

Guidance for the use of the risk-based surveillance (RBS) airworthiness (AIR) tool

**Approved by the General Coordinator and published
under his responsibility**

**First edition
March 2020**

SPACE INTENTIONALLY LEFT IN BLANK

Record of amendment

[illegible]

Table of contents

	Pages
RECORD OF AMENDMENTS.....	II
TABLE OF CONTENTS.....	
1. PURPOSE	GU-1
2. RBS PLANNING AND OPERATION TOOLS	GU-1
2.1. RISK-BASED SURVEILLANCE PLANNING TOOL (AIR_TOOL_BOOK1_RBS_PLANNING_EN)	GU-1
2.2. CHECKLISTS TOOL (AIR_TOOL_BOOK2_CHECKLISTS_EN).....	GU-6
2.3. SMS EVALUATION TOOL (AIR_TOOL_BOOK3_SMS_EVALUATION_EN).....	GU-10
2.4. SPIs DIAGRAMS TOOL (SPI) (AIR_TOOL_BOOK4_SPIs_DIAGRAMS_EN)	GU-11
2.5. SURVEILLANCE DATABASE TOOL (AIR_TOOL_BOOK5_DATABASE_RESULTS_EN).....	GU-13
APPENDIX 1 – RBS PROCESS	GU-18

1. Purpose

This booklet provides guidance to the States on how to use the Excel airworthiness (AIR) books to determine the risk-based surveillance (RBS) level of intensity. Likewise, States may determine the scope of the RBS taking into account the items, whose potential consequences could represent a greater risk for air operations.

2. RBS planning and operation tools

To carry out the process of continuous planning and operation of the RBS, the following five (5) Excel workbooks that are interconnected are used. These books allow to establish the periodicity and points of greatest concern of a service provider

- 1) Risk-based surveillance planning tool (AIR_Tool_Book1_RBS_Planning_en);
- 2) Checklists tool (AIR_Tool_Book2_Checklists_en);
- 3) SMS evaluation tool (AIR_Tool_Book3_SMS_Evaluation_en);
- 4) Safety performance indicators (SPIs) diagrams tool (AIR_Tool_Book4_SPIs_Diagrams_en); and
- 5) RBS database tool (AIR_Tool_Book5_Database_Results_en). Below you can find an explanation on how to use each Excel book:

2.1. Risk-based surveillance planning tool (AIR Tool Book1 RBS Planning en)

2.1.1. This book consists of seven (7) tabs: Start, RBS, risk profile (ORP), exposure indicator (IdE), surveillance intensity matrix and specific organization and programming data.

REGIONAL SAFETY OVERSIGHT COOPERATION SYSTEM RISK-BASED SURVEILLANCE PLANNING	
Maintenance organization name:	Inspector responsible for the surveillance:
Address:	Telephone:
Responsible manager name:	Date: (jm: dd/mm/aa)
OMA certificate number:	Inspectors:

2.1.2. It must be started by completing all the boxes on the "Start" tab. The name of the service provider, its address, the name of the responsible manager, the document number granted by the CAA (certificate or equivalent document), name of the inspector responsible for surveillance (JEI), telephone number of the service provider, date on which the surveillance inspection begins, and the names of the inspectors who will support the inspection process.

2.1.3. In the "RBS" tab, the flow of the continuous risk-based surveillance planning process can be visualized (Fig. 1-1).

2.1.4. The "Organization risk profile (ORP)" tab is the most important of all the tabs in this book. In this Excel spreadsheet, the organization's risk parameters are established. For the area of airworthiness there are 50 parameters that, after being completed, the ORP Category of each of them will be established with a total score that will place them within a range that goes from "most desirable" to "least desirable"

2.1.4.1 To obtain the final score, each parameter has three levels and, in each of its cells, the criteria for determining the score level are explained, which can be selected in the "RESULT" column, based on one of the following four levels: 1, 2, 3 and N/A. When you select one of the items, a weight will automatically be obtained in the "FINAL RESULT" column. The sum of each final result will provide the total score obtained from each parameter. It is very important that all items have been selected in the "RESULT" column.

2.1.4.2 The less "total points" obtained, the better the profile of the service provider.

2.1.4.3 In this book, there are items that cannot be selected, since they will depend on the result obtained from other books. The specific cases are:

- a) Item 47: will depend on the SMS evaluation book
- b) Item 48: will depend on the checklists.
- c) Item 50: will depend on the diagram of the selected safety performance indicator (SPI)

2.1.4.4 Likewise, Items 27 and 28 must be selected manually and will depend on the result of the level of the findings obtained from Book 5, corresponding to the "surveillance database". Therefore, only when you have the results of Book 5, Items 27 and 28 should be completed.

2.1.5. In the "Exposure Indicator" tab, a table has been developed to determine the size and complexity of the AMO. For this, the following criteria have been established:

- Size of the organization;
- Number of employees;
- Number of additional bases; and
- Number of limitations (for aircraft and aircraft components)

2.1.5.1 The value for each criterion must be selected according to the drop-down table that allows you to select the values between 1, 2 and 3. For example: to determine the size of an organization (large, medium or small), consult the advisory circular CA-AIR-145-001 where the criteria that determine the size of the AMO is established. In addition, this circular may be consulted in relation to the qualifications and limitations of the AMO.

2.1.5.2 The result of the sum of all the values will provide us with the exposure indicator that may vary between letters A to E, whose detail is presented below:

Value Table C1	Description	IdE
5	Very low impact on the aeronautical system. Very low exposure to hazards	A
6 a 8	Low impact on the aeronautical system. Low exposure to hazards	B
9 a 11	Moderate impact on the aeronautical system. Moderate exposure to hazards	C
12 a 14	High impact on the aeronautical system. High exposure to hazards	D
15 or more	Very high impact on the aeronautical system. Very high exposure to hazards	E

2.1.5.3 The higher the exposure is, the higher the score will be and, therefore, the letter to be obtained will be letter E, or other close to this letter.

2.1.6. The "surveillance intensity matrix" tab presents a matrix where the IdR (risk profile tab) and the IdE (exposure indicator) are used to determine the type, sample size and frequency of the audits and inspections that should be performed on each AMO in a specific period of time

Table D1 – Surveillance intensity matrix							
EXPOSURE INDICATOR	Very high	E	5E	4E	3E	2E	1E
	high	D	5D	4D	3D	2D	1D
	Moderate	C	5C	4C	3C	2C	1C
	low	B	5B	4B	3B	2B	1B
	Very low	A	5A	4A	3A	2A	1A
			5	4	3	2	1
			Very high	high	Moderate	Low	Very low
			RISK INDICATOR				

2.1.6.1 The result of the risk indicator-exposure indicator combination will place the AMO in one of the colored boxes (red, yellow and green) that will allow us to visualize the intensity level and the periodicity of the surveillance that will vary between:

- a) Rigorous: 12 months
- b) Normal: 24 months
- c) Reduced: 36 months

Surveillance intensity level			
Periodicity between inspections	Rigorous	Normal	Reduced
	12 months	24 months	36 months

Value of the matrix			
AMO name	IDR	IDE	Surveillance intensity
0	3	E	RIGOROUS

2.1.6.2 Finally, the Table 2D of this tab allows us to determine the size of the sample that will be inspected according to the IdR and IdE of each AMO, and determine the appropriate number of inspections or audits for each type of inspection or audit

Table D2			
Matrix values →	3E, 4D, 4E, 5C, 5D, 5E	1D, 1E, 2C, 2D, 2E, 3B, 3C, 3D, 4A, 4B, 4C, 5A, 5B	1A, 1B, 1C, 2A, 2B, 3A
Surveillance intensity →	Rigorous	Normal	Reduced
Population ↓	Sample ↓		
2 to 8	3	2	2
9 to 15	5	3	2
16 to 25	8	5	3
26 to 50	13	8	5
51 to 90	20	13	5
91 to 150	32	20	8
151 to 280	50	32	13
281 to 500	80	50	20

2.1.7. The tab "OMA specific data", allows to determine the sampling that will be inspected according to the population that is selected in the drop-down boxes of the "population" for each "criterion" according to the following detail:

- Number of employees;
- Number of tools and equipment calibrated;
- Number of parts, materials and components;
- Number of maintenance data; and
- Additional locations

Note: the criteria range goes from 2 to 500

2.1.7.1 When selecting one of the values in the population table, the amount of sampling to be verified will automatically be presented.

Specific data of the approved maintenance organization		
Criteria	Population	Sample
Number of employees	281 to 500	80
Number of tools and calibrated equipment	2 to 8	3
Number of parts, materials and components	16 to 25	8
Number of maintenance data	2 to 8	3
Additional locations	91 to 150	32

2.1.7.2 Likewise, a table with the types of inspection and the intensity of the inspection is presented.

Inspection types		
Criteria	Value	Intensity
MOM's surveillance	1	12 Months
AMO's staff surveillance	1	12 Months
Facilities surveillance	1	12 Months
Equipment, tools and materials surveillance	1	12 Months
AMO's maintenance data surveillance	1	12 Months
Maintenance release certification surveillance	1	12 Months
AMO's maintenance records surveillance	1	12 Months
AMO's SMS surveillance	1	12 Months
AMO's SMS manual acceptance	1	12 Months
Surveillance of AMO's maintenance, inspection and quality systems	1	12 Months

MOM: Maintenance organization manual

AMO: Approved maintenance organization

2.1.8. The "Programming" tab, as a result of the intensity of the surveillance, proposes the different inspections in quarters of the year, and it is subdivided into weeks that, according to the intensity of the surveillance, will automatically select the dates on which inspections should be executed. In the event of any change in the surveillance intensity, the "SEE SURVEILLANCE SCHEDULE" window must be selected.

		SEE SURVEILLANCE SCHEDULE						RIGOROUS				
Year	Quarter	Week	MOM's surveillance	OMA's staff surveillance	Facilities surveillance	Equipment, tools and materials surveillance	AMO's maintenance data surveillance	Maintenance release certification surveillance	AMO's maintenance records surveillance	AMO's SMS surveillance	Surveillance of AMO's maintenance, inspection and quality systems	Additional locations
2020	Q1	1	•									
		2										
		3										
		4										
		5										
		6										
		7		•								
		8										
		9										
		10										
		11										
		12			•							
		13										
2020	Q2	14										
		15										
		16										
		17				•						
		18										
		19										
		20										
		21										
		22					•					
		23										
		24										
		25										
		26										
2020	Q3	27						•				
		28										
		29										
		30										
		31										
		32							•			
		33										
		34										
		35										
		36										
		37								•		
		38										
		39										
2020	Q4	40										
		41										
		42									•	
		43										
		44										
		45										
		46										
		47										•
		48										
		49										
		50										
		51										
		52										

2.2. Checklists tool (AIR Tool Book2 Checklists en)

2.2.1. The checklists tool (CL) consists of eight (8) CLs:

- 1) maintenance organization manual (MOM);
- 2) staff;
- 3) facilities;
- 4) equipment, tools and materials;
- 5) maintenance data;
- 6) maintenance release certification (CCM);
- 7) records; and
- 8) maintenance, inspection and quality system.

**REGIONAL SAFETY OVERSIGHT COOPERATION SYSTEM
CHECKLISTS TOOL - AIR**

1. Maintenance organization name:

2. Address:

3. Responsible manager name:

4. AMO certificate No:

5. Date:

6. Inspector responsible for surveillance:

7. Inspectors:

SELECCIONE :

LV-6 Personal
LV-4 MDM
LV-3 Personal
LV-7 Instalaciones
LV-8 Equip. Herrer, Mani
LV-9 Datos de mantenimiento

INICIO LV-4 MDM LV-4 MDM-GRAFICO LV-4 MDM Cod-Peligro LV-6 Personal Cod-Peligro L

2.2.2. In the "START" tab all boxes must be filled in. It begins with the name of the organization, the address established in the organization's manual, the name of the responsible manager, the number of the certificate or document issued by the CAA, the date on which the first certificate was issued by the CAA, the name and surname of the inspector responsible for surveillance (JEI), and the name of the inspectors who will support the inspection. There is also a "SELECT" box, which allows you to select one of the eight (8) checklists and have quick access to them. In case you want to return to the "START" page, select the figure that is located in the upper left corner of the Excel template.

2.2.3. When selecting one of the access tabs to a CL, the Excel sheet of that CL will be displayed, which is made up of seven (7) columns, as follows:

STAFF SURVEILLANCE						
9 Reference	10 Requirement question	11 Requirement compliance status	12 Guidance for review of proofs or evidence	13 Codification / Hazard code	14 Implementation status / IdR	16 Proofs / Notes / Comments
1. MAINTENANCE STAFF						
LAR 145.300 (a)	145-II-6-1. Does the AMO have enough personnel to carry out maintenance activities according to its capacity list in the last revision?	Satisfactory	- Verify that the AMO maintains sufficient personnel in accordance with its approval to: 1) Plan; 2) perform; 3) supervise; 4) inspect; and 5) monitor the processes and procedures of the AMO. - Verify the work carried out by the WCO during the last three months in relation to its maintenance staffing (workload versus staffing) in order to show if the staff is sufficient.	II-6-1-1/ONM-03	Implemented / IdR no applicable	
				II-6-1-2/TMA-13	Implemented / IdR no applicable	

- "Reference" column: Shows the reference of the requirement that will be verified.
- "Requirement question" column: Describes the questions applicable to the requirement to be verified.
- Column "Requirement compliance status": The status of compliance with the requirement is recorded. This box is associated with the result of Box 14 that describes the guidelines for the review of proofs or evidence of the requirement. This column has three (3) levels of compliance: satisfactory, not satisfactory and not applicable
 - Satisfactory. - It means that the proofs or evidence presented for examination satisfies all the guidelines of the requirement and no more detail is required; therefore, the risk estimation associated with the consequence of the hazard does not apply.

2. Not satisfactory. - It means that the proofs or evidence presented for examination does not satisfy one or more or all of the guidelines and, therefore, either the requirement. This level of implementation is associated with one of the following established IdRs:

- Not Implemented / Negligible;
- Not Implemented / Minor;
- Not Implemented / Major;
- Not Implemented / Hazardous; or
- Not Implemented / Catastrophic.

For the purpose of RBS, the IdRs of this CL have been predetermined by a team of airworthiness specialists, therefore, the AI will mark the default IdR when an orientation does not meet the requirement.

3. Not applicable. - It means that the requirement does not apply to the AMO and consequently either to its guidelines

- d) Column “Guidance for review of proofs or evidence”: describes the guidance to review proofs or evidence to be presented by service providers. It is intended to clarify the question of the requirement in the column "Requirement question", with the actions that should be examined by the airworthiness inspector. It is necessary for the AMO to always have documented proofs that evidence the guidance in column 12 “Guidance for review of proofs or evidence” or other acceptable to the inspector.
- e) Column “Codification / Hazard Code”: It is used for the coding of the guidance and the associated hazard, according to what is established in the codification and taxonomy of the SRVSOP.
- f) Column “Implementation status / IdR”: Indicates that the evidence submitted for examination satisfies or does not satisfy the corresponding guidance. If the corresponding guidance is not satisfied, the airworthiness inspector must mark the predefined IdR. The conditions of “Not applicable - IdR Not applicable” and “Implemented - IdR Not applicable” do not have an associated IdR because it is assumed that there is no risk at the time of the audit or inspection. In the event that the proof or evidence does not meet the guidelines, the AI will mark the predefined IdR that will correspond to one of the five IdRs indicated below.
- Not applicable - IdR not applicable. - Used when the guidance does not apply because the requirement does not apply to the AMO.
 - Implemented - IdR not applicable. - The evidence presented for examination satisfies the guidance of the requirement question and, therefore, the result does not apply to the determination of the IdR.
 - Not implemented / Negligible. - The evidence presented for examination does not meet the guidance of the requirement question and, the weighted IdR, in terms of severity, indicates few consequences. The airworthiness inspector shall apply the established processes for decision-making and deficiencies follow up.
 - Not implemented / Minor. - The evidence presented for examination does not meet the guidance of the requirement question and, the weighted IdR, in terms of severity, indicates discomfort, operational limitations, use of emergency procedures or minor incident. The airworthiness inspector shall apply the established processes for decision-making and deficiencies follow up.
 - Not implemented / Major. - The evidence presented for examination does not meet the guidance of the requirement question and, the weighted IdR, in terms of severity, indicates 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 result of conditions impairing their efficiency, serious incident or injury to people. The

airworthiness inspector shall apply the established processes for decision-making and deficiencies follow up.

- Not implemented / Hazardous. - The evidence presented for examination does not meet the guidance of the requirement question and, the weighted IdR, in terms of severity, indicates a large reduction in safety margins, physical stress or a workload such that operations personnel cannot perform their tasks accurately or completely, serious injuries or major equipment image. The airworthiness inspector shall apply the established processes for decision-making and deficiencies follow up.
 - Not implemented / Catastrophic. - The evidence presented for examination does not meet the orientation of the requirement question and, the weighted IdR, in terms of severity, indicates aircraft or equipment destroyed or multiple deaths. The AI shall apply the established processes for decision making and deficiencies follow up.
- g) “Proofs / Notes / comments” column: It is included for the airworthiness inspector to document the evidence presented by the AMO and the aspects that have been evaluated in the review of evidence. It also allows the inspector to make additional comments and detail the nature of the observations or findings found.

2.2.4. The inspector shall evaluate each of the Column 12 guidelines and then select one of the options that appear in the drop-down list in Column 14 “implementation status / IdR. Selecting one of the options will produce one of the following conditions:

- Not applicable - cell will change to ocher color
- Implemented - cell will change to green
- Not implemented - cell will change to red

2.2.5. Column 14 is linked to Column 11 "Requirement compliance status", therefore, if there are several guidelines related to a question of a requirement, the compliance status will assume the most critical condition. For example. If a requirement question has three guidelines and, when evaluating them, one guidance is not applicable, the next one is implemented and the last one is not implemented, the implementation status cell of the related question will change to “Not satisfactory” and its color will change to red.

2.2.6. Column 14 will also have the option of setting the risk indicator (IdR), which is already predetermined.

2.2.7. The accounting of the results of all CLs is automatically added to the “IMPLEMENTATION STATUS” tab in which it can be displayed;

- the values obtained from each list;
- an implementation status graph of each CL;
- the hazards taxonomy results; and
- the hazards taxonomy graph.

2.2.8. In addition, it is linked to the “COMPLIANCE STATUS” tab, where we can obtain the value of the sum of all satisfactory, not satisfactory and not applicable questions. Likewise, we will obtain the “Compliance status” graph.

2.2.9. Finally, in the “REGULATORY COMPLIANCE” tab, the results of the CLs in relation to the regulatory compliance rate and the effective implementation (EI) of regulatory compliance will be presented.

2.2.10. In addition to everything mentioned, each checklist has two tabs associated:

- GRAPHIC: presents us graphically:
 - (i) the status of implementation of that CL;
 - (ii) the status of implementation for detected hazards; and

- (iii) the compliance status of the CL (not applicable, not satisfactory, satisfactory)
- Associated hazard code: allows us to visualize hazard graphs for each part of the list (sub-parts) according to the implementation status.

2.3. **SMS evaluation tool (AIR Tool Book3 SMS Evaluation en)**

2.3.1. This tool provides the information that will be automatically loaded in Item 47 of the ORP and is made up of the following six (6) tabs:

2.3.1.1. Start: The following data will be recorded:

- a) Maintenance organization name;
- b) Approval / certification reference;
- c) SMS or SM manual evaluation;
- d) Evaluation scope;
- e) Evaluator (s) (name and department);
- f) Evaluation date; and
- g) Evaluation reference.

2.3.1.2. SMS evaluation tool: The development of this checklist consists of the following columns:

- a) Item: The correlative order of the different components and elements of the SMS will be noted.
- b) Component: Reference is made to one of the four (4) components of the SMS. Then, the ICAO reference will be displayed, for example (C1 or C2 or C3 or C4).
- c) Element: One of the twelve (12) elements that are part of the components is referenced, and then a column with the ICAO reference and the affected LAR regulation will be displayed.
- d) Compliance and performance indicators: There are 47 descriptions that will determine the level of maturity of the SMS processes.
- e) Effectiveness: Four (4) maturity levels expressed as present (P), adequate (S), operational (O) and effective (E) were established.
- f) How is it achieved? Record the support reference to the “Compliance and performance indicator” guidelines.
- g) Comments: The comments of the evaluator will be recorded (free text).
- h) Orientation
- (i) What to look for? This section guides the evaluator when looking at each individual feature and is not meant to be a checklist. The items listed are not specific to an individual *Present*, *Suitable*, *Operating*, or *Effective* level, but remind the evaluator of

areas they may want to consider. Some items in this column may not be relevant depending on the size, type, or nature of the organisation.

- (ii) Present (P): There is evidence that the relevant indicator is documented within the organisation's SMS documentation.
- (iii) Adequate (S): The relevant indicator is adequate based on the size, nature and complexity of the maintenance organization and the risk inherent in its activity.
- (iv) Operational (O): There is evidence that the relevant indicator is being used and is generating a result.
- (v) Effective (E): There is evidence that the relevant indicator is achieving the desired outcome and has a positive safety impact.
- i) Comparison chart: The status of maturity and effectiveness of compliance and performance indicators of the SMS can be visualized.
- j) Comparison of components: The comparison of the components and interface at the level of compliance and performance indicators is displayed, depending on their effectiveness.
- k) Comparison by element: The comparison of the elements and interface at the level of compliance and performance indicators is displayed, depending on their effectiveness.
- l) Comparison of totalities: The total score that expresses the level of the SMS effectiveness is displayed. This score is the sum of the result obtained from each of the performance and compliance indicators.

***Note:** The result of each compliance indicator is obtained by multiplying the effectiveness of each compliance or performance indicator by the weight assigned to each indicator*

2.3.1.3. For more details, see the procedure in Chapter 11 of Part I of the MIA.

2.4. Safety performance indicators (SPI) diagrams tool (AIR Tool Book4 SPIs Diagrams en)

2.4.1. This tool has been developed for training purposes and considers only an SPI. However, the CAA that develops this methodology should consider the indicators that each AMO should develop according to its size and complexity.

2.4.2. This Excel workbook provides data for Item 51 of the "checklist tool (AIR_Tool_Book2_Checklists_en)".

2.4.3. In the "Indicator chart" tab, the diagram on the left corresponds to the performance of the previous year, while the diagram on the right corresponds to the progressive data trend of the current year. The alert level setting is based on standard deviation criteria of the basic safety metric. The formula of the Excel spreadsheet is "= STDEVP". For purposes of calculating manual standard deviation.

2.4.4. This data sheet (data sheet for a sample of the safety indicator diagram) is used to generate the safety indicator diagram that appears in the "Indicator data" tab. The same can be used to generate any other safety indicator diagram with the appropriate data entry and customization of the safety indicator descriptor. The three alert lines and target lines are automatically generated according to the respective configuration in this spreadsheet.

2.4.5. In the "Indicator data" tab (data sheet to record the data of the previous year and data of the current year, you will provide the information to the "Indicator Graph" data sheet. This sheet consists of the following parts:

- a) Previous year;
- b) Current year;
- c) Alert levels per current year;
- d) Target of the current year;
- e) Standard deviations (Ave + 1SD; Ave + 2SD; Ave + 3SD);

f) Objective.

2.4.6. **Previous year:** It is made up of the following columns:

- Month.
- Total of works of the AMO: works (online attentions), work done on components, etc., per month.
- Events: Failures, malfunctions and defects as a result of work carried out by the AMO; deferred as a result of maintenance problems after work done by the AMO; return of aircraft to platform after dispatch as a result of maintenance; component failures after major maintenance performed by the AMO, etc.
- Incident rate denominator: It should be considered that the actual data point interval and the event rate denominator should be determined according to the nature of each data set, to ensure the feasibility of the safety indicator. To obtain this rate, the number of events must be multiplied by a constant that can vary from 10 to 1,000,000 depending on the amount of work done by the AMO (Total per month) and result divided by the total of the month.
- Occurrence * 100 / Total work of the AMO
- Average: It is the average of all "incident rates" of the year.

2.4.7. **Current year:** It is made up of the following columns:

- Month.
- Total of works of the AMO: works (online attentions), work done on components, etc., per month.
- Events: Failures, malfunctions and defects as a result of work carried out by the AMO; deferred as a result of maintenance problems after work done by the AMO; return of aircraft to platform after dispatch as a result of maintenance; component failures after major maintenance performed by the AMO, etc.
- Incident rate denominator: It should be considered that the actual data point interval and the event rate denominator should be determined according to the nature of each data set, to ensure the feasibility of the safety indicator. To obtain this rate, the number of events must be multiplied by a constant that can vary from 10 to 1,000,000 depending on the amount of work done by the AMO (Total per month) and that result is divided by the total of the month
- Occurrence * 100 / Total work of the AMO

2.4.8. Alert levels per current year: It is made up of 3 columns:

- a) Average of the previous year + 1SD
- b) Average of the previous year + 2SD
- c) Average of the previous year + 3SD

2.4.9. **Target of the current year:** It is the average improvement rate of the percentage that is drawn as a target according to the objective.

2.4.10. Standard deviations (Ave + 1SD; Ave + 2SD; Ave + 3SD)

For purposes of manual calculation of the standard deviation, the formula is:

$$\delta = \frac{\sqrt{\sum(x - \mu)^2}}{N}$$

where "X" is the value of each data point, "N" is the number of data points and "μ" is the average value of all data points.

2.4.11. Target: It is the percentage of improvement of the current year indicated in an average improvement rate. This result will be the one presented in the "target of the current year" column.

2.5. **RBS database tool (AIR Tool Book5 Database Results en)**

2.5.1. This latest Excel workbook will allow us to obtain the results that must be noted in the Items 27 and 28 of the OPR that are the only ones that are recorded based on some result that comes from another workbook.

2.5.2. It consists of six (6) data tabs, which are detailed

REGIONAL SAFETY OVERSIGHT COOPERATION SYSTEM
SURVEILLANCE DATABASE

AMO GENERAL DATA

EDIT AMO DATABASE

RECORD OF FINDINGS

EDIT DATABASE OF RECORDS OF FINDINGS

GRAFICOS:

UBICACION ADICIONAL ▼

SAVE AND CLOSE FILE

2.5.2.1. Start: Allows access to the following data:

- a) **OMAS GENERAL DATA:** All data of an AMO must be recorded for the first time. Each time an AMO is entered this link should be used, for this the following data should be noted:
- AMO Name: AMO Name as it appears on the certificate granted by the CAA.
 - Date of initial AMO certification: The day, month and year of the date on which the AMO received the certificate for the first time will be noted. They should be noted in numbers (dd / mm / yy).
 - National or foreign: Three options will be presented in a drop-down box: National, Foreign, Multinational. The corresponding option must be selected.
 - AMO Size: A drop-down box with three options will be presented: Small, Medium, Large. To determine the size of the AMO, the provisions of advisory circular CA-AIR-145-001 can be used.
 - AMO Capabilities: A drop-down box with eight (8) options will be presented:
 - A - Aircraft structure
 - B - Aircraft engines
 - C - Propellers

D - Radio (Avionics)

E - Computer system

F - Instruments

G - Accessories

H - Specialized services

Capacity distribution has been considered in accordance with the provisions of Appendix 4 of LAR 145.

- Name of the responsible manager: Record the first and last name of the current responsible manager of the AMO.
- Appointment date of the responsible manager: Record the date (dd/mm/yy) on which the CAA granted the acceptance of the responsible manager.
- Name of the SMS manager: Record the first and last name of the current SMS Manager of the AMO.
- Date of appointment of the SMS responsible: Record the date (dd/mm/yy) on which the CAA granted the acceptance of the SMS Responsible.
- Name of the head of the quality system: Record the name and surname of the Head of the current quality system of the AMO.
- Designation date of the quality system manager: Record the date (dd/mm/yy) on which the responsible manager appointed the quality system manager.
- Name of the person in charge of the inspection system: Record the first and last name of the person in charge of the current inspection system of the AMO.
- Date of designation of the responsible for the quality system: Record the date (dd/mm/yy) on which the responsible manager appointed the responsible for the inspection system.
- Name of the person in charge of the maintenance system: Record the first and last name of the person in charge of the current maintenance system of the AMO.
- Date of designation of the responsible for the quality system: Record the date (dd/mm/yy) on which the responsible manager designated the responsible for the maintenance system.
- Date of the last inspection: Record the day, month and year (dd/mm/yy) of the day the last inspection was carried out with the AMO.
- Other certifications: Record all other certifications that the AMO may have, such as IOSA, ISO, etc.
- Other approvals with expiration date, if applicable: Register other certifications obtained from other States. Also, note the expiration date of the certification.
- Notes: Record any observations that are considered important and that can serve as a reference. If you consider not writing down any observations, you should write "NONE".

Once all the boxes have been completed, "register" MUST be selected.

- b) **EDIT AMOs DATABASE**: In case it is necessary to modify any registered data, select "EDIT RECORDS". When making this selection you will be directed to an Excel sheet where you must select the change you want to make. Once made, the change must be recorded and then select the "START" tab.

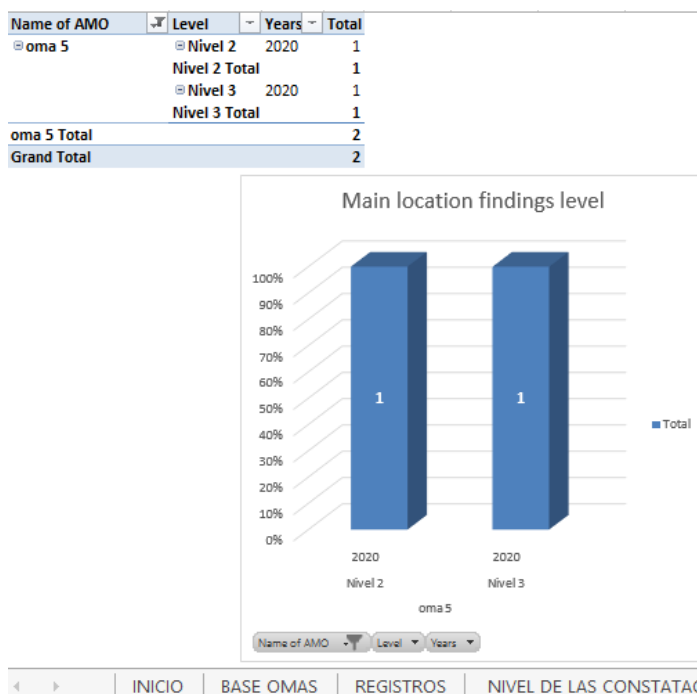
- c) **RECORD OF FINDINGS:** It consists of the following options:
- AMO NAME: Select the name of the AMO, which will be generated after completing the data at the beginning of this book.
 - ACTIVATE THE # OF FINDING: Enter Number 1 for the first verification. After selecting this option, the corresponding number will automatically appear.
 - LEVEL: Select one of the three (3) levels that have been considered.
 - Level 1: negligible and minor
 - Level 2: major
 - Level 3: hazardous and catastrophic
 - CODIFICATION / HAZARD CODE: Write down what is established in the guidance of the checklist in Book 2 of “Checklist Tool”
 - REFERENCE: Write down the regulatory requirement established in the checklists.
 - FINDING DATE: Enter the date (dd/mm/yy) on which the finding was detected.
 - INITIAL EXPIRATION DATE: Verify the procedure of MIA Part I, Chapter 10A to determine the expiration date of each finding.
 - PAC RECEPTION DATE: Verify the procedure of the MIA Part I, Chapter 10A to determine the deadline for the AMO to send the PAC.
 - DATE OF CLOSURE OF THE FINDING: Note the date on which the inspector assigned to verify the CAP evidence that corrective and preventive actions were taken.
 - PLACE: Select in the drop-down box the base where the inspection is carried out. There will be two options:
 - Main base
 - Additional location
 - DESCRIPTION: The verification (non-conformity) will be recorded based on a specific regulatory requirement, identified during an inspection and duly documented.
 - EVIDENCE: It is the support generated by the finding, which must detail in an objective and documented way the data of the evidence found.
- d) **EDIT DATABASE OF RECORDS OF FINDINGS:** Upon entering this option an Excel sheet appears with all the findings. The finding to be edited and the cell to be edited for the change to be generated must be located. Once the change is made, it must be recorded, and the existing data will be updated.

e) GRAPHICS: This option allows us three options:

- 1) Levels of the findings related to the severity of the hazards: The levels of the AMOs findings related to the severity of the hazards may be displayed in the last 24 months. Also, in the graph there are filters to select the AMO, the levels of the findings related to the severity of the hazards and the date of the findings.



- 2) Main location: The levels of the findings related to the severity of the hazards of the main location may be displayed in the last 24 months. Also, in the graph there are filters to select the AMO, the levels of the findings related to the severity of the hazards and the period of time.



- 3) Additional location: It will be possible to visualize the levels of the findings related to the severity of the hazards of the additional location, in the last 24 months. Also, in the graph there are filters to select the AMO, the levels of the findings related to the severity of the hazards and the period of time
 - f) **SAVE AND CLOSE FILE:** This option must be selected to save the changes and close the file.
- 2.5.2.2. AMO Base: See EDIT AMOs DATA BASE (2.5.2.1 (b)).
 - 2.5.2.3. Records: See RECORDS OF FINDINGS (2.5.2.1 (c)).
 - 2.5.2.4. Level of findings: See GRAPHICS (2.5.2.1 (e) (1)).
 - 2.5.2.5. Main location: See GRAPHICS (2.5.2.1 (e) (2)).

Appendix 1 - RBS Process

