THE AFI AIR NAVIGATION DEFICIENCIES (AAND) MANAGEMENT PROCESS

1. Introduction

1.1 Based on the information resulting from the assessment carried out by ICAO on the input received from various regions regarding deficiencies in the air navigation field, it became evident that improvements were necessary in the following areas:

a) collection of information;
b) safety assessment of reported problems;
c) identification of suitable corrective actions technical/ operational/ financial/organizational), both short-term and long-term; and
d) method of reporting in the reports of ICAO planning and implementation regional groups (PIRGs).

1.2 This methodology was therefore prepared with the assistance of ICAO PIRGs and approved by the ICAO Council for the efficient identification, assessment and clear reporting of air navigation deficiencies. It may be further updated by the Air Navigation Commission in the light of the experience gained in its utilization.

1.3 For the purpose of this methodology, the definition of deficiency is as follows:

> A *deficiency* is a situation where a facility, service or procedure does not comply 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.

1.4 In order to support the implementation of the Uniform Methodology for the identification, assessment and reporting of deficiencies, it was established for the AFI Region, a web- based platform, the AFI Air Navigation Deficiencies Data Base (AANDD). The AANDD application provides an online tool for States and relevant stakeholders to manage air navigation deficiencies in the region. The application is available on the ICAO ESAF and WACAF Regional Offices websites. The AANDD user manual is in Appendix.

2. Collection and posting of information in the Data base

2.1 Collection of the information for all the sources (**Regional office, States, Users, Professional provider organizations' sources) -** Refer to the APIRG Procedural Handbook, part V, section 2.

2.2 **Additional guidance on reporting**

2.2.1 In order to encourage reporting, the Group has adopted a list of minimum reporting areas which is reflected at **Appendix** to this Process. The intent of the list is not to replace reporting based on ICAO Council policy, but to encourage reporting, in recognition of Assembly Resolution A37-15 Appendix L, and noting the historical critically low level of reporting, as well as the expanse of SARPs and requirements on which reporting may be effected.

2.2.2 Without prejudice to the definition of "deficiency" as approved by the Council, States, Regulators and Air Navigation Service Providers (ANSPs), users (IATA, AFRAA, etc.), and

professional organizations (IFALPA, IFATCA, IFATSEA, etc.) are encouraged to report on deficiencies in the areas listed in **Appendix** to this process, in addition to reporting any other deficiencies as defined by the Council.

3. Reporting of information on deficiencies

3.1 In order to enable the ICAO PIRGs to make detailed assessments of deficiencies, States and appropriate International organizations including IATA, IFALPA and IFATCA, are expected to provide the information they have to the ICAO Regional Offices for action as appropriate, including action at PIRG meetings.

3.2 The information should at least include: description of the deficiency, risk assessment, possible solution, time-lines, responsible party, agreed action to be taken and action already taken.

3.3 Newly identified deficiencies shall be sent to ESAF/WACAF Offices by the State/Organization Focal Point through the AANDD. Evidences to support the information provided should be attached in the AANDD or forwarded via email to the accredited ICAO Regional Office at icaowacaf@icao.int or icaoesaf@icao.int.

3.4 The newly added deficiency in the AANDD will always have an "N" status for New at the point of entering the details in the reporting form. On approval by the appropriate Regional Officer the deficiency will appear in the database list highlighted in "Yellow" and will be available for AANDD users in the delete, update, search and print options.

3.5 Once received and updated in the AANDD system by the ICAO regional Office, the request is forwarded to the appropriate Regional Officer for review and analysis as per the paragraph 2.1.1 of the APIRG Procedural Handbook. The accredited ICAO regional Office may contact the source of the information and the concerned State for more details when required. The result of the assessment is submitted with all the evidences to a committee formed by the Regional Office subject matter Experts and the Deputy Regional Director for review. The same process shall be followed for Regional office sources.

3.6 If the deficiencies are confirmed, the State is informed by the accredited ICAO Regional Office and given a time period to take appropriate actions. If actions are taken in time, the case is closed and captured in the AANDD as proposed for deletion and will appear highlighted in "Yellow" as a strike through and the information shall be provided to the APIRG meeting.

3.7 Otherwise, the case is submitted to the APIRG Meeting for consideration and endorsement using the List of reported Deficiencies extracted from the AANDD system. The APIRG' endorsed deficiencies are uploaded in the AANDD by the Regional Offices and the State requested to submit an action plan within a given timeframe.

3.8 The States shall follow-up the implementation of proposed mitigation actions, as established in the action plan and submit relevant evidences for consideration to the ICAO Regional Office by email/ through the AANDD. In case of challenges with the implementation, the State Focal point should inform and coordinate with the Regional Office SME. The State's Focal Points and Regional office should ensure that the information provided in the AANDD is updated.

3.9 The agenda of APIRG meeting should include an item on air navigation deficiencies, including information reported by States and other stakeholders reflected in paragraph 2.4 and 2.5, Part V of the APIRG Procedural Handbook, in addition to those identified by the Regional Office

according to paragraph 2.1. Review of the deficiencies should be a top priority for each meeting. APIRG, in reviewing lists of deficiencies, should make an assessment of the safety impact for subsequent review by the ICAO Air Navigation Commission.

3.10 The Model reporting table for use in the reports of PIRGs and actions by the Regional Offices are stated in the Part V of the APIRG Procedural Handbook.

3.11 In line with the above, and keeping in mind the need to eventually make use of this information in the planning and implementation process, it is necessary that once a deficiency has been identified and validated, the following fields of information should be provided in the reports on deficiencies in the air navigation systems. The fields to be filled and the reporting form are detailed in the APIRG Procedural Handbook, Part V.

4. Monitoring & Removal of APIRG' endorsed deficiencies from the Data base

4.1 The ICAO Regional Offices will monitor the implementation by the States of their actions plans and report to APIRG. States shall implement their action plans and submit relevant evidences for consideration to the ICAO Regional Offices through the AANDD platform of by email at icaowacaf@icao.int or icaoesaf@icao.int.

4.2 The relevant Regional Officers should assess on the regular basis the implementation of the States action plans until their completion. Once the implementation completed, a documented report, comprising evidences should be submitted to the Committee formed by the Regional Office subject matter Experts and the Deputy Regional Director for review. The report is submitted to the APIRG meeting consideration.

4.3 If deemed satisfactory, the deficiency is deleted from the AANDD at which point will appear as a strike though highlighted in "Yellow" and the information is provided to the State.

4.4 Once validated and confirmed by the APIRG meeting to be an existing deficiency based on provided evidences, a command is run in the system to remove the completed deficiencies (proposed for deletion) on the Database by the Regional Office.

5. Assessment and prioritization

5.1 A general guideline would be to have three levels of priority organized on the basis of safety, regularity and efficiency assessment as follows:

5.2 The APIRG Procedural Handbook stated that Sub-Groups should, as soon as practical replace the prioritization criteria contained in its Part V, with a system based on SMS principles. The assessment and prioritization of deficiencies is based on the safety risk matrix contained in the Safety Management Manual (SMM), Doc 9859.

Table 1. Safety risk probability table

Likelihood	*Meaning*	*Value*
Frequent	Likely to occur many times (has occurred frequently)	5
Occasional	Likely to occur sometimes (has occurred infrequently)	4
Remote	Unlikely to occur, but possible (has occurred rarely)	3
Improbable	Very unlikely to occur (not known to have occurred)	2
Extremely improbable	Almost inconceivable that the event will occur	1

Table 2. Example safety risk severity table

Severity	*Meaning*	*Value*
Catastrophic	• Aircraft / equipment destroyed • Multiple deaths	A
Hazardous	• A large reduction in safety margins, physical distress or a workload such that operational personnel cannot be relied upon to perform their tasks accurately or completely • Serious injury • Major equipment damage	B
Major	• A significant reduction in safety margins, a reduction in the ability of operational personnel to cope with adverse operating conditions as a result of an increase in workload or as a result of conditions impairing their efficiency • Serious incident • Injury to persons	C
Minor	• Nuisance • Operating limitations • Use of emergency procedures • Minor incident	D
Negligible	• Few consequences	E

Table 3. Example safety risk matrix

Safety Risk		*Severity*				
Probability		*Catastrophic A*	*Hazardous B*	*Major C*	*Minor D*	*Negligible E*
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

Table 4. Example of safety risk tolerability

Safety Risk Index Range	*Safety Risk Description*	*Recommended Action*
5A, 5B, 5C, 4A, 4B, 3A	INTOLERABLE	Take immediate action to mitigate the risk or stop the activity. Perform priority safety risk mitigation to ensure additional or enhanced preventative controls are in place to bring down the safety risk index to tolerable.
5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C, 1A	TOLERABLE	Can be tolerated based on the safety risk mitigation. It may require management decision to accept the risk.
3E, 2D, 2E, 1B, 1C, 1D, 1E	ACCEPTABLE	Acceptable as is. No further safety risk mitigation required.

"U" priority (Red) = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.
Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.
"A" priority (Orange) = Top priority requirements necessary for air navigation safety.
Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.
"B" priority (Green) = Intermediate requirements necessary for air navigation regularity and efficiency.
Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.