International Civil Aviation Organization

MIDANPIRG STEERING GROUP

Third Meeting (MSG/3)
(Cairo, Egypt, 17 - 19 June 2013)

Agenda Item 4: **Performance Framework for Regional Air Navigation Planning and Implementation**

MID REGION AIR NAVIGATION STRATEGY

(Presented by the Secretariat)

SUMMARY

This paper presents the recent developments related to the air navigation priorities and targets at global level and highlights the need to establish regional and national air navigation priorities and targets in line with the Global Air Navigation Plan (GANP) for inclusion into the MID Region Air Navigation Strategy.

Action by the meeting is at paragraph 3.

REFERENCES

- DGCA-MID/2 Report

1. **INTRODUCTION**

1.1   States and planning and implementation regional groups (PIRGs) are transitioning to a performance-based approach to support their air navigation infrastructure planning.

1.2   As PIRGs are progressing with regional performance improvements through implementation of relevant ASBU Block 0 Modules of the GANP, this paper proposes a draft MID Air Navigation Strategy for review by the meeting and further development.

2. **DISCUSSION**

2.1   The GANP establishes a framework for incremental implementations based on the specific operational profiles and traffic densities of each region and State. This is accomplished through the Aviation System Block Upgrades (ASBUs). The latest version of ASBU working document dated 28 March 2013 is available on the ICAO Website at:

http://www.icao.int/Meetings/anconf12/Pages/Aviation-System-Block-Upgrades.aspx.

2.2   An analysis of this data should lead to the identification of opportunities for operational performance improvement. Modules from the ASBUs would be evaluated to identify which of those modules best provide the needed operational improvements. Depending on the complexity of the module, additional planning steps may need to be undertaken including financing and training needs. Finally, regional plans would be developed for the deployment of modules by drawing on supporting technology requirements. This is an iterative planning process which may require repeating several steps until a final plan with specific regional targets is in place. This planning methodology requires full involvement of States, service providers, airspace users and other stakeholders, thus ensuring commitment by all for implementation. This approach would facilitate the response to Recommendation 6/1 of the AN-Conf/12 that calls on States and PIRGs to finalize the alignment of regional air navigation plans with the Fourth Edition of the Global Air Navigation Plan by May 2014.

2.3   A Planning and Implementation Regional Groups (PIRGs) and Regional Aviation Safety Groups (RASGs) Global Coordination Meeting (GCM) was held in Montreal on 19 March 2013 under the Chairmanship of the President of the ICAO Council. The main objective of the meeting was to exchange views on the readiness and ability of the PIRGs and RASGs to set priorities and targets in line with the new versions of the GANP and the Global Aviation Safety Plan (GASP). A secondary objective was to share successful initiatives of each of the PIRGs and RASGs to ensure the best possible synergy. The outcome of the meeting includes:

a)   agreement on establishing regional priorities and targets for air navigation by May 2014 consistent with the GANP/ASBU framework;

b)   agreement on the need to measure performance improvements to help demonstrate their positive impact on the environment; and

c)   endorsement of the envisioned regional performance dashboard prototype and envisioned determination of an initial set of indicators and metrics for air navigation.

Regional Performance Dashboard

2.4   Transparency and sharing of information are fundamental to a safe and efficient global air transportation system. Consistent with this principle, ICAO is presently introducing regional 'Performance Dashboard' homepages for every public website of the ICAO Regional Offices. These dashboards will illustrate the regional implementation status relating to the strategic objectives on Safety, Air Navigation Capacity and Efficiency, and Environmental Protection. They will show targeted performance at the regional level and will, initially, contain graphics and maps with a planned expansion to include the Aviation System Block upgrades (ASBU) Block 0 Modules. This new interactive online system will be in place in January 2014 and will be updated at regular intervals.

Global Air Navigation Report

2.5   Much like the existing annual Safety Report, the objective of the annual Global Air Navigation Report is to assist PIRGs and States in understanding which areas require special attention to effectively improve air navigation performance worldwide as well as to help propagate information on implementation success stories. This first edition of this Report, slated for March 2014, will also provide an opportunity for the civil aviation community to evaluate progress across different ICAO regions. This will facilitate more effective interregional harmonization planning. The outcomes reflected in the proposed Report could also help identify annual tactical adjustment priorities for regional work programmes, as well as informing longer-term policy adjustments.

2.6   The first edition of the *Global Air Navigation Report* is planned for release in March 2014. It will consist of qualitative and quantitative information and cover key performance areas of air navigation systems. The initial report will cover the following subjects:

- global air navigation challenges;
- measuring against those challenges;
- status of operational measures for performance improvement;
- implementation progress of selected priority ASBU Block 0 Modules. The metrics or initial dataset that includes key global air navigation priorities are Performance Based Navigation (PBN), Continuous Decent Operation (CDO), Continuous Climb Operations (CCO), Aeronautical Information Management (AIM), Air Traffic Flow Management (ATFM) and estimated environmental benefits accrued from operational improvements based on ICAO Fuel Savings Estimation Tool (IFSET) or any other more rigorous tool recognized by Committee on Aviation Environmental Protection (CAEP). This initial dataset for both *Regional Performance Dashboard* and the *Global Air Navigation Report* was recently agreed by the PIRG Chairs; and
- sharing of successful initiatives and key demonstrations.

Mechanism for the monitoring of the Aviation System Block Upgrades (ASBUs) Implementation in the MID Region

2.7   The meeting may wish to recall that MIDANPIRG/13 supported an initial set of operational improvements and agreed that the CNS/ATM/IC Sub-Group further review them taking into consideration the outcome of the AN-Conf/12, as follows:

a) improved Airport Accessibility;
b) increased Interoperability, Efficiency and Capacity through Ground-Ground Integration –AIDC;
c) service Improvement through Digital Aeronautical Information Management;
d) improved Operations through Enhanced En-Route Trajectories;
e) improved Flexibility and Efficiency in Descent Profiles (CDOs);
f) improved Flexibility and Efficiency in Departure Profiles;
g) improved Runway Safety (A-SMGCS);
h) improved Airport Operations through A-CDM; and
i) improved access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B.

2.8   The meeting may wish to note that MIDANPIRG/12 through Conclusion 12/47 endorsed 8 Metrics for performance monitoring of the air navigation systems in the MID Region, as follows:

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.

2.9   It's to be highlighted that the ICAO MID Regional Office, through State Letter Ref.: AN 7/26.1–13/056 dated 18 February 2013, sent a questionnaire to all MID States, on Aviation System Block Upgrades (ASBU) Block Zero Modules, in order to prioritize the appropriate ASBU modules relevant to the MID Region.

2.10   Based on all of the foregoing, the DGCA-MID/2 meeting:

   a) urged States to:

      i.   establish a performance measurement strategy for their air navigation system;
      ii.   share successful initiatives among each other; and
      iii. support the ICAO MID Regional Office by providing the requisite information to demonstrate operational improvements; and

   b) tasked MIDANPIRG and its Steering Group (MSG) with:

      i.   the establishment of priorities and targets for air navigation by May 2014, in accordance with Recommendation 6/1 of the Twelfth Air Navigation Conference (AN Conf/12);
      ii.   the monitoring and measurement of the agreed air navigation Metrics and indicators, at regional level; and
      iii. the identification of necessary measures/action plans to reach the agreed air navigation targets.

2.11   The first meeting of the MID Air Navigation Plan Ad-hoc Working Group (ANP WG/1) held in Cairo, 27-29 May 2013 reviewed all the ASBU Block 0 Modules and agreed that the following Modules be included in the MID Region Air Navigation Strategy, pending final endorsement by MIDANPIRG/14:

   1) B0 – APTA: Optimization of Approach Procedures including vertical guidance
   2) B0 – SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)
   3) B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration
   4) B0 – DATM: Service Improvement through Digital Aeronautical Information Management
   5) B0 – MET: Meteorological information supporting enhanced operational efficiency and safety
   6) B0 – FRTO: Improved Operations through Enhanced En-Route Trajectories
   7) B0 – CDO: Improved Flexibility and Efficiency in Descent Profiles (CDO)
   8) B0 – CCO: Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)

2.12   The ANP WG/1 meeting agreed also on the format of the Tables to be used for the monitoring of the ASBU implementation in the MID Region. It was highlighted that the Tables should be further developed to include appropriate Key Performance Indicators (KPIs), targets and action plans; and that necessary/supporting enablers (i.e: tables, databases, etc.) should be developed and included in Volume III of the ANP, taking into consideration the Air Navigation Report Forms, in order to provide States with the planning tool to be used for the measurement of air navigation systems performance.

2.13   Based on all of the above, the draft MID Air Navigation Strategy as at **Appendix A** to this working paper is proposed for review and further development.

3.   Action by the Meeting

3.1   The meeting is invited to:

a) review the draft MID Air Navigation Strategy as at **Appendix A** to this working paper and provide comments/inputs for further improvement of the Startegy; and

b) agree on a mechanism for the development of the final version of the strategy which will be presented to MIDANPIRG/14 for endorsement.

MID Region Air Navigation Strategy

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MID Region Air Navigation Strategy

Strategic Air Navigation Capacity and Efficiency Objective:

To realize sound and economically-viable civil aviation system in the MID Region that continuously increases in capacity and improves in efficiency with enhanced safety, security and facilitation while minimizing the adverse environmental effects of civil aviation activities.

Air Navigation Objectives:

States must focus on their Air Navigation Capacity and Efficiency priorities as they continue to foster expansion of the air transport sectors.

The ICAO Global Air Navigation Plan (GANP) represents a rolling strategic methodology which leverages existing technologies and anticipates future developments based on State/industry agreed operational objectives. The Block Upgrades are organized in five-year time increments starting in 2013 and continuing through 2028 and beyond. This structured approach provides a basis for sound investment strategies and will generate commitment from States, equipment manufacturers, operators and service providers.

The Global Plan offers a long-term vision that will assist ICAO, States and industry to ensure continuity and harmonization among their modernization programmes. It also explores the need for more integrated aviation planning at both the regional and State level and addresses required solutions by introducing Aviation System Block Upgrade (ASBU) methodology.

The MID Region air navigation objectives are in line with the global air navigation objectives and address specific air navigation operational improvements identified within the framework of the Middle East Regional Planning and Implementation Group (MIDANPIRG).

The enhancement of communication and information exchange between aviation Stakeholders and their active collaboration under the framework of MIDANPIRG would help achieving the MID Region Air Navigation objectives in an expeditious manner.

Near-term Objective (2017):

(TBD)

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Mid-term Objective (2022):

(TBD)

Long-term Objective (2027):

(TBD)

Measuring and monitoring air navigation Performance:

The monitoring of air navigation performance and its enhancement is achieved through identification of relevant air navigation Metrics and Indicators as well as the adoption and attainment of air navigation system Targets.

The following are the MID Region air navigation Metrics endorsed for the monitoring of air navigation system performance, based on the ASBU Block 0 Modules:

1) B0 – APTA: Optimization of Approach Procedures including vertical guidance
2) B0 – SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)
3) B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration
4) B0 – DATM: Service Improvement through Digital Aeronautical Information Management
5) B0 – MET: Meteorological information supporting enhanced operational efficiency and safety
6) B0 – FRTO: Improved Operations through Enhanced En-Route Trajectories
7) B0 – CDO: Improved Flexibility and Efficiency in Descent Profiles (CDO)
8) B0 – CCO: Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)

The MID Region air navigation Key Performance Indicators, Targets and Action Plans are detailed in the Table below:

MONITORING OF THE AVIATION SYSTEM BLOCK UPGRADES (ASBUS) IMPLEMENTATION IN THE MID REGION

B0 – APTA: Optimization of Approach Procedures including vertical guidance				
Applicability: Aerodromes (TBD)				
Metrics	**Key Performance Indicators (KPIs)**	**Targets**	**Action Plan**	**Remarks**
LNAV approaches				
LNAV/VNAV approaches				
Precision approaches				

B0 – SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)				
Applicability: Aerodromes (TBD)				
Metrics	**Key Performance Indicators (KPIs)**	**Targets**	**Action Plan**	**Remarks**

B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration				
Applicability: States/ACCs (TBD)				
Metrics	**Key Performance Indicators (KPIs)**	**Targets**	**Action Plan**	**Remarks**
AIDC/OLDI				

B0 – DATM: Service Improvement through Digital Aeronautical Information Management				
Applicability: States				
Metrics	**Key Performance Indicators (KPIs)**	**Targets**	**Action Plan**	**Remarks**
1- AIXM based AIS database				
2- eAIP				
3- WGS-84				
4-eTOD				
5- Aeronautical data quality				

B0 – MET: Meteorological information supporting enhanced operational efficiency and safety				
Applicability: States				
Metrics	**Key Performance Indicators (KPIs)**	**Targets**	**Action Plan**	**Remarks**

B0 – FRTO: Improved Operations through Enhanced En-Route Trajectories				
Applicability: States				
Metrics	**Key Performance Indicators (KPIs)**	**Targets**	**Action Plan**	**Remarks**
Airspace under full control of Civil Authority				
Airspace under full control of Military Authority				

Jointly used Airspace (Civil/Military)				

B0 – CDO: Improved Flexibility and Efficiency in Descent Profiles (CDO)				
Applicability: Aerodromes				
Metrics	*Key Performance Indicators (KPIs)*	*Targets*	*Action Plan*	*Remarks*
International aerodromes/TMAs with CDO				

B0 – CCO: Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO)				
Applicability: Aerodromes				
Metrics	*Key Performance Indicators (KPIs)*	*Targets*	*Action Plan*	*Remarks*
International aerodromes/TMAs with CCO				

Note: The different elements supporting the implementation are explained in the ASBU Document, and Global Plan (Doc 9750)

Action Plans:

MIDANPIRG through its activities under the various subsidary bodies will continue to develop, update and monitor the implementation of Action Plans to achieve the air navigation targets.

A progress report on the implementation of the Action Plans and achieved targets will be developed by the Air Navigation System Implemenation Group (ANSIG) and presented to MIDANPIRG.

Governance:

The MID Region Air Navigation Strategy is to be endorsed by MIDANPIRG.

The MID Region Air Navigation Strategy will guide the work of MIDANPIRG and all its member States and partners.

The MIDANPIRG will be the governing body responsible for the review and update of the Strategy, as deemed necessary.

Progress on the implementation of the MID Region Air Navigation Strategy and the achievement of the agreed air navigation Targets will be reported to the ICAO Air navigation Commission (ANC), through the review of the MIDANPIRG reports; and to the stakeholders in the Region within the framework of MIDANPIRG.

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