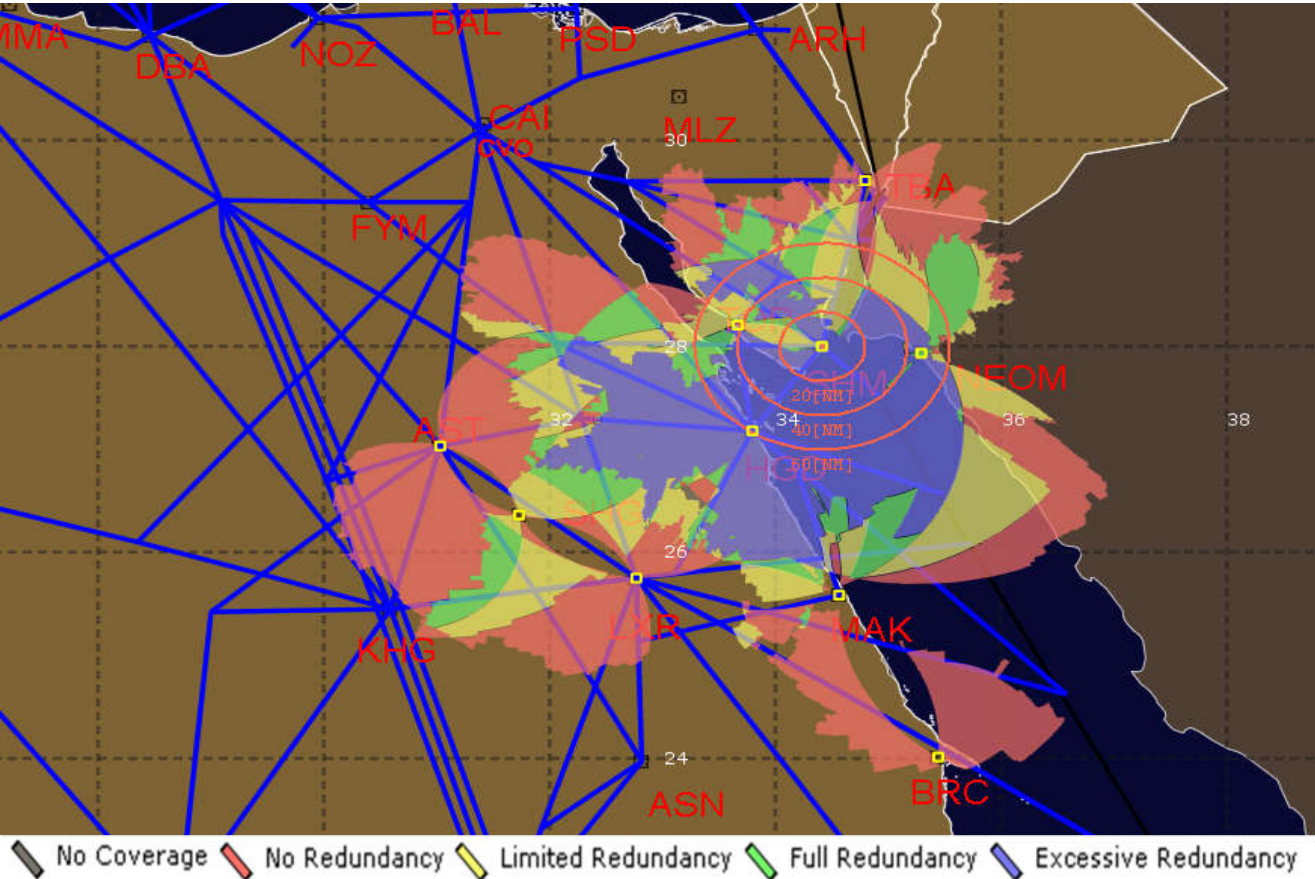


At FL120

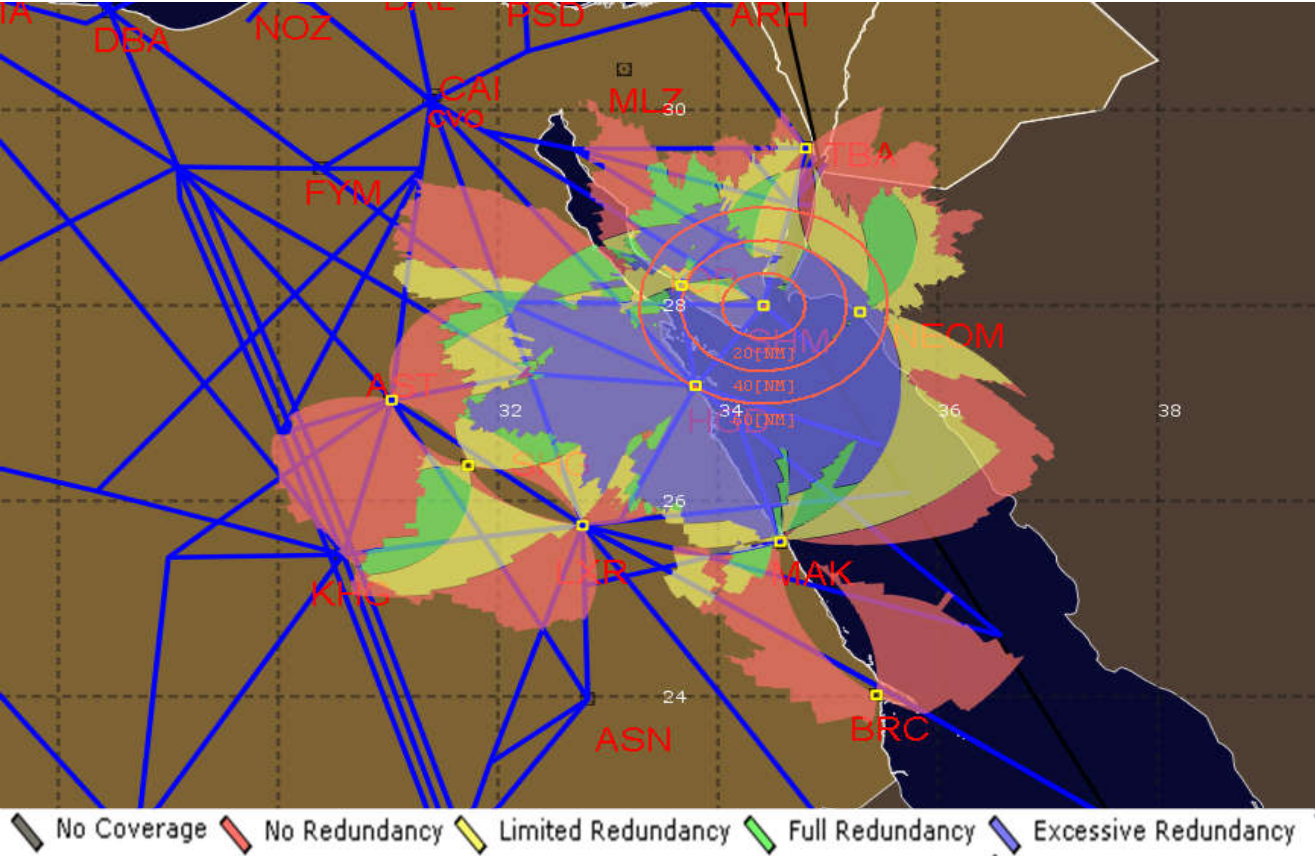




At FL140

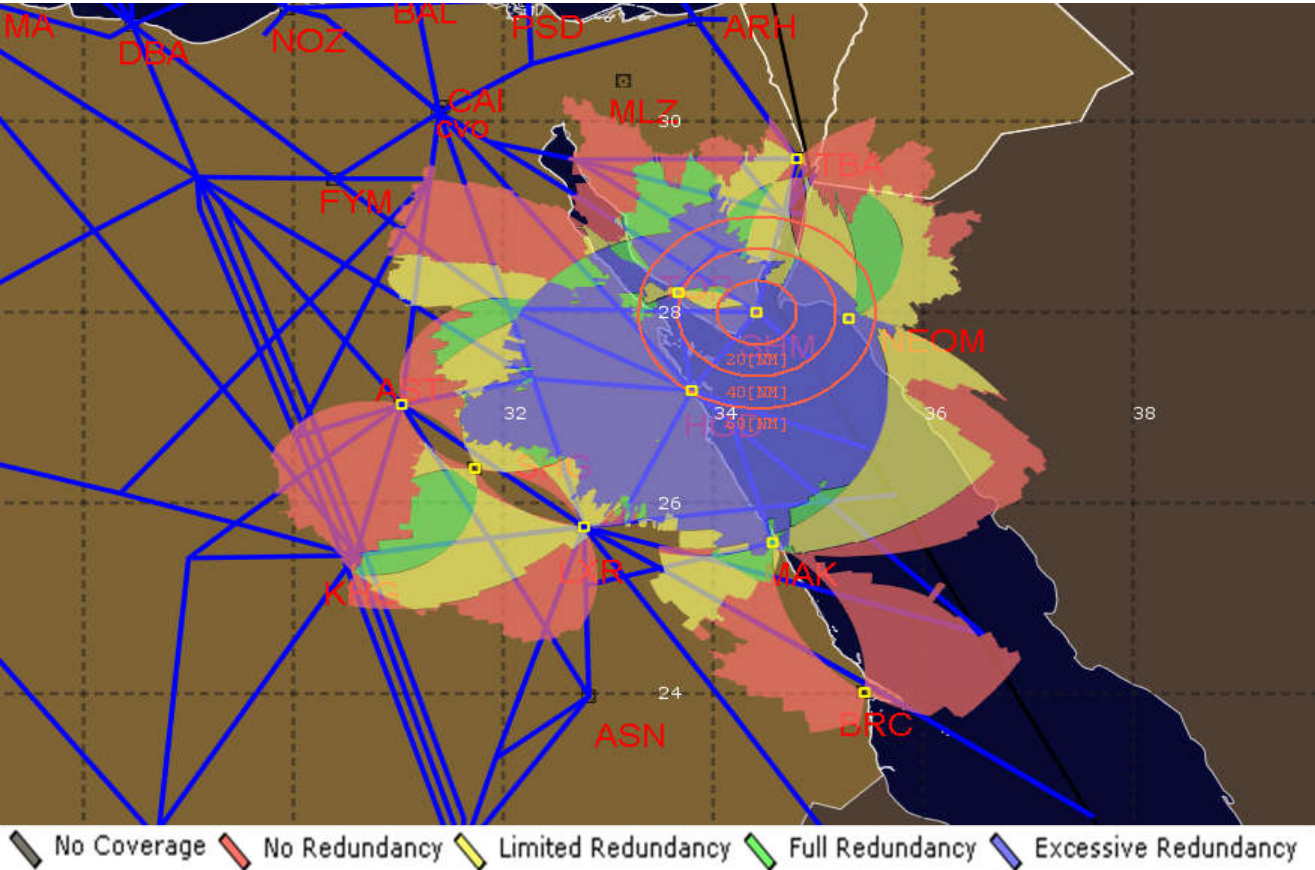


At FL160

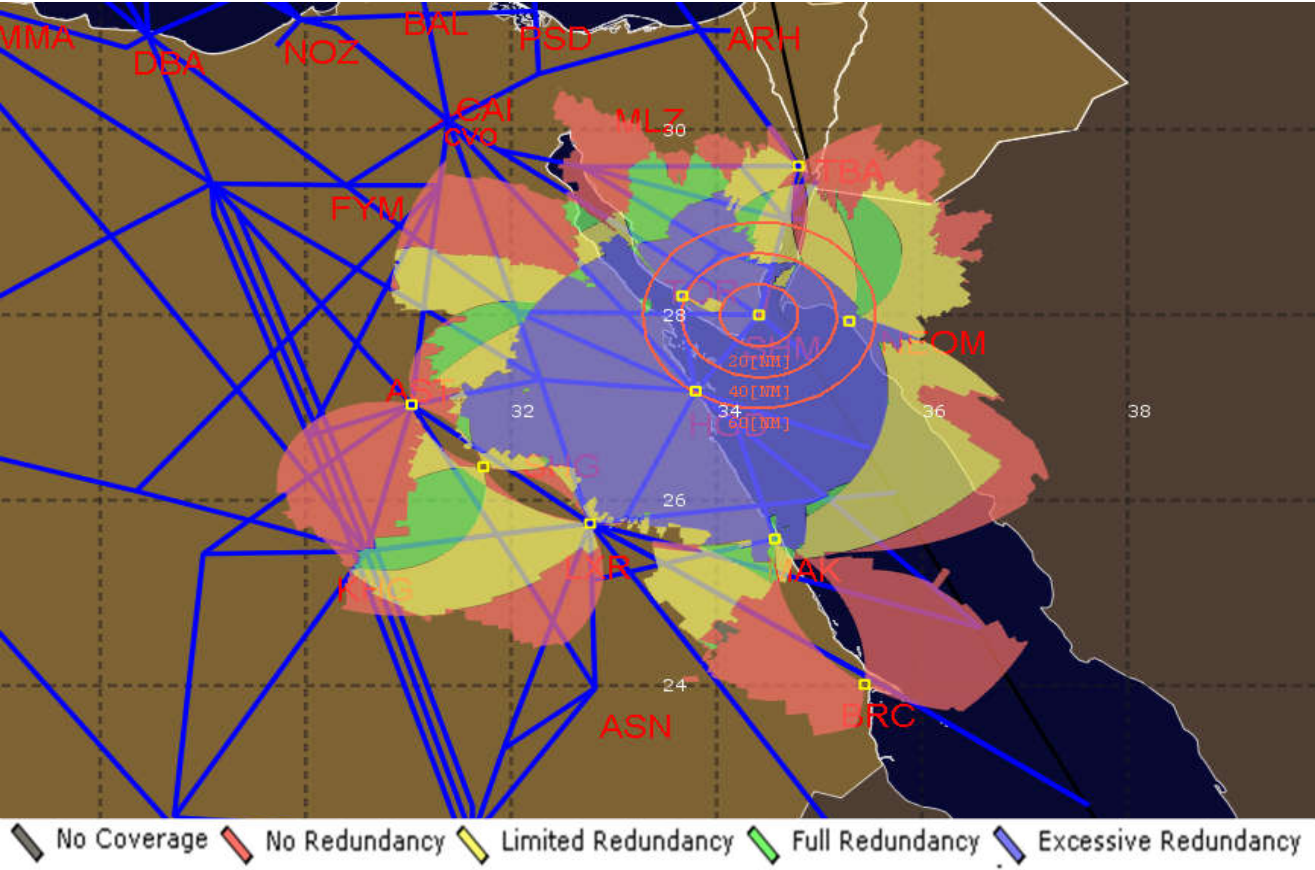




At FL180



At FL200



Conclusion

The current DME systems in Egypt with the Planned new DME system at El Tour airport and the DME system at NEOM airport (Saudi Airport) at FL8 and above achieve DME/DME full coverage for SHARM EL SHEIKH airport till range of 40 NM.

2 DME/DME Coverage for HURGHADA airport

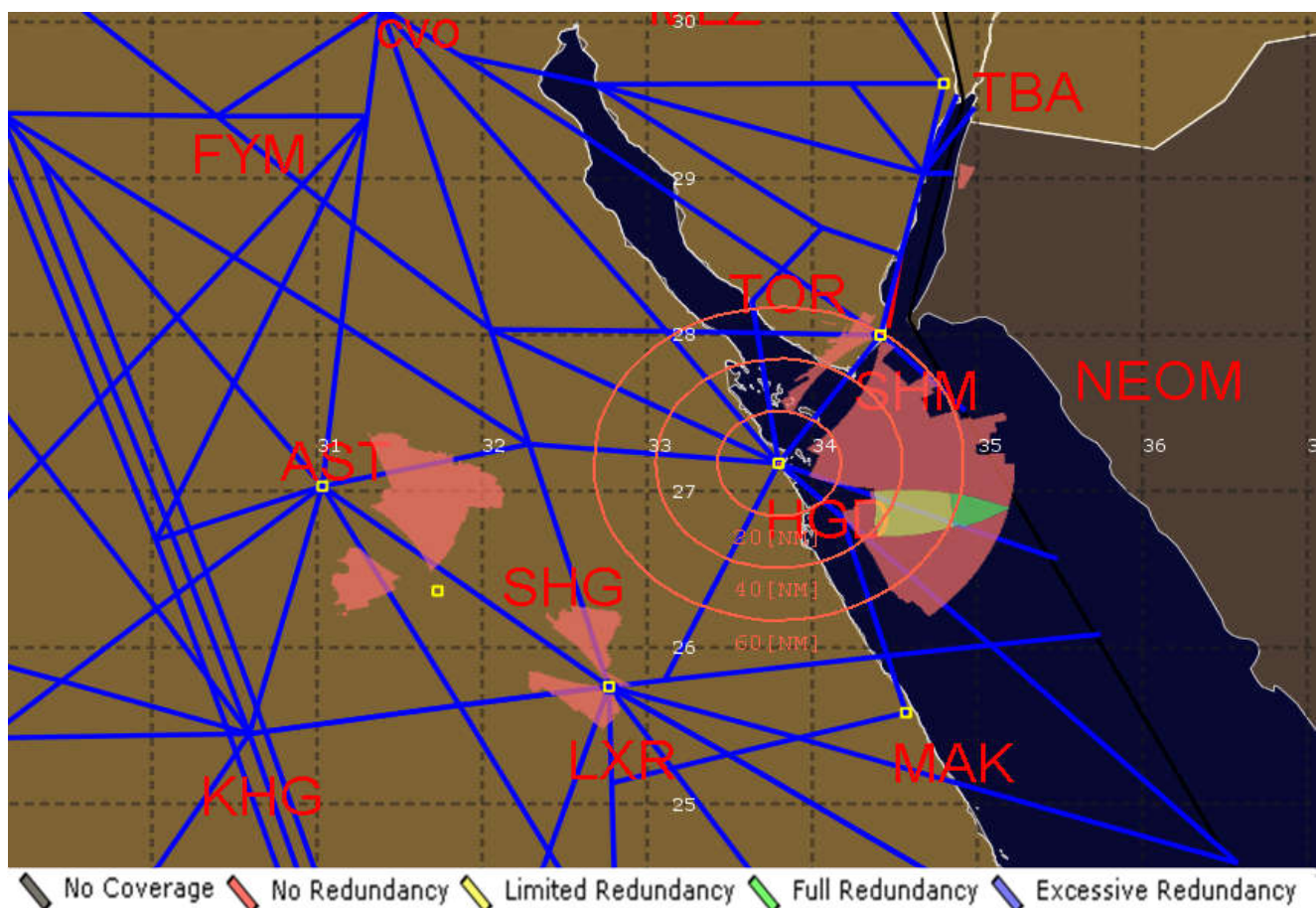
DME/DME coverage for Hurghada airport is achieved by using the current DME systems in Egypt and Saudi Arabia and Planned DME systems as follow:

- 1- The current DME systems in Egypt
- 2- The current DME systems in Egypt with the DME system at NEOM airport (Saudi Arabia)
- 3- The current DME systems in Egypt with the Planned new DME system at ELTOUR airport and the DME system at NEOM airport (Saudi Arabia)

Note: The selected airport is highlighted by red rings at 20NM,40NM, and 60NM to show the DME/DME coverage range.

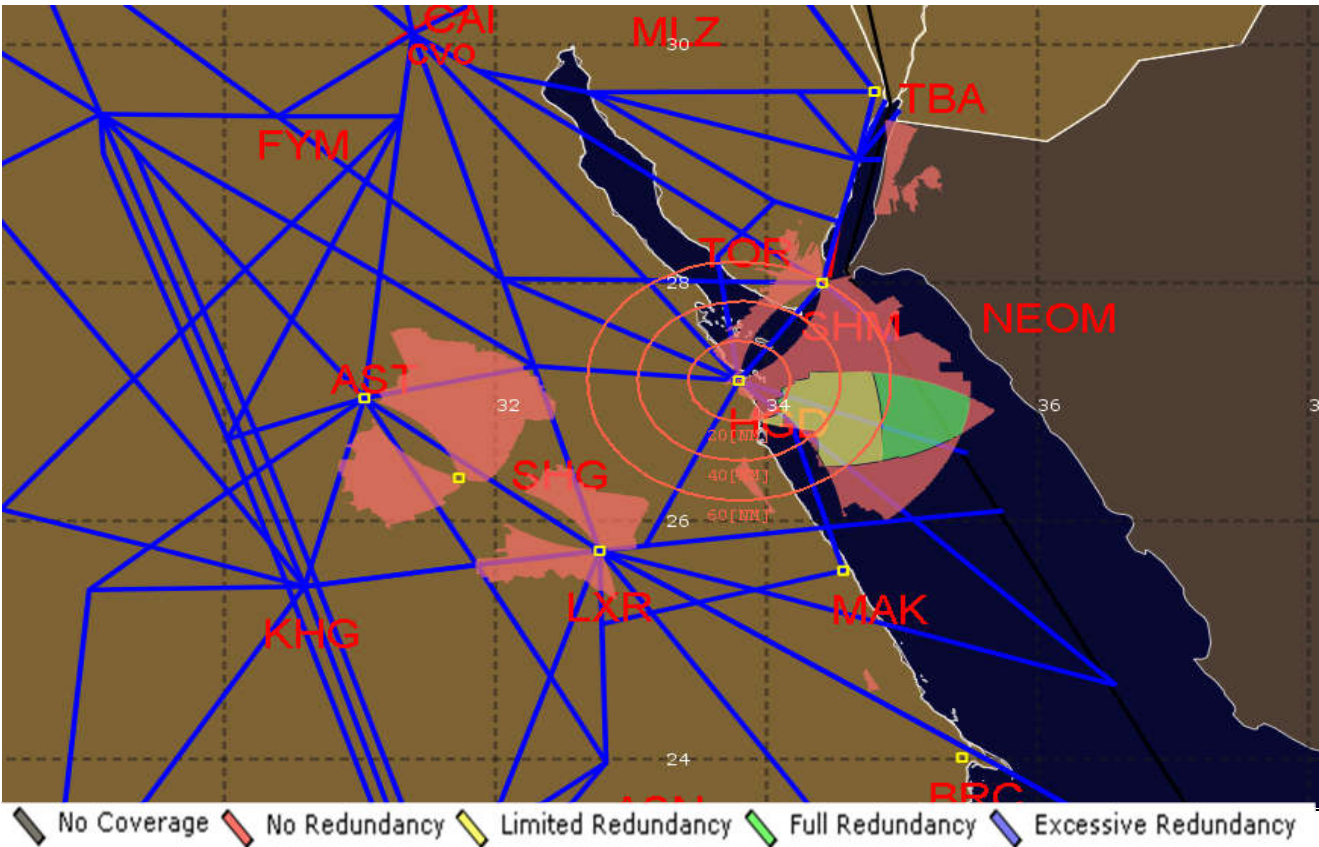
2.1 The coverage of current DME systems

At FL40

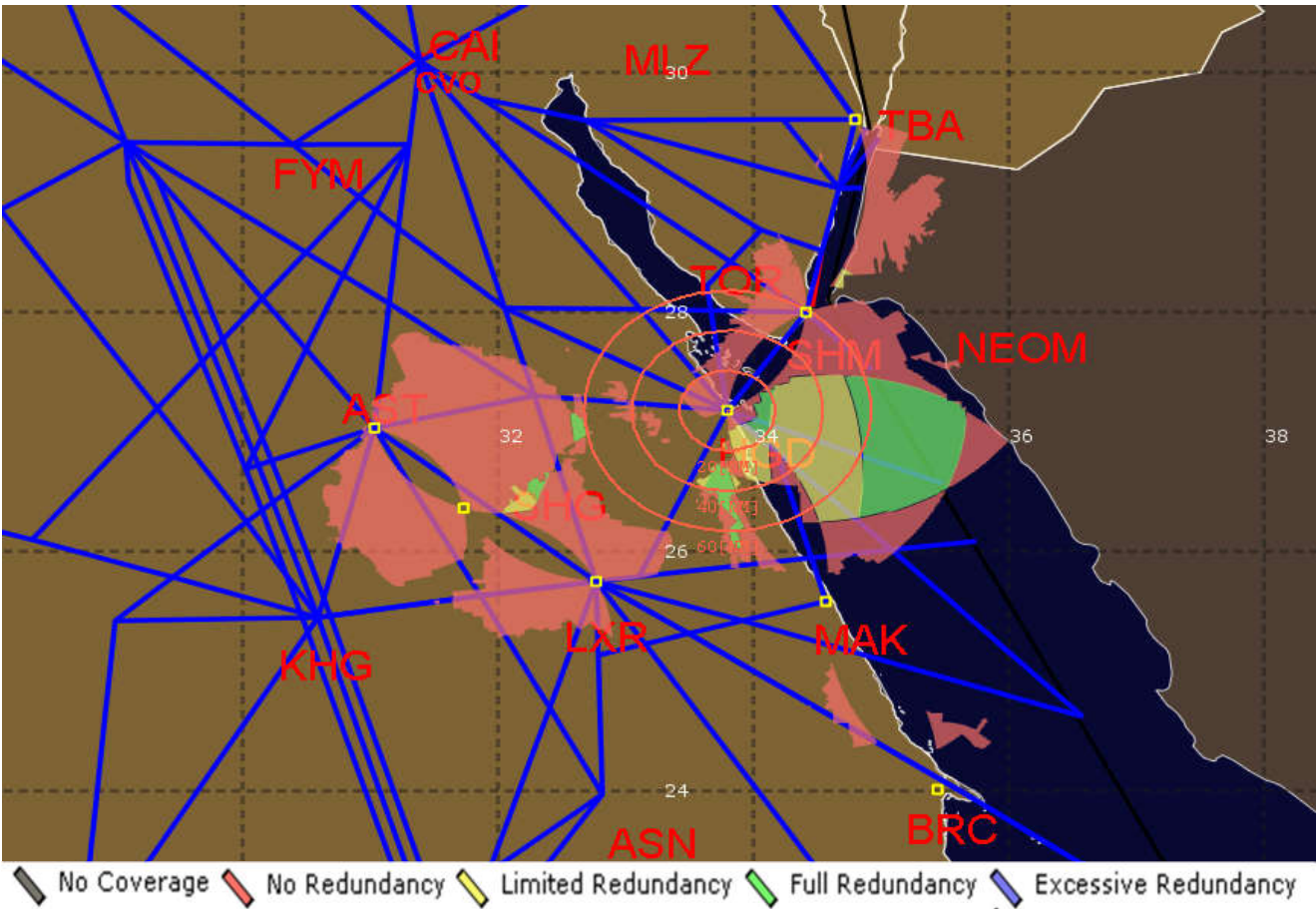




At FL60

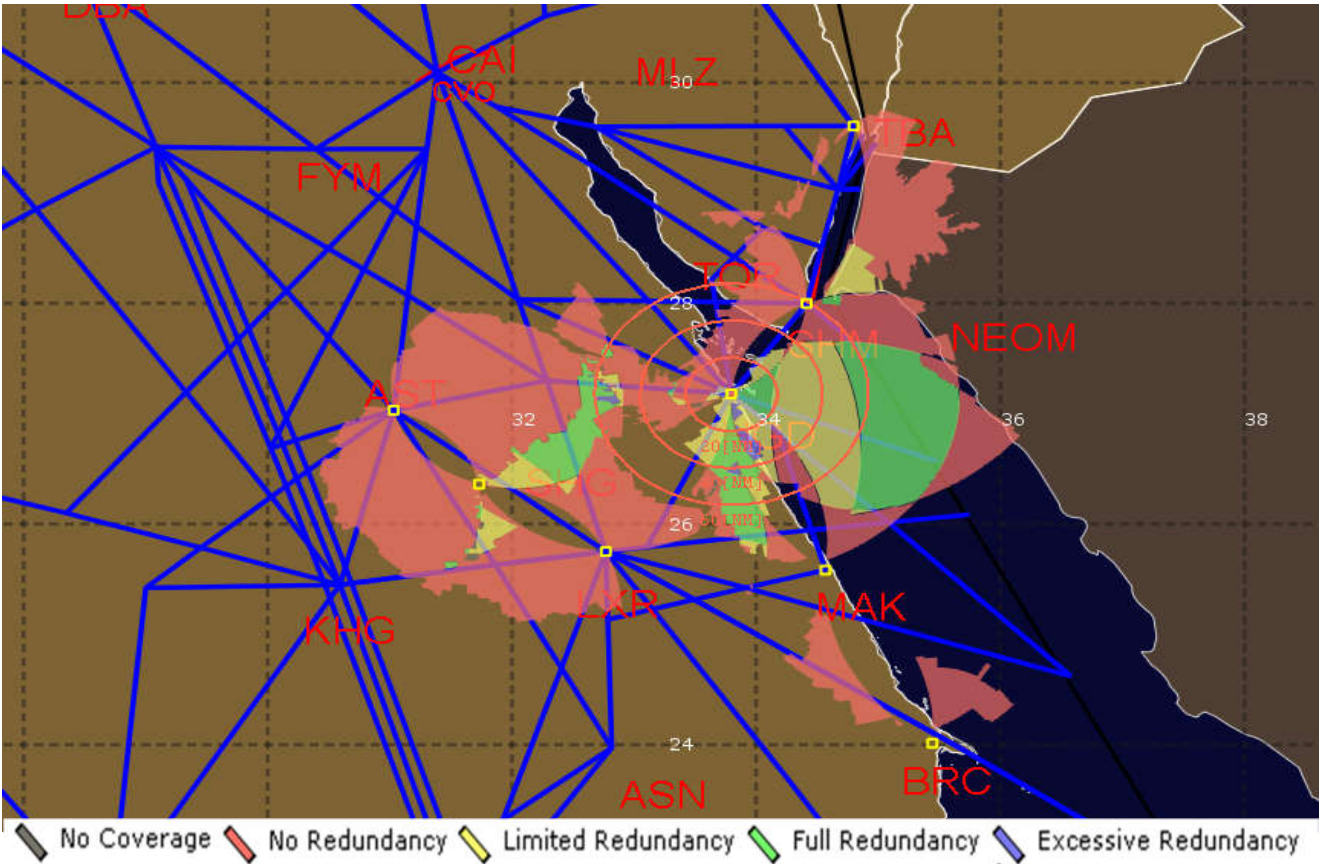


At FL80

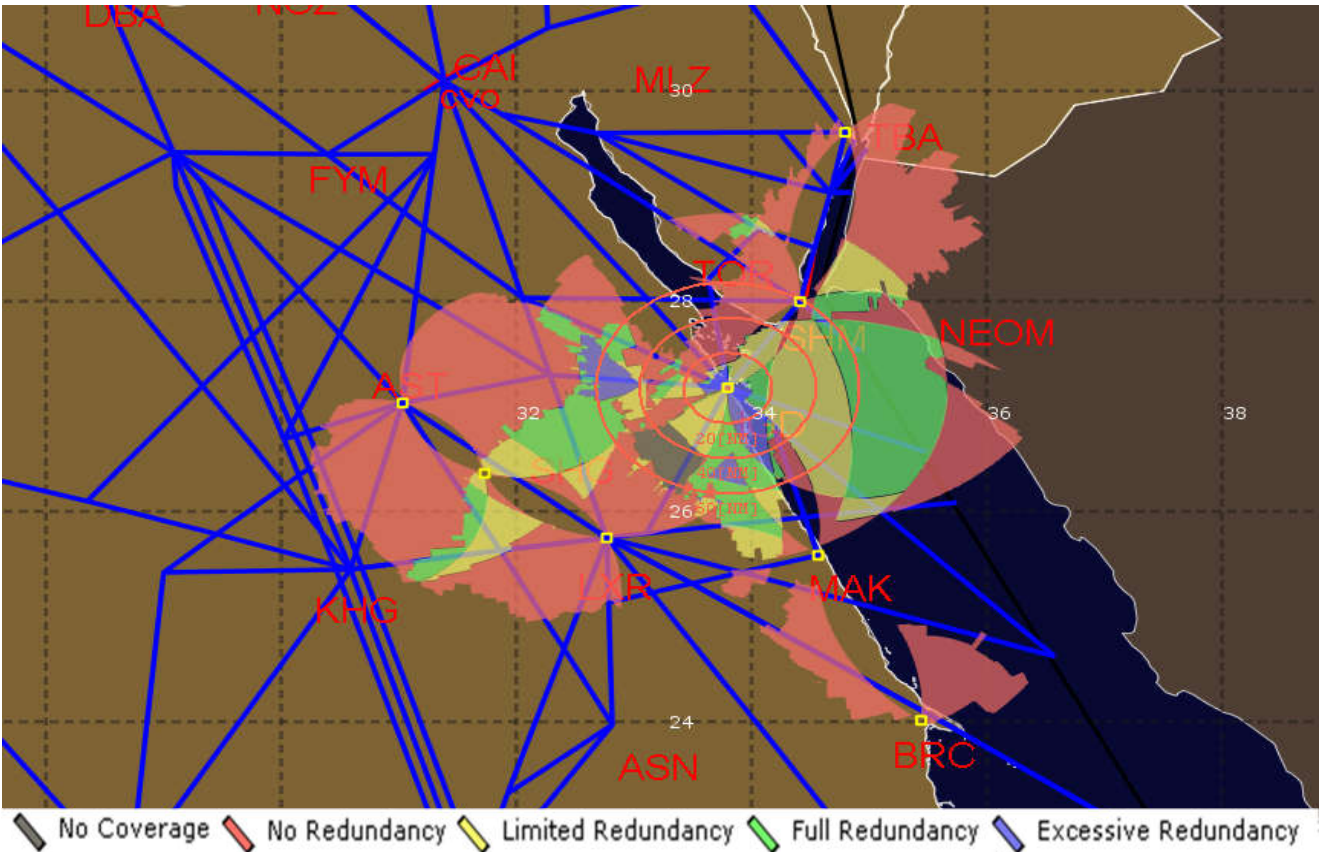




At FL100

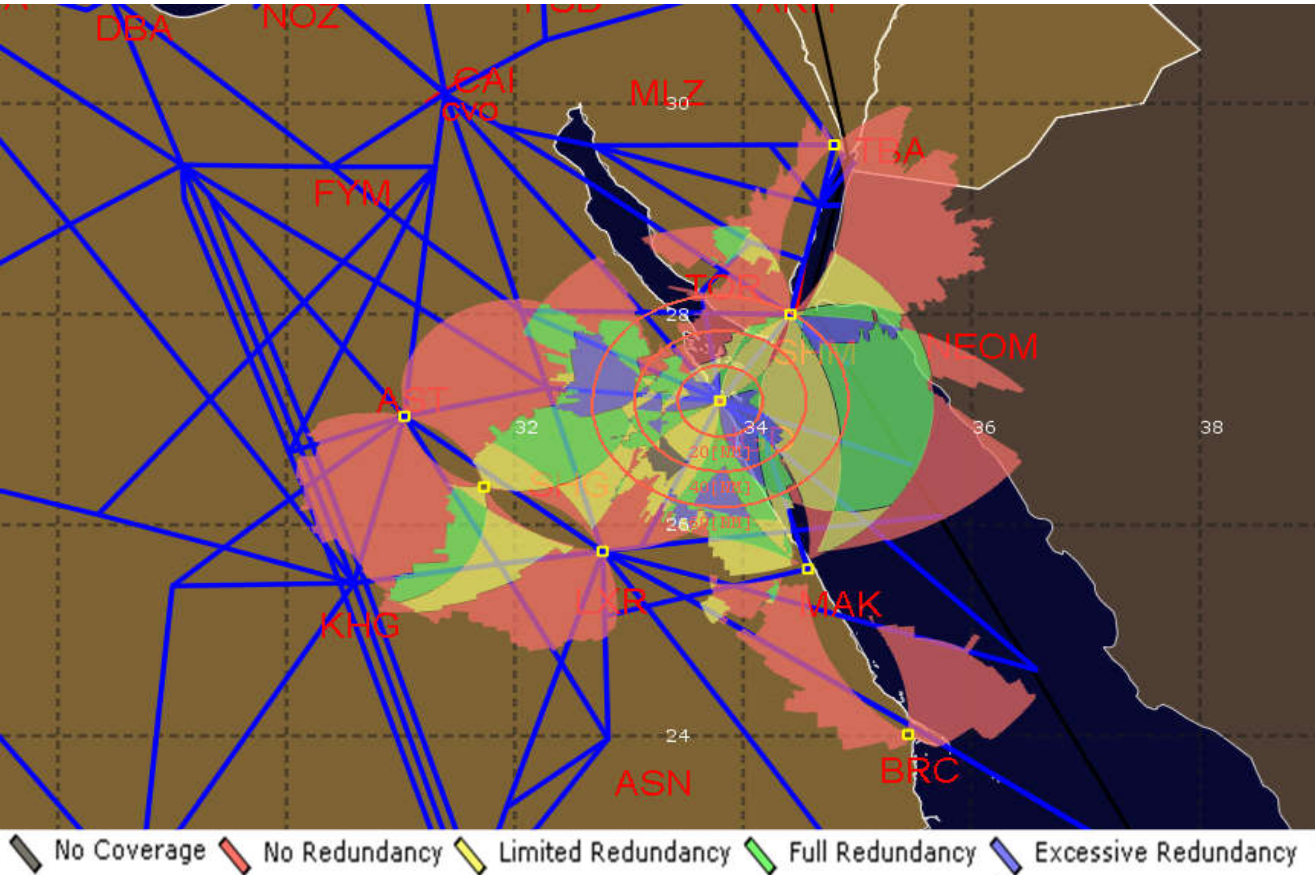


At FL120

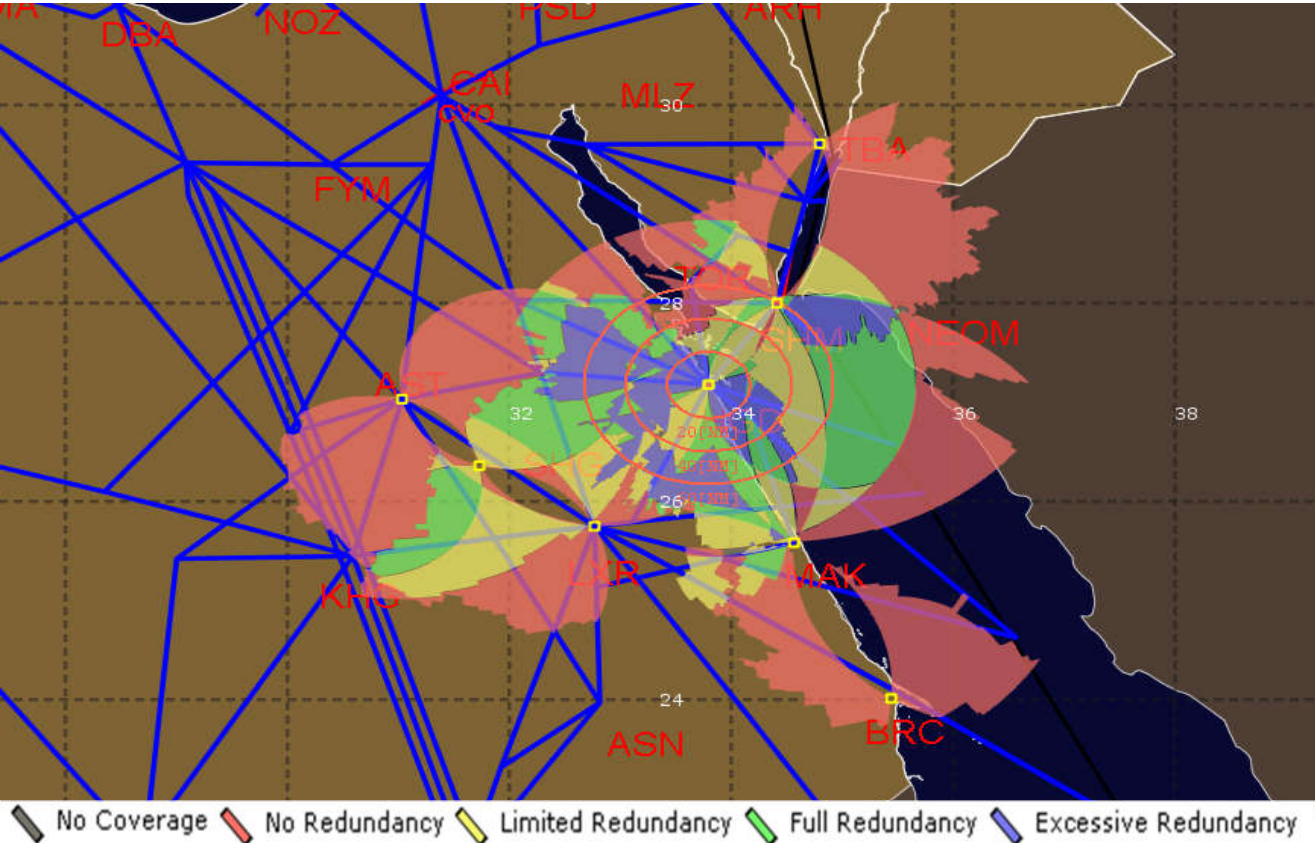




At FL140

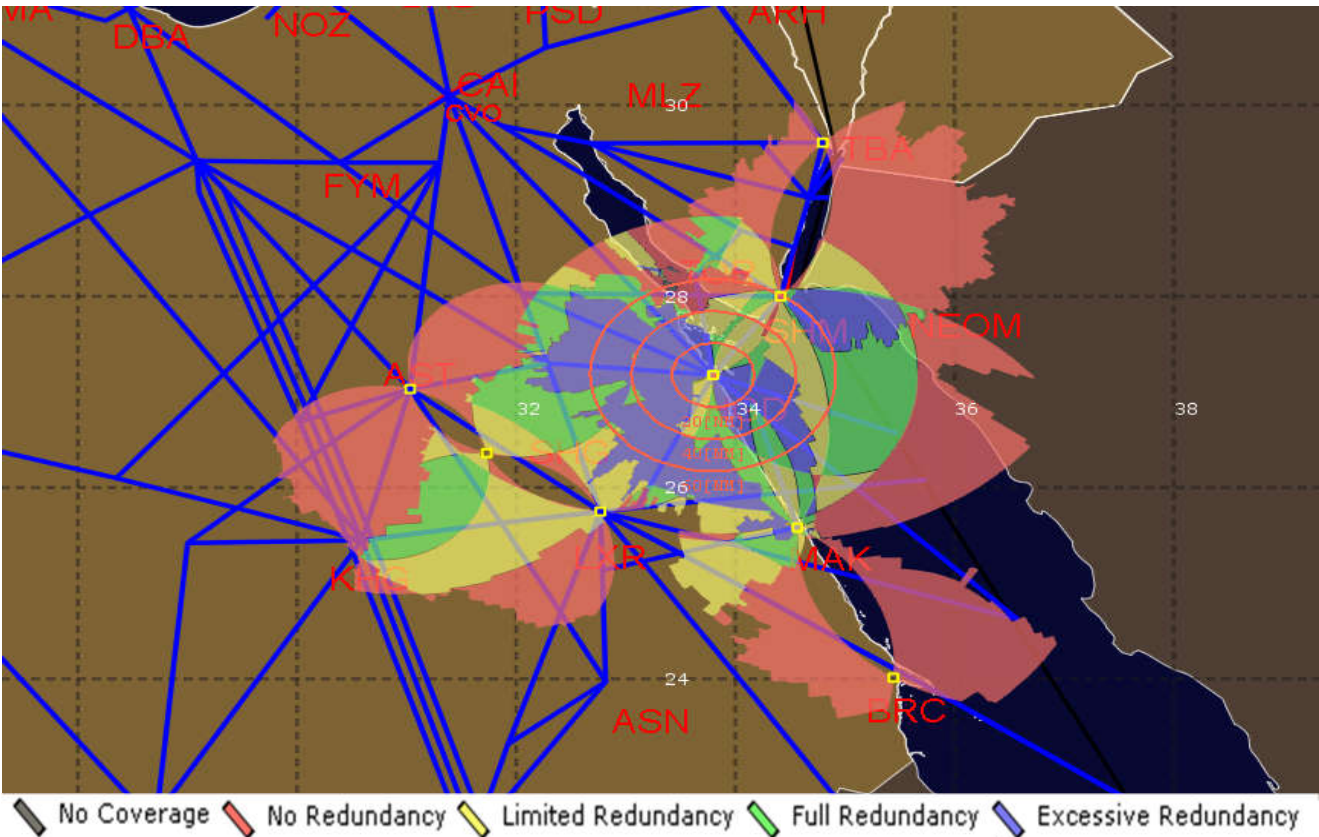


At FL160

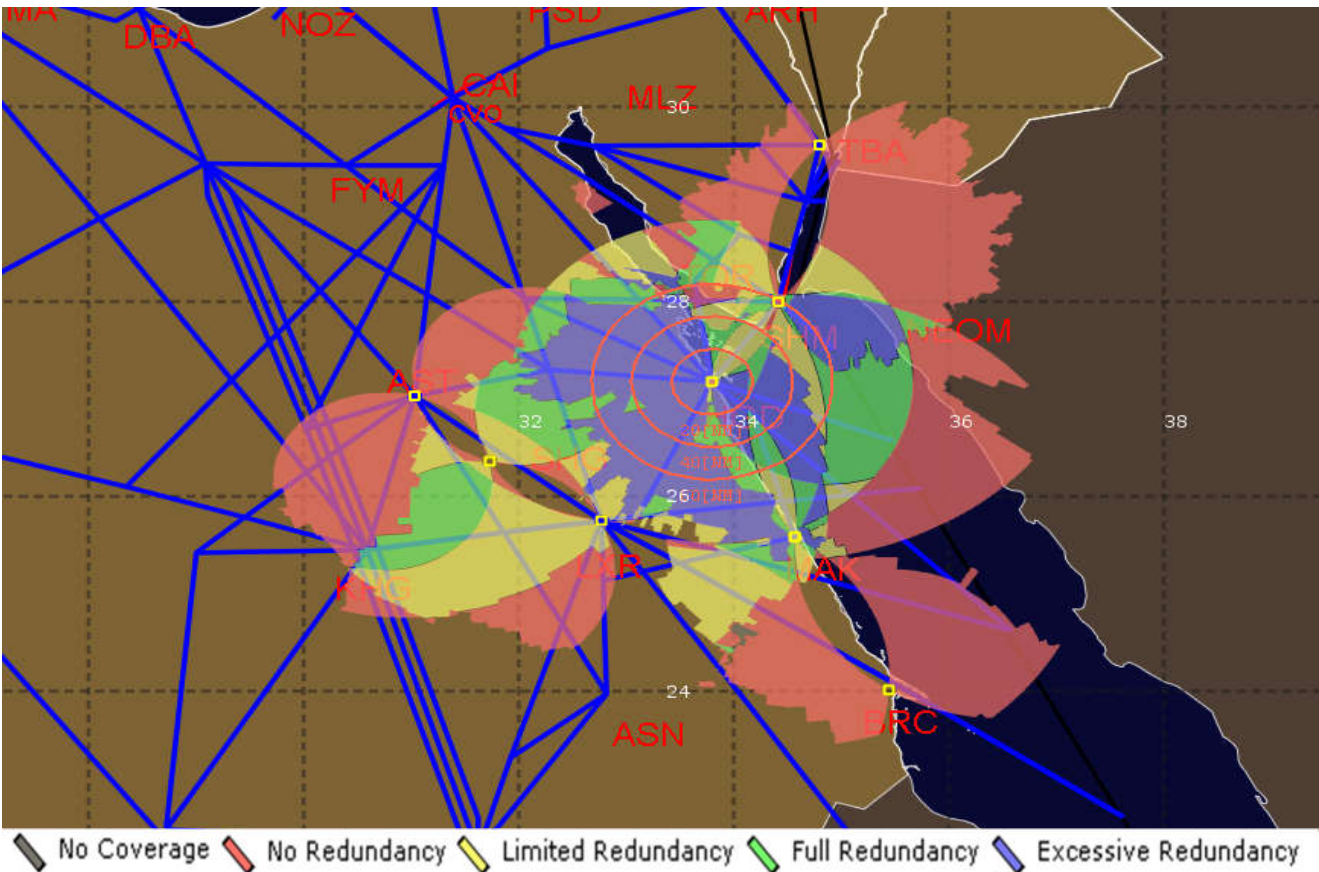




At FL180



At FL200

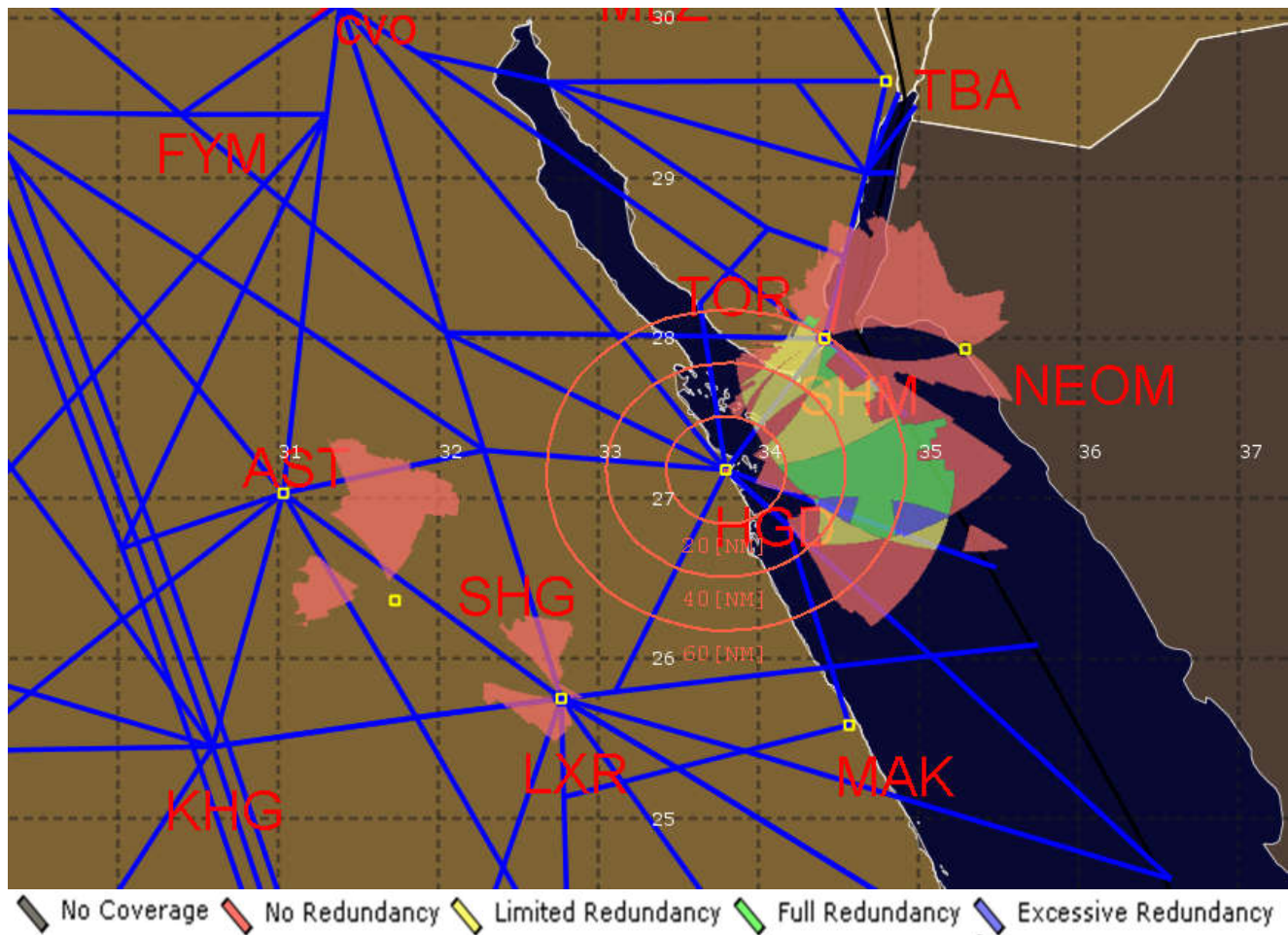


Conclusion

The current DME systems in Egypt at FL16 achieve DME/DME coverage for HURGHADA airport till range of 40 NM.

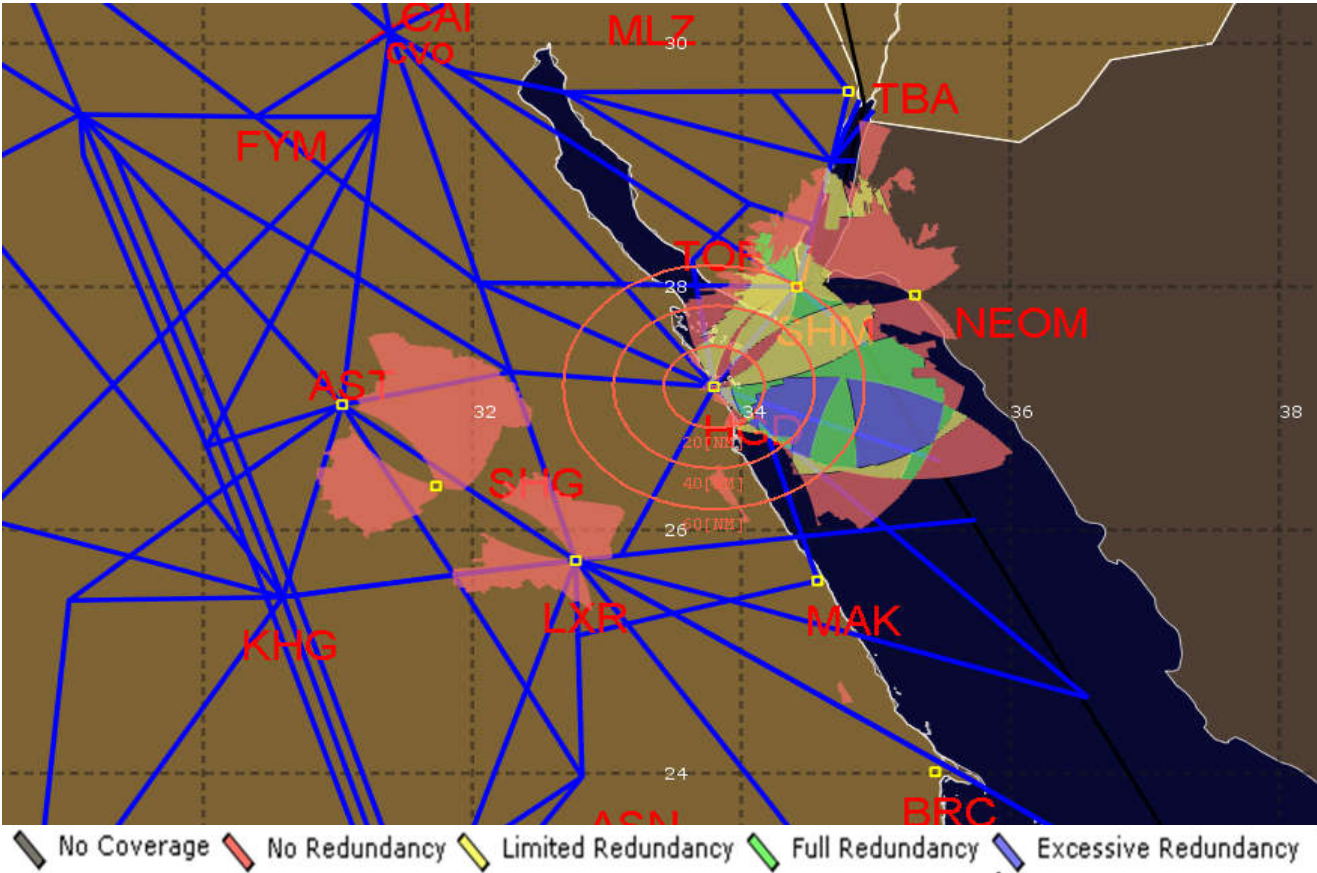
2.2 The coverage of current DME systems with DME system at NEOM airport

At FL40

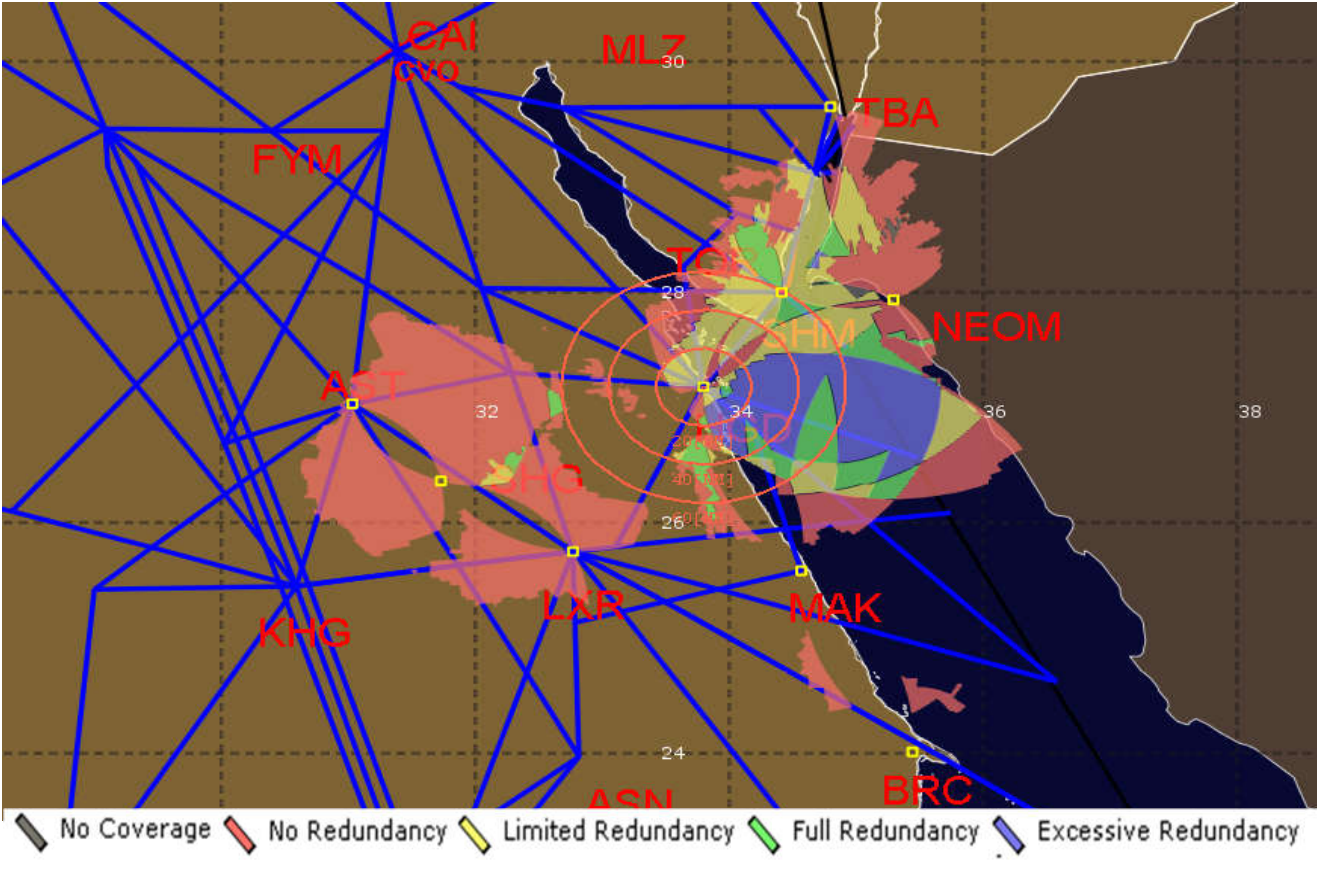




At FL60

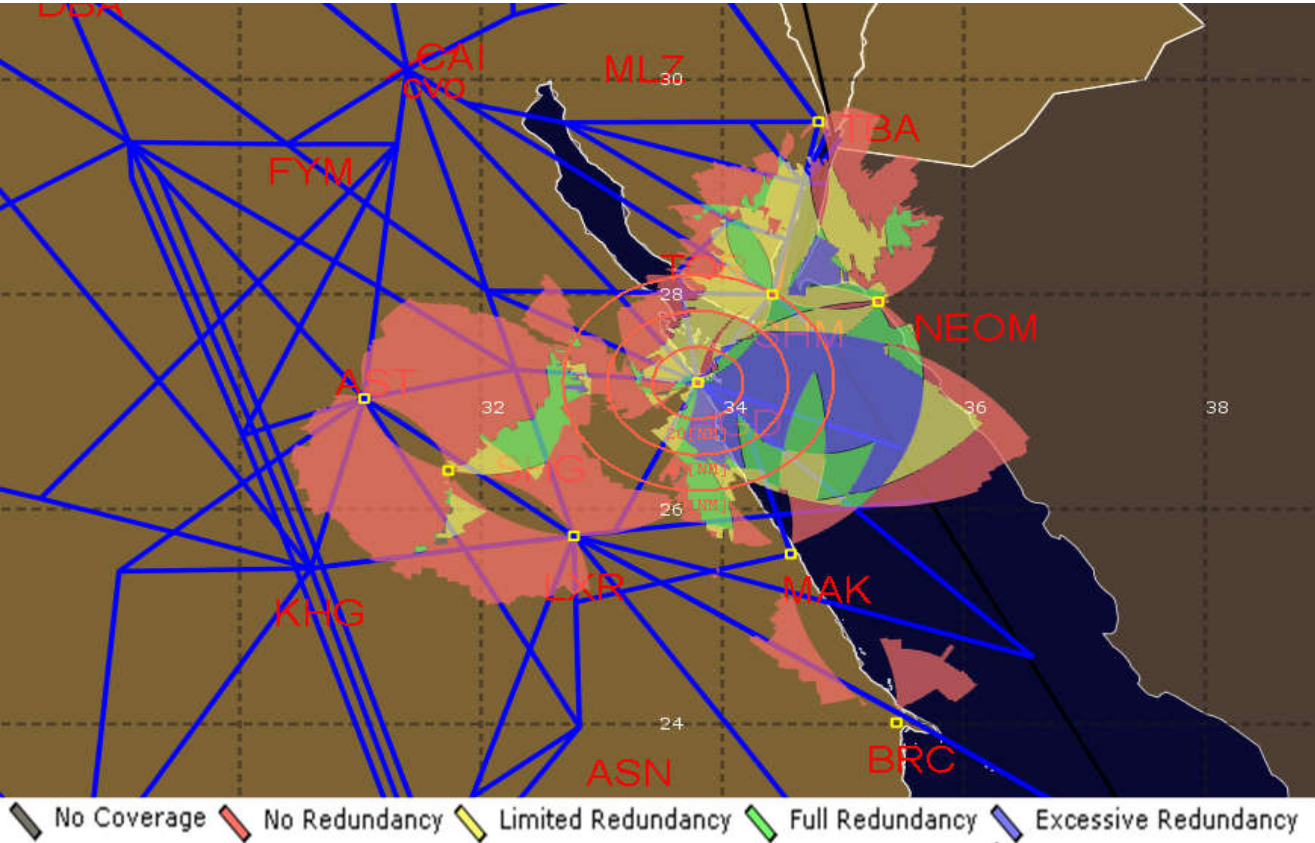


At FL80

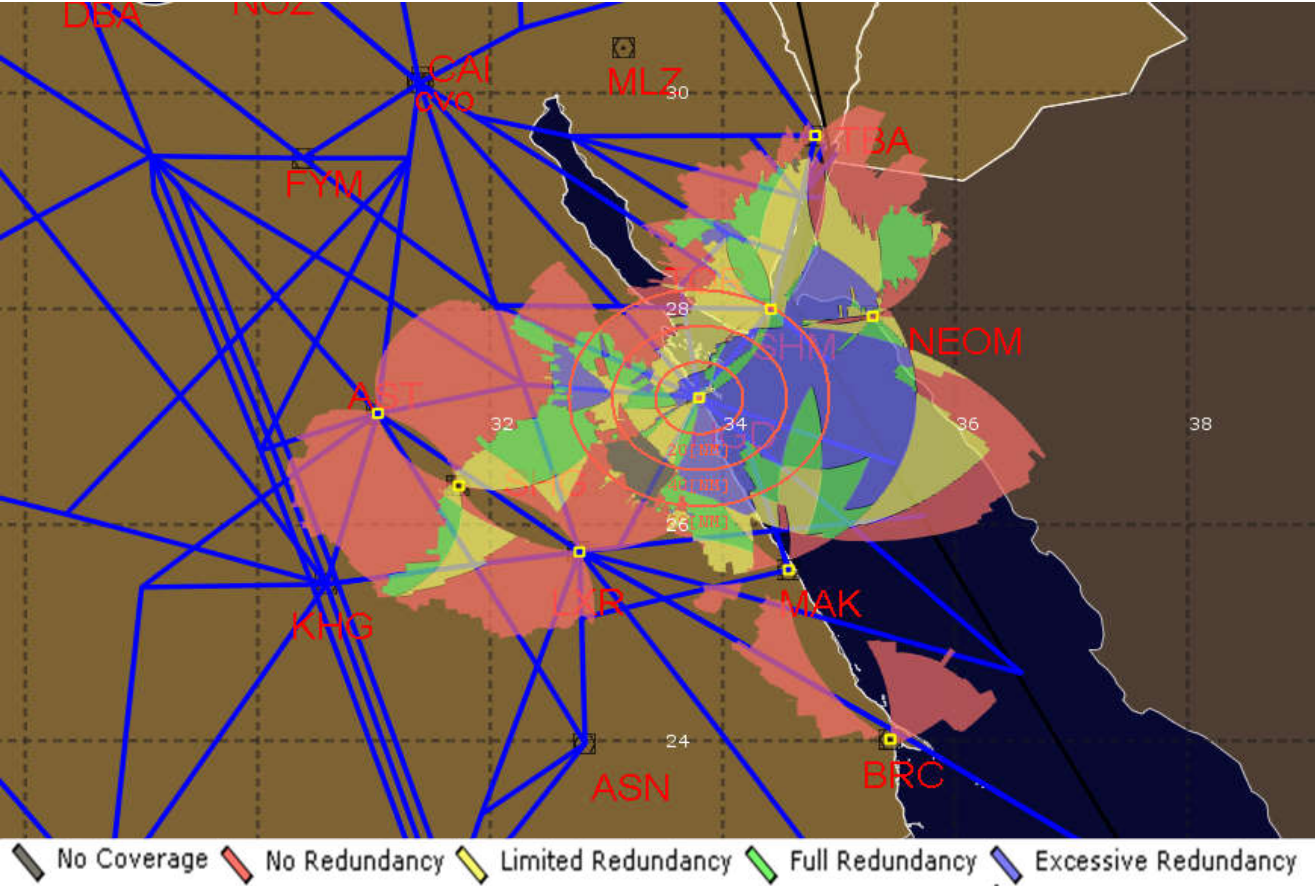




At FL100

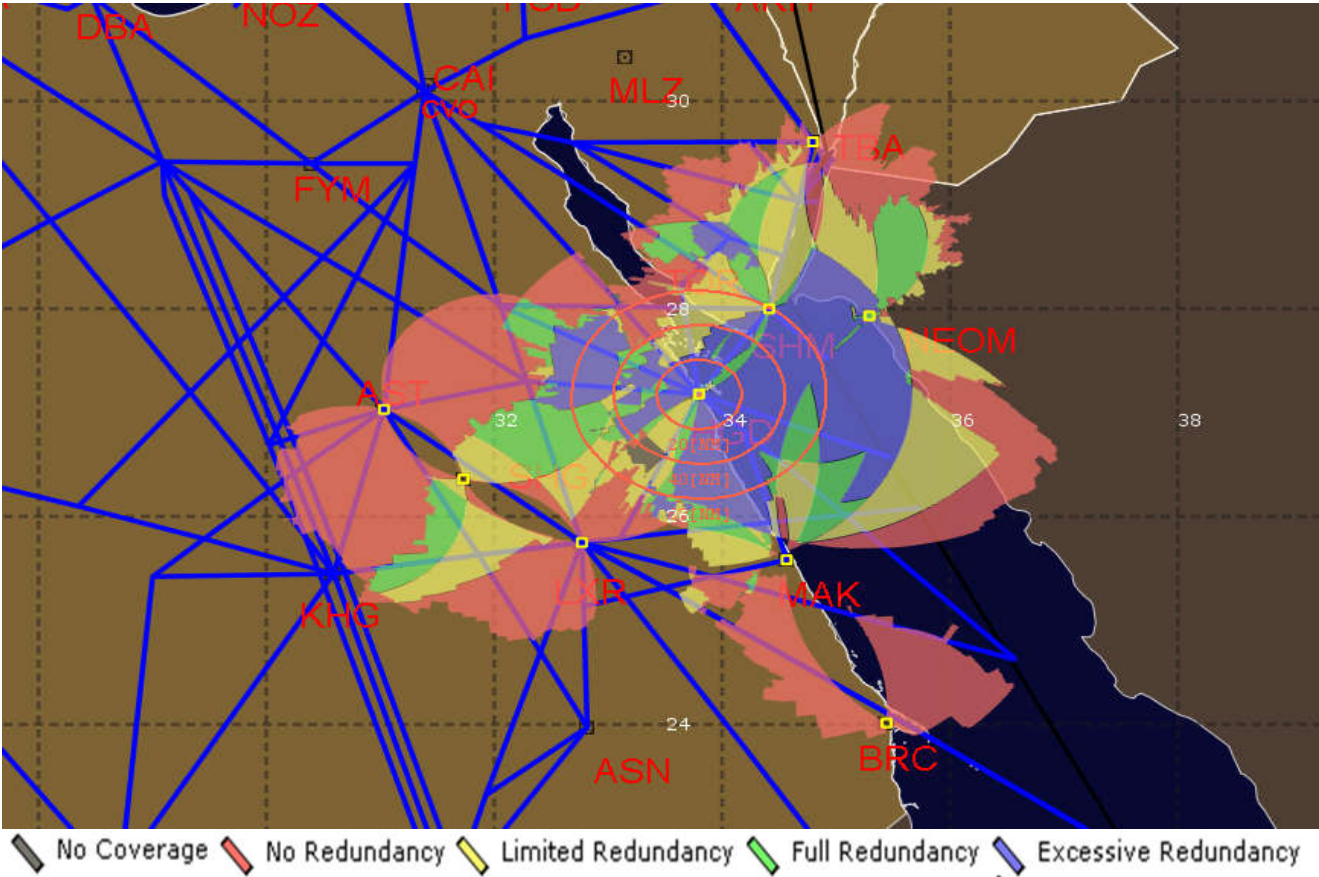


At FL120

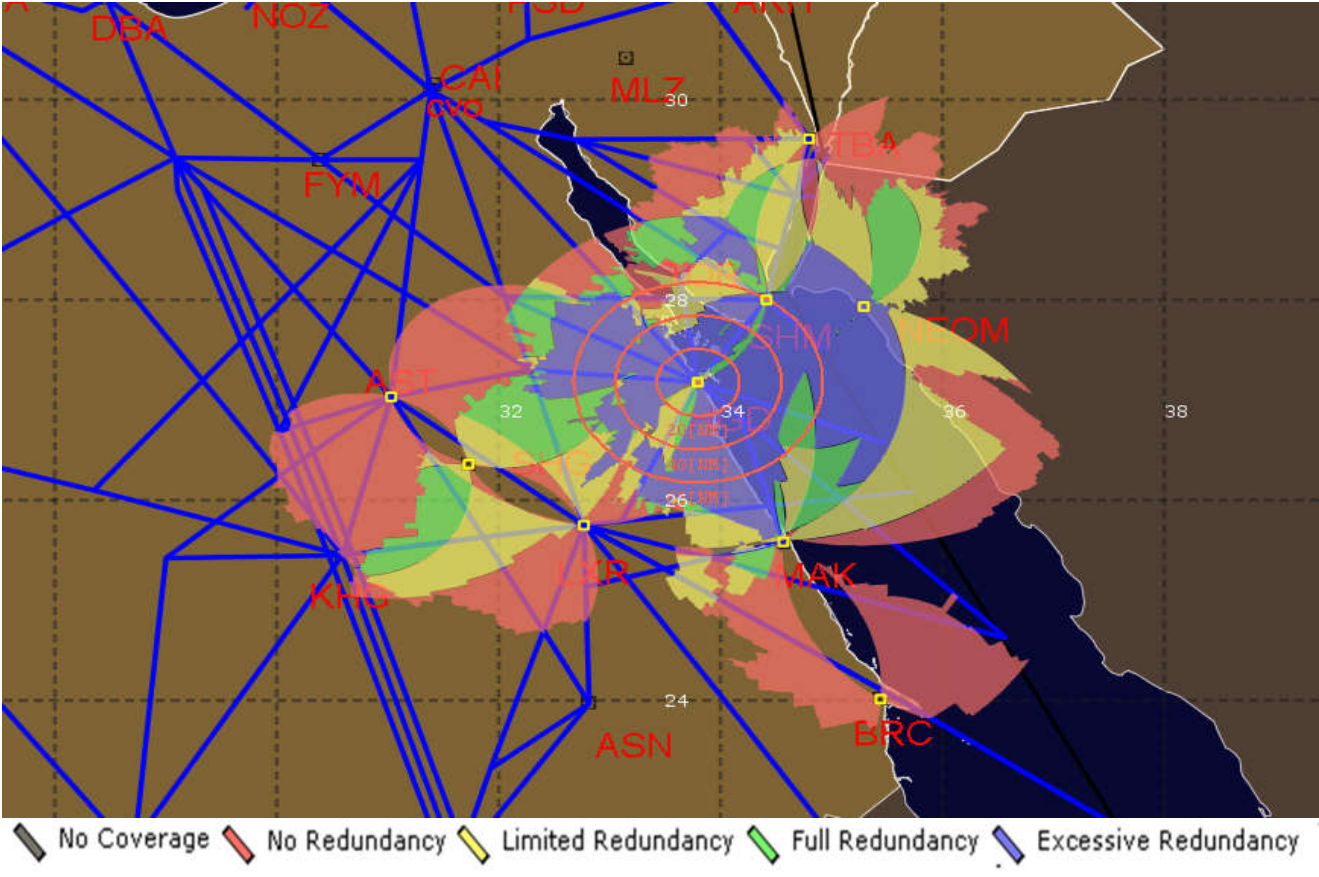




At FL140

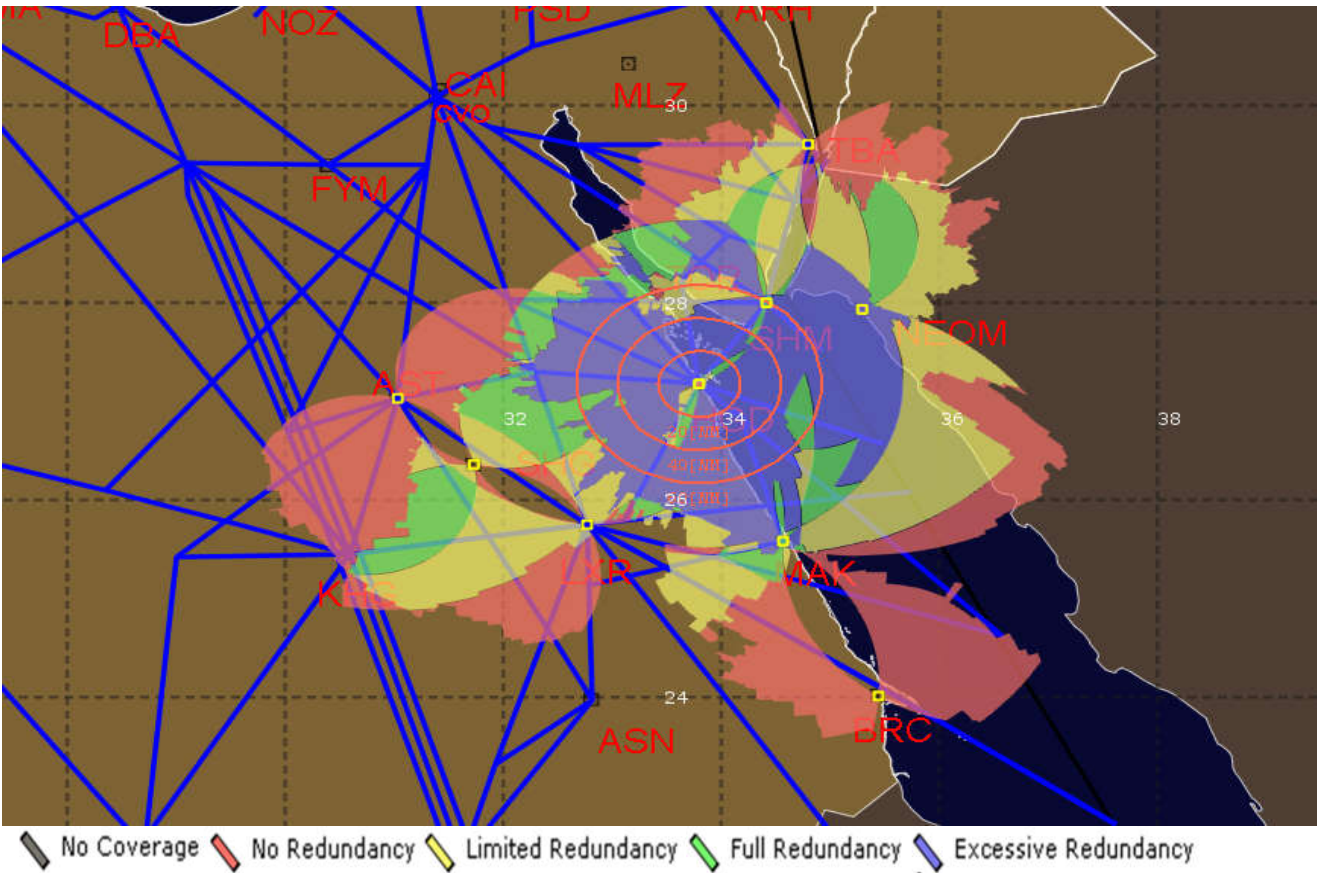


At FL160

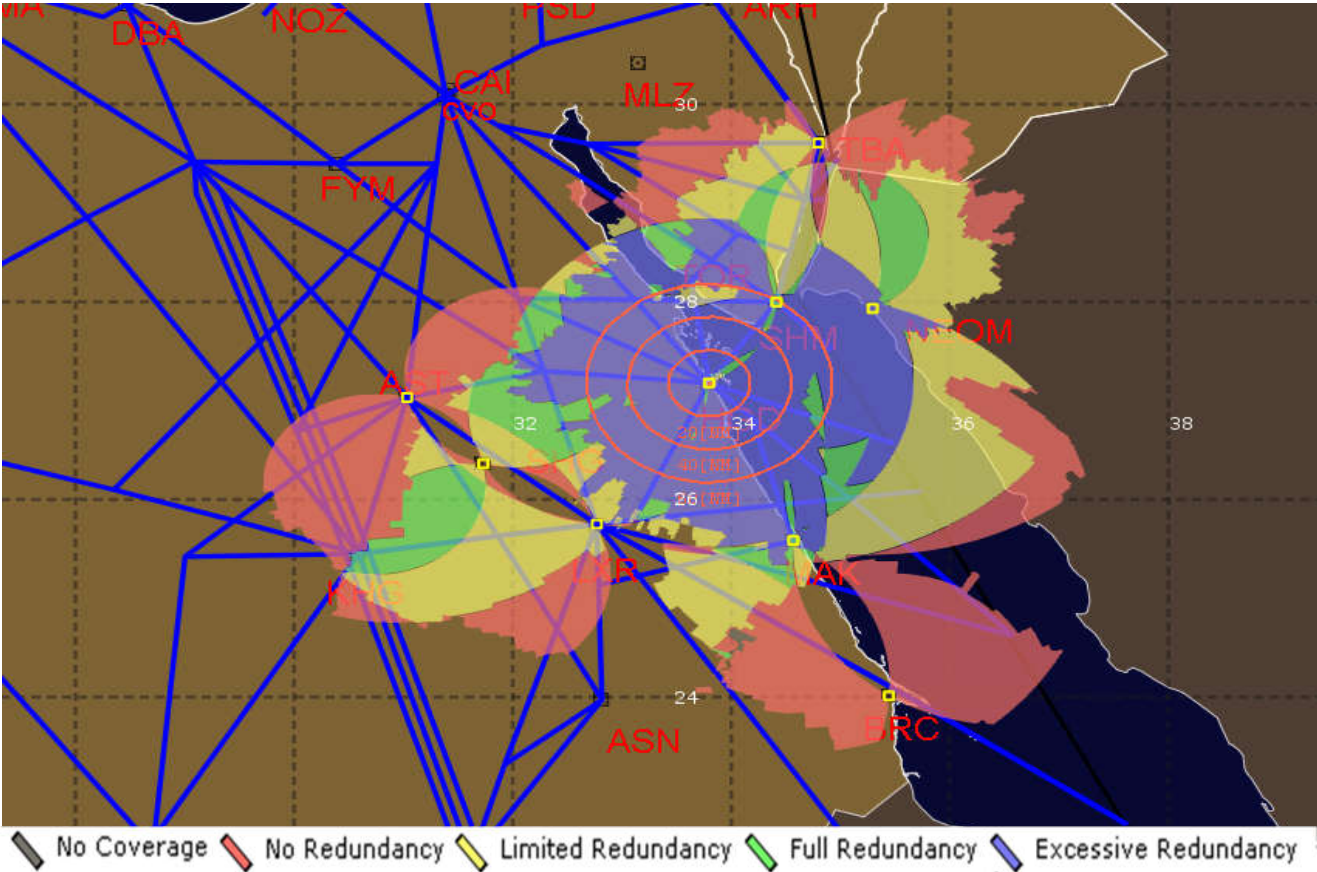




At FL180



At FL200

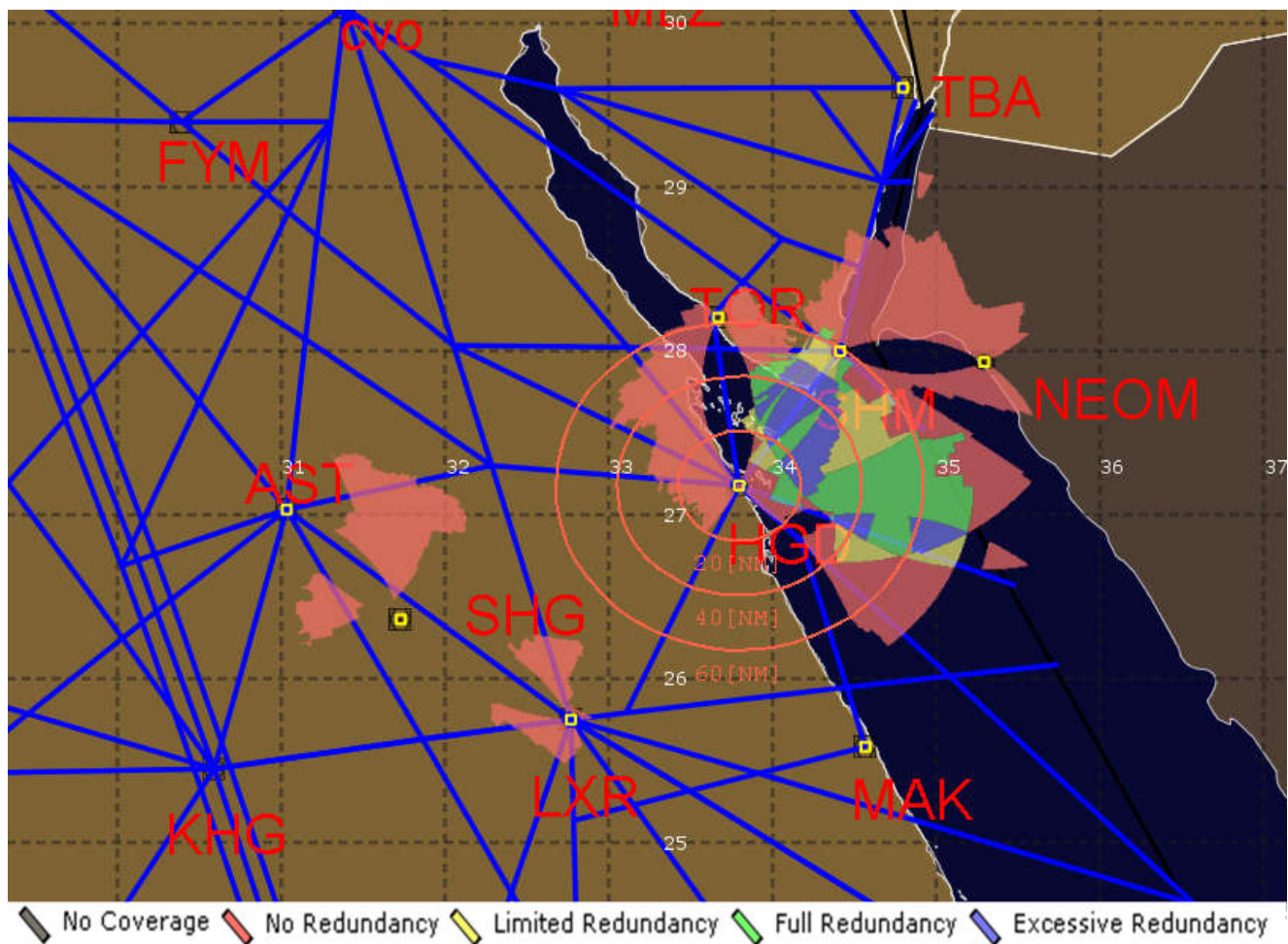


Conclusion

The current DME systems in Egypt with the current DME system at NEOM airport (Saudi Arabia) at FL12 and above achieve DME/DME coverage for HURGHADA airport till range of 40 NM.

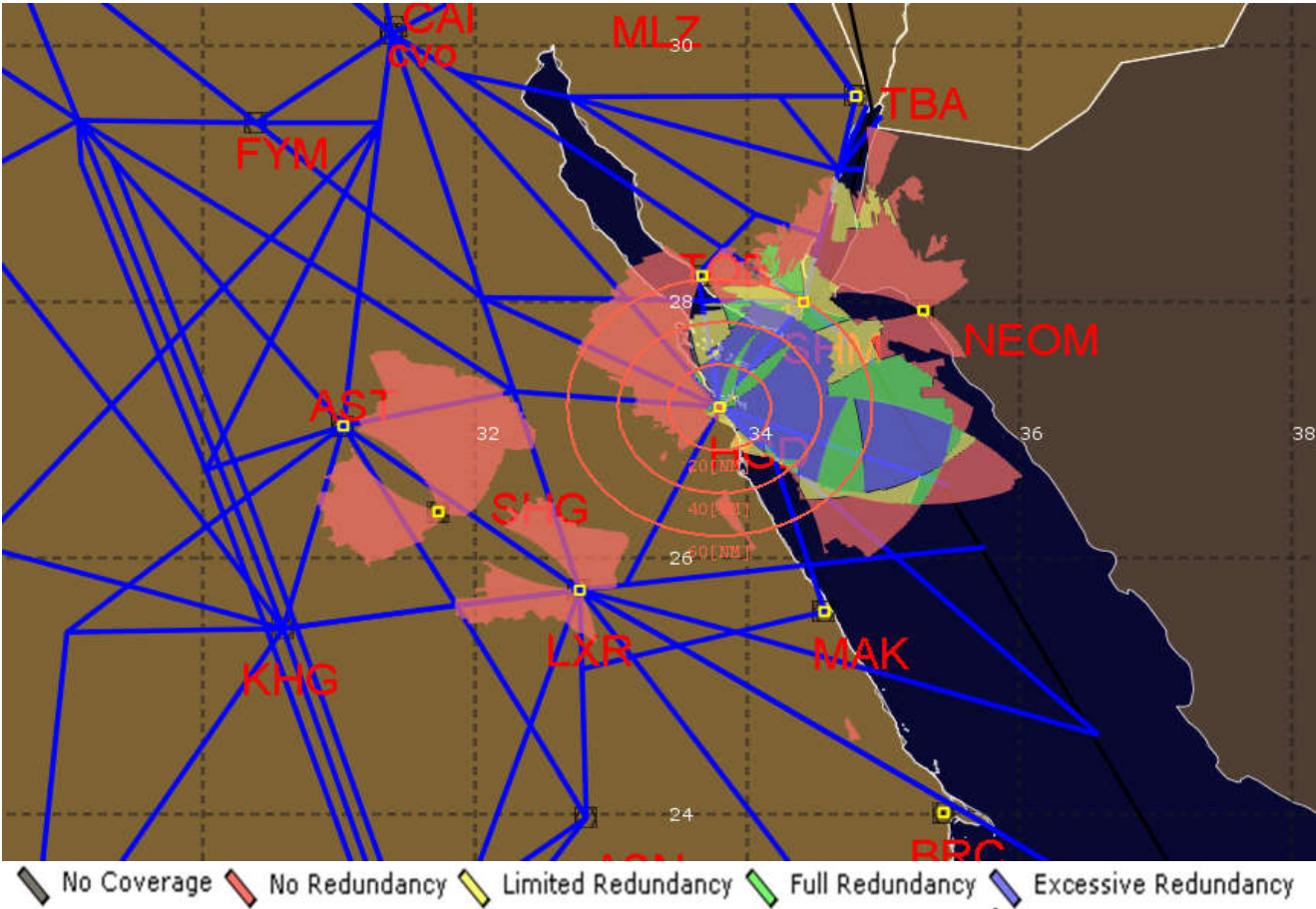
2.3 The coverage of current DME systems with the Planned new DME system at ElTour airport and the DME system at NEOM airport.

AT FL40

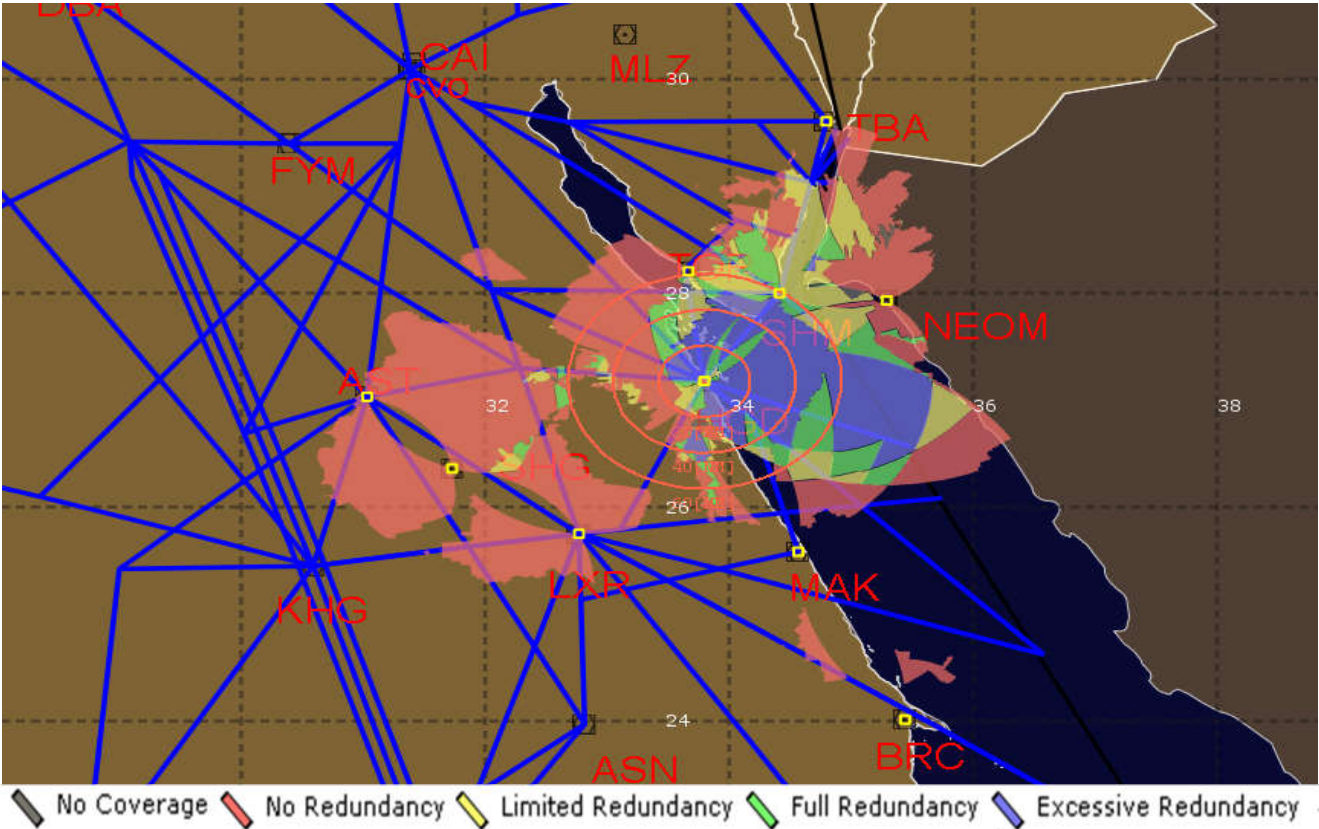




At FL60

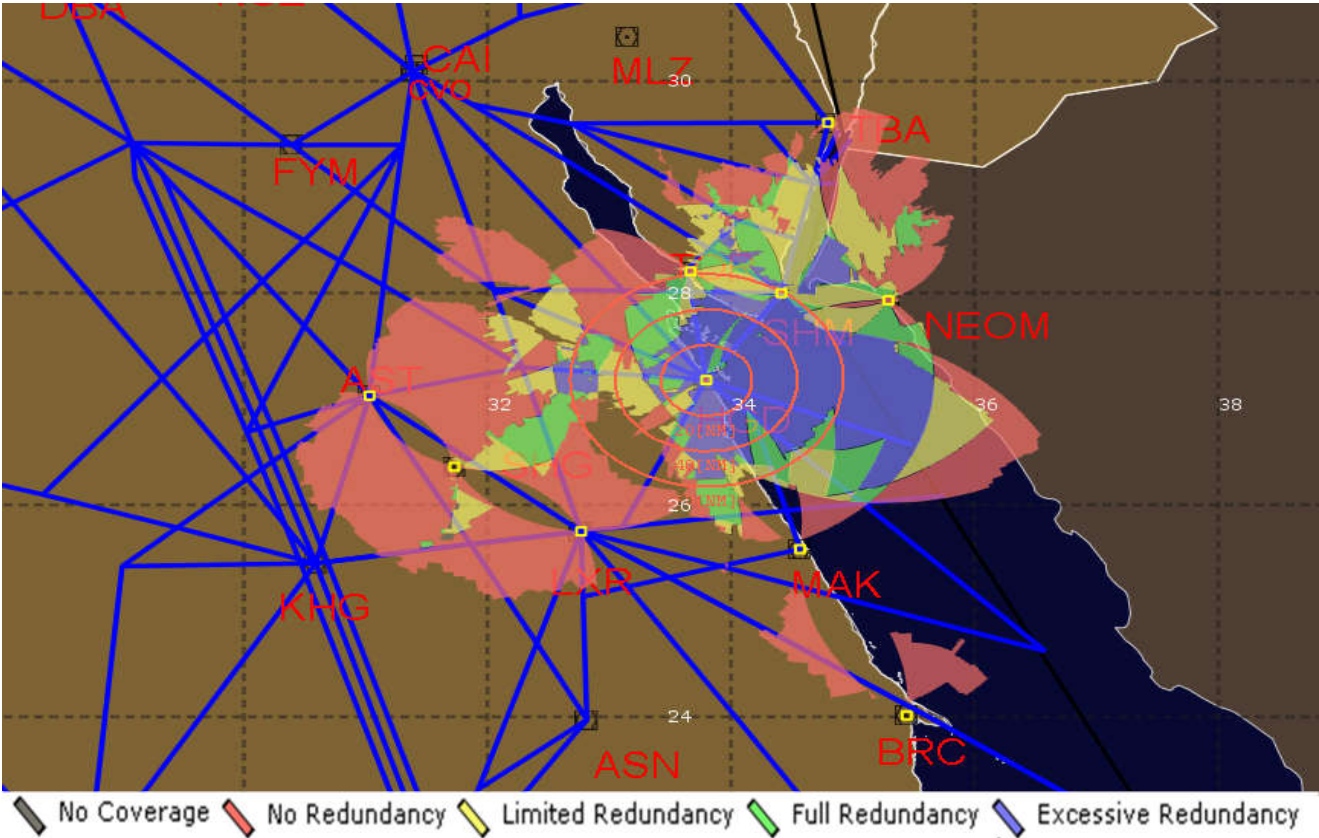


At FL80

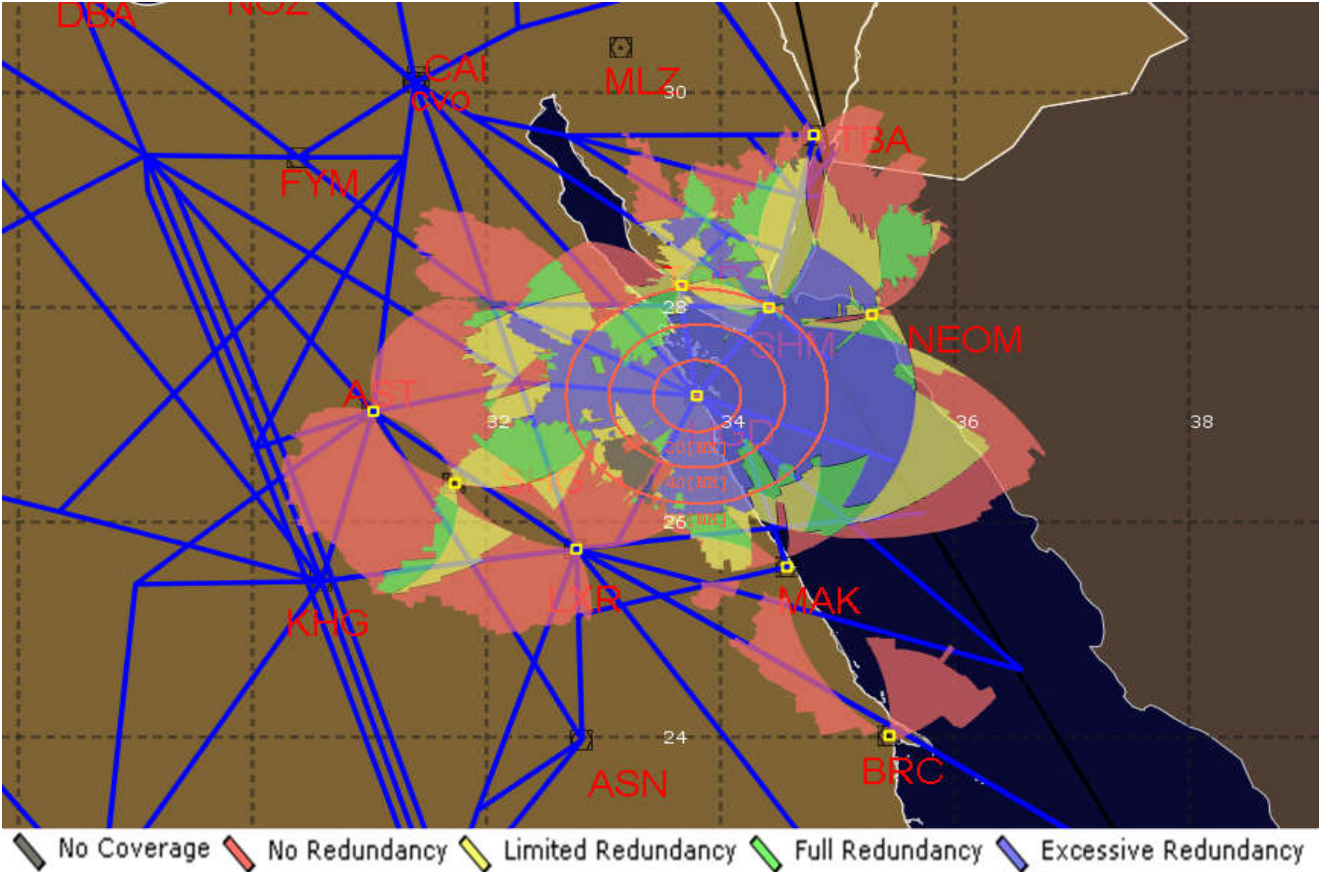




At FL100

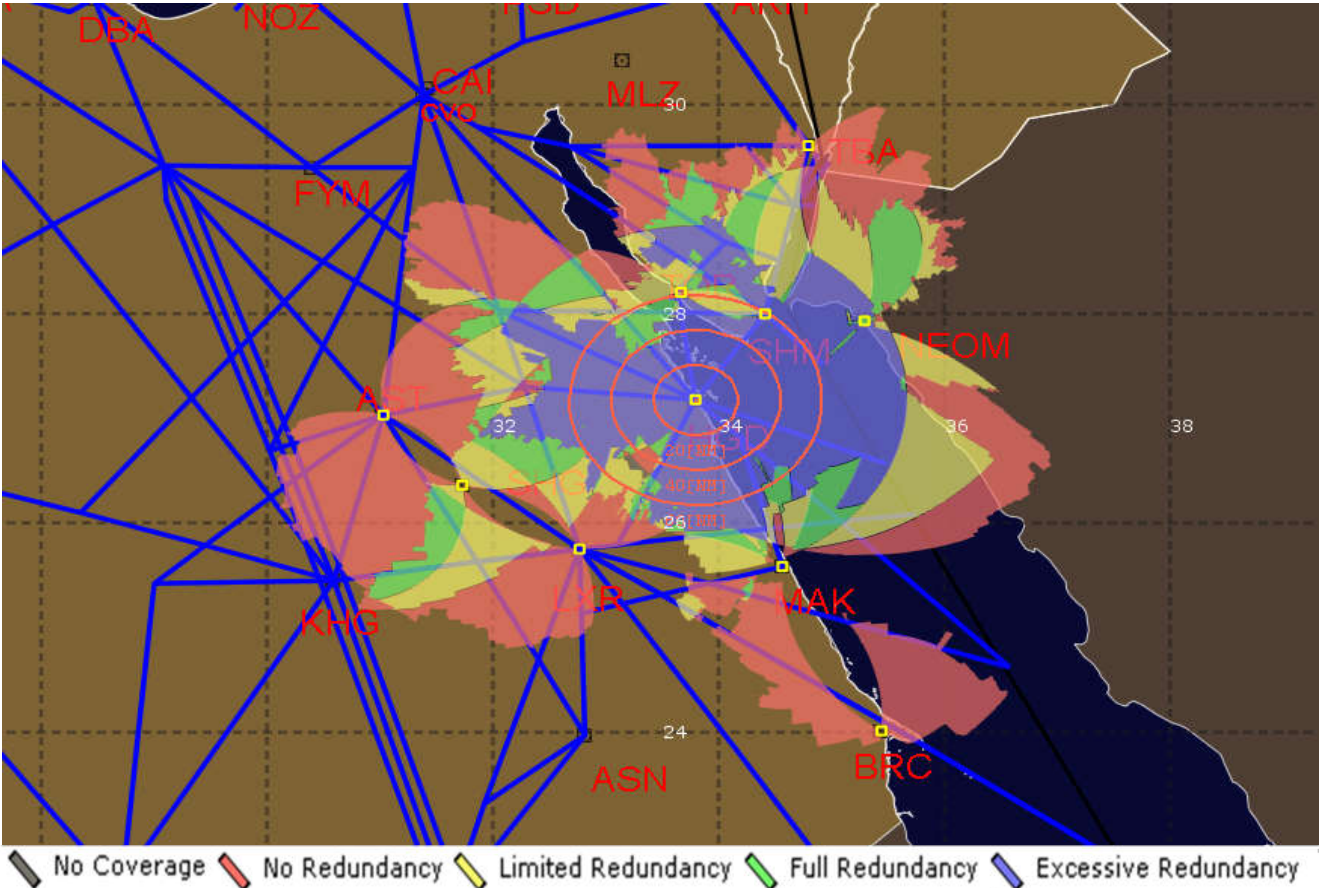


At FL120

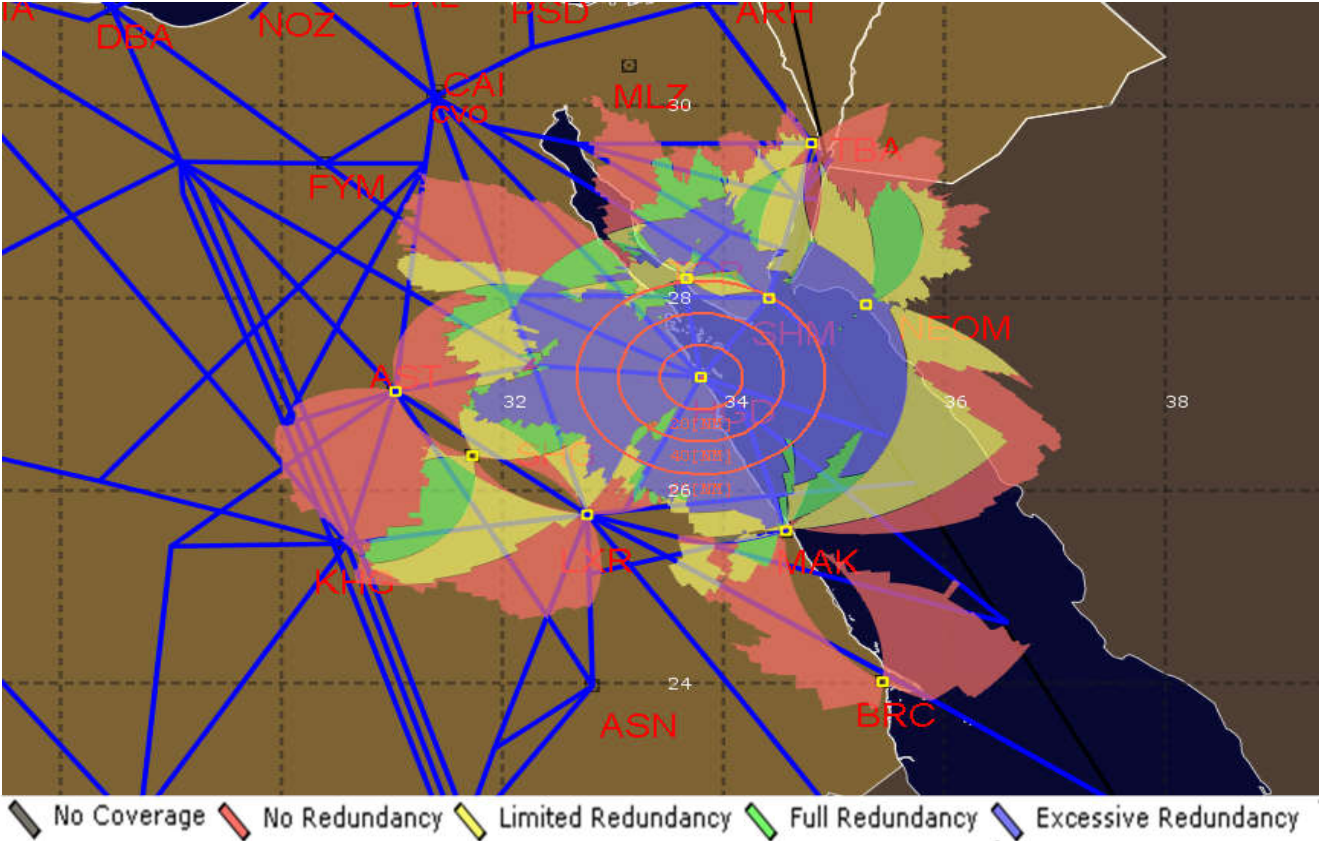




At FL140

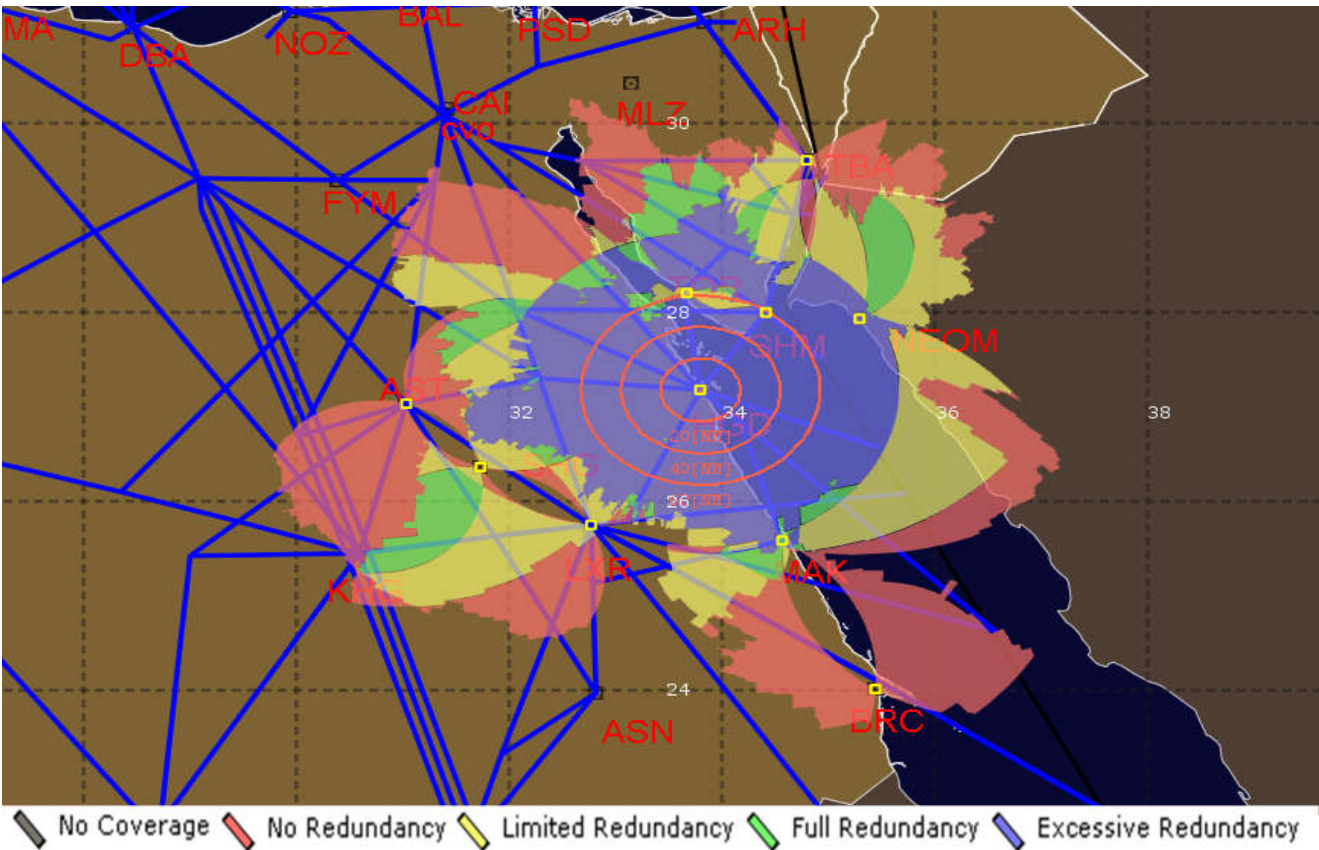


At FL160

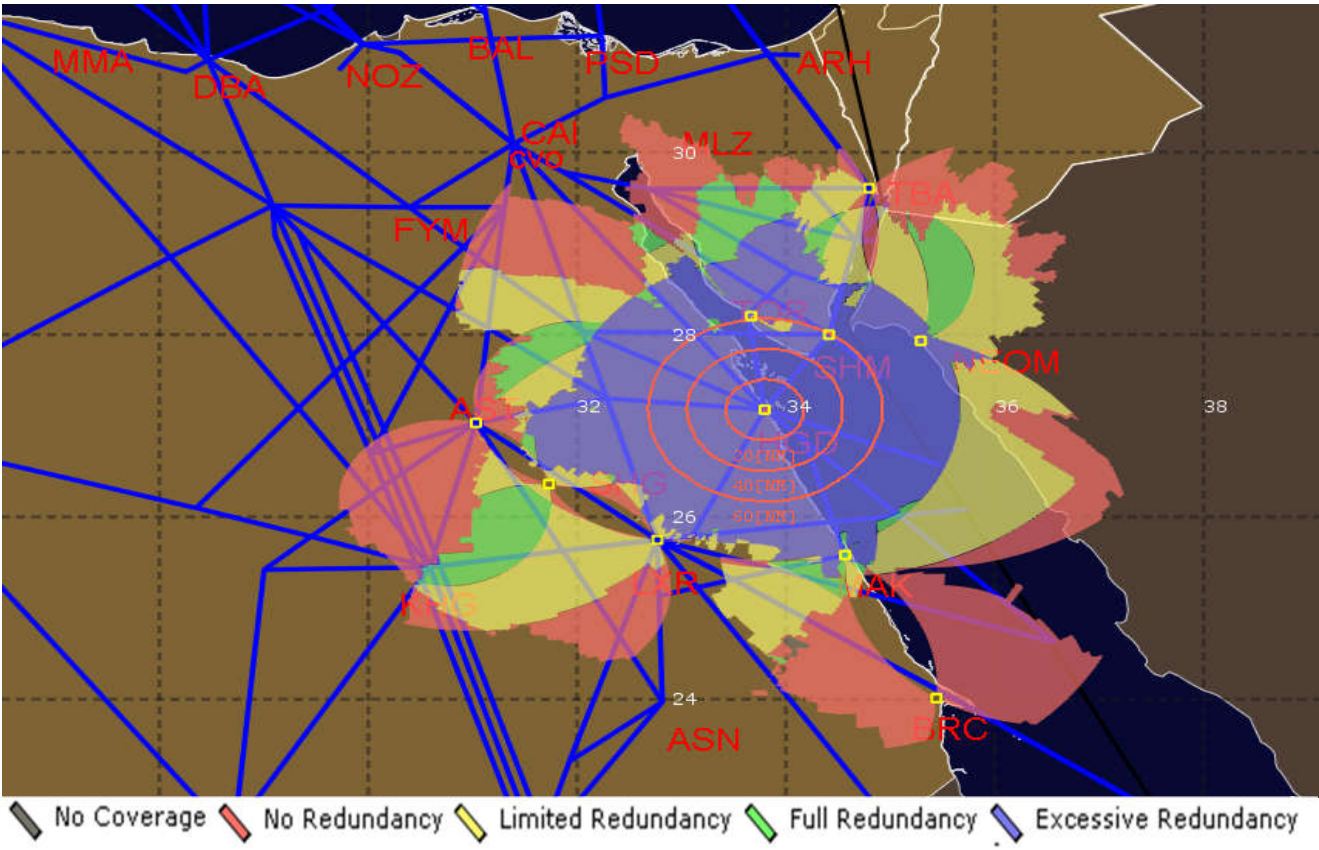




At FL180



At FL200



Conclusion

The current DME systems in Egypt with the Planned new DME system at El Tour airport and the current DME system at NEOM airport (Saudi Airport) at FL10 and above achieve DME/DME full coverage for HURGHADA airport till range of 40 NM.

Finally

The best DME/DME coverage in range till 40NM achieved at flight level:

- 1- start from FL8 and above for Sharm El Sheikh airport.
- 2- start from FL10 and above for Hurghada airport.

The best DME/DME coverage achieved by using all the following DME systems:

- The current DME systems in Egypt
- The Planned new DME system at EL Tour airport
- The current DME system at NEOM Saudi Arabia airport