International Civil Aviation Organization

RASG-MID Steering Committee

Fifth Meeting (RSC/5)
(Amman, Jordan, 23 – 25 January 2017)

Agenda Item 4:   **Coordination between RASG-MID and MIDANPIRG**

COORDINATION BETWEEN RASG-MID AND MIDANPIRG
FOR SAFETY RELATED ISSUES

(Presented by the Secretariat)

SUMMARY
This paper provides an update on the activities of the Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG), especially those related to safety. It highlights the activities coordinated between RASG-MID and MIDANPIRG for an improved efficiency of both Groups and to avoid duplication of efforts including the agreed coordination mechanism.
Action by the meeting is at paragraph 3.

REFERENCES

- ATM SG/2 Report

- MIDANPIRG/15 Report

- MRC/2 Minutes

- RASG-MID/5 Report

1.   INTRODUCTION

1.1   The RASG-MID and MIDANPIRG have been coordinating safety-related issues such as mitigation measures for CFIT (unstabilized approaches), conflict zones, and call sign confusion. Other subjects of interest to both groups have been identified, in particular those related to ATM safety such as SMS implementation for ANS/ATM, Language Proficiency for Air Traffic Controllers, RVSM safety monitoring, etc.

2.   DISCUSSION

Coordination between RASG-MID and MIDANPIRG

2.1   The meeting may wish to recall that, with a view to further improve the current coordination mechanism between MIDANPIRG and RASG-MID, and based on the outcome of the PIRG-RASG Global Coordination meeting (Montreal, 5 February 2015), it was agreed that:

- the Chairperson(s) of MIDANPIRG should attend the RASG-MID meetings;

- the Chairperson(s) of RASG-MID should attend the MIDANPIRG meetings;

- the ICAO MID Regional Office to organize on a yearly basis a MIDANPIRG/RASG-MID Coordination meeting to be attended by the Chairpersons of both Groups and their subsidiary bodies, in order to follow-up on the activities being coordinated between the two Groups, agree on the level of involvement of the relevant subsidiary bodies, address any roadblocks and identify additional subjects, which need to be addressed by/coordinated between both Groups;

- a Table listing the subjects in which both MIDANPIRG and RASG-MID have interest with an assignment of the leading Group be presented to the First MIDANPIRG/RASG-MID Coordination meeting for endorsement; and

- the procedural handbooks of MIDANPIRG and RASG-MID should be updated before the end of 2015 to include the agreed coordination mechanism.

2.2   The meeting may wish to note that the Second MIDANPIRG/RASG-MID Coordination meeting (MRC/2) was held on 25 May 2016 as a side meeting of Third MID Safety Summit (Doha, Qatar, 24-25 May 2016). The MRC/2 meeting reviewed and updated the table listing the subjects in which both MIDANPIRG and RASG-MID have interest with an assignment of the leading Group as at **Appendix A**. The MRC/3 is planned to be held in Kuwait on 14 February 2017 back-to-back with MIDANPIRG/16 meeting.

2.3   It is to be highlighted that the RASG-MID procedural handbook has been updated to include among other things, the agreed coordination mechanism.

MIDANPIRG Activities

Call Sign Confusion

2.4   The meeting may wish to recall that MIDANPIRG/14 agreed that an initiative related to CSC be implemented under the framework of the MID Region ATM Enhancement Programme (MAEP), with Etihad Airways as the lead. The progress report on the CSC initiative as presented to the Third Meeting of the MAEP Board (MAEP Board/3) is at **Appendix B**.

2.5   The MAEP Board/3 meeting noted with appreciation the progress achieved with the implementation of the CSC initiative, and that the MID Region experience has been considered by the adjacent ICAO Regions. The meeting commended the work and efforts of the CSC Initiative Team.

2.6   The MAEP Board/3 meeting recalled that the Initiative is implemented in two phases.

- Phase one: assessing the acceptance of the alphanumeric call signs for commercial flights i.e.(UAE20AA) by the ATM systems, aerodromes, authorities providing overflight and landing/departure permissions, etc.

- Phase two: identifying and de-conflicting current and future call sign similarities within the Region.

2.7   The MAEP Board/3 meeting urged Sates to follow-up with their operators to implement the procedures for the de-conflicting of call sign similarities in coordination with the CSC Initiative Team.

2.8   The meeting may wish to note that additional airlines joined Etihad Airways in the testing of the flight plans starting from this year winter schedule. Accordingly, States were invited to cooperate and report feedback in order to ensure successful implementation.

2.9   The MAEP Board/3 meeting noted that the ICAO MID Regional Office issued State Letter Ref.: AN 6/34-16/173 dated 26 June 2016, as a follow-up action for the implementation of MIDANPIRG Conclusion 15/2. Accordingly, the meeting urged States to report call sign similarity/confusion cases using the template at **Appendix C** to the following email addresses: MIDCSC@icao.int and MENACSSU@iata.org, which will allow the CSC Initiative Team to follow-up with the concerned airline(s) to resolve the issue in a timely manner.

2.10   The MAEP Board/3 meeting agreed that a progress report with recommended actions should be presented to MIDANPIRG/16.

Reduced Vertical Separation Minima (RVSM)

2.11   The meeting may wish to recall that the Middle East Regional Monitoring Agency (MIDRMA) has been established in accordance with the provisions of ICAO Annex 11, to monitor the height-keeping performance of aircraft operating between FL290 and 410 inclusive, in order to ensure that the continued application of the vertical separation minimum meets the safety objectives. The MIDRMA is composed of the fifteen (15) MID States and is hosted in Bahrain, and staffed with three full time experts equipped with the latest GPS-based Monitoring Units (GMUs).

2.12   It is to be highlighted that the MIDRMA has several tools to improve the monitoring of RVSM implementation such as:

- Large Height Deviation (LHD) Online Reporting Tool;
- Collision Risk Assessment software;
- Online Auto Minimum Monitoring Tool; and
- Airspace Collision Risk Hot-spot Analysis software

2.13   States are invited to visit the MIDRMA website (www.midrma.com) for more information, reports and tools related to the RVSM implementation.

2.14   The meeting may wish to recall that the RASG-MID/5 meeting was apprised of the MIDRMA activities related to the Minimum Monitoring Requirements (MMR). The meeting noted with appreciation that the MIDRMA developed an Auto Online MMR Tool to enable the Civil Aviation Authorities in the MID Region to check their MMR for each air operator under their responsibility and identify the aircraft that are non-compliant with the Annex 6 requirements for height-keeping performance. Accordingly, the meeting urged States to use the Auto Online Minimum Monitoring Requirements (MMR) Tool, available on the MIDRMA website.

2.15   The RASG-MID/5 meeting emphasized that, in RVSM airspace, the operation of an aircraft which does not comply with stringent altimetry system performance requirements, constitutes a significant risk to mid-air collision. The same risk exists for an approved aircraft which is configured differently to the configuration for which the approval was granted.

2.16   The RASG-MID/5 meeting noted that recently, the Airworthiness Authorities in UAE and Qatar managed to certify all their C17s aircraft and Oman certified some other types which are used by their military, while the Airworthiness Authority in Kuwait is still reviewing the certification process of their C17s aircraft. It was highlighted that the MIDRMA is continuously monitoring the activities of the non-approved military cargo aircraft operating in the Middle East airspace and

expects an increase in the number of violations to the RVSM airspace. Accordingly, the meeting encouraged States to implement a process for the RVSM approval of their military aircraft, if not yet done so.

2.17   The RASG-MID/5 meeting reviewed and updated the MIDRMA Airworthiness/Flight Operations focal points as at **Appendix D**.

2.18   The meeting may wish to note that the Second meeting of the Air Navigation Systems Implementation Group (ANSIG/2) (Cairo, Egypt, 6-8 December 2016) noted with appreciation that the MIDRMA managed to conduct GMU monitoring for **124** aircraft registered in the Middle East Region since MIDANPIRG/15, achieving a percentage of **94 %** of aircraft with known height monitoring results, which is the highest percentage of monitored aircraft globally.

2.19   The ANSIG/2 meeting reviewed the Draft MID RVSM Safety Monitoring Report (SMR) 2015, and noted with appreciation that the three (3) safety objectives set out by MIDANPIRG continue to be met. The meeting invited States to provide their comments, if any, to the MIDRMA by 10 January 2016, in order to present the final version to MIDANPIRG/16 (Kuwait, 13-16 February 2017) for endorsement.

Performance Based Navigation (PBN)

2.20   The meeting may wish to recall that the Fourth edition of the Global Air Navigation Plan (GANP) considered the Performance Based Navigation (PBN) as the highest priority for the air navigation. The introduction of PBN has met the expectations of the entire aviation community, by increasing airspace capacity, improving airport accessibility, ensuring flight safety, and reducing CO_2 emissions. The status of PBN implementation is reflected in the Global Air Navigation Report as well as the Global and Regional Air Navigation Performance Dashboards.

2.21   Several mandates are requesting States and stakeholders to work together in order to foster the implementation of PBN such as: the Assembly Resolution A37/11, GANP, Montreal Declaration on Planning for Aviation Safety Improvement, MID Region Air Navigation Strategy, MID Region PBN Implementation Plan, DGCA-MID Doha Declaration on Aviation Safety and Air Navigation in the MID Region, PIRGs and RASGs Conclusions, etc. The PBN implementation in the MID Region is still far behind the agreed targets.

2.22   The main identified challenges impeding the advancement of PBN implementation in addition to the low number of qualified PBN Experts (PANS-OPS, Airspace planner, OPS Approval and Instructors) is the lack of necessary regulations enabling service providers to implement and the air operators to use PBN procedures.

2.23   The meeting may wish to note that the establishment of the MID Flight Procedure Programme under the framework of MAEP is on-going, it is planned to start operation in September 2017, and will be hosted in Lebanon. The MID FPP main objective in Phase 1 is building the MID States' capabilities related to PBN, which eventually will foster the PBN Implementation.

Civil/Military Coordination

2.24   The meeting may wish to recall that the RASG-MID/5 meeting noted that the MIDANPIRG/15 meeting established the MID Civil/Military Support Team, with a view to expedite the implementation of the FUA Concept in the MID Region. Accordingly, the meeting encouraged States to request the ICAO MID Regional Office to coordinate the conduct of a Support Team visit, which includes in its work programme a Civil/Military Cooperation Workshop.

2.25   It is to be highlighted that ICAO jointly with ACAC and CANSO will organize a Civil/Military Workshop in Tunis from 25 to 27 September 2017. The main objective of the Workshop is to raise awareness related to the civil/military cooperation and agree on recommendations that would foster the implementation of the Flexible Use of Airspace Concept.

Conflict Zones

2.26   The meeting may wish to note that some airspace users continue to circumnavigate Baghdad, Damascus, Tripoli FIRs and Yemen Airspace due to the conflict zones. With regard to Sana'a FIR, some air operators resumed operations through Sana'a FIR using the ATS routes over the high seas.

2.27   Several Contingency Coordination Teams (CCTs) have been established in accordance with the MID Region ATM Contingency Plan, which succeeded in the provision of a forum for sharing information, identifying the challenges and implementation of contingency measures/routes ensuring the safety of air traffic during contingency situations.

2.28   In accordance with Annex 11 provisions, Air Traffic Services authorities shall develop and promulgate contingency plans for implementation in the event of disruption, or potential disruption, of air traffic services and related supporting services in the airspace for which they are responsible for the provision of such services. Such contingency plans shall be developed with the assistance of ICAO as necessary, in close coordination with the air traffic services authorities responsible for the provision of services in adjacent portions of airspace and with airspace users concerned.

2.29   In order to ensure adequate level of coordination between States, Area Control Centres are required to sign Contingency Agreements with their adjacent ACCs. The status of signed ATS Contingency Agreements in the MID Region is at **Appendix E**. It is to be highlighted that air navigation deficiencies are reported in the MIDANPIRG Air Navigation Deficiencies Database (MANDD) related to the un-signed contingency agreements.

Search and Rescue

2.30   The meeting may wish to note that SAR main USOAP-CMA findings in the MID Region are related to lack of:

- english language proficiency for RCC radio operators;
- appropriate training programmes/plans of SAR experts;
- signature of SAR agreements;
- plans of operations for the conduct of SAR operations and SAR exercises;
- provision of required SAR services; and
- non-compliance with the carriage of Emergency Locator Transmitter (ELT) requirements.

2.31   The meeting may wish to note that the ICAO AFI/APAC/MID Regional and Inter-regional SAR Workshop was successfully held in Mahe, Seychelles from 19 to 22 July 2016. The Workshop was hosted by the Seychelles Civil Aviation Authority. The Workshop was attended by a total of eighty-five (85) participants from twenty-six (26) States and four (4) international organizations. Iran, Iraq, Lebanon, Saudi Arabia and UAE participated in the Workshop from the MID Region.

2.32   The main objectives of the Workshop was to bring together States from the four ICAO Regions, to share experiences, identify challenges and agree on measures to ensure harmonized SAR service provisions. The workshop familiarized participants with the latest developments at

global, regional and interregional level pertaining to SAR services. In addition, available solutions to challenges facing States in implementing SAR requirements as provided for under Annex 12 (Search and Rescue services) to the Chicago Convention were considered. A search and rescue exercise (SAREX) was carried out by the Seychelles Joint Rescue Coordination Centre, in order to familiarize participants with SAR operational aspects.

2.33   The Workshop also provided an opportunity for the coordination of SAR Letter of Agreements (LoAs) between the present States, which will enhance the status of LoAs signed and may encourage more multilateral agreements.

2.34   The following are the main key points that were highlighted during the workshop based on the lessons learnt from MH370, QZ8501 and MS804, which are considered vital in order to enhance search and rescue services in the four ICAO Regions (APAC, ESAF, MID and WACAF) in an harmonized manner:

a)   Search and Rescue should be given appropriate support at all levels within the International Civil Aviation Organization (ICAO), including other international and regional organizations and States;

b)   ICAO should work with all stakeholders concerned with search and rescue to:

i.   raise awareness on the importance of search and rescue at a high level and obtain the commitment of States in operationalizing SAR;

ii.   create forums to enable signing of high-level multi-lateral SAR agreements and harmonization of SAR plans; and

iii. coordinate with States' Administrations, including donor States and organizations to improve the availability of SAR funds to support SAR activities, including for search and rescue exercise (SAREX) and the provisions of services during large scale SAR responses, such as Mass Rescue Operations (MRO).

c)   States should work together to share experiences, resources and develop regional or sub-regional SAR JRCC, projects, research development, SAREX, etc.;

d)   States should take necessary measures to enhance the competency of their SAR experts and workforce, including SAR inspectorate staff, through the organization of SAR courses with the support of ICAO and IMO as appropriate;

e)   States should ensure proper cooperation between all their national authorities concerned with SAR, such as aeronautical, military, maritime, etc. through the establishment of national SAR committees; and

f)   States, that have not done so, should finalize their SAR plans and coordinate SAR agreements with all adjacent States as a matter of urgency. States experiencing challenges in implementation should contact their relevant ICAO Regional Office, which will guide and support the coordination of SAR agreements.

2.35   The Workshop also agreed to a set of recommendations to be implemented for the enhancement of SAR as at **Appendix F**.

2.36   The meeting may wish to note that the MID SAR Action Group established by MSG/5 meeting based on the outcome of the ATM SG/2 meeting is working on the development of a MID Region SAR Plan including an action plan from a SAR regional/sub-regional exercise. The first draft will be presented to the ATM SG/3 meeting (Cairo, Egypt, 22-25 May 2017).

2.37   The meeting may wish to note that the amendment to Annex 6 Part 1 in relation to Normal Tracking and Flight Data Recovery and Distress Tracking will be applicable in 2018 and 2021, respectively.

2.38   The Council and Commission both observed that extensive work was still required in relation to consequential Standards and Recommended Practices (SARPs) and guidance material and that diligence is required in this work to make sure there is no overlap or gaps in the documentation.

SIDs and STARs Phraseology

2.39   The meeting may wish to note that the amendment to the phraseologies on SIDs and STARs was circulated as State Letter AN 13/2.1-16/54, which formed part of the Amendment 7 to PANS-ATM. This amendment will enhance the comprehensibility as well as the consistency of procedures, which will enable air traffic controllers and flight crews to have a common understanding of the terms and expectations.

2.40   With a view to support the implementation of the amendment to the SIDs and STARs phraseologies, ICAO has developed a set of supporting materials designed to explain and elaborate on those amendments. It is to be highlighted that CANSO, EUROCONTROL, IATA, ICCAIA, IFALPA and IFATCA are also partnering ICAO in the sharing of these materials with their respective stakeholders. The guidance material are available on the ICAO website: http://www.icao.int/airnavigation/sidstar/pages/changes-to-sid_star-phra-seologies.aspx

2.41   The subject was addressed by the ANSIG/2 meeting, which encouraged States to take necessary measures for the implementation of the SIDs and STARs new phraseologies, and agreed to the following Draft Conclusion:

DRAFT CONCLUSION 2/2:   SIDS AND STARS PHRASEOLOGY

That, States be urged to:

a)   *implement the new provisions related to SIDs and STARs phraseology; and*

b)   *report the planned implementation date to the ICAO MID Regional Office; and if any support is required.*

MID Air Navigation Deficiency Database (MANDD)

2.42   The meeting may wish to recall that the MIDANPIRG/15meeting agreed to the following Conclusion to replace and supersede the MIDANPIRG/14 Conclusion 14/32 related to elimination of Air navigation Deficiencies:

CONCLUSION 15/35:   AIR NAVIGATION DEFICIENCIES

That, States be urged to:

a) *use the MID Air Navigation Deficiency Database (MANDD) for the submission of requests for addition, update, and elimination of Air Navigation Deficiencies, including the submission of a specific Corrective Action Plan (CAP) for each deficiency; and*

b) *submit a Formal Letter to the ICAO MID Regional Office containing the evidence(s) that mitigation measures have been implemented for the elimination of deficiency(ies) when requesting the elimination of deficiency(ies) from the MANDD.*

2.43　　　　In connection with the above, the ICAO MID Regional Office issued State Letter Ref. AN 2/2 - 15/351 dated 29 December 2015 requesting States to take all necessary measures to implement the provisions of the above Conclusion and send their feedback on the actions taken to the ICAO MID Regional Office, not later than 31 January 2016

3.　ACTION BY THE MEETING

3.1　　　　The meeting is invited to:

a) urge States (regulators) to take necessary measures to:

　i. support the work of the CSC Initiative and ensure reporting of call sign similarity/confusion cases using the template at **Appendix B** to the following email addresses: MIDCSC@icao.int and MENACSSU@iata.org;

　ii. implement the provisions of the ATM SG/2 Draft Conclusion 2/3 related to the use of the Auto Online Minimum Monitoring Requirements (MMR) Tool;

　iii. develop/update the civil aviation regulations to cover the PBN requirements;

　iv. ensure that their ATS develop contingency plan in accordance with ICAO provisions that should be coordinated with the adjacent ATS units;

　v. consider the latest developments related to Global Tracking;

　vi. ensure the timely implementation of the SIDs and STARs new phraseologies; and

　vii. implement the provisions of the MIDANPIRG Conclusion 15/35 related to air navigation deficiencies and provide their feedback on the actions undertaken to the ICAO MID Regional Office;

b) encourage States to:
　i. to implement a process for the RVSM approval of their military aircraft, if not yet done so; and

　ii. participate in the Civil/Military Workshop that will be held in Tunis from 25 to 27 September 2017; and

c) update, as deemed necessary, the MIDRMA Airworthiness/Flight Operations focal points at **Appendix D**;

d) review and update the status of MID Region ATS Contingency Agreement at **Appendix E**; and

e) take action as appropriate regarding the coordination of activities between MIDANPIRG and RASG-MID.

APPENDIX A

Coordination between MIDANPIRG and RASG-MID

Subjects of interest for MIDANPIRG and RASG-MID	Responsible/Leading Group	
	RASG-MID	**MIDANPIRG**
Aerodrome Operational Planning (AOP)		X
Runway and Ground Safety	X	
AIM, CNS and MET safety issues		X
CFIT	X	
SSP Implementation	X	
SMS implementation for ANS and Aerodromes	X	
Accidents and Incidents Analysis and Investigation	X	
English Language Proficiency	X	
RVSM safety monitoring		X
SAR and Flight Tracking		X
PBN		X
Civil/Military Coordination		X
Airspace management		X
Call Sign Similarity and Confusion		X
Conflict Zones		X
Contingency Planning		X
USOAP-CMA	X	
COSCAP, RSOO and RAIO	X	
Air Navigation Deficiencies		X
Training for ANS personnel		X
Training other civil aviation personnel	X	
Laser attack	X	
Fatigue Risk Management	X	
RPAS		X
GPS Jamming		X
Aeromedical	X	

APPENDIX B

ALPHA NUMERICAL CALL SIGN ACCEPTANCE TESTING

INTRODUCTION

The PMO is responsible of implementing and/or supporting the implementation of MAEP objectives.

Project: ATS systems acceptance of Commercial Airline call-signs utilizing Alpha-Numeric within the flight ID per ICAO Annex10 and ICAO DOC 4444 Pans/ATM

In order to achieve its purpose the MAEP PMO shall:

1. Review regional objectives in line with the Air Navigation Strategy and the users' requirements.
2. Identify, propose and prioritize projects to meet the regional objectives as stipulated in   MAEP Master Plan.
3. Develop project plans (business plans, deliverables, timeline, budget and concerned entities) for each agreed regional project for the review of the MSC and/or the Board.
4. Coordinate, support and track the implementation of national projects.
5. Ensure coordination between national and regional projects.
6. Measure the performance of MAEP.
7. Provide regular communications and reports to the MSC, the Board and other stakeholders as appropriate.
8. Manage PMO projects.
9. Maintain communication channels with all MAEP stakeholders.
10. Coordinate the work of Task Forces and implementation bodies.
11. Provide Secretarial support to MAEP Steering Committee (MSC).

Composition & Reporting:

The PMO is a dedicated and independent (both financially and managerially) office hosted at ICAO MID Regional Office. The PMO reports directly into MAEP Steering Committee and into MAEP Board through the MSC. Its work is supported by all MAEP stakeholders as required

INDEX

1   COVER PAGE

Country: UAE

Project title: ALPHA NUMERIC CALL SIGN ACCEPTANCE

Starting date: 22 February 2015

Completion date: ongoing

Responsible for project execution: Etihad Airways

Responsible for project execution: IATA Middle East North Africa

2   EXECUTIVE SUMMARY

Alpha numeric flight call sign acceptance testing within the Middle East ATS systems is a defined series of structured tests that do not include the element of a live flight associated with the flight plan as to identify any challenges associated in ensuring the regions capability of accepting alpha numeric call signs for commercial flights. Testing will include ATC Systems, regulatory overflight approval, Airport landing and departure approvals. As to validate the testing the project will conclude with a live flight. Etihad Airways has been selected to manage this project that includes a final report and Gap Analysis to the MEAP Board for review and consideration.

The project is the first phase addressing the regional and global concern relating to call sign confusion. The need to identifying solutions and possible mitigation measures addressing this safety concern will need the co-operation of all aviation stakeholders.

3   SECTION 1. BACKGROUND

This document will look at call sign similarity / confusion that often occur within an FIR. The danger is that ATC clearances issued to one flight (call sign) can be – and has been – incorrectly read back and complied with by a similar sounding flight (call sign). This confusion by either flight crews or ATC can lead to possible safety consequences. Whilst it would seem an easy exercise to change call signs to eradicate the confusion, several factors affect this:

- The call sign usually reflects the flight number associated with the airline schedule,
- Overflight approvals in certain countries are requested based on the flight number / call sign and can take an extremely long time to apply for a change (especially in our current geopolitical climate);
- Automation on the ground such as operations systems, flight planning systems, reservations and weight and balance are fed by downlinks from the aircraft (i.e. 0001 messages);

- In areas where datalink is used for communications or surveillance the flight call sign input into the FMS will downlink into ATC systems (meaning the FMS must reflect what is in the ICAO ATC filed flight plan).

4 SECTION 2. RATIONALE

4.1 2.1 Problems/Issues to be addressed

4.2 **States and their respective ATM systems must be ready to accept alpha numeric call signs in any combination.**

4.3 2.2 Stakeholders and Target Beneficiaries

4.4 Stakeholders**: States, ANSPs and Operators**

4.5 Target Beneficiaries: **ATC and Operators**

4.6

4.7 2.3 Project Justification

Call sign similarity / confusion have been identified on a global and regional level that creates a safety problem which has proportionally increased within the region and will increase further with the increased growth of commercial aviation. Due to the limited number of current combinations of flight call signs the number of operators using the same flight numbers within the same areas of airspace has and will increase.

As a mitigating factor regions surrounding the Middle East have adopted the acceptance of alpha numeric with a commercial flight id used within the ATS environment.

5 SECTION 3. PROJECT FRAMEWORK

5.1 3.1 Impact

To ensure the Middle East ATS system acceptance of such flight Id's several tests will be conducted, testing will include "dummy Flight Plans" to validate ATC, regulatory and airport acceptance to conclude with a live actual flight.

The testing requires State and ANSP feedback as to provide a gap analysis to the MEAP PMO. The gap analysis might include such deficiencies that require States to upgrade their systems or review there regulatory requirements.

5.2 3.2 project process and work plan

5.3 **The following structure and process shall be utilized during the phases of testing and will be adjusted as deemed necessary as to produce a final report and Gap Analysis. (see chart Annex-1)**

5.4 **Prior to any ATC system testing states shall be notified through the IATA MENA office with the relevant information prior to the planned test, these tests will identify any ATC system challenges associated with acceptance of such flight plans.**

5.5 **State overflight, airport landing and departure approvals shall be accomplished through the required application process which can vary from state to state as well as airport to airport. As this phase of testing is solely a paper and approval exercise no prior notification will be provided with landing and departure approvals only addressing international airports. This phase of testing is designed to identify challenges within the state and airport environments.**

5.6 **As to validate the testing and not solely rely on results done in a test environment a "Stress Test" shall be conducted prior to the actual live flight conclusion. The stress test with consist of several regional airlines per there internal bulk flight plan processing include a flight plan that includes a flight utilizing alpha-numeric. The aim of this test is to finalize the testing**

phase prior to an actual flight.

5.7   Flight Plans:

1. **Per ICAO doc 4444**
2. **Per state AIP**

5.8   Testing schedule:

5.9   Test 1 and 2 - flight plan testing for ATC Systems

5.10 Test 3 - Flight plan testing for state overflight permissions which require individual flight plan processing per state over flight permission.

5.11 Test 4 - Flight plan testing for international airport landing and departure approvals to be based on airport requirements for processing.

5.12 Test 5- Stress test utilizing several Middle East based operators processing several days of bulk flight plans with embedded flight plans that utilize Alpha numerics

5.13 Test 7- Actual live flight to validate final acceptance based upon testing results.

5.14

6   SECTION 4.   IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

6.1   4.1 Institutional Framework and Coordination

Etihad Airways will provide flight plans to test ATM systems, overflight approvals and airport approvals and conclude with an actual flight testing based on section 3.

7   SECTION 5. OVERSIGHT, MONITORING, MANAGEMENT INFORMATION, AND REPORTING

7.1   5.1 Monitoring

IATA and Etihad Airways will monitor the testing as well as the outcome and provide a final report to the MEAP Board.

7.2   5.2 Communication and Visibility

All communication will be completed by IATA to include MEAP updates as necessary

7.3   5.3 Reporting Schedule

7.4   TBD

8   ANNEX-1 PROJECT WORK PLAN

Country	ATC System capability	State Overflight Approval	Airport Landing / Departure Approval	Remarks
Egypt	YES / EMAIL	YES / EMAIL	Partially Successful	Testing temporarily suspended due to EY internal software issues
Saudi Arabia	YES / EMAIL	YES / EMAIL	Successful	
Kuwait	YES / EMAIL	YES / EMAIL	Successful	
Iran	YES / EMAIL	YES / EMAIL	Partially Successful	Testing temporarily suspended due to EY internal software issues
Bahrain	YES / EMAIL	SEE QATAR	Successful	
UAE	YES / EMAIL	N/A	Partially Successful	Etihad does not operate to all UAE airports
Jordan	YES / EMAIL	YES / EMAIL	Successful	
Iraq	YES / EMAIL	YES / EMAIL	Partially Successful	EY has suspended operation to Iraq destinations and overflight is currently prohibited by authorities
Lebanon	YES / EMAIL	YES / AFTN	Successful	
Qatar	YES / EMAIL	YES / AFTN	Successful	
Oman	YES / EMAIL	YES / AFTN	Successful	
Sudan	YES / EMAIL	Sudan already accepts any call sign	Partially Successful	No overflight testing is currently possible as it would move into another region (AFI)
Syria	NO REPLY	NOT REQUESTED	not planned	
Yemen	NO REPLY	NOT REQUESTED	not planned	

Flight Plan Test-1 conducted February 22nd 2015

(FPL-ETD42DW-IS
-B77W/H-SDE2E3FGHIJ5M1RWXY/SB1D1
-EIDW0820
-N0482F350 PESIT5A PESIT DCT BAKUR UN546 STU UP2 NIGIT UL18 MID
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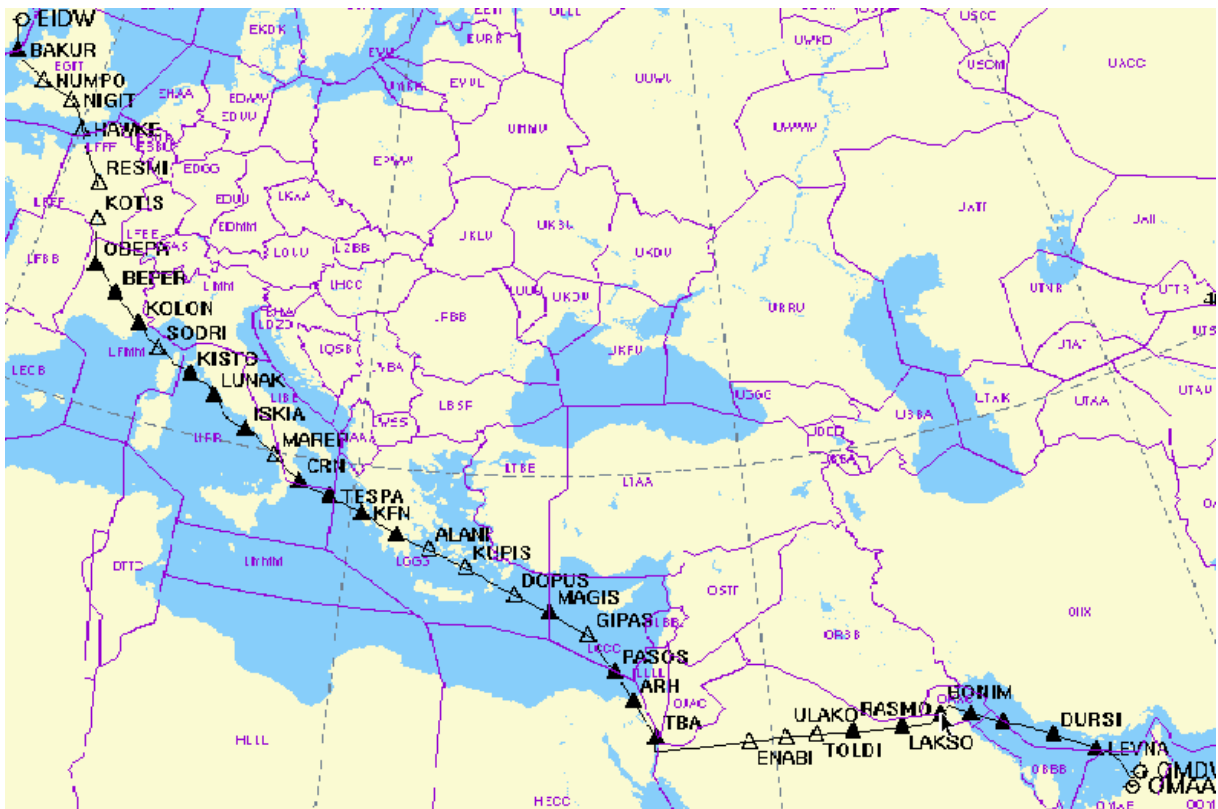
Flight Plan Test-2 conducted March 22nd 2015

(FPL-ETD42DW-IS

-B77L/H-SDE2E3FGHIJ5M1RWXY/SB1D1
-OMAA0800
-N0479F370 DCT MCT/N0482F380 DCT SYN DCT PSD/N0477F390 DCT
LUDAN/N0475F380 DCT KAD/N0456F360 DCT ORER/N0445F350 DCT OTHH DCT
-OMAA0826 OMAL
-PBN/A1B1D1L1O1S2T1 DOF/150316 REG/XXXXX EET/OOMM0010 OEJD0053
OOMM0123 OYSC0128 OEJD0245 HHAA0326 HSSS0334 HECC0403 OEJD0417
OJAC0504 OSTT0524 OLBB0533 OSTT0545 ORBB0614 OIIX0647 ORBB0656
OIIX0657 ORBB0700 OIIX0714 ORBB0716 OIIX0718 ORBB0722 OKAC0726
OBBB0736 OMAE0813 SEL/CJDQ OPR/ETD RMK/TCAS EQUIPPED DUMMY FLIGHT
PLAN ONLY NO AIRCRAFT)

9 ANALYSIS

The Pool of Standards Required by the Use Case

Summary of Standards

Test trial summary

Over the past 18 Months Etihad has successfully introduced 44 live test trial flights into Europe and 38 live test trial flights within the Middle East. The trials will continue to include further destinations where necessary. Below is an extract of flights currently operated with an alpha numeric call sign within the Middle East

MIDDLE EAST							
VALID 30 October 2016 TILL 25 March 2017							
Operator IATA	**Commercial Flight Number**	**Operator ICAO**	**Alpha Numeric Call Sign**	**Departure IATA**	**Departure ICAO**	**Destination IATA**	**Destination ICAO**
EY	327	ETD	11D	AUH	OMAA	DMM	OEDF
EY	308	ETD	14C	KWI	OKBK	AUH	OMAA
EY	333	ETD	14D	AUH	OMAA	JED	OEJN
EY	385	ETD	14W	MCT	OOMS	AUH	OMAA
EY	346	ETD	18U	MED	OEMA	AUH	OMAA
EY	301	ETD	19A	AUH	OMAA	KWI	OKBK
EY	345	ETD	21C	AUH	OMAA	MED	OEMA
EY	371	ETD	23B	AUH	OMAA	BAH	OBBI
EY	334	ETD	23Y	JED	OEJN	AUH	OMAA
EY	331	ETD	25Q	AUH	OMAA	DOH	OTBD
EY	320	ETD	29F	DMM	OEDF	AUH	OMAA
EY	314	ETD	38A	JED	OEJN	AUH	OMAA
EY	323	ETD	40Y	AUH	OMAA	DMM	OEDF
EY	315	ETD	42P	AUH	OMAA	RUH	OERK
EY	391	ETD	43A	AUH	OMAA	DOH	OTBD
EY	310	ETD	44V	KWI	OKBK	AUH	OMAA
EY	313	ETD	48U	AUH	OMAA	JED	OEJN
EY	325	ETD	49X	AUH	OMAA	DMM	OEDF
EY	318	ETD	50N	RUH	OERK	AUH	OMAA
EY	379	ETD	54W	AUH	OMAA	BAH	OBBI
EY	376	ETD	60Z	BAH	OBBI	AUH	OMAA
EY	328	ETD	61A	DMM	OEDF	AUH	OMAA
EY	316	ETD	61E	RUH	OERK	AUH	OMAA

Technical details:

1. **Conversion to an alpha numeric call sign**
   It is important to understand that not every single flight number needs to be changed. This would create a reversed negative affect. Etihad has used the EuroControl CSS tool to de-conflict its own schedule. EuroControl has provided alpha numeric call signs to those flight numbers that are phonetically similar.

We have tested the use of EY as letters (e.g. ETD1EY) but found that it was not practical. Other airline codes may work better.
It was also recommended by our crews to use 2 numbers and 1 letter whenever possible. It is easier to say and to remember. Since this is a global issue we may even run out of possible combinations so this is not always possible

2. Obtaining overflight permissions and airport approvals

When applying for overflight it is recommended to apply for both the commercial flight number and the respective alpha numeric call sign. This will help to safeguard the flight in case of any unforeseen problems using the alpha numeric call sign. This procedure can be ignored after one or two seasons of using alpha numeric call signs to reduce workload for operators and state approvers. For airport approvals it is usually sufficient to inform the airport of the alpha numeric call sign that is connected to a commercial flight number.

3. Internal considerations and issues

Flight Plan

The operational flight plan should include both the commercial and the alpha numeric call sign. The ICAO flight plan however will be filed with its alpha numeric call sign but it is important to add the commercial flight number under field 18 to ensure the connection between the two numbers.

FMS

We have tested Airbus A320, A340 and A320, Boeing B787 and Boeing B777. Depending of the FMS used may have to be used to ensure that messages are transmitted to other internal systems such as load planner, fuel dockets etc.

ACARS

It is important that the ops control system is set so that it understands both flight numbers. This is important since the aircraft uses alpha numeric in the OOOI messages where the airport offices typically send movement messages with commercial flight numbers.

Datalink

We have further tested DCL and CPDLC. We found no issues when using alpha numeric call signs.

B777 Flight Tracking

Issue

B777 flights with alphanumerical call signs could not be tracked through our flight watch system. The system dropped the letter so position reports were not received unless the aircraft was within ADS-B coverage.

Solution

An upgrade of the ACARS system as well as the flight tracking system has solved the problem. Additionally Flight Crews now have a supplementary procedure in place

Connecting gates uplink and IFE map

Issue

Connecting gate uplink for our hub operation discontinued to work with the introduction of alpha numeric call signs and the IFE map started showing the alpha numeric call sign iso the commercial flight number which caused confusion

Solution

A software change was initiated which has fixed the gate uplink issue. We are currently working on the IFE issue.

ACARS LS acceptance and AIMS OOOI message

Issue

The FMS started using the alpha numeric call sign iso the commercial flight number which was not understood by several internal systems such as the load master system as well as our ops control system

Solution

In a first step we have changed the configuration in our AIRCOM server so that the system was able to read both commercial as well as alpha numeric call signs. This however was only a workaround and therefore a converter document will be introduced which is the final solution

Mobile APP

Issue

We are using an APP that allows several functions around flight operation including the location on a map. We are however not getting position data where alpha numeric call signs are used.

Solution

As a workaround we have introduced a table to the flight information system FIS which will be used as a converter so that the APP understands the connection between commercial and alpha numeric flight numbers.

Use Case Airline Open Issues

Event	Event Description	Actions
IFE (inflight entertainment system)	Alpha numeric flight number display iso commercial	A software change was initiated which has fixed the gate uplink issue. We are currently working on the IFE issue.

Gaps in Standards

In this subsection we provide a description of the gaps, including missing or incomplete standards, in standards that are required for the events in this Use Case.

Event	Event Description	Standard Gap
Sudan overflight	Testing did not include MID to AFI overflight	Flights in and out of Sudan Airports identified no gaps
Saudi Arabia overflight	Initial denial of overflight permission	Appears to be a gap in information exchange
Saudi Arabia airports	Initial denial of alpha numeric call signs	Test trial supporting airline's request to use alpha numeric call signs was initially refused. This was resolved with the kind cooperation of GACA, IATA and ICAO

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Standards to be profiled in Implementation Guides TBD

        In this subsection we provide a list of projected profiles for any standards that maybe utilized

Event	Event Description	Standard Gap
Recommendations for states		

Resolution Recommendations TBD

Event	Event Description	Standard Duplication/ Overlap/Gap Resolution

Next Steps

1. Etihad's summer 2017 has once again been de-conflicted by EuroControl. This is the first time that we have kept most of the alpha numeric call signs since they have worked well during the winter 2016 season. This way we have limited changes to converter lists which would be very time consuming. We are currently requesting overflight and airport permissions for all Etihad flights into below regions / countries. It is also the first time that we request overflight permissions for Europe and the Middle East for alpha numeric call signs only as we have not had any issues during the last 2 seasons
   - Europe
   - North America (new region)
   - Middle East
   - India (new region)

2. Etihad invited other operators to help testing further destinations within the Middle East. Currently RJ, TK, QR, FZ and BA (support as needed).

14 Summary Recommendations for endorsement

The project has found no deficiencies so far with flight plan processing or active live flights with regional ATC or CAA units. Etihad Airways with the support of selected regional and international airlines will continue the flight plan testing phases for International airports' arrivals and departures within the Mid-Region to identify gaps and/or challenges within the airport process, such as IT or human factors, that would limit the use of Alpha-Numeric call signs for commercial flights in the MID region. Any deficiencies will be reported to ICAO and the MEAP S/C upon the completion of the testing phase.

The project has identified that the Call Sign Similarity process and software which is currently used by Eurocontrol can be utilized in the MID Region. Furthermore, the region will benefit from the lessons learned by Eurocontrol to ensure a better implementation of the tool.

Suggestions overview:
1. Establish a regional call-sign similarity unit (CSS)
2. Establish CSS rules for call-sign conflicts as done by Eurocontrol
3. Establish CSS Working Group through ICAO
4. Operators having an internal process to de-conflict the airline's flight schedule, will provide the internally de-conflicted schedule to the regional call sign similarity unit (CSS).
5. Operators that do not have an internal de-conflicting process that they can utilize to de-conflict their internal flight schedule, will provide data to the regional call sign similarity unit (CSS) for de-confliction.
6. Call- sign conflicts identified through regional call sign similarity unit (CSS) will be provided to operators with options for adjustments (example: XXX123 to XXX12A/XXX12M).
7. Call signs that have been identified with no conflict will be assigned until such time they are no longer utilized by operator.
8. All new call signs will be applied through the regional call sign similarity unit (CSS) prior to utilizations to assure de-confliction and report and assignment provided to submitter by the (CSS)
9. Call signs that have worked well during a season should be kept were possible. It will help to eventually decrease the changes to zero and support the aim of retaining a specific alpha numeric call sign for a commercial flight number
10. States will report to the regional call sign similarity unit (CSS) attaching the ATC/Airport call-sign confusion reports for review tracking and action if deemed appropriate.

Alphanumeric Call-Sign Trial

Qatar Airways
Navigation Services, ATM
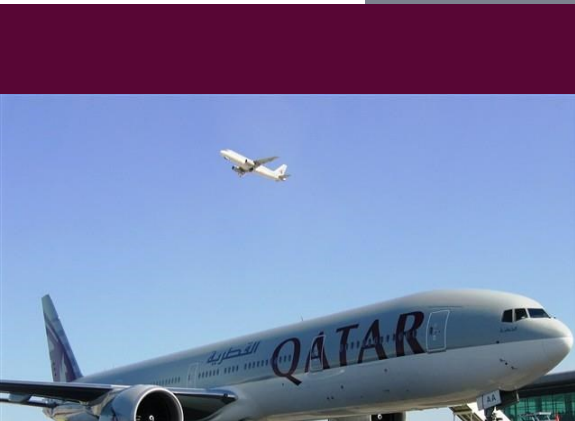
Qatar Airways – Alpha Numeric Trial (MENA Region)

UPDATE JANUARY 2017

- August 2016, Qatar Airways confirmed participation in the MENA Region Alpha Numeric Trials

- QR agreed to undertake Alpha Numeric Trials in:
- Iran (IKA, SYZ, MHD)
- Iraq (BGW, ISU, BSR, EBL, NJF)

- All QR destinations in Iran and Iraq are served by the Airbus A320/A330 Fleet

- Tehran (IKA) was nominated as the first airport for the trial

ACTIVITY UPDATE

November 2016

EUROCONTROL Training undertaken by ATM team in Brussels.

De-confliction of winter 16/17 schedule utilizing the CSS tool.

Manual check of the Alpha Numeric city pairs assigned by the CSS undertaken by ATM, Fleet Management and Flight Safety to capture further potential conflicts or issues.

- Issue identified for short return sector flights where Alpha Numeric was similar e.g. 32H / 32J. Similar Call-Signs amended.

A Procedure for fallback use of Alpha Numeric Call-Sign established to support late notice a/c swap from Airbus to Boeing fleet (B777).

Awareness campaign undertaken for fleets (QR publications, intranet, internal briefings).

January 2017

Overflight Permissions from Iran, Saudi Arabia and Egypt requested (to support route options in/out of Iran/Iraq).

Iran/Iraq Alpha Numeric Call-Signs (Winter 16/17)

QR	482	QTR	482	450	655	DOH	IKA
QR	483	QTR	483	805	1010	IKA	DOH
QR	490	QTR	32K	2155	2359	DOH	IKA
QR	491	QTR	51P	110	315	IKA	DOH
QR	498	QTR	498	1545	1750	DOH	IKA
QR	499	QTR	499	1910	2115	IKA	DOH
QR	476	QTR	56E	2315	30	DOH	SYZ
QR	477	QTR	39H	130	250	SYZ	DOH
QR	492	QTR	73B	1600	1820	DOH	MHD
QR	493	QTR	19Z	1920	2200	MHD	DOH
QR	494	QTR	56K	2120	2340	DOH	MHD
QR	495	QTR	495	40	320	MHD	DOH
QR	442	QTR	94F	1550	1800	DOH	BGW
QR	443	QTR	443	1900	2059	BGW	DOH
QR	444	QTR	78L	505	715	DOH	BGW
QR	445	QTR	64D	815	1015	BGW	DOH
QR	458	QTR	458	1015	1225	DOH	BGW
QR	459	QTR	459	1325	1525	BGW	DOH
QR	462	QTR	462	330	705	DOH	ISU
QR	463	QTR	62F	805	1020	ISU	DOH
QR	446	QTR	58Q	1055	1225	DOH	BSR
QR	447	QTR	17L	1325	1450	BSR	DOH
QR	448	QTR	448	545	715	DOH	BSR
QR	449	QTR	449	815	940	BSR	DOH
QR	450	QTR	80A	1215	1535	DOH	EBL
QR	451	QTR	451	1635	1900	EBL	DOH
QR	452	QTR	75N	520	840	DOH	EBL
QR	453	QTR	14R	940	1205	EBL	DOH
QR	456	QTR	456	525	725	DOH	NJF

QR	457	QTR	61B	825	1015	NJF	DOH
QR	460	QTR	460	1545	1745	DOH	NJF
QR	461	QTR	461	1845	2035	NJF	DOH
QR	464	QTR	464	1020	1220	DOH	NJF
QR	465	QTR	78A	1320	1510	NJF	DOH

Alphanumeric Trial - Tehran (IKA)

- Tehran ATC notified of trial, ATC confirmed no issues in support QR's trial
- 1st test flight commenced 29th Nov

Alphanumeric Trial

Return Flight IKA – DOH
QR483 | QTR51P

Flight Info — FLF011

QR 483 / QTR51P | IKA - DOH | 29 Nov | A7-ADS | 321

Capacity
Loaded Pax :
Crew Count :

IKA — TTL : 01:23 hrs — DOH

ATD 08:01 11:31(L) — ETA 10:00 13:00(L)
STD 08:05 11:35(L) — STA 10:10 13:10(L)

OVERFLIGHTS PROHIBITED. ISU AUTHORIZED AS ALTERNATE AIRPO... EBL AND VICE VERSA. SOUTHERN ROUTE AUTHORIZED FOR EBL-DO...

TRIAL RESULTS

23

29th November 2016

QR 482 QTR32K DOH-IKA | QR 482 QTR 51P 29/11

- –No issues reported by ATC
- –Positive feedback received from operating crew
- –Minor adjustment required to in-house Flight Watch tool due Call-Sign correlation issue

November 2016 – January 2017

- –DOH – IKA-DOH flight continues to operate with Alpha Numerics
- –1 operational issue reported due late a/c change to B777, fall back to numeric Call-Sign required, caused minor issues.
- –B777 software still not capable to support Alpha Numeric Call-Signs (QR). Limitation requires to use an aircraft swap procedure, and limits implementation process.
- –Unclear Landing/airport approvals procedure in Iran. No clear indication on how to obtain landing permissions from Iran.
- – NOTAM issued by Dubai stating non acceptance of Alpha Numeric Call-Signs.

Next Steps

JANUARY 2017

–Commence Alpha Numeric Trials on remainder of destinations served by QR in Iran/Iraq

–Undertake Testing of B788/A350/A380

–Attend EUROCONTROL CSS User Group Meeting (January 24th 2017)

–To support recommendations from the Alpha Numeric Regional meeting (Abu Dhabi 24th August 2016):

All Participating Airlines (Qatar Airways, Royal Jordanian & Turkish Airlines) to de-conflict schedule using the Eurocontrol tool. (Actioned)

Airlines to provide chosen routes for the trial. (Actioned)

ICAO and IATA to establish an ATM Call-Sign similarity Working Group, to de-conflict Call-Signs amongst all the Regional Airlines. (QR Supports)

Call-Sign similarity statistics to be gathered for analysis. (QR Collating stats)

A combined paper mapping final test result for both ICAO & Airlines to be provided by the 25th of January 2017.

Call-Sign Conflict

QR REPORT

- 40 reports received since commencement of Winter 2016schedule.

    - 6 external (e.g.: EMIRATES 383 QR 933 Etihad 833)

    - Majority of reports are from Middle East, Asia and Europe.

    - all Aircraft types, majority of reports B777/B787 fleet ▪Majority of reports identify

conflicts with more than two aircraft ▪Only 1 report received from ANSP (Brest ACC):

- Number of numeric flight numbers available limits full possibility to deconflict schedules.

- Airlines are assigning numeric Call-Signs based on their own criteria, thus creating additional Call-Sign conflict.

Call Sign Similarity/Confusion Reporting Template

Case	Reporting ANSP or AO	Place of occurrence (Airport, sector, etc)	Date of occurrence (26/04/2013)	Time (UTC)	Call signs (one line for each)	Departure airport (ICAO 4-letter code)	Arrival airport (ICAO 4-letter code)	Type of aircraft (ICAO type desig)	Aircraft Operator (ICAO 3-letter code)	Type of Occurrence (CSS or CSC)	AO using CSST (YES or NO)
1											
2											
3											
4											
1											
2											

APPENDIX D

LIST OF MIDRMA BOARD MEMBERS/ALTERNATES AND FOCAL PONTS

STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
BAHRAIN	Mr. Saleem Mohammed Hassan A/Director Air Navigation Civil Aviation Affairs P.O. Box 586 - BAHRAIN Fax: (973) 17 32 9977 Tel: (973) 17321116 Mobile: (973) 39608860 E-mail: saleemmh@caa.gov.bh	Mr. Abdullatif Ahmed Bucheeri Civil Aviation Affairs P.O. Box 586 – BAHRAIN Fax: (973) 17 32 9966 Tel: (973) 17 321118 Mobile: (973) 39456519 E-mail: aabdulrahman@caa.gov.bh	Mr. Ahmed Mohammed Bucheeri Head of Air Traffic Operation Civil Aviation Affairs P.O. Box 586 BAHRAIN Fax: (973) 17 329966 Tel: (973) 17 321158 Mobile: (973) 39522696 E-mail: a.ali@caa.gov.bh	Capt. Abdulla Al Saeedi Aircraft Operations Inspector Civil Aviation Affairs P.O. Box 586 BAHRAIN Tel: (973) 17 32 9940 E-mail: a.alsaeedi@caa.gov.bh Eng. Abdulrazzqaq Abdulwahid Aircraft Registration Specialist Civil Aviation Affairs P.O. Box 586 BAHRAIN Tel: (973) 17 32 9031 E-mail: a.mohammed@caa.gov.bh
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IRAN	Mr. Mohammad Shahbazi Director General of Airworthiness Department I.R. Iran Civil Aviation Organization Tehran Mehrabad International Airport P.O. Box 13445-1798 Tehran - IRAN Fax: (9821) 66018659 Tel: (9821) 66073526 Mobile:: (98 912) 4369921 E-mail: m-shahbazi@cao.ir	Mr. Mohammad Javad Taghvaey Flight Standard Deputy I.R. Iran Civil Aviation Organization Tehran Mehrabad International Airport P.O. Box 13445-1798 Tehran - IRAN Fax: (9821) Tel: (9821) Mobile: (98912) Email: taghvaey@cao.ir	Mr. Ebrahim Moradi General Director of ATS Iran Airports Company (IAC) Tehran – IRAN Fax: (98 21) Tel: (98 21) Mobile: (98912) Email: ebistar_moradi@yahoo.com	Mr. Majid Khademhosseini Airworthiness In charge (Avionic) Flight Standard Department (CAO) Tehran – IRAN Fax: (98 21) 660 25066 Tel: (98 21) 661 02123 Mobile: (98) 9122140530 E-mail: majid.khadem@gmail.com m-khademhossini@cao.ir
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STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
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LIBYA				

STATE	MIDRMA BOARD MEMBER	ALTERNATE	ATC FOCAL POINT	AIRWORTHINESS/FLIGHT OPERATIONS FOCAL POINT
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APPENDIX E

Table 2. Status of Contingency Agreements in the MID Region

STATE	CORRESPONDING STATES			REMARKS
BAHRAIN	☒ IRAN ☒ KUWAIT	☒ QATAR ☒ SAUDI ARABIA	☒ UAE	Completed
EGYPT	☒ GREECE ☒ JORDAN	☒ LYBIA ☒ CYPRUS	☒ SAUDI ARABIA ☒ SUDAN	Completed
IRAN	☒ ARMENIA ☐ AZERBAIJAN ☐ TURKMANISTAN ☐ AFGHANISTAN	☒ BAHRAIN ☒ IRAQ ☐ KUWAIT ☒ OMAN	☒ PAKISTAN ☒ TURKEY ☐ UAE	6/11
IRAQ	☒ IRAN ☐ JORDAN	☐ KUWAIT ☐ SAUDI ARABIA	☐ SYRIA ☐ TURKEY	0/6
JORDAN	☒ EGYPT ☐ IRAQ	☐ ISRAEL ☒ SAUDI ARABIA	☐ SYRIA	2/5
KUWAIT	☒ BAHRAIN ☐ IRAN	☐ IRAQ	☒ SAUDI ARABIA	2/4
LEBANON	☐ CYPRUS	☐ SYRIA		0/2
LIBYA	☐ ALGERIA ☐ CHAD ☒ EGYPT	☐ MALTA ☐ NIGER	☐ SUDAN ☐ TUNIS	1/7
OMAN	☐ INDIA ☒ IRAN	☐ PAKISTAN ☐ SAUDI ARABIA	☒ UAE ☒ YEMEN	4/6
QATAR	☒ BAHRAIN	☐ SAUDI ARABIA	☐ UAE	1/3
SAUDI ARABIA	☒ BAHRAIN ☒ EGYPT ☐ ERITREA ☐ IRAQ	☒ JORDAN ☒ KUWAIT ☐ OMAN	☐ SUDAN ☐ UAE ☐ YEMEN	4/10
SUDAN	☐ CENTRAL AFRICAN ☐ CHAD ☒ EGYPT	☐ ERITREA ☐ ETHIOPIA ☐ LIBYA	☐ SAUDI ARABIA ☐ SOUTH SUDAN	1/8
SYRIA	☐ IRAQ ☐ JORDAN	☐ LEBANON ☐ CYPRUS	☐ TURKEY	0/5
UAE	☒ BAHRAIN ☐ IRAN	☒ OMAN ☐ QATAR	☐ SAUDI ARABIA	2/5
YEMEN	☐ DJIBOUTI ☐ ERITREA ☐ ETHIOPIA	☐ INDIA ☒ OMAN ☐ SAUDI ARABIA	☐ SOMALIA	1/7

☒ Agreement Signed   ☐ Agreement NOT Signed   Signed Agreements / Total No. of required Agreements

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APPENDIX F

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	Action	Responsible	Timeline	Status / Updates
1.	Organize ICAO Inter-regional AFI/APAC/MID SAR Workshop periodically on a rotational basis between the regions. ICAO ROs to include the workshop venue and dates in 2017 schedule of meetings	ICAO	Dec. 2016	
2.	Coordinate with ICAO HQ to provide more support to SAR through the provision of adequate resources to ensure effective follow-up and assistance regarding global SAR issues.	ICAO	Sep. 2016	
3.	Consider the reduction of the uncertainty phase timing commensurate with adequate communications and surveillance capabilities.	ICAO	TBD	
4.	Clearly define the division of responsibilities regarding command and control and hand over between the search and rescue function (Annex 12) and the air accident investigation search and recovery function (Annex 13).	ICAO	TBD	
5.	Development of AFI and MID Regional SAR Plans in a harmonized manner, taking into consideration the APAC SAR Plan and experience.	ICAO MID ICAO AFI	Mar. 2017 TBD	
6.	Establishment of national SAR committee that manages aeronautical, maritime, and civil/military cooperation aspects.	States ICAO	June 2017	
7.	Establishment of internal Quality Management System (QMS) for RCCs utilizing frameworks such IAMSAR, regional plan, USOAP-CMA protocol questions related to SAR.	States	Ongoing	
8.	Development of a Template for national SAR Plan	ICAO	Jan. 2017	
9.	Development of a comprehensive national SAR Plan addressing the ICAO and IMO requirements, involving the airspace operators and ensuring effective internal and cross borders cooperation, taking into consideration the regional SAR Plan. Aerodrome and airline emergency response plans and disaster management plans should be synchronized with the SAR Plan.	States	June 2017	
10.	Raise awareness related to SAR through promotional material and the conduct of national, regional and inter-regional SAR workshops with the support of ICAO and IMO.	AFCAC (for AFI Region) ICAO IMO States	Ongoing	
11.	Negotiate and sign SAR LoAs between adjacent States	States AFCAC (for AFI Region)	June 2017	
12.	States at the interface with the ICAO MID Region to follow-	States	June 2017	

	up with their ACCs the signature of the MID SAR Bilateral Arrangements with their relevant adjacent MID ACCs to ensure that alerting and coordination procedures are in place.	adjacent to MID States		
13.	Staff RCCs with sufficient number of adequately dedicated SAR personnel, and ACC with supervisory resource to ensure swift triggering of the alerting and coordination process.	States	Ongoing	
14.	Develop a short and long term plans for training of search and rescue personnel, including those involved in the oversight of SAR, derived from comprehensive training programmes, manual, etc. in order to ensure effective training and high level of competency.	ICAO IMO States	Ongoing	
15.	Enhance SAR experts' competency thorough the conduct of national, regional and inter-regional SAR courses with the support of ICAO and IMO as appropriate.	States ICAO AFCAC	Ongoing	
16.	RCCs and, as appropriate, RSCs, staffed 24 hours a day by trained and qualified operational personnel using radiotelephony communications who are proficient in the use of the English language.	States	Ongoing	
17.	Training to interact with the media should be provided to SAR Managers or any person involved with public communications.	States	Ongoing	
18.	Alternatives means of communication to promote, coordinate, SAR issues such as social media could be used. *Note. Social media should not be used as an initial alerting means in lieu of formal communication mechanism*	States	ongoing	
19.	Establishment of a Joint Rescue Coordinator Centre (JRCC) to coordinate aeronautical and maritime SAR operations	States	TBD	
20.	Sharing of resources (Human, assets, funding, etc.) through the establishment of regional and sub-regional SAR JRCC	ICAO States	Ongoing	
21.	Making available funds to ensure effective provision of SAR services, which should cover the running cost of the RCC and the SAR missions in case of incidents and accidents, SAREX and the provisions of services during large scale SAR responses, such as Mass Rescue Operations (MRO).	States Donors Stakeholders	Ongoing	
22.	Review the GADSS Concept and consider their preparedness for implementation.	States Airlines	Ongoing	
23.	Establishment of a legal framework to support the roles and responsibilities of SAR experts to handle various SAR missions.	States	Ongoing	
24.	Conduct national, regional, sub-regional and inter-regional SAREX. SAREX should be effective to test the SAR system in place.	States ICAO IMO	Ongoing	
25.	Signature of Memorandum of Arrangements (MoA) between SPOCs and their relevant MCCs	States	June 2017	

26.	RCCs should be notified well in advance regarding any activity that may lead to a SAR response (adventure, experimental, etc.) within their area of responsibility by their relevant authorities, for appropriate actions.	States	Ongoing	
27.	Consider the use of drones for SAR services.	States	Ongoing	
28.	Development of guidance on the use of drones for SAR.	ICAO IMO Stakeholders	Dec 2017	
29.	Take note of the emerging space-based ADS-B technology (trial from September 2016)	States	Ongoing	

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