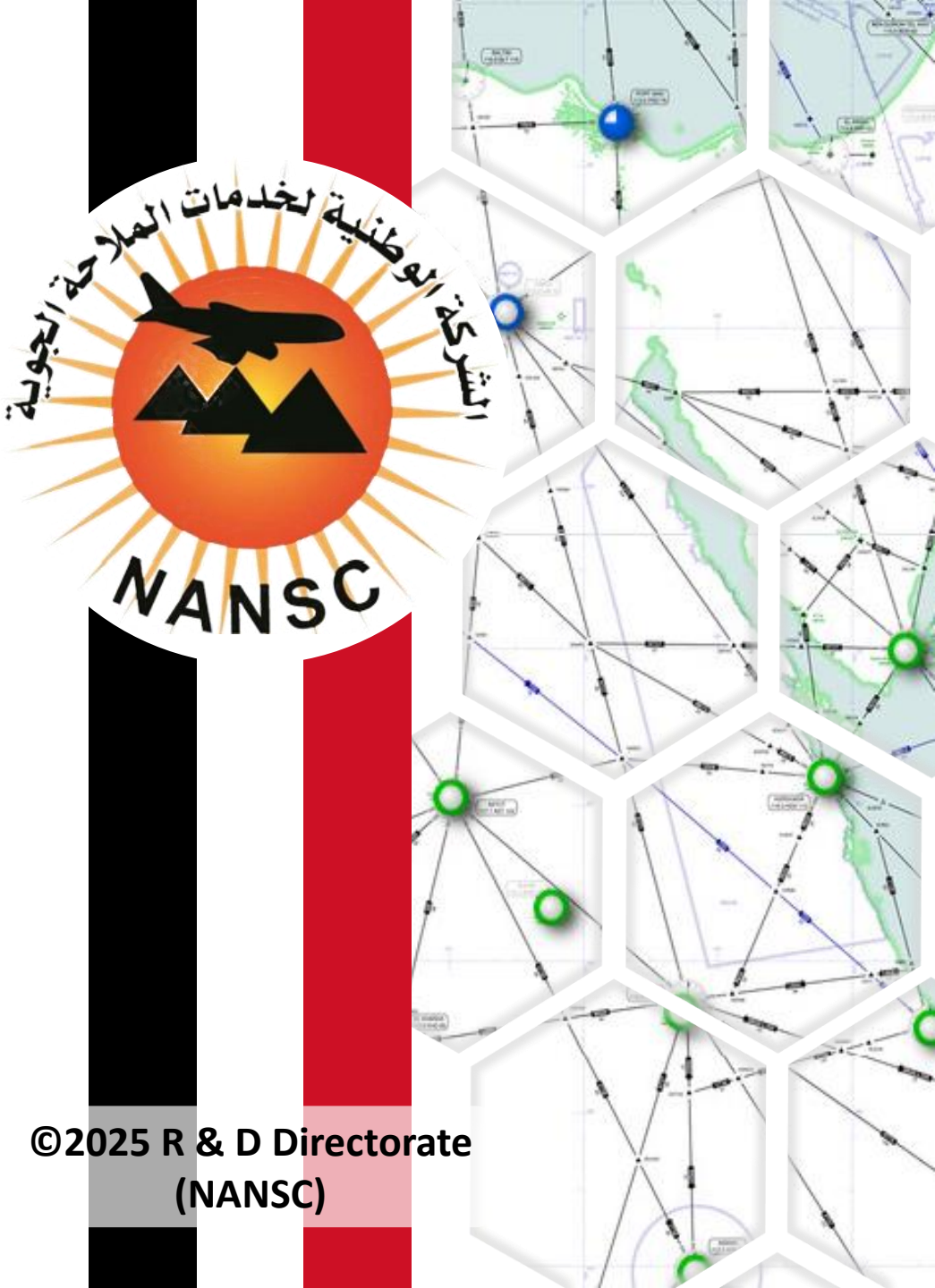
وزارة الطيران المدني
Ministry of Civil Aviation

Second Meeting of the RANP/NANP Task Force (RANP/NANP TF/2)

(Cairo, Egypt, 17 - 19 February 2025)

Cairo FIR Optimization

20/30 رؤية مصر VISION OF EGYPT



Cairo FIR Optimization

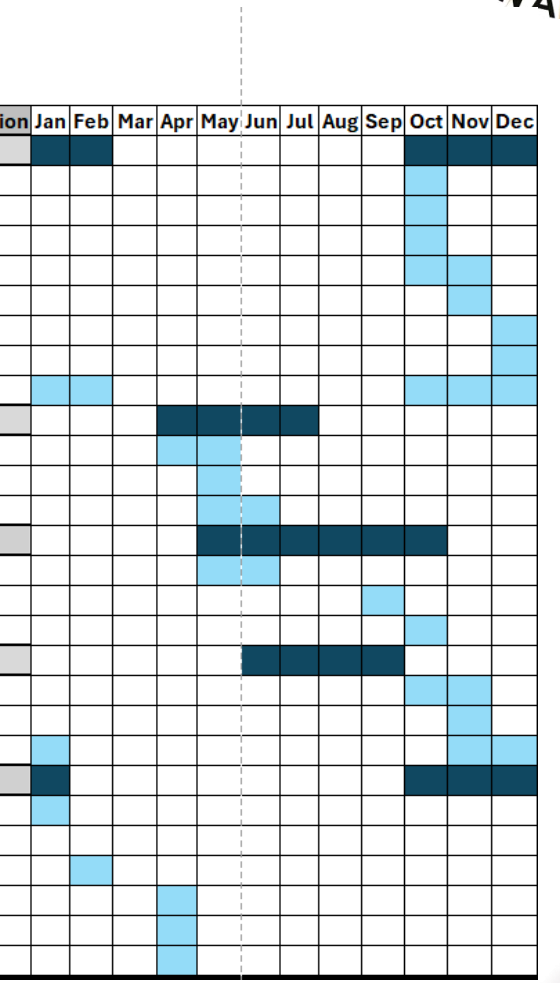
This presentation outlines the planned upgrades within the Cairo Flight Information Region. We aim to improve efficiency, enhance safety, and accommodate future air traffic growth.

Contents

1. The project roadmap

Cairo FIR Optimization

Phase	Milestone activity	Weight	Assigned to	Start date	End date	Status	% complesion	Weight of Compelision
Planning and Data gathering		**20%**	**R&D - ATC sector**	**01-10-2023**	**10-02-2024**	**Completed**	**100%**	**20%**
	Operational Requirements	10%		**01-10-2023**	**05-10-2023**	Completed	100%	
	Create Airspace Design Team	10%		**08-10-2023**	**11-10-2023**	Completed	100%	
	Project objectives and timescales	10%		**12-10-2023**	**17-10-2023**	Completed	100%	
	Data gathering and Analysis	10%		**22-10-2023**	**26-11-2023**	Completed	100%	
	Select Safety Criteria	10%		**28-11-2023**	**29-11-2023**	Completed	100%	
	CNS/ATM enablers and constraints	10%		**04-12-2023**	**07-12-2023**	Completed	100%	
	GAP Analysis	20%		**10-12-2023**	**14-12-2023**	Completed	100%	
	CMC and initial approval	20%		**24-10-2024**	**10-02-2024**	Completed	100%	
Airspace design		**20%**	**AIM**	**07-04-2024**	**12-06-2025**	**Completed**	**100%**	**20%**
	Initial design scenarios	40%		**07-04-2024**	**08-05-2024**	Completed	100%	
	Operations consultation	20%		**09-05-2024**	**14-05-2024**	Completed	100%	
	finalizing designs	40%		**15-05-2024**	**12-06-2024**	Completed	100%	
Validation		**10%**	**ATC sector& safte**	**15-05-2024**	**24-10-2024**	**Completed**	**100%**	**10%**
	Mitigation measures and controls	50%		**15-05-2024**	**10-06-2024**	Completed	100%	
	FTS	25%		**23-09-2024**	**25-09-2024**	Completed	100%	
	RTS	25%		**01-10-2024**	**24-10-2024**	Completed	100%	
Training		**25%**	**Training direcorite**	**31-10-2024**	**08-01-2025**	**Completed**	**100%**	**25%**
	Training plan and Simulator Data	30%		**31-10-2024**	**07-11-2024**	Completed	100%	
	Awareness and training material	20%		**10-11-2024**	**14-11-2024**	Completed	100%	
	Simulator training	50%		**17-11-2024**	**08-01-2025**	Completed	100%	
Implamantation		**25%**	**ATC sector**	**09-01-2025**	**17-04-2025**	**on track**	**50%**	**13%**
	Manuals Amendments	25%		**09-01-2025**	**30-01-2025**	Completed	100%	
	Submission to State for approval	25%		**05-02-2025**		Completed	100%	
	finalization of Publication	10%		**05-02-2025**	**05-02-2025**	Completed	100%	
	ATM Automation data set	20%		**10-04-2025**	**11-04-2025**	on track	0%	
	effective date - Implement - On-job trainin	10%		**17-04-2025**		on track	0%	
	Conduct post-implementation review	10%		**17-04-2025**		on track	0%	



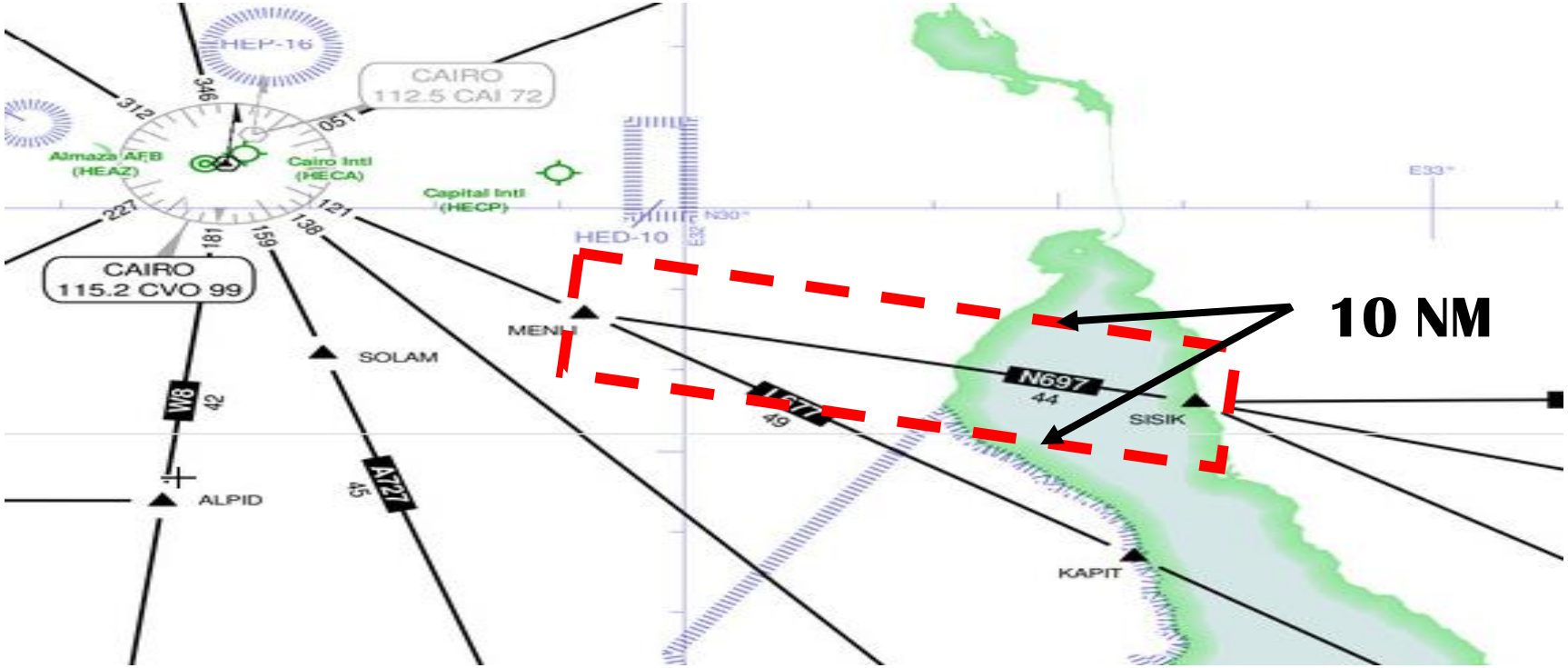
Cairo FIR Optimization

Cairo FIR Optimization– Phase 1

2. Cairo FIR Optimization– Phase 1

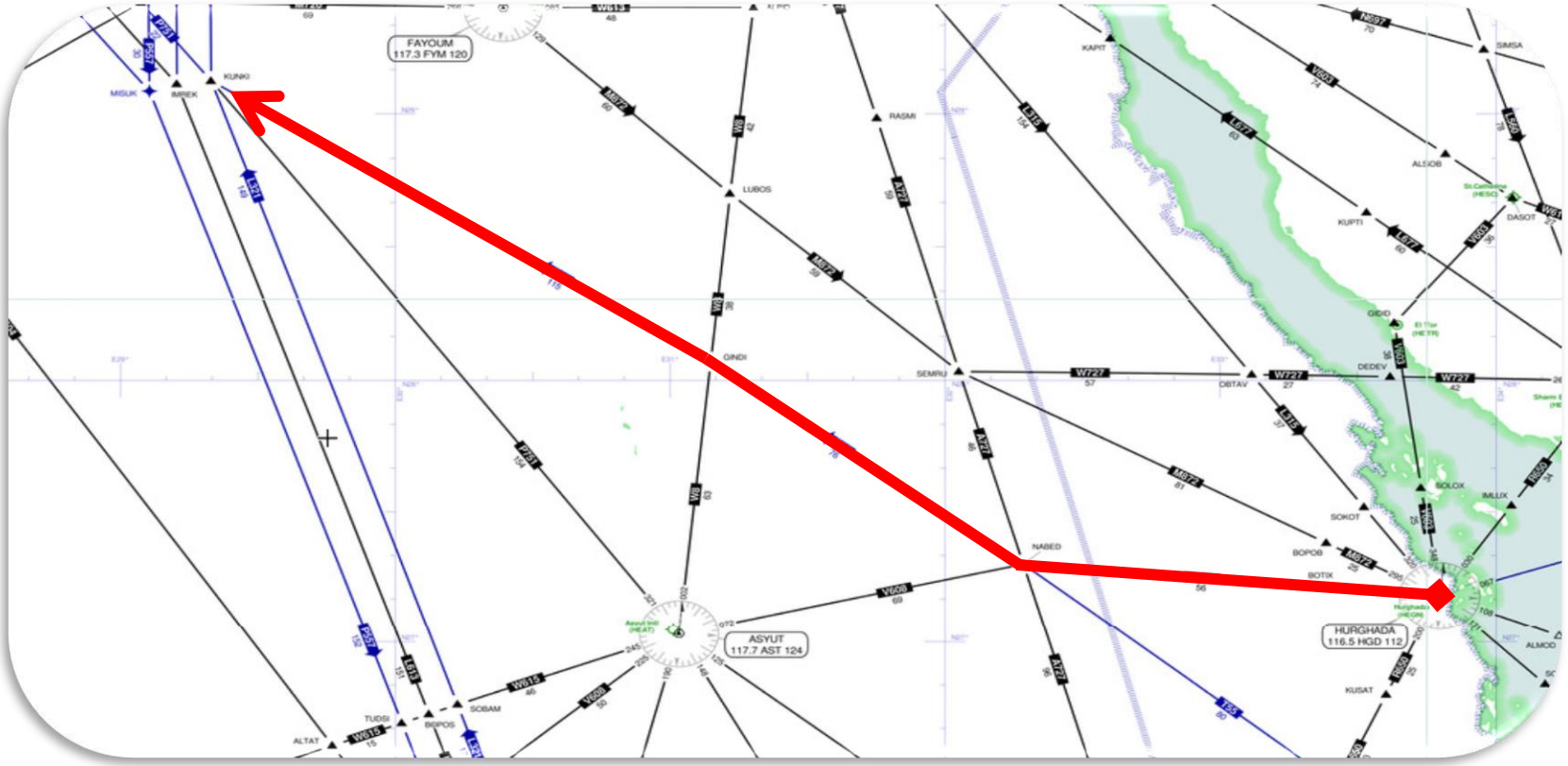
❖ **Increase the width of airway N697 segment between waypoints MENLI and SISIK to 10 NM. This widening could be for various reasons, such as:**

- **Increased Traffic: To accommodate a higher volume of air traffic in the area.**
- **Safety Margins: To provide greater separation between aircraft and enhance safety.**
- **Weather Considerations: To allow for more flexibility in flight paths during adverse weather conditions.**



2. Cairo FIR Optimization– Phase 1

- To enhance service for HEGN departures, a proposal is made to:
  - **Extend the operational hours of airway T55 to 24 hours.**
  - **Lower the minimum flight level for T55 from FL330 to FL260.**

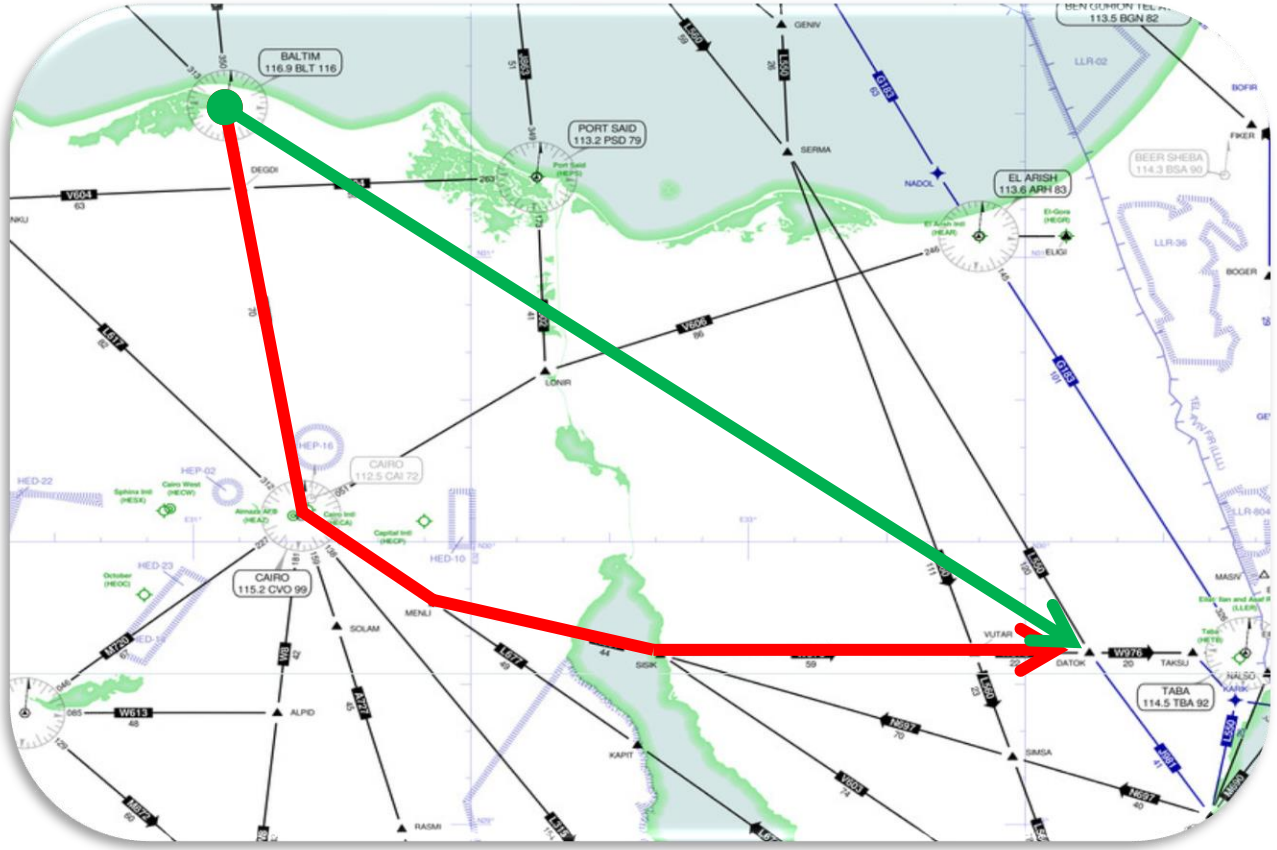


Cairo FIR Optimization

Cairo FIR Optimization – Phase 2

3. Cairo FIR Optimization– Phase 2

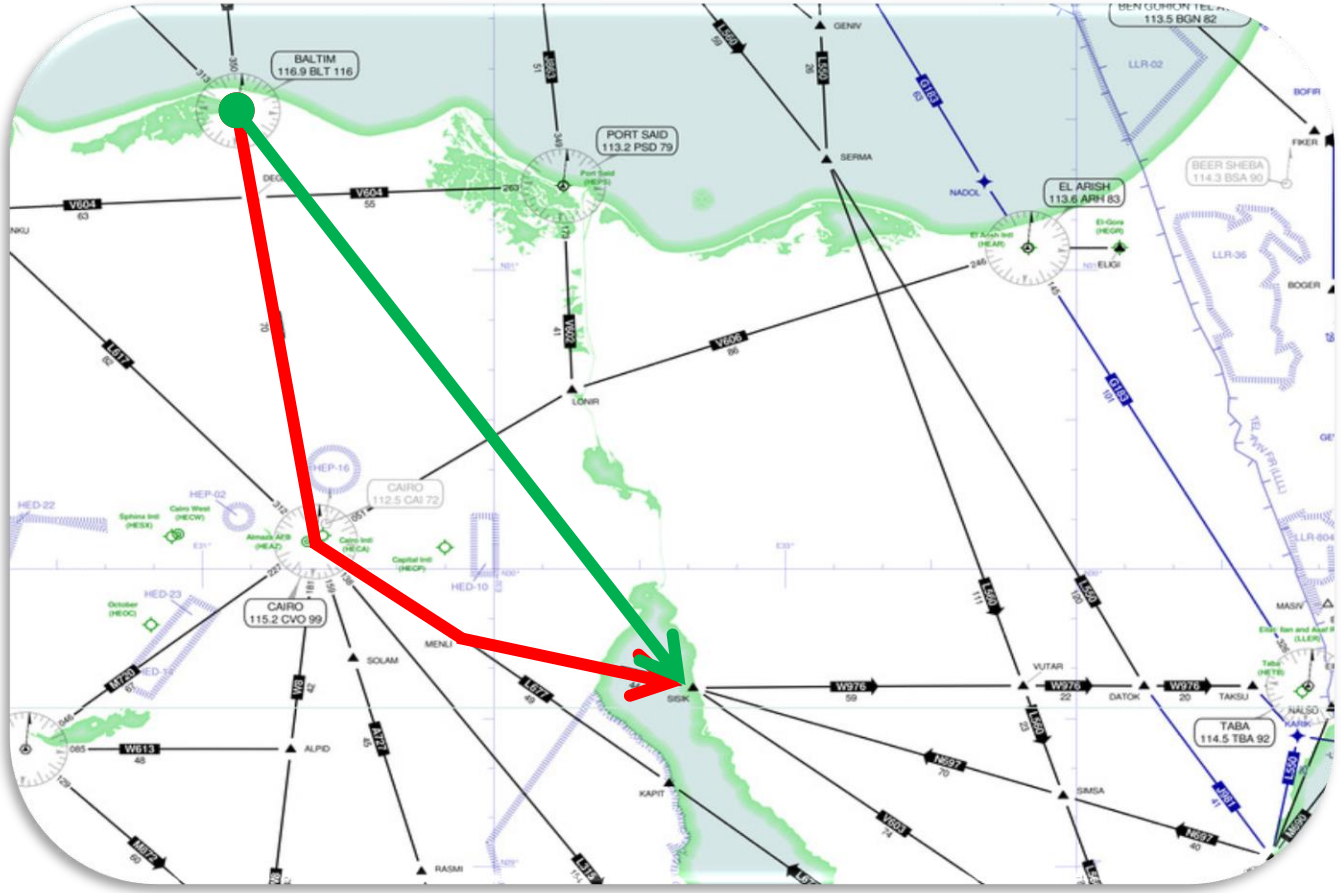
❖ A direct route between (BLT-DATOK) for inbound traffic from Nicosia FIR via RASDA to Amman FIR via ULINA.



Benefits and Expected Outcomes	
Distance Reduction	45.3 nm
Time Savings	Approx. 6 MINs
Fuel Efficiency	Approx. 241.8 kg
Emissions Reduction	Approx. 764.088 kg
Cost Savings per Flight (USD)	202.73 $

3. Cairo FIR Optimization– Phase 2

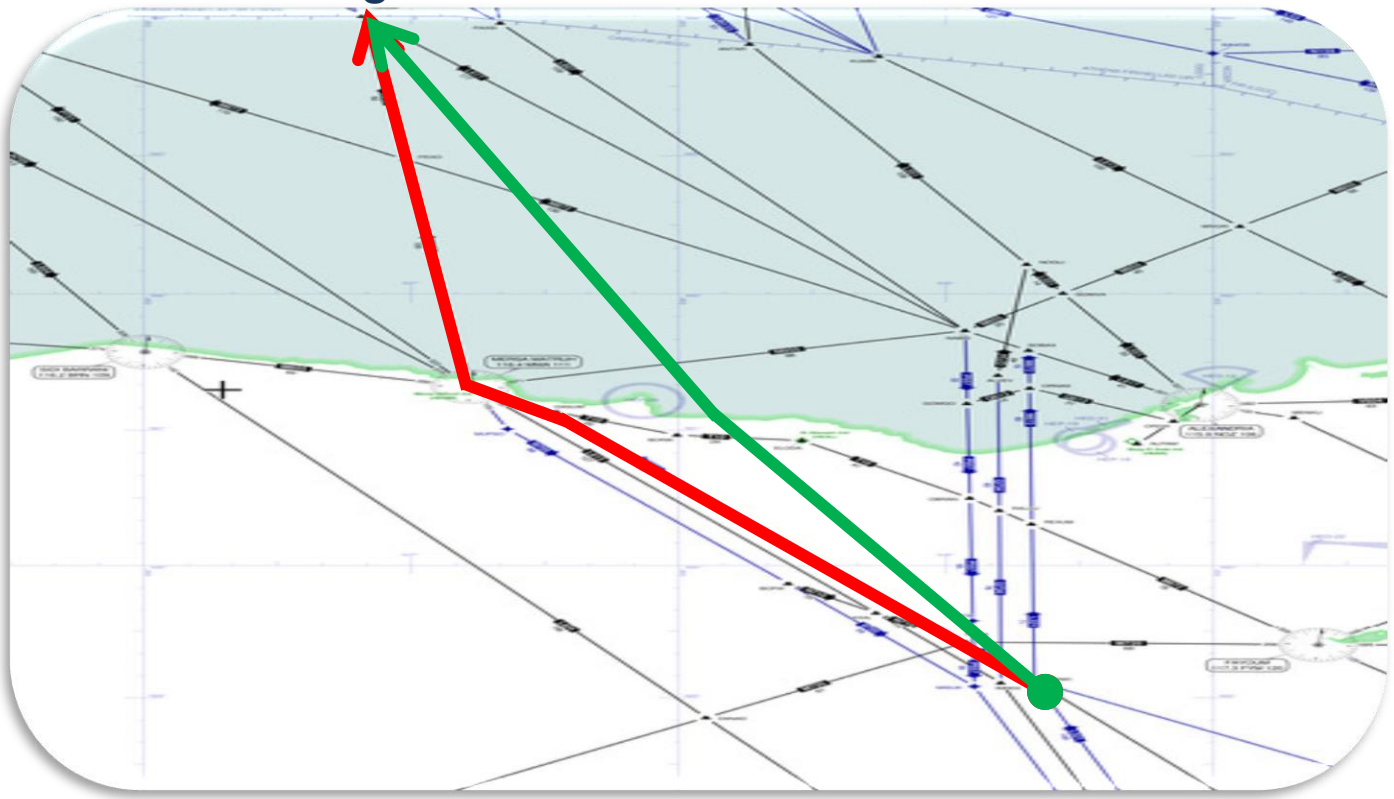
❖ A direct route between (BLT-SISIK) for inbound traffic from Athens and Nicosia landing HESH to avoids the congested portion of (BLT-CVO-MENLI).



Benefits and Expected Outcomes	
Distance Reduction	21.3 nm
Time Savings	Approx. 3 MINs
Fuel Efficiency	Approx. 104.8 kg
Emissions Reduction	Approx. 331.168 kg
Cost Savings per Flight (USD)	87.87$

3. Cairo FIR Optimization– Phase 2

- **A direct route between KUNKI and TANSA would generally result in:**
  - **Reduced flight time**
  - **Reduced rate of turn: Direct routes often involve fewer course changes, leading to smoother flight profiles and lower fuel consumption.**
  - **Shorter flight distance.**

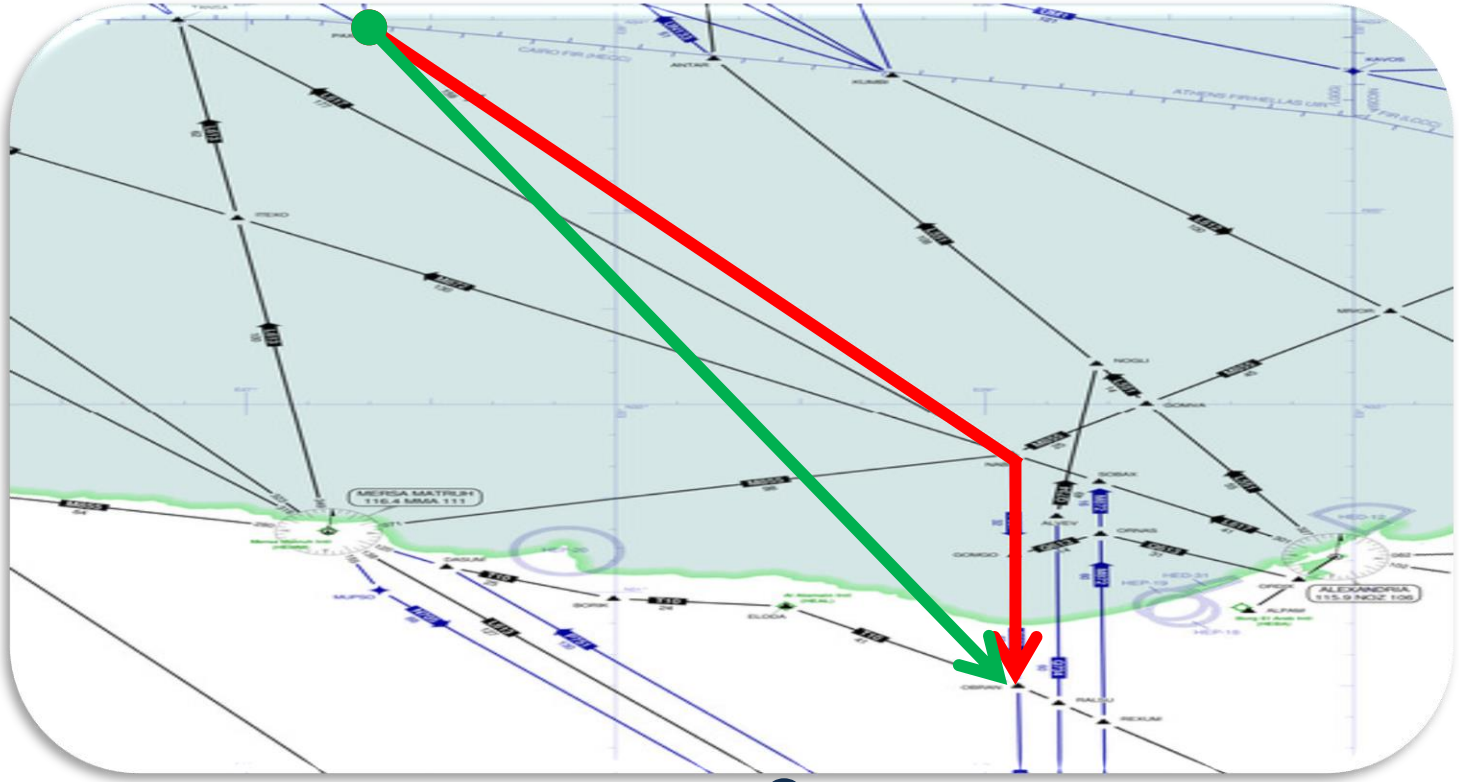


Benefits and Expected Outcomes	
Distance Reduction	14.7 nm
Time Savings	Approx. 2 MINs
Fuel Efficiency	Approx. 74.8 kg
Emissions Reduction	Approx. 236.4 kg
Cost Savings per Flight (USD)	62.71$

3. Cairo FIR Optimization– Phase 2

❖ **A direct route between (PAXIS-OBRAN) would generally result in :**

- Reduced flight time
- Reduced rate of turn : Direct routes often involve fewer course changes, leading to smoother flight profiles and lower fuel consumption.
- Shorter flight distance.

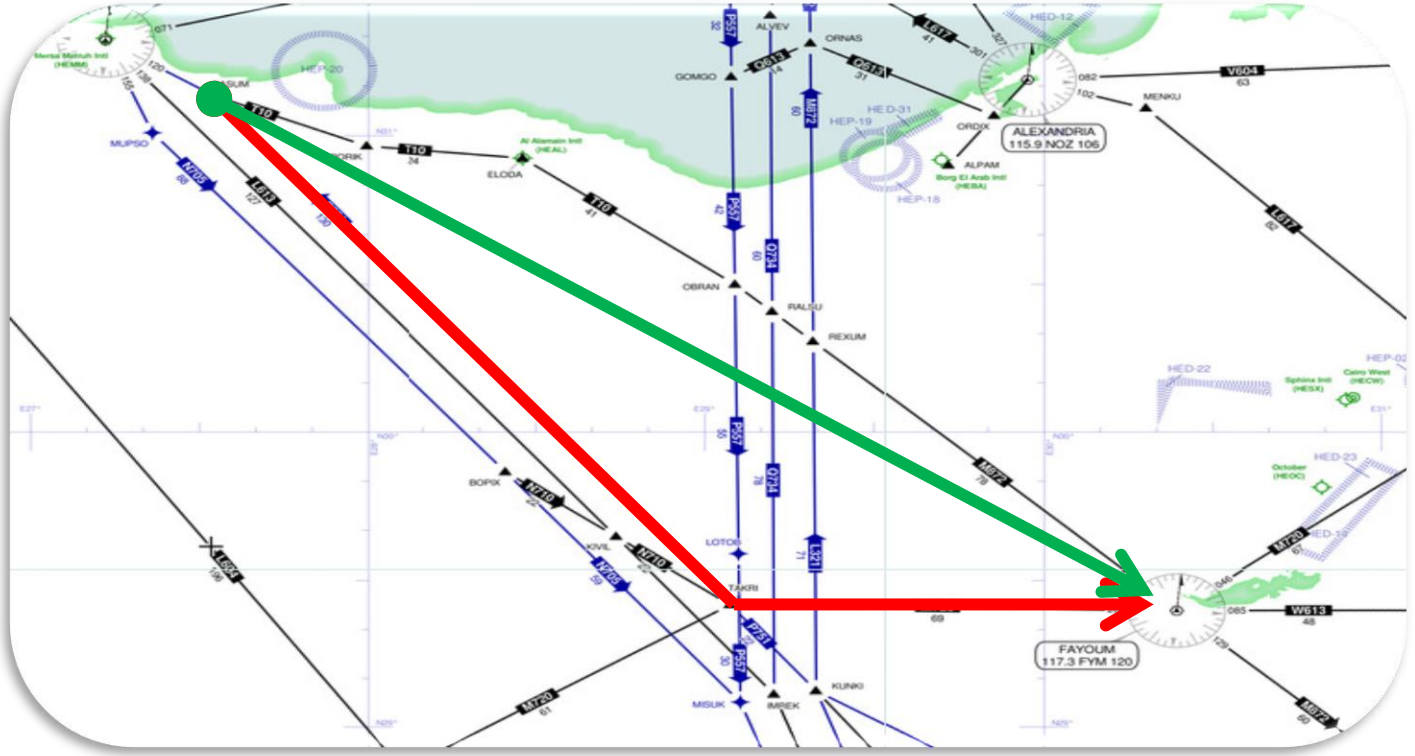


Benefits and Expected Outcomes	
Distance Reduction	7.9 nm
Time Savings	Approx. 1 MINs
Fuel Efficiency	Approx. 40.8 kg
Emissions Reduction	Approx. 128.9 kg
Cost Savings per Flight (USD)	34.21$

3. Cairo FIR Optimization– Phase 2

❖ A direct route between (DASUM-FYM) would generally result in :

- Reduced flight time
- Reduced rate of turn : Direct routes often involve fewer course changes, leading to smoother flight profiles and lower fuel consumption.
- Shorter flight distance.

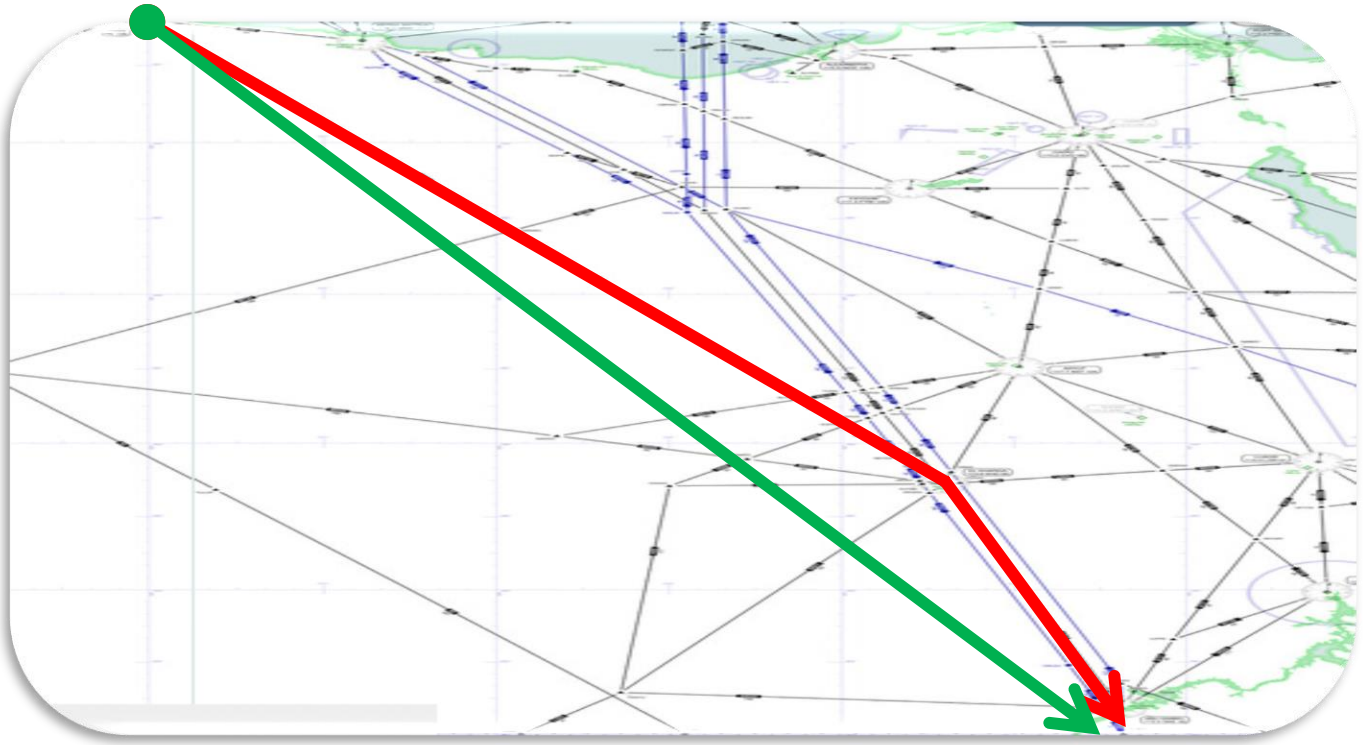


Benefits and Expected Outcomes	
Distance Reduction	19.5 nm
Time Savings	Approx. 3 MINs
Fuel Efficiency	Approx. 97.9 kg
Emissions Reduction	Approx. 309.4 kg
Cost Savings per Flight (USD)	82.08$

3. Cairo FIR Optimization– Phase 2

❖ A direct route between (BRN-NUBAR) would generally result in :

- Reduced flight time.
- Reduced rate of turn : Direct routes often involve fewer course changes, leading to smoother flight profiles and lower fuel consumption.
- Shorter flight distance.

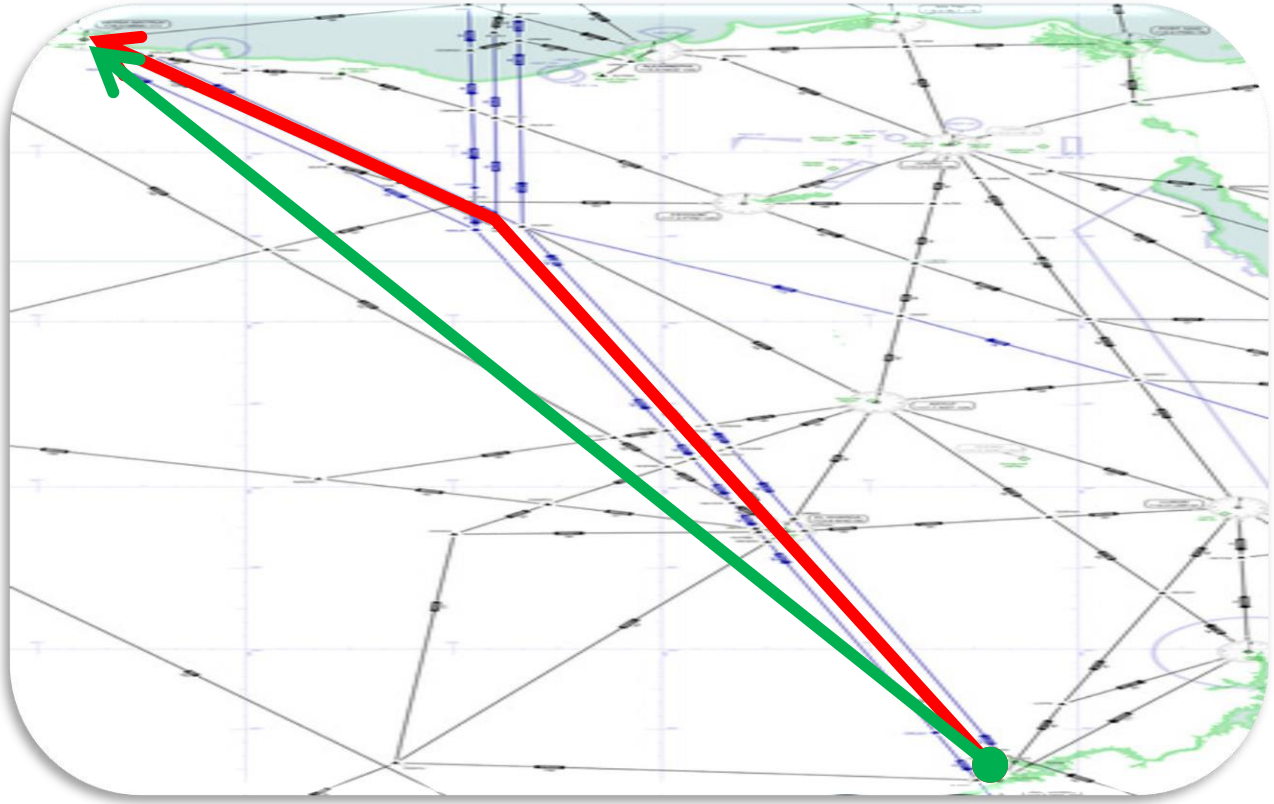


Benefits and Expected Outcomes	
Distance Reduction	5.2 nm
Time Savings	Approx. 1 MINs
Fuel Efficiency	Approx. 27.2 kg
Emissions Reduction	Approx. 85.9 kg
Cost Savings per Flight (USD)	22.8$

3. Cairo FIR Optimization– Phase 2

❖ A direct route between (SML-MMA) would generally result in :

- Reduced flight time
- Reduced rate of turn : Direct routes often involve fewer course changes, leading to smoother flight profiles and lower fuel consumption.
- Shorter flight distance.

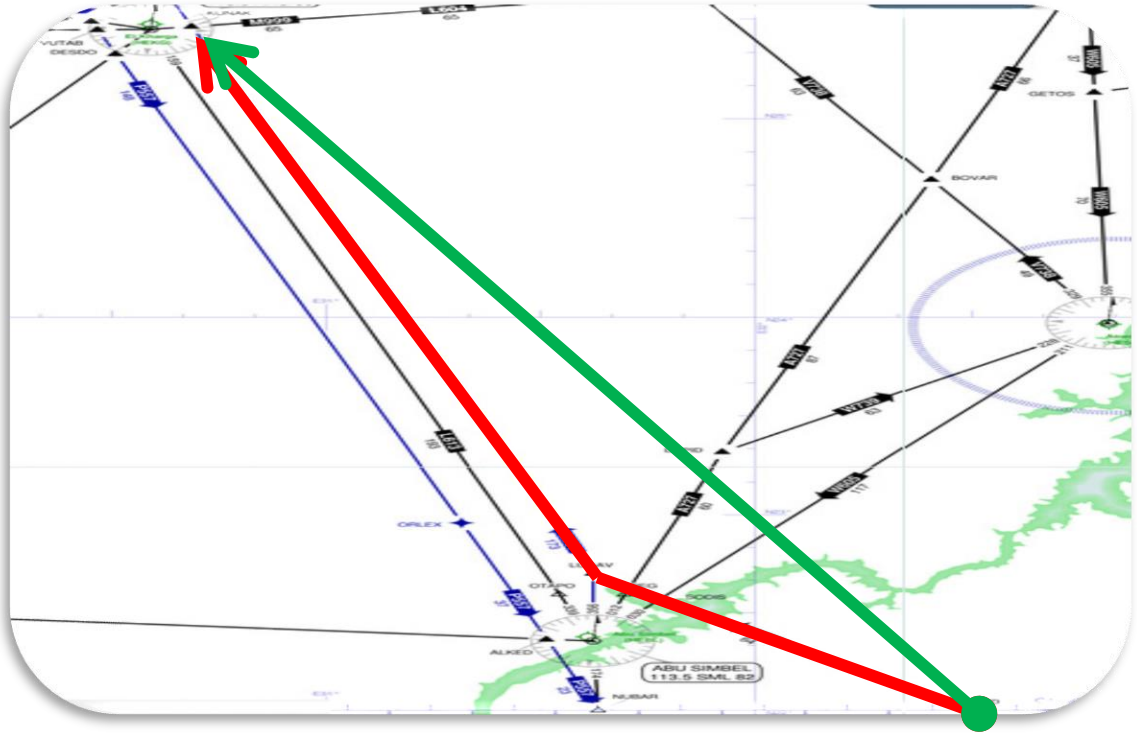


Benefits and Expected Outcomes	
Distance Reduction	10.6 nm
Time Savings	Approx. 1 MINs
Fuel Efficiency	Approx. 55.8 kg
Emissions Reduction	Approx. 176.3 kg
Cost Savings per Flight (USD)	46.78$

3. Cairo FIR Optimization– Phase 2

❖ A direct route between (SISID-KUNAK) would generally result in :

- Reduced flight time.
- Reduced rate of turn : Direct routes often involve fewer course changes, leading to smoother flight profiles and lower fuel consumption.
- Shorter flight distance.

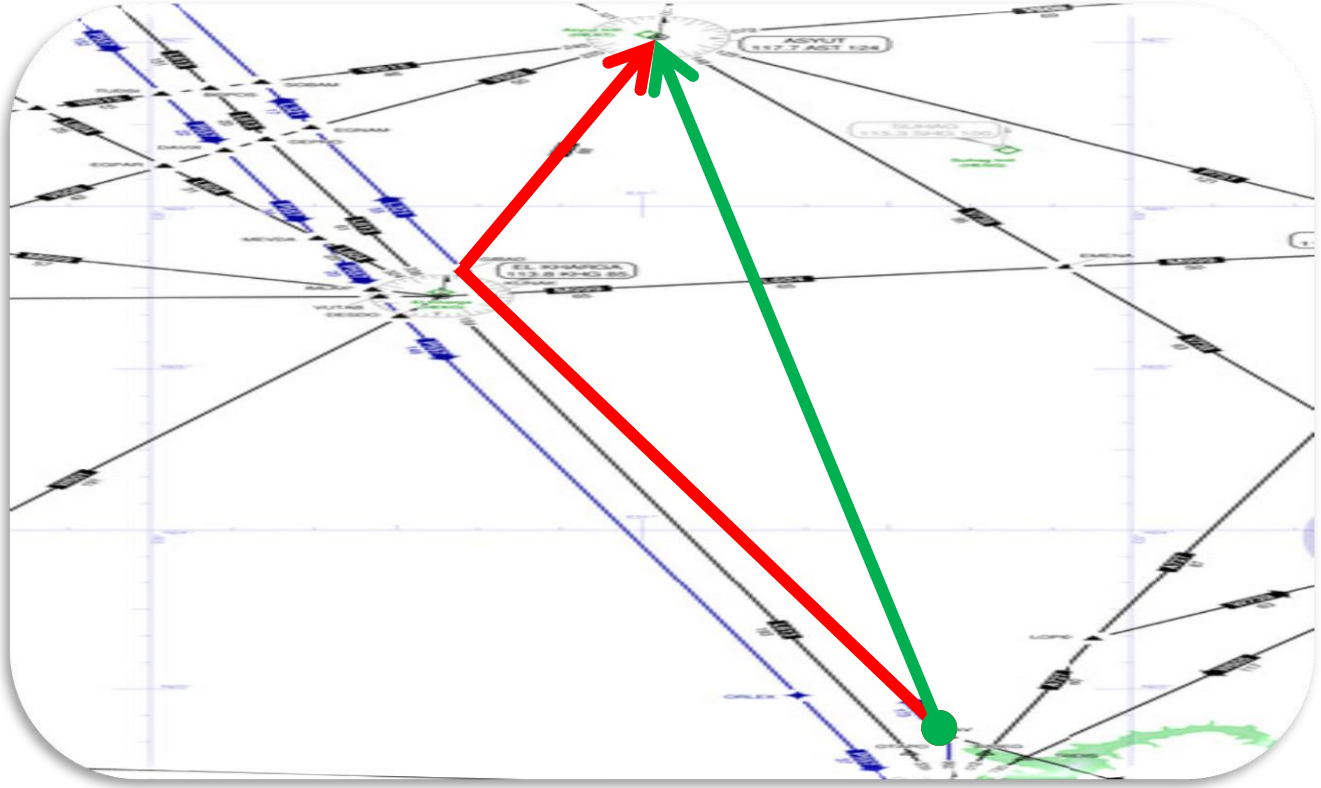


Benefits and Expected Outcomes	
Distance Reduction	7.3 nm
Time Savings	Approx. 1 MINs
Fuel Efficiency	Approx. 37.2 kg
Emissions Reduction	Approx. 117.6 kg
Cost Savings per Flight (USD)	31.19$

3. Cairo FIR Optimization– Phase 2

❖ **A direct route between (LUGAV-AST) would generally result in :**

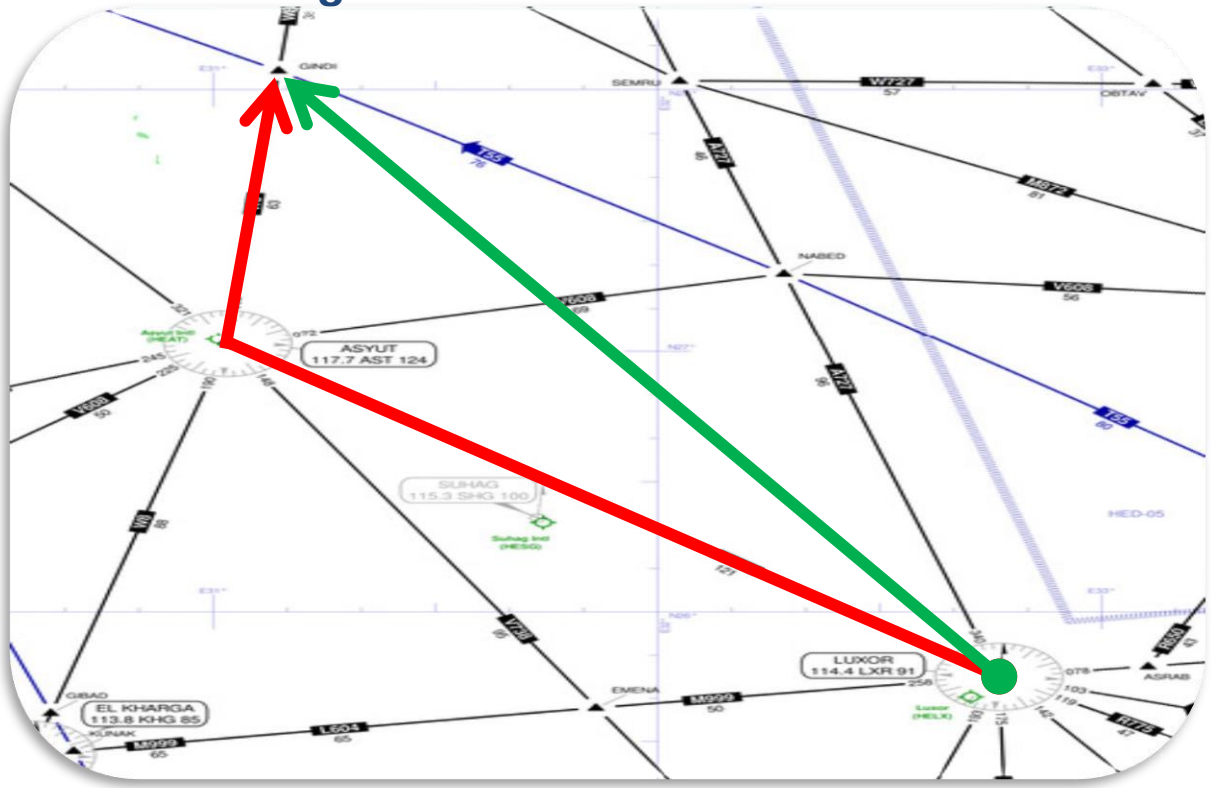
- **Reduced flight time**
- **Reduced rate of turn : Direct routes often involve fewer course changes, leading to smoother flight profiles and lower fuel consumption.**
- **Shorter flight distance.**



Benefits and Expected Outcomes	
Distance Reduction	8.9 nm
Time Savings	Approx. 1 MINs
Fuel Efficiency	Approx. 46.2 kg
Emissions Reduction	Approx. 146.0 kg
Cost Savings per Flight (USD)	38.73$

3. Cairo FIR Optimization– Phase 2

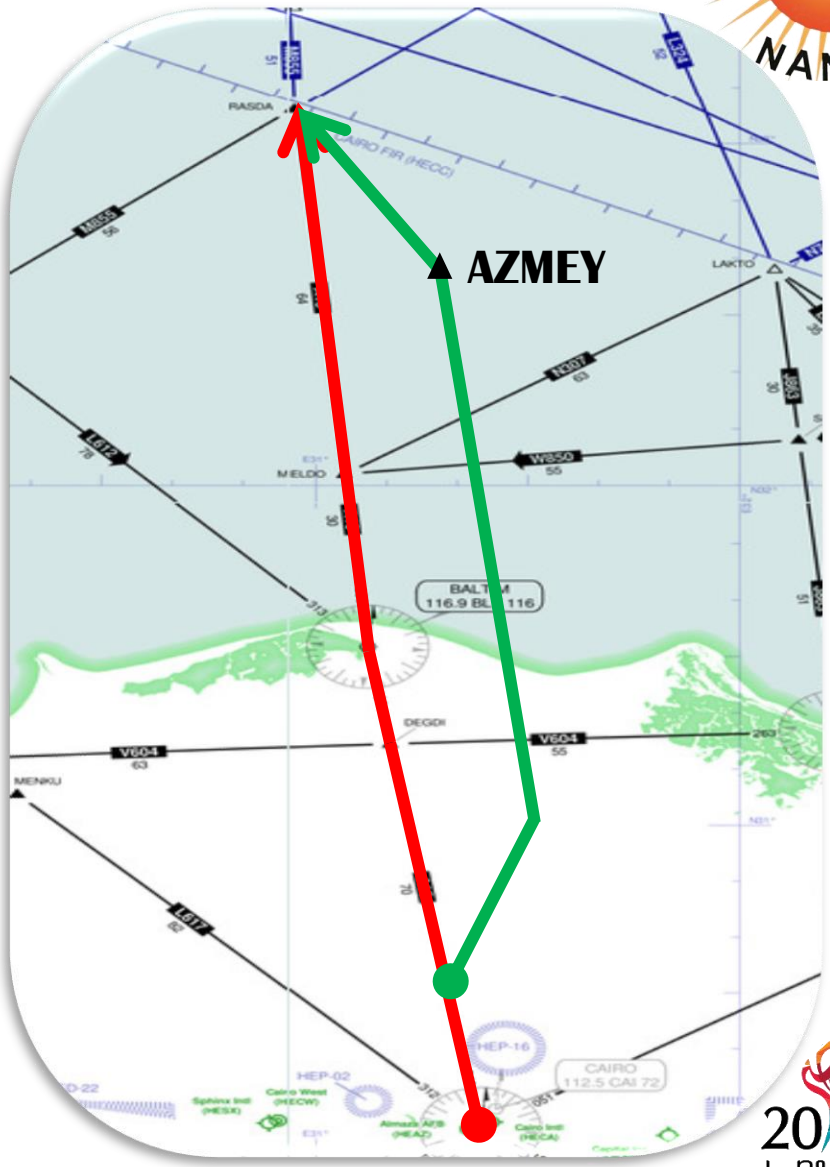
- **A direct route between (LXR-GINDI) would generally result in :**
  - **Reduced flight time.**
  - **Reduced rate of turn : Direct routes often involve fewer course changes, leading to smoother flight profiles and lower fuel consumption.**
  - **Shorter flight distance.**



Benefits and Expected Outcomes	
Distance Reduction	19.6 nm
Time Savings	Approx. 3 MINs
Fuel Efficiency	Approx. 107 kg
Emissions Reduction	Approx. 338.1 kg
Cost Savings per Flight (USD)	89.71$

3. Cairo FIR Optimization– Phase 2

- The dualization of A16 into two distinct routes, one for southbound and another for northbound traffic via waypoint AZMEY, offers several key advantages:
  - Increased Airspace Capacity: By segregating traffic flow, the dualization effectively doubles the capacity of the A16 corridor. This allows for a greater number of aircraft to transit the airspace safely and efficiently.
  - Enhanced Safety: Separating conflicting flight paths significantly reduces the risk of mid-air collisions and other safety incidents. This is particularly beneficial for traffic converging from or diverging towards the Nicosia FIR.
  - Reduced Controller Workload: The separation of traffic flow simplifies air traffic management, reducing the complexity of airspace coordination and minimizing the cognitive burden on air traffic controllers.
- Overall, the dualization of A16 represents a significant improvement in airspace management, enhancing safety, efficiency, and capacity within sector 2.



The project Expected Outcomes

Route	Current Distance (NM)	Proposed Distance (NM)	Distance Saving (NM)	Fuel Consumption (Current) (kg)	Fuel Consumption (Proposed) (kg)	Fuel Savings (kg)	Fuel Savings (%)	Carbon Emission Savings (kg)	Cost Savings per Flight (USD)
DATOK-PSD-MELDO-NEWPOINT	435.5	347.2	88.3	2300	1833.1	466.9	20.3	1475.4	391.45
BLT-DATOK	243.3	198	45.3	1300	1058.2	241.8	18.6	764.1	202.73
BLT-SISIK	162.3	141	21.3	800	695.2	104.8	13.1	331.2	87.87
KUMBI-CVO	264.8	255.3	9.5	1400	1349.6	50.4	3.6	159.3	42.26
KUNKI-TANSA	333.8	319.1	14.7	1700	1625.2	74.8	4.4	236.4	62.71
MENKU-ANTAR	197.2	192.3	4.9	1000	975	25	2.5	79	20.96
PAXIS-OBRAN	233.1	225.2	7.9	1200	1159.2	40.8	3.4	128.9	34.21
DASUM-FYM	220.3	200.8	19.5	1100	1002.1	97.9	8.9	309.4	82.08
SALUN-CVO-SILKA	757	726.5	30.5	3900	3744	156	4	493	130.79
BRN-NUBAR	652.6	647.4	5.2	3400	3372.8	27.2	0.8	86	22.8
SML-MMA	596.4	585.8	10.6	3100	3044.2	55.8	1.8	176.3	46.78
SISID-KUNAK	236.9	229.6	7.3	1200	1162.8	37.2	3.1	117.6	31.19
LUGAV-AST	269.9	261	8.9	1400	1353.8	46.2	3.3	146	38.73
LXR-GINDI	183.5	163.9	19.6	1000	893	107	10.7	338.1	89.71

Thank you

ANY Questions?

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NANSC

R & D

Directorate

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