International Civil Aviation Organization

Aerodrome Operational Planning Sub-Group (AOP SG)

Eighth Meeting
(Cairo, 13 – 15 February 2012)

Agenda Item 9: MID Region Aerodromes Performance Objectives

REVIEW AND UPDATE THE MID REGION PERFORMANCE OBJECTIVES RELEVANT TO THE AERODROMES FIELD

(Presented by the Secretariat)

SUMMARY

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. This paper proposes a set of key performance areas and associated metrics to be used as the basis for performance measurement of the MID Regional Air Navigation Work Programme in the aerodrome field.

Action by the meeting is at paragraph 3.

REFERENCES

- Doc. 9854 - *Global Air Traffic Management Operational Concept*
- Doc. 9750 - *Global Air Navigation Plan*
- Doc. 9883 - *Manual on Global Performance of the Air Navigation System*
- MIDANPIRG/12

1. INTRODUCTION

1.1 ***Air Navigation Planning Process***: The ICAO planning objective is to achieve a Performance Based Global Air Traffic Management (ATM) system through the implementation of Air Navigation Systems and Procedures in a progressive, cost-effective and cooperative manner. The Regional planning and implementation process is the principal engine of ICAO planning framework.

1.2 ***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

Air Navigation Performance Monitoring and Measurement

2.1 *Data management*: Data collection, processing, storage and reporting are fundamental to the performance-based approach and form part of performance monitoring and management. It should not be assumed that all data which is needed is simply available "somewhere" and only needs to be copied. Establishing a data reporting chain usually involves participation from many ATM community members. Their willingness to participate requires the establishment of a performance data reporting culture, a capability to successfully manage disclosure and confidentiality aspects, and deciding on a case-by-case basis which approach works best: mandatory or voluntary reporting. In the end, data will be condensed into a few indicators which represent the high level knowledge about the performance of the system.

2.2 *Terminology*: It is essential to use harmonized terminology in applying performance based approach to planning and implementation of Air Navigation Systems. For performance measurement, three basic terms are explained:

a) *Performance Indicator:* Current/past performance, expected future performance as well as actual progress in achieving performance objectives is quantitatively expressed by means of performance indicators (sometimes called Key Performance Indicators, or KPIs). To be relevant, indicators need to correctly express the intention of the associated performance objective. Since indicators support objectives, they should not be defined without having a specific performance objective in mind. These performance indicators are not often directly measured. They are calculated from supporting metrics according to clearly defined formulas, e.g. cost-per-flight-indicator=Sum (cost)/ Sum(flights).

b) *Performance target*: Performance targets are closely associated with performance indicators: they represent the values of performance indicators that need to be reached or exceeded to consider a performance objective as being fully achieved.

c) *Metrics:* Performance measurement is done through the collection of data for the supporting metrics (e.g. this leads to a requirement for cost data collection and flight data collection). Supporting metrics fulfil three functions. They form a basis for assessing and monitoring the provision of ATM (aerodrome) services, they define what ATM (aerodrome) services user value and they can provide common criteria for cost benefit analysis for air navigation systems development. These metrics are used to calculate the values of performance indicators. In other words, metrics are quantitative measure of system performance – how well the system is functioning.

d) **Appendix A** to this working paper contains MIDANPIRG Conclusions 12/47 & 12/48 on MID Regional Performance Metrics and Data Collection for MID Region Performance Metrics.

Choosing Metrics for the MID Region

2.3 *Methodology*: The increased demand for ATS services has begun to focus attention on the performance rather than capabilities of technologies. As the investment decisions required for providing ATM services become more complex, the need for well defined metrics for ATM systems performance increases.

2.4 *Metrics:* The Performance Monitoring and Measurement of ATM systems calls for metrics in area that envelopes access, capacity, cost effectiveness, efficiency, environment, flexibility, predictability and safety. On the basis of the Global ATM Operational Concept and the Manual on Performance of the Global Air Navigation System, a sample set of metrics is listed in **Appendix B** to this working paper. It should be noted that the list in Appendix B hereto is not exhaustive. The MID Region, on the basis of its experience, could determine the appropriate metrics applicable to its situation. Agreement on the metrics would necessitate common definitions and understanding.

2.5 *ICAO Statistics Programme*: It is noteworthy that the data needed for some of the metrics (e.g. fuel consumption or aircraft movements) listed in **Appendix B** to this working paper, are in the final phase of being officially collected from the Contracting States, in the context of the ICAO Statistics Programme, managed by the Economic Analyses and Databases (EAD) Section at ICAO Headquarters, Montreal.

2.6 The meeting may wish to recall the MIDANPIRG/11 Conclusion 11/70 and Conclusion 11/71 and the outcome of MIDANPIRG 12 in which an agreement to the following set of Aerodrome Performance Metrics proposed by the AOP SG/7 meeting, which are in line with the MID Regional Aerodrome Performance Objectives need further updates:

a) *MID AOP Metric 1:* *Number of certified international aerodromes;*

b) *MID AOP Metric 2:* *Number of Runway incursions and excursions per year;*

c) *MID AOP Metric 3:* *Number of air navigation deficiencies in the aerodrome area of priority "A" eliminated; and*

d) *MID AOP Metric 4:* *Number of Aerodromes that are ready to accommodate NLA operations.*

Conclusion

2.7 *Evolutionary approach:* The global ATM system will emerge through the implementation of many initiatives over several years on an evolutionary basis. At first, the planning and implementation activities begin with application of available procedures, processes and capabilities. The evolution progresses to the application of emerging procedures, processes and capabilities and ultimately, migrates to the ATM system based on the operational concept.

2.8 *Recommendation*: Taking into account the need of counting with a clearly defined strategy for the implementation of the ATM systems, as well as the need to align the work programmes of States, regions and ICAO Headquarters, MID States should adopt a national performance framework on the basis of ICAO guidance material, and guarantee its alignment with regional performance objectives, the regional air navigation plan, and the global ATM operational concept.

2.9 In addition, the meeting may wish to review, amend, update as appropriate the proposal of MID Regional Performance Objectives prepared for the meeting as contained in **Appendix B** to this working paper as an example: The first objective relates to the Implementation of Aerodrome Certification and the second refers to the Elimination of Identified Deficiencies, such as Safety of Runway Operations, Aerodrome Emergency Planning. For this AOP SG/8 Meeting it is proposed a Regional Performance Objective: Enhance aerodrome capacity, which contains several relevant projects for consideration and approval by the meeting.

2.10 Based on the above; the meeting is invited to review and update the regional key performance areas in the aerodrome field including access, capacity, cost effectiveness, efficiency, environment, flexibility, predictability and safety in the aerodrome field.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) take note of the information presented regarding the Global Air Navigation Plan and endorsed MID Regional Performance Objectives for the Aerodrome field;

b) take note of MIDANPIRG Conclusions regarding Performance Metrics and Data Collection contained at **Appendix A** to this working paper;

c) review, amend and agree on the set of metrics as in 2.6 for the MID Region for performance monitoring of the air navigation systems in the aerodrome field;

d) review and update the **Regional** work programme in the aerodrome field, on the basis of the Global Air Navigation Plan, following performance objectives taking into account the forms referred to Regional Performance Framework included in **Appendix B** to this working paper;

e) encourage MID States to establish a performance based approach for their **National** aerodrome planning and implementation and develop performance objectives with related measurable indicators and metrics; and

f) to agree to the following Draft Conclusions:

DRAFT CONCLUSION 8/X: UPDATE OF REGIONAL PERFORMANCE OBJECTIVES AND ESTABLISHMENT OF RELATED MEASURABLE INDICATORS, TARGETS AND METRICS IN THE AERODROME FIELD

That, States be urged to update the Regional Performance Objectives and Establishment of Related Measurable Indicators, Targets and Metrics in the Aerodrome Field.

APPENDIX A

PERFORMANCE PLANNING FRAMEWORK

RELEVANT MIDANPIRG/12 CONCLUSIONS AND APPENDIX 5.5O
TO THE REPORT OF MIDANPIRG/12 ON AGENDA ITEM 5.5

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.

CONCLUSION 12/48: DATA COLLECTION FOR MID REGION PERFORMANCE METRICS

That, States be invited to:

a) incorporate the agreed MID Region Performance Metrics into their National performance monitoring process;

b) collect and process relevant data necessary for performance monitoring of the air navigation systems *to support the regional Metrics adopted by MIDANPIRG; and*

c) submit this data to the ICAO MID Regional Office on a regular basis.

MIDANPIRG/12
Appendix 5.5B to the Report on Agenda Item 5.5

PERFORMANCE FRAMEWORK

REGIONAL PERFORMANCE OBJECTIVES /NATIONAL PERFORMANCE OBJECTIVES **IMPROVEMENT OF THE QUALITY AND EFFICIENCY OF AERODROME FACILITIES, SERVICES AND ENHANCEMENT OF SAFETY OF RUNWAY OPERATIONS PROVIDED BY MID STATES**				
Benefits				
Efficiency **Safety**	• Increased capacity and enhanced efficiency of aerodrome facilities and services; • Improved safety at aerodromes operations • Reduction of runway incursions and improve safety of runway operations			
Strategy **Short term (2010)** ***Medium term (2011 - 20015)***				
ATM OC COMPONENTS	**TASKS (As part of Certification of Aerodrome process and implementation of Safety Management for aerodrome operations)**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
AO, CM, TS, AUO	• Establish collaborative bodies with ATM, aircraft operators and aerodrome operators for developing plans to increase aerodrome capacity to meet the actual air traffic or forecast demand	2008 -2010	States & AOP SG	On-going
	• Implement aerodrome ground infrastructure commensurate with operational expectations including operations of new larger aircrafts at existing aerodromes,	2008-2013	States & AOP SG	On-going
	• Implement, where warranted, precise surface guidance to and from a runway to improve capacity and efficiency,	2009-2011	States & AOP SG	On-going
	• Implement collaborative aerodrome operational procedures with ATM, ground services providers and associated operations support services	2008-2010	States & AOP SG	On-going
	• Develop, Implement and make available to ATM at aerodromes a positioning system for all vehicles and aircrafts operating on the movement area on a cost-benefit basis.	2008-2012	States & AOP SG	On-going
	• Implement procedures and technologies to enhance the performance of runway operations and optimize runway capacity	2008 - 2013	States & AOP SG	On-going
	• Establish collaborative bodies with ATM, aircraft operators and aerodrome operators for implementing plans and measures aimed at prevention of runway incursion	2008-2013		
	• Develop and implement a runway physical characteristics maintenance programme	208-2010		
	• Implement safety management system for aerodrome operations	2008-2013	States & AOP SG	On-going
linkage to GPIs	GPI/13: Aerodrome design and management, GPI/14: Runway operations, GPI/21: Navigation Systems			

MID REGIONAL PERFORMANCE OBJECTIVES
AERODROMES PERFORMANCE OBJECTIVES

IMPLEMENTATION OF CERTIFICATION OF AERODROMES	
Benefits	
Environment	• enhanced Land-use management around aerodromes • reduction in aircraft noise and emission impact
Efficiency	• enhance safety, access, efficiency and capacity of aerodrome operations in the States • uniform implementation of ICAO SARPS in the MID States • efficient use of aerodrome resources • reduction in delays • maximize aerodrome capacity in all weather conditions
Safety	• safely manoeuvre in all weather conditions • reduced wild life/bird strikes hazards • reduced incident/accident factors • reduced number of deficiencies • increased runway usability factors • improved safety of aerodromes operations • decreased number of accidents & serious incidents occurred during aircraft movements to/from aerodromes
KPI	• status of implementation of certification of aerodromes • status of implementation of SSP & SMS for aerodrome • status of planning for aerodrome emergencies and testing their effectiveness • status of readiness to accommodate NLs operations at aerodromes
Proposed Metrics:	• number of certified aerodromes used for international operations • number of resolved Air Navigation deficiencies identified in the area of aerodrome operations • number of accidents & serious incidents per 100000 aircraft movements to/from aerodromes • number of adequate aerodromes for NLAs operations • number of peoples in and around aerodromes affected by aircraft operations

Strategy
Short term (2010-2012)
Medium term (2013 - 2016)

ATM OC COMPONENTS	**TASKS (As part of Certification of Aerodrome process and implementation of Safety Management for aerodrome operations)**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
AO, CM, DCB, ATM SDM	**Certification of aerodromes**			
	• establish collaborative bodies with ATM, aircraft operators and aerodrome operators for developing national plans to increase aerodrome capacity aimed at meeting actual air traffic and/or forecast demand	2010 - 2012	States & AOP SG	valid

Strategy ***Short term (2010-2012)*** ***Medium term (2013 - 2016)***				
ATM OC COMPONENTS	**TASKS (As part of Certification of Aerodrome process and implementation of Safety Management for aerodrome operations)**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
	• implement aerodrome ground infrastructure commensurate with operational expectations including operations of new larger aircrafts at existing aerodromes	2010 - 2015	States & AOP SG	valid
	• implement collaborative aerodrome operational procedures with ATM, ground services providers and associated operations support services	2010 - 2013	States & AOP SG	valid
	• monitor and ensure promulgation of national standards for aerodromes including certification of aerodromes requirement in accordance with established criteria and certification process	2010-2011	ICAO, States & AOP SG	valid
	• ensure that national requirements for aerodrome includes enforcement provisions for unresolved non-compliances in a timely manner	2010-2013	ICAO, States & AOP SG	valid
	• monitor and ensure clear separation of authority between the aerodrome operation service providers (aerodrome Operators) and the State regulatory agency	2010-2011	ICAO ., States & AOP SG	valid
	• monitor and ensure establishment of an organizational structure of a separate entity within CAA with clearly defined duties and responsibilities relevant to airport certification and continuous surveillance activities, appropriate to the size and scope of aerodromes in the State and ensure having sufficient qualified human resources to carry out its functions and mandate	2008-2013	ICAO, States & AOP SG	valid
	• monitor and ensure that the certification process explicitly include coordination with elements of air traffic service (ATS) for the local airspace of an aerodrome	2010-2012	ICAO, States & AOP SG	valid
	• monitor and ensure that aerodrome certification process include procedures for dealing with a non-compliance with the established requirements, including aeronautical studies and risk assessment mechanism and notification procedure	2010-2012	ICAO, States & AOP SG	valid

Strategy ***Short term (2010-2012)*** ***Medium term (2013 - 2016)***				
ATM OC COMPONENTS	**TASKS (As part of Certification of Aerodrome process and implementation of Safety Management for aerodrome operations)**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
	• develop, review, approve and verify the content of an Aerodrome Manual for each aerodrome used for international operations	2009-2012	States	valid
	• issue/grant certification of aerodromes as required	2009-2012	States	valid
	• establish an aerodrome surveillance and safety oversight programme and develop associated implementation plans, monitor and insure that aerodromes continuo meeting certification obligations and application of enforcement provisions for non compliance in a timely manner	2009-2016	States and AOP SG	valid
	• ensure promulgation of information on status of certification of aerodromes in the State AIP	2010-2016	ICAO, States and AOP SG	valid
	• monitor and follow-up alleviating of identified aerodrome deficiencies and ensure application of enforcement provisions for unresolved non-compliances in a timely manner	2010-2016	ICAO, States and AOP SG	valid
AO, CM, AUO	**Safety Management of Aerodromes**			
	• monitor and ensure promulgation of national harmonized requirement for aerodrome safety management	2010-2016	ICAO, States and AOP SG	valid
	• establish and implement an aerodrome safety programme and define acceptable level of safety and ensure it includes a requirement for certified aerodrome operators to implement a Safety Management System (SMS) acceptable to the State	2011-2016	ICAO, States and AOP SG	valid
	• Monitor, develop and implement an SMS with agreed performance objectives for aerodrome operations and ensure it clearly define lines of safety accountability throughout a certified aerodrome including a direct accountability for safety on the part of senior management	2011-2016	ICAO, States and AOP SG	valid

Strategy ***Short term (2010-2012)*** ***Medium term (2013 - 2016)***				
ATM OC COMPONENTS	**TASKS (As part of Certification of Aerodrome process and implementation of Safety Management for aerodrome operations)**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
	• implement remedial action necessary to maintain agreed safety performance and ensure the continuous monitoring and regular assessment of the safety performance that aims at a continuous improvement of the overall performance of the safety management system. Review and assess effectiveness of mitigation measures in regular bases	2011-2016	States and AOP SG	valid
	• Implement, where warranted, precise surface movement guidance and control system integrated with the runway incursion prevention programme to improve safety, increase capacity and efficiency of runway operations	2009-2012	States & AOP SG	valid
	• Develop, Implement and make available to ATM at aerodromes a positioning system for all vehicles and aircrafts operating on the movement area on a cost-benefit basis.	2013 - 2016	States & AOP SG	valid
AO, CM	**Aerodrome Emergency Planning**			
	• Establish collaborative bodies with ATS, aircraft operators, aerodrome operators, aerodrome security agency and other agencies that might be involved in different aerodrome emergencies to develop emergency plans for each aerodrome	2010 - 2012	States & AOP SG	valid
	• Coordinate and conduct different exercises as required to assess, review and ensure proper coordination between different agencies involved in an emergency and the effectiveness of the aerodrome emergency plan observing Human Factors principles aimed at ensuring optimum response by all existing agencies participating in emergency operations	2010 - 2012	States & AOP SG	valid
	• Arrange and test where warranted, precise measures for aircraft emergencies in difficult environment in and around aerodromes	2009-2012	States & AOP SG	valid
Linkage to GPIs	GPI/13: Aerodrome design and management GPI/14: Runway operations GPI/21: Navigation Systems			

IMPLEMENTATION OF RUNWAY SAFETY PROGRAMME	
Benefits	
Environment	• Contribution to efficient environmental control
Efficiency	• efficient use of Runways • increased runway usability factors • reduced incident/accident factors • reduced number of deficiencies • minimize the effects of weather on capacity
Safety	• improve situational awareness • enhance precise surface guidance to and from a runway • improve safety of runway operations • improve safety of aerodrome operations in general
KPI	• status of implementation of Runway Safety programmes in the MID Region
Proposed Metrics:	• number of Runway incursions per year • number of Runway excursions per year • number of aircraft accidents& serious incidents per 100,000 movements

Strategy
Short term (2010-2012)
Medium term (2013 - 2016)

ATM OC COMPONENTS	TASKS	TIMEFRAME START-END	RESPONSIBILITY	STATUS
AO, CM, , DCB, ATM SDM	**Runway Incursion Prevention**			
	• establish collaborative bodies with ATM, aircraft operators and aerodrome operators for implementing plans and measures aimed at prevention of runway incursion	2010 - 2015	States & AOP SG	valid
	• establish Runway Incursion Prevention programme, identify its goals as part of the national Runway Safety programme and monitor implementation plan	2009-2010	States & AOP SG	valid
	• implement, where warranted, precise surface movement guidance to and from a runway to improve capacity, safety and efficiency	2009-2012	States & AOP SG	valid
	• develop, Implement and make available to ATM at aerodromes a positioning system for all vehicles and aircrafts operating on the movement area on a cost-benefit basis	2013 - 2016	States & AOP SG	valid

Strategy ***Short term (2010-2012)*** ***Medium term (2013 - 2016)***				
ATM OC COMPONENTS	**TASKS**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
	• implement procedures and technologies to enhance the performance of runway operations and optimize runway capacity	2013 - 2016	States & AOP SG	valid
AO, CM, , AUO, ATM SDM	• **Runway Excursion Prevention**			
	• establish collaborative bodies with ATM, aircraft operators and aerodrome operators for measures and implementing plans aimed at prevention of runway excursions	2010 - 2015	States & AOP SG	valid
	• harmonize, coordinate and support the Runway Excursion Prevention measures and implementation activities on a regional basis	2010 - 2016	ICAO, States & AOP SG	valid
	• develop and implement an integrated maintenance programme at aerodromes that includes pavement and visual aids	2009-2016	States & AOP SG	valid
	• establish collaborative bodies with AIM and ATM to ensure meeting quality requirements for runway declared distances	2010 - 2012	ICAO, States & AOP SG	valid
	• monitor and implement Runway End Safety Area (RESA) requirements at aerodromes	2010 - 2012	ICAO, States & AOP SG	valid
	• monitor and ensure meeting Runway strip characteristics and frangibility requirements	2010 - 2016	ICAO, States & AOP SG	valid
	• monitor, develop measures and ensure inspection of the movement area including control of Foreign Object Damage (FOD)	2009-2016	States & AOP SG	valid
AO	**Runway Pavement Maintenance**			
	• promote the awareness about the requirements for the provision of Pavement Maintenance in the movement area	ongoing	ICAO & AOP SG	valid
	• develop and implement a runway maintenance programme	2009-2012	States & AOP SG	valid
	• harmonize, coordinate and support the Runway pavement maintenance guidance for implementation activities on a regional basis	2009-2011	ICAO & AOP SG	valid

Strategy ***Short term (2010-2012)*** ***Medium term (2013 - 2016)***				
ATM OC COMPONENTS	**TASKS**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
	• defined maintenance performance level objectives in order to maintain good friction characteristics and low rolling resistance on runways	2010-2011	States & AOP SG	valid
	• identify minimum friction level below which information that a runway may be slippery when wet should be made available, and develop coordination between AIM, ATM and aerodrome operators to monitor effective implementation in a timely manner	2009-2012	States & AOP SG	valid
	• monitor the removal of runway contaminants in particular; rubber deposits and accumulated sand	2010-2016	States & AOP SG	valid
	• 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 objectives and pavement maintenance programme	2010-2016	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			

APPENDIX B

MID REGIONAL PERFORMANCE

FRAMEWORK FORM IN THE AERODROME FIELD (Updated)

1. PERFORMANCE FRAMEWORK FORM - EXPLANATORY NOTES

1. **Performance framework form:** This form is an output and management form which is applicable to both regional and national planning and includes references to the Global Plan. Other formats may be appropriate but should contain as a minimum the elements described below.

2. **Performance objective:** Regional /national performance objectives should be developed using a performance based approach that best reflects the necessary activities needed to support regional/national ATM systems. During their life cycle, performance objectives may change depending on the ATM system's evolution; therefore, throughout the implementation process, these should be coordinated with and be available to all interested parties within the ATM Community. The establishment of collaborative decision making processes ensures that all stakeholders are involved in and concur with the requirements, tasks and timelines.

3. **Regional performance objective:** Regional performance objectives are the improvements required to the air navigation system in support of the global performance objectives, and are related to the operating environments and priorities applicable at the regional level.

4**.** **National performance objective:** National performance objectives are the improvements required to the air navigation system in support of the regional performance objectives, and are related to the operating environments and priorities applicable at the State level.

5**.** **Benefits:** The regional/national performance objectives should meet the expectations of the ATM community as described in the operational concept and should lead to benefits for stakeholders and be achieved through operational and technical activities aligned with each performance objective.

6. **Strategy:** ATM evolution requires a clearly defined progressive strategy including tasks and activities which best represent the national and regional planning processes in accordance with the global planning framework. The goal is to achieve a harmonized implementation process evolving toward a seamless global ATM system. For this reason, it is necessary to develop short (1 to 5 years) and medium term (6 to 10 years) work programmes, focusing on improvements to the system indicating a clear work commitment for the parties involved.

7. **ATM operational concept components;** Each strategy or set of tasks should be linked with associated components of the ATM operational concept. The designators for ATM components are as follows:

- AOM – Airspace organization and management
- DCB – Demand and capacity management
- **AO – Aerodrome operations**
- TS – Traffic synchronization
- CM – Conflict management
- AUO – Airspace user operations
- ATM SDM – ATM service delivery management

8. **Tasks:** The regional/ national work programmes, using these PFF templates, should define tasks in order to achieve the said performance objective and at the same time maintain a direct relation with ATM system components. The following principles should be considered when developing work programme:

- The work should be organized using project management techniques and performance-based objectives in alignment with the strategic objectives of ICAO.

- All tasks involved in meeting the performance objectives should be developed using strategies, concepts, action plans and roadmaps which can be shared among parties with the fundamental objective of achieving seamlessness through interoperability and harmonization.

- The planning of tasks should include optimizing human resources as well as encouraging dynamic use of electronic communication between parties such as the Internet, videoconferences, teleconferences, e-mail, telephone and facsimile. Additionally, resources should be efficiently used, avoiding any duplication or unnecessary work.

- The work process and methods should ensure that performance objectives can be measured against timelines and the national and regional progress achieved can be easily reported to PIRGs and ICAO Headquarters respectively.

9. **Timeframe:** Indicates start and end time period of that particular task(s).

10. **Responsibility:** Indicates the organization/entity/person accountable for the execution or management of the related tasks.

11**.** **Status:** The status is mainly focused on monitoring the progress of the implementation of that task(s) as it progresses toward the completion date.

12**.** **Linkage to global plan initiatives (GPIs)*:*** The 23 GPIs, as described in the Global Plan (Doc 9750), provide a global strategic framework for planning for air navigation systems and are designed to contribute to achieving the regional/national performance objectives. Each performance objective should be mapped to the corresponding GPIs. The goal is to ensure that the evolutionary work process at the **State** and **regional levels** will be integrated into **the global planning framework**.

PROPOSED UPDATED MID REGIONAL PERFORMANCE FRAMEWORK IN THE AERODROME FIELD MID REGIONAL PERFORMANCE OBJECTIVES AERODROMES PERFORMANCE OBJECTIVES

IMPLEMENTATION OF CERTIFICATION OF AERODROMES	
Benefits	
Environment	• enhanced Land-use management around aerodromes • reduction in aircraft noise and emission impact
Efficiency	• enhance safety, access, efficiency and capacity of aerodrome operations in the States • uniform implementation of ICAO SARPS in the MID States • efficient use of aerodrome resources • reduction in delays • maximize aerodrome capacity in all weather conditions
Safety	• safely manoeuvre in all weather conditions • reduced wild life/bird strikes hazards • reduced incident/accident factors • reduced number of deficiencies • increased runway usability factors • improved safety of aerodromes operations • decreased number of accidents & serious incidents occurred during aircraft movements to/from aerodromes
KPI	• status of implementation of certification of aerodromes • status of implementation of SSP & SMS for aerodrome • status of planning for aerodrome emergencies and testing their effectiveness • status of readiness to accommodate NLs operations at aerodromes
Proposed Metrics:	• number of certified aerodromes used for international operations • number of resolved Air Navigation deficiencies identified in the area of aerodrome operations • number of accidents & serious incidents per 100000 aircraft movements to/from aerodromes • number of adequate aerodromes for NLAs operations • number of peoples in and around aerodromes affected by aircraft operations

Strategy

ATM OC COMPONENTS	**TASKS (As part of Certification of Aerodrome process and implementation of Safety Management for aerodrome operations)**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
AO, CM, DCB, ATM SDM	**Certification of aerodromes**			
	• establish collaborative bodies with ATM, aircraft operators and aerodrome operators for developing national plans to increase aerodrome capacity aimed at meeting actual air traffic and/or forecast demand	2012 - 2013	States & AOP SG	valid

Strategy				
ATM OC COMPONENTS	**TASKS (As part of Certification of Aerodrome process and implementation of Safety Management for aerodrome operations)**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
	• implement aerodrome ground infrastructure commensurate with operational expectations including operations of new larger aircrafts at existing aerodromes	Ongoing	States & AOP SG	valid
	• implement collaborative aerodrome operational procedures with ATM, ground services providers and associated operations support services	2012 - 2014	States & AOP SG	valid
	• monitor and ensure promulgation of national standards for aerodromes including certification of aerodromes requirement in accordance with established criteria and certification process	2012-2013	ICAO, States & AOP SG	valid
	• ensure that national requirements for aerodrome includes enforcement provisions for unresolved non-compliances in a timely manner	2012-2014	ICAO, States & AOP SG	valid
	• monitor and ensure clear separation of authority between the aerodrome operation service providers (aerodrome Operators) and the State regulatory agency	2012-2013	ICAO ., States & AOP SG	valid
	• monitor and ensure establishment of an organizational structure of a separate entity within CAA with clearly defined duties and responsibilities relevant to airport certification and continuous surveillance activities, appropriate to the size and scope of aerodromes in the State and ensure having sufficient qualified human resources to carry out its functions and mandate	2008-2013	ICAO, States & AOP SG	valid
	• monitor and ensure that the certification process explicitly include coordination with elements of air traffic service (ATS) for the local airspace of an aerodrome	2012-2014	ICAO, States & AOP SG	valid
	• monitor and ensure that aerodrome certification process include procedures for dealing with a non-compliance with the established requirements, including aeronautical studies and risk assessment mechanism and notification procedure	2012-2014	ICAO, States & AOP SG	valid

Strategy				
ATM OC COMPONENTS	**TASKS (As part of Certification of Aerodrome process and implementation of Safety Management for aerodrome operations)**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
	• develop, review, approve and verify the content of an Aerodrome Manual for each aerodrome used for international operations	Ongoing	States	valid
	• issue/grant certification of aerodromes as required	Ongoing	States	valid
	• establish an aerodrome surveillance and safety oversight programme and develop associated implementation plans, monitor and insure that aerodromes continue meeting certification obligations and application of enforcement provisions for non compliance in a timely manner	2009-2016	States and AOP SG	valid
	• ensure promulgation of information on status of certification of aerodromes in the State AIP	2010-2016	ICAO, States and AOP SG	valid
	• monitor and follow-up alleviating of identified aerodrome deficiencies and ensure application of enforcement provisions for unresolved non-compliances in a timely manner	2010-2016	ICAO, States and AOP SG	valid
AO, CM, AUO	**Safety Management of Aerodromes**			
	• monitor and ensure promulgation of national harmonized requirement for aerodrome safety management	2010-2016	ICAO, States and AOP SG	valid
	• establish and implement an aerodrome safety programme and define acceptable level of safety and ensure it includes a requirement for certified aerodrome operators to implement a Safety Management System (SMS) acceptable to the State	2012-2016	ICAO, States and AOP SG	valid
	• Monitor, develop and implement an SMS with agreed performance objectives for aerodrome operations and ensure it clearly define lines of safety accountability throughout a certified aerodrome including a direct accountability for safety on the part of senior management	2011-2016	ICAO, States and AOP SG	valid

Strategy				
ATM OC COMPONENTS	**TASKS (As part of Certification of Aerodrome process and implementation of Safety Management for aerodrome operations)**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
	• implement remedial action necessary to maintain agreed safety performance and ensure the continuous monitoring and regular assessment of the safety performance that aims at a continuous improvement of the overall performance of the safety management system. Review and assess effectiveness of mitigation measures in regular bases	2011-2016	States and AOP SG	valid
	• Implement, where warranted, precise surface movement guidance and control system integrated with the runway incursion prevention programme to improve safety, increase capacity and efficiency of runway operations	2009-2012	States & AOP SG	valid
	• Develop, Implement and make available to ATM at aerodromes a positioning system for all vehicles and aircrafts operating on the movement area on a cost-benefit basis.	2013 - 2016	States & AOP SG	valid
AO, CM	**Aerodrome Emergency Planning**			
	• Establish collaborative bodies with ATS, aircraft operators, aerodrome operators, aerodrome security agency and other agencies that might be involved in different aerodrome emergencies to develop emergency plans for each aerodrome	2012 - 2014	States & AOP SG	valid
	• Coordinate and conduct different exercises as required to assess, review and ensure proper coordination between different agencies involved in an emergency and the effectiveness of the aerodrome emergency plan observing Human Factors principles aimed at ensuring optimum response by all existing agencies participating in emergency operations	2012 - 2014	States & AOP SG	valid
	• Arrange and test where warranted, precise measures for aircraft emergencies in difficult environment in and around aerodromes	2009-2012	States & AOP SG	valid
Linkage to GPIs	GPI/13: Aerodrome design and management GPI/14: Runway operations GPI/21: Navigation Systems			

IMPLEMENTATION OF RUNWAY SAFETY PROGRAMME	
Benefits	
Environment	• Contribution to efficient environmental control
Efficiency	• efficient use of Runways • increased runway usability factors • reduced incident/accident factors • reduced number of deficiencies • minimize the effects of weather on capacity
Safety	• improve situational awareness • enhance precise surface guidance to and from a runway • improve safety of runway operations • improve safety of aerodrome operations in general
KPI	• status of implementation of Runway Safety programmes in the MID Region
Proposed Metrics:	• number of Runway incursions per year • number of Runway excursions per year • number of aircraft accidents& serious incidents per 100,000 movements

Strategy
Short term (2010-2012)
Medium term (2013 - 2016)

ATM OC COMPONENTS	TASKS	TIMEFRAME START-END	RESPONSIBILITY	STATUS
AO, CM, , DCB, ATM SDM	**Runway Incursion Prevention**			
	• establish collaborative bodies with ATM, aircraft operators and aerodrome operators for implementing plans and measures aimed at prevention of runway incursion	2012 - 2016	States & AOP SG	valid
	• establish Runway Incursion Prevention programme, identify its goals as part of the national Runway Safety programme and monitor implementation plan	2012-2014	States & AOP SG	valid
	• implement, where warranted, precise surface movement guidance to and from a runway to improve capacity, safety and efficiency	2012-2015	States & AOP SG	valid
	• develop, Implement and make available to ATM at aerodromes a positioning system for all vehicles and aircrafts operating on the movement area on a cost-benefit basis	2013 – 2016	States & AOP SG	valid
	• implement procedures and technologies to enhance the performance of runway operations and optimize runway capacity	2013 – 2016	States & AOP SG	valid

Strategy ***Short term (2010-2012)*** ***Medium term (2013 - 2016)***				
ATM OC COMPONENTS	**TASKS**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
AO, CM, , AUO, ATM SDM	• **Runway Excursion Prevention**			
	• establish collaborative bodies with ATM, aircraft operators and aerodrome operators for measures and implementing plans aimed at prevention of runway excursions	2012 – 2016	States & AOP SG	valid
	• harmonize, coordinate and support the Runway Excursion Prevention measures and implementation activities on a regional basis	2012 – 2017	ICAO, States & AOP SG	valid
	• develop and implement an integrated maintenance programme at aerodromes that includes pavement and visual aids	2010-2016	States & AOP SG	valid
	• establish collaborative bodies with AIM and ATM to ensure meeting quality requirements for runway declared distances	2012 – 2014	ICAO, States & AOP SG	valid
	• monitor and implement Runway End Safety Area (RESA) requirements at aerodromes	Ongoing	ICAO, States & AOP SG	valid
	• monitor and ensure meeting Runway strip characteristics and frangibility requirements	Ongoing	ICAO, States & AOP SG	valid
	• monitor, develop measures and ensure inspection of the movement area including control of Foreign Object Damage (FOD)	Ongoing	States & AOP SG	valid
AO	**Runway Pavement Maintenance**			
	• promote the awareness about the requirements for the provision of Pavement Maintenance in the movement area	ongoing	ICAO & AOP SG	valid
	• develop and implement a runway maintenance programme	2012-2014	States & AOP SG	valid
	• harmonize, coordinate and support the Runway pavement maintenance guidance for implementation activities on a regional basis	201-2015	ICAO & AOP SG	valid
	• defined maintenance performance level objectives in order to maintain good friction characteristics and low rolling resistance on runways	2012-2014	States & AOP SG	valid

Strategy ***Short term (2010-2012)*** ***Medium term (2013 - 2016)***				
ATM OC COMPONENTS	**TASKS**	**TIMEFRAME START-END**	**RESPONSIBILITY**	**STATUS**
	• identify minimum friction level below which information that a runway may be slippery when wet should be made available, and develop coordination between AIM, ATM and aerodrome operators to monitor effective implementation in a timely manner	2012-2014	States & AOP SG	valid
	• monitor the removal of runway contaminants in particular; rubber deposits and accumulated sand	Ongoing	States & AOP SG	valid
	• 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 objectives and pavement maintenance programme	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			

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