

INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP EIGHTEENTH MEETING (APIRG/18) Kampala, Uganda (27 – 30 March 2012)

Agenda Item 4: Review of deficiencies in the air navigational fields

ADDRESSING REGIONAL AIR NAVIGATION DEFICIENCIES – TRANSITION FROM FIVE REGIONAL DATABASES INTO A CENTRAL DATABASE

(Presented by the Secretariat)

SUMMARY

The Planning and Implementation Regional Groups (PIRGs), have adopted the Council approved uniform methodology for the identification, reporting and assessment of regional air navigation deficiencies. This methodology is being supported by the deficiency database developed separately by each region. In response to APIRG Conclusion 17/100, the AFI Regional Offices sought the support of the MID Regional Office to develop the AFI Database for air navigation deficiencies. This was implemented in October 2011. Noting that these databases are region specific, this working paper recommends for adopting a centralized database in ICAO Headquarters that would result in significant benefits to this process. Information contained in the AFI deficiency database has already been provided to ICAO Headquarters.

Action by APIRG/18 is contained in paragraph 4.

Reference(s): APIRG/17 Report

Related ICAO Strategic Objective(s): A

1. **INTRODUCTION**

- 1.1 The uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies (henceforth referred to as Uniform Methodology) was prepared with the assistance of the planning and implementation regional groups (PIRGs) of ICAO and approved by the ICAO Council on 23 June 1998 for the efficient identification, assessment and clear reporting of air navigation deficiencies.
- 1.2 In 2001, in order to avoid any ambiguity, ALLPIRG proposed, in Conclusion ALLPIRG 4/11 that the definition for a shortcoming or a deficiency as contained in the Uniform Methodology be replaced with a single definition for both situations. In response to this, the Council on 30 November 2001 approved the single definition by retaining the word *deficiency* in the new single definition, as the negative connotation associated with the word had political and financial leverage to assist with the corrective action required. The amended version of the Uniform

Methodology (Appendix A refers) has been consistently implemented by all PIRGs.

To support the implementation of the Uniform Methodology, every PIRG has developed its own unique deficiency database as a means of sharing safety information related to air navigation systems and viewed/used by that respective region(s) only. The sharing of safety information will become increasingly beneficial with the continued maturation of Safety Risk Management (SRM) and Safety Assurance (SA) processes contained within State Safety Programmes as well as Safety Management Systems. In either case, data aggregation will enhance identification of emerging safety issues, the monitoring of safety trends and benchmarking of safety performance among peer organizations. To maximize their effectiveness, information sharing efforts should exercise the appropriate degree of transparency as necessary to ensure proactive resolution of air navigation safety issues without jeopardizing the voluntary exchange of information that is critical to the process. To extend this sharing safety information related to air navigation systems from regionally to globally, this working paper discusses an approach to transition from current regionally managed deficiency databases to one consolidated and centrally managed deficiency database.

2. AIR NAVIGATION DEFICIENCY DATABASES – CURRENT REGIONAL APPROACH

Currently the APANPIRG (ASIA/PAC Air Navigation Planning and Implementation Regional Group), APIRG (Africa-Indian Ocean Planning and Implementation Regional Group – October 2011), EANPG (European Air Navigation Planning Group), GREPECAS (CAR/SAM Planning and Implementation Regional Group) and MIDANPIRG (Middle East Air Navigation Planning and Implementation Regional Group) have developed, established and maintaining their respective regional air navigation deficiency databases to support the implementation of the Uniform Methodology. Each of this regional deficiency databases has its architecture, protocols and access rights. In view of region specific databases, they are not available for worldwide viewing and usage. Although this approach is satisfactory from regional perspective, it needs to be extended globally in order to be consistent with the principles of sharing safety information worldwide leading to complete transparency.

3. AIR NAVIGATION DEFICIENCY DATABASES – PROPOSED GLOBAL APPROACH

3.1 Building on the current Planning and Implementation Regional Group (PIRG)/regional efforts, ICAO has developed a prototype system for the management of air navigation deficiencies at the global level and has been incorporated in the integrated Safety Trend Analysis and Reporting System (iSTARS) framework (Appendix B refers). Access to iSTARS is through the safety page of www.icao.int. iSTARS is a web-based system which groups together different safety related datasets and allows for effective integrated safety analysis. The establishment of a centralized database for regional air navigation deficiencies on iSTARS would result in significant benefits through the harmonization of data structure and content, as well as by providing uniform access to the respective

Regional Offices, Member States and other authorized users. The objective is to consolidate different regional air navigation deficiency databases, have all regions/States reporting in single database, provide consistent reporting across all regions and allow viewing of deficiencies of all States thus leading to improved information sharing and complete transparency.

3.2. This centralized system initiated in November 2011 was populated with data provided by all regions and fully supports the Uniform Methodology. The data integration process revealed instances of corrective actions that were either incomplete or inconsistent or showed incorrect completion dates. It has also been noted that for many deficiencies, the expected corrective action completion date is well passed the deadline without any indication of the deficiency being resolved. In order to be able to use the collected air navigation deficiencies for integrated safety analysis purposes, all Regional Offices were requested to review and update all respective regional deficiencies that are available on iSTARS by February 2012. On the basis of regional coordination and the feedback received, ICAO has further improved the centralized database on iSTARS and is now ready for evaluation by States. Further to comments that will be received by PIRGs/States, ICAO will mature the system for worldwide use. The attached user guide at Appendix C will assist in accessing the data from iSTARS. The complete transition from the current five regional air navigation databases to single centralised database on iSTARS is scheduled for December 2012.

4. **ACTION BY APIRG/18**

4.1 The meeting is invited to **consider adopting the following as a conclusion** noting the approach to transfer five regional air navigation deficiency databases into a single centralized database on iSTARS platform by December 2012.

CONCLUSION 18/XXX: A SINGLE CENTRALIZED AIR NAVIGATION DEFICIENCIES DATABASE

That States and International Organizations:

- a) test the centralized database on iSTARS platform using the guidance in Appendix C;
- b) update the data as necessary in coordination with ICAO Regional Offices, Nairobi/Dakar; and
- c) provide feedback to ICAO Regional Office, Nairobi/ Dakar by 31 August 2012.

APPENDIX A

UNIFORM METHODOLOGY FOR THE IDENTIFICATION, ASSESSMENT AND REPORTING OF AIR NAVIGATION DEFICIENCIES

(Approved by the Council on 30 November 2001)

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 is therefore prepared with the assistance of ICAO PIRGs and is 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.

2. COLLECTION OF INFORMATION

2.1 **Regional office sources**

- 2.1.1 As a routine function, the regional offices should maintain a list of specific deficiencies, if any, in their regions. To ensure that this list is as clear and as complete as possible, it is understood that the regional offices take the following steps:
 - a) compare the status of implementation of the air navigation facilities and services with the regional air navigation plan documents and identify facilities, services and procedures not implemented;

- b) review mission reports with a view to detecting-deficiencies that affect safety, regularity and efficiency of international civil aviation;
- make a systematic analysis of the differences with ICAO Standards and Recommended Practices filed by States to determine the reason for their existence and their impact, if any, on safety, regularity and efficiency of international civil aviation;
- d) review aircraft accident and incident reports with a view to detect possible systems or procedures deficiencies;
- e) review inputs, provided to the regional office by the users of air navigation services on the basis of Assembly Resolution A33-14, Appendix M;
- f) assess and prioritize the result of a) to e) according to paragraph 4;
- g) report the outcome to the State(s) concerned for resolution; and
- h) report the result of g) above to the related PIRG for further examination, advice and report to the ICAO Council, as appropriate through PIRG reports.

2.2 States' sources

2.2.1 To collect information from all sources, States should, in addition to complying with the Assembly Resolution A31-10, establish reporting systems in accordance with the requirements in Annex 13, paragraph 7.3. These reporting systems should be non-punitive in order to capture the maximum number of deficiencies.

2.3 Users' sources

2.3.1 Appropriate international organizations, including the International Air Transport Association (IATA) and the International Federation of Air Line Pilots' Associations (IFALPA), are valuable sources of information on-deficiencies, especially those that are safety related. In their capacity as users of air navigation facilities they should identify facilities, services and procedures that are not implemented or are unserviceable for prolonged periods or are not fully operational. In this context it should be noted that Assembly Resolution A33-14, Appendix M and several decisions of the Council obligate users of air navigation facilities and services to report any serious problems encountered due to

the lack of implementation of air navigation facilities or services required by regional plans. It is emphasized that this procedure, together with the terms of reference of the PIRGs should form a solid basis for the identification, reporting and assisting in the resolution of non-implementation matters.

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 and IFALPA, are expected to provide the information they have to the ICAO regional office 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 The agenda of each PIRG meeting should include an item on air navigation deficiencies, including information reported by States, IATA and IFALPA in addition to those identified by the regional office according to paragraph 2.1 above. Review of the deficiencies should be a top priority for each meeting. The PIRGs, in reviewing lists of deficiencies, should make an assessment of the safety impact for subsequent review by the ICAO Air Navigation Commission.
- 3.4 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. These fields are as follows and are set out in the reporting form attached hereto.

a) Identification of the requirements

As per ICAO procedures, Regional Air Navigation Plans detail *inter alia* air navigation requirements including facilities, services and procedures required to support international civil aviation operations in a given region. Therefore, deficiencies would relate to a requirement identified in the regional air navigation plan documents. As a first item in the deficiency list, the requirements along with the name of the meeting and the related recommendation number should be included. In addition, the name of the State or States involved and/or the name of the facilities such as name of airport, FIR, ACC, TWR, etc. should be included.

b) Identification of the deficiency

This item identifies the deficiency and would be composed of the following elements:

- i) a brief description of the deficiency;
- ii) date deficiency was first reported;
- iii) appropriate important references (meetings, reports, missions, etc)
- c) Identification of the corrective actions

In the identification of the corrective actions, this item would be composed of:

- i) a brief description of the corrective actions to be undertaken;
- ii) identification of the executing body;
- iii) expected completion date of the corrective action*; and
- iv) when appropriate or available, an indication of the cost involved.

4. ASSESSMENT AND PRIORITIZATION

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

"U" priority = 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 = Top priority requirements necessary for air navigation safety.

* It should be noted that a longer implementation period could be assigned in those cases in which the expansion or development of a facility was aimed at serving less frequent operations or entailed excessive expenditures.

A - 5

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 = 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.

5. MODEL REPORTING TABLE FOR USE IN THE REPORTS OF PIRGS

Taking the foregoing into account, the model table at the Appendix is for use by PIRGs for the identification, assessment, prioritization etc. of-deficiencies. It might be preferred that a different table would be produced for each of the different topics i.e. AGA, ATM, SAR, CNS, AIS/MAP, MET. However, all tables should be uniform.

6. ACTION BY THE REGIONAL OFFICES

- 6.1 Before each PIRG meeting, the regional office concerned will provide advance documentation concerning the latest status of deficiencies.
- 6.2 It is noted that the regional offices should document serious cases of deficiencies to the Air Navigation Commission (through ICAO Headquarters) as a matter of priority, rather than waiting to report the matter to the next PIRG meeting, and that the Air Navigation Commission will report to the Council.

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE FIELD IN THE REGION

Identification		Deficiencies			Corrective action				
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Date of completion	Priority for action*	
Requirement of Part, paragraph (table) of the air navigation plan	Terra X Terra Y	Speech circuits not implemented Villa X - Villa Y	12 Dec. 2X	Coordination meeting between Terra X and Terra Y on 16 July 2X to finalize arrangements to implementation circuit via satellite	Implementation of direct speech circuit via satellite	Terra X	20 Aug. 2X	A	

^{*} Priority for action to remedy a deficiency is based on the following safety assessments:

"U" priority = 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 = Top priority requirements necessary for air navigation safety.

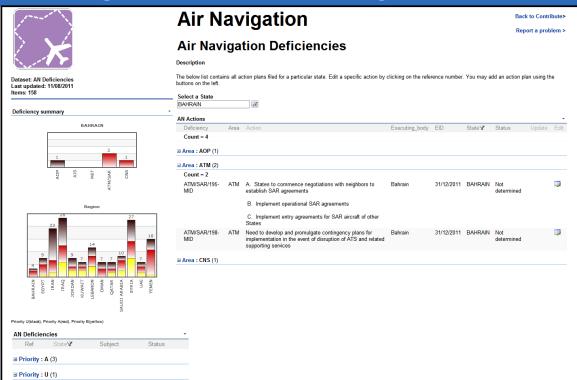
Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

"B" priority = 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.

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iSTARS: Air Navigation Deficiencies Page



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ICAO Air Navigation Deficiencies ANDEF

User Guide

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Click on ANDEF Link on the right hand side on iStars home page



ANDEF- Initial View

When you login to ANDEF this is your home page. By default the deficiencies listed will be for the AFI Region...

Last updated: 08/11/2011

Dataset: Air Navigation Deficiencies

Air Navigation

Report a problem >

Air Navigation Deficiencies

Description

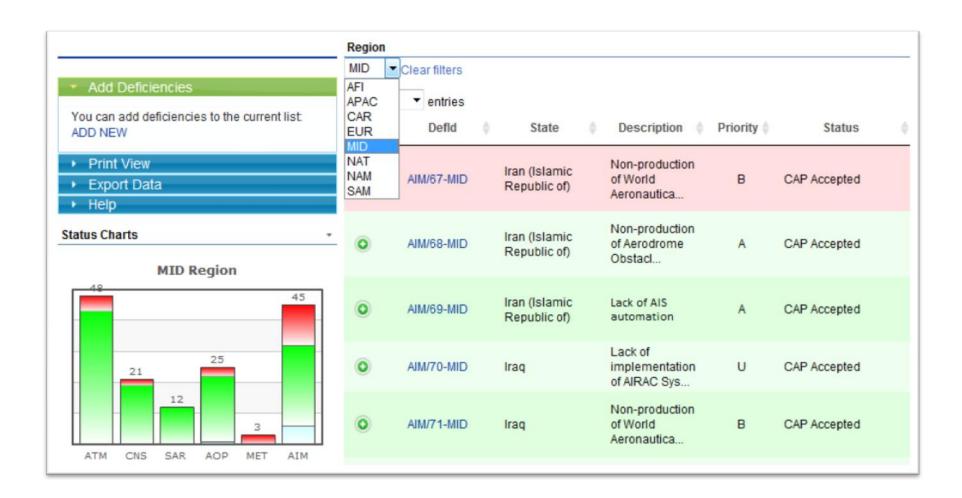
The list below shows all air navigation deficiencies currently managed by your region.

Items: 2148 Region AFI ▼ Clear filters Add Deficiencies Show 50 ▼ entries Search: You can add deficiencies to the current list: Total Target Corrective CAP Status Defld State Description Priority 0 Status Tracking ADD NEW 197 action Impl. Date TAF of Luanda Improve Print View 0 MET/225-AFI not regularly CAP Accepted 2012-12-31 Not Determined On-time Angola reliability of Export Data availab.. telecomm. Help Prohibited Withdraw these CAP Accepted 0 ATM/226-AFI Kenya area, restricted U 2009-12-31 Not Determined Overdue areas. Status Charts area, d... Non-provision No action due to AFI Region ATM/227-AFI Somalia of ATC service CAP Accepted the present 2009-12-31 Not Determined Overdue 150 NM... situat... Withdraw this 0 Prohibited area ATM/228-AFI Swaziland CAP Accepted 2009-12-31 Not Determined Overdue area - P4. Tanzania is United Republic Lubumbashi -ATM/229-AFI CAP Accepted coordinating Not Determined Overdue of Tanzania Dar-es-Salaam with the &... implementation 21 ATM/230-AFI Algeria No CAP Defined Not Determined Overdue of ATC in the up... SAR Need for SSR

ANDEF- Select Region View

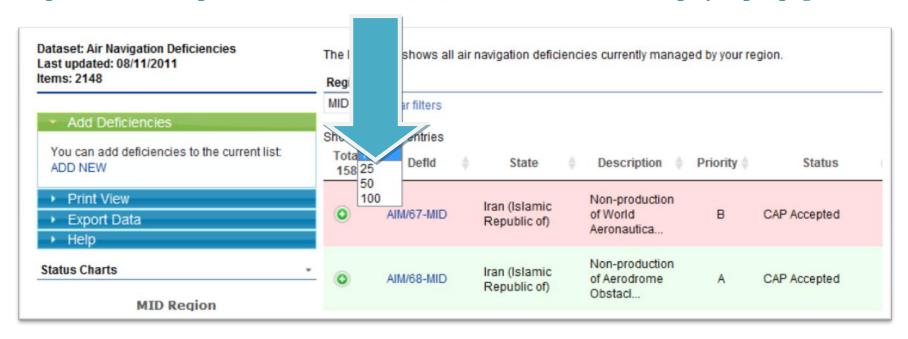
To select a different region, use the dropdown menu and choose the region you want:





ANDEF- List Deficiencies

To increase the number of entries listed you can select the number of entries you prefer from the drop down menu (Options available are: 10, 25, 50 or 100 deficiencies displayed per page).



ANDEF- Scroll Deficiencies

To scroll for more deficiencies listing press the arrow at the bottom of the page to go right and left



The information bar at the bottom will display the number of deficiencies listed and total number of entries.

ANDEF- Expand view

By selecting a region you will have a list of all deficiencies reported in that region. Click on the Green button to display the full deficiency listing for that specific deficiency

Deviate that channel A deep V-"PENDING shaped **ACTION PLAN®** В Colombia CAP Accepted 2009-02-28 Not Determined Overdue CORRECTED SAM channel 80-100 (AEROCIVIL 2002m fr... 1272, 23 NOV 2004)

A deep V- Deviate that channel "PENDING"

shaped channel 80-100 B CAP Accepted CORRECTED 2009-02-28 Not Determined Overdue

(AEROCIVIL 2002-1272, 23 NOV 2004)

Reference:

Date reported: 1996-01-01

AOP/1279-

SAM

Reported by: Deficiency type:

Description: A deep V-shaped channel 80-100 m from threshold RWY 30 potentially dangerous in event of RTO

Requirements: RWY end safety area (Annex 14, Vol. I. Chap. 3)

Location: Colombia, SANTAFE DE BOGOTA/Eldorado Aerodrome

Colombia

Remarks: IFALPA CAR/SAM Meeting, 98REG049, Buenos Aires, 9/10 Dic. 1997, ICAO Mission to Bogotá and Rio Negro from 16 to 19 July 2001 and ICAO Regular Mission

(15/16 MAY 2003, Recommended Action AGA/17 of its respective Report) ASBE: StateLetter sent Results:No results Difficulties:

Rational:

Recommendation:

Deviate that channel "PENDING ACTION PLAN"

CORRECTED (AEROCIVIL 2002-1272, 23 NOV 2004)

m fr...

Deviate that channel

Corrective action: "PENDING ACTION PLAN"

CORRECTED (AEROCIVIL 2002-1272, 23 NOV 2004)

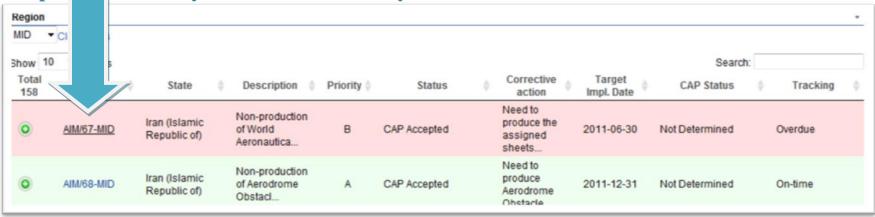
Execurting body: COLOMBIA/AEROCIVIL

Target implementation

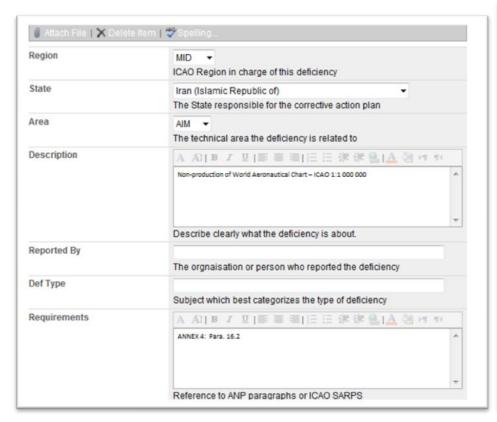
date: 2009-02-28

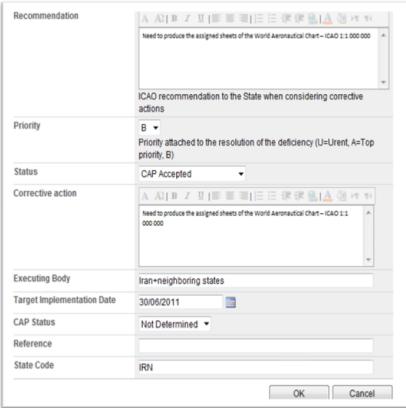
ANDEF- Edit/ Update Deficiency

To update a deficiency click on the deficiency ID



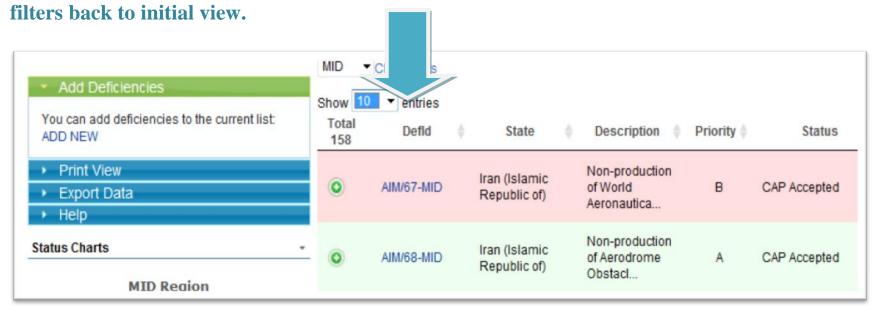
A new window will open to perform all required updates





ANDEF- Clear Filters

To clear all previously applied filters just press on the "clear filters" text and it will reset all your



ANDEF- Search Feature

Use the Search box to search by any keyword in the deficiencies list For example to search for all deficiencies in APAC region that has the keyword WGS-84 Select APAC from the drop down region list, and type in the search field the keyword WGS-84





Region	
	-

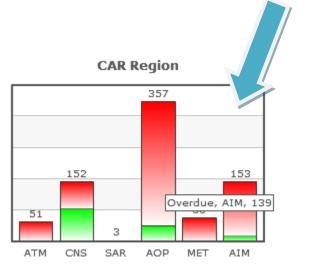
	Clear filters												
Show 10	▼ entries									Search	i: WG	S-84	
Total 9	Defld	State	Description	Priority	Status	\$	Corrective action	\$	Target Impl. Date	CAP Status	\$	Tracking	-
0	ATM/423- APAC	Solomon Islands	WGS-84 - Not implemented	Α	No CAP Defined					Not Determined		Overdue	
•	ATM/431- APAC	Vanuatu	WGS-84 - Implemented at main airpor	A	CAP Accepted		Implemented at mai airports	n		Not Determined		Overdue	
0	ATM/434- APAC	Bhutan	WGS-84 - Not implemented	Α	No CAP Defined					Not Determined		Overdue	
0	ATM/438- APAC	China	WGS-84 - Not implemented * implemen	Α	CAP Accepted		china advised APANPIRG/19 that WGS		2010-12-01	Not Determined		Overdue	
0	ATM/447- APAC	Democratic People's Republic of Korea	WGS-84 - Not implemented	Α	CAP Accepted		DPR Korea advised ATM/AIS/SAR/SG/18			Completed		Completed	
0	ATM/449- APAC	Kiribati	WGS-84 - Not implemented	Α	No CAP Defined					Not Determined		Overdue	
•	ATM/460- APAC	Nauru	WGS-84 - Not implemented	Α	No CAP Defined					Not Determined		Overdue	
0	ATM/470- APAC	Solomon Islands	WGS-84 - Not implemented	Α	No CAP Defined					Not Determined		Overdue	
0	ATM/475- APAC	Vanuatu	WGS-84 - Implemented at main airpor	Α	CAP Accepted		Implemented at mai airports	n		Not Determined		Overdue	
	Search Refs	Search State	s Search Descr	-		₹	Search CAP		Search TID		•		Ŧ
howing 1	to 9 of 9 entri	es (filtered from 80	total entries)									-	-

The information line at the bottom will indicate the total number of deficiencies that matched your search criteria.

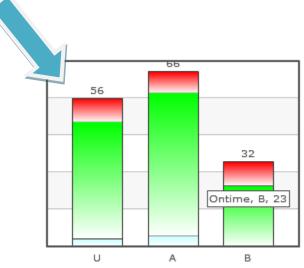
ANDEF- Filtering data: Using Graphs

Click on the graph to filter data and display: completed deficiencies, on-time or overdue.

Data on the graphs is sorted by Area or by Priority.



Overdue(red), On-time(green), Completed(blue)



Overdue(red), On-time(green), Completed(blue)

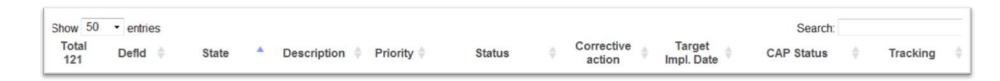
ANDEF- Filtering Data: Using Filtering box

0	AIM/84- MID	Lebanon	Implementation of a Quality System	U	CAP Accepted	Need to introduce a properly organized quality system in conformity with ISO 9000 series of quality assurance standards.	2010- 12-31	Not Determined	Overdue
0	AIM/85- MID	Lebanon	Implementation of geoid undulation referenced to the WGS-84 ellipsoid.	A	CAP Accepted	Need to implement geoid undulation referenced to the WGS-84 ellipsoid.	2011- 12-31	Not Determined	On-time
0	AIM/86- MID	Oman	Implementation of a Quality System	U	CAP Accepted	Need to introduce a properly organized quality system in conformity with ISO 9000 series of quality assurance standards.	2012- 12-31	Not Determined	On-time
nowing	11 to 20 of	158 entries		-	•			•	

Filtering text boxes type a value in the appropriate field or choose a value from the list to filter your data, accordingly

ANDEF- Sorting Data

You can sort deficiencies using any of the fields in the display bar just press the arrow up/down to sort data ascending or descending.



Data will be automatically sorted accordingly

APAC •	Clear filters							
Show 10	entries						Searc	h:
Total 80	Defld	State	Description	Priority 🔻	Status	Corrective action	Target CAP Status	Tracking
0	ATM/437- APAC	Bhutan	Annex 6 requirement not implemented	U	No CAP Defined		Not Determined	Overdue
0	ATM/439- APAC	Bhutan	Annex 6 requirement not implemented	U	No CAP Defined		Not Determined	Overdue
0	MET/481- APAC	Cambodia	Requirements for meteorological watch office (MWO) to be established at Phnom-Penh international airport have not been met.	U	CAP Accepted	Bilateral agreement Cambodia-China became effective on 1 June 2009. ATC project proposal submitted to SSCA Cambodia. In process of establishing MWO with target date of 2011.	Not Determined	Overdue

ANDEF- Report a Problem

Facing any technical difficulty with the system, you need help with any system component or you have a general comment/ request just press the "Report a Problem" on the right hand side of the screen.

