International Civil Aviation Organization

Sixth Meeting of the Aerodrome Safety, Planning & Implementation Group

(ASPIG/6) ***(Muscat, Oman, 27-29 May 2024)***

Agenda Item 3: Regional Performance Framework for Aerodrome Capacity and Efficiency

ACDM IMPLEMENTATION IN THE MID REGION

(Presented by the Secretariat)

SUMMARY

This paper presents the MID Region Readiness for the Airports Collaborative Decision Making (ACDM) Implementation; and proposes the rationale behind the need to establish of a MID Region ACDM Task Force (TF) and its TORs.

Action by the meeting is at paragraph 3.

REFERENCES

- ICAO GANP 7th Edition
- ASPIG Reports
- MIDANPIRG/21 & RASG-MID/11 Report

1. INTRODUCTION

1.1 Airport Collaborative Decision Making (ACDM) is a collaborative process that involves the airport operator, airlines, ground handlers, air traffic control, and other stakeholders in making decisions that affect the operations of an airport. The primary goal of ACDM is to improve the overall efficiency of airport operations, reduce delays, and enhance safety.

2. DISCUSSION

Establishment of the ACDM Tak Force in the MID Region

2.1 The meeting may wish the note and update, as deemed necessary, the status of MID Region Readiness for the ACDM Implementation as at **Appendix A** (as per the ACDM applicability area, agreed upon by the MID States), and take action as appropriate.

2.2 The meeting may wish to note that MIDANPIRG/21 & RASG-MID/11 Meeting was appraised of the current level of the ACDM Implementation, and the challenges faced by the States to reach full deployment of the ACDM. The later meeting noted with appreciation the effort made by Qatar and UAE as both Hamad International Airport and Zayed International Airport had fully implemented their ACDM.

2.3 The meeting may wish to note that the MIDANPIRG/21 & RASG-MID/11 meeting agreed on the establishment of a Regional ACDM Task Force (ACDM-TF) to support and assist in the implementation of ACDM in the MID Region.

2.4 The MIDANPIRG/21 & RASG-MID/11 meeting recognized that the main role of the Regional ACDM-TF is to assist Airports in enhancing their preparedness for the successful

implementation of ACDM processes in coordination with relevant stakeholders. The meeting noted that the Task Force can take a variety of actions including but not limited to:

a) Establishing clear goals and objectives: The task force should establish clear goals and objectives for the implementation of Airport Collaborative Decision Making (ACDM) processes. This can help ensure that all stakeholders are working towards the same goals and objectives.

b) Defining roles and responsibilities: The task force should define the roles and responsibilities of each stakeholder involved in the implementation of ACDM processes. This can help ensure that all stakeholders understand their responsibilities and are working together effectively.

c) Fostering collaboration: The task force should foster collaboration between stakeholders by providing opportunities for stakeholders to meet, exchange information, and share best practices. This can help build trust and cooperation between stakeholders and ensure that they are working together effectively.

d) Providing Capacity Building: The task force should provide training and education for airport stakeholders on ACDM processes and tools. This can help ensure that stakeholders understand how to use ACDM processes and tools effectively and can work together to implement them.

e) Monitoring progress: The task force should monitor the implementation of ACDM processes and tools to ensure that stakeholders are working together effectively. This can involve regular meetings, progress reports, and evaluations of the effectiveness of ACDM processes.

2.5 The meeting may wish to note that the MIDANPIRG/21 & RASG-MID/11 Meeting reviewed the Terms of Reference (ToRs) of the ACDM Task Force at **Appendix B** and agreed that the TORs be updated to include the potential coordination with the ATFM Task Force once the ACDM Task Force reach the maturity facilitating such coordination. Accordingly, the meeting may wish to agree on the following Decision:

PIRG/RASG DECISION 3: ESTABLISHMENT OF THE MID REGION ACDM TASK FORCE (MID ACDM-TF)

That, the MID Region Airport Collaborative Decision-Making Task Force (MID ACDM-TF) be established, subject to review and confirmation of ASPG/6, in accordance with the Terms of Reference at ***Appendix 2A.***

2.6 The meeting may wish to review and confirm the ToRs of the ACDM Task Force at **Appendix B**. The meeting may wish to note that the ICAO MID Office would coordinate the ACDM Task Force activities with the concerned MID States as per the applicability Area that been defined on the Regional Air Navigation Plan.

Monitoring of the ACDM Implementation in the MID Region

2.7 The meeting may wish to review and update, the Action Milestones for the MID ACDM Planning and Implementation at **Appendix C**, proposed to be used/customized and tailored by the States and used as a reference to foster the planning and implementation of the ACDM in their individual Airports.

2.8 In connection with the above, States may wish to review/update the new Template, at **Appendix D,** to be used for the monitoring of the ACDM Implementation in the MID Region.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) urge concerned States to foster the Implementation of the ACDM in their concerned Airport, and

b) review and agree to the following Draft Conclusion replacing and superseding the previous *MIDANPIRG CONCLUSION 18/27:*

Why	to efficiently monitor the ACDM Implementation progress in the MID Region
What	Airports ACDM Implementation Progress submitted by States using the **NEW Template as at Appendix A,** in full **collaboration with their concerned Airports**
Who	States/Airports
When	**By Q3 of the current Year**

DRAFT CONCLUSION 6/9: MID ACDM IMPLEMENTATION PROGRESS

*That, with reference to the sample of Action Millstones on ACDM Planning and Implementation at **Appendix C**, States be urged to provide, by **Q3 of the current Year**, to the ICAO MID Office, with the progress of Airports ACDM Deployment Plans, as confirmed by Airports included in the RANP Applicability Area, using the Template at **Appendix D**,*

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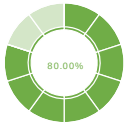
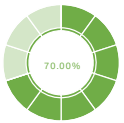
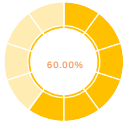
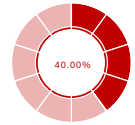
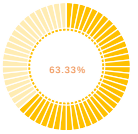
Aerodromes Readiness for ACDM Operations based on the MID Region ACDM Implemention Plan

State	Country Code	Total # of AD as defined in the Applicabilty Area	City	Aerodrome Name (AOP Table I-I)	Location Indicator (AOP Table I-I)	Designation (AOP Table I-1)	ICAO Reference Code		Aerodrome Traffic Density			Information Sharing	Milestones Approach	Variable Taxi Time	Collaborative Management of Flight Updates	Collaborative Pre-departure Sequence	ACDM in Adverse Conditions	ACDM Elements Implementation Progress
							Number	Letter	Light	Medium	Heavy							
Bahrain	BHR	1	Manama	Bahrain International Airport	OBBI	RS	4	F				✓	✓	✗	✓	✓	✗	66.67%
Egypt	EGY	1	Cairo	CAIRO INTERNATIONAL AIRPORT	HECA	RS	4	F				✓	✓	✗	✗	✗	✗	33.33%
Iran	IRN	1	Tahran	Mehrabad International Airport	OIII	RS	4	E				✗	✗	✗	✗	✗	✗	0.00%
Kuwait	KWT	1	Kuwait	Kuwait International Airport	OKBK	RS	4	F				✗	✗	✗	✗	✗	✗	0.00%
Oman	OMN	1	Muscat	Muscat International Airport	OOMS	RS	4	F				✓	✗	✓	✗	✓	✗	50.00%

Aerodromes Readiness for ACDM Operations based on the MID Region ACDM Implemention Plan

State	Country Code	Total # of AD as defined in the Applicabilty Area	City	Aerodrome Name (AOP Table I-I)	Location Indicator (AOP Table I-I)	Designation (AOP Table I-1)	ICAO Reference Code		Aerodrome Traffic Density			Information Sharing	Milestones Approach	Variable Taxi Time	Collaborative Management of Flight Updates	Collaborative Pre-departure Sequence	ACDM in Adverse Conditions	ACDM Elements Implementation Progress
							Number	Letter	Light	Medium	Heavy							
Qatar	QAT	1	Duha	Hamad International Airport	OTHH	RS	4	F				✓	✓	✓	✓	✓	✓	100.00%
Saudi Arabia	SAU	2	Jeddah	King Abdulaziz International Airport	OEJN	RS	4	F				✓	✓	✓	✓	✓	✓	100.00%
			Riyadh	King Khalid International Airport	OERK	RS	4	E				✓	✓	✓	✓	✓	✓	100.00%
UAE	ARE	2	Abu Dhabi	Zayed International Airport	OMAA	RS	4	F				✓	✓	✓	✓	✓	✓	100.00%
			Dubai	Dubai International Airport	OMBD	RS	4	F				✓	✓	✓	✓	✓	✗	83.33%

Aerodromes Readiness for ACDM Operations based on the MID Region ACDM Implemention Plan

		Total # of AD as defined in the Applicabilty Area		Aerodrome Traffic Density			Information Sharing	Milestones Approach	Variable Taxi Time	Collaborative Management of Flight Updates	Collaborative Pre-departure Sequence	ACDM in Adverse Conditions	ACDM Elements Implementation Progress
				Light	Medium	Heavy							
MID REGION	MID	10		0	7	3							

MID Region

Airports Collaborative Decision-Making Task Force

(MID ACDM-TF)

Terms of Reference

1. SCOPE

The scope and objective of the MID ACDM-TF is to identify, plan and assist in the implementation of A-CDM at the list of Airports concerned by the ACDM Implementation, as defined on the MID Regional Air Navigation Plan (ACDM applicability area agreed by the MID States).

2. PURPOSE:

The purpose of the Regional Task Force is to enhance the MID Region Airports preparedness for the ACDM Implementation. The task force will provide technical assistance, guidance, and support for Airports to ensure the successful implementation of ACDM processes and tools.

3. COMPOSITION:

The Regional Task Force will be composed of representatives from Sates, Airport Stakeholders, including airlines, ground handlers, air traffic control, and airport operators. The task force will be chaired by a representative from the States defined within the ACDM applicability Area.

4. ROLES AND RESPONSIBILITIES:

The Regional Task Force will have the following roles and responsibilities:

a) Assist, support and enhance the MID Region Airports preparedness for the ACDM Implementation,
b) Review the Current status of ACDM Implementation Plan in MID Region,
c) Check the Readiness of the newly Implemented Elements/Enablers of any ACDM Project,
d) Review the effectiveness of existing Airports ACDM projects in the MID Region,
e) Assist, as requested, the implementation of coordination procedures between Airports and relevant stakeholders:
    i. Facilitate the exchange of information and best practices between airport stakeholders to ensure that stakeholders are aware of the latest developments in ACDM processes, tools, and technologies,
    ii. Provide guidance and support for the implementation of ACDM processes, including training and education for Airport and relevant stakeholders,
    iii. Monitor the implementation of ACDM processes and evaluate their effectiveness to identify areas for improvement,
    iv. Ensure that ACDM processes are achieving their intended objectives, including optimizing the use of airport resources, reducing delays, and enhancing safety.

5. MEETINGS AND REPORTING:

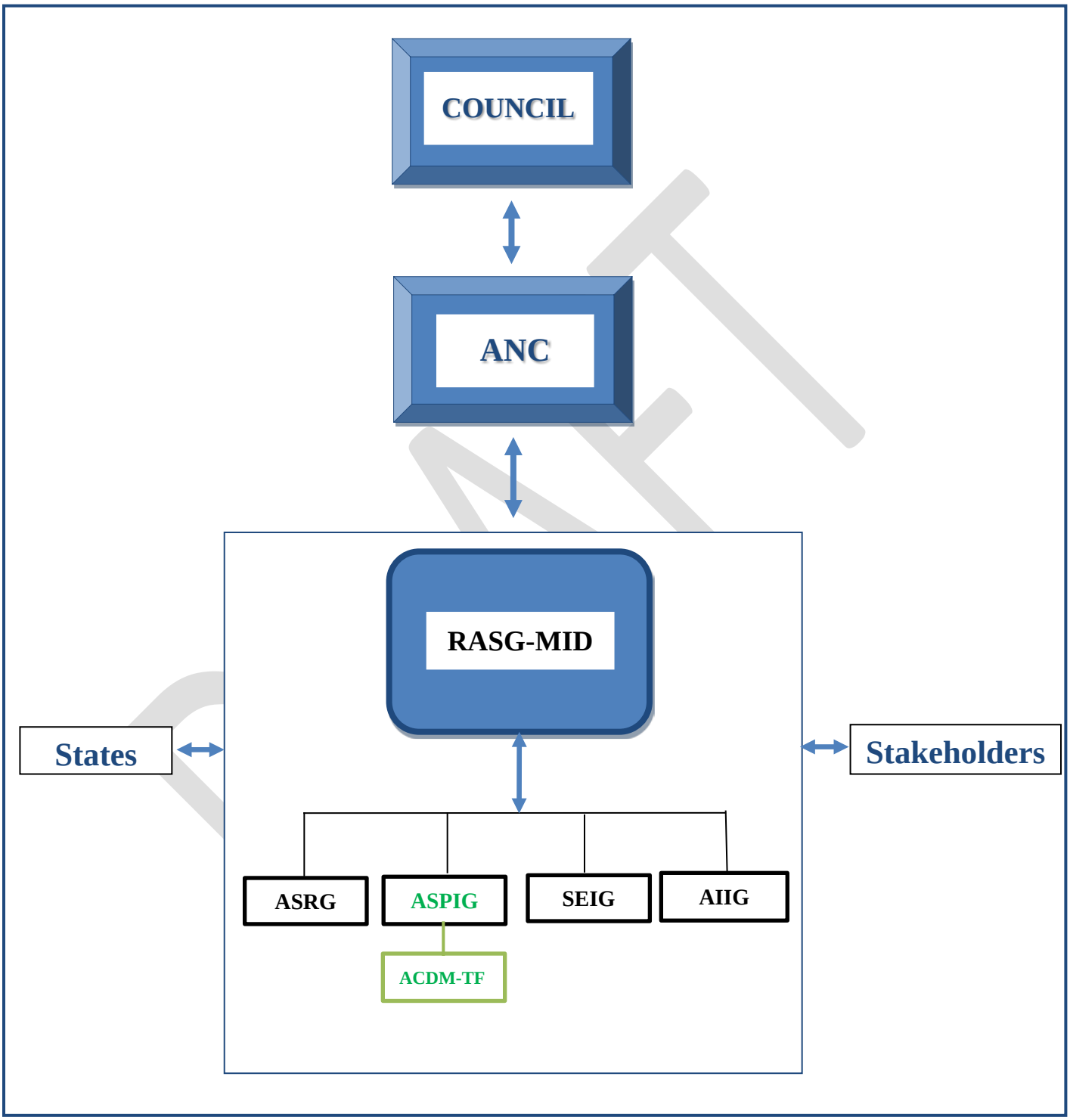
The Regional Task Force will meet on a regular basis to discuss the implementation of ACDM processes and tools. The task force will produce regular progress reports and provide recommendations for improvements to airport stakeholders.

6. WORKING METHODS:

The Task force meeting should be held at least once a year for three-days.

RASG-MID
ORGANIZATIONAL STRUCTURE

Including the proposed ACDM-TF



ASRG	Annual Safety Report Group	SEIG	Safety Enhancement Implementation Group
ASPIG	Aerodromes Safety & Planning Implementation Group	AIIG	Accident & Incident Investigation Group
ACDM-TF	Airport Collaborative Decision Making Task Force		

Action Milestones

for the MID ACDM Planning and Implementation

State/: _ _ _ _ _ _ _ _ _ _ _ _ _ _

State ACDM Focal Point Name/email: _ _ _ _ _ _ _ _ _ _ _ _ _ _

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 Implemented / 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:

A-CDM Implementation Plan

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:

ICAO Region	State	Location name	Location indicator (ICAO code)	ACDM Information Sharing (1=Yes, 0=No)	Milestones Approach (1=Yes, 0=No)	Variable Taxi Time Calculation (1=Yes, 0=No)	Collaborative Pre-Departure Sequencing (1=Yes, 0=No)	ACDM in Adverse Conditions (1=Yes, 0=No)	Colaborative Mangement of Fligh Updates (1=Yes, 0=No)
MID	QATAR	HAMAD INTERNATIONAL	OTHH						
MID	QATAR	DOHA INTERNATIONAL	OTBD						

- END -