



International Civil Aviation Organization

**Aerodrome Certification Implementation Task Force
(ADCI TF/1)**

**First Meeting
(Cairo, Egypt, 15 - 17 October 2012)**

Agenda Item 4: Certification Process and Implementation Issues

**REVIEW AND UPDATE THE MID REGION PERFORMANCE OBJECTIVES
RELEVANT TO THE AERODROMES CERTIFICATION**

(Presented by the Secretariat)

SUMMARY

This paper presents an update on the monitoring of the MID Region Performance Metrics and associated global developments in the aerodrome Operation field. The paper calls also for the review and update of the MID Region Regional Performance Framework Forms (PFFs) related to the aerodrome certification.

Action by the meeting is at paragraph 3.

REFERENCES

- AOP SG/8
- MIDANPIRG/13

1. INTRODUCTION

1.1 The Performance-Based Approach (PBA) adheres to strong focus on results through adoption of performance objectives and targets; collaborative decision making driven by the results; and reliance on facts and data for decision making. The assessment of achievements is periodically checked through a performance review, which in turn requires adequate performance measurement and data collection capabilities. In this regard, one of the key aspects of the performance based approach to air navigation planning is the development of performance objectives with related measurable indicators and metrics.

1.2 The State or Region that has adopted a PBA, must acknowledge the following requirements: commitment (at the top); agreement on goals (desired results); responsibility (who is accountable); human resources and know-how (culture and skills); data collection, processing, storage and reporting; collaboration and coordination (with other partners) and cost implication (what does it cost).

1.3 Following the adoption of performance-based approach by all PIRGs in 2008, the next step is performance monitoring through an established measurement strategy. While PIRGs are progressively identifying a set of regional performance metrics, States in the meantime have recognized that data collection, processing, storage and reporting for the identified regional performance metrics are fundamental to the success of performance based approach.

1.4 Transition to a Performance Based Air Navigation Planning:

- *Basis:* The notion of a performance based air navigation system emanated from good industry practices that have emerged over many years. As the aviation industry evolved into a less regulated and more corporatized environment with greater accountabilities, the advantages of transitioning from systems based to performance-based planning are apparent.
- *Principles:* The Performance-based Approach (PBA) adheres to the following principles: strong focus on results through adoption of performance objectives and targets; collaborative decision making driven by the results; and reliance on facts and data for decision making. In PBA methodology, the assessment of achievements is periodically checked through a performance review, which in turn requires adequate performance measurement and data collection capabilities.
- *Advantages:* The advantages of PBA methodology include: result oriented, transparent and promotes accountability; shift from prescribing solutions to specifying desired performance; employs quantitative and qualitative methods; avoids a technology driven approach; helps decision makers to set priorities, makes the most appropriate trade-offs, and allows optimum resource allocation.
- *Guidance:* To facilitate the realization of a performance based Global ATM system, ICAO has made significant progress in the development of relevant guidance material.

2. DISCUSSION

2.1 The meeting may wish to recall that, ICAO in 2008 completed the development of relevant guidance material so as to facilitate the realization of a performance based global air navigation system. Following the adoption of the performance-based approach to air navigation planning and implementation, all PIRGs in different regions have been working on the performance monitoring through an established measurement strategy. In this respect, it was noted that PIRGs have identified different sets of regional performance metrics, and recognized that data collection, processing, storage and reporting for the identified regional performance metrics are fundamental to the success of performance based approach.

2.2 In connection with the above, the meeting recalled that 8 performance Metrics have been endorsed by MIDANPIRG/12, through Conclusion 12/47, for performance monitoring of the air navigation systems in the MID Region as follows:

CONCLUSION 12/47: MID REGION PERFORMANCE METRICS

That,

- a) *the following MID Region Metrics be adopted for performance monitoring of the air navigation systems:*

MID Metric 1: Number of accidents per 1,000 000 departures;

- MID Metric 2:** *Percentage of certified international aerodromes;*
- MID Metric 3:** *Number of Runway incursions and excursions per year;*
- MID Metric 4:** *Number of States reporting necessary data to the MIDRMA on regular basis and in a timely manner;*
- MID Metric 5:** *The overall collision risk in MID RVSM airspace;*
- MID Metric 6:** *Percentage of air navigation deficiencies priority “U” eliminated;*
- MID Metric 7:** *Percentage of instrument Runway ends with RNP/RNAV approach procedure; and*
- MID Metric 8:** *Percentage of en-route PBN routes implemented in accordance with the regional PBN plan.*

- b) *the MIDANPIRG subsidiary bodies monitor the Metrics related to their work programmes; develop associated performance targets and provide feed-back to MIDANPIRG.*

2.3 The Thirteenth Meeting of Air Navigation Planning and Implementation Regional Group (MIDANPIRG/13) held in Abu Dhabi, UAE, 22-26 April 2012 reviewed the eight (8) MID Region Performance Metrics and agreed to the following:

- **MID Metric 1** *(Number of accidents per 1,000 000 departures) should be the responsibility of the MID Region Aviation Safety Group (RASG-MID);*
- **MID Metric 2** *(Percentage of certified international aerodromes) and Metric 3 (Number of Runway incursions and excursions per year) are to be monitored by the AOP Sub-Group giving that States provide the ICAO MID Regional Office necessary data on the certified international aerodromes and number of runway incursions and excursions;*
- **MID Metric 4** *(Number of States reporting necessary data to the MIDRMA on regular basis and in a timely manner) and Metric 5 (The overall collision risk in MID RVSM airspace) are to be monitored by the MIDRMA Board and the ATM/AIM/SAR Sub-Group, giving that States provide the MIDRMA with the necessary data on a regular basis and in a timely manner;*
- **MID Metric 6** *(Percentage of air navigation deficiencies priority “U” eliminated) is to be processed by the ICAO MID Regional Office, using the MID Air Navigation Deficiency Database (MANDD) and the outcome of all the MIDANPIRG Subsidiary bodies related to air navigation deficiencies; and*
- **MID Metric 7** *(Percentage of instrument Runway ends with RNP/RNAV approach procedure) and Metric 8 (Percentage of en-route PBN routes implemented in accordance with the regional PBN plan) are to be monitored by the PBN/GNSS Task Force, giving that States provide the ICAO MID Regional Office necessary data.*

2.4 In accordance with MIDANPIRG/11 Conclusion 11/71 – “National Performance Framework” and MIDANPIRG/12 Conclusion 12/48, the meeting urged States to develop/update their National Performance Framework. It was clarified that the National Performance Framework, includes, inter-alia, the following:

- identification of the national objectives with measurable indicators and metrics, which support the regional objectives identified in the Regional PFFs;
- allocation of resources for the achievement of the agreed objectives, based on cost-benefit analysis;
- development of the National PFFs; and
- development of necessary procedures related to the collection and reporting of necessary data, performance measurement, human resources (training), coordination (internally and with neighbouring States, as appropriate), etc.

2.5 The MIDANPIRG/13 meeting reviewed the Regional PFFs related to AGA, as at **Appendix A** to this working paper as developed and updated by the AOP SG/8 meeting. Aerodromes Certification represents the major part of the Aerodromes Performance Objectives. It was underlined that the Regional PFFs should be further reviewed to evolve to the newly designed Air Navigation Report Forms (ANRF), taking into consideration the global developments and the users’ needs and expectations.

2.6 The meeting may wish to recall that with regard to the development of performance targets, the MIDANPIRG/13 meeting agreed to the following:

- Performance Target associated with **MID Metric 2**: Minimum **50%** of the international aerodromes should be certified;
- Performance Target associated with **MID Metric 3**:
 - number of Runway incursions-related accident or serious incident: max 1 per year; and
 - number of Runway excursions-related accident or serious incident: max 2 per year.
- Performance Target associated with the MID Metric 6: elimination of **10%** of the deficiencies priority “U”;

2.7 Based on the above, MIDANPIRG/13 Meeting agreed to the following Conclusion to replace and supersede the MIDANPIRG/12 Conclusion 12/48:

CONCLUSION 13/30: NATIONAL PERFORMANCE FRAMEWORK

That, States be urged to:

- a) develop, update and/or complete their National Performance Framework, including the National Performance Framework Forms (PFFs), ensuring the alignment with and support to the regional performance objectives;*
- b) incorporate the agreed MID Region Performance Metrics into their National performance monitoring process; and*

- c) report relevant data necessary for performance monitoring of the air navigation systems to the ICAO MID Regional Office, on a regular basis, with a view to update the Regional PFFs and monitor the MID Region Performance Metrics.*

2.8 Based on the above; the meeting is invited to review, amend, update as appropriate the proposal of MID Regional Performance Objectives prepared for the meeting as contained in **Appendix A** to this working paper in particular the first objective relating to the Implementation of Aerodrome Certification.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) take note of MIDANPIRG Conclusions regarding Performance Metrics and targets as indicated above;
- b) review the PFF related to “Aerodromes Performance Objectives” as contained in **Appendix A** to this working paper and suggest necessary amendment and updates taking into consideration the global developments and the users’ needs and expectations; and
- c) encourage MID States to establish a performance based approach for their aerodrome certification implementation and develop performance objectives with measurable indicators and metrics.

APPENDIX A

MIDANPIRG/13-REPORT
APPENDIX 4.5A

MIDANPIRG/13
Appendix 4.5A to the Report on Agenda Item 4.5

**MID REGIONAL PERFORMANCE OBJECTIVES
AERODROMES PERFORMANCE OBJECTIVES**

AERODROME CERTIFICATION	
Benefits	
Safety	<ul style="list-style-type: none"> Improved safety of aerodromes operation Reduced number of incident/accident. Safety level improved
Environment	<ul style="list-style-type: none"> Reduced emissions through effective aerodrome operation.
Capacity	<ul style="list-style-type: none"> Increased capacity through better planning and operation
Efficiency	<ul style="list-style-type: none"> Improved aerodrome capacity and level of service.
Performance Measurement	
Performance Metrics:	<ul style="list-style-type: none"> Number of States having fully implemented certification of aerodromes. Number of certified aerodromes Number of deficiency related to the aerodromes field Number of States having implemented QMS Number of runway incursion/excursion. Number for adequate aerodromes for NLA operation.

Strategy					
ATM Operational Concept Components	Projects/Tasks	Linkage to ASBU Module	Timeframe Start/End	Responsibility	Status
AO (Aerodrome operations), CM (Conflict management) DCB (Demand and capacity balancing) AUO (Airspace user operation)	<ul style="list-style-type: none"> Establish a regulatory framework specifying the requirement for aerodrome Certification. 	B0-65	2013	States	valid
	<ul style="list-style-type: none"> Establish a regulatory authority 	B0-65	2014	States	valid
	<ul style="list-style-type: none"> Develop and maintain aerodrome certification regulations & standards 	B0-65	ongoing	States	valid
	<ul style="list-style-type: none"> Facilitate the implementation of aerodrome certification by conducting courses and technical support. 	B0-30	2013	ICAO & AOP	valid
	<ul style="list-style-type: none"> monitor the implementation of aerodrome certification by all MID States 	B0-80	Ongoing	ICAO & AOP	valid

<i>Strategy</i>					
ATM Operational Concept Components	Projects/Tasks	<i>Linkage to ASBU Module</i>	Timeframe Start/End	Responsibility	Status
	<ul style="list-style-type: none"> review and update the deficiencies in the aerodrome field and provide necessary guidance for their elimination 	B0-80	Ongoing	ICAO & AOP	valid
	<ul style="list-style-type: none"> ensure promulgation of information on status of certification of aerodromes in the State AIP 	B0-30	Ongoing	States	valid
	SMS AT CERTIFIED AERODROMES				
	<ul style="list-style-type: none"> Facilitate the implementation of SMS by conduct of courses and guidance materials. 	B0-75	Ongoing	ICAO & AOP	valid
	<ul style="list-style-type: none"> establishment of a requirement for SMS to be part of aerodrome certification 	B0-75	2013	States	valid
	<ul style="list-style-type: none"> implementation of SMS 	B0-75 B1-80	Ongoing	States	valid
	<ul style="list-style-type: none"> Develop action plan on safety targets and hazard reporting 	B0-75	2011-2016	States	valid
	<ul style="list-style-type: none"> Surveillance, internal audit and Safety Oversight Programmes 	B0-75	Ongoing	ICAO & States	valid
	<ul style="list-style-type: none"> implementation of digital data exchange with originators 	B0-30	2013-2018	States	valid
	<ul style="list-style-type: none"> foster the integrated improvement of AIS/AIM through proper training and qualification of the AIS/AIM personnel in the MID Region and certification of the AIM Services 	B0-30	2011-2016	ICAO & AIM TF & States	valid

4.5A-3

<i>Strategy</i>					
ATM Operational Concept Components	Projects/Tasks	<i>Linkage to ASBU Module</i>	Timeframe Start/End	Responsibility	Status
	AERODROME EMERGENCY PLANNING				
	<ul style="list-style-type: none"> conduct a survey to assess the level of implementation on aerodrome emergency planning 	B0-80	2011-2012	ICAO	valid
	<ul style="list-style-type: none"> Establish a requirement of aerodrome emergency planning 	B0-80	2013	States	valid
	<ul style="list-style-type: none"> development of aerodrome emergency planning document 	B0-80	2013	States	valid
	<ul style="list-style-type: none"> Conduct full scale aerodrome emergency exercise at intervals not exceeding two years 	B0-75 B0-80	Ongoing	States	valid
	<ul style="list-style-type: none"> Conduct partial emergency exercise in the intervening year to ensure that deficiencies found during the full scale exercise have been corrected. 	B0-75 B0-80	Ongoing	States	valid
	<ul style="list-style-type: none"> Facilitate the implementation of aerodrome emergency planning by conduct of courses and guidance materials 	B0-80	2012-2016	ICAO & AOP SG	valid
Linkage to GPIs	GPI-5: Performance-based navigation GPI-13: Aerodrome design and management GPI-14: Runway operations GPI-18: Aeronautical Information				

**MID REGIONAL PERFORMANCE OBJECTIVES
AERODROMES PERFORMANCE OBJECTIVES**

RUNWAY SAFETY PROGRAMME	
Benefits	
Safety	<ul style="list-style-type: none"> • Improved safety of runway operation • Reduced number of incident/accident. • Safety level improved
Environment	<ul style="list-style-type: none"> • Reduced emissions through effective aerodrome operation.
Capacity	<ul style="list-style-type: none"> • Increased capacity through better planning and operation
Efficiency	<ul style="list-style-type: none"> • Improved aerodrome capacity and level of service.
Performance Measurement	
Performance Metrics:	<ul style="list-style-type: none"> • Number of runway incursions per year. • Number of runway excursions per year. • Number of accident per 100,00 departures.

Strategy					
ATM Operational Concept Components	Projects/Tasks	Linkage to ASBU Module	Timeframe Start/End	Responsibility	Status
AO (Aerodrome operations), CM (Conflict management) DCB (Demand and capacity balancing) AUO (Airspace user operation)	<ul style="list-style-type: none"> • Facilitate the implementation of runway safety programme by conducting seminars and workshops.. 	B0-75	2013	ICAO & Partners	valid
	<ul style="list-style-type: none"> • Establish a Runway safety Team 	B0-75	2014	Sates	valid
	Runway Incursion Prevention				valid
	<ul style="list-style-type: none"> • establish Runway Incursion Prevention programme, identify its goals as part of the national Runway Safety programme and monitor implementation plan 	B0-75	2014	Sates	valid
	<ul style="list-style-type: none"> • implement, where warranted, precise surface movement guidance to and from a runway to improve capacity, safety and efficiency 	B0-75	2015	States	valid
	<ul style="list-style-type: none"> • develop, at aerodromes a positioning system for all vehicles and aircrafts operating on the movement area on a cost-benefit basis 	B0-75	2013 – 2016	States & AOP SG	valid

4.5A-5

<i>Strategy</i>					
ATM Operational Concept Components	Projects/Tasks	<i>Linkage to ASBU Module</i>	Timeframe Start/End	Responsibility	Status
	<ul style="list-style-type: none"> implement procedures and technologies to enhance the performance of runway operations and optimize runway capacity 	B0-75	2013 – 2016	States & AOP SG	valid
	<ul style="list-style-type: none"> Runway Excursion Prevention 				
	<ul style="list-style-type: none"> establish collaborative bodies with ATM, aircraft operators and aerodrome operators for implementing plans aimed at prevention of runway excursions 	B0-75	2012 – 2016	States	valid
	<ul style="list-style-type: none"> harmonize, coordinate and support the Runway Excursion Prevention measures and implementation activities on a regional basis 	B0-75	2012 – 2017	ICAO, States & AOP SG	valid
	<ul style="list-style-type: none"> develop and implement an integrated maintenance programme at aerodromes that includes pavement and visual aids 	B0-75	2010-2016	States & AOP SG	valid
	<ul style="list-style-type: none"> implement and monitor Runway End Safety Area (RESA) requirements at aerodromes 	B0-75	Ongoing	ICAO, States & AOP SG	valid
	<ul style="list-style-type: none"> monitor and ensure meeting Runway strip characteristics. 	B0-75	Ongoing	States & AOP SG	valid
	<ul style="list-style-type: none"> develop measures and ensure inspection of the movement area including control of Foreign Object Debris (FOD) 	B0-75	Ongoing	States & AOP SG	valid
	<ul style="list-style-type: none"> provision of enhanced visual aids and markings on runway and movement area. 	B0-75	2014	States	valid
	<ul style="list-style-type: none"> monitor and ensure meeting Runway strip frangibility requirements 	B0-75	Ongoing	States & AOP SG	valid

<i>Strategy</i>					
ATM Operational Concept Components	Projects/Tasks	Linkage to ASBU Module	Timeframe Start/End	Responsibility	Status
	Runway Pavement Maintenance				
	<ul style="list-style-type: none"> promote the awareness about the requirements for the provision of Pavement Maintenance in the movement area 	B0-75	ongoing	ICAO & AOP SG	valid
	<ul style="list-style-type: none"> develop and implement a runway maintenance programme 	B0-75	2012-2014	States & AOP SG	valid
	<ul style="list-style-type: none"> harmonize, coordinate and support the Runway pavement maintenance guidance for implementation activities on a regional basis 	B0-75	201-2015	ICAO & AOP SG	valid
	<ul style="list-style-type: none"> Seminar on runway surface friction measurement 	B0-75	2014	ICAO	valid
	<ul style="list-style-type: none"> measurement and reporting of friction characteristics of wet paved runways. 	B0-75	201-2015	Sates	valid
	<ul style="list-style-type: none"> Availability of a friction measurement equipment 	B0-75	2012-2014	States	valid
	<ul style="list-style-type: none"> establishment of maintenance friction level below which corrective action should be initiated. 	B0-75	2012-2014	States & AOP SG	valid
	<ul style="list-style-type: none"> identify minimum friction level below which information that a runway may be slippery when wet should be made available 	B0-75	2012-2014	States & AOP SG	valid
	<ul style="list-style-type: none"> monitor the removal of runway contaminants in particular; rubber deposits and accumulated sand 	B0-75	Ongoing	States & AOP SG	valid
	<ul style="list-style-type: none"> monitor implementation of the requirements for measurement and reporting of the friction characteristics and carrying out appropriate corrective maintenance in accordance with defined maintenance performance level 	B0-75	Ongoing	ICAO, States & AOP SG	valid
Linkage to GPIs	GPI/6 Air traffic flow management GPI/9 Situational awareness GPI/13 Aerodrome design and management GPI/14 Runway operations GPI/15 Match IMC and VMC operating capacity GPI/18 Aeronautical information				

**MID REGIONAL PERFORMANCE OBJECTIVES
AERODROMES PERFORMANCE OBJECTIVES**

AERODROME SAFETY	
Benefits	
Safety	<ul style="list-style-type: none"> • Improved safety of aerodromes operation • Reduced number of incident/accident. • Safety level improved
Environment	<ul style="list-style-type: none"> • Reduced emissions through effective aerodrome operation. • Reduced aircraft noise impact on residential and commercial areas around the aerodrome
Capacity	<ul style="list-style-type: none"> • Increased capacity through better planning and operation
Efficiency	<ul style="list-style-type: none"> • Improved aerodrome capacity and level of service.
Performance Measurement	
Performance Metrics:	<ul style="list-style-type: none"> • Number of obstacles penetrating obstacle limitation surface. • Number of certified aerodromes • Number of deficiency related to the aerodromes field • Number of runway incursion/excursion.

<i>Strategy</i>					
ATM Operational Concept Components	Projects/Tasks	<i>Linkage to ASBU Module</i>	Timeframe Start/End	Responsibility	Status
AO (Aerodrome operations), CM (Conflict management) DCB (Demand and capacity balancing) AUO (Airspace user operation)	<ul style="list-style-type: none"> • OBSTACLE LIMILTATION 				
	<ul style="list-style-type: none"> • Establish a regulatory framework on Obstacle Limitation Surfaces (OLS) around the aerodrome 	B0-65	2014	States	valid
	<ul style="list-style-type: none"> • Monitor the height of buildings or structures within the boundaries of OLS 	B0-65	ongoing	States	valid
	<ul style="list-style-type: none"> • WILDLIFE HAZARD CONTROL 				
	<ul style="list-style-type: none"> • survey and collect information on state's practice with respect to airport wild life control 	B0-80	2013	ICAO	valid
	<ul style="list-style-type: none"> • establishment of national bird control committee. 	B0-80	2013	States	valid
	<ul style="list-style-type: none"> • organize a seminar on wildlife hazard reporting, assessment and reduction. 	B0-80	2013	ICAO & AOP	valid
	<ul style="list-style-type: none"> • landuse management inside and in the vicinity of aerodrome. 	B0-30	Ongoing	States	valid
<ul style="list-style-type: none"> • establishment of a national procedure for recording and reporting wildlife strikes to aircraft. 	B0-75	2013	States	valid	

<i>Strategy</i>					
ATM Operational Concept Components	Projects/Tasks	<i>Linkage to ASBU Module</i>	Timeframe Start/End	Responsibility	Status
	<ul style="list-style-type: none"> collect wildlife strike reports and forward to ICAO for inclusion in the ICAO IBIS database. 	B0-75	Ongoing	States	valid
Linkage to GPIs	GPI-5: Performance-based navigation GPI-13: Aerodrome design and management GPI-14: Runway operations GPI-18: Aeronautical Information				

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