

Results of TCU performance audits on aerospace defense



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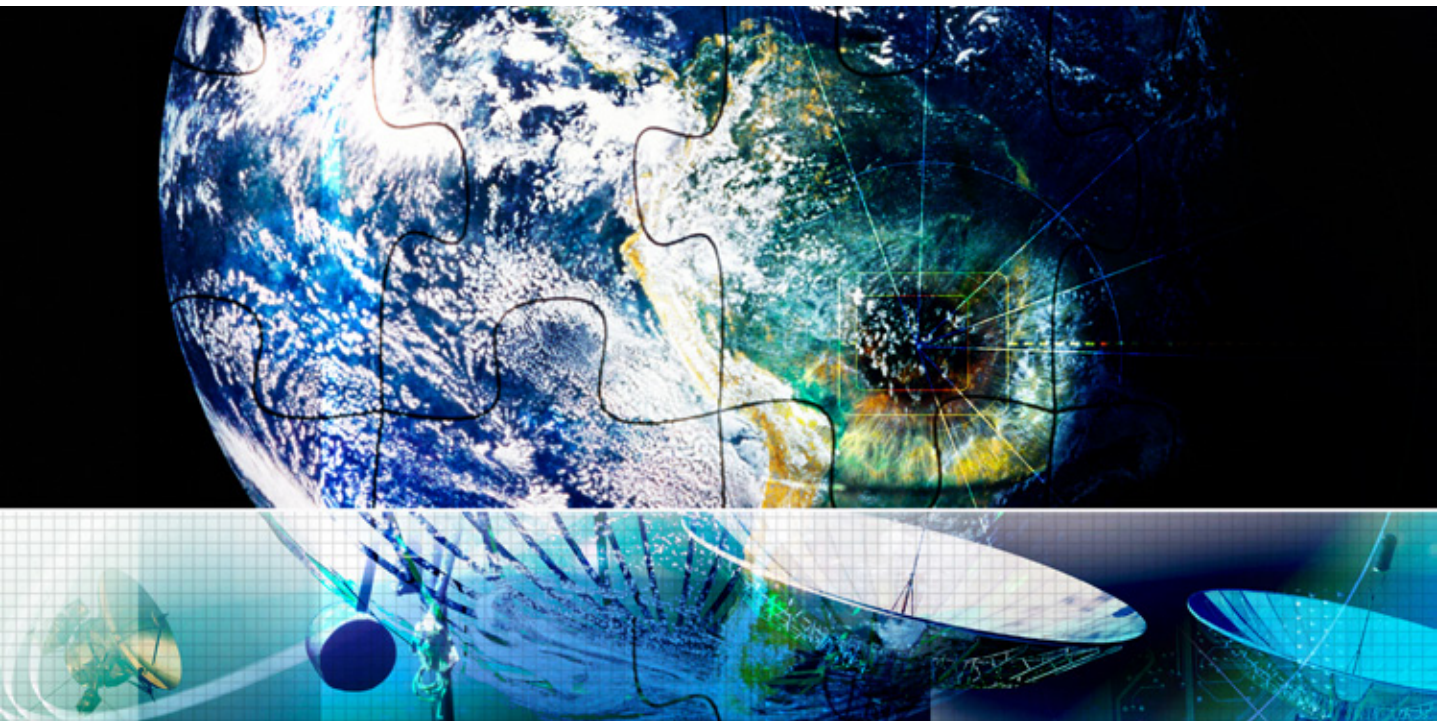
ABSTRACT

The Performance Audits (ANOp) carried out by the Federal Court of Accounts of Brazil (TCU) in the Brazilian Air Force (FAB) resulted in guidelines aimed at improving the management of Aerospace Defense in Brazil. Performance audits conducted both in the EMAer-32 Program and in the Brazilian Airspace Control System (SISCEAB) were beneficial to boost organization and transparency in management. ANOps, however, have not yet proven to be effective as to establishing a real measure of efficiency of the evaluated programs. This was a qualitative survey based on literature review and interviews and in it one can clearly see TCU's in-depth treatment of highly specific and technical Defense subjects, among other things. The survey also revealed opportunities for enhancement regarding improving processes in the control agency itself and the path to fostering better behaviors and techniques in the audited organizations.

Keywords: Aerospace Defense. Efficiency. Performance Audit. Transparency

1. INTRODUCTION

Performance Audits (ANOp) held by the Federal Court of Accounts of Brazil (TCU) regarding



the Brazilian Air Force (FAB) resulted in guidelines aimed at improving the management of the Brazilian Aerospace Defense. Performance audits conducted both in the EMAer-32 Program and in the Brazilian Aerospace Control System (SISCEAB) were beneficial to boost organization and transparency in management. ANOps, however, have not yet proven to be effective as to establishing a real measure of efficiency of the evaluated programs.

This was a qualitative survey based on literature review and interviews, which have been specially conducted for it (Appendix A). Document analysis includes official documents open for public consultation as well as academic teachings. A total of 54 interviews were conducted: 33 of them with TCU officials, 20 with FAB officials and one with an official from the Ministry of Defense (MD). Political leadership, general managers, area managers and audit professionals were interviewed both at TCU and FAB, and one active director was interviewed at the MD.

The survey results indicate the in-depth treatment of highly specific and technical subjects, among other predominantly positive aspects of TCU's ANOps as to the Aerospace Defense industry. This result was possible due to the multidisciplinary nature of the Court's Technical Staff coupled with an active participation of the officials of the institutions being audited. It also

revealed opportunities for enhancement regarding improving processes in the control agency itself and the path to fostering better behaviors and techniques inside the audited organizations.

2. DEVELOPMENT OF PERFORMANCE AUDITS

Performance Audit (ANOp) is developed according to a complex cycle of complementary and sequential phases. Each of these phases contains a key step that triggers the next one. It was designed as such to maintain the ongoing process of reviewing the management of the audited organization. According to TCU's Performance Audit Guidelines - which follows the general guidelines set by the International Organization of Supreme Audit Institutions (INTOSAI) - ANOp is developed as follows: Selection, Planning, Implementation, Reporting, Manager Review, Assessment, Disclosure and Monitoring (Appendix B).

ANOp's cycle begins with the selection of the audit object, i.e., the organization being audited and the program in question. At this stage, one of the essential criteria to be adopted is that of relevance. The audit should not waste any efforts to audit broader aspects of organization or even less important programs. Due to the principle of efficiency - something in the core of ANOp - the audit should

be limited to organizations and programs whose operation have the greatest impact on society and/or public administration.

The phases of **planning, implementation** and **reporting** come next. They are usually analyzed together and are the core of the audit itself. The report is presented to the manager who then makes **comments**, thus enriching and validating the findings of the audit. The next phase is the **assessment** by a panel of TCU ministers who later disclose their ruling not only to the audited manager, but also to society as a whole. **Monitoring** will end the cycle of ANOP, by checking the compliance status of the recommendations and resolutions addressed to the organization under evaluation.

3. RECOMMENDATIONS AND RESOLUTIONS

In ANOP processes, as well as other types of processes, TCU issues recommendations and resolutions, an official procedure set forth in the Internal Rules of TCU (RITCU). These two procedural commands help TCU set forth preventive and educational control over the organizations audited, something distinct from the direct application of its sanctioning power. ANOP processes do not directly result in fines or penalties according to the methodology in force at TCU.

Recommendations and resolutions, however, are two different things. The recommendations do not result in mandatory obligations and the lack of compliance with it by the organization does not result in a penalty for the manager in charge of the organization. The recommendation is an educational measure that has nothing to do with the sanctioning power of TCU.

Resolutions, on the other hand, are of a compulsory nature. The disrespect for it or its non-adoption by the supervised organization may lead to the imposition of a penalty, usually a monetary fine to the manager in charge of the organization. Resolutions, despite being intended to be of a preventive and educational nature, are closely tied to the sanctioning power of TCU.

Therefore, upon receiving ANOP's recommendations, the manager in charge of the organization can make his/her own decisions about adopting such procedures for his/her organization. If

he/she does not deem it relevant or appropriate, the manager may simply choose not to follow it, without any consequences. As for resolutions, the manager will be required to implement it in the organization, under penalty of being held liable.

4. PERFORMANCE AUDIT OF THE EMAER-32 PROGRAM

The EMAer-32 program was the subject of TCU's ANOP, and the whole auditing cycle was completed through extensive monitoring. The EMAer-32 program is a program coordinated by the Brazilian Air Force General Staff (EMAer-32) that uses 32% of the proceedings of the Additional Airport tax (ATAERO) in the infrastructure of aerodromes considered to be of interest by the Brazilian military, thus financing the Development of Airports of Military Interest Program (PDAIM), all in accordance with the National Defense Policy (PDN) (BRAZIL, 2005).

Airports of military interest are all those airports that support civilian or military aircrafts that could eventually be used for technical landing for military flight operations, as well as those that can be used as an alternative landing (BRAZIL, 2003a).

The EMAer-32 Program is of particular relevance for the Aerospace Defense. The airports of military interest are remote operating bases from where the Brazilian military aviation would take action in real combat situations. They are also important to support aircrafts in distress.

TCU issued a total of 14 recommendations on Ruling 36/2003-P (BRAZIL, 2003a). 12 were intended for FAB (Appendix C), one for the Ministry of Defense (MD) and one for the Ministry of Planning, Budget and Management (MPOG) (Appendix D). At the end of the monitoring carried out by TCU, out of the 14 recommendations, seven were considered **implemented**, six were considered **under implementation** and 1 was considered **not implemented**. The monitoring carried out by TCU under the EMAer-32 Program resulted in Rulings 1724/2003-P (BRAZIL, 2003b), 1225/2004-P (BRAZIL, 2004) and 162/2009-P (BRAZIL, 2009a), whose summaries can be seen in the table in Appendix E).

Out of the 12 recommendations issued to FAB (9.1.1 to 9.1.12), TCU considered seven of them as **implemented** and five as **under implementation**. The only recommendation TCU considered **not implemented** (Recommendation 9.2.1) was addressed to the MPOG and TCU considered the recommendation issued to the MD (recommendation 9.3.1) as **under implementation**. In the end, TCU understood that 92.86% (ninety-two point eighty-six percent) of the recommendations of Ruling 36/2003-P (BRAZIL, 2003a) were complied with, taking into account the **implemented** and **under implementation** recommendations. The chart in Appendix F shows the compliance status according to Ruling 36/2003-P.

It is noteworthy that none of the recommendations to FAB was assessed as not **implemented**, something that displays the high level of compliance of FAB with the guidelines issued by TCU. This comes to show that the general idea that military institutions are resistant to external control is not accurate. The chart in Appendix G shows the clear implementation of the recommendations of Ruling 36/2003-P by FAB.

Among the recommendations issued to FAB, recommendations 9.1.1 and 9.1.2 of Ruling 36/2003-P (BRAZIL, 2003a) are of particular importance for the greater efficiency in the management of EMAer-32 Program. Recommendation 9.1.1 addressed the need to clearly state the purpose of the program and define its affordable costs. Recommendation 9.1.2, in turn, addressed the ever-recurring question of performance indicators.

Item 9.1.1 of Ruling 36/2003-P recommended that FAB should seek specific rules for EMAer-32 Program so that the purpose of the program and all costs that may be borne by it become clear. It is a very important recommendation, since the lack of clarity in defining the purpose of the Program may alone lead the governmental effort to failure. Among the problems resulting from this lack of clarity that were later ranked by TCU as **misuse of priority**, there were investments in the Aerospace Museum of Aviation (MUSAL), which is not an operating unit of FAB and already receives funds from the Ministry of Culture (MinC). In particular, TCU highlighted the misuse of priority in the face of contingencies of resources that would be used to acquire equipment and the execution of necessary activities in the Amazon region. (BRAZIL, 2009a).

Item 9.1.2 of the same ruling recommended FAB to prepare performance indicators that could evaluate the effectiveness, efficiency and possible economy to the EMAer-32 Program. The recommendation was well received by FAB, whose officials involved with the program made a point of highlighting the strengthening of their management skills as a result from TCU's intervention, in particular by lining up the indicators according to the type of performed project or activity. However, even with the implementation of the indicators, there is still a problem familiar to those involved with the study of defense budget and economy that continues to challenge managers and auditors: measuring the efficiency, as well as the cost-benefit analysis of the Aerospace Defense expenses. The conclusion of Ruling 162/2009-P (2009a) is quite clear about not being possible to assess aspects of the economic benefits and cost effectiveness of the audit.

Due to the lack of a historical series of cost assessment of construction sites, **it has not been possible to measure the economic benefits** of performance auditing in the Emaer-32 program, and the consequent **comparison of the cost-effectiveness of the audit** (emphasis added) (BRAZIL, 2009a).

Performance audit is considered to contribute to the improved performance of the Emaer-32 Program, **although economic benefits cannot be measured** (emphasis added) (BRAZIL, 2009a).

5. SISCEAB'S PERFORMANCE AUDIT

The Brazilian Airspace Control System (SISCEAB) was also the subject of TCU's ANOp. The inspection was held at the Ministry of Defense (MD), the Brazilian Air Force (FAB), the Brazilian Company of Airport Infrastructure (Infraero) and the National Agency of Civil Aviation (ANAC) and had the purpose of evaluating the status of air traffic control in Brazil. The audit followed a series of problems related to air traffic control that involved, among other cases, the collision of two civil aircrafts over the Amazon, a situation the Brazilian press named "aerial blackout". Minister Augusto Nardes, the Ruling's Rapporteur, the ANOp focused on:

(...) Examining, through auditing, the severe crisis called “aerial blackout”, that stem from the negligence of the government regarding the management of air traffic control, something that has been causing serious problems to the population not only because of flight delays and cancellations - which postpone everyone’s commitments - but also with consequences on economic activity and life, our greater asset (BRAZIL, 2006).

The proper functioning of SISCEAB is of particular importance for the Aerospace Defense. It is linked to highly specific technical and managerial units such as the Department of Airspace Control (DECEA) and the Integrated Air Defense Centers and Air Traffic Control (CINDACTA). The monitoring of movement in the Brazilian airspace and the possibility of intercepting any unauthorized aircraft flying over the country depend on it. SISCEAB constitutes the heart of air traffic control and embodies the fundamental ability to ensure the safety of civil and military aircraft flights, besides triggering the alarm against the intrusion into Brazilian airspace.

TCU issued a total of eight recommendations and 11 resolutions in ruling 2420/2006-P (BRAZIL, 2006). Four recommendations were addressed to the Chief of Staff’s Office (Appendix H) and one recommendation was set out for each of the following organizations (Appendix I): National Agency of Civil Aviation (ANAC), Brazilian Company of Airport Infrastructure (INFRAERO), the National Secretariat of Treasury (STN) and the Comptroller General (CGU). There were four resolutions addressed exclusively to the MD (Appendix J); five exclusively to FAB (Appendix K); one to the MD, to FAB and to INFRAERO altogether (Appendix J) set out in item 9.2 of the Ruling, and one to the MD, to the MOPG and the Chief of Staff’s Office set out in item 9.8 of the Ruling.

Out of the 19 guidelines of Ruling 2420/2006-P (BRAZIL, 2006), both in the form of recommendations as well as resolutions, 14 were subject to further monitoring by TCU. Out of the 14 monitored guidelines, two were considered implemented, one was considered **partially implemented** and 11 were considered **under implementation**. At first TCU did not monitor the recommendations set out in items 9.7 (Chief of Staff’s Office) and 9.9 (CGU). The monitoring carried out by TCU regarding SISCEAB resulted

in Resolution 2464/2007-P (BRAZIL, 2007), and its summary can be seen in the table in Appendix G).

Out of the six resolutions issued to FAB (9.2 and 9.3.1 to 9.3.5), TCU considered one of them as **implemented**, one was considered **partially implemented** and four were considered **under implementation**. It is important to highlight, once more, that just like what had taken place with the EMAer-32 Program, the resolutions set out to FAB regarding SISCEAB received a great deal of attention. We understand that as the organization’s high level of compliance with respect to TCU’s advices. The chart in Appendix M represents FAB’s fulfillment of Ruling 2420/2006-P.

Among the resolutions set out for FAB, items 9.3.1 (**implemented**), 9.3.3 (**partially implemented**) and item 9.3.4 (**under implementation**) deserve special attention. The first item refers to the technical characteristics of the flight control of the aircrafts that travel in the Brazilian airspace. The second item has to do with SISCEAB’s budgeting and financial planning. The last one refers to technical and contractual matters regarding the useful life of the radars adopted by the system.

According to item 9.3.1 of Ruling 2420/2006-P, TCU ordered FAB to **study the feasibility of the system of lateral separation (OFF SET) in the airways, in addition to the already planned vertical separation**. A highly technical resolution, aimed at better identifying airline routes and flying targets upon FAB’s exercises of air traffic control. A resolution that shows TCU’s positive influence to improve all of the activities in the audited organizations, without being intimidated by the highly technical areas of the audited organizations.

As for item 9.3.3, TCU ordered FAB to broadly reassess the cost of SISCEAB. FAB should get information from ANAC about the volume of air traffic, to identify the real material and human needs of the system. A resolution clearly aimed at SISCEAB’s planning, showing TCU’s intention to act in this important focal point of the management of Aerospace Defense. TCU has been firmly positioning itself for the strengthening of planning bodies and understands that a lot more effort should be devoted to this phase of management, for its proper performance determines the quality of the results that may be obtained in the subsequent phases. According to Ruling 2420/2006-P, TCU decided that:

9.3. Determine that the Armed Forces Command: (...)

9.3.3. Reassess the planning of SISCEAB's funding, seeking to periodically receive from ANAC the necessary information for effective measurement of the increase in air traffic volume, so that the real needs for expansion and modernization of human and material resources of the system can be readily identified, tracking the trends and demands of the airline industry (BRAZIL, 2006);

Finally, according to item 9.3.4 of Ruling 2420/2006-P, TCU ordered FAB to present technical feasibility studies concerning the useful life of the radars. FAB **should find solutions to eliminate the time gap between the useful life of radars established by DECEA and the deadlines for the supply of parts set out in the contracts.** A resolution of technical and contractual nature that highlights TCU's commitment to address crucial issues related to the management of Aerospace Defense activities, not merely exercising its external control role. The subsequent monitoring of item 9.3.4 makes TCU's harsh positioning before the audited organizations, in particular, in this case, in relation to the Aerospace Defense organizations. As to the contracts of management of the maintenance and supply of spare parts for radar, one can clearly see that, despite FAB's contrary allegations TCU made sharp remarks:

Despite the claims of the Armed Forces Command that occasional obsolescence in the radar network does not compromise SISCEAB's performance, as well as that there is an ongoing process of modernization and replacement of equipment, **we believe that the absence of guaranteed supply of spare parts** beyond the usual 10 years established by the equipment's manufacturers **leaves room to occasional failures in radar network (emphasis added)** (BRAZIL, 2007).

In the exercise of its government audit duty, TCU does not seem to be limited by the intensity of the technical issues of the objects audited nor by the specificity of the topics covered by the different areas of government matters. The highly specific

themes and the intense technical characteristics of Aerospace Defense at no time made TCU's assessment a superficial one. Regarding ANOP, TCU proves to be quite confident to properly deal with the matters in depth thanks not only due to its quality and multidisciplinary Technical Corps, but also due to a very special feature of the ANOP processes: the active participation of the audited organization's employees in the construction of the audit. In his report for Ruling 2464/2007-P, Rapporteur Minister Augusto Nardes made harsh comments on the poor coordination between different organizations responsible for the management of Brazilian airspace. In his words:

(...) I reinforce my opinion that the **organizations involved in the management of Brazilian airspace need a more coordinated strategy, aimed at increasing the market efficiency of the sector**, especially with regard to the safety of users. The survey carried out by 3rd Secex shows that, although the organizations acted upon the problems disclosed in Ruling 2.420/2006-TCU-Plenário, more substantial steps need to be taken, because the serious deficiencies that had been previously found remain unchanged, and our great concern remains. **(emphasis added)** (BRAZIL, 2007).

6. OPPORTUNITIES FOR ANOP TO BE IMPROVED

The 54 respondents had the opportunity to speak about opportunities for improvement in the ANOP processes conducted by the External Control Agency of Aerospace Defense at TCU and FAB. Altogether, 28 identified opportunities for improvement, according to their perception. The remaining 26 respondents chose not to comment on it.

Opportunities for improvement identified by the respondents were classified as opportunities for **improvement** and opportunities for **encouragement**. Opportunities for improvement should be understood as those focused on TCU's internal processes, i.e. possible changes to be adopted by TCU in its own procedures, in order to obtain better results in the ANOPs. Opportunities for encouragement should be understood as those regarding the changes introduced in the FAB or other organizations as a result of TCU's ANOP.

Apart from having been classified as opportunities for **improvement** or **encouragement**, as steps meant to be taken by TCU or behavioral changes to be adopted by FAB or other organizations, the answers of the respondents were subdivided according to the purpose to be achieved. So, we reached a total of ten opportunities for improvement identified by respondents, with seven improvements and three encouragements. The table in Appendix N summarizes the opportunities for improvement that were listed. The ones intended for TCU begin with the verb **improve** and those intended for FAB or other organizations begin with the verb **encourage**.

7. IMPROVEMENT OF CONDUCTS AND TECHNIQUES AT TCU

The respondents presented opportunities for improvement so that TCU could improve the ANOp's processes. Conducts and techniques that, according to respondents, could make TCU's ANOp in Aerospace Defense to have even greater-impact results.

- **Improve knowledge of those being audited:** an opportunity for improvement related to a perceived need to better understand TCU's audited organizations. Respondents point out that the characteristics of the Aerospace Defense are very dynamic and there should be a constant effort for external auditors to remain updated.
- **Improve effectiveness:** an opportunity for improvement aimed at ensuring that the conclusions of TCU's ANOp actually generate the expected results in Aerospace Defense or any area of public administration. The respondent who identified an opportunity for improvement highlighted that he did not perceive the practical effects of TCU's recommendations in the management of Aerospace Defense.
- **Improve monitoring:** an opportunity for improvement focused on ensuring that TCU monitors whether the interventions that resulted from ANOp are indeed being adopted by the organizations. Monitoring is consistent with the procedures adopted in other Supreme Audit Institutions (SAI), such

as the **Australian National Audit Office** (ANAO), Australia's SAI, where the monitoring (**follow-up**) is designed to verify the implementation of ANOp's recommendations (AUSTRALIA, 2008: 3), and Riksrevisjonen, Norway's SAI, where monitoring is seen as an opportunity to evaluate the effects of the recommendations issued by the control organizations that were later adopted by the audited organizations (NORWAY 2005: 47).

- **Improve external partnerships:** an opportunity for improvement that aims for TCU to look up for effective partnerships with the audited organizations in order to make them realize the true meaning of ANOp and actively contribute to build its conclusions.
- **Improve internal partnerships:** an opportunity for improvement in communication among TCU's own member units, so that its various sectors act cooperatively in search of better outcomes for the management of public organizations, particularly through the processes of ANOp.
- **Improve the auditor's profile:** it refers to the selection of auditors by TCU, with greater skills, aptitude and expertise focused to perform ANOp in each one of the audited organizations, and in



particular here, organizations dealing with aerospace defense activities.

- **Improve planning:** it concerns the better planning of ANOp inside TCU, so that they can focus on more relevant programs and more central aspects of the management of the audited organizations.

8. ENCOURAGING BEHAVIORS AND TECHNIQUES IN THE AUDITED ORGANIZATIONS

The survey also pointed out possible opportunities for improvement related to the encouragement of improved behaviors and techniques in the audited organizations. One of the special purposes expected from TCU's ANOp in public organizations is to introduce behaviors and techniques to improve management processes. We identified among the respondents of this performance audit of Aerospace Defense the expectation that TCU's ANOp may induce better managerial efficiency, better planning and realization of related academic research.

We should promptly highlight that the expectations of encouragement of conducts and techniques in the audited organizations exceed those for improvement focused on the behaviors and techniques of TCU itself. The expectation of those involved with the Brazilian Aerospace Defense is clear: they would like to see greater efficiency in their organization's processes. The graph of Annex O reveals this expectation: among the main changes expected by both TCU and FAB's officials is the encouragement of better conducts and techniques in the audited organizations.

The opportunity for improvement that had the highest expectation was of more efficient management of the Aerospace Defense organizations. Something that makes perfect sense with the institutionalized notion that we must seek the best possible result from the use of the available public resources, in order to obtain the best cost-benefit relation in the use of such resources. Respondents had thus great expectations for TCU's ANOp to contribute to the management practices of Aerospace Defense to get better results at the lowest possible cost.

Another opportunity for improvement had to do with planning. Respondents both from TCU and FAB expect the planning of Aerospace Defense

management to be better conducted with the adoption of the recommendations and administrative resolutions issued by TCU after the ANOp. This expectation appears to be consistent with modern trends aimed at improving techniques for the planning of organizations, as well as for the adoption of the most appropriate management techniques by organizational planners.

Finally, we identify opportunities for improvement regarding the encouragement of academic research. The universe of administrative survey for the management of Defense and in this particular case, Aerospace Defense seems to be scarce. It is clear that respondents hope that ANOp may contribute to the encouragement of a greater number of scholars and surveyers for the subject.

9. CONCLUSION

TCU's ANOp regarding FAB resulted in important recommendations and decisions aimed at improving the management of the Brazilian Aerospace Defense without, however, being able to establish a real measure of efficiency of the evaluated programs. Once adopted by FAB, TCU's guidelines contributed to the evolution of behavior and management practices, with an overall result in best practices with clear goals and results presented with more transparency. However, the cost-benefit analysis of the Aerospace Defense programs has not been achieved by TCU: the challenge of measuring the efficiency of spending on defense (in particular the Aerospace Defense) remains.

An example of this organizational gap on the inability to assess the efficiency of the Aerospace Defense programs is evident in item 9.1.2 of Resolution 36/2003-P. In this item, TCU recommended FAB to prepare performance indicators that could evaluate the effectiveness, efficiency and economy of the EMAer-32 Program. However, although the recommendation was well received at FAB, where the need for the strengthening of management capacity was recognized after the TCU intervention, the External Control agency confirmed that it was not possible to accurately determine the efficiency of expenditures.

Performance Audit (ANOp) is developed according to a complex cycle of complementary and sequential phases. Each of these phases contains a key step that triggers the next one. It was designed

to maintain the ongoing process of reviewing the management of the audited organization. TCU's ANOP on FAB generated recommendations and resolutions. The recommendations are not mandatory and the lack of compliance with it by the organization does not result in a penalty for the manager in charge of the organization. Resolutions, on the other hand, are of a compulsory nature. The disrespect for it or its non-adoption by the supervised organization may lead to the imposition of a penalty, usually a monetary fine, to the manager in charge of the organization.

TCU ended the ANOP cycle with two cases of performance audits of Aerospace Defense: one regarding the EMAer-32 Program, in which it analyzed the application of the 32% Additional Airport tax (ATAERO) at airports of military interest, and the second one, the SISCEAB and the airspace control. The ANOP held at the EMAer-32 program resulted in 12 recommendations for FAB, seven of which were considered implemented and five were considered under implementation by TCU. The ANOP held at SISCEAB resulted in six resolutions addressed to FAB, and one was considered implemented by TCU, one was considered partially implemented and four were considered under implementation.

None of the recommendations or resolutions aimed at FAB was assessed as **not implemented** or **not met** in both of the performance audits (the EMAer-32 Program as well as the one of SISCEAB), which shows the high level of FAB's compliance with respect to the guidelines issued by TCU. This comes to show that the general idea that military institutions are resistant to external control of organizations with constitutional and statutory commands, such as TCU, is not accurate.

When performing ANOP in Aerospace Defense industry, TCU had to deal with very specific issues of highly technical specificity. The high level of expertise of the audit objects, in general, was not seen by TCU as something that limited its action, but as a challenge to be overcome. That is very special feature of ANOP processes that should be highlighted: the active participation of the audited organization's employees in the construction of the audit. ANOP are instruments of control by which TCU earns a more thorough knowledge about the different organizations of the public administration, constituting a true work of organizational intelligence.

The survey identified opportunities for improvement, based on interviews and analysis of the available official documents. These are opportunities for improvement related to the process of TCU's ANOP itself and also for the encouragement of better conducts and techniques in the audited organizations. We highlight the opportunities identified for greater efficiency in the management of the Aerospace Defense organizations as one of the greatest expectations of the respondents. Thus, some recommendations may be suggested to TCU regarding the execution of ANOP on Aerospace Defense based on the survey as well. Some of them may be even stretched to other areas of public administration:

- **Improve knowledge of those being audited:** an opportunity for improvement related to a perceived need to better understand TCU's audited organizations. Respondents point out that the characteristics of the Aerospace Defense are very dynamic and there should be a constant effort for external auditors to remain updated.
- **Improve effectiveness of the audits:** an opportunity for improvement aimed at ensuring that the conclusions of TCU's ANOP actually generate the expected results in Aerospace Defense or any area of public administration. Recommendations should focus on possible practical results.
- **Properly monitor the recommendations and resolutions:** a recommendation also focused on the issue of ANOP's effectiveness and that deals with both the convenience and the need for TCU to systematically evaluate the effects of the recommendations and decisions intended for the audited organizations.
- **Build external partnerships:** TCU should establish effective partnerships with the audited organizations in order to make them realize the true meaning of ANOP and rely on its contribution.
- **Improve internal partnerships:** an opportunity for communication improvement

among TCU's own member units, so that its various sectors act cooperatively in search of better outcomes for the management of public organizations, particularly through the processes of ANOp.

- **Improve the auditor's profile:** it refers to the selection of auditors by TCU, with greater skills, aptitude and expertise focused to perform ANOp in each one of the audited organizations.
- **Strengthen the planning of ANOp:** it concerns the better planning of ANOp inside TCU, so that they can focus on more relevant programs and more central aspects of the management of the public organizations, particularly through ANOp's processes.
- **Make efficiency a top priority in the audited organizations:** a recommendation

to make the ANOp held in Aerospace Defense to result primarily on recommendations and resolutions aimed at increasing the cost-effectiveness of public resources, including the definition and use of performance indicators specifically designed to do so.

- **Demand better planning in the audited organizations:** it is expected that TCU's ANOp result in recommendations and resolutions aimed at improving systematic planning in the management of Aerospace Defense.
- **Foster academic research:** a recommendation concerning the expectation that TCU, the Brazilian SAI and central organization of the External Control System of Brazil stimulate academic research regarding ANOp and the search for a more efficient public administration.

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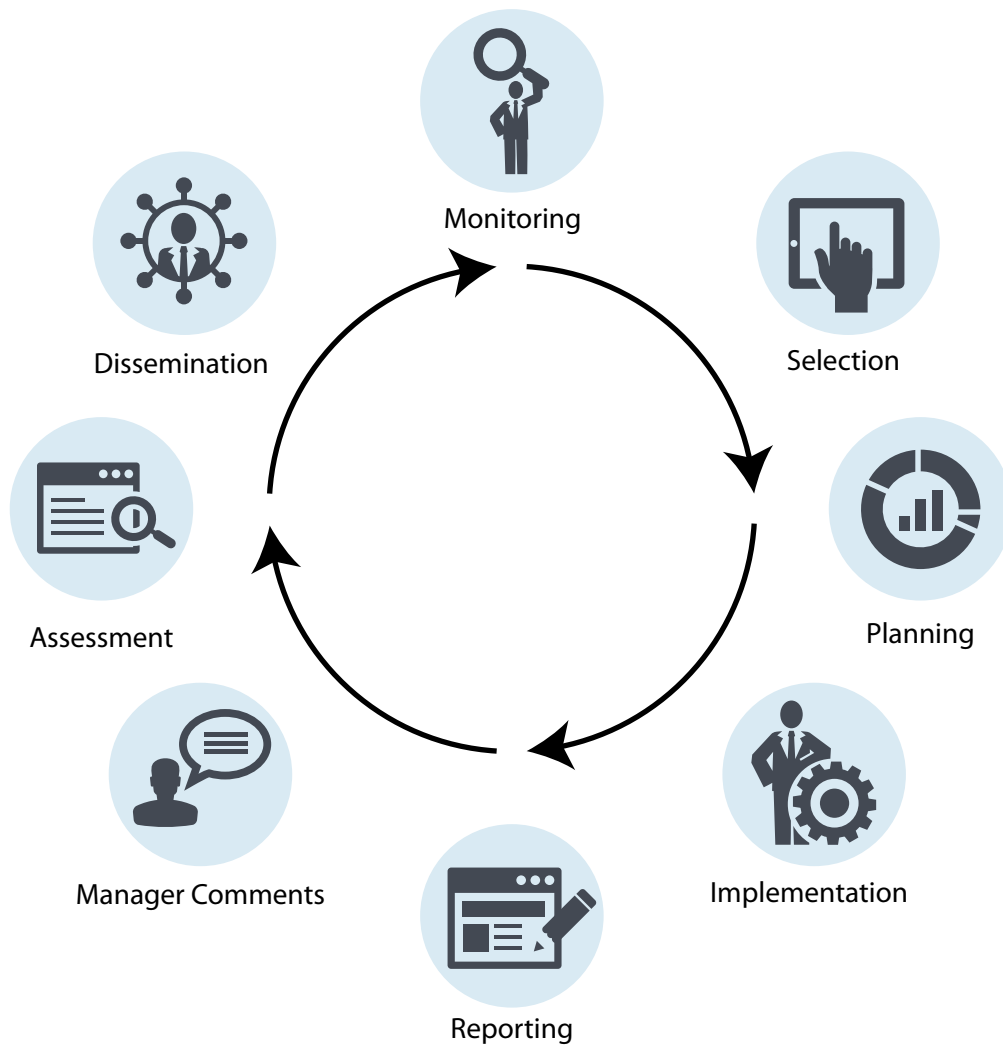
APPENDIX

APPENDIX A

Interviews conducted at the Federal Court of Accounts of Brazil (TCU), at the Brazilian Air Force (FAB) and at the Ministry of Defense (MD)			
Alberto Tavares de Oliveira	FAB	José Antônio dos Santos Raposo	FAB
Alfredo Fernandes de Jesus	FAB	José Carlos Santos	FAB
Ana Lúcia Epaminondas	TCU	Juniti Saito	FAB
Ariane de Almeida Pitassi Sales	FAB	Larissa Caldeira Leite Leocádio	FAB
Benjamin Zymler	TCU	Lidercio Januzzi	FAB
Carlos Alberto Flora Baptistucci	FAB	Luciana Nunes Goulart	TCU
Carlos Alberto Sampaio de Freitas	TCU	Luciano dos Santos Danni	TCU
Carlos André Marques	FAB	Marcelo Barros Gomes	TCU
Carmen Pereira Rêgo Meirelles	TCU	Marcelo Bemerguy	TCU
Claudio Cesar de Avelar Junior	TCU	Marcelo Luiz Souza da Eira	TCU
Clayton Lourenço de Oliveira	TCU	Marco Antônio Carballo Perez	FAB
Dagomar Henriques Lima	TCU	Marcos Araújo Silva	TCU
Daniel de Menezes Delgado	TCU	Maria Lúcia de Oliveira Feliciano de Lima	TCU
Diógenes Corrêa Vieira de Faria	TCU	Mariana Priscila Maculan Sodré	TCU
Édison Franklin Almeida	TCU	Mayalú Tameirão de Azevedo	TCU
Eduardo Sequeiros de Sousa Nunes	FAB	Neimar Dieguez Barreiro	FAB
Eliane Meira Barros de Oliveira	TCU	Nicole Veiga Prata	TCU

Interviews conducted at the Federal Court of Accounts of Brazil (TCU), at the Brazilian Air Force (FAB) and at the Ministry of Defense (MD)			
Eliane Vieira Martins	TCU	Paulo Gomes Gonçalves	TCU
Fábio Mafra	TCU	Ricardo de Mello Araújo	TCU
Francisco Carlos Siqueira Moura	FAB	Ricardo Soares Cortes Real	FAB
Glória Maria Merola da Costa Bastos	TCU	Ronaldo Ferreira da Silva	FAB
Hiram de Carvalho Leite	TCU	Rosendo Severo dos Anjos Neto	TCU
Horácio Sabóia Vieira	TCU	Salvatore Palumbo	TCU
Itiberé Rosado de Farias	FAB	Sebastião Eurípedes Rodrigues	MD
Jesse Andros Pires de Castilho	TCU	Selma Maria Hayakawa Cunha Serpa	TCU
João Luiz Rodrigues	FAB	Sérgio Santi de Souza	FAB
Jorge de Sousa Pantaleão	FAB	Ubiratan Aguiar	TCU

APPENDIX B - ANOP'S CYCLE



Source: TCU's Guidelines for ANOp (BRAZIL, 2010: 10)

APPENDIX C - RESOLUTION 36/2003-P: RECOMMENDATIONS ADDRESSED TO FAB

Item	Recommendation
9.1.1	Commit to seek specific rules for EMAER-32, in which the purpose of the program and all expenses that may be borne by it become clear
9.1.2	Develop performance indicators that can assess the effectiveness, efficiency and economy of the program, based on the rules mentioned in the previous section
9.1.3	Publicize it to all those who are responsible for the implementation, mission, objectives and purpose of the program
9.1.4	Undertake a joint effort with the Ministry of Defense to maintain the Additional Airport Tax (ATAERO) in order not to transfer the responsibility to fund the program to the National Treasury in the future
9.1.5	Promote studies that enable the application of program resources in hospitals, thus avoiding the decentralization of funding for this purpose from the Additional Airport Tax - ATAERO until the completion of such studies
9.1.6	Conduct a study to objectively point relevant areas of the EMAER-32 program that deserve to receive more funds
9.1.7	Promote studies in order to try to bring state governments to aid the airports of common interest through the Federal Aid to Airports Program (PROFAA)
9.1.8	Give priority to the development of the pavement management system, allocating specific budget and human resources for its completion and start of operations
9.1.9	Promote studies about the feasibility of acquiring new ferry pushers or other equipment that enhance the logistics of Comara, (Airport Commission of the Amazon Region) with the aid of Comara itself
9.1.10	Create an audit contact group, with the participation of the Brazilian Air Force General Staff and the Department of Economics and Finance of the Brazilian Air Force, which acts as a communication channel with this court, in order to facilitate the monitoring of the implementation of the recommendations of this Court of Auditors, the evolution of performance indicators of EMAER-32 and the fulfillment of its goals
9.1.11	Submit this Court within 60 days the action plan, with detailed schedule to adopt the necessary measures to implement the recommendations, with the names of those responsible for such measures in order to monitor and evaluate the results
9.1.12	Submit this Court information concerning the progress and consequences of the recommended actions, with the first formalization of such referral taking place six months after this Ruling, followed by a new update in 12 months, and the final update in 24 months after this Ruling

APPENDIX D - RESOLUTION 36/2003-P: RECOMMENDATIONS ADDRESSED TO MPOG AND MD

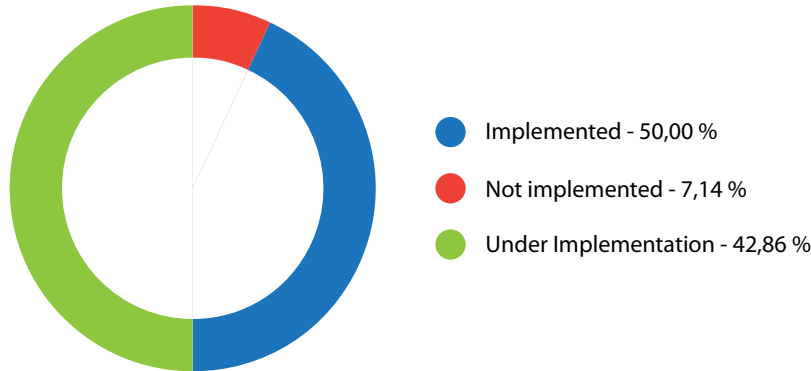
Item	Authority	Recommendation
9.2.1	MPOG	Prepare a study aiming to leave the binding resources of other government authorities/program out of the budget ceiling of the Brazilian Air Force. This is necessary because, just like the Additional Airport tax set forth by Law No. 7.920/89 determines the application of additional resources in the improvement, modernization, renovation, expansion and depreciation of airport facilities and the telecommunications network as well as aid air navigation, these resources can only fund specific programs due to legal requirements. The foregoing inclusion does not allow the verification of the proper use of the rates, fees and other similar instruments, i.e., if they are being used for what they were created for.
9.3.1	MD	Issue orders of resource allocation between the Brazilian Air Force and the Brazilian Company of Airport Infrastructure - INFRAERO destined to the federal government by the Additional Airport tax (ATAERO) as set forth by Law No. 8.399, of 01/07/92.

APPENDIX E - IMPLEMENTATION OF THE RECOMMENDATIONS – RULING 36/2003-P

Recommendations: Ruling n.º 36/2003-Full Court	Status	Recommendations: Ruling n.º 36/2003-Full Court	Status
9.1.1	Implemented	9.1.8	Under Implementation
9.1.2	Implemented	9.1.9	Under Implementation
9.1.3	Implemented	9.1.10	Implemented
9.1.4	Under Implementation	9.1.11	Implemented
9.1.5	Under Implementation	9.1.12	Implemented
9.1.6	Implemented	9.2.1	Not Implemented
9.1.7	Under Implementation	9.3.1	Under Implementation

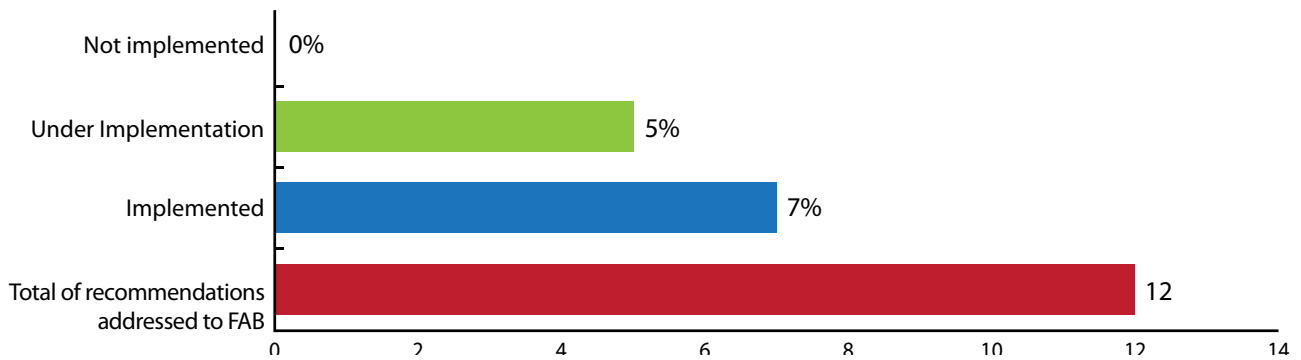
Source: TCU's Ruling 162/2009-P (BRAZIL, 2009a)

APPENDIX F - LEVEL OF COMPLIANCE (%) OF RULING 36/2003-P



Source: Ruling 162/2009-P (BRAZIL, 2009a)

APPENDIX G - FAB'S FULFILLMENT OF RULING 36/2003-P



Source: Ruling 162/2009-P (BRAZIL, 2009a)

APPENDIX H - RULING 2420/2006-P: RECOMMENDATIONS TO THE CHIEF OF STAFF'S OFFICE

Item	Recommendation
9.7.1	Assess the relevance and opportunity, alongside with the Ministry of Defense, the Brazilian Air Force and Infraero to identify the needs for capital investment for SISCEAB in order to verify whether deficiencies take place in the operation and maintenance of the system or any of the actions regarding its expansion, or in both areas
9.7.2	Check the appropriateness, even if only for a short period of time, to provide resources from the National Treasury for Government Actions related to funding and expansion of SISCEAB, besides the funds from the collection of TAN, TAT and ATAERO tariffs
9.7.3	Conduct studies in order to implement an Integrated Coordination and Management of Transportation Infrastructure Policies, with the definition of a central agency and sectorial bodies and enforcement agencies involving, among others, the Ministries of Defense; Transport; Finance and Planning; Budget and Management, in order to establish planning, elaboration, implementation and evaluation model for government actions needed to promote the integration of the entire transportation sector, ensuring the provision of adequate public services, in accordance with the principles of regularity, efficiency and continuity
9.7.4	Conduct studies to define a government department in charge of establishing direct relations with TCU in order to oversee and coordinate the implementation of preventive and corrective measures suggested under the scope of a performance audit, giving them greater effectiveness through the adoption of more timely governmental actions

APPENDIX I - RULING 2420/2006-P: RECOMMENDATIONS ADDRESSED TO ANAC, INFRAERO, STN AND CGU

Item	Órgão	Recomendação
9.4	ANAC	exija dos membros consultivos da Comissão de Coordenação de Linhas Aéreas Regulares (COMCLAR) a devida motivação para os pareceres relativos à concessão ou alteração de Horários de Transporte (HOTRAN), de modo a dar cumprimento integral ao disposto no art. 50 da Lei n. 9.784/1999
9.5	Infraero	faculte ao Força Aérea Brasileira o acesso aos dados e sistemas relativos à arrecadação das tarifas TAN, TAT e ATAERO correspondente, na hipótese da inexistência de procedimento dessa natureza

Item	Órgão	Recomendação
9.6	STN	avaliar a conveniência e oportunidade de inserir os procedimentos e dados relativos às tarifas de uso das comunicações e dos auxílios à navegação aérea (TAN), e uso das comunicações e dos auxílios rádio e visuais em área terminal de tráfego aéreo (TAT), no Sistema de Administração Financeira do Governo Federal (SIAFI), uma vez se tratar de recursos públicos, sem a natureza de receita própria, mas de tributo que apenas é arrecadado por ente não integrante do Orçamento Fiscal
9.9	CGU	avaliar o cumprimento das metas previstas no plano plurianual, a execução dos programas de governo e dos orçamentos da União, bem como comprove a legalidade e avalie os resultados, quanto à eficácia e eficiência, da gestão orçamentária, financeira e patrimonial nos órgãos e entidades da administração federal, especialmente dos órgãos e entidades objeto da presente auditoria

ANEXO J - RULING 2420/2006-P: RESOLUTIONS ADDRESSED TO THE MD

Item	Resolution
9.1.1	Replace the Official Letter number 01/EMAER/R-081 of 26/01/1999, for the proper legal instrument that regulates matters relating to SISCEAB, noting that such substitution may occur upon completion of the review of the percentage rates owed both to Infraero and the Brazilian Air Force regarding TAN and TAT tariffs
9.1.2	Establish periodic and specific procedures aimed at verifying the compliance of management actions relating to deductions of INFRAERO funds from the collections of TAN, TAT and ATAERO tariffs through its Internal Control Secretariat
9.1.3	Make efforts alongside with the Brazilian Air Force in order to enable a special audit by the International Civil Aviation Organization (ICAO), under the Universal Program for Operational Safety Surveillance (PUVSO), aiming to improve the global safety of Brazilian civil aviation
9.1.4	Adopt measures to strengthen the coordinated actions of agencies and entities involved in the implementation of the National Aviation, especially with regard to the effective functioning of the National Civil Aviation Council (CONAC) and the implementation of its resolutions
9.2	Reevaluate along with the Brazilian Air Force and INFRAERO the percentages owed to these two bodies (TAN, TAT and ATAERO tariff revenues) so that they portray the responsibilities of each entity with the costs of funding and investing in SISCEAB

ANEXO K - RULING 2420/2006-P: RESOLUTIONS ADDRESSED TO FAB

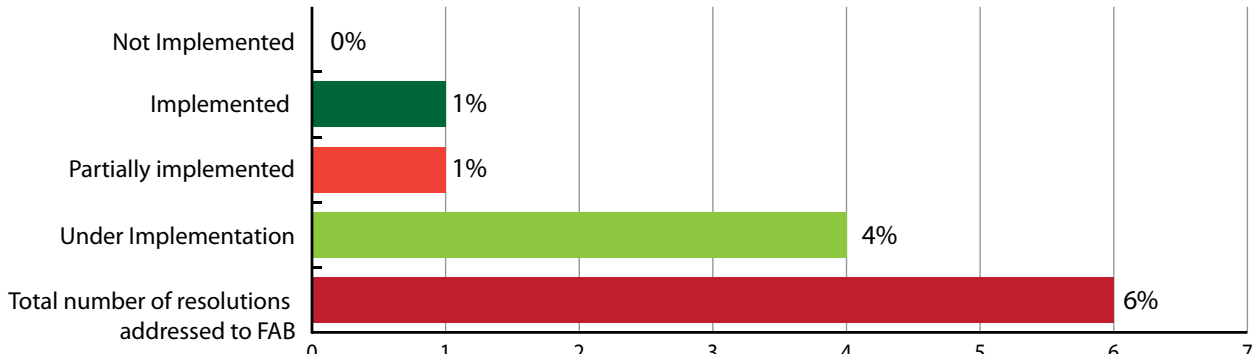
Item	Resolution
9.3.1	Perform studies aimed at verifying the feasibility of the system of lateral separation (OFF SET) in the airways, in addition to the already planned vertical separation
9.3.2	Wisely evaluate the convenience and opportunity to meet the human resource needs related to SISCEAB when planning the allocation of senior staff
9.3.3	Reassess planning of the funding of SISCEAB, seeking to periodically obtain the necessary information for effective measurement of the increase in air traffic volume with ANAC, so that the real needs for expansion and modernization of human and material resources of the system can be readily identified, tracking the trends and demands of the airline industry
9.3.4	Make technical feasibility studies in order to find solutions to eliminate the time gap established by DECEA between the useful life span of radars and the terms defined for the purchase of spare parts for such equipment
9.3.5	Guide the Air Navigation Centre Management (CGNA) so that the provision of opinions on the Regular Airlines Coordination Commission (COMCLAR) be preceded by careful analysis of the SISCEAB's conditions

ANEXO L - RULING/RECOMMENDATION IMPLEMENTATION ACCORDING TO RULING 2420/2006-P

Recommendations and Resolutions of Ruling 2420/2006-P	Status	Recommendations and Resolutions of Ruling 2420/2006-P	Status
9.1.1	Under Implementation	9.3.3	Partially Implemented
9.1.2	Under Implementation	9.3.4	Under Implementation
9.1.3	Under Implementation	9.3.5	Under Implementation
9.1.4	Under Implementation	9.4	Under Implementation
9.2	Under Implementation	9.5	Implemented
9.3.1	Implemented	9.6	Under Implementation
9.3.2	Under Implementation	9.8	Under Implementation

Source: Ruling 2464/2007-P do TCU (BRAZIL, 2007)

ANEXO M - FAB'S FULFILLMENT OF RULING 2420/2006-P



Source: Ruling 2464/2007-P do TCU (BRAZIL, 2007)

ANEXO N - OPPORTUNITIES FOR ANOP TO IMPROVE

Nature of demand	Answers	Percentage (%)
Improve knowledge of those being audited	2	3.7
Improve effectiveness	1	1.9
Improve monitoring	2	3.7
Improve external partnerships	1	1.9
Improve internal partnerships	3	5.6
Improve auditor's profile	1	1.9
Improve planning	2	3.7
Encourage efficiency	7	12.9
Encourage academic research	4	7.4
Encourage planning	5	9.2
No answer	26	48.1
Total	54	100.0

ANEXO O): QUANTITATIVE DISTRIBUTION OF OPPORTUNITIES FOR IMPROVEMENT OF ANOP

