



*International Civil Aviation Organization*

**Runway and Ground Safety Working Group**

**Third Meeting (RGS WG/3)**  
*(Cairo, Egypt, 19-22 September 2016)*

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**Agenda Item 3: Implementation of Aerodrome Safety Priorities and Objectives in the MID Region**

**SAFETY ISSUES ASSOCIATED WITH ASBU MODULES B0-SURF & B0-ACDM**

*(Presented by the Secretariat)*

**SUMMARY**

This paper presents an overview on B0-SURF which is a priority one ASBU module in the MID Air Navigation Strategy aiming at Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2) and ASBU Module B0-ACDM.

Action by the meeting is at paragraph 3.

**REFERENCES**

- MSG/5 Report

**1. INTRODUCTION**

1.1 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.

1.2 B0-SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2) is a priority one ASBU module in the MID Air Navigation Strategy.

1.3 Airport Collaborative Decision Making (A-CDM) is a concept which aims at improving Air Traffic Flow and Capacity Management (ATFCM) at airports by reducing delays, improving the predictability of events and optimizing the utilization of resources.

1.4 B0-ACDM (Improved Airport Operation through Airport-CDM) is a priority one ASBU module in the MID Air Navigation Strategy. Implementation of A-CDM will enhance surface operations and safety by making airspace users, ATC and airport operators better aware of their respective situation and actions on a given flight.

## 2. DISCUSSION

### ***B0-SURF (A-SMGCS)***

2.1 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.

2.2 B0-SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2) is a priority one ASBU module in the MID Air Navigation Strategy. It is to be highlighted that the following aerodromes have already implemented A-SMGCS Levels 1 & 2: OMDB, OMAA, OMDW, OTBD, OTHH, and HECA.

2.3 A-SMGCS Levels 1-2 related to B0-SURF are to be implemented by a number of agreed international airports as included in the MID Region Air Navigation Strategy. Name of the applicable airports and implementation Performance Indicators/Supporting Metrics and Targets are included in Volume III of the MID eANP as at **Appendix A**.

2.4 The MIDANPIRG/15 meeting appreciated the progress made in implementation on of this module and encouraged States to work toward achievement of the MID Air Navigation Strategy target for 2017.

### ***B0-A-CDM***

2.5 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. Implementation of A-CDM will enhance surface operations and safety by making airspace users, ATC and airport operators better aware of their respective situation and actions on a given flight.

2.6 In order to support the implementation of B0-ACDM, the MID Regional Office has successfully conducted a seminar on A-CDM in Bahrain from 11 to 13 October 2015. The seminar was graciously hosted by Bahrain Civil Aviation Affairs and sponsored by Bahrain Airport Company (BAC).

2.7 The A-CDM Seminar was attended by a total of sixty five (65) participants from four (4) MID States (Bahrain, Qatar, Sudan, and United Arab Emirates) and seven (7) Organizations/Industries (ACI, Airbus, CANSO, Deutsche Flugsicherung (DFS), Eurocontrol, IATA and IFATCA).

2.8 The Work Programme and the presentations delivered during the Seminar are available at the ICAO MID Regional Office website: <http://www.icao.int/MID/Pages/2015/A-CDM%20Seminar.aspx>.

2.9 The outcomes of the A-CDM seminar included the following recommendations:

- 1) MID States and stakeholders to consider the establishment of A-CDM Committee to foster the implementation of A-CDM at the airports identified by the MID Air Navigation Strategy and request assistance from ICAO MID Regional Office, if needed.
- 2) Terminal congestion, particularly in adverse weather conditions, should be considered as part of the A-CDM.

- 3) Roles and responsibilities of regulators, aerodromes, air operators, ground handling agents and ATC should be clearly defined for A-CDM implementation.
- 4) ICAO to consider the above elements in drafting the A-CDM manual.

2.10 Based on the above, the MSG/5 meeting (Cairo, Egypt, 18-20 April 2016) agreed on the following Draft Conclusion:

*DRAFT CONCLUSION 5/1: ACTION PLAN FOR A-CDM IMPLEMENTATION*

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

2.11 Detailed table has been developed to monitor the implementation status of the B0-ACDM elements with guidance on the elements that need to be implemented as at **Appendix A**.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) review and update the status of implementation of the different B0-ACDM and A-SMGCS; and
- b) urge States, that have not yet done so, to develop action plan for A-CDM implementation.

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**APPENDIX A**

***B0-SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)***

**Description and purpose**

Basic A-SMGCS provides surveillance and alerting of movements of both aircraft and vehicles on the aerodrome thus improving runway/aerodrome safety. ADS-B information is used when available (ADS-B APT).

**Main performance impact:**

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
Y	Y	Y	Y	Y

***Applicability consideration:***

A-SMGCS is applicable to any aerodrome and all classes of aircraft/vehicles. Implementation is to be based on requirements stemming from individual aerodrome operational and cost-benefit assessments. ADS-B APT, when applied is an element of A-SMGCS, is designed to be applied at aerodromes with medium traffic complexity, having up to two active runways at a time and the runway width of minimum 45 m.

<b><i>B0-SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)</i></b>			
<b>Elements</b>	<b>Applicability</b>	<b>Performance Indicators/Supporting Metrics</b>	<b>Targets</b>
A-SMGCS Level 1*	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEDF, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented A-SMGCS Level 1  Supporting Metric: Number of applicable international aerodromes having implemented A-SMGCS Level 1	70% by Dec. 2017
A-SMGCS Level 2*	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented A-SMGCS Level 2  Supporting Metric: Number of applicable international aerodromes having implemented A-SMGCS Level 2	50% by Dec. 2017

\*Reference: Eurocontrol Document – “Definition of A-SMGCS Implementation Levels, Edition 1.2, 2010”.

**TABLE B0-SURF (A-SMGCS Level 1-2)**

**EXPLANATION OF THE TABLE**

Column

- 1 Name of the State
- 2 Name of City/Aerodrome and Location Indicator
- 3 Status of implementation of A-SMGCS Level 1, where:  
 Y – Yes, implemented  
 N – No, not implemented
- 4 Status of implementation of A-SMGCS Level 2, where:  
 Y – Yes, implemented  
 N – No, not implemented
- 5 Action plan — short description of the State’s Action Plan with regard to the implementation of A-SMGCS Level 1-2, especially for items with “N”.
- 6 Remarks

State	City/ Aerodrome Location Indicator	Level 1	Level 2	Action Plan	Remarks
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
BAHRAIN	Bahrain/Bahrain Intl (OBBI)	N	N	A-SMGCS Level 1-2 Project is under Execution phase. expected completion on Dec 2015	
EGYPT	Cairo/Cairo Intl (HECA)	Y	Y		
IRAN	Tehran/Mehrabad Intl (OIII)	N	N		
KUWAIT	Kuwait/Kuwait Intl (OKBK)	N	N		
OMAN	Muscat/Muscat Intl (OOMS)	N	N		
QATAR	Doha/Doha Intl (OTBD)	Y	Y		
	Doha/Hamad Intl (OTHH)	Y	Y		
SAUDI ARABIA	Dammam/King Fahad Intl (OEDF)	N	N		
	JEDDAH/King Abdulaziz Intl (OEJN)	N	N		
	RIYADH/King Khalid Intl (OERK)	N	N		
UAE	Abu Dhabi/Abu Dhabi Intl (OMAA)	Y	Y	Level 4 2017	
	Dubai/Dubai Intl (OMDB)	Y	Y	Level 4 2016	
	DUBAI/AI Maktoum Intl (OMDW)	Y	N	Level 4 2018	
<b>Total Percentage</b>		<b>46%</b>	<b>46%</b>		

***B0 – ACDM: Improved Airport Operations through Airport-CDM***

**Description and purpose**

To implement collaborative applications that will allow the sharing of surface operations data among the different stakeholders on the airport. This will improve surface traffic management reducing delays on movement and manoeuvring areas and enhance safety, efficiency and situational awareness.

**Main performance impact:**

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N	Y	Y	Y	N

***Applicability consideration:***

Local for equipped/capable fleets and already established airport surface infrastructure.

***B0 – ACDM: Improved Airport Operations through Airport-CDM***

<i>Elements</i>	<i>Applicability</i>	<i>Performance Indicators/Supporting Metrics</i>	<i>Targets</i>
A-CDM	OBBI, HECA, OIII, OKBK, OOMS, OTBD, OTHH, OEJN, OERK, OMDB, OMAA, OMDW	Indicator: % of applicable international aerodromes having implemented improved airport operations through airport-CDM  Supporting metric: Number of applicable international aerodromes having implemented improved airport operations through airport-CDM	40% by Dec. 2017

**TABLE B0-ACDM**

**EXPLANATION OF THE TABLE**

Column

- 1 Name of the State
- 2 Name of City/Aerodrome and Location Indicator
- 3 Status of implementation of Apron Management, where:  
 Y – Yes, implemented  
 N – No, not implemented
- 4 Status of implementation of ATM-Aerodrome coordination, where:  
 Y – Yes, implemented  
 N – No, not implemented
- 5 Terminal & runway capacity is declared, where:  
 Y – Yes, declared  
 N – No, not declared
- 6 Action plan — short description of the State’s Action Plan with regard to the implementation of B0-ACDM.
- 7 Remarks

<b>State</b>	<b>City/ Aerodrome Location Indicator</b>	<b>Apron Management</b>	<b>ATM-Aerodrome Coordination</b>	<b>Terminal &amp;runway capacity declared</b>	<b>Action Plan</b>	<b>Remarks</b>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
BAHRAIN	Bahrain/Bahrain Intl (OBBI)	N	N	N	2018	
EGYPT	Cairo/Cairo Intl (HECA)	N	N	N		
IRAN	Tehran/Mehrabad Intl (OIII)	N	N	N		
KUWAIT	Kuwait/Kuwait Intl (OKBK)	N	N	N		
OMAN	Muscat/Muscat Intl (OOMS)	N	N	N		
QATAR	Doha/Doha Intl (OTBD)	N	N	N		
	Doha/Hamad Intl (OTHH)	N	N	N		
SAUDI ARABIA	Jeddah/King Abdulaziz Intl (OEJN)	N	N	N		
	Riyadh/King Khalid Intl (OERK)	N	N	N		
UAE	Abu Dhabi/Abu Dhabi Intl (OMAA)	N	N	N	2017	
	Dubai/Dubai Intl (OMDB)	N	N	N	2016	
	Dubai/Al Maktoum Intl (OMDW)	N	N	N	2017	
<b>Total Percentage</b>		<b>0</b>	<b>0</b>	<b>0</b>		