International Civil Aviation Organization

MIDANPIRG STEERING GROUP

Fifth Meeting (MSG/6)
(Cairo, Egypt, 2 - 4 November 2018)

Agenda Item 5.3: Specific Air Navigation Issues

AOP MATTERS

(Presented by the Secretariat)

SUMMARY

This paper presents the AOP matters for consideration of and/or endorsement by the MSG/6 meeting.

Action by the meeting is at paragraph 3.

REFERENCES

- ADOP/3 Report
- Annex 14 Volume I

ICAO Airport Planning Manual Doc 9184 - Part 1-2nd Edition 1987

1. INTRODUCTION

1.1 The fifth meeting of the RASG-MID Runway and Ground Safety Working Group (RGS WG/5), was held in Cairo, Egypt, from 25 to 27 November 2018.

1.2 The Second Global Air Navigation Industry Symposium (GANIS/2) and Safety and Air Navigation Implementation Symposium (SANIS/1) were successfully held at ICAO HQ in Montreal, Canada in December 2017. A number of topics related to the Panel's job cards were featured in the symposium such as airport master planning and design, TAMs, obstacle management, runway safety, ground handling and aerodrome certification.

1.3 The third meeting of the Aerodrome Design and Operations Panel (ADOP) in Montréal, Canada, from 26 to 29 March 2018.

1.1 Third meeting of the Air Navigation System Implementation Group (ANSIG/3) was held in Cairo, Egypt from 2 to 4 July 2018.

2. DISCUSSION

Airport Master Plan

2.1 The Airport Master Plan is a document that presents the short-term (1-5 years), intermediate-term (6-10 years) and long-term (10-20 year) development\goals of an airport and is typically evaluated and updated every 5 to 10 years.

2.2 The Airport Master Plan provides the following:

- A graphic presentation of the future development of the airport and anticipated land uses in the vicinity of the airport;
- A schedule for development;
- An achievable financial plan;
- Justification for the plan technically and procedurally; and
- An implementation plan that satisfies local, state, and federal regulations.

2.3 The Master Plan should be reviewed at least annually and adjusted as appropriate to reflect conditions at the time of review. It should be thoroughly evaluated and modified every five years or more often if changes in economic, operational, environmental and financial condition indicate an earlier need for such revision. It is recommended that the aerodrome operator should be proactively involved in the master planning to eliminate potential hazards being created by aerodrome infrastructure, such as the runway and taxiway layout, etc., and to accommodate future aircraft developments.

2.4 An example of an Airport Master planning process is provided as follows:

2.5 The ADOP meeting acknowledged that effective airport master planning is vital in building the airport capacity in a timely and phased approach, thus avoiding significant delays in the future due to capacity constraints. Airport capacity would be increased and airport delays would be reduced through more precise and up-to-date airport planning.

2.6 The need for new ICAO provisions for airport master planning was recognized by both the ADOP as well as states in the various ICAO regions. Accordingly, new SARPs on airport planning requirements have been proposed to be included in Annex 14, Volume I to support the provision of airport capacity enhancements in a timely manner to avoid airport congestion and delays.

2.7 Airport Master Plan Task Force (AMPTF) had been tasked with a complete rewrite of the obsolete guidance in the 30-year old Doc 9184, Airport Planning Manual, Part 1 — Master Planning that addressed airport master planning. Additionally, as part of the deliverables in the job card, the TF also found it necessary to propose new provisions germane to airport planning to support airport capacity enhancements which were currently non-existent save for those necessitating the integration of security considerations and land use and environmental planning in the design and construction of new facilities.

2.8 Accordingly, the ADOP meeting developed Proposals for Amendment of Standards,

Recommended Practices and Procedures for Air Navigation Services related to the Annex 14 Vol I, Annex 4 and Doc 9981–PANS-Aerodromes.

2.9 The RGS WG/5 meeting was apprised of the latest developments regarding airport master planning, including the outcome of the RGS WG/4 and the ADOP/3 meetings. Considering that the work related to the development of SARPs and Guidance material pertaining to airport master planning, has been already developed in ICAO headquarters, the meeting invited States to share with the RGS WG/6 meeting their experience with regard to the implementation of airport master planning and encourage their Airport Operators to develop a Master Plan for their International Airports.

Aerodrome Certification

2.10 Based on the latest feedback provided by States and the amended AOP table, the Aerodromes Certification implementation table has been updated, as at **Appendix A**. The table shows that 34 out of the 58 MID States international aerodromes have been certified. This number represents 59% of the international aerodromes listed in the MID ANP.

2.11 The current Aerodrome Certification percentage is 59%, which did not meet the MID Safety Strategy target of 75%. Accordingly, more efforts are needed to meet the Strategy target.

A-CDM Implementation

2.12 The meeting may wish to recall that B0-ACDM related to Improved Airport Operation through Airport Collaborative Decision Making (A-CDM) is a priority one ASBU module in the MID Air Navigation Strategy. A-CDM plays an important role in enhancing the utilization of existing infrastructure, through a coordinated effort among key players involved in airside operations at aerodromes, to proactively plan and manage the punctuality, efficiency and predictability of operations.

2.13 The meeting may wish to recall that the ANSIG/3 meeting (Cairo, Egypt, 3-5 July 2018), raised concern about the slow progress of implementation of the B0-ACDM and requested that an ACDM Workshop be organized by the ICAO MID Office in 2019.

2.14 The ANSIG/3 meeting agreed that concerned States (according to the B0-ACDM applicability area included in the MID Air Navigation Strategy) should provide the ICAO MID Office with the contact details of their designated ACDM Focal Points for an improved coordination of ACDM implementation, and that a Survey on ACDM implementation be carried out for the monitoring of ACDM implementation by the concerned international aerodromes (reference applicability area in the MID Air Navigation Strategy).

2.15 The ANSIG/3 meeting noted that ACDM Information Sharing and ACDM Milestones Approach (Turn-round Process) are considered as the main elements that should be assigned high priority (fundamental elements) for ACDM implementation.

2.16 Based on the above, the meeting may wish to agree to the following Draft Conclusions:

DRAFT MSG CONCLUSION 6/X: SURVEY ON ACDM IMPLEMENTATION

That,

a) concerned States (according to the B0-ACDM applicability area included in the MID Air Navigation Strategy) be urged to provide the ICAO MID Office with the contact details of their designated ACDM Focal Points; and

*b) a Survey on ACDM implementation be carried out for the monitoring of ACDM implementation, using the template at **Appendix B**.*

DRAFT MSG CONCLUSION 6/X: ACDM IMPLEMENTATION WORKSHOP

That, an ACDM Implementation Workshop be organized by the ICAO MID Office in 2019.

DRAFT MSG CONCLUSION 6/X: ACTION PLAN FOR A-CDM IMPLEMENTATION

That, States be urged to develop an action plan for A-CDM implementation in line with the MID Air Navigation Strategy.

B0-SURF (A-SMGCS)

2.17 The Advanced Surface Movement Guidance and Control Systems (A-SMGCS) is an expansion of the Surface Movement Guidance and Control Systems (SMGCS) to improve capacity and safety by making use of modern technologies and a higher level of integration between the various functionalities.

2.18 B0-SURF (A-SMGCS Level 1-2) is a priority 1 ASBU Module in the MID Air Navigation Strategy. The meeting may wish to note that the Status of implementation of B0-SURF is 54% (Level 1: OBBI, HECA, OTBD, OTHH, OMDB, OMAA, OMDW) and 46% (Level 2: OBBI, HECA, OTBD, OTHH, OMDB, OMAA).

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information and updates contained in this working paper and take action as appropriate;

b) urge States to expedite the implementation of Aerodrome Certification in their International Aerodromes in order to achieve the MID Air Navigation Strategy targets; and

c) endorse the proposed Draft Conclusions.

APPENDIX A

STATUS OF AERODROME CERTIFICATION IMPLEMENTATION IN MID REGION						
	State	**Number of Intl Aerodromes (AOP Table 1-1 -MID ANP)**	**Number of Certified Intl Aerodromes**	**Percentage Certified**	**List of Intl Aerodromes having Certificates**	**Remarks**
1	Bahrain	1	1	100%	BAHRAIN/Bahrain Intl (OBBI)	
2	Egypt	7	5	71%	- CAIRO/Cairo Intl (HECA) - SHARM EL-SHEIKH/Sharm El Sheikh Intl (HESH) - HURGADA/Hurghada Intl (HEGN) - MARSA ALAM /Marsa Alam Intl (HEMA) - ASWAN/Aswan Intl (HESN)	Certification of: - LUXER/Luxor Intl Airport (HELX) will be in Dec 2017 - ALEXANDRIA/Borg El-Arab Intl Airport (HEBA) will be in the first half of 2018
3	Iran	9	4	44%	- TEHRAN/Mehrabad Intl (OIII) - ZAHEDAN/Zahedan Intl (OIZH) - YAZD /Yazd Intl (OIYY) - ISFAHAN/Isfahan Int'l (OIFM)	Certification Status for: - TEHRAN/ IKIA Intl (OIIE) - BANDAR Abbas /Bandar Abbas Intl (OIKB) are waiting CAA final action for certification very soon
4	Iraq	6	2	33%	- BAGHDAD/Baghdad Intl (ORBI) - ERBIL/Erbil Intl (ORER)	

5	Jordan	2	2	100%	- AMMAN/Queen Alia Intl (OJAI) - AQABA/ King Hussein Intl (OJAQ)	
6	Kuwait	1	1	100%	KUWAIT/Kuwait Intl (OKBK)	
7	Lebanon	1	0	0%		
8	Libya	3	0	0%		
9	Oman	2	2	100%	- MUSCAT/Muscat Intl (OOMS) - SALALAH/Salalah (OOSA)	
10	Qatar	2	2	100%	- DOHA/Doha Intl (OTBD) - DOHA/Hamad Intl (OTHH)	
11	Saudi Arabia	4	4	100%	- DAMMAM/Kind Fahid Intl (OEDF) - JEDDAH/King Abdulaziz Intl (OEJN) - MADINAH/Prince Mohammad Bin Abdulaziz Intl (OEMA) - RIYADH/King Khalid Intl (OERK)	
12	Sudan	4	3	75%	-KHARTOUM/Khartoum (HSSS) - EL OBEID/El Obeid (HSOB) - PORT SUDAN/Port Sudan	Certification of NYALA/Nyala (HSNN) by the end of 2019

					(HSPN)	
13	Syria	3	0	0%		
14	UAE	8	8	100%	- ABU DHABI/Abu -Dhabi Intl (OMAA) - ABU DHABI/Al Bateen Intl (OMAD) - DUBAI/Dubai Intl (OMDB) - DUBAi/Al Maktoum Intl (OMDW) - AL AIN/Al Ain Intl (OMAL) - FUJAIRAH/Fujairah Intl (OMFJ) - RAS AL KHAIMAH/Ras Al Khaimah Intl (OMRK) - SHARJAH/Sharjah Intl (OMSJ	
15	Yemen	5	0	0%		
	Total Certified	**58**	**34**	**59%**		**MID Region Safety Target 75% by end of 2017**

APPENDIX B

MID Region Airport Collaborative Decision Making (MID A-CDM) Survey Questionnaire

Name of the State/Administration:

Approach to implementation

1. Is the A-CDM implementation a national program/project or a local airport by airport project? *(Please select the applicable box)*

It is a national program where A-CDM is being implemented at several airports with one entity managing the overall program to facilitate common procedures and approach to the implementations	
It is an "airport-by-airport" approach where each project is managed at "local" level	
It is a combination of a national program and separate airport projects manager at "local" level	
There is not yet an implementation plan for A-CDM	

Please add free text comments if needed:

2. If A-CDM has been/is going to be implemented, please indicate at which airports and by what year:

Airport	Year

Add additional lines as needed

For EACH airport mentioned above, please provide separate responses to QUESTIONS 3 to 22:

Status of A-CDM implementation

3. In which of the following phases is the A-CDM implementation?
(Please select the box that is the most suitable option)

No planning, i.e. nothing in relation to A-CDM has started yet	
Initial planning, i.e. collecting information about guidance material etc. to set the scope of the projects	
Planning well underway, i.e. scope set, engaged with stakeholders etc.	
Ready to launch A-CDM implementation project	
A-CDM implemented, i.e. procedures are in place and used in the "day-to-day" operations (Please indicate number of years for A-CDM used in day-to-day operations.	

A-CDM Project Scope

4. Which one of the A-CDM conceptual elements are being implemented as part of the A-CDM project? (*Please select the applicable box(es))*

Information sharing	
Milestone Management	
Variable Taxi Times	
Collaborative Management of Flight Updates	
Pre Departure Sequencing	
A-CDM in adverse conditions	
Integration with Air Traffic Flow Management (ATFM)	

Please add free text comments if needed:

5. How is Information sharing implemented as par to the solution/planned A-CDM solution? (*Please select the applicable box(es))*

Via Information Sharing platform collecting data in real-time from various systems.	
Via manual interaction and information exchange	
A combination of the two alternatives above	

Please add free text comments if needed:

6. What Milestones (based on the Eurocontrol model) are captured/planned to be captured for the Milestone Management? *(Please select the applicable box(es) and please indicate if the implementation/planned implementation uses any other names for the milestones)*

Eurocontrol Milestones	Applied	Alternative name
Milestone 1 - ATC Flight Plan Activated		
Milestone 2 - CTOT Allocation/EOBT – 2 Hrs		
Milestone 3 - Take off from Outstation		
Milestone 4 - Local Radar Update/FIR Entry		
Milestone 5 - Final Approach		
Milestone 6 - Landed		
Milestone 7 - In Block		
Milestone 8 - Aircraft at Gate		
Milestone 9 - TOBT Entered		
Milestone 10 - TSAT Issued		
Milestone 11 - Boarding Starts		
Milestone 12 - Aircraft Ready		
Milestone 13 - Start-up Request		
Milestone 14 - Start-up Approved		
Milestone 15 - Off Block		
Milestone 16 - Take Off		

Please add free text comments if needed:

7. Are you planning to apply the concept of Target Off Block Times? *(Please select the applicable box)*

No	
Yes, and this will be the responsibility of the Airlines and/or appointed Ground Handlers to manage and update the Target Off Block Times (TOBT) in order to ensure that TOBT is accurate and reliable.	

   a. If yes, will the project provide a solution that facilitates predictive TOBT calculations? *(Please select the applicable box)*

No	
Yes	

8. What methodology is applied/going to be applied for calculating Variable Taxi Time? *(Please select the applicable box)*

"Table look up" utilizing fixed taxi time from gates to runways.	
Dynamic Variable Taxi Time using self-learning algorithms based on real-time and statistical surveillance data	

9. How is Target Start-Up Approval Time (TSAT) being calculated as part of Pre-Departure Sequencing? *(Please select the applicable box)*

Manual TSAT calculations	
Automatic TSAT calculations utilizing a Pre Departure Sequence or full Departure Management system/capability	

   a. If TSAT Is calculated automatically, at what key milestones are the TSAT calculated/re-calculated? *(Please select the applicable box(es))*

Milestone 1 - ATC Flight Plan Activated	
Milestone 2 - CTOT Allocation/EOBT – 2 Hrs	
Milestone 3 - Take off from Outstation	
Milestone 4 - Local Radar Update/FIR Entry	
Milestone 5 - Final Approach	
Milestone 6 - Landed	
Milestone 7 - In Block	
Milestone 8 - Aircraft at Gate	
Milestone 9 - TOBT Entered	
Milestone 10 - TSAT Issued	
Milestone 11 - Boarding Starts	

10. How TSAT information is shared to Airlines operators/Ground Handling Agencies? *(Please select the applicable box(es))*

Via A-CDM portal/web interface/application	
Via mobile application	
Via Automatic Parking Aid displays at gate	
Data link	
Radio communication	

11. What are the key parameters for data exchange between ACDM and ATFM? *(Please specify in free text in the text box)*

12. To establish the A-CDM project, has any guidance material been used to facilitate the scope and objectives? *(Please select the applicable box)*

Yes	
No	

a. If yes, please indicate what guidance material has been used. *(Please select the applicable box(es))*

ICAO Doc 9971	
Eurocontrol A-CDM Manual	
CANSO A-CDM Guidance Material	
FAA Surface CDM material	
IATA Guidance material	
Specific airport "operational guidelines" materials	
Other material like Eurocae or ETSI standards for A-CDM (*Please specify)*	

Please add free text comments if needed:

Local Concept of Operations

13. Has a "Local Concept of Operations" document for the A-CDM implementation been established? *(Please select the applicable box)*

Yes	
No	

a. If yes, please indicate the scope of the document. *(Please select the applicable box(es))*

It sets out the objectives that A-CDM is aiming to achieve	
It provides a common vocabulary with all definitions for A-CDM	
It provides information about information sharing and the sources for the information collected	
It provides information about the milestones used in the A-CDM process	
It defines each participating stakeholder's role and responsibilities as part of the A-CDM process	
It provides how A-CDM shall operate during irregular operations	
It provides descriptions of the process steps for various regular and irregular operations	
It includes how to measure the success of A-CDM once implemented, i.e. Key Performance Indicators (KPIs)	

Please add free text comments if needed:

Stakeholder Engagement

14. Which stakeholders are involved in the A-CDM implementation? *(Please select the applicable box(es))*

Airport operator	
Airline operators	
Ground handlers	
Air Navigation Service Provider	
Network Operations/ATFM unit	
Others (*Please specify)*	

15. Has a Memorandum of Understanding (MOU) been established between the stakeholders? *(Please select the applicable box)*

Yes	
No	

Please add free text comments if needed:

Project Implementation

16. Has a project group been established with all stakeholders involved? *(Please select the applicable box)*

Yes	
No	

Please add free text comments if needed:

17. Is there a shared leadership or is the project management led by one organization? (*Please select the applicable box)*

Shared leadership	
Leadership is appointed from one organization	

a. Please explain why one of the options is applied:

18. Is the project group meeting held on a regular basis or ad-hoc? (*Please select the applicable box)*

Regular	
Ad-hoc	

a. Please explain why one of the options is applied:

19. What are the objectives identified in the project that A-CDM is aiming to achieve? *(Please select the applicable box(es))*

Increase predictability	
Increase on-time performance	
Improve resource utilization	
Reduce taxi times	
Increase airport efficiency	
Reduce environmental nuisance	
Optimise the use of available capacity	
Improved safety	
Other *(please indicate what other objectives are identified in box below)*	

Please add free text comments if needed:

20. Has the project identified a more detailed Key Performance Framework with Key Performance Indicators to facilitate the measurements of the A-CDM implementation? *(Please select the applicable box)*

Yes	
No	

a. If yes, would the project team be willing to share this work with the ICAO Regional officer for Aerodromes and Ground Aids (AGA) to aid in its future work such as the establishment of more detailed A-CDM guidelines? *(Please select the applicable box)*

Yes	
No	

Please add free text comments if needed:

Training

21. Has the project established training in any of the following areas for the implementation of A-CDM? *(Please select the applicable box(es))*

Initial training for stakeholders to “what is A-CDM”	
Advanced training for stakeholders to “what is A-CDM”	
Training on how to operate under A-CDM procedures for all stakeholders	
Specialized/tailored training for each user in relation to “what do I need to do when A-CDM is operational at the airport”?	

Please add free text comments if needed:

Challenges

22. Please rank what hold most true in relation to your A-CDM implementation. (Please use 1-5 where 1 indicates “no, do not agree at all” and 5 is “yes, agree completely”).

A-CDM as a concept is too complicated and vague	
Developed guidelines are not enough to understand how A-CDM shall be implemented successfully	
It is challenging to understand what an A-CDM implementation is, i.e. what has to be achieved to say “yes, we have A-CDM at our airport”	
The challenge is to understand what system(s) is(are) and information are needed to implement A-CDM	
It is challenging to get all stakeholders engaged and committed to the A-CDM project	
It is challenging to manage the A-CDM project	
It is challenging to understand what value A-CDM will bring	
It is very complicated to establish how to measure the success of A-CDM	

Please add free text comments if needed:

- END -