International Civil Aviation Organization

Second Meeting of the RASG-MID Steering Committee (RSC/2)

(Amman, Jordan, 28 – 30 October 2013)

Agenda Item 3: Regional Performance Framework for Safety

UPDATE ON DEVELOPMENT AND IMPLEMENTATION OF SIES & DIPS RELATED TO CFIT

(Presented by CFIT Coordinator)

SUMMARY

This paper presents the Final Safety Enhancement Initiatives (SEIs) and one Detailed Implementation Plan (DIP) to mitigate risks of Controlled Flight Into Terrain (CFIT)

Action by the meeting is at paragraph 3.

1. INTRODUCTION

1.1 Controlled Flight into Terrain (CFIT) constitutes a high fatality and hull loss accident category. Based on an analysis carried out by Boeing for the years 1987 and 2010, fatality risk from CFIT constitutes 20% of total accidents, and comes second in place after LOC-I in terms of fatality risk.

1.2 Although there were no reported CFIT accidents in the Middle East Region, RASG-MID maintained this accident category within the framework of MID-ASRT and MID-RAST because it remains one of the major fatality risk accidents worldwide.

2. DISCUSSION

2.1 The top contributing factors to CFIT based on IATA statistics for 2010 and 2011, are:

a) SOP Adherence / SOP Cross Verification
b) Nav-aids Malfunction or not available
c) Flight Ops Training
d) Poor visibility

2.2 In 2011, 100% of the reported CFIT accidents had regulatory oversight as a contributing factor.

2.3 The developed Safety Enhancement Initiatives (SEIs) to address CFIT risks are:

a) the construction, approval and implementation of RNAV(GNSS)/RNP-AR procedures to all runways not currently served by precision approach procedures;

b) promote, implement and mandate best practice Standard Operating Procedures with respect to CFIT amongst Aircraft Operators and Air Navigation Service Providers; and

c) mandate the incorporation of the latest standard CFIT warning and prevention technology onboard operators' aircraft and within ANSP's facilities.

2.4 In an attempt to preclude future CFIT accidents, and address contributing factors to this accident category, RASG-MID is developing a Detailed Implementation Plan (DIP) to ensure that RNAV (GNSS) and RNP-AR approach design and procedures are adequate and provide sufficient altitude protection during the approach and landing phase.

2.5 RASG-MID will also work on ensuring that pilots and controllers training and guidance in the use of RNAV(GNSS) & RNP-AR is adequate, current, uniformly conducted and supports the optimum utilization of automation resources so that individuals can take a monitoring role.

2.6 RASG-MID will also work with the MID PBN Support Team (MPST) to accelerate the implementation of PBN in the Region. This will include supporting:

a) localized PBN Go Team visits and workshops;

b) development of Regional guidance material for operational approval and pilot training;

c) Awareness workshops and training courses; and

d) Gap Assessments and Development of implementation Action Plans for specific airports.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) review and endorse the attached SEIs and DIP for CFIT as in **Appendices A and B** to this working paper;

b) support the action plans proposed for accelerated RNAV (GNSS) and RNP-AR approach; and

c) volunteer for PBN Go Team visits under the MID PBN Support Team (MPST).

APPENDIX A

Controlled Flight Into Terrain (CFITs)

DIP	RAST No	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	IC Indicator	Priority	Possible Champion	Time Frame	Notes
	RAST-MID/CFIT/3	The construction, approval and implementation of RNAV(GNSS) / RNP-AR procedures to all runways not currently served by precision approach procedures	N/A	12	High	Difficult	P1	1	IATA/CANSO	Long-term	
	RAST-MID/CFIT/7	Promote,implement and mandate best practice Standard Operating Procedures with respect to CFIT amongst Aircraft Operators and Air Navigation Service Providers	N/A	1	High	Medium	P2	2		Mid-term	
	RAST-MID/CFIT/4	Mandate the incorporation of the latest standard CFIT warning and prevention technology onboard operators' aircraft and within ANSP's facilities	N/A	12	High	Difficult	P3	3		Long-term	

APPENDIX B

DETAILED IMPLEMENTATION PLANS (DIPs)

Rast No.	Safety Enhancement Action	Reference	GSI	Safety Impact	Changeability	Indicator	Priority	Time Frame
RAST-MID/CFIT/3	The construction, approval and implementation of RNAV(GNSS) / RNP-AR procedures to all runways not currently served by precision approach procedures	SE09	12	High	Difficult	P3	3	Long-term

Safety Enhancement:	Introduction of RNAV(GNSS) / RNP-AR approaches and removal of traditional non-precision approaches. This is to ensure that the latest performance based navigation technology is utilized, at such airfields, to provide the highest level of safety during the conduct of an approach and landing towards the runway.
Statement of Work:	In an attempt to preclude future CFIT accidents, design an implementation plan to ensure that RNAV(GNSS) and RNP-AR approach design and procedures are adequate and provide sufficient altitude protection during the approach and landing phase and this, around all domestically and internationally identified, Higher Risk Airports served by NPA. Also ensure that pilots and controllers training and guidance in the use of RNAV(GNSS) & RNP-AR is adequate, current, uniformly conducted and supports the optimum utilization of automation resources so that individuals can take a monitoring role.
Champion Organization:	IATA/CANSO
Human Resource:	CAA Operational Support Service Procedure Designers Air Navigation Service Providers (ANSP)
Financial Resource:	
Relation Current Aviation Community Initiative:	- IATA & ICAO are jointly developing a CFIT toolkit addressing the CFIT contributing factors - CAST safety enhancements addressing the CFIT contributing factors - Partnership between airlines and RNP-AR consulting firms such as Quovadis/Airbus & Etihad Airways for the creation of RNP-AR approaches at specific airfields. These new technology approaches, designed by Airbus' Performance Based Navigation (PBN) subsidiary, Quovadis, utilize 'continuous descent' operations and optimised trajectories. This will enhance flight safety which is at the heart of the RNP-AR Implementation Plan effort.
Performance Goal	Goal 1: Implementation Plans to be complete in December 2013 Goal 2: Keeping in mind that GNSS with Baro-VNAV is the key enabling technology, PBN and APV operations (APproaches with Vertical guidance) regional operator implementation to be complete: - 30% by Dec 2015 - 70% by Dec 2018 - 100% by Dec 2020 Goal 3: Before year 2020, reduce CFIT accidents/incidents by 80%, at these airfields during the conduct of ground-based non-precision approaches. Goal 4: APV to apply to all runways not currently served by precision approach procedures by 2020 Goal 5: Promote stable approaches through APV
Indicators:	Maintain the MID CFIT accident rate at 2012 level
Key Milestones:	Deliverables 1. Identify the regional airports/runways which require specific RNP-AR approaches within 6 months. 2. Aircraft Operators FOQA programmes to monitor data (consistency and accuracy of the Operator's fleet for each selected "high risk/special airport) and provide a summary of stable/unstable approaches to MID-RAST each quarter commencing Q4 2013. 3. Identify suitable service providers who can assist Aerodrome Operators/States with procedure design for those airfield/runway combinations identified in deliverable 1 within 12 months.
Potential Blockers:	- Operators may not recognize the safety enhancements benefits - Operators may not be able to afford the required technology - Operators may have difficulties funding the development of the procedures or planning the required training due to technology or downtime limitations
Responsible	
DIP Notes:	

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