



International Civil Aviation Organization

MIDANPIRG Air Traffic Flow Management Task Force

Sixth Meeting (ATFM TF/6)
(Virtual, 27 – 28 June 2022)

Agenda Item 3: Regional Framework

OPERATIONAL DATA EXCHANGE MODEL

(Presented by the Secretariat)

SUMMARY

This paper presents progress of Operational data exchange model in the ICAO MID Air Traffic Flow Management V.2 (ICAO MID Doc 014).

Action by the meeting is at paragraph 3.

REFERENCES

- ICAO MID Doc 014
- MIDANPIRG/19 and RASG-MID/9 Meetings Report (Riyadh, Saudi Arabia, 14 - 17 February 2022)

1. INTRODUCTION

1.1 “ICAO Simplified procedure for Air Traffic Management/Collaborative Decision Making and sharing of information (ATM/CDM process)” was initially developed at the beginning of COVID-19. The aim of this procedure was to provide an effective cross-border coordination process between ANSPs and Airspace users, where no other systematic tool is available.

1.2 The ATFM TF/4 meeting agreed to task the Secretariat with the support of the Chairman to develop a customized version of the process to be implemented in the MID Region.

1.3 The customized process was presented and endorsed by the MIDANPIRG/18 meeting (virtual, 15 – 22 February 2021) through Conclusion 18/29, at **Appendix A**.

2. DISCUSSION

2.1 As a prerequisite for implementation of ATFM in the MID Region, the MIDANPIRG/19 meeting reviewed the MID Doc 014 (V.2.0) which incorporated the MID ATFM CONOPS, ATFM MID Region Framework as well as implementation guidance and agreed to the following MIDANPIRG Conclusion:

MIDANPIRG CONCLUSION 19/14: MID ATFM PLAN (V2.0)

That, the MID Doc 014 renamed as MID Region Air Traffic Flow Management Plan (V2.0), is endorsed and be published on the ICAO MID website.

2.2 The meeting also urged MID States to take necessary measures to establish ATFM service in accordance with the MID Region ATFM Plan. In this respect MIDANPIRG/19, through Conclusion 19/16 endorsed the following:

MIDANPIRG CONCLUSION 19/16: ATFM IMPLEMENTATION

That,

- a) States be urged to take necessary measures to establish ATFM service in accordance with the MID Region ATFM Plan taking into consideration the available relevant guidance materials, and the willingness of ICAO and International organization to provide support as appropriate; and*
- b) ATFM TF be tasked to*
 - i. assess the available opportunities for the exchange of information and propose a way forward to the ATM SG; and*
 - ii. develop a checklist for ATFM service implementation assessment and monitoring (regulation, declared capacity, organizational ATFM structure, procedure for information sharing, etc).*

2.3 Based on all the above and in accordance with ATFM Plan (MID Doc 014), Part One, **Appendix B**, the following document were prepared:

- ICAO MID Doc 014, Appendix H, related to ATFM LoA template has been modified to meet the states and ANSPs requirements to develop a template of ATFM Letter of Agreement, at **Appendix B**;
- As a quick reference and easy access to relevant ATM Operational Data Exchange process, the draft of flowchart was prepared at **Appendix C**;
- For ATFM service implementation assessment and monitoring, a draft of checklist was prepared at **Appendix D**.

3. ACTION BY THE MEETING

3.1 The meeting is inviting States to review drafts at **Appendices B, C and D**, respectively and provide the MID Office with their comments/feedback not later than **15 August 2022**.

INTERNATIONAL CIVIL AVIATION ORGANIZATION



ICAO MID

MID ATFM Plan (V2.0)

ATM Operational Data Exchange Process

Edition 1.0, Feb 2021

INTRODUCTION

1. The intention of this simplified CDM procedure is to provide effective process for air navigation service providers (ANSPs) in order to carry out cross-border coordination with their adjacent ANSPs taking into consideration the circumstances that would have impact on traffic flows. This includes going into a contingency situation or returning to normal operations.
2. The main objective of the procedures, however, is to provide a better collaborative platform for the coordination and management of traffic during the disruption caused by the COVID-19 Pandemic. These procedures would also support a smooth and less challenging return to normal operations. In this regard, the templates at Appendices A and B were developed to support coordination between adjacent area control centers (ACCs).
3. The procedures are most suitable for those States that have not implemented or established an ATFM structure yet; as well as in the ICAO Regions where no regional/sub-regional ATFM solutions had been implemented. The well-established regional or sub-regional ATFM solutions would normally ensure collaboration between their members, however, it is recognized that coordination with their adjacent States/Regions might remain a challenge.

Note 1: The procedure is not intended to replace in any form the guidance in Manual on Collaborative Air Traffic Flow Management (Doc 9971) or provisions in other ICAO documentation related to ATFM/CDM or Regional ATFM/CDM plans or guidance.

4. The procedure outlined in this document requires several layers of collaboration and coordination as follows:
 - a) National Level.
 - b) Cross border between adjacent States.
 - c) Multi-States Collaboration (Optional).
 - d) Regional. Which could be part of the contingency coordination teams (CCTs) framework or similar mechanism.

Note 2: Contingency Coordination Teams (CCTs) terminology utilized on these pages represent: contingency coordination teams, regional contingency groups, contingency and emergency response groups or any similar framework.

National Level

5. At National level, where no ATFM system is in place, a National Collaborative Decision Making (CDM) Committee should be established to coordinate the ATM issues (en-route and terminal). The Committee should be composed of representatives from entities that have involvement/impact on ATM operations (ATS, MET, AIS, CNS, SAR, PANS-OPS, regulator, airspace users, airport operators, military authorities, etc.).
6. In cases where a State already have an established Committee or other mechanism is in place, measures should be taken to ensure that it addresses ATM operations-related issues and contingency planning as well as the optimization of airspace management.

7. The CDM Committee should hold frequent (preferable daily) coordination meetings/telecoms to address the operational status and agree on the measures that should be implemented to mitigate the associated challenges.

8. A-CDM, at the airports where it is implemented, will facilitate the work of the CDM Committee, as well as for effective optimization of flight operations at the airports and relevant terminal airspaces.

9. An ATM/CDM Coordinator should be appointed to lead the communication between all stakeholders at national level, including airports, who will also act as the point of contact for cross-border coordination with the adjacent ANSPs/ACCs. It is recommended that the coordinator is an active/dynamic en-route air traffic controller/supervisor knowledgeable of the airspace with high level tactical skills, able to discuss, coordinate and explore solutions to traffic flows. Where an ATFM structure is in place, the ATFM Manager would play this role.

Cross-border Coordination

10. The relevant communication and exchange of operational information among stakeholders on a real-time basis forms the backbone of CDM. This exchange may be accomplished by a variety of means including telephone calls, web conferences, e-mail messages, and electronic data exchange including, but not limited to web page displays. The purpose of the information exchange is to increase stakeholder situational awareness, improve operational decision-making, and enhance the efficiency of the ATM system.

11. It is a significant advantage if a tool is in place to exchange information between the adjacent ACCs. Nevertheless, operational issues for discussion could be coordinated by emails and discussed via telephone. In addition, the use of web-conference applications should be considered, which improve the exchange/sharing of information through view-my-screen options.

12. It is recommended that the ATM/CDM Coordinators from adjacent States communicate together at least once daily on a suitable time for both parties that ensure all matters related to operations are addressed in a timely manner. Timing of daily teleconference should be based on either traffic distribution of associated shift changes.

13. The objective of daily teleconferences between adjacent ACCs is mainly to address the operations outlook and any factor affecting normal operations so as to agree on ATM measures to overcome challenges impacting traffic flows and operational requirements agreed upon via the ATS Letters of Agreement (LoAs).

14. The sharing of information and coordination at national, cross-border and regional levels between stakeholders provides the following tangible and measurable operational benefits:

- reduction of unnecessary delays and airborne holding due to, better planning, increased situational awareness and solutions developed via the coordination process;
- reroute flights in collaboration with neighboring ANSPs, taking into account airspace user needs;
- fuel savings due to better-coordinated tactical air traffic management;
- communicating in a timely manner the impact of special events, contingency and crisis including weather, national disaster, disruption of services, etc.;

- advance planning for the events and for post-events recovery;
- top management kept briefed and informed; and
- optimized implementation of ATFM measures due to improved view of demand and capacity predictions.

15. The Table at **Appendix A** presents a simplified ATM/CDM Telecom Template to facilitate the daily discussions between adjacent ACCs or ATFM units during the COVID-19 Pandemic and preparation for the resumption of normal operations. A more detailed Template for teleconferences during normal situation (after the pandemic) is provided at **Appendix B**. The Table Templates would form the basis for the development of ATFM Daily Plans.

Multi States Conference Calls:

16. Instead of having one-to-one daily conferences, several States may decide to organize joint teleconferences to address the topics outlined in Appendices A or B. For better management of joint teleconferences, follow-up, monitoring and reporting, a lead State/ANSP would be nominated that will ensure communication between the States members of the joint teleconferences as well as communicating and reporting as deemed necessary to the relevant ICAO Regional Office/CCT.

Regional Level

17. ICAO Regional Offices consolidate the inputs received from their relevant States or Group of States as well as those provided by the airspace users and share it as required for regional/inter-regional consideration through the CCT framework or any other mechanism for discussion and agreement on necessary ATM measures to mitigate the identified challenges.

18. Regional Offices organize periodic teleconferences, as deemed necessary, (preferably on weekly or bi-weekly basis) with States and Organizations concerned. During these regional discussions, the relevant ICAO State Letters as well as the matters reported by States and the challenges reported by airspace users should be addressed.

19. States should coordinate with their respective ICAO regional offices to provide, on a periodic basis, the measures undertaken with respect to COVID-19 Pandemic. Regional offices will follow-up in this regard.

20. The following websites provide supporting material on the APAC COVID-19 ATM/ATFM Status Update, EUROCONTROL Network Operating Plan-COVID-19 Business Continuity Plan and CANSO – Latin America and Caribbean Region COVID-10 Limitation Update, and should prove useful to all States/regions:

- APAC: <https://www.icao.int/APAC/Pages/COVID-19-BCP.aspx>
- EUR: <https://www.public.nm.eurocontrol.int/PUBPORTAL/gateway/spec/index.html>
- CANSO: https://www.cadenois.org/vpublic_advisorynew.jsp

Note 3. A State could be assigned as a Collection Point for a group of States to consolidate the updates/inputs and provide them to the accredited ICAO Regional Office.

21. Also reference is made to the following links of ICAO, CANSO, EASA, IATA and IFATCA related to

COVID-19:

ICAO <https://www.icao.int/safety/COVID-19OPS>

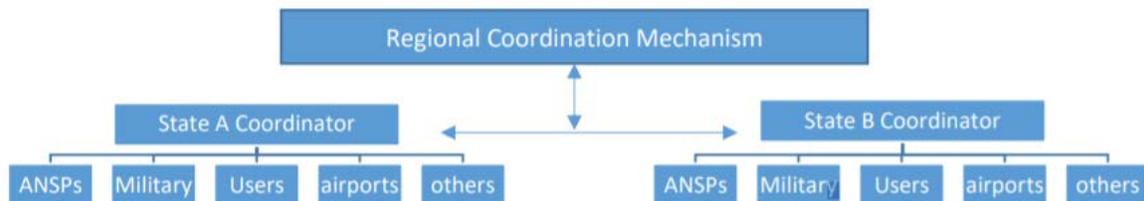
CANSO <https://www.canso.org/covid-19-ensuring-continuity-ats-service-globally>

EASA <https://www.easa.europa.eu/the-agency/coronavirus-covid-19>

IATA <https://www.iata.org/en/programs/safety/health/diseases/government-measures-related-tocoronavirus>

IFATCA <https://www.ifatca.org/covid-19>

22. The chart below illustrates the coordination process:



Recovery Phase:

23. In preparation for the recovery phase, adequate time for the gradual return of traffic should be anticipated taking into consideration the following:

- a) ATC capability to handle again an increased amount of traffic after the recess period. This includes the measures taken to ensure continued competency, qualifications and skills of air traffic controllers;
- b) status of aerodromes services/facilities and CNS/ATM infrastructure;
- c) availability of adequate number of ATC staff ready to handle the expected increase of traffic within the en-route and terminal airspaces considering the prevention measures that might be in place;
- d) availability of required air navigation services supporting ATM operations;
- e) agreement between adjacent States/ANSPs on necessary ATM measures/arrangements to be implemented to ensure a safe, smooth and orderly transition to that experienced prior to the COVID-19 Pandemic;
- f) development of regional transition plans for the resumption of normal operations in coordination with all regional stakeholders that should be based on the data provided by airlines and ANSPs:
 - i. airlines, through IATA regional offices, could use the template at **Appendix C** to provide their planned/forecasted flights for each FIR; and
 - ii. the excel sheet at **Appendix D** could be used by ANSPs to count the number of traffic at each entry/exit point to provide a better picture on the hourly distribution of traffic. Also the sheet could be beneficial for determining the impact of rerouting traffic through comparison between the situation before and after a crisis or the implementation of ATM measures.

Also reference is made to the following link to CANSO guidance related to ATFM and A-CDM and a regional cross-border initiative:

<https://www.canso.org/implementing-air-traffic-flow-management-and-collaborative-decision-making>

<https://www.canso.org/guidelines-airport-collaborative-decision-making-cdm-key-performance-measures>

<https://www.cadenaois.org/index.html>

APPENDIX A**Template for Daily Teleconferences between States/ANSPs during COVID-19**

	Telecom.	Ref.	Date	Action/Remark
1	Covering period (date and time)	From:	To:	<i>i.e. coming 12h, 24h, 5, 7 days</i>
2	Between State/ANSPs	State/ANSP A: [title] [Coordinator name] [email] [Telephone/mobile]	State/ANSP B: [title] [Coordinator name] [email] [Telephone/mobile]	
3	Greetings	---	----	
4	Brief Overview of the situation			
5	Describe the measures planned/implemented due COVID-19 and/or any changes to these measures that may have impact on traffic flow during the coming period. Consider airlines reported challenges/requirements			
6	Aerodromes specific issues affecting capacity such as VIP movements, special flights, infrastructure, weather, etc.			
7	En-route specific issues such ATM restrictions, Military operations, weather, status of CNS/ATM infrastructure, etc.			
8	Changes to Coordination Processes/Communication			
9	Preparation to the normalized situation:			
	a) ANSP readiness			
	b) Measures required during transition period			
	c) Inputs from airlines			
	d) Inputs from CCTs			
	e) Common Date of implementation and publication of NOTAM			
	f) other			
10	Other topics of mutual interest			
11	Required follow-up actions till next telecom			
12	Agreement what and who will report any relevant information or decisions to the relevant ICAO Regional Office and/or CCT			
13	Summary			

APPENDIX B**Template for Daily Teleconferences between Adjacent ACCs or ATFM units**

Telecom #.				
1	Covering period (date and time)	From:	To:	<i>i.e. coming 12h, 24h, 5, 7 days</i>
2	Between State/ANSPs	State/ANSP A: [title] [Coordinator name] [email] [Telephone/mobile]	State/ANSP B: [title] [Coordinator name] [email] [Telephone/mobile]	
3	Greetings	---	----	
4	Brief Overview of the situation			
5	Describe the issues that may have impact on traffic flow during the coming period:			
	a) Weather: current or forecasted weather that would have impact on en-route or aerodrome operations such as reduced visibility, hurricanes, sandstorms, turbulence, thunderstorm activities, volcanic ash, etc.			
	b) Infrastructure (NAVAID outage, GNSS signal interference, planned maintenance, radar outage, direct COM issues, etc.) NOTAMed or planned to take place.			
	c) Military activities			
	d) Special movements			
	e) Special events			
	f) Pandemic-related issues			
	g) Others			

6	Aerodromes issues			
	a) Airport capacity			
	b) Projected terminal demand;			
	c) Anticipated ATFM measures (MDI, MIT, GSt, GDP, MINIT, etc.)			<i>Refer to Doc 9971 Chap 4 Section 4.5</i>
	d) Other			
7	En-route issues			
	a) Airspace capacity (Sector capacity)			
	b) Changes to traffic flow with highlight on relevant Entry/Exist Points.			
	c) ATS Routes status (available, closed, CDR, DCTs, etc.)			
	d) Anticipated ATFM measures (MDI, MIT, MINIT, Re-route, etc.)			<i>Refer to Doc 9971 Chap 4 Section 4.5</i>
	e) Other			
8	Coordination Process/Communication			
	a) Discuss changes to way of communication and exchange of info and coordination, of traffic between the 2 ATS units, if any. This would include, Direct Speech, OLDI/AIDC, AFTN Messages, etc.			
	b) Transfer of control points			
	c) Flight level restrictions at entry/exit points			
	d) Expected frequency changes in case of Sector opening/closure or combining sectors.			
	e) Other			
9	Other topics of mutual interest			
10	Required follow-up actions till next telecom			
11	Agreement what and who will report any relevant information or decisions to the relevant ICAO Regional Office and/or CCT			
12	Summary			

APPENDIX D

Hourly Distribution of traffic on Entry/Exit points FIR

Note	<i>Declared Capacity:</i>	<i>Defined number of traffic that could be accepted on each point taking into consideration the available FLs, separation, ATCO workload, airspace complexity, etc.</i>
	<i>No. of traffic:</i>	<i>Based on inputs received from airlines or FPLs (Appendix C)</i>
	<i>The spreadsheet could also be used to analysis the distribution of traffic and impact of rerouted traffic due to contingency situation.</i>	
	% columns and Total column are formulas based for automatic calculation	

No.	Way Points	E=Entry X=Exit B=both	0:00z			1:00z...		
			Declared Capacity	No. of Traffic	%	Declared Capacity	No. of Traffic	%
1								
2								
3								
4								
5								
6								
7								
8								
9								

APPENDIX H - TEMPLATE FOR LETTER OF AGREEMENT (LOA)

ATFM LETTER OF AGREEMENT (LOA)

Effective date: DD MMM YYYY

Subject: Air traffic flow management (ATFM) collaboration and coordination

~~ANSP1 and ANSP2 enter into this LoA to facilitate the safe and efficient movement of air traffic between and over both countries.~~

1. PURPOSE

The purpose of this LoA is to establish continuity of operations and ATFM procedures between unit 1 (FMU1)/ACC/ANSP1 ~~the flow management in (city/country)State/FIR1~~ and unit 2 FMU2/ACC2/ANSP in ~~(city/country)State/FIR2~~. ~~This LoA is not intended to replace any local agreements between ANSP1 area control centres (ACCs) and ANSP2 ACCs.~~ This LoA will promote coordination and collaboration between FMU1/ACC1 and FMU2/ACC2 regarding traffic management measures and the routing of aircraft into and out of ANSP1 and ANSP2 ~~those~~ airspace. ~~FMU1/ACC1 and FMU2/ACC2 will be the primary points of contact for coordinating traffic management (TM) measures and operations between ANSP1 and ANSP2.~~

To achieve this objective, several layers of collaboration and coordination at national, cross border (bi-lateral), multi-States and regional levels should be developed. The detail of the procedure is available in ICAO MID ATFM Plan (ICAO MID Doc 014), Part I, Appendix B.

2. SCOPE

The procedures outlined are for use by unit 1 FMU/ACC FMU1/ACC1 and unit 2 FMU/ACC FMU2/ACC2 to provide normal air traffic services (ATS).

3. BACKGROUND

- a) ~~ANSP1 State 1 and ANSP2 State 2~~ have established operational agreements creating cross-border communications and a seamless operational atmosphere. This agreement incorporates unit 1 FMU/ACC FMU1/ACC1 and unit 2 FMU/ACC FMU2/ACC2 operational procedures and practices.
- b) traffic flow management continues to evolve as new procedures and technologies are developed. FIR 1 ANSP1 TM measures may include departures from FIR 2 ANSP2 airports. Likewise, FIR 2 ANSP2 TM measures may include departures from FIR 1 ANSP1 airports. The TM measures coordinated by either FMU/ACC may include MIT, MINIT, ground delay measures, ground stops and re-route initiatives.

Note: This list is not all-inclusive and other TM measures may be developed and coordinated to meet operational needs either between two adjacent FIRs or during regional coordination meeting.

4. RESPONSIBILITIES

- a) Responsibilities of unit 1 FMU/ACC FMU1/ACC1 Operations:

- 1) ~~unit 1 FMU/ACC FMU1~~ is responsible for the flow management of traffic ~~to ANSP1 destinations and through ANSP1 airspace in FIR 1 AoR~~ as follows:
 - i. ~~unit 1 FMU/ACC FMU1/ACC1~~ will coordinate with ~~unit 2 FMU/ACC FMU2/ACC2~~ before implementing TM measures that may impact ~~ANSP2 FIR 2 airspace and~~ airports;
 - ii. when ~~FIR 2 ANSP2 airspace and~~ airports are included in a TM measure, advise ~~unit 2 FMU/ACC FMU2/ACC2~~:
 - before implementing the TM measure;
 - what the TM parameters are; and
 - when the TM measure is cancelled;
 - iii. ~~unit 1 FMU/ACC FMU1/ACC1~~ will coordinate with ~~unit 2 FMU/ACC FMU2/ACC2~~ before implementing aircraft reroutes affecting ~~overflights and~~ departures from ~~FIR 2 ANSP2~~ airports or airspace;
 - iv. ~~unit 1 FMU/ACC FMU1/ACC1~~ must include ~~unit 2 FMU/ACC FMU2/ACC2~~ TM measures in the ATFM operations plan (OP) when it is likely that ~~FIR 1 ANSP1~~ stakeholders will be affected by these measures;
- 2) ~~unit 1 FMU/ACC FMU1~~ will ensure ~~unit 2 FMU/ACC FMU2~~ is informed of situations and conditions in ~~ANSP1 FIR 1~~ airspace that may require implementing TM measures affecting ~~ANSP2 FIR 2~~ traffic;

b) Responsibilities for ~~unit 2 FMU2-FMU/ACC~~ Operations:

- 1) ~~unit 2 FMU/ACC FMU2~~ is responsible for traffic flow management of ~~FIR 2 AoR ANSP2 destinations and through ANSP2~~ airspace as follows:
 - i. ~~unit 2 FMU/ACC FMU2~~ will coordinate with ~~unit 1 FMU/ACC FMU1~~ before implementing TM measures that impact departures from ~~ANSP1 FIR 1~~ airports;
 - ii. when ~~ANSP1 FIR 1~~ airports are included in a TM measure, advise ~~unit 1 FMU/ACC FMU1~~:
 - before implementing the TM measure;
 - what the TM parameters are; and
 - when the TM measure is cancelled;
 - iii. ~~unit 2 FMU/ACC FMU2~~ must include ~~unit 1 FMU/ACC FMU1~~ TM measures in the ATFM OP when it is likely that ~~ANSP2 FIR 2~~ stakeholders will be affected by these measures;
 - iv. ~~unit 2 FMU/ACC FMU2~~ must coordinate with ~~unit 1 FMU/ACC FMU1~~ before implementing aircraft re-routes impacting departures from ~~ANSP1 FIR 1~~ airports or airspace;

- 2) unit 2 FMU/ACC FMU2 will ensure unit 1 FMU/ACC FMU1 is informed of situations and conditions, in ANSP2 FIR 2 airspace that may require implementing TM measures affecting ANSP1 FIR 1 traffic;
- c) Responsibilities for unit 1 FMU/ACC FMU1 and unit 2 FMU/ACC FMU2:
- 1) to streamline coordination, unit 2 FMU/ACC FMU2 will be unit 1 FMU/ACC FMU1's sole point of contact with in ANSP2 FIR 2 and FMU1 FIR 1 will be unit 2 FMU/ACC's FMU2's sole point of contact with in ANSP1 FIR 1 in regard to cross-border TM measures and routing of aircraft;
 - 2) unit 1 FMU/ACC FMU1 and unit 2 FMU/ACC FMU2 will implement and manage TM measures, as necessary, to relieve congestion and to ensure the orderly flow of air traffic consistent with an equitable distribution of delays;
 - 3) unit 1 FMU/ACC FMU1 and unit 2 FMU/ACC FMU2 will make every effort to limit the impact of TM measures on stakeholders and implement only those measures that will adequately address the system constraint;
 - 4) the principal TM measures to be implemented will consist of MIT, MINIT, re-routes, en-route spacing measures, ground delay measures and ground stops;
Note: This list is not all-inclusive, and other TM measures may be developed and coordinated to meet operational needs.
 - 5) unit 1 FMU/ACC FMU1 and unit 2 FMU/ACC FMU2 will collaborate on the design of preferred routes and severe weather avoidance routes that involve the use of both ANSP1 FIR 1 and ANSP2 FIR 2 airspace or resources; and
 - 6) unit 1 FMU/ACC FMU1 and unit 2 FMU/ACC FMU2 will provide feedback and share data on the impact and assessment of joint TM measures, as required.

5. IMPLEMENTATION

The procedures outlined in this LoA will be implemented by operational personnel at unit 1 FMU/ACC FMU1 and at unit 2 FMU/ACC FMU2. The means of communication telephone numbers for unit 1 FMU/ACC FMU1 and unit 2 FMU/ACC FMU2 personnel can be found in **Attachments 1 and 2**, respectively.

Since the real-time coordination is a backbone of CDM, an ATM/CDM Coordinator shall be appointed by the relevant states to lead the communication between all stakeholders at national level, who will also act as the point of contact for cross-border, multi-states, and regional coordination with the adjacent ANSPs/ACCs. The specification of the ATM/CDM Coordinator is available at ICAO MID Doc 014, Part I, Appendix B.

The ATM/CDM Coordinators from adjacent States should communicate together at least ----- on a suitable time for both parties that ensure all matters related to operations as indicated in ICAO MID Doc 014, Part I, Appendix B are addressed in a timely manner.

Forms A, B, C and D at Attachment 3, 4, 5 & 6 presents a simplified ATM/CDM Telecom Templates to facilitate the daily discussions between adjacent ACCs or ATFM units to develop ATFM Daily Plan. The details and usage of each template is available at ICAO MID Doc 014, Part I, Appendix B.

6. REVIEW PERIOD

FMU1/ACC1 and FMU2/ACC2 agree to participate in a yearly review of this document.

Original signed by:

ANSP1 State 1-----

ANSP2 State 2-----

Date: -----

Date: -----

FMU1 ANSP 1-----

FMU2 ANSP 2-----

Date: -----

Date: -----

LOA-Attachment 1

The following are the primary and alternative points of contact for coordinating traffic management (TM) measures and operations between **ANSP1** and **ANSP2**

<u>(Name of the FMU/ACC) FMU/ACC Point of Contact – Main</u>	
<u>Name</u>	
<u>Position</u>	
<u>Email address – main</u>	
<u>Email address – alternate</u>	
<u>Telephone Number - work</u>	
<u>Telephone Number - mobile</u>	
<u>Other means</u>	
<u>(Name of the FMU/ACC) FMU/ACC Point of Contact – Standby</u>	
<u>Name</u>	
<u>Position</u>	
<u>Email address – main</u>	
<u>Email address – alternate</u>	
<u>Telephone Number - work</u>	
<u>Telephone Number - mobile</u>	
<u>Other means</u>	

TELEPHONE NUMBERS FOR FMU1/ACC1

FMU1 Phone number(s): xxx xxx xxx

LOA-Attachment 2

The following are the primary and alternative points of contact for coordinating traffic management (TM) measures and operations between ANSP1 and ANSP2

TELEPHONE NUMBERS FOR FMU1/ACC2

FMU1 Phone number(s): xxx xxx xxx

<u>(Name of the FMU/ACC)FMU/ACC Point of Contact – Main</u>	
<u>Name</u>	
<u>Position</u>	
<u>Email address – main</u>	
<u>Email address – alternate</u>	
<u>Telephone Number - work</u>	
<u>Telephone Number - mobile</u>	
<u>Other means</u>	
<u>(Name of the FMU/ACC)FMU/ACC Point of Contact – Standby</u>	
<u>Name</u>	
<u>Position</u>	
<u>Email address – main</u>	
<u>Email address – alternate</u>	
<u>Telephone Number - work</u>	
<u>Telephone Number - mobile</u>	
<u>Other means</u>	

Attachment 3- Template for Daily Teleconferences between States/ANSPs during COVID-19

	<u>Telecom.</u>	<u>Ref.</u>	<u>Date</u>	<u>Action/Remark</u>
1	<u>Covering period (date and time)</u>	<u>From:</u>	<u>To:</u>	<i>i.e. coming 12h, 24h, 5, 7 days</i>
2	<u>Between State/ANSPs</u>	<u>State/ANSP A: [title] [Coordinator name] [email] [Telephone/mobile]</u>	<u>State/ANSP B: [title] [Coordinator name] [email] [Telephone/mobile]</u>	
3	<u>Greetings</u>	<u>---</u>	<u>---</u>	
4	<u>Brief Overview of the situation</u>			
5	<u>Describe the measures planned/implemented due COVID-19 and/or any changes to these measures that may have impact on traffic flow during the coming period. Consider airlines reported challenges/requirements</u>			
6	<u>Aerodromes specific issues affecting capacity such as VIP movements, special flights, infrastructure, weather, etc.</u>			
7	<u>En-route specific issues such ATM restrictions, Military operations, weather, status of CNS/ATM infrastructure, etc.</u>			
8	<u>Changes to Coordination Processes/Communication</u>			
9	<u>Preparation to the normalized situation:</u>			
	<u>a) ANSP readiness</u>			
	<u>b) Measures required during transition period</u>			
	<u>c) Inputs from airlines</u>			
	<u>d) Inputs from CCTs</u>			
	<u>e) Common Date of implementation and publication of NOTAM</u>			
	<u>f) other</u>			
10	<u>Other topics of mutual interest</u>			
11	<u>Required follow-up actions till next telecom</u>			
12	<u>Agreement what and who will report any relevant information or decisions to the relevant ICAO Regional Office and/or CCT</u>			
13	<u>Summary</u>			

Attachment 4-Template for Daily Teleconferences between Adjacent ACCs or ATFM units

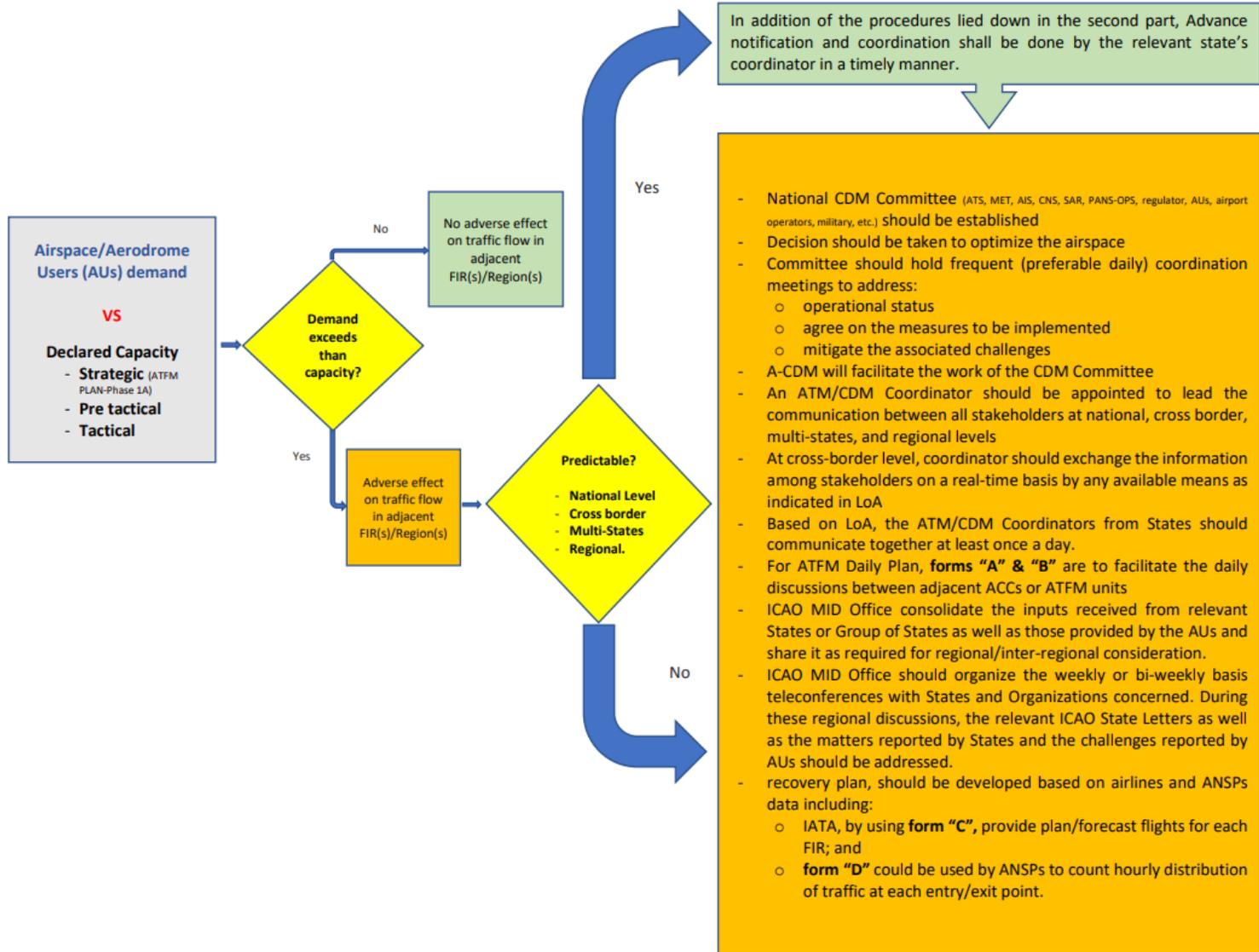
<u>Telecom #.</u>			
<u>1</u>	<u>Covering period (date and time)</u>	<u>From:</u>	<u>To:</u> <i>i.e. coming 12h, 24h, 5, 7 days</i>
<u>2</u>	<u>Between State/ANSPs</u>	<u>State/ANSP A: [title]</u> <u>[Coordinator name]</u> <u>[email]</u> <u>[Telephone/mobile]</u>	<u>State/ANSP B: [title]</u> <u>[Coordinator name]</u> <u>[email]</u> <u>[Telephone/mobile]</u>
<u>3</u>	<u>Greetings</u>	<u>---</u>	<u>---</u>
<u>4</u>	<u>Brief Overview of the situation</u>		
<u>5</u>	<u>Describe the issues that may have impact on traffic flow during the coming period:</u>		
	<u>a) Weather: current or forecasted weather that would have impact on en-route or aerodrome operations such as reduced visibility, hurricanes, sandstorms, turbulence, thunderstorm activities, volcanic ash, etc.</u>		
	<u>b) Infrastructure (NAVAID outage, GNSS signal interference, planned maintenance, radar outage, direct COM issues, etc.) NOTAMed or planned to take place.</u>		
	<u>c) Military activities</u>		
	<u>d) Special movements</u>		
	<u>e) Special events</u>		
	<u>f) Pandemic-related issues</u>		
	<u>g) Others</u>		

	<u>Aerodromes issues</u>			
<u>6</u>	<u>a) Airport capacity</u>			
	<u>b) Projected terminal demand;</u>			
	<u>c) Anticipated ATFM measures (MDI, MIT, GSt, GDP, MINIT, etc.)</u>			<i>Refer to Doc 9971 Chap 4 Section 4.5</i>
	<u>d) Other</u>			
	<u>En-route issues</u>			
<u>7</u>	<u>a) Airspace capacity (Sector capacity)</u>			
	<u>b) Changes to traffic flow with highlight on relevant Entry/Exist Points.</u>			
	<u>c) ATS Routes status (available, closed, CDR, DCTs, etc.)</u>			
	<u>d) Anticipated ATFM measures (MDI, MIT, MINIT, Re-route, etc.)</u>			<i>Refer to Doc 9971 Chap 4 Section 4.5</i>
	<u>e) Other</u>			
	<u>Coordination Process/Communication</u>			
<u>8</u>	<u>a) Discuss changes to way of communication and exchange of info and coordination, of traffic between the 2 ATS units, if any. This would include, Direct Speech, OLDI/AIDC, AFTN Messages, etc.</u>			
	<u>b) Transfer of control points</u>			
	<u>c) Flight level restrictions at entry/exit points</u>			
	<u>d) Expected frequency changes in case of Sector opening/closure or combining sectors.</u>			
	<u>e) Other</u>			
<u>9</u>	<u>Other topics of mutual interest</u>			
<u>10</u>	<u>Required follow-up actions till next telecom</u>			
<u>11</u>	<u>Agreement what and who will report any relevant information or decisions to the relevant ICAO Regional Office and/or CCT</u>			
<u>12</u>	<u>Summary</u>			

Attachment 6-Template of the Hourly Distribution of traffic on Entry/Exit points FIR

Note	<u>Declared Capacity:</u>	<i>Defined number of traffic that could be accepted on each point taking into consideration the available FLs, separation, ATCO workload, airspace complexity, etc.</i>
	<u>No. of traffic:</u>	<i>Based on inputs received from airlines or FPLs (Appendix C)</i>
	<i>The spreadsheet could also be used to analysis the distribution of traffic and impact of rerouted traffic due to contingency situation.</i>	
	<i>% columns and Total column are formulas based for automatic calculation</i>	

<u>No.</u>	<u>Way Points</u>	<u>E=Entry</u> <u>X=Exit</u> <u>B=both</u>	<u>0:00z</u>			<u>1:00z...</u>		
			<u>Declared Capacity</u>	<u>No. of Traffic</u>	<u>%</u>	<u>Declared Capacity</u>	<u>No. of Traffic</u>	<u>%</u>
<u>1</u>								
<u>2</u>								
<u>3</u>	-	-	-	-				
<u>4</u>	-	-	-	-				
<u>5</u>	-	-	-	-				
<u>6</u>	-	-	-	-				
<u>7</u>	-	-	-	-				
<u>8</u>	-	-	-	-				
<u>9</u>	-	-	-	-				



Checklist for ATFM service implementation assessment and monitoring

Note: Further details is available in ICAO MID Doc 014, Version 2, Part II Chapter 5.

State:				Date:							
	Phase	Task	Subtask/ parameters to be considered	Target date / intervals	Applicable area	Status / Implementation plan					
1	IA	National ATFM Regulations	Establishing regulatory framework	December 2023	States where traffic demand at times exceeds, or is expected to exceed declared capacity						
2		Building States national ATFM capabilities	<ol style="list-style-type: none"> 1. Raising the awareness and the need 2. Establishing phase of the ATFM service: <ol style="list-style-type: none"> a. Organizational structure b. Job task description c. Human resources d. Training e. Development of operational procedures f. Tools and agreement to be implemented g. Determining and declare airspace capacity h. Establishing National ATFM CONOPS 	December 2023							
3		Strategic Capacity and Demand Monitoring and Analysis	<table border="1"> <tr><td>CNS systems;</td></tr> <tr><td>ATC resources and capability;</td></tr> <tr><td>ATC separation standards and techniques;</td></tr> <tr><td>runway occupancy times;</td></tr> <tr><td>seasonal schedules; and</td></tr> <tr><td>historical traffic data and traffic growth forecasts.</td></tr> </table>	CNS systems;	ATC resources and capability;	ATC separation standards and techniques;	runway occupancy times;	seasonal schedules; and	historical traffic data and traffic growth forecasts.	A regular program of bi-annual strategic airport and airspace capacity and demand analysis	should be implemented for all international airports and associated terminal area airspace, and for all en-route ATC sectors. Where strategic analysis indicates that demand does not yet exceed capacity, preparation for the implementation of ATFM capability should be based on careful analysis of current traffic and expected growth in the next 5 years
CNS systems;											
ATC resources and capability;											
ATC separation standards and techniques;											
runway occupancy times;											
seasonal schedules; and											
historical traffic data and traffic growth forecasts.											

4		Pre-Tactical Capacity Demand and Monitoring and Analysis	expected runway and airspace configurations;	Daily pre-tactical airport and airspace capacity and demand analysis should be conducted	all ATFM Program Airports and associated terminal area airspace, and for all en-route ATC sectors	
			forecast meteorological phenomena;			
			ATC resources, facilities and equipment;			
			other known or expected capacity constraints; and			
			updated flight schedule and flight plan information.			
5		Pre-Tactical ATFM Execution	Web-based ATFM network; or	Daily basis	ATFM Daily Plan (ADP) for all ATFM Program Airports and associated terminal area airspace, including airport and airspace capacity declarations and related background information, should be prepared and distributed to all relevant stakeholders.	
			Web-pages hosted by each participating ANSP; or			
			email distribution.			
6		Post-Operations Analysis		Daily basis	The accuracy and effectiveness of capacity and demand analyses and ADP preparation and distribution, including supporting information should be verified through comparison with operational outcomes observed, and rectification of discrepancies included in planning for system and process improvements.	
7	IB	ATFM Systems	Operational FPL and ATS message distribution systems and processes should be analysed and, where necessary, modified to ensure that FPL, CHG, DEP, DLA and CNL messages are originated, distributed and processed.	December 2024	States where traffic demand at times exceeds, or is expected to exceed declared capacity	
			Requirements should be published in the State AIP, specifying that, except where necessary for operational or			

			<p>technical reasons, FPL should be submitted not less than 3 hours prior to EOBT.</p> <p>A DLA message should be transmitted when the departure of an aircraft, for which basic flight plan data FPL has been sent, is delayed by more than 15 minutes after the estimated off-block time contained in the basic flight plan data.</p> <p>Where the delay is the result of a GDP, the DLA message should be sent by the ATFMU responsible for the destination airport, addressed to the ATS unit serving the departure aerodrome for subsequent transmission</p> <p>Appropriate procedures should be implemented to ensure that FPL are not discarded from other ATM systems as a consequence of ATFM delay.</p> <p>ATFM, AMAN/DMAN and A-CDM systems should be integrated through the use of common fixes, terminology and communications protocols to ensure complementary operations.</p>			
8	Capacity Improvement	<p>Airport and terminal airspace capacity should be increased through optimized ATC separation standards and techniques and reduced runway occupancy.</p> <p>using a performance-based approach, terminal area ATS route structure improvements including CCO/CDO</p>	December 2024	all ATFM Program Airports and associated terminal area airspace, and for all en-route ATC sectors		

			should be implemented to reduce ATC and pilot workload and enable better use of aircraft capability to meet ATFM measures.			
9		Strategic Execution	ATFM Implement strategic airport slot allocation, for periods where demand significantly exceeds the airport's capacity.	December 2024	at all international airports	
10		Pre-Tactical Capacity and Monitoring and Analysis	Demand and Pre-tactical modelling of expected airport and airspace configuration and traffic demand, and the effect of ATFM measures.	December 2024	all ATFM Program Airports and associated terminal area airspace, and for all en-route ATC sectors	
11		Pre-Tactical Execution	ATFM CDM capability should be implemented, enabling the sharing of all relevant information with all stakeholders, providing continuous availability of information and common reference material.	Daily and ad-hoc ATFM conferences.	States where traffic demand at times exceeds, or is expected to exceed declared capacity	
12		Tactical Capacity and Demand Monitoring and Analysis	Tactical Capacity and Dynamic update of airport and airspace capacity constraints, capacity calculation, demand information using schedule, flight plan and ATS messaging, and ATM system information and modelling of tactical ATFM programs should be implemented.	December 2024	all ATFM Program Airports and associated terminal area airspace, and for all en-route ATC sectors	
13		Tactical Execution	ATFM Tactical ATFM at ATFM Program Airports should be implemented using Ground Delay Programs (CTOT), or Minutes in trail (MINIT) or miles in trail (MIT) or other ATFM measures.	December 2024	all ATFM Program Airports and associated terminal area airspace, and for all en-route ATC sectors	
			Implement local ATC procedures and, where available, CDM processes		All States	

			<p>facilitating compliance with received CTOT</p>			
			<p>CTOT for individual aircraft should, where necessary, be revised, cancelled, suspended or de-suspended.</p>		<p>all ATFM Program Airports and associated terminal area airspace, and for all en-route ATC sectors</p>	
			<p>Tactical ATFM should be implemented for operations through constrained airspace sectors, only during periods affected by the constraint.</p>			
			<p>As far as practicable, individual aircraft should not be subject to more than one tactical ATFM measure per flight.</p>			
<p>14</p>		<p>Post-Operations Analysis</p>	<p>Procedures and agreements should be developed to ensure post-operational analysis of cross-border ATFM programs, including the canvassing and consideration of feedback from airspace users, airports operators, ATS and other ATFM units</p>	<p>December 2024</p>	<p>all ATFM Program Airports and associated terminal area airspace, and for all en-route ATC sectors</p>	
			<p>Daily post-operations analysis conferences should be held, supplemented where necessary by ad-hoc conferences called to assess the outcomes of programs of ATFM measures responding to non-normal situations.</p>			
			<p>The results of post-operations analyses should be used for planning ATFM, airspace and ATS route improvements.</p>			

15	II	ATFM Systems	<p>Distributed multi-nodal ATFM information distribution capability utilizing FIXM version 3.0 (or later) should be implemented, including:</p> <ul style="list-style-type: none"> i. Sharing of ADP and dynamically updated demand and capacity data; ii. Slot allocation information for all flights subject to ATFM programs, including as a minimum CTOT, CTO and CLDT information; iii. Authorized user functions for slot amendment, cancellation or suspension (ATFMU), and slot-swapping (aircraft operator and ATFMU); and iv. Automated slot compliance monitoring and reporting, supplemented where necessary by authorized inputs by ATFMU, ATSU or airspace operator. 	December 2027	all ATFM Program Airports and associated terminal area airspace, and for all en-route ATC sectors.	
			Full interoperability of cross border ATFM, A-CDM, AMAN, DMAN, ATM automation and airspace user systems should be implemented, utilizing FIXM 3.0 (or later), to provide seamless gate-to-gate collaborative ATFM operations.			
16		Pre-Tactical Capacity and Monitoring Demand and Analysis	Automated modelling of expected airport and airspace configuration and traffic demand, and the effect of ATFM measures, should be implemented.	December 2027	all ATFM Program Airports and associated terminal area airspace, and for all en-route ATC sectors.	

D-7

17		Tactical Capacity and Demand Monitoring and Analysis	Meteorological services to support ATM in the terminal area (MSTA) should be implemented, including near-term or now-casting forecasts of convective weather activity.	December 2027	All ATFM Program Airports and associated instrument approach procedures, terminal area ATS routes and holding points and other significant locations.	
18		Tactical Measures ATFM	ATFM measures including MIT, MINIT and, where necessary, CTO at AFIX or RFIX.	December 2027	should be applied in constrained airspace	
<p>Ground Delay Programs utilizing CTOT should be applied to:</p> <ul style="list-style-type: none"> i. aircraft destined for constrained ATFM Program Airports, that have not yet departed; and ii. aircraft planned to operate through constrained airspace where tactical ATFM measure CTO at RFIX or AFIX is in place, that have not yet departed. 						
ATFM systems should have the capability to take into account long haul flights.						
Systems should be in place to ensure the timely update of estimate information for airborne aircraft.						

- END -