International Civil Aviation Organization
CAR/SAM Regional Planning Implementation Group (GREPECAS)
Eighth Meeting of the Administration Coordination Group (ACG/8)
Mexico City, Mexico, 26-27 January 2011

Agenda Item 6: Proposed New Deficiencies Methodology

(Presented by the Secretariat)

SUMMARY

This working paper presents a proposal for a new deficiencies methodology.

References:

- GREPECAS/13, 14, 15
- C-DEC 164/7-3/12/01
- Doc. 9859 2nd. Ed. 2009

1. Introduction

1.1 The Air Navigation Commission has the responsibility to update the uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies in light of the experience gained in its application. The latest review of this methodology was carried out in 2001 in light of views of the ALLPIRG/Advisory Group, when the Commission developed a single definition of a *deficiency*, which was approved by the Council on 30 November 2001.

1.2 At that time, the concepts of safety management and the USOAP program were in their early stages. With the current safety risk management processes to improve safety, it is appropriate to review this methodology and incorporate the contemporary processes and a result based approach.

2. Discussion

Problem Statement

2.1 The following are some of the shortcomings of the ASB GREPECAS mechanism that justify the need to reengineer the process:

- GREPECAS Air Navigation Deficiencies Database (GANDD) is out-of-date due to insufficient reporting by States and follow-up by ICAO, IATA and IFALPA.
- There are new tools for the identification and sources for reporting of deficiencies.
- New Safety Intelligence of USOAP and CMA.
- Implementation of SMS (by service providers) and SSP (by States).
- Need for upper management commitment to resolve deficiencies.

- Methodology for assessing and prioritizing deficiencies needs to have upper management accountability.

Deficiencies as hazards

2.2 The role of the ASB is to address safety as its name implies. A deficiency is a situation where a facility, service or procedure is not provided **in accordance with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices**, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation.

2.3 Therefore it is clear that a deficiency is a hole for the latent conditions that have all the potential to breach aviation system defenses, hence it could be considered as a hazard.

Management Systems of Service Providers

2.4 All service providers are required by ICAO SARPs to either have SMS or QMS, even Annexes which do not have direct provisions for SMS such as CNS are in one way or another covered under the umbrella of an SMS. Therefore a deficiency should be treated as an input into its management system, a safety hazard in the case of an SMS and/or quality degradation in the case of QMS.

2.5 In both cases i.e. SMS or QMS, the service providers are required by regulation to process this input into its management system and to provide an appropriate and effective response to the individual and/or organization informing its concern. The lack of response is clear evidence of lack of effective implementation (LEI) which under the new CMA of ICAO USOAP could increase the risk level of a specific State and trigger the need for an ICAO audit.

2.6 On the other hand, an effective SMS or QMS will address the identified hazard, develop a safety risk analysis and take a decision on the corrective actions with clear accountabilities.

Concept of the revised methodology for the identification, assessment and reporting of Air Navigation Deficiencies

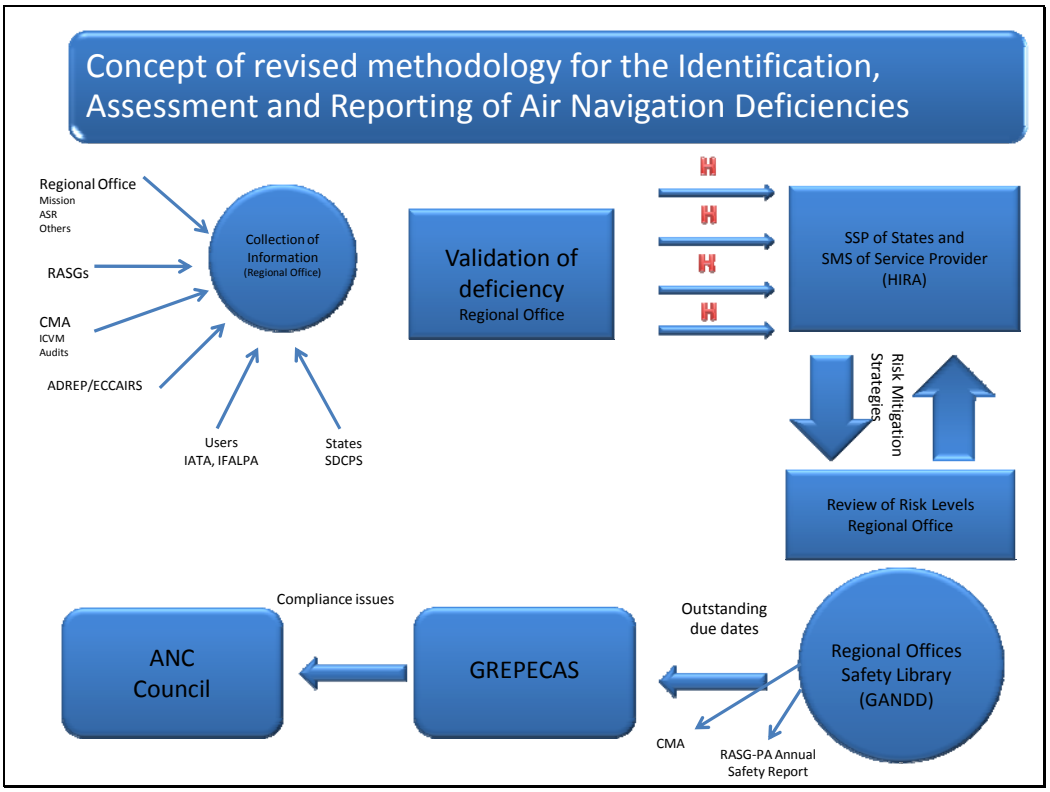
2.7 The following flowchart depicts the concept of the proposed process which will be managed by ICAO ROs, collecting information from different sources, validating the deficiency and informing it as an identified hazard to the respective State where the service provider is located asking for a hazard and risk analysis (HIRA) to be performed using the form presented in **Appendix 1** of this working paper.

2.8 The service provider will perform its HIRA and return the form completed and signed to the Regional Office Safety Library.

2.9 If there is no reply to the identified hazard, this could be considered as lack of effectiveness of the SMS and/or QMS of the service providers and hence increase the risk levels of the State which could trigger the deployment of one of the different intervention strategies of CMA.

2.10 GREPECAS could analyze the statistics of the data base and if necessary inform the ANC as appropriate.

Figure # 1



2.11 If ACG agrees with this proposal, the following Draft Conclusion could be adopted by the ACG:

DRAFT CONCLUSION 08/03 - REVISED METHODOLOGY FOR THE IDENTIFICATION, ASSESSMENT AND REPORTING OF AIR NAVIGATION DEFICIENCIES

That the ANC, consider the concept of GREPECAS (see figure # 1) for revising the methodology for the identification, assessment and reporting of air navigation deficiencies.

3. **Action suggested:**

3.1 The meeting is invited to:

a) take into account the information presented in this paper, and

b) based on the deliberations, adopt the draft conclusion submitted under paragraph 2.11

Hazard Scenario and Risk Assessment Report

Scenario # **Date** **Hazard Scenario Title**

Area of Operation or Activity:

Task Being Performed:

Specific Conditions or Circumstances:

Specific Error or Failure:

Mitigation Currently in Place:

Analysis and Discussion:

Realistic Worst Case Outcome:

Risk Assessment Team Members

Estimated Cost of Worst Case:

Severity of Worst Case:

Probability of Worst Case:

Risk Level of Worst Case:

Hazard Scenario and Risk Assessment Report (cont.)

		Severity				
		Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Probability	Frequent 5	*5A*	*5B*	*5C*	*5D*	*5E*
	Occasional 4	*4A*	*4B*	*4C*	*4D*	*4E*
	Remote 3	*3A*	*3B*	*3C*	*3D*	*3E*
	Improbable 2	*2A*	*2B*	*2C*	*2D*	*2E*
	Extremely Improbable 1	*1A*	*1B*	*1C*	*1D*	*1E*

Report Compiled by

5A-C, 4A = High: Stop the operation until the risk is mitigated to a lower level.

5D, 4B-D, 3A-C, 2A-B = Moderate: Mitigation is required to reduce the level of risk.

1A-E, 2C-E, 3D-E, 4E,5E = Low: Manage by normal procedures.

Probability: (Estimated likelihood of the hazard scenario at any level of severity and not specifically for the worst case outcome.)

Almost Certain: May be expected to occur in this organization at least once in any one-year period.

Likely: May be expected to occur in this organization as often as once in any three-year period.

Possible: May be expected to occur in this organization as often as once in any five-year period.

Unlikely: May be expected to occur in this geographical region /industry sector as often as once in any three-year period.

Rare: May be expected to occur in this geographical region/industry sector as often as once in any five-year period.

Severity: (Estimated realistic worst case outcome for the specified hazard scenario.)

Catastrophic: Death, toxic hazardous materials release off-site with detrimental effect, extreme harm to organization reputation, hull loss or major damage to equipment and facilities

Major: Extensive injuries, hazardous materials release with minor detrimental effects requiring outside assistance, considerable harm to organization reputation, major damage to equipment and facilities

Moderate: Medical treatment required, hazardous materials released with no detrimental effects but requiring outside assistance, some harm to organization image, damage under $10,000

Minor: First aid required, on site hazardous materials release immediately contained, minimal harm to organization reputation, damage to equipment or facilities under $1,000

Insignificant: Minor inconvenience, no injury, no hazardous materials release, no effect on organization reputation, damage to equipment or facilities under $100