SUPREME AUDIT INSTITUTION
INFORMATION TECHNOLOGY MATURITY ASSESSMENT

SAI ITMA

Version 2.0

June 2024

USER'S GUIDE

Handbook

Developed by:

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Bonn, June 2024

Contents

Abbreviations, Acronyms and Glossary

All abbreviations, acronyms and terms described below correspond generally to the documents that make up the SAI ITMA Application Kit.

Application	Type of software or computer program designed to perform a group of functions, tasks, or activities to support user tasks.
Big Data	Big data refers to extremely large datasets that may be analysed computationally to reveal patterns, trends, and associations, especially relating to human behaviour and interactions
CAATs	Computer Aided Audit Techniques
CCC	OLACEFS Capacity Building Committee (*Comité de Creación de Capacidades*)
CISA	Certified Information Systems Auditor (CISA) issued by the ISACA
Cloud Computing	A network of remote servers hosted on the Internet to store, manage and process data, instead of a local server or a personal computer.
Data Analytics	The science of analyzing raw data to draw conclusions about that information.
Data model (including geographic ones)	Logical and physical definition of how the data will be stored and how it will be accessed.
Databases	Set of data belonging to the same context and systematically stored for later use.
DP / CD	Development Partners (*Cooperantes de Desarrollo*)
EGDI	E-Government Development Index issued by the United Nations
EUROSAI	European Organization of Supreme Audit Institutions
Facilitators	Person or persons who have the task of guiding the entire SAI ITMA implementation process.
FPO World	Finance Performance Oversight (consulting company that developed the first version of SAI ITMA)
Geographic Databases	Set of geographic data organized in such a way as to allow analysis and management of geographically referenced information within Geographic Information System (GIS) applications.
Geographic Information Systems	Any information system capable of integrating, storing, editing, analyzing, sharing and displaying geographically referenced information.
Geotechnologies (Geographic Information Science & Technology)	Remote sensors, location systems, matrix data and vector data, GIS. They are included within the concept of Information Technology according to GUID 5100.
GIT	Geographic Information Technology
GIS	Geographic Information Systems (software applications)
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GUID	INTOSAI Guidelines (GUIDs) are issued by the International Organization of Supreme Audit Institutions (INTOSAI) as part of the INTOSAI Framework of Professional Pronouncements.
Help desk	Center of attention to users, the service desk is the single point of contact between the IT service provider and users for day-to-day activities.
ICT	Information and Communications Technology
IFPP	INTOSAI Framework of Professional Pronouncements
INCOSAI	International Congress of Supreme Audit Institutions
Information Systems	Information Systems can be defined as a combination of the strategic, managerial and operational activities carried out in the collection, processing, storage, distribution and use of information and its related technologies. (GUID 5100)
Information Systems Audit	The Information Systems audit can be defined as the examination of the controls related to Information Systems based on Information Technology, in order to determine cases of deviation from the criteria, which in turn have been identified on the basis of the adopted audit type, that is, the financial audit, the compliance audit or the performance audit. (GUID 5100)
Information Technology	Information Technology includes hardware, computer programs (software - GIS), communications and other *facilities* used to enter, store, process, transmit and issue data in any form. (GUID 5100)
INTOSAI	International Association of Supreme Auditing Institutions
INTOSAI-P	INTOSAI Principles (INTOSAI-P) are part of the INTOSAI Framework of Professional Pronouncements (IFPP) and they consist of Founding Principles and Main Principles. The founding principles have a historical significance and specify the role and functions to which Supreme Audit Institutions (SAIs) should aspire.
ISA	International Standards on Auditing

ISO	International Organization for Standardization
ISSAI	International Standards of Supreme Audit Institutions
ITASA	IT Audit Self-Assessment
ITSA	Information Technology Self-Assessment
ITWG	EUROSAI IT Working Group
Map	Geographical representation of the Earth, or part of it, on a flat surface, according to a scale.
Metadata	It literally means "beyond the data," which can be interpreted as data describing the data.
OLACEFS	Organization of Latin American and Caribbean Supreme Audit Institutions (*Organización Latinoamericana y del Caribe de Entidades Fiscalizadoras Superiores*)
QM	Quality management
QMS	Quality Management System (processes focused on achieving quality policies and objectives)
Personnel clearance procedures	Procedures for personalized attention for software inquiries.
SaaS	Software as a Service, a cloud-based software distribution model centralized on a server.
SAI	Supreme Audit Institution
SAI ITMA	Supreme Audit Institution Information Technology Maturity Assessment developed by GIZ
SAI PMF	Supreme Audit Institutions Performance Measurement Framework developed by IDI
SDG	Sustainable Development Goals defined by the United Nations
Spatial Analysis	A process in which problems are geographically modeled, results are obtained through computer processing, and then those results are explored and examined.
Spatial information	All data that has a geographic reference associated with it, in such a way that we can find exactly where it is located within a map.
TCU	Federal Court of Accounts (SAI of Brazil)
WebGIS	Distributed information system application, comprising at least one server and one client, where the server is a GIS server and the client is a web browser. It can be a desktop or mobile application.

1. Introduction to the SAI ITMA User's Guide

This User's Guide provides guidance on the use or management of the Microsoft Excel-based tool for the Supreme Audit Institution Information Technology Maturity Assessment (SAI ITMA)[1]. Its content provides guidance and information on the essential aspects for the effective use of this tool.

The application works on a Microsoft Excel-based model for compatible Operating Systems, allowing information to be managed by means of commands or instructions (macros), thus generating management reports.

This User's Guide is, in turn, part of the SAI ITMA Toolkit, which includes, among others, the tool itself and the Manual, which provides detailed information on the preparation and procedures for the effective application of this assessment in a SAI.

2. Sheet descriptions of the Excel-based tool

The Excel-based instrument contains four different types of sheets:

- Explanatory sheets introducing the SAI ITMA
- Operational sheets that store the data necessary for the SAI ITMA
- Sheets containing the five pillars of the SAI ITMA
- Interpretation sheets that graphically illustrate the results obtained

2.1. Explanatory sheets

2.1.1. Cover Page sheet

On the "Cover Page" you will find the institutional information and logos of the Development Partner (DP) organizations: See figures 1 and 2.

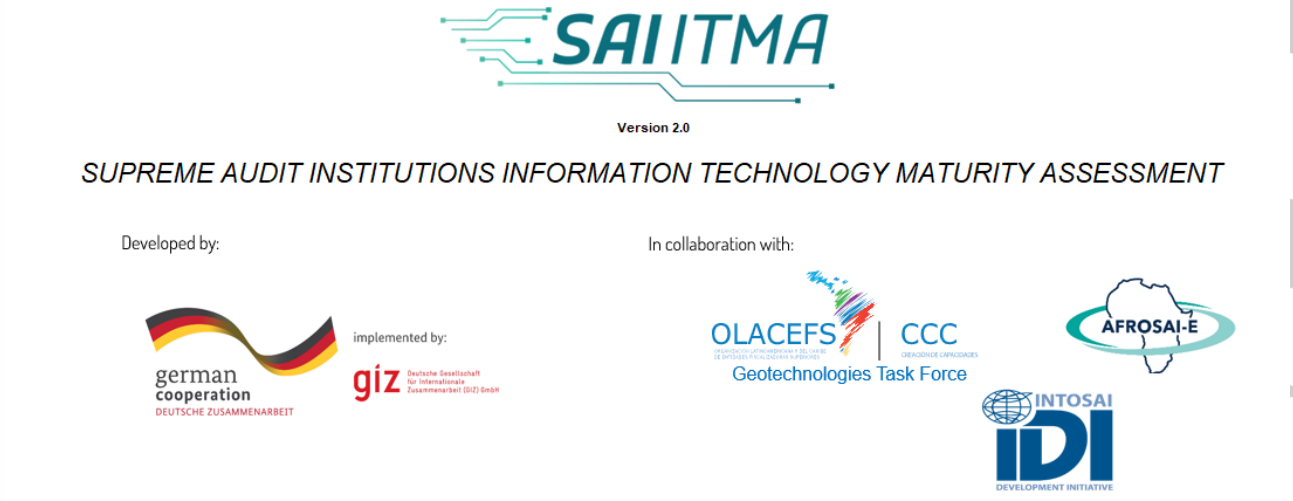

***Figure 1** - Institutional Information*

[1] There is another user's guide on the web-based version of the SAI ITMA tool.

Figure 2 – "Cover" sheet

2.1.2 "Mapping Diagram" and "Maturity Development" sheets

The "Mapping Diagram" and "Maturity Development" sheets are aids for interpreting the results and contain content that is explained in greater detail in the Manual. *All the data shown in the Figures are intended to illustrate the operation and results that the SAI ITMA tool processes and displays. Therefore, when conducting the assessment, different data and different graphs will be displayed.*

Figure 3 (figure 26 in the tool) combines the result of the SAI ITMA application (global maturity level from 0 to 5) with the United Nations' E-Government Development Index (EGDI) (index level from low to very high). The cross section of the country's EGDI level and the SAI's maturity level gives an estimation of how much support the SAI needs to adjust to the country's needs. If the gap between the country's EGDI level and the SAI's maturity level is big, then there is higher need to enhance the SAI's capabilities. For purposes of this model, this is called intervention rationale, which has three levels: low, medium, and high.

	SAI Maturity Level					
Reference EGDI Country Index	**0**	**1**	**2**	**3**	**4**	**5**
Low	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**
Medium	**High**	**Medium**	**Medium**	**Medium**	**Low**	**Low**
High	**High**	**High**	**High**	**Medium**	**Medium**	**Low**
Very High	**High**	**High**	**High**	**High**	**Medium**	**Low**

Figure 3 - Algorithm for the Rationale of the intervention.

Please, note that:

Figure 4 shows the development of maturity occurring both vertically – in each pillar – and horizontally – from pillar 1 to pillar 5.

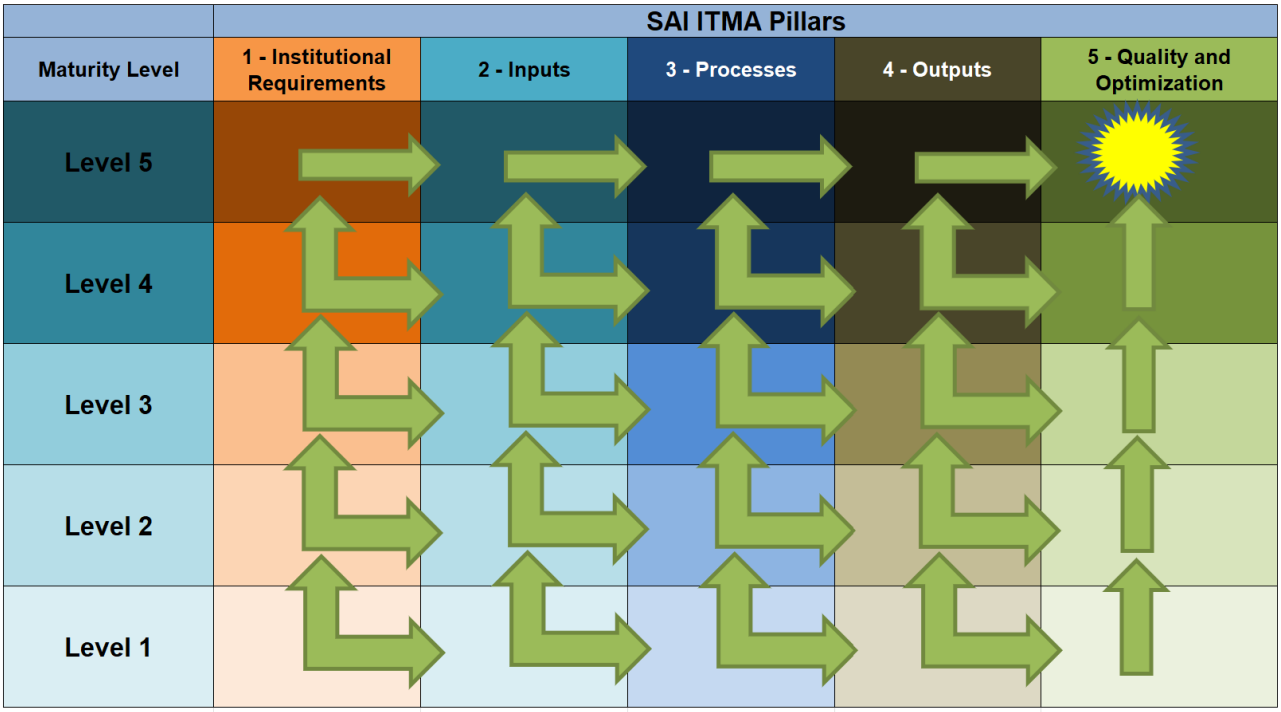

***Figure 4** - Bi-directional maturity development.*

The rationale for the bi-directional maturity is based on the assumption that processes are interconnected and affect each other, despite the allocation of the requirements in different pillars. Vertical maturity development is intuitive – each pillar has predefined requirements, and the SAI moves to the next maturity level, if all the requirements are met. On the other hand, specific requirements from pillar 1 serve as a prerequisite for the specific requirements in pillar 2 etc.

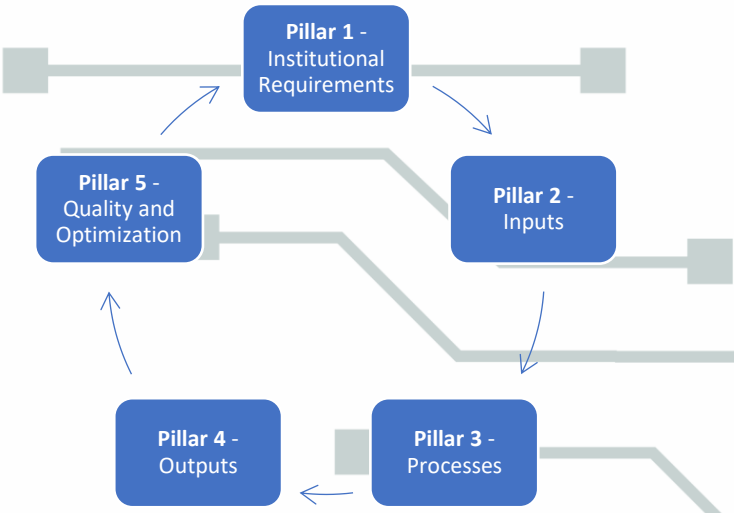

***Figure 5 -** Maturity cycles.*

For example, Pillar 1, Requirement 4.7: "The SAI is mandated to adopt any Critical and emerging technology (CET) based on the SAI objectives" and Pillar 2, Requirement 5.3: "The SAI has defined procedures to pilot appropriate Critical and Emerging Technology (like GIS, AI, Blockchain etc.)" are interconnected. The SAI needs the legal mandate to adopt CETs, while adoption of the CETs requires specific procedures for piloting them. Hence, meeting the requirement 4.7 from Pillar 1, enables Requirement 5.3 from pillar 2 to be met, which is an example of horizontal maturity development.

2.1.3. "Description" sheet

The "Description" sheet contains basic information about all the sheets of the SAI ITMA application which can be accessed in case a general reference is needed. See Figures 5 and 6.

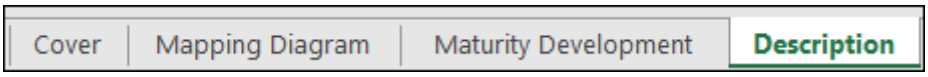

Figure 6 – "Description" sheet.

Spreadsheets Description - MS Excel SAI ITMA Tool 2.0	
General Data	The SAI should fullfil General data in the given form.
Mapping Diagram	The model takes into account not only SAI's self-assessment based on given requirements, but also country context in which SAI operates. Therefore, the model offers mapping principles between country context and maturity level, hence, the gap is a good proxy for the stakeholders decision to intervene or not.
Maturity Development	The model is holistic and overarching for the SAI's functions. To demonstrate the development path of the organization and relation between pillars, model includes "maturity development matrix" as well.
Pillars	The model has 5 Pillars with 5 levels of maturity in each one.
Summary	Summary displays general results of the self-assessment according to the maturity model. SAI may see the recommended level of maturity based on country context, while the actual results of assessment are also displayed. The model automatically suggests the gap between actual and desired levels.
Non-Compliance Report	The model is capable of identifying the SAI's lack of capacity (challenges) in each pillar and in each level of maturity. The tool also enables combined reporting for all pillars and all levels of maturity.
Statistics	The model offers the SAI to have a look at the detailed statistics of the model requirements.
Results Dashboard	The model provides the SAI, as well as Development Partner(s), with a series of graphs and other indicators that present the results obtained after the application of the SAI ITMA.

Figure 7 - Basic information about all the other sheets of the tool.

2.1.4. "General Data" sheet

On the "General Data" sheet, general information about the SAI is entered. This information should be filled in by the assessors or by the SAI team who works with the SAI ITMA.

If the SAI team does not fill the complete information or has delays in filling it, assessor should take advantage of any of the subsequent meetings to ask about the missing information and complete the sheet.

On the sheet there is an option to select the country to work with (in the country row): see Figures 7, 8 and 9.

1. Official name of the SAI in the official language
2. Official name of the SAI in English
3. Country
4. Full address
5. Corporate email address
6. Total SAI staff (internal)
7. Total number of SAI auditors
8. Total number of Information Systems auditors
9. Total number of IT/Information Systems administrative staff
10. Total technical support staff, assistance and other personnel in Information Technology
11. Is there a unit that deals with Information Systems auditing?
12. Number of audit reports issued in the last year.
13. Number of Information Systems audit reports issued in the last year.
14. Average duration of Information Systems audits
15. Introduction year of Information Systems auditing

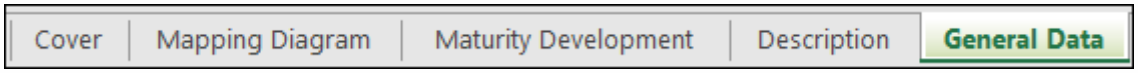

Figure 8 – "General Data" Sheet.

SAI General Information		Comments or remarks
Official name of the SAI in the official language		
Official name of the SAI in English	*EXAMPLE SAI*	
Country		
Full Address		
Corporate Email		
Total SAI staff (in-house)		
Total number of SAI auditors		
Total number of Information Systems auditors		
Total number of IT/Information Systems administrative staff		
Total technical support staff, assistance and others in Information Technology		
Is there a unit in charge of Information Systems auditing?		
Number of audit reports issued in the last year		
Number of Information Systems audit reports issued in the last year		
Average duration of Information Systems Audits		
Introduction year of Information Systems auditing		
Information provided by		
Email of the person responsible for the reported information		

TOTAL IS AUDITORS
Please enter the answer with numbers

Figure 9 - Country Choice (Row 3, Column B).

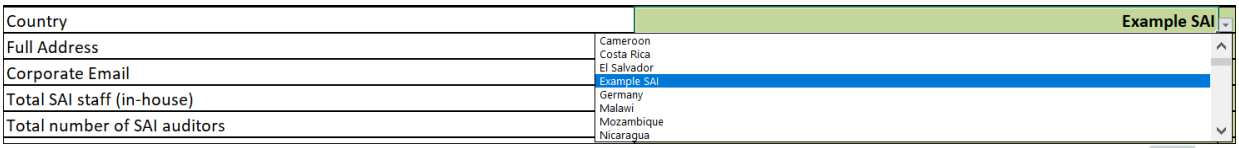

Figure 10 - Selecting the country.

2.2. SAI ITMA Operational sheets

2.2.1. "Lists" sheet

In the "Lists" sheet, the following parameters are preliminarily stored for information management during the application of the SAI ITMA (Figures 10, 11 and annex 1).

- Maturity level and its description
- Rationale / Logic or Justification for the Intervention
- E-Government Development Index (EGDI) Degree of Reference

The three indicated parameters are explained in the Manual.

It is recommended that the "Lists" sheet is kept hidden and protected to avoid unintentionally changing the information or parameters that are already stored in it. Any change could affect the management of the information because the MS Excel macros could work or run erroneously or express an error related to the mentioned sheet.

To unlock the sheet, you must enter the same password that was provided to operate the SAI ITMA tool.

Figure 11 - "Lists" Sheet

Very High
High
Medium
Low

Maturity Level		Description
Level 0	0	**Non-existent:** SAI has significant limitations in technology adoption.
Level 1	1	**Starter:** the SAI is at the initial level of technology adoption in its audit work.
Level 2	2	**Managed:** the SAI utilizes basic technologies in audits and administrative functions.
Level 3	3	**Defined:** the SAI supports use of technologies in audits and administrative processes on a systematic way.
Level 4	4	**Quantitatively Managed:** the SAI utilizes complex technologies in audit and administrative processes.
Level 5	5	**Optimizing:** the SAI technology adoption is optimized and focused on continous improvement.

Level	From	To
Very High	0.75	1.00
High	0.50	0.75
Middle	0.25	0.50
Low	0.00	0.25

Rationale or Justification for the Intervention	
Low	Major intervention is not advisable, as the SAI is developed in comparison to the country's e-government systems.
Medium	Intervention recommended, as the SAI lacks capacities for auditing e-government systems.
High	Major intervention is highly recommended, since the SAI lacks major capacities for auditing e-government systems.

Reference Maturity Level	
Low	1
Medium	2
High	3
Very High	4

Figure 12 - Definitions from the "Lists" sheet.

2.2.2. "Challenges" sheet

When identifying non-compliance (when option "0" is selected) with the SAI ITMA requirements, the assessor(s) should select possible **challenges for compliance**. These challenges are derived from the COBIT 2019 enablers. It is recommended that the "Challenges" sheet is kept hidden and protected in order to avoid unintentionally changing the

information or parameters that are already stored in it. The following challenges can be selected (and further elaborated in the comments):

- Organizational Structure
- Processes
- People, Skills and Competences
- Principles, Policies, Procedures
- Services, Infrastructure and Applications

An example of the use of challenges for non-compliance is shown in Figure 13.

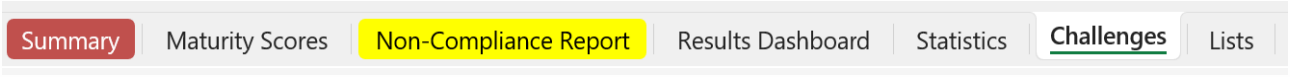

Figure 13 - "Challenges" sheet.

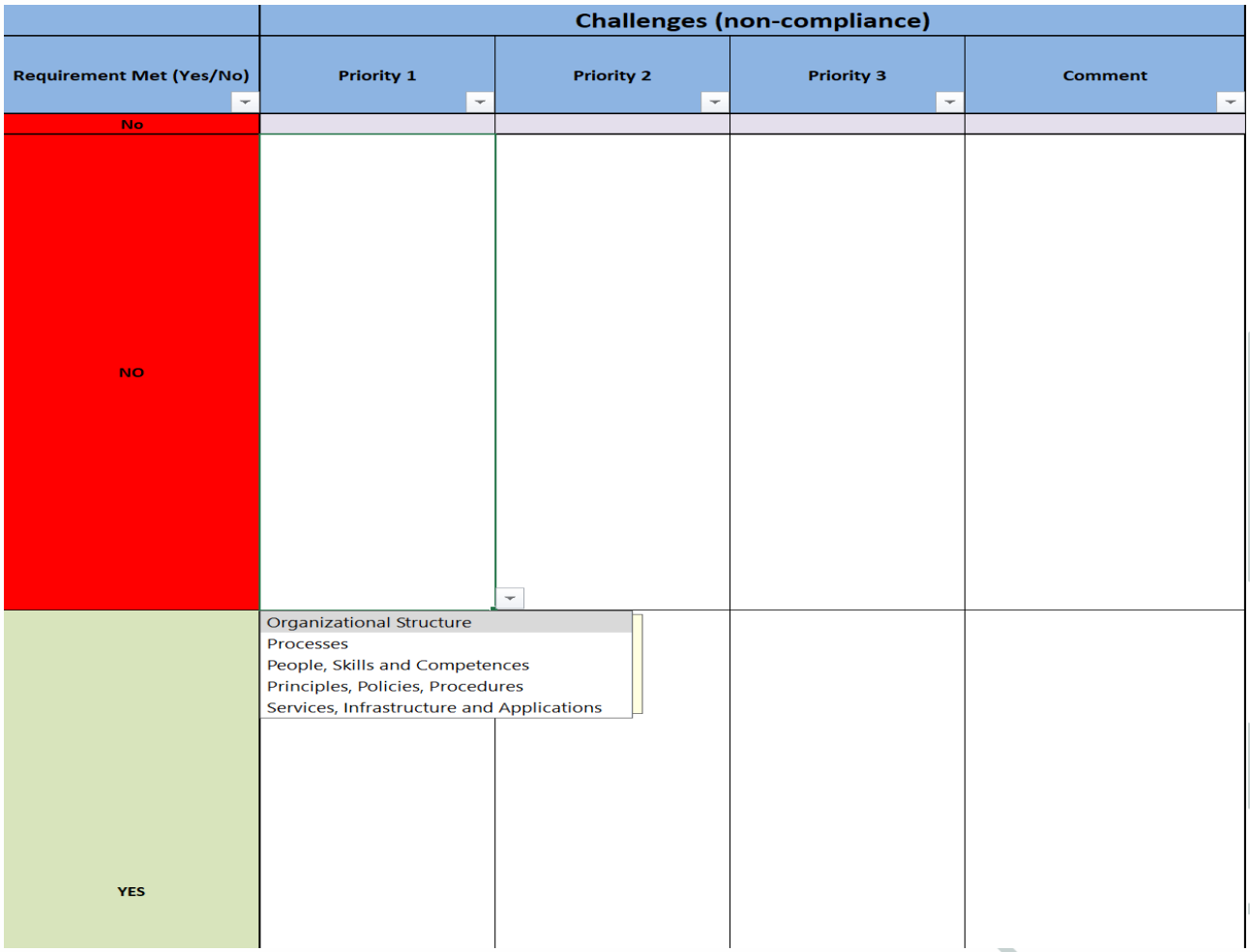

Figure 14 - Selecting the challenge and respective priority.

2.2.3. "List of Countries- EGDI" sheet

In the "List of Countries - EGDI" sheet, the following data of countries and their e-governments are stored:

- Ranking
- Country
- Subregion

- Level
- EGDI[2] (E-Government Development Index)
- Online Service Component
- Telecommunications Infrastructure Component
- Human Capital Component

The information referring to the indicated fields is extracted from the 2022 United Nations E-Government Development Index (EGDI). The EGDI is published every two years and, before starting the SAI ITMA application, it is necessary to verify if there is more current data. See Figures 14 and 15.

It is recommended that this "List of Countries – EGDI" sheet should be kept hidden and protected and should only be unlocked at the time of updating the EGDI to update the reference value. For more details on how to hide and show the "List of Countries – EGDI" sheet, as well as to insert, edit and delete countries and their respective EGDI indexes, see Annex 3 of this material.

In the event that the "List of Countries – EGDI" sheet is left unlocked, the values could be unintentionally changed, and the MS Excel macros could work or run erroneously or express an error related to the aforementioned sheet. To unlock the sheet, you must enter the same password that was provided to operate the SAI ITMA tool.

Figure 15 - "Countries List - EGDI" Sheet

		E-Government Index (EGDI			(UN)E-Government Survey 2022	
EGDI Level	Country	Level	EGDI	Online Service Index	Human Capital Index	Telecommunication Infrastructure Index
1	Denmark	Very High	0.9717	0.98	0.96	0.19
2	Finland	Very High	0.9533	0.98	0.96	0.60
3	Republic of Korea	Very High	0.9529	0.98	0.91	0.61
4	New Zealand	Very High	0.9432	0.96	0.98	0.88
5	Iceland	Very High	0.9410	0.89	0.97	0.20

Figure 16 - EGDI Database

2.3. SAI ITMA Assessment sheets – Pillars 1 to 5

The SAI ITMA tool structures the maturity assessment in five pillars:

- **Pillar 1** – Institutional requirements
- **Pillar 2** – Inputs
- **Pillar 3** – Processes
- **Pillar 4** – Outputs
- **Pillar 5** – Quality and Optimization

For each pillar, the maturity is measured in values ranging from 0 to 5 (5 being the highest maturity).

Each pillar is assessed on a separate sheet and includes a series of requirements (*criteria*) grouped around five levels (Figure 16).

Figure 17 - Sheets of Pillar 1 to Pillar 5

[2] EGDI means E-Government Development Index, **EGDI**, which is a composite index based on the weighted average of three normalized indices.

To reach a certain level of maturity**, all the requirements** of the level at which it is being assessed **must be met.**

Each requirement is numbered and is accompanied by a description (figure 17). The description also includes the description of the "**Suggested Evidence**", which is suggested guidance for the assessors. In some cases, the assessors) may identify other more suitable evidence as well.

If a SAI complies with the requested requirement, "1" (described as "Yes") must be chosen from the drop-down menu in the "**Requirement Met**" column (**Yes/No**).

If the requested requirement is not met, choose "**0**" (described as "**NO**") in the drop-down menu in the "**Requirement Met**" column (**Yes/No**). If a requirement is only partially met, "**0**" (described as "**NO**") must be chosen.

Requirement	Description	Requirement Met (Yes/No)
		Yes
The SAI is mandated to conduct an audit of Information Systems.	ISSAIs 100, 200, 300 and 400 establish the basic precepts of the audit in relation to Financial Audit, Performance Audit and Compliance Audit. These ISSAIs relate to the general principles, procedures, standards and expectations of an auditor. They are equally applicable to audits of information systems. The SAI's mandate authorizes it to conduct I) integrated audits in which the Information Systems audit is part, and ii) separate Information Systems audits. ***Suggested Evidence:*** Review the Law on the SAI and related regulatory documents.	YES
The SAI has access to proper financial resources to implement ICT solutions to achieve its mandate.	SAIs should have available, necessary and reasonable resources, and should manage their own budgets without interference or control from the Executive. In terms of ICT, the financial independence is critical since it requires long-term planning and continuous investments in capacity, infrastructure, and performance. ***Suggested Evidence:*** Review the SAI budget with the focus on the ICT.	YES

***Figure 18** - Example of the Requirements and Descriptions.*

If No ("0") is chosen, then, continuing with the assessment, in the subsequent three columns to the right up to three challenges priority challenges can be selected and recorded. This is illustrated in Figure 13 above. In the "Comment" sub-column of the "Challenges", the challenges can be explained further.

When all the requirements are marked as "**YES**" (in the column "**Requirement Met** (**Yes/No**)", it means that the total level turns from red to green, indicating that the respective approval level has been reached.

Maturity Level	Requirement	Description	Requirement Met (Yes/No)
Level 1			Yes
1.1	The SAI manages Requirements Definition.	**The SAI Requirements Definition Management should:** Identify solutions and analyze requirements before acquisition or creation to ensure that they align with SAI strategic requirements covering business processes, applications, information/data, infrastructure, and services. Coordinate the review of feasible options with affected stakeholders, including relative costs and benefits, risk analysis, and approval of requirements and proposed solutions **The Process should cover:** BAI02.01 Define and maintain business functional and technical requirements. BAI02.02 Perform a feasibility study and formulate alternative solutions. BAI02.03 Manage requirements risk. BAI02.04 Obtain approval of requirements and solutions ***Suggested Evidence**: Review the SAI requirements definition process. Review the process for technical requirements definition, including feasibility study and risk management process. Interview the SAI staff to learn more about the process.* *For additional guidance, refer to COBIT 2019 Governance and Management Framework.*	YES
1.2	The SAI manages Solutions Identification and Build.	**The SAI Solutions Identification and Build should:** Establish and maintain identified products and services (technology, business processes and workflows) in line with enterprise requirements covering design, development, procurement/sourcing and partnering with vendors. Manage configuration, test preparation, testing, requirements management and maintenance of business processes, applications, information/data, infrastructure and services. **The Process should cover:** BAI03.01 Design high-level solutions. BAI03.02 Design detailed solution components. BAI03.03 Develop solution components. BAI03.04 Procure solution components. BAI03.05 Build solutions. BAI03.06 Perform quality assurance (QA). ***Suggested Evidence**: Review the SAI process related to identification and building of ICT solutions. Review the internal practices related to development and procurement. Interview the SAI staff on the quality assurance practice and review any QA documents (like inspection memos).* *For additional guidance, refer to COBIT 2019 Governance and Management Framework.*	YES

***Figure 19** - Requirement Met - "Yes" / "No".*

This result will also be reflected in the "**Summary**" sheet. It is important to clarify that, for each pillar, the assessment procedure is the same.

Please, note that maturity development is cumulative, which means that all the previous requirements must be met to move to the next maturity level. For example, if the specific requirement(s) is not met on the level 4, while all the requirements are met on the level 5, the SAI will not be able to reach level 5 (see the next example).

Level 4			**No**
4.1	The permanent files (audit documentation) include general information about the Information Systems environment of the audited entities.	The support and participation/involvement of the Information Systems audit should be adequately documented. For that purpose, the permanent files of the audit work (whether financial, compliance or performance) should include general information about the auditee's information systems control environment. [former ISSAI 1230 Audit documentation] ***Suggested Evidence*** **:** a sample of audit files.	**YES**
4.2	The SAI manages Service Requests and Incidents.	**The SAI Service Request and Incident Management should:** Provide timely and effective response to user requests and resolution of all types of incidents. Restore normal service; record and fulfil user requests; and record, investigate, diagnose, escalate and resolve incidents. **The Process should cover:** DSS02.01 Define classification schemes for incidents and service requests. DSS02.02 Record, classify and prioritize requests and incidents. DSS02.03 Verify, approve and fulfil service requests. DSS02.04 Investigate, diagnose and allocate incidents. DSS02.05 Resolve and recover from incidents. DSS02.06 Close service requests and incidents. DSS02.07 Track status and produce reports. ***Suggested Evidence:*** Review the SAI service requests and incident management practice. Review the inventory for service requests (for example, tools by Atlassian, ManageEngine and etc.). Review the process of classification, review and escalation. Interview the SAI staff - users and IT staff including. *For additional guidance, refer to COBIT 2019 Governance and Management Framework.*	**NO**
4.3	When performing Information Systems audit tasks, the audit documentation refers to IS auditing standards or guidelines.	When performing Information Systems auditing tasks, auditors should refer to the Information Systems auditing standards and guidelines. [former ISSAI 1230] ***Suggested Evidence*** **:** a sample of audit reports, reference guidelines and standards and etc.	**YES**
Level 5			**No**
5.1	The findings and conclusions regarding Information Systems audit are issued in accordance with objective criteria similar to those of the financial, compliance and performance audit (materiality, relevance, etc.).	Findings and conclusions regarding the Information Systems audit should be issued in accordance with objective criteria similar to those for financial, compliance and performance audit (materiality, relevance, etc.). [former ISSAI 1230, ISSAI 1500] ***Suggested Evidence*** **:** a sample of audit reports to analyze similarities.	**YES**
5.2	Information Systems audit work is properly documented (including records of any type of data manipulation during Information Systems audit tests).	Like all audit procedures, Information Systems audit work should be documented in accordance with the documentation standard defined by the SAI, including available and up-to-date metadata for geographic data. This should also include records of any data manipulation during Information Systems audit tests. [former ISSAI 1330-A63, ISSAI 1230, ISSAI 1500] **Suggested Evidence:** a sample of audit documentation, record of data manipulation, log data and etc.	**YES**
5.3	The portfolio of all government Information Systems projects and all government Information Systems applications is available to the SAI.	The SAI has a portfolio of all government Information Systems projects and all government Information Systems applications available for audit purposes. ***Suggested Evidence*** **:** register / inventory of government projects.	**YES**

Figure 20 *- Example of cumulative maturity development.*

2.4. SAI ITMA Interpretation sheets

The SAI ITMA tool will be freely accessible to the SAI that receives it together with the Toolkit, i.e.

2.4.1 Summary sheet

SAI maturity Vs Reference maturity level

The "**Summary**" sheet contains a precise synopsis based on the answers that were assigned in the previous sheets.

The SAI IT maturity level for each pillar and the country's (constant) reference **EGDI**-level are depicted in the summary table (**figure 19**) and in the spider chart (figure 20). The "Decision" column of the summary table in figure 19 reflects the deviation between the degree of maturity and the reference level.

SUMMARY – GENERAL RECOMMENDATIONS FOR EXAMPLE SAI			
	Maturity Level	Reference Level	Decision
Pillar 1 – Institutional Requirements	1	4	Increase Maturity by 3 Level(s)

***Figure 21** - SAI Maturity in each pillar vs reference maturity level.*

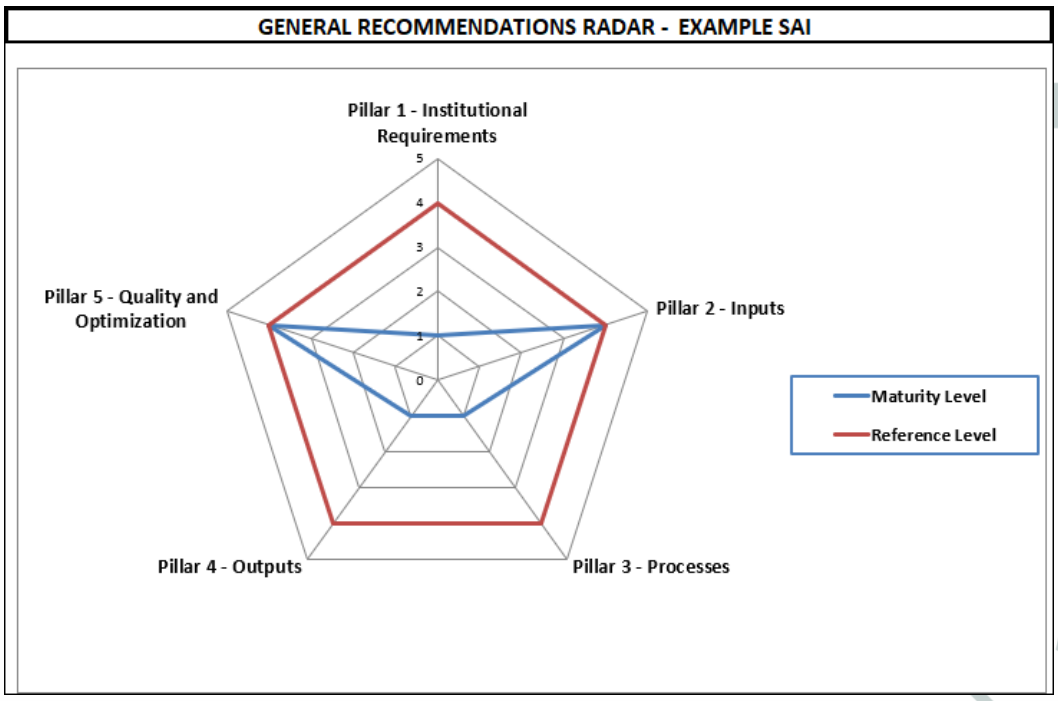

***Figure 22** - Summary of SAI maturity compared to reference maturity level.*

In the summary table, it is clarified that the degree of maturity of the SAI equals the rounded average degree of the pillar maturity levels (Figure 21).

	Maturity Level
Pillar 1 - Institutional Requirements	1
Pillar 2 - Inputs	4
Pillar 3 - Processes	1
Pillar 4 - Outputs	1
Pillar 5 - Quality and Optimization	4
Average maturity level (average of all pillars)	2,20
SAI Maturity Level	**2**

***Figure 23** - Calculation of SAI average maturity.*

Rationale for intervention

The main objective of the "**Summary**" sheet is to guide the SAI top management, staff and development partners via easy-to-understand steps. The main decision to be made is whether to plan major, medium or no interventions to support SAI's technological direction.

	Maturity Level	Reference Level	Decision
Pillar 1 - Institutional Requirements	0	4	Increase Maturity by 4 Level(s)
Pillar 2 - Inputs	5	4	No treatment required
Pillar 3 - Processes	1	4	Increase Maturity by 3 Level(s)
Pillar 4 - Outputs	1	4	Increase Maturity by 3 Level(s)
Pillar 5 - Quality and Optimization	5	4	No treatment required
Average maturity level (average of all pillars)	2.40		
SAI Maturity Level	**2**		**Managed: the SAI utilizes basic technologies in audits and administrative functions.**
EGDI Country Index	**Very High**		
Rationale or Justification for the Intervention	**High**		**Major intervention is highly recommended, since the SAI lacks major capacities for auditing e-government systems.**
Reference Maturity Level	**4**		

***Figure 24** - Rationale for Intervention - automated decision model of SAI ITMA.*

In the given example, SAI ITMA tool analyses the current SAI maturity levels in each pillar and compares it to the reference maturity levels. SAI maturity level is arithmetic average of the maturity levels from the pillars. The average maturity level is compared with the reference maturity level and decision is made whether to intervene or not. The

decision matrix is defined in the "Mapping Diagram" sheet and gives predefined decisions for each scenario of SAI maturity and reference level maturity.

	SAI Maturity Level					
Reference EGDI Country Index	**0**	**1**	**2**	**3**	**4**	**5**
Low	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**
Medium	**High**	**Medium**	**Medium**	**Medium**	**Low**	**Low**
High	**High**	**High**	**High**	**Medium**	**Medium**	**Low**
Very High	**High**	**High**	**High**	**High**	**Medium**	**Low**

***Figure 25** - Decision making matrix used by SAI ITMA.*

Statistics of Requirements met / not met

In addition to the maturity levels, the "Summary Sheet" also describes the level of conformity with the requirements from each pillar. The dashboard shows the percentage of the requirements met in each pillar, which is intended to be used by the SAI as an additional measure.

	Requirements Met	Total Requirements	Ratio
Pillar 1 - Institutional Requirements	**17**	**20**	**85%**
Pillar 2 - Inputs	**22**	**23**	**96%**
Pillar 3 - Processes	**16**	**20**	**80%**
Pillar 4 - Outputs	**16**	**18**	**89%**
Pillar 5 - Quality and Optimization	**14**	**14**	**100%**
Average maturity level (average of all pillars)	**85**	**95**	**89%**

***Figure 26** - Raw data on requirements met.*

2.4.3. "Maturity Scores" Sheet

SAI ITMA establishes a methodology to calculate the maturity of the SAI processes. The basis of the calculation is that all the requirements must be met in the given order to increase maturity in each pillar. Achievements on higher level-requirements would thus not be reflected in the achieved maturity level if lower-level requirements have not been met (for example, in pillar 1, requirement 4.1 is met, while requirement 2.1 is not met).

The field testing of the SAI ITMA demonstrated that, in some cases, SAIs may have implemented higher-level requirements before the lower-level requirements. To catch these cases, SAI ITMA V2.0 introduces new dashboards ("Maturity Scores" sheet) that present information (for the raw data "Figure 27, Figure 28 and Figure 29) from all pillars.

	Pillar 1			Pillar 2			Pillar 3			Pillar 4			Pillar 5		
	Requirements Met	Total of Requirements	Ratio	Requirements Met	Total of Requirements	Ratio	Requirements Met	Total of Requirements	Ratio	Requirements Met	Total of Requirements	Ratio	Requirements Met	Total of Requirements	Ratio
Level 1	2	3	67%	2	3	67%	3	4	75%	1	2	50%	1	1	100%
Level 2	2	3	67%	2	2	100%	5	6	83%	4	5	80%	2	2	100%
Level 3	2	3	67%	6	6	100%	3	4	75%	3	3	100%	4	4	100%
Level 4	7	7	100%	6	6	100%	2	3	67%	6	6	100%	3	3	100%
Level 5	4	4	100%	6	6	100%	3	3	100%	2	2	100%	4	4	100%
Total	17	20	85%	22	23	96%	16	20	80%	16	18	89%	14	14	100%

***Figure 27** - Maturity scores - raw data from all the pillars.*

***Figure 28** - Summary graph of maturity scores.*

In addition to the summarized data and graphs, the SAI also may refer to the analytical graphs related to each pillar.

***Figure 29** - Maturity scores by a pillar.*

2.4.2 "Non-Compliance Report" Sheet

The "Non-Compliance Report" sheet provides information on the requirements that were assessed as not met, receiving a "No" or a value of "0".

Options or "buttons" are presented on the sheet to show the non-compliant results for each pillar. The sheet serves as a "dashboard" and shows the report of "non-compliance" by pillar (Figure 23).

***Figure 30** - Example of "Non-compliance Report" Sheet*

As can be seen in the bar graph at the top right of figure 23, there is the information related to challenges, for example, which challenges were the most frequently selected by the SAI during the assessment. This is depicted in figure 24 below in detail.

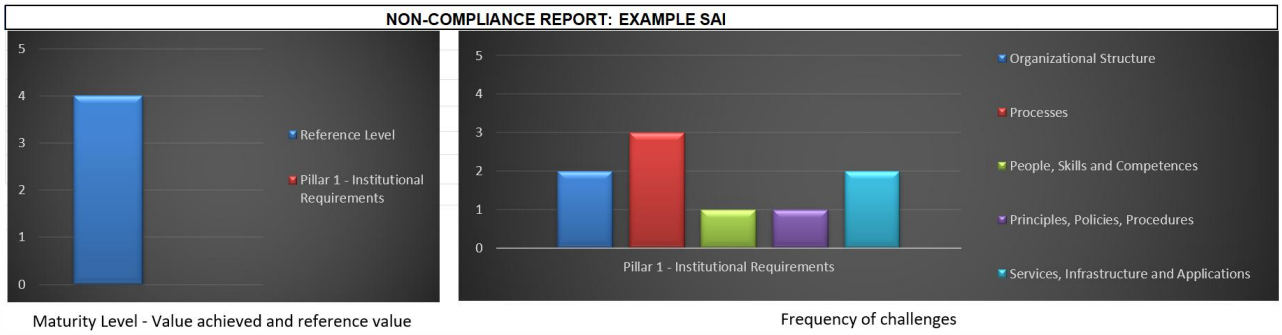

***Figure 31** - Example of "Non-compliance Report" Sheet.*

As can be seen in Figure 25, all the requirements that were not met by the assessed SAI can be invoked by clicking on the respective buttons. For example: By clicking on "Pillar 1 – First Non-Compliance" the tool will present (only) the first requirement in pillar 1 that was not met and hence led to the equivalent level of maturity. Likewise, if "Pillar 1 – All Non-Compliance" is clicked, the tool will present all the requirements that were not met.

Consequently, these same choices can be made for individual pillars or for all pillars (Figure 25).

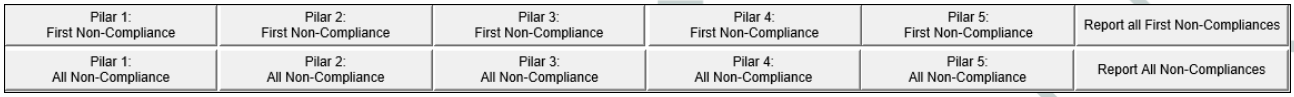

***Figure 32** - Buttons (shortcuts) to generate reports.*

It is essential that, before generating a new report, a previous report is eliminated by "clicking" on the corresponding button "DELETE THE REPORT" (Figure 26).

Figure 33 - Delete shortcut.

2.4.4. "Statistics" sheet and "Results Dashboard" sheet

The "Statistics" sheet contains all the tabulation and information related to the priority challenges that were selected. It shows the frequency with which each challenge had been selected in a pillar as priority 1, 2 or 3. The information about the frequency and is also presented in graphs, in the auxiliary sheet "Results Dashboard."

This sheet does not require the introduction or selection of any information. Graphics are for illustrative purposes only. See Figure 27 and 28.

Challenges (non-compliance)	Pillar 1 - Institutional Requirements			Pillar 2 - Inputs			Pillar 3 - Processes			Pillar 4 - Outputs			Pillar 5 - Quality and Optimization			SUM
	Priority 1	Priority 2	Priority 3	Priority 1	Priority 2	Priority 3	Priority 1	Priority 2	Priority 3	Priority 1	Priority 2	Priority 3	Priority 1	Priority 2	Priority 3	
Organizational Structure	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	4
Processes	3	0	0	0	2	0	2	1	1	0	3	6	1	2	1	22
People, Skills and Competences	0	0	1	0	0	1	1	2	1	1	0	0	0	1	1	9
Principles, Policies, Procedures	0	0	1	1	0	0	0	1	2	0	0	0	0	0	0	5
Services, Infrastructure and Applications	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	3	3	3	1	2	1	4	4	4	2	3	6	1	3	2	42

Figure 34 - Challenges per pillar.

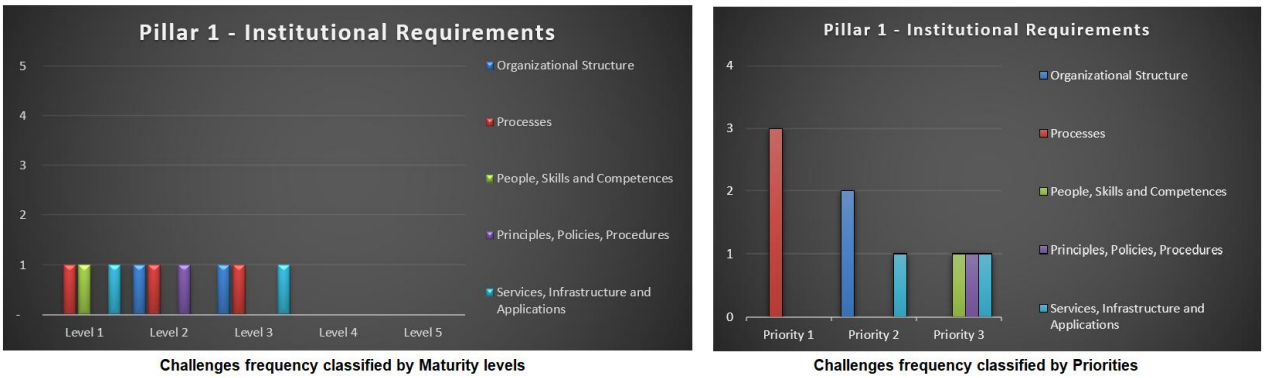

Figure 35 - Frequency of Challenges