International Civil Aviation Organization

MIDANPIRG RANP/NANP Task Force

First Meeting (RANP/NANP TF/1)
(Cairo, Egypt, 19 – 22 February 2024)

Agenda Item 4: MID Air Navigation Report-2023

PRELIMINARY RESULTS OF THE MID AIR NAVIGATION REPORT 2023

(Presented by the Secretariat)

SUMMARY

This paper presents the preliminary results of the MID Air Navigation Report 2023.

Action by the meeting is at paragraph 3.

REFERENCES

- MIDANPIRG/20 & RASG-MID/10 Report (Muscat, Oman, 14 – 17 May 2023)

1. INTRODUCTION

1.1 The MIDANPIRG/20 meeting, through Conclusions 20/9 and 20/11 respectively urged States to implement performance-based approach and provide the ICAO MID Office, with relevant data necessary for the development of the MID Region Air Navigation Report – 2023.

MIDANPIRG CONCLUSION 20/9: DEVELOPMENT OF NANP

That, in order to enable prioritization and optimum allocation of resources for all planned projects within States:

a) States be urged to develop NANP based on a performance-based approach and the six-step performance management process described in the Manual on Global Performance of the Air Navigation System (Doc 9883) and the Revised MID Air Navigation Strategy (Doc 002); and

b) ICAO MID to conduct assistance missions/Workshops at National level on GANP/NANP in 2023-2024.

and

MIDANPIRG CONCLUSION 20/11: WEB-BASED MID REGION AIR NAVIGATION REPORT (2023)

That,

a) States be invited to provide the ICAO MID Office with the following data for the development of the MID Region Air Navigation Report (2023) by 1 December 2023:

i. Status of ASBU Implementation; and

ii. States' implementation of the Performance Based approach using the agreed Template as at Appendix 6.1A.

b) the MID Air Navigation Report (2023) be presented to the MIDANPIRG/21 for endorsement.

2. DISCUSSION

2.1 As a Follow-up action to the above MIDANPIRG/20 Conclusions, the ICAO MID Office issued State Letter AN 1/7-23/270 dated 6 December 2023 to collect the following information and updates from MID States:

a) update on the status of implementation of the priority 1 ASBU Threads/Elements;

b) progress achieved in the implementation of the Performance Based Approach and development of State National Air Navigation Plan (NANP), by completing the Questionnaire at **Appendix A**; and

c) State's major achievement(s)/success story(ies) in the air navigation field in 2023.

2.2 As of 10 February 2024, six (6) MID States (Bahrain, Jordan, Kuwait, Oman, Saudi Arabia and UAE) have replied to the aforementioned State Letter. Accordingly, ICAO MID, based on the above replies and the last update provided by remaining States in the Air Navigation Report 2022, consolidated the Report at ***Appendix B***. The main outlines of the preliminary report are as follows:

2.2.1 Status of ASBU Implementation

a) per ICAO MID ANP Volume III and MID Air Navigation Strategy Plan (Doc 002), this report included the status of 15 threats (DAIM, AMET, FICE, APTA, FRTO, NOPS, ACAS, SNET, GADS, RSEQ, SURF, ACDM, ASUR, NAVS and COMI) out of the 22 threats listed in 7th edition of the GANP;

b) this report incorporated the status of 34 ASBU elements included in the MID Air Navigation Strategy, out of 232 elements included in the 7th edition of the GANP;

c) DAIM (B1/1, B1/3 & B1/4), the regional level of implementation is decreased to 44.50% compared to 45.47% in 2022;

d) AMET (B0/1, B0/2, B0/3 & B0/4), the regional level of implementation is decreased to 49.21% compared to 56.28% in 2022;

e) FICE (B0/1), the regional level of implementation is increased to 30.30% compared to 26.19% in 2022;

f) APTA (B0/1, B0/2, B0/4, B0/5 & B0/7), the regional level of implementation is increased to 64.10% compared to 62.64% in 2022;

g) FRTO (B0/2 & B0/4), the regional level of implementation is increased to 64.88% compared to 53.57% in 2022;

h) NOPS (B0/1), the regional level of implementation is 41.67%, the same as the year 2022;

i) ACAS (B1/1), the regional level of implementation is 86.67%, the same as the year 2022;

j) SNET (B0/1, B0/2 & B0/3), the regional level of implementation is increased to 86.11% compared to 82.71% in 2022;

k) GADS (B1/2), the regional level of implementation is increased to 80.00% compared to 73.33% in 2022;

l) RSEQ (B0/1), the regional level of implementation is 35.71%, the same as the year 2022;

m) SURF (B0/1, B0/2 & B0/3), the regional level of implementation is decreased to 66.67%

compared to 80.17% in 2022;

n) ACDM (B0/1 & B0/2), the regional level of implementation is decreased to 45.00% compared to 51.70% in 2022;

o) ASUR (B0/1, B0/2 & B0/3), the regional level of implementation is decreased to 69.44% compared to 77.78% in 2022;

p) NAVS (B0/3 & B0/4), the regional level of implementation is increased to 46.67% compared to 43.34% in 2022;

q) COMI (B0/7 & B1/1), the regional level of implementation is increased to 70.00% compared to 66.67% in 2022;

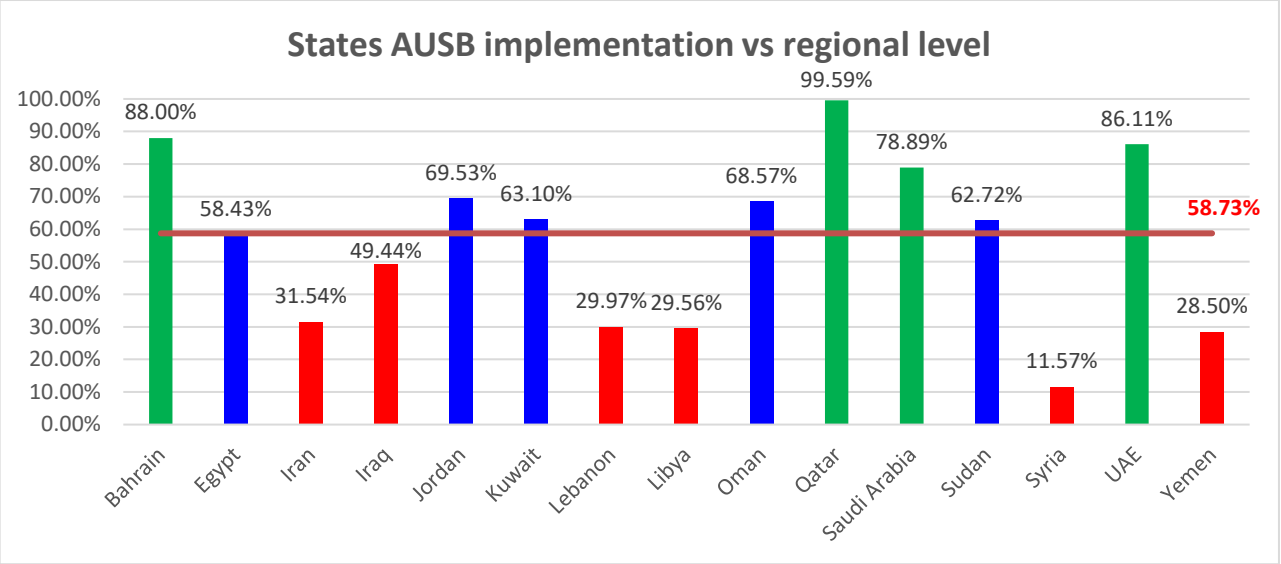
r) overall regional ASBU level of implementation is increased to 58.73% compared to 56.93% in 2022;

s) Qatar, Bahrain, UAE and Saudi Arabia have the highest level of implementation with 99.59%, 88.00%, 86.11% and 78.89%, respectively; and

t) FICE, RSEQ & NOPS have the lowest level of implementation with 30.30%, 35.71% and 41.67%, respectively.

	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen	
DAIM	100	27.77	61.11	0.00	0.00	66.67	16.67	0.00	16.67	100	100	33.33	0.00	100	0.00	**44.50**
AMET	100	75.00	6.25	20.49	97.25	0.00	6.25	3.13	100	97.22	100	32.64	0.00	100	0.00	**49.21**
FICE	40.00	25.00	0.00	0.00	0.00	0.00	NA	NA	0.00	100	16.67	NA	NA	75.00	NA	**30.30**
APTA	80.00	65.33	24.17	5.56	40.00	100	20.00	33.33	60.00	96.67	100	20.00	4.17	100	28.00	**61.32**
FRTO	100	50.00	0.00	0.00	100	100	0.00	NA	100	100	100	0.00	NA	50.00	NA	**64.88**
NOPS	100	0.00	0.00	0.00	0.00	0.00	0.00	NA	100	100	100	0.00	NA	100	NA	**41.67**
ACAS	100	100	100	100	100	100	100	0.00	100	100	100	100	0.00	100	100	**86.67**
SNET	100	66.67	66.67	66.67	100	100	66.67	NA	100	100	100	66.67	0.00	100	NA	**83.55**
GADS	100	100	100	100	100	100	0.00	100	100	100	100	100	0.00	100	0.00	**80.00**
RSEQ	100	0.00	NA	NA	NA	NA	NA	NA	NA	100	0.00	NA	NA	100	NA	**35.71**
SURF	100	100	33.33	100	100	100	100	100	33.33	100	33.33	100	100	100	100	**66.67**
ACDM	50.00	50.00	0.00	NA	NA	0.00	NA	NA	50.00	100	100	NA	NA	0.00	NA	**45.00**
ASUR	100	66.67	50.00	100	66.67	66.67	0.00	NA	100	100	33.33	100	NA	66.67	NA	**69.44**
NAVS	50.00	50.00	0.00	50.00	100	50.00	0.00	0.00	0.00	100	100	100	0.00	100	0.00	**46.67**
COMI	100	100	0.00	100	100	100	50.00	0.00	100	100	100	100	0.00	100	0.00	**70.00**
	88.00	**58.43**	**31.54**	**49.44**	**69.53**	**63.10**	**29.97**	**29.56**	**68.57**	**99.59**	**78.89**	**62.72**	**11.57**	**86.11**	**28.50**	**58.37**

Table 1- Priority 1 ASBU Threats/Elements implementation in the MID Region by State



2.2.2 Development of NANP based on a Performance-Based Approach.

States inputs will be presented under Agenda Item 6.

2.2.3 State's major achievement/success story

UAE implemented Free Route Airspace (FRA). The description of the implementation and success story is presented at ***Appendix C***.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) review and update the preliminary Air Navigation Report 2023 at **Appendix B**;

b) urge those States that have not provided required data/updates to the MID Office, to do so, as soon as possible, in order for the Secretariat to finalize the Air Navigation Report 2023 and present it to MIDANPIRG/21 for endorsement;

c) note the progress of the PBA implementation and development of NANP at **Appendix D,** and agree on required actions to expedite implementation; and

d) note UAE success story presented at **Appendix C**.

Questionnaire on the progress achieved in the Implementation of the Performance Based Approach and Development of National Air Navigation Plan (NANP)

In order to have a clear picture on the progress achieved in the implementation of the Performance Based Approach and development of the National Air Navigation Plan, as a follow-up to the MIDANPIRG/20 Conclusions 20/9 and 20/11 related to the "Development of States National Air Navigation Plan" and "Web-based MID Air Navigation Report for 2023"; you are kindly requested to complete the following Questionnaire and send it back to the ICAO MID Office (icaomid@icao.int) before 15 January 2024.

State / Organization:	**Name:**	
	Contact details:	
	Date:	

Has your State developed a plan for the improvement of the air navigation system performance? ☐ **Yes** ☐ **No**

If Yes, is your approach aligned with the MID ANP Volume III (Six-step performance management process as described in the Manual on Global Performance of the Air Navigation System (Doc 9883))? ☐ **Yes** ☐ **No**

Additional Comments:……

……

……..

……..

In case you have started the implementation of the Performance Based Approach (six-step approach), please provide inputs to the following questions:

1	**STEP 1: DEFINE SCOPE, CONTEXT AND SET AMBITIONS/EXPECTATIONS**
1.1	Has your State defined the scope and context of the required performance improvements to the national air navigation system?
	Feedback and comments:
1.2	Have you agreed with concerned stakeholders on the expected performance improvements (KPA, ambitions, Focus areas)?
	Feedback and comments:

2	**STEP 2: KNOW YOUR SYSTEM – IDENTIFY OPPORTUNITIES, ISSUES AND SET OBJECTIVES**
2.1	Based on the scope, context and general ambitions/expectations which were agreed to during the previous step, have you conducted a SWOT analysis to identify the air navigation system's strengths, weakness, opportunities and threats in order to set the required objectives.
	Feedback and comments:
3	**STEP 3: QUANTIFY OBJECTIVES AND SET TARGETS**
3.1	Have you quantified the current/past performance (Perfromance Baseline), expected future performance, as well as actual progress in achieving performance objectives by means of Key Performance Indicators (KPIs)?
	Feedback and comments:
3.2	Are you using the KPIs available in the GANP and MID ANP Vol III or different KPIs?
	Feedback and comments:
3.3	Has your State ensured that concerned stakeholders have in place a system for data collection to support the calculation of the agreed KPIs?
	Feedback and comments:
4	**STEP 4: SELECT SOLUTIONS**
4.1	To optimize the decisions and maximize the achievement of the desired/required (performance) results in accordance with agreed targets, has your State identified the optimum solution(s) for each target based on a cost-benefits analysis, environmental impact assessment, safety assessment and human factor assessment?
	Feedback and comments:
4.2	Have you used the ICAO Air Navigation System Performance Analysis (AN-SPA) tool, available at: https://www4.icao.int/ganpportal/ANSPA/Reports) to select the ASBU elements as potential solutions to improve the selected objectives/KPIs?
	Feedback and comments:

5	**STEP 5: IMPLEMENT SOLUTIONS**
5.1	Have you developed detailed implementation plans for each of the changes and improvements (the optimum solution(s)/projects) identified during the previous steps?
	Feedback and comments:
5.2	Has your State allocated required resources for deployment of these plans/optimum solutions (projects)?
	Feedback and comments:
5.3	Have you started the implementation of these projects (if any)?
	Feedback and comments:
5.4	Are you keeping track of the projects deployments (time, budget, etc.)?
	Feedback and comments:
6	**STEP 6: ASSESS ACHIEVEMENTS**
6.1	Are you continuously keeping track of the performance achieved and monitoring whether performance gaps are being closed as planned and expected?
	Feedback and comments:
6.2	As part of the process to assess the achievements, have you estimated the benefits accrued from the implementation of each of the agreed solutions?
	Feedback and comments:
6.3	Have you put in place a system to collect necessary data and report to ICAO on annual basis the status of implementation of the selected solutions and progress achieved, including the priority 1 ASBU Threads/Elements implementation status against the objectives and targets as set forth in the MID Air Navigation Strategy (MID Doc 002).
	Feedback and comments:

7	**Air Navigation Systems Performance Based Framework/Template**
	*Please complete the Table at **Appendix A** with relevant data related to the implementation of the six-step approach for the improvement of your Air Navigation System Performance*
8	**Status of Development of the National Air Navigation Plan**
	What is the status of development of your National Air Navigation Plan (NANP)? ☐ **Planned** ☐ **On-going** ☐ **Completed** *Feedback and comments:*
9	**Additional comments**
	Please provide additional comments, including if you need assistance from the ICAO MID Office for the implementation of the six-step approach and development of NANP

MID Region Air Navigation Systems Performance Based Framework/Template

Column

(1) Scope of Performance Improvement
(2) KPA (from the ICAO defined 11 Key Performance Areas (KPAs))
(3) Performance Objectives (ambition/expectations)
(4) KPIs based on the ICAO list of KPIs and associated variant
(5) The Baseline of each KPI
(6) The target of the KPI
(7) Selected ASBU element(s) /Enabler(s) and/or Non ASBU solution(s) for each operational improvement
(8) Target Implementation date

Scope/ Applicability	KPA & Focus Area	Performance Objective	KPI/ Variant	KPI Baseline	KPI Target	Operational Improvements (ASBU Elements/Enablers & Non ASBU)	Target Date
1	2	3	4	5	6	7	8

Modules	Elements	Description (GANP 7th)	MID Strategy plan indicators/metrics	Applicability area	Targets	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen	Regional level
B1 – DAIM	DAIM B1/1 Provision of quality-assured aeronautical data and information	1- Full move into an automated data-centric environment so that the management, processing, verification, usage and exchange can be done in a structured, automatic manner and human intervention is reduced. 2- Formal arrangements with data originators, neighbouring States, data and information service providers and others.	**Indicator***: Regional average implementation status of DAIM B1/1 (provision of quality-assured aeronautical data and information). **Supporting Metrics:** 1. Number of States that have implemented an AIXM-based AIS database (AIXM V5.1+) 2. Number of States that have established formal arrangements with at least 50% of their AIS data originators.	**Bahrain** (AIXM DB, SLA) **Egypt** (AIXM DB, SLA) **Iran** (AIXM DB, SLA) **Iraq** (AIXM DB, SLA) **Jordan** (AIXM DB, SLA) **Kuwait** (AIXM DB, SLA) **Lebanon** (AIXM DB, SLA) **Libya** (AIXM DB, SLA) **Oman** (AIXM DB, SLA) **Qatar** (AIXM DB, SLA) **Saudi Arabia** (AIXM DB, SLA) **Sudan** (AIXM DB, SLA) **Syria** (AIXM DB, SLA) **UAE** (AIXM DB, SLA) **Yemen** (AIXM DB, SLA)	80%	100.00%	50.00%	50.00%	0.00%	0.00%	0.00%	50.00%	0.00%	50.00%	100.00%	100.00%	100.00%	0.00%	100.00%	0.00%	46.67%
	DAIM B1/3 Provision of digital terrain data sets	The need for interoperable exchange of terrain data requires providing the data in digital form and complying with digital data exchange requirements. This element consists in the replacement of existing terrain data by digital terrain data sets. Therefore, this element supports the migration to a data-centric environment where terrain data will be provided in a digital form and in a structured way.	**Indicator***: Regional average implementation status of DAIM B1/3(Provision of Terrain digital datasets). **Supporting Metric**: Number of States that provide required Terrain digital datasets	**Bahrain** (Area 1, Area 4, 2a/TOFP/OLS) **Egypt** (Area 1, Area 4, 2a/TOFP/OLS) **Iran** (Area 1, Area 4, 2a/TOFP/OLS) **Iraq** (Area 1, Area 4, 2a/TOFP/OLS) **Jordan** (Area 1, Area 4, 2a/TOFP/OLS) **Kuwait** (Area 1, Area 4, 2a/TOFP/OLS) **Lebanon** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Libya** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Oman** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Qatar** (Area 1, Area 4, 2a/TOFP/OLS) **Saudi Arabia** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Sudan** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Syria** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **UAE** (Area 1, Area 4, 2a/TOFP/OLS) **Yemen** (Area 1, ~~Area 4~~, 2a/TOFP/OLS)	60%	100.00%	33.30%	66.67%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	0.00%	44.74%
	DAIM B1/4 Provision of digital obstacle data sets	The need for interoperable exchange of obstacle data requires providing the data in digital form and complying with digital data exchange requirements. This element consists in the replacement of existing obstacle data by digital obstacle data sets. Therefore, this element supports the migration to a data centric environment where obstacle data will be provided in a structured and digital form through the use through the use of information exchange models (e.g. AIXM).	**Indicator***: Regional average implementation status of DAIM B1/4(Provision of obstacle digital datasets). **Supporting Metric**: Number of States that provide required obstacle digital datasets	**Bahrain** (Area 1, Area 4, 2a/TOFP/OLS) **Egypt** (Area 1, Area 4, 2a/TOFP/OLS) **Iran** (Area 1, Area 4, 2a/TOFP/OLS) **Iraq** (Area 1, Area 4, 2a/TOFP/OLS) **Jordan** (Area 1, Area 4, 2a/TOFP/OLS) **Kuwait** (Area 1, Area 4, 2a/TOFP/OLS) **Lebanon** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Libya** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Oman** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Qatar** (Area 1, Area 4, 2a/TOFP/OLS) **Saudi Arabia** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Sudan** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **Syria** (Area 1, ~~Area 4~~, 2a/TOFP/OLS) **UAE** (Area 1, Area 4, 2a/TOFP/OLS) **Yemen** (Area 1, ~~Area 4~~, 2a/TOFP/OLS)	60%	100.00%	0.00%	66.67%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	0.00%	42.11%
	Average					100.00%	27.77%	61.11%	0.00%	0.00%	66.67%	16.67%	0.00%	16.67%	100.00%	100.00%	33.33%	0.00%	100.00%	0.00%	44.50%
	AMET B0/1 Meteorological observations products	1- Automatic Weather Observation System (AWOS) information (including real-time exchange of wind and RVR data) 2- Local reports (MET REPORT / SPECIAL) 3- Aerodrome reports (METAR / SPECI) 4- Lightning information 5- Ground-based weather radar information 6- Meteorological satellite imagery 7- Aircraft meteorological report (ie. ADS-B, AIREP, AMDAR etc.) 8- Vertical wind and temperature profiles 9- Volcano Observatory Notice for Aviation (VONA) 10- Wind shear alerts	**Indicator***: Regional average implementation status of B0/1 (Meteorological observations products). **Supporting Metrics**: Number of States that provide the following Meteorological observations products, as required: 1. Automatic Weather Observation System (AWOS)information (including real-time exchange of wind and RVR data) 2. Local reports (MET REPORT/SPECIAL) 3. Aerodrome reports (METAR/SPECI) 4. Lightning Information 5. Ground-based weather radar information 6. Meteorological satellite imagery 7. Aircraft meteorological report (ie. ADS-B, AIREP, etc.) 8. Vertical wind and temperature profiles 9. Wind shear alerts	**Bahrain** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Egypt** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Iran** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Iraq** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Jordan** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Kuwait** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Lebanon** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Libya** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Oman** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Qatar** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Saudi Arabia** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Sudan** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Syria** (1, 2, 3, 4, 5, 6, 7, 8, 9) **UAE** (1, 2, 3, 4, 5, 6, 7, 8, 9) **Yemen** (1, 2, 3, 4, 5, 6, 7, 8, 9)	80%	100.00%	100.00%	0.00%	44.44%	89.00%	0.00%	0.00%	0.00%	100.00%	88.89%	100.00%	55.56%	0.00%	100.00%	0.00%	51.85%

B0-AMET	**AMET B0/2** Meteorological forecast and warning products	1-World Area Forecast System (WAFS) gridded products 2- Significant Weather (SIGWX) 3- Low-level Area Forecast (GAMET) 4- Aerodrome Forecast (TAF) 5- Trend Forecast (TREND) 6- Take-off Forecast 7- Tropical Cyclone Advisory (TCA) 8- Volcanic Ash Advisory (VAA) 9- AIRMET 10- SIGMET 11- Aerodrome Warning 12- Wind Shear Warning	**Indicator***: Regional average implementation status of B0/2 (Meteorological forecasts and warning products) **Supporting Metrics**: Number of States that provides the following Meteorological forecast and warning products, as required: 1. World Area Forecast System (WAFS) gridded products 2. Significant Weather (SIGWX) 3. Aerodrome Forecast (TAF) 4. Trend Forecast (TREND) 5. Take-off Forecast 6. SIGMET 7. Aerodrome Warning 8. Wind Shear Warning	**Bahrain** (1, 2, 3, 4, 5, 6, 7, 8) **Egypt** (1, 2, 3, 4, 5, 6, 7, 8) **Iran** (1, 2, 3, 4, 5, 6, 7, 8) **Iraq** (1, 2, 3, 4, 5, 6, 7, 8) **Jordan** (1, 2, 3, 4, 5, 6, 7, 8) **Kuwait** (1, 2, 3, 4, 5, 6, 7, 8) **Lebanon** (1, 2, 3, 4, 5, 6, 7, 8) **Libya** (1, 2, 3, 4, 5, 6, 7, 8) **Oman** (1, 2, 3, 4, 5, 6, 7, 8) **Qatar** (1, 2, 3, 4, 5, 6, 7, 8) **Saudi Arabia** (1, 2, 3, 4, 5, 6, 7, 8) **Sudan** (1, 2, 3, 4, 5, 6, 7, 8) **Syria** (1, 2, 3, 4, 5, 6, 7, 8) **UAE** (1, 2, 3, 4, 5, 6, 7, 8) **Yemen** (1, 2, 3, 4, 5, 6, 7, 8)	90%	100.00%	100.00%	25.00%	37.50%	100.00%	0.00%	25.00%	12.50%	100.00%	100.00%	100.00%	75.00%	0.00%	100.00%	0.00%	58.33%
	AMET B0/3 Climatological and historical meteorological products	1- Aerodrome climatological tables; 2- Aerodrome climatological summaries; and 3- The provision of historical products including meteorological observations, forecasts, advisories and warnings.	**Indicator**: % of States that provide Climatological and historical meteorological products, as required. **Supporting Metric**: Number of States that provide Climatological and historical meteorological products, as required	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Libya	85%	100.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	100.00%	0.00%	46.67%
	AMET B0/4 Dissemination of meteorological products	This element represents the dissemination of meteorological products using a variety of formats and means. Formats include: 1- TAC 2- Gridded 3- Graphical (i.e., PNG format) 4- BUFR code 5- IWXXM (in XML/GML) Dissemination means includes aeronautical fixed service (AFTN with increasing use of AMHS), and via secure internet services (ie. WIFS/SADIS).	**Indicator**: % of States disseminating Meteorological products using a variety of formats and means (TAC, Gridded, Graphical, BUFR code, IWXXM) **Supporting Metric**: Number of States disseminating Meteorological products using a variety of formats and means (TAC, Gridded, Graphical, BUFR code, IWXXM)	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Libya Oman Qatar Saudi Arabia Sudan Syria UAE Yemen	85%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	100.00%	0.00%	40.00%
	Average					100.00%	75.00%	6.25%	20.49%	97.25%	0.00%	6.25%	3.13%	100.00%	97.22%	100.00%	32.64%	0.00%	100.00%	0.00%	49.21%
B0 – FICE	**FICE B0/1** Automated basic inter facility data exchange (AIDC)	This element represents a first automation step in the evolution of the coordination and transfer of control between neighbouring ATS units to guarantee that all related and necessary flight information will be available to the other unit as per agreement.	**Indicator***: % of priority 1 AIDC/OLDI Interconnection have been implemented **Supporting metric**: Number of AIDC/OLDI interconnections implemented between adjacent ACCs	**Bahrain**: Qatar, UAE, Saudi Arabia, Kuwait, Iran **Egypt**: Jordan, Saudi Arabia, Cyprus, Greece **Iran**: Turkey, Bahrain **Iraq**: Turkey, Kuwait **Jordan**: Egypt, Saudi Arabia **Kuwait**: Iraq, Bahrain **Oman**: UAE, Saudi Arabia, India **Qatar**: Bahrain, UAE, Saudi Arabia **Saudi Arabia**: Jordan, Bahrain, Qatar, Oman, Egypt, UAE **UAE**: Bahrain, Qatar, Saudi Arabia, Oman	70%	40.00%	25.00%	0.00%	0.00%	0.00%	0.00%	NA	NA	0.00%	100.00%	16.67%	NA	NA	75.00%	NA	21.05%
	Average					40.00%	25.00%	0.00%	0.00%	0.00%	0.00%	NA	NA	0.00%	100.00%	16.67%	NA	NA	75.00%	NA	30.30%

B0 – APTA	**APTA B0/1** PBN Approaches (with basic capabilities)	PBN approaches allow for guided lateral paths and optionally, with associated advisory vertical paths based on Baro-VNAV functionality for aircraft so equipped. Such Baro-VNAV functionality enables stabilized decent operations on the final segment of the approach at airports which do not have ground infrastructure to support precision approaches. These procedures can also be implemented to allow continued approach operations in the case of failure of an existing ILS or traditional non precision approaches that are based on ground navigation aids.	**Indicator**: % of Runway ends at international aerodromes served by PBN approach procedures with basic functionalities - down to LNAV or LNAV/VNAV minima **Supporting metric**: Number of Runways ends at international aerodromes served by PBN approach procedures with basic functionalities - down to LNAV or LNAV/VNAV minima	**Bahrain:** (**OBBI**: 12R, 12L, 30R, 30L) **Egypt:** (**HEBA**: 14R, 32L, 32), (**HESN**: 17, 35), (**HECA**: 05L, 23R, 05C, 23C, 05R, 23L), (**HEGN**: 16L, 34R, 16R, 34L), (**HELX**: 02, 20, 02L, 20R), (**HEMA**: 15, 33), (**HESH**: 04L, 22R, 04R, 22L) **Iran:** (**OIKB**: 03R, 21L), (**OIFM**: 08L, 26R, 08R, 26L), (**OIMM**: 13L, 31R, 13R, 31L), (**OISS**: 29L, 29R), (**OITT**: 12L, 30R), (**OIIE**: 11L, 29R), (**OII**: 11R, 29L, 11L, 29R), (**OIYY**: 13, 31), (**OIZH**: 17R, 35L) **Iraq:** (**ORNI**: 28, 10), (**ORBI**: 15R, 33L, 15L, 33R), (**ORMM**: 32, 14), (**ORER**: 18, 36), (**ORSU**: 31, 13) **Jordan:** (**OJAI**: 08R, 26L, 08L, 26R), (**OJAQ**: 01, 19) **Kuwait:** (**OKKK**: 15R, 33L, 15L, 33R) **Lebanon:** (**OLBA**: 03, 21, 16, 17) **Libya:** (**HLLB**: 15L, 33R, 15R, 33L), (**HLLS**: 13, 31), (**HLLT**: 09, 27) **Oman:** (**OOMS**: 08L, 26R), (**OOSA**: 07, 25) **Qatar:** (**OTBD**: 15, 33), (**OTHH**: 16L, 34R, 16R, 34L) **Saudi Arabia:** (**OEDF**: 16L, 34R, 16R, 34L), (**OEJN**: 16R, 34L, 16C, 34C, 16L, 34R), (**OEMA**: 17, 35, 18, 36), (**OERK**: 15L, 33R, 15R, 33L) **Sudan:** (**HSOB**: 01, 19), (**HSSK**: 18, 36), (**HSNN**: 04, 22), (**HSPN**, 16, 34) **Syria:** (**OSAP**: 09, 27), (**OSDI**: 05L, 23R, 05R, 23L), (**OSLK**: 17, 35) **UAE:** (**OMAA**: 13R, 31L, 13L, 31R), (**OMAD**: 13, 31), (**OMDW**: 12, 30, 13, 31), (**OMDB**: 12L, 30R, 12R, 30L), (**OMFJ**: 11, 29), (**OMRK**: 16, 34), (**OMSJ**: 12, 30), (**OMAL**: 01, 19) **Yemen:** (**OYAA**: 08, 26), (**OYHD**: 03, 21), (**OYRN**: 06, 24), (**OYSN**: 18, 36), (**OYTZ**: 01, 19)	100%	100.00%	48.00%	8.33%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	83.33%	100.00%	75.00%	12.50%	100.00%	20.00%	52.76%
	APTA B0/2 PBN SID and STAR procedures (with basic capabilities)	This element represents the use of PBN in design of arrival and departure procedures to provide more flexibility to airspace planners to manage the use of airspace for enhancing arrival and departures in terminal areas. It provides the basic capability to support the implementation of CDO and CCO operations.	**Indicator**: % of Runway ends at international aerodromes provided with PBN SID and STAR (basic capabilities). **Supporting Metric**: Number of Runway ends at international aerodromes provided with PBN SID and STAR (basic capabilities).	**Bahrain:** (**OBBI**: 12R, 12L, 30R, 30L) **Egypt:** (**HEBA**: 14R, 32L, 32), (**HESN**: 17, 35), (**HECA**: 05L, 23R, 05C, 23C, 05R, 23L), (**HEGN**: 16L, 34R, 16R, 34L), (**HELX**: 02, 20, 02L, 20R), (**HEMA**: 15, 33), (**HESH**: 04L, 22R, 04R, 22L) **Iran:** (**OIKB**: 03R, 21L), (**OIFM**: 08L, 26R, 08R, 26L), (**OIMM**: 13L, 31R, 13R, 31L), (**OISS**: 29L, 29R), (**OITT**: 12L, 30R), (**OIIE**: 11L, 29R), (**OII**: 11R, 29L, 11L, 29R), (**OIYY**: 13, 31), (**OIZH**: 17R, 35L) **Iraq:** (**ORNI**: 28, 10), (**ORBI**: 15R, 33L, 15L, 33R), (**ORMM**: 32, 14), (**ORER**: 18, 36), (**ORSU**: 31, 13) **Jordan:** (**OJAI**: 08R, 26L, 08L, 26R), (**OJAQ**: 01, 19) **Kuwait:** (**OKKK**: 15R, 33L, 15L, 33R) **Lebanon:** (**OLBA**: 03, 21, 16, 17) **Libya:** (**HLLB**: 15L, 33R, 15R, 33L), (**HLLS**: 13, 31), (**HLLT**: 09, 27) **Oman:** (**OOMS**: 08L, 26R), (**OOSA**: 07, 25) **Qatar:** (**OTBD**: 15, 33), (**OTHH**: 16L, 34R, 16R, 34L) **Saudi Arabia:** (**OEDF**: 16L, 34R, 16R, 34L), (**OEJN**: 16R, 34L, 16C, 34C, 16L, 34R), (**OEMA**: 17, 35, 18, 36), (**OERK**: 15L, 33R, 15R, 33L) **Sudan:** (**HSOB**: 01, 19), (**HSSK**: 18, 36), (**HSNN**: 04, 22), (**HSPN**, 16, 34) **Syria:** (**OSAP**: 09, 27), (**OSDI**: 05L, 23R, 05R, 23L), (**OSLK**: 17, 35) **UAE:** (**OMAA**: 13R, 31L, 13L, 31R), (**OMAD**: 13, 31), (**OMDW**: 12, 30, 13, 31), (**OMDB**: 12L, 30R, 12R, 30L), (**OMFJ**: 11, 29), (**OMRK**: 16, 34), (**OMSJ**: 12, 30), (**OMAL**: 01, 19) **Yemen:** (**OYAA**: 08, 26), (**OYHD**: 03, 21), (**OYRN**: 06, 24), (**OYSN**: 18, 36), (**OYTZ**: 01, 19)	70%	0.00%	48.00%	12.50%	16.67%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	100.00%	25.00%	0.00%	100.00%	20.00%	49.69%
	APTA B0/4 CDO (Basic)	Arriving aircraft are allowed to descend continuously from top of descent by employing minimum engine thrust, ideally in a low drag configuration, prior to the Initial Approach Fix (IAF).	**Indicator***: % of International Aerodromes with CDO implemented and published as required. **Supporting Metric**: Number of International Aerodromes with CDO implemented and published as required.	**Bahrain:** (**OBBI**: 12R, 12L, 30R, 30L) **Iran:** (**OIKB**: 03R, 21L), (**OIFM**: 08L, 26R, 08R, 26L), (**OIIE**: 11L, 29R) **Jordan:** (**OJAI**: 08R, 26L, 08L, 26R) **Lebanon:** (**OLBA**: 03, 21, 16, 17) ~~**Libya:** (**HLLB**: 15L, 33R, 15R, 33L), (**HLLS**: 13, 31), (**HLLT**: 09, 27)~~ **Oman:** (**OOMS**: 08L, 26R) **Qatar:** (**OTBD**: 15, 33), (**OTHH**: 16L, 34R, 16R, 34L) **Saudi Arabia:** (**OEDF**: 16L, 34R, 16R, 34L), (**OEJN**: 16R, 34L, 16C, 34C, 16L, 34R), (**OEMA**: 17, 35, 18, 36), (**OERK**: 15L, 33R, 15R, 33L) **Sudan:** (**HSSK**: 18, 36), (**HSPN**, 16, 34) **UAE:** (**OMAA**: 13R, 31L, 13L, 31R), (**OMAD**: 13, 31), (**OMDW**: 12, 30, 13, 31), (**OMDB**: 12L, 30R, 12R, 30L), (**OMFJ**: 11, 29), (**OMRK**: 16, 34), (**OMSJ**: 12, 30), (**OMAL**: 01, 19)	100%	100.00%	NA	0.00%	NA	0.00%	NA	0.00%	NA	0.00%	100.00%	100.00%	0.00%	NA	100.00%	NA	69.44%
	APTA B0/5 CCO (Basic)	Departing aircraft are allowed to climb continuously, to the greatest possible extent, by employing optimum engine thrust. An optimal continuous climb should start on take-off and allow the aircraft to climb efficiently using climb profiles that reduce controller pilot communications and segments of level flight until the top of climb.	**Indicator***: % of International Aerodromes with CCO implemented and published as required. **Supporting Metric**: Number of International Aerodromes with CCO implemented and published as required.	**Bahrain:** (**OBBI**: 12R, 12L, 30R, 30L) **Iran:** (**OIKB**: 03R, 21L), (**OIFM**: 08L, 26R, 08R, 26L), (**OIIE**: 11L, 29R) **Jordan:** (**OJAI**: 08R, 26L, 08L, 26R) **Lebanon:** (**OLBA**: 03, 21, 16, 17) ~~**Libya:** (**HLLB**: 15L, 33R, 15R, 33L), (**HLLS**: 13, 31), (**HLLT**: 09, 27)~~ **Oman:** (**OOMS**: 08L, 26R) **Qatar:** (**OTBD**: 15, 33), (**OTHH**: 16L, 34R, 16R, 34L) **Saudi Arabia:** (**OEDF**: 16L, 34R, 16R, 34L), (**OEJN**: 16R, 34L, 16C, 34C, 16L, 34R), (**OEMA**: 17, 35, 18, 36), (**OERK**: 15L, 33R, 15R, 33L) **Sudan:** (**HSSK**: 18, 36), (**HSPN**, 16, 34) **UAE:** (**OMAA**: 13R, 31L, 13L, 31R), (**OMAD**: 13, 31), (**OMDW**: 12, 30, 13, 31), (**OMDB**: 12L, 30R, 12R, 30L), (**OMFJ**: 11, 29), (**OMRK**: 16, 34), (**OMSJ**: 12, 30), (**OMAL**: 01, 19)	100%	100.00%	NA	0.00%	NA	0.00%	NA	0.00%	NA	0.00%	100.00%	100.00%	0.00%	NA	100.00%	NA	69.44%

	APTA B0/7 Performance based aerodrome operating minima – Advanced aircraft	For advanced aircraft, Improvements include: 1- EVS operations using existing Type A or Type B CAT I procedures, requiring natural vision from 100 ft, but with significantly reduced RVR 2- Lower that standard CAT I (SA CAT I) operations by means of HUD or autoland. CAT II operations with less infrastructure (SA CAT II) by means of HUD or autoland. 3- EVS to land operations, using existing CAT I facilities but without the need to have natural visual references before landing.	**Indicator**: % of States authorizing Performance based Aerodrome Operating Minima for Air operators operating Advanced aircraft. **Supporting Metric**: 1- Number of States having provisions for operational credits to enable lower minima based on advanced aircraft capabilities. (Reference: Annex 6 Part I para. 4.2.8.2.1) 2-Number of States Putting in place an approval process for the operational credit to Aircraft operator conducting PBAOM operations for low visibility operations (Reference: Doc 9365 (AWO Manual)), as applicable.	**Bahrain:** (**OBBI**: 12R, 12L, 30R, 30L) **Egypt:** (**HEBA**: 14R, 32L, 32), (**HESN**: 17, 35), (**HECA**: 05L, 23R, 05C, 23C, 05R, 23L), (**HEGN**: 16L, 34R, 16R, 34L), (**HELX**: 02, 20, 02L, 20R), (**HEMA**: 15, 33), (**HESH**: 04L, 22R, 04R, 22L) **Iran:** (**OIKB**: 03R, 21L), (**OIFM**: 08L, 26R, 08R, 26L), (**OIMM**: 13L, 31R, 13R, 31L), (**OISS**: 29L, 29R), (**OITT**: 12L, 30R), (**OIIE**: 11L, 29R), (**OIII**: 11R, 29L, 11L, 29R), (**OIYY**: 13, 31), (**OIZH**: 17R, 35L) **Iraq:** (**ORNI**: 28, 10), (**ORBI**: 15R, 33L, 15L, 33R), (**ORMM**: 32, 14), (**ORER**: 18, 36), (**ORSU**: 31, 13) **Jordan:** (**OJAI**: 08R, 26L, 08L, 26R), (**OJAQ**: 01, 19) **Kuwait:** (**OKKK**: 15R, 33L, 15L, 33R) **Lebanon**: (**OLBA**: 03, 21, 16, 17) **Libya:** (**HLLB**: 15L, 33R, 15R, 33L), (**HLLS**: 13, 31), (**HLLT**: 09, 27) **Oman:** (**OOMS**: 08L, 26R), (**OOSA**: 07, 25) **Qatar:** (**OTBD**: 15, 33), (**OTHH**: 16L, 34R, 16R, 34L) **Saudi Arabia:** (**OEDF**: 16L, 34R, 16R, 34L), (**OEJN**: 16R, 34L, 16C, 34C, 16L, 34R), (**OEMA**: 17, 35, 18, 36), (**OERK**: 15L, 33R, 15R, 33L) **Sudan:** (**HSOB**: 01, 19), (**HSSK**: 18, 36), (**HSNN**: 04, 22), (**HSPN**, 16, 34) **Syria**: (**OSAP**: 09, 27), (**OSDI**: 05L, 23R, 05R, 23L), (**OSLK**: 17, 35) **UAE**: (**OMAA**: 13R, 31L, 13L, 31R), (**OMAD**: 13, 31), (**OMDW**: 12, 30, 13, 31), (**OMDB**: 12L, 30R, 12R, 30L), (**OMFJ**: 11, 29), (**OMRK**: 16, 34), (**OMSJ**: 12, 30), (**OMAL**: 01, 19) **Yemen:** (**OYAA**: 08, 26), (**OYHD**: 03, 21), (**OYRN**: 06, 24), (**OYSN**: 18, 36), (**OYTZ**: 01, 19)	50%	100.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	79.14%
	Average					80.00%	65.33%	24.17%	5.56%	40.00%	100.00%	20.00%	33.33%	60.00%	96.67%	100.00%	20.00%	4.17%	100.00%	28.00%	64.10%
B0–FRTO	**FRTO B0/2** Airspace planning and Flexible Use of Airspace (FUA)	This element addresses strategic/long term airspace management, pre-tactical planning and tactical operations. Automated ASM support systems improve airspace management processes and flexible airspace planning including time horizon specifications in all flight phases (strategic, pre-tactical and tactical time horizon) by providing mutual visibility on civil and military requirements. They also support flexible airspace planning according to civil and military ANSPs and airspace user requirements, including permit cross border and use of segregated areas operations regardless of national boundaries.	**Indicator***: % of ACCs using and implementing appropriate means (procedures and tools (automation)) to support Airspace planning and FUA and improve data exchange between Civil and Military to improve efficiency of Airspace. **Supporting metric**: Number of ACCs using and implementing appropriate means (procedures and tools (automation)) to support Airspace planning and FUA and improve data exchange between Civil and Military to improve efficiency of Airspace. * As per the applicability area	Bahrain Egypt Jordan Qatar Saudi Arabia (2 ACCs) Sudan UAE	50.00%	100.00%	0.00%	NA	NA	100.00%	NA	NA	NA	NA	100.00%	100.00%	0.00%	NA	100.00%	NA	71.43%
	FRTO B0/4 Basic conflict detection and conformance monitoring	MTCD assists the controller in conflict identification and planning tasks by providing automated early detection of potential conflicts; facilitating identification of flexible routing/conflict free trajectories; identifying aircraft constraining the resolution of a conflict or occupying a flight level requested by another aircraft. The monitoring aids (MONA) function provides the controller with warnings if aircraft deviate from a clearance or planned trajectories and reminders related to the ATCO instructions to be issued. MONA might include the flight progress monitoring as well as the lateral, longitudinal, vertical and Cleared Flight Level (CFL) deviations.	**Indicator***: % States that implemented MTCD and MONA, for ACCs, as required **Supporting metric**: The number of States that implemented MTCD and MONA for ACCs, as required. * As per the applicability area	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Oman Qatar Saudi Arabia (2 ACCs) Sudan UAE	70.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	0.00%	NA	100.00%	100.00%	100.00%	0.00%	NA	0.00%	NA	58.33%
	Average					100.00%	50.00%	0.00%	0.00%	100.00%	100.00%	0.00%	NA	100.00%	100.00%	100.00%	0.00%	NA	50.00%	NA	64.88%
B0-NOPS	**NOPS B0/1** Initial integration of collaborative airspace management with air traffic flow management	This element represents the initial step to enhancing the common situational awareness supporting optimum availability of airspace and ATC capacity to meet air traffic demands. It will result in a dynamic/rolling process supporting the enhancement of network operations. It will improve the cross border operations and optimise network operations based on the richest and more accurate information. It requires the implementation of new tools/systems and processes notably: 1- ASM/ATFM process for the provision of the airspace use plan; 2- Improved ASM/ATFM process for the provision of updated airspace use plan; 3- System/tools for provision of airspace plan to ATM network function; 4- Improved notification process for the ASM/ATFM purposes; 5- Improved accuracy of airspace booking; 6- Interoperability between local ASM and ATFM systems.	**Indicator***: % of States implementing ASM/ATFM techniques, procedures and tools for the initial establishment of an integrated collaborative airspace management and air traffic flow and capacity management process **Supporting metric**: number of States implementing ASM/ATFM techniques, procedures and tools for the initial establishment of an integrated collaborative airspace management and air traffic flow and capacity management process.	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Oman Qatar Saudi Arabia Sudan UAE	50.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	NA	100.00%	100.00%	100.00%	0.00%	NA	100.00%	NA	41.67%

	Average					100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	NA	100.00%	100.00%	100.00%	0.00%	NA	100.00%	NA	41.67%
B1-ACAS	**ACAS B1/1** ACAS Improvements Operational	TCAS systems selectively interrogate nearby aircraft to determine their position and velocity (using Mode C/S replies); this information is passed through "threat logic" to determine proximate traffic, issue traffic alerts, and issue collision avoidance "resolution advisories" to flight crews. Resolution advisories provide flight crews with vertical guidance (climb, descend, remain level, do not descend/climb) as appropriate to avoid collisions. Modern "hybrid surveillance" TCAS systems use ADS-B information to reduce the interrogations needed to perform some of these functions – however, resolution advisories are only issued based on interrogation/reply information (ADS-B data is not used).	**Indicator**: % of States requiring carriage of ACAS (TCAS v 7.1) for aircraft with a max certificated take-off mass greater than 5.7 tons **Supporting metric**: Number of States requiring carriage of ACAS (TCAS v 7.1) for aircraft with a max certificated take-off mass greater than 5.7 tons	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Libya Oman Qatar Saudi Arabia Sudan Syria UAE Yemen	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	86.67%
	Average					100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	86.67%
B0 – SNET	**SNET B0/1** Short Term Conflict Alert (STCA)	Surveillance data from ground radars and ADS-B stations is used to track aircraft. For each pair of aircraft which are sufficiently close, a short term conflict alert is raised if at least one of the following tests is true: 1- (current proximity test) their current horizontal separation is lower than a horizontal threshold and their current vertical separation is lower than a vertical threshold; or 2- (linear prediction test) at any of their future positions within a given amount of time (warning time), as linearly extrapolated from their current track, their horizontal separation will be lower than a horizontal threshold and their vertical separation will be lower than a vertical threshold. The horizontal and vertical thresholds may be different in each test but are equal or lower than the ATC separation standards for the airspace covered by the STCA system. The warning time for the linear prediction may depend on the control unit specificities but is typically equal to or lower than 2 minutes. The above parameters may be configured differently in defined geographic areas of the control unit. Additionally, inhibitions of alerts may be set up for a list of aircraft and for defined geographic areas.	**Indicator***: % of States that have implemented Short-term conflict alert (STCA) **Supporting metric**: number of States that have implemented Short-term conflict alert (STCA) * As per the applicability area	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Oman Qatar Saudi Arabia Sudan UAE	80%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	NA	100.00%	100.00%	100.00%	100.00%	NA	100.00%	NA	100.00%
	SNET B0/2 Minimum Safe Altitude Warning (MSAW)	Surveillance data (including tracked pressure altitude), flight data (including cleared flight levels) and environment data (including terrain and obstacle data) are input to the MSAW system to generate the alerts to the controller working position. On noticing the alert, the controller has to analyse the situation and, if deemed necessary, issue an instruction to the aircraft, with the appropriate emergency phraseology.	**Indicator***: % of States that have implemented Minimum safe altitude warning (MSAW) **Supporting metric**: number of States that have implemented Minimum safe altitude warning (MSAW)	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Oman Qatar Saudi Arabia Sudan ~~Syria~~ UAE	80%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	NA	100.00%	100.00%	100.00%	100.00%	NA	100.00%	NA	100.00%
	SNET B0/3 Area Proximity Warning (APW)	Surveillance data (including tracked pressure altitude), flight data (including cleared flight levels and RVSM status) and environment data (including airspace volumes) are input to the APW system to generate the alerts to the controller working position(s). On noticing the alert, the controller has to analyse the situation and, if deemed necessary, issue an instruction to the aircraft, with the appropriate emergency phraseology.	**Indicator***: % of States that have implemented Area Proximity Warning (APW) for ACCs, as required **Supporting metric**: number of States that have Implemented Area Proximity Warning (APW) for ACCs, as required	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Oman Qatar Saudi Arabia Sudan UAE	70%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	NA	100.00%	100.00%	100.00%	0.00%	NA	100.00%	NA	58.33%
	Average					100.00%	66.67%	66.67%	66.67%	100.00%	100.00%	66.67%	NA	100.00%	100.00%	100.00%	66.67%	NA	100.00%	NA	86.11%

B1-GADS	**GADS B1/2** Contact directory	Point of Contact repository is part of the Global Aeronautical Distress and Safety System (GADSS) and is used to enable timely contact between the persons relevant to an emergency situation involving an aircraft in a specified area.	**Indicator**: % of States that provided GADSS Point of Contact (PoC) information **Supporting Metric**: Number of States that provided GADSS Point of Contact (PoC) information	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Libya Oman Qatar Saudi Arabia Sudan Syria UAE Yemen	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	0.00%	80.00%
	Average					100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	0.00%	80.00%											
B0-RSEQ	**RSEQ B0/1** Arrival Management	This element represents management of arrival sequences, thereby allowing aircraft to fly more efficiently to the necessary fix and to reduce the use of holding stacks, especially at low altitude. Based on inbound traffic prediction information and decision making support, ATC operational techniques (metering points, speed-control, Time-To-Gain/Time-To-Lose, etc.) will be used to sequence inbound flights at minimum separation on final approach (time or distance based) so as to optimise runway utilization. Time-based metering (as opposed to time-based separations) is the practice of planning a sequence of traffic by time rather than distance. Typically, the relevant ATC authorities will assign a time in which a flight must arrive at the aerodrome or at a specific control point, and/or advises subject flights of speed changes as required to achieve the optimal separation on final approach. Besides inbound traffic predication information, input can include aerodrome capacity, terminal airspace capacity, aircraft capability, wind and other meteorological factors. Time-based metering is the primary mechanism in which arrival sequencing is achieved.	**Indicator***: % of Aerodromes that have implemented arrival manager (AMAN), where required/applicable **Supporting Metric**: Number of Aerodrome that have implemented arrival manager (AMAN), where required/applicable * As per the applicability area	**Bahrain:** OBBI **Egypt:** HEBA, HECA, HELX, HESN, HESH **Qatar:** OTBD, OTHH **Saudi Arabia:** OEDF, OEJN, OEMA, OERK **UAE:** OMAA, OMDB	100.00%	100.00%	0.00%	NA	NA	NA	NA	NA	NA	NA	NA	100.00%	0.00%	NA	NA	100.00%	NA	35.71%
	Average					100.00%	0.00%	NA	NA	NA	NA	NA	NA	NA	NA	100.00%	0.00%	NA	NA	100.00%	NA	35.71%										
B0 - SURF	**SURF-B0/1** Basic ATCO tools to manage traffic during ground operations	This element represents the provision of guidance and routing information to the pilot in order to manage the traffic in a safe and efficient way by the controller: 1- to confirm the routing of all aircraft and vehicles according to the defined identification procedures; 2- to prevent incursions on the runway using visual aids, stop bars in particular. The Controller monitors and commands the lighting systems.	**Indicator**: % of Aerodromes having implemented Basic ATCO tools to manage traffic during ground operations **Supporting metric**: Number of Aerodromes having implemented Basic ATCO tools to manage traffic during ground operations	**Bahrain:** OBBI **Egypt:** HEBA, HESN, HECA, HEGN, HELX, HEMA, HESH **Iran:** OIKB, OIFM, OIMM, OISS, OITT, OIIE, OIII, OIYY, OIZH **Iraq:** ORNI, ORBI, ORMM, ORER, ORSU **Jordan:** OJAI, OJAQ **Kuwait:** OKKK **Lebanon:** OLBA **Libya:** HLLB, HLLS, HLLT **Oman:** OOMS, OOSA **Qatar:** OTBD, OTHH **Saudi Arabia:** OEDF, OEJN, OEMA, OERK **Sudan:** HSOB, HSSK, HSNN, HSPN **Syria:** OSAP, OSDI, OSLK **UAE:** OMAA, OMAD, OMDW, OMDB, OMFJ, OMRK, OMSJ, OMAL **Yemen:** OYAA, OYHD, OYRN, OYSN, OYTZ	100%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	SURF-B0/2 Comprehensive situational awareness of surface operations	This service represents the provision of surveillance information to the controller in order to manage the traffic in a more efficient way and allows the controller: 1- to confirm the identity of all participating vehicles according to the defined identification procedures; 2- to prevent collisions between all aircraft and vehicles especially in conditions when visual contact cannot be maintained; 3- to manually correlate (link a target with a call sign) targets for the rare cases where there is an operational need to, e.g. areas of poor cooperative surveillance coverage and the need to track non-cooperative targets such as towed aircraft; 4- to detect and indicate the position of potential intruders.	**Indicator***: % of Airports having implemented the surveillance service of A SMGCS **Supporting metric**: Number of Airports having implemented the surveillance service of A SMGCS * As per the applicability area	**Bahrain:** OBBI **Egypt:** HECA **Iran:** OIII **Oman:** OOMS **Qatar:** OTBD, OTHH **Saudi Arabia:** OEDF, OEJN, OERK, OEMA **UAE:** OMDB, OMAA	80%	100.00%	100.00%	0.00%	NA	NA	NA	NA	NA	0.00%	100.00%	0.00%	NA	NA	100.00%	NA	50.00%										

	SURF-B0/3 Initial ATCO alerting service for surface operations	This element represents the first step of A-SMGCS alerting service and is based on A-SMGCS surveillance. It takes into account elements such as: 1- the runway configuration of the airport (e.g. one, two or more runways); 2- the associated procedures (e.g. multiple line ups and reduced separation on the runway when approved by the ATS authorities); 3- the position and type of the aircraft and vehicles (e.g. arrival, departure or vehicle) according to the set time parameters and their relative speeds and positions when within or about to enter a predefined area around the runway; 4- aircraft in the vicinity of the runway (e.g. on final approach, climb out and helicopters crossing); 5- meteorological conditions.	**Indicator***: % of Airports having implemented the A SMGCS alerting service. **Supporting metric**: Number of Airports having implemented the A SMGCS alerting service * As per the applicability area	**Bahrain:** OBBI **Egypt:** HECA **Iran:** OIII **Oman:** OOMS **Qatar:** OTBD, OTHH **Saudi Arabia:** OEDF, OEJN, OERK, OEMA **UAE:** OMDB, OMAA	80%	100.00%	100.00%	0.00%	NA	NA	NA	NA	NA	0.00%	100.00%	0.00%	NA	NA	100.00%	NA	50.00%
	Average					100.00%	100.00%	33.33%	100.00%	100.00%	100.00%	100.00%	100.00%	33.33%	100.00%	33.33%	100.00%	100.00%	100.00%	100.00%	66.67%					
B0 & 1 - ACDM	**ACDM B0/1** Airport CDM Information Sharing (ACIS)	This element represents the first collaboration step among stakeholders involved in aerodrome operations. It consists in the definition of common specific milestones for several flight events taking place during surface operations. The stakeholders involved have to, based on accurate operational data, achieve the agreed milestones.	**Indicator***: % of Airports having implemented ACIS **Supporting metric:** number of Airports having implemented ACIS	**Bahrain:** OBBI **Egypt:** HECA **Iran:** OIII **Kuwait:** OKKK **Oman:** OOMS **Qatar:** OTHH **Saudi Arabia:** OEJN, OERK **UAE:** OMDB, OMAA	90%	100.00%	100.00%	0.00%	NA	NA	0.00%	NA	NA	100.00%	100.00%	100.00%	NA	NA	0.00%	NA	60.00%
	ACDM B0/2 Integration with ATM Network function	This element consists in feeding arrival information from the network into A-CDM and, at the same time, coordinate specific departure milestones. The involved stakeholders have to, based on accurate operational data, achieve the agreed milestones.	**Indicator***: % of Airports having integrated ACDM with the ATM Network function. **Supporting metric**: Number of Airports having integrated ACDM with the ATM Network function	**Bahrain:** OBBI **Egypt:** HECA **Iran:** OIII **Kuwait:** OKKK **Oman:** OOMS **Qatar:** OTHH **Saudi Arabia:** OEJN, OERK **UAE:** OMDB, OMAA	50%	0.00%	0.00%	0.00%	NA	NA	0.00%	NA	NA	0.00%	100.00%	100.00%	NA	NA	0.00%	NA	30.00%
	Average					50.00%	50.00%	0.00%	NA	NA	0.00%	NA	NA	50.00%	100.00%	100.00%	NA	NA	0.00%	NA	45.00%					
B0 – ASUR	**ASUR B0/1** Automatic Dependent Surveillance – Broadcast (ADS-B)	ADS-B provides an aircraft's identification, position, altitude, velocity, and other information to any receiver (airborne or ground) within range. The broadcasted aircraft position/velocity is normally based on the global navigation satellite system (GNSS) and transmitted at least once per second.	**Indicator***: % of States that have implemented ADS-B to improve surveillance coverage/capabilities **Supporting Metric**: Number of States that have implemented ADS-B to improve surveillance coverage/capabilities	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Oman Qatar Saudi Arabia	80%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	0.00%	NA	100.00%	100.00%	0.00%	100.00%	NA	100.00%	NA	75.00%
	ASUR B0/2 Multilateration cooperative surveillance systems (MLAT)	MLAT is a new technique providing independent cooperative surveillance. The MLAT system interrogates an aircraft and the transponder reply is received by multiple receivers located in different places. The reply's times of arrival difference at the receivers allows the position of the source of signals to be determined, with an accuracy that is dependent on the number of receivers and their location relative to the aircraft. MLAT systems do not require a rotating radar dish and were initially deployed on airports to provide surface surveillance of aircraft. The technique is now used to provide surveillance over wide area (wide area MLAT system - WAM), sometimes in conjunction with ADS-B. MLAT requires more ground stations than ADS-B, but has the early implementation advantage of using existing aircraft transponders.	**Indicator***: % of States that have implemented Multi lateration (M-LAT) **Supporting Metric**: Number of States that have implemented Multi-lateration (M-LAT)	Bahrain Egypt Jordan Kuwait Oman Qatar Saudi Arabia UAE	80%	100.00%	100.00%	NA	NA	0.00%	0.00%	NA	NA	100.00%	100.00%	0.00%	NA	NA	0.00%	NA	50.00%
	ASUR B0/3 Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	Downlink of Aircraft Parameters (DAPS) includes both Controller Access Parameters (CAPs) and System Access Parameters (SAPs). Possible CAPs include Magnetic Heading, Indicated Airspeed / Mach Number, Barometric rate of climb/descent, and Selected Altitude (which can also be consider a SAP). SAPs include Roll Angle, Track Angle Rate, True Track Angle, and Barometric Pressure Setting.	**Indicator***: % of States that have implemented Downlink of Aircraft Parameters (SSR DAPS) **Supporting Metric**: Number of States that have implemented Downlink of Aircraft Parameters (SSR-DAPS)	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Oman Qatar Saudi Arabia Sudan UAE	80%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	0.00%	NA	100.00%	100.00%	100.00%	100.00%	NA	100.00%	NA	83.33%
	Average					100.00%	66.67%	50.00%	100.00%	66.67%	66.67%	0.00%	NA	100.00%	100.00%	33.33%	100.00%	NA	66.67%	NA	69.44%					

B0 - NAVS	NAVS B0/3 Aircraft Based Augmentation Systems (ABAS)	This element supports non-precision and vertically guided approaches using GNSS lateral navigation and barometric vertical guidance.	**Indicator**: % of States requiring Aircraft Based Augmentation System (ABAS) equipage for aircraft with a max certificated take off mass greater than 5,700 Kg to enable PBN Operations **Supporting metric**: Number of States requiring Aircraft Based Augmentation System (ABAS) equipage for aircraft with a max certificated take off mass greater than 5,700 Kg to enable PBN Operations	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Libya Oman Qatar Saudi Arabia Sudan Syria UAE Yemen	70%	100.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	100.00%	0.00%	53.33%
	NAVS B0/4 Navigation Minimal Operating Networks (Nav. MON)	This element allows the rationalization of the ground based conventional infrastructure through the definition of minimal networks of ground navaids. Consultations and agreements from airspace users and aircraft operators are required to define this element. The MON should be revisited with the introduction of new navigation capabilities.	**Indicator**: % of States that have developed a plan of rationalized conventional NAVAIDS network to ensure the necessary levels of resilience for navigation **Supporting metric**: Number of States that have developed a plan of rationalized conventional NAVAIDS network to ensure the necessary levels of resilience for navigation	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Libya Oman Qatar Saudi Arabia Sudan Syria UAE Yemen	70%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	100.00%	0.00%	40.00%
	Average					50.00%	50.00%	0.00%	50.00%	100.00%	50.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	100.00%	0.00%	46.67%
B0 & 1 - COMI	COMI B0/7 ATS Message Handling System (AMHS)	The AMHS is served as ICAO mandated communication for data exchange between ANSPs (ICAO Doc. 9880 and Annex X). AMHS is served as enabler for 1- Flight Plan/Clearance 2- AIDC: Flight transfer 3- MET data ATS voice service is used for emergency coordination and/or normal coordination when data communication service is not available. AMHS is expected to be utilized to carry traffic for AIDC/Flight Plan/MET until SWIM is ready in Block 2. This is due to ANSPs need time to upgrade/implement adaptors to support SWIM interface. In the meantime, AMHS will accommodate SWIM compliance data message (IWXXM) as required. It is noted that AMHS would not be able to support FF-ICE and FIXM data. The interface is based on IP over legacy dedicated point-to-point circuits.	**Indicator**: % of States that have established AMHS interconnections with adjacent COM Centres **Supporting metric**: Number of States that have established AMHS interconnections with adjacent COM Centres	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Libya Oman Qatar Saudi Arabia Sudan Syria UAE Yemen	90%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	0.00%	73.33%
	COMI B1/1 Ground Ground Aeronautical Telecommunication Network/Internet Protocol Suite (ATN/IPS)	The ATN/IPS internetwork consists of IPS nodes and networks operating in a multinational environment in support of Air Traffic Service Communication (ATSC) as well as Aeronautical Industry Service Communication (AINSC), such as Aeronautical Administrative Communications (AAC) and Aeronautical Operational Communications. This evolution will support enhanced civil-military cooperation and coordination functions, if interoperability and military information security aspects are considered.	**Indicator**: % of States that have established National IP Network for voice and data communication **Supporting metric**: Number of States that have established National IP Network for voice and data communication	Bahrain Egypt Iran Iraq Jordan Kuwait Lebanon Libya Oman Qatar Saudi Arabia Sudan Syria UAE Yemen	80%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	0.00%	66.67%
	Average					100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	50.00%	0.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	0.00%	70.00%
State level of implementation (Average)						**88.00%**	**58.43%**	**31.54%**	**49.44%**	**69.53%**	**63.10%**	**29.97%**	**29.56%**	**68.57%**	**99.59%**	**78.89%**	**62.72%**	**11.57%**	**86.11%**	**28.50%**	**58.73%**

APPENDIX C

UAE success story to implement Free Route Airspace (FRA)

During July 2023 the UAE General Civil Aviation Authority launched the Free Route Airspace Project in the Emirates FIR, in a step that enhances the position of the UAE's air navigation sector in the region. This transformative project aims to enhance air navigation efficiency, utilizes resources optimally, and harnesses modern concepts in air traffic management. The project will have a positive impact on both the air sector and the environment.

The Implementation of free route airspace, which the UAE is the first country to apply in the Middle East, aims to improve the efficiency of air navigation by providing freedom of movement for over-flying aircraft without the restrictions of conventional air routes.

This transformational project will provide the Emirates FIR with high flexibility, which encourages air operators to use it more, as it will reduce airspace congestion, contribute to shortening flight times and increasing the efficiency of flights. It will also lead to achieving significant environmental benefits, by reducing flown miles and shortening flight paths. Aircraft will consume less fuel and reduce carbon emissions and environmental pollution, which will reflect positively on environmental sustainability.

The launch of this transformative project coincided with UAE's declaration of 2023 as the year of sustainability, as it reinforces the goal of the UAE General Civil Aviation Authority represented in its commitment to national priorities and the new government work methodology for the UAE, in line with the broader concept of transformational projects, which aims to advance the path of development in the country for the next ten years, forthcoming and beyond.

The implementation of Free Route Airspace is expected to enable more than 55,000 annual flights to benefit from its use, and will lead to an annual fuel saving of more than 30 million kg, and operational savings. Annual benefits for airlines exceeding 50 million Dirhams, in addition to indirect operating benefits.

The number of flights benefiting from the project will increase continuously, according to the GCAA's expectations for an increase in air traffic in the coming years, in addition to the development of the stages of applying free route airspace to include a segment of new users that exceeds the current application, and it will constitute a factor of attraction for all airlines.

These positive expectations come to enhance the benefits of this pioneering project in the economic aspect for airlines, as companies will benefit from reducing fuel costs and improving flight efficiency, and thus will lead to improving the financial performance of airlines, enhancing their economy, and enhancing happiness and quality of life.

The air navigation sector in the UAE was on the rise in 2023, where the UAE has scored the highest daily movements ever in the history of aviation with 2848 air traffic movements during November 2023. That the UAE is one of the first countries to recover to pre-pandemic levels traffic levels, pointing to an air traffic growth to that exceeded 931,000 air movements by the end of 2023, an increase of more than 17% from pre-pandemic levels.

Free Route Airspace implementation is a pioneering leap which is a first step in an integrated plan to apply free route airspace on a larger scale, according to carefully studied stages with the aim of improving the airspace infrastructure.

The maximum benefit from this concept is achieved when this transformative project is implemented on a larger scale at the level of neighboring countries to connect with the Gulf and regional air

navigation networks, which comes as testament of the airspace restructuring project that the GCAA completed in 2017 with the aim of continuing to improve the airspace, ensuring smooth air traffic and to handle the expected traffic growth until 2040.

The application of UAE GCAA free route airspace, is an exceptional achievement that enhances the efficiency of air navigation, supports the economy of airlines, and contributes positively to enhancing sustainability in aviation.

APPENDIX D

STATES STATUS REGARDING IMPLEMENTATION OF PBA AND DEVELOPMENT OF NANP

State	1. PBA implementation															7	8	9	State focal point
	Step 1		Step 2	Step 3			Step 4		Step 5				Step 6						
	1.1	1.2	2.1	3.1	3.2	3.3	4.1	4.2	5.1	5.2	5.3	5.4	6.1	6.2	6.3	Use the MID ANP Volume III template to implement Six Step approach	Development of NANP	Additional comments	
	Scope	Agree with Stakeholder for "KPA", "Ambitions" & "focus areas".	SWOT analysis	Current ANS status to future objectives by means of KPIs	Using KPIs in GANP & MID ANP Vol III	Data collection system in place	Identified of optimum solution	Use AN-SPA	Developed detailed implementation plan (project/solution)	Allocated of required resources for deployment of plan (project/solution)	Started implementation of the plan/solution	Kept on track of the project	Monitoring system is in place	Estimated the benefit	Report mechanism is in place to annually report ICAO				
Bahrain	Bahrain has established a committee to develop a plan for the implementation of the PBA in accordance with Six- Step performance management process described in the ICAO Document 9883															-	Planned	-	-
Jordan	Yes	Yes	Yes	Yes	Differ	Yes	Yes	Checked	Yes	Yes	In progress	Yes	Yes	Yes	Yes	Not completed	Planned	Request ICAO assistance to use AN-SPA & develop NANP	Yes
Kuwait	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	completed	-	Yes
Oman	Not implemented															Not completed	Not completed	-	Yes
Saudi Arabia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Not yet	Yes	Yes	Yes	Yes	Yes	TBD	Ongoing	After preparation of the NANP, request ICAO feedback	Yes
UAE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Not completed	Ongoing	-	Yes

- END -