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**Agenda Item 7: Regional MET requirements for ATM**

(Presented by the Secretariat)

**SUMMARY**

This working paper presents a panoramic view on ATM systems activities and co ordinations, at the global, inter-regional and intra-regional levels.

**References:**

- Report of the Fifteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/15, Rio de Janeiro, Brazil, 13 to 17 de October 2008)

**1. Introduction**

1.1 This working paper presents the results of the analysis made by GREPECAS/15 Meeting on the proposal of an ICAO electronic Air Navigation Plan (eANP), the Regional and National Performance Framework, Amendments to ICAO Flight Plan, the Transition to Aeronautical Information Management (AIM) and Global/Inter/Intra-Regional Activities.

**2. Discussion**

**2.1 Inter-regional and intra-regional CNS/ATM activities and coordination**

**Regional and National Performance Framework**

2.1.1 GREPECAS noted that the ICAO planning objective aims to achieve a performance-based global air traffic management (ATM) system through the application of air navigation systems and procedures in a progressive, cost-effective and cooperative manner.

2.1.2 The performance-based approach 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. Assessment of achievements is periodically checked through a performance review, which in turn requires adequate performance measurement and data collection capabilities.

2.1.3 The advantages of a performance-based approach includes: orientation towards results, transparency and accountability; shifts from prescribing solutions to specifying desired performance; employs quantitative and qualitative methods; avoids a technology driven approach; helps decision-makers set priorities; makes the most appropriate trade-offs; and allows optimum resource allocation.

2.1.4 To facilitate the realization of a performance-based Global ATM system, the Meeting was informed that ICAO has made significant progress in the development of relevant guidance material. The documents include: *Global Air Traffic Management Operational Concept (Doc 9854)*; *Air Traffic Management System Requirements (Doc 9882)*; *Manual on Global Performance of the Air Navigation System (Doc 9883)*; and *Global Air Navigation Plan (Doc 9750)*. All of these documents are available on ICAO-NET ([www.icao.int/icaonet](http://www.icao.int/icaonet)).

2.1.5 In terms of regional performance planning, the work will be based on the Global Air Navigation Plan in conjunction with Global Performance Manual. The outcome of this process would result in an output and management form that has been designated as "Performance Framework Form (PFF)." This PFF has been standardized, and a sample is shown in **Appendix A** to this working paper.

2.1.6 The PFF is applicable to both regional and national planning framework and thus ensures easy understanding and harmonization. The explanatory notes provided in **Appendix B** to this working paper serve as a guide for completing the PFF. The Group agreed that GREPECAS, on the basis of PFF, will identify the individual parties responsible for achieving the regional performance objectives and establish a monitoring mechanism. The Regional Plan includes information on progress achieved and provides periodic reports to ICAO Headquarters.

2.1.7 In terms of national performance planning, the States in cooperation with the ATM community, should update or develop national plans aligned with the regionally agreed performance objectives through use of the common PFF template described in Appendix A to this working paper. The Group agreed that States, through the PFF, should identify the individual parties responsible for achieving the national performance objectives and as a means for monitoring progress. National plans should include information on progress achieved and provide periodic reports to ICAO.

2.1.8 In addition, GREPECAS acknowledged that the global ATM system will emerge through the implementation of many initiatives by States over several years on an evolutionary basis. The set of global planning initiatives (GPIs) contained in the Global Plan are meant to facilitate and harmonize the work already underway within the regions and States so as to bring needed benefits to aircraft operators over the near and medium terms. For the long term, ICAO will continue to develop newer initiatives on the basis of the Operational Concept and subsequently these will be placed in the Global Plan.

2.1.9 Considering the need to have a clearly defined strategy to implement ATM systems as well as to align work programmes of the States, regions and ICAO Headquarters, GREPECAS adopted Conclusion 15/1, which is reproduced for ease of reference:

*CONCLUSION 15/1*                      *DEVELOPMENT OF PERFORMANCE BASED REGIONAL AND NATIONAL PLANS*

*That,*

- a) *GREPECAS develop a performance-based regional plan in accordance with the Global Air Navigation Plan and the Global ATM Operational Concept. This plan should include identification of regional performance objectives and completion*

*of performance framework forms for all air navigation areas such as ATM, CNS, AIM, MET and AGA/AOP; and*

- b) *States, Territories and International Organizations, taking into account user needs, develop performance-based national plans in accordance with the regional performance objectives included in the Regional Air Navigation Plan. These national plans should encompass identification of national performance objectives and completion of performance framework forms for all air navigation areas such as ATM, CNS, AIM, MET and AGA/AOP.*

2.1.10 In this regard, the following are the regional performance objectives in the MET field, based on the current regional work programme:

- a) CAR/SAM MET 1 – Implementation of International Airways Volcano Watch (IAVW), of International Tropical Cyclone Watch (ITCW) and SIGMETs
- b) CAR/SAM MET 2 – Implementation of WAFS and associated developments
- c) CAR/SAM MET 3 – Development of regional MET requirements to support ATM
- d) CAR/SAM MET 4 – Improvement of OPMET exchange efficiency
- e) CAR/SAM MET 5 – Implementation of QMS MET

2.1.11 Based on the above, the Meeting is invited to review completed MET performance framework contained in **Attachment C** to this working paper and formulate the following draft conclusion:

**DRAFT**

**CONCLUSION 10/XX – CAR/SAM MET REGIONAL PERFORMANCE OBJECTIVES**

That, the CAR/SAM MET Regional Performance Objectives and associated performance framework forms as contained in **Appendix XX**<sup>1</sup> to this part of the report are adopted.

2.1.12 The Meeting could take note that the Next Generation Air Transport System (*NextGen*) developed by U.S. enables safe, efficient and reliable movement of large numbers of people and goods throughout the air transportation system. The system is founded upon a set of principles and is enabled by a series of key capabilities including network-enabled information access; performance-based services; layered adaptive security; weather assimilated into decision-making; broad-area precision navigation; aircraft trajectory-based operations; equivalent visual operations; and super-density operations. Real-time information access will provide users with all required information for decision-making. *NextGen* will use four dimensional trajectories as the basis for planning and executing system operations. *NextGen* will deliver an overall system capacity up to three times greater than that of current operating levels. Detailed information regarding *NextGen* is provided at <http://www.jpdo.gov>.

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<sup>1</sup>Appendix XX corresponds to Appendix C to WP/08.

2.1.13 Taking into account the need to develop a strategic planning document with the objective of gradual and coordinated introduction of the National ATM Operational Concept, the Meeting could also note that the Airspace Control Department (DECEA) of Brazil has developed the National ATM Operational Concept. Initially, the concept will make use of available procedures, processes and capacities evolving into the medium-term encompassing emerging procedures, processes and capacities. The implementation is expected to take place in three phases: Phase 1 – short-term up to 2010; Phase 2 - medium-term: 2011 to 2015; and Phase 3 - long-term: 2016 to 2020.

2.1.14 Colombia develops and implements the flow management unit - CFMU, so as to meet the rapid growth of air traffic operations in Colombia.

2.1.15 The measures adopted by the flow management unit of Colombia include a collaborative decision-making process, optimization of flow into El Dorado Airport to avoid additional holding of aircraft, and continuous sequencing in the approach phase. All of these measures respond to the increase of aircraft operations to this aerodrome.

2.1.16 The Meeting could note that Colombia signed a cooperation agreement with the FAA, defining the terms and conditions for use of the ETMS system, the exchange of non-critical radar data and information on domestic and oceanic flights.

2.1.17 Colombia, Mexico, United States and Brazil would continue working to increase capacity and establish operational relationships with adjacent FIRs.

2.1.18 Flight plan and secondary radar exchange tests between the Amazonico and Maiquetia ACCs are being carried out, and the aeronautical administrations of Brazil and Venezuela are expected to sign a bilateral agreement shortly to implement this functionality using the REDDIG. Also, similar tests are being planned between Brazil and Peru. Automation developments under Regional Project RLA/98/003 have been achieved.

2.1.19 There are also agreements to interface the automated systems among Cuba, Jamaica and COCESNA, as well as radar data exchange and sharing agreements established by COCESNA with Mexico, Panama, United States and Central American States. Trinidad and Tobago is already exchanging radar data with French Antilles (Martinique and Guadeloupe) and also with Barbados.

#### **Amendments to ICAO Flight Plan**

2.1.20 The Meeting could note that on 28 May 2008, amendment No. 1 to the Fifteenth Edition of the *Procedures for Air Navigation Services - Air Traffic Management* (PANS-ATM, Doc 4444) was approved, calling for substantial changes to the ICAO flight plan to take effect from 15 November 2012. The interim edition of the amendment is available as an attachment to the electronic version of State letter AN 13/2.1-08/50 on the ICAO-NET ([www.icao.int/icaonet](http://www.icao.int/icaonet)).

2.1.21 The new ICAO flight plan (FLP) format and related provisions are necessary to allow ATM systems to make optimum use of advanced aircraft capabilities as well as to meet the evolving requirements of automated ATM systems. The new flight plan addresses air navigation functionalities and technologies such as Reduced Vertical Separation Minima (RVSM), Performance Based Navigation (PBN), Required Communication Performance (RCP), Automatic Dependent Surveillance-Contract (ADS-C), Automatic Dependent Surveillance-Broadcasting (ADS-B) and Global Navigation Satellite System (GNSS), while maintaining a high degree of commonality with the existing flight plan format. It should be noted that the amendment to the flight plan is an interim step towards a completely revamped

system of interaction between aircraft and the ATM system, wherein the aircraft will be an integral part of the ATM system as envisaged in the Global ATM Operational Concept.

2.1.22 In order to assist States with an orderly transition from the current flight plan to the new one, a basic checklist using the performance framework form (PFF) has been developed by ICAO HQ and is available in **Appendix D** to this working paper. Additional guidance on transition to the new flight plan is being developed by ICAO HQ.

### **Transition to Aeronautical Information Management (AIM)**

2.1.23 In order to satisfy new requirements arising from the ATM Operational Concept, the Meeting could take note that the Aeronautical Information Services (AIS) must transition to the broader concept of AIM with a different method of information provision and management given its data centric nature, as opposed to the product centric nature of AIS.

2.1.24 To support this transition from AIS to AIM, ICAO has put in place a work programme (**Appendix E**), which includes development of a global strategy/road map; appropriate provisions in Annex 4 and Annex 15 and associated guidance material for standard aeronautical information/data conceptual and exchange models (AIXM) to enable the global exchange of data in digital open-architecture formats; establishment of new digital requirements with an appropriate quality and presentation of aeronautical information/data to the end user such as e-AIP, electronic charts, electronic terrain and obstacles data (e-TOD); and the use of Geographic Information System (GIS) as a main tool. Furthermore, it will be necessary to define the human resource activities to meet future AIM functions. This will involve identification of the basic skill set required for future personnel (personnel profiles), mechanisms for validating competency, and the development of supporting guidance and training material. A work plan will also be developed to consider the resolution of any legal and institutional issues.

2.1.25 In view of the complexity of the issues involved in the transition from AIS to AIM, ICAO has established a new ANC study group named the Aeronautical Information Services-Aeronautical Information Management Study Group (AIS-AIM/SG) to assist the ICAO Secretariat with the development of a global strategy/roadmap for the transition from AIS to AIM and to prepare new AIM SARPs and guidance material. Ongoing activities at the regional level will be integrated with those of the study group to ensure harmonization at the global level. MET issues, including the review of existing provisions in Annex 3 — *Meteorological Service for International Air Navigation* and a review of Doc 7192 - *Training Manual*, will be included in the work of the study group as the transition from AIS to AIM develops.

### **Global/Inter/Intra-Regional Activities**

2.1.26 The Meeting could take note of the activities being carried out by ICAO to develop the electronic Air Navigation Plan (eANP). This planning tool, which would be available on-line, has two objectives:

- a) at the global level - reconcile the Regional Air Navigation Plan with the ATM Operational Concept, the new Global ANP provisions and the ICAO planning processes of new activities; and

- b) at the regional level - expedite regional planning and coordination through simplifying and freeing core planning from a long and cumbersome formal approval process (whilst maintaining the planning and coordination process requirements within the ICAO regional machinery).

2.1.27 The eANP could be available to the States during 2009 and advances can be seen on the ICAO website (GIS – Geographical Information System - <https://192.206.28.84/egamp>).

#### **ATM/MET Seminar/Workshop**

2.1.28 The Group could agree in the convening of a meeting with the purpose of developing a list of possible MET requirements in support of ATM for the CAR/SAM Regions and formulate the following draft conclusion:

#### **DRAFT**

#### **CONCLUSION 10/XX – ATM/MET SEMINAR/WORKSHOP**

That, in order to develop a list of possible MET requirements in support of ATM for the CAR/SAM Regions, ICAO, in coordination with WMO, conduct a Seminar/Workshop for the CAR/SAM Regions.

### **3. Action suggested**

3.1 The Meeting is invited to:

- a) take note of the information presented in this working paper;
- b) analyze and, if necessary, complete Appendix C to this working paper; and
- c) based on the discussions, consider the approval of the draft conclusions of paragraphs 2.1.11 and 2.1.28.

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## APPENDIX A

## PERFORMANCE FRAMEWORK FORM

(a sample)

REGIONAL PERFORMANCE OBJECTIVES / NATIONAL PERFORMANCE OBJECTIVES —				
OPTIMIZE THE ATS ROUTE STRUCTURE IN EN-ROUTE AIRSPACE				
Benefits				
<b>Environment</b>	<ul style="list-style-type: none"> <li>• reductions in fuel consumption;</li> </ul>			
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>• ability of aircraft to conduct flight more closely to preferred trajectories;</li> <li>• increase in airspace capacity;</li> <li>• facilitate utilization of advanced technologies (e.g., FMS based arrivals) and ATC decision support tools (e.g., metering and sequencing), thereby increasing efficiency.</li> </ul>			
Strategy				
Short term (2010)				
Medium term (2011 - 2015)				
ATM OC COMPONENTS	TASKS	TIMEFRAME START-END	RESPONSIBILITY	STATUS
AOM	<p><i>En-route airspace</i></p> <ul style="list-style-type: none"> <li>• analyze the en-route ATS route structure and implement all identifiable improvements;</li> <li>• implement all remaining regional requirements (e.g. RNP 10 routes); and</li> <li>• finalize implementation of WGS-84</li> <li>• monitor implementation progress</li> <li>• develop a strategy and work programme to design and implement a trunk route network, connecting major city pairs in the upper airspace and for transit to/from aerodromes, on the basis of PBN and, in particular, RNAV/5, taking into account interregional harmonization;</li> <li>• monitor implementation progress</li> </ul>	2005-2008		
<b>linkage to GPs</b>	GPI/5: performance-based navigation, GPI/7: dynamic and flexible ATS route management, GPI/8: collaborative airspace design and management, GPI/11: RNP and RNAV SIDs and STARs and GPI/12: FMS-based arrival procedures.			

## APPENDIX B

## 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, 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.

## APPENDIX C

<b>REGIONAL PERFORMANCE OBJECTIVE: APAC – MET 1</b>				
<b>Implement International Airways Volcano Watch (IAVW), International Tropical Cyclone Watch (ITCW) and SIGMETs</b>				
<b>Benefits</b>				
<b>Safety</b>	<ul style="list-style-type: none"> <li>Improve in-flight safety by providing information on volcanic ash, tropical cyclone or other hazardous weather</li> </ul>			
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>Improve pre-flight planning by optimizing flight routes with respect to volcanic ash and hazardous weather phenomena</li> </ul>			
<b>Strategy Short term/Medium term (2011 - 2015)</b>				
<b>ATM OC COMPONENTS</b>	<b>TASKS</b>	<b>TIME FRAME</b>	<b>RESPONSIBILITY</b>	<b>STATUS</b>
<b>MET</b>	<ul style="list-style-type: none"> <li>Monitor and provide assistance in the regional implementation of volcanic ash and tropical cyclone advisories and SIGMET</li> </ul>	2009 - 2015	RO/MET LIMA & RO/MET MEXICO	In progress
	<ul style="list-style-type: none"> <li>Conduct periodic tests for SIGMET on volcanic ash and tropical cyclones in view of assessing improvements in their implementation</li> </ul>	2009 - 2015	RO/MET LIMA, RO/MET MEXICO & AERMETS/10-WP/08	In progress
	<ul style="list-style-type: none"> <li>Develop and keep up-to-date a regional guidance in Spanish to explain the contents of Doc 9766, <i>Handbook on the International Airways Volcano Watch (IAVW) Operational Procedures and Contact List</i>.</li> </ul>	2010 - 2015	RO/MET LIMA	Future
	<ul style="list-style-type: none"> <li>Conduct controls on the issuance of SIGMET WS, WV and WC in view of assessing improvements in their implementation</li> </ul>	2010 - 2015	Brasilia International OPMET Databank	Future
	<ul style="list-style-type: none"> <li>Update the Regional SIGMET Guide, periodically, to keep it consistent with Annex 3 and with the corresponding FASID MET Tables</li> </ul>	2010 - 2015	RO/MET LIMA	Future
<b>Linkage to GPIs</b>	GPI/19 – Meteorological Systems			
<b>References</b>	<ul style="list-style-type: none"> <li><i>Annex 3</i></li> <li><i>Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691)</i></li> <li><i>Handbook on the International Airways Volcano Watch (IAVW) Operational Procedures and Contact List (Doc 9766)</i></li> <li><i>Asia/Pacific Regional SIGMET Guide</i></li> </ul>			

<b>REGIONAL PERFORMANCE OBJECTIVE: APAC – MET 2</b> <b>Implement WAFS and associated developments</b>				
<b>Benefits</b>				
<b>Safety</b> <b>Efficiency</b>	<ul style="list-style-type: none"> <li>Improve the regional implementation of weather forecasts (upper-level winds, turbulence, icing, cumulonimbus) used by airlines and ATM needed to optimize flight routes which will provide an increase in efficiency and reduced carbon emissions</li> </ul>			
<b>Strategy Short term/Medium term (2011 - 2015)</b>				
<b>ATM OC COMPONENTS</b>	<b>TASKS</b>	<b>TIME FRAME</b>	<b>RESPONSIBILITY</b>	<b>STATUS</b>
<b>MET</b>	<ul style="list-style-type: none"> <li>Assist in the regional implementation of the new turbulence, icing and cumulonimbus forecasts</li> <li>Coordinate the organization of regional training of the new turbulence, icing and cumulonimbus forecasts</li> </ul>	2009 - 2013	RO/MET LIMA, RO/MET MEXICO & AERMETSG	In progress
	<ul style="list-style-type: none"> <li>Monitor the migration to ISCS G3 and to WIFS implementation.</li> </ul>	2010 - 2012	ICAO, WMO & Washington WAFC	In progress
<b>Linkage to GPIs</b>	GPI/19 – Meteorological Systems			
<b>References</b>	<ul style="list-style-type: none"> <li>Annex 3</li> <li><a href="http://www.icao.int/anb/wafsopsg/">http://www.icao.int/anb/wafsopsg/</a></li> <li><a href="http://www.lima.icao.int/">http://www.lima.icao.int/</a></li> </ul>			

<b>REGIONAL PERFORMANCE OBJECTIVE: APAC – MET 3</b> <b>Develop regional MET requirements to support ATM</b>				
<b>Benefits</b>				
<b>Safety Efficiency</b>	<ul style="list-style-type: none"> <li>Improve efficiency of ATM and airlines by providing tailored regional MET products needed to optimize flight routes in all weather conditions</li> </ul>			
<b>Strategy</b> <b>Short term/Medium term (2011 - 2015)</b>				
<b>ATM OC COMPONENTS</b>	<b>TASKS</b>	<b>TIME FRAME</b>	<b>RESPONSIBILITY</b>	<b>STATUS</b>
<b>MET</b>	<ul style="list-style-type: none"> <li>Carry out annual surveys on ISCS efficacy in order to send them to the focal points and analyze the results to be presented at the next AERMETSG meeting.</li> </ul>	Annually	RO/MET LIMA & RO/MET MEXICO	In progress
	<ul style="list-style-type: none"> <li>Based on the last edition of Doc 9750 - <i>Global Air Navigation Plan for CNS/ATM</i>, develop the MET chapter of the <i>CAR/SAM Regional Plan for the implementation of CNS/ATM systems</i>, Document I.</li> </ul>	2011	MET/ATM/OP TF	Future
	<ul style="list-style-type: none"> <li>Conduct a CAR/SAM ATM/MET Seminar/workshop, in order to develop a list of possible regional MET requirements in support of ATM</li> </ul>	2010	RO/MET LIMA, RO/MET MEXICO & WMO	Future
<b>Linkage to GPIs</b>	GPI/19 – Meteorological Systems			
<b>References</b>	<ul style="list-style-type: none"> <li><i>Manual on co-ordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services (Doc 9377)</i></li> </ul>			

<b>REGIONAL PERFORMANCE OBJECTIVE: APAC – MET 4</b> <b>Improve OPMET exchange efficiency</b>				
<b>Benefits</b>				
<b>Safety Efficiency</b>	<ul style="list-style-type: none"> <li>Improve the quality of meteorological information and meteorological services and reliability needed for flight planning (efficiency) and in-flight replanning (safety)</li> </ul>			
<b>Strategy Short term/Medium term (2011 - 2015)</b>				
<b>ATM OC COMPONENTS</b>	<b>TASKS</b>	<b>TIME FRAME</b>	<b>RESPONSIBILITY</b>	<b>STATUS</b>
<b>MET</b>	<ul style="list-style-type: none"> <li>Support States to implement a Quality Management System in the MET Services, developing a guide of procedures for implementing the Quality Management System for MET Services, including the documented procedures required by ISO 9001:2008 and guidance of the ICAO/WMO joint <i>Manual on the Quality Management System for the Provision of Meteorological Service to International Air Navigation</i> (Doc 9873), as well as the documentary system for the provision of aeronautical meteorological service.</li> </ul>	2010	RO/MET LIMA & QMS MET EXPERT	In progress
	<ul style="list-style-type: none"> <li>Develop of documentary system for the referred guide.</li> </ul>	2010	RO/MET LIMA & QMS MET EXPERT	In progress
	<ul style="list-style-type: none"> <li>Develop a Quality Management Seminar/Workshop for MET services with the objective that the States adapt the quality management to their MET services.</li> </ul>	2010	RO/MET LIMA & QMS MET EXPERT	In progress
<b>Linkage to GPIs</b>	GPI/19 – Meteorological Systems			
<b>References</b>	<ul style="list-style-type: none"> <li><i>Project Document RLA/06/901</i></li> </ul>			

**APPENDIX D**

REGIONAL/NATIONAL PERFORMANCE OBJECTIVE — IMPLEMENTATION OF THE NEW ICAO FPL FORM				
Benefits				
<b>Environment</b>	<ul style="list-style-type: none"> <li>• reductions in fuel consumption</li> </ul>			
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>• ability of air navigation service providers to make maximum use of aircraft capabilities</li> <li>• ability of aircraft to conduct flights more closely to their preferred trajectories</li> <li>• facilitate utilization of advanced technologies thereby increasing efficiency</li> <li>• optimized demand and capacity balancing through the efficient exchange of information</li> </ul>			
<b>Safety</b>	<ul style="list-style-type: none"> <li>• enhance safety by use of modern capabilities onboard aircraft</li> </ul>			
<i>Strategy</i>				
Short term (2010)				
<i>Medium term (2011 - 2015)</i>				
ATM OC COMPONENTS	TASKS	TIMEFRAME START-END	RESPONSIBILITY	STATUS
<b>SDM</b>	<p><i>En-route airspace</i></p> <ul style="list-style-type: none"> <li>• ensure that the automation and software requirements of local systems are fully adaptable to the changes envisaged in the new FPL form</li> <li>• ensure that issues related to the ability of FDPS's to parse information correctly and to correctly identify the order in which messages are received, to ensure that misinterpretation of data does not occur</li> <li>• analyze each individual data item within the various fields of the new flight plan form, comparing the current values and the new values to verify any problems with regard to applicability of service provided by the facility itself or downstream units</li> <li>• ensure that there are no individual State peculiarities or deviations from the flight plan provisions</li> <li>• ensure that the accepting ATS Reporting Office accepts and disseminates all aircraft capabilities and flight intent to all the downstream ACCs as prescribed by the PANS-ATM provisions</li> </ul>	2009-2012		
		2009		
		2009-2012		
		2009		
		2009-2012		
		2012		
	<ul style="list-style-type: none"> <li>• plan the transition arrangements to ensure that the changes from the current to the new ICAO FPL form occur in a timely and seamless manner and with no loss of service</li> </ul>	2009-2012		

	<ul style="list-style-type: none"> <li>• in order to reduce the change of double indications it is important that any State having published a specific requirement(s) which are now addressed by the amendment should withdraw those requirements in sufficient time to ensure that aircraft operators and flight plan service providers, after 15 November 2012, use only the new flight plan indications.</li> </ul>	2009-2012		
	<ul style="list-style-type: none"> <li>• establish a central depository in order to track the implementation status and inform the ICAO regional offices on an ongoing basis</li> </ul>	2009		
<b>linkage to GPIs</b>	GPI/18 Aeronautical Information			

## APPENDIX E

**EXPECTED OUTPUTS OF ICAO WORK PROGRAMME  
FOR TRANSITION FROM AIS TO AIM**

**D2-INF-AIM — Aeronautical Information Management**

<i>ID</i>	<i>Expected output</i>	<i>Source</i>	<i>Final results</i>	<i>Completed</i>
1.	Global strategy/roadmap for the transition from AIS to AIM.	A36-WP/321	State letter/Guidance material	2008 (Draft)
2.	SARPs and guidance material related to the provision of a standard aeronautical information conceptual model and standard aeronautical information exchange model to enable the global exchange of data in digital format. Definition of a means to allow the further evolution of these models in a managed and supportable manner.	A36-WP/321	Amendments 36/37 to Annex 15 Amendments 56/57 to Annex 4 New manual and amendment Defined means to allow the further evolution of the models	2010/13 2010/13 2010/13 2010
3.	SARPs and guidance material related to an appropriate presentation of digital aeronautical information to the end user, including eAIP, electronic charts and use of GIS within the context of AIM.	A36-WP/321	Amendments 36/37 to Annex 15 Amendments 56/57 to Annex 4 Amendments to Doc 8126 Amendments to Doc 8697	2010/13 2010/13 2010/13 2010/13
4.	Guidance material and further development of SARPs related to the quality system to support AIM.	A36-WP/321	New AIM quality system manual Amendment 36 to Annex 15	2010 2010
5.	Review of SARPs and guidance material related to electronic terrain and obstacle data to determine if refinement of SARPs or additional guidance material is necessary.	EANPG Conc. 49/39	Amendment 36 to Annex 15 Amendment to Doc 9881	2010 2010
6.	Guidance and training material related to staffing and training for the transition from AIS to AIM.	A36-WP/321	New AIM training manual Amendment to Doc 8697	2010 2010
7.	Development of a proposed work plan to consider key legal and institutional issues raised during the Worldwide Symposium on Enabling the Net-Centric Information Environment (Montreal, 2 to 4 June 2008)	A36-WP/321	AN-WP	2009