IISL.4.-94-855

THE NEW BRAZILIAN SPACE AGENCY (AEB): A POLITICAL AND LEGAL ANALYSIS *

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"The project of creating the Brazilian Space Agency reaffirms our effort for the peaceful uses of outer space."
- President of Brazil Itamar Franco, in April 2, 1993

Abstract

Brazil has taken finally this year the important decision of creating the Brazilian Space Agency (AEB) as a civil institution.

This paper tries to examine eight questions about the new AEB:

- 1) Why was it created only now?;
- 2) Why was it finally created?;
- 3) How was it created?;
- 4) How is it defined?
- 5) What is its position in the government?;
- 6) Which are its functions?;
- 7) What is its administrative structure?
- 8) Is it a good beginning?

The aim is to focus on some essential elements of each question, without an exhaustive analysis.

Introduction

The AEB was created by federal law no 8.854, signed by the President of the Republic in February 10, 1994 and published in the Federal Registry of the following day. It had been previously approved by both the House of Representatives and the Federal Senate.

The first President of the AEB, Luiz Gylvan Meira Filho (1), and its first General-Director, Air Force Brigadier Ajax Barros de Melo (2), were appointed by the President of Brazil and took on their duties on March 15.

The AEB has its headquarters in Brasilia, with its head office located in the Presidential Office Building.

The AEB was created on the day after completion of

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one year in orbit of the SCD-1 (Satélite de Coleta de Dados - Data Collection Satellite), the first satellite designed and built in Brazil, as well as in Latin America, which is performing above all the expectations, including a useful lifetime twice as long as predicted (3).

It was a meaningful coincidence. The AEB and SCD-1 have something in common. Both have arrived after a long delay not yet sufficiently evaluated. Nevertheless, they have raised great hopes.

The SCD-1 was first concrete product of the Brazilian Complete Space Mission (MECB), that was approved back in 1979. Ten years later, in 1989, after successive changes of schedule, it was finally ready to be launched. At this time the question arose whether or not it should be launched by the VLS (Satellite Launch Vehicle), the rocket projected in MECB, whose construction was blockaded by the Missile Technology Control Regime (MTCR) since 1988 (4). As VLS was not ready (according to the latest official reports, it should be ready in 1995), the SCD-1 was finally launched from the Pegasus winged booster, of USA Orbital Sciences Corporation.

The success of the SCD-1 today had eclipsed, to some extent, yesterday's problems. However, neither the past nor the present should be forgotten. They reveal negatives and positives aspects of the long period of the Brazilian space activities during which the government did not deem necessary to create a civil space agency.

On one hand, until now Brazil has not adopted a stable, wide and transparent space policy firmly linked with the scientific, technological and industrial development of the country, so that, from the beginning, the space sector lacked regular support. On the other hand, in spite of errors and difficulties, it has been possible to form qualified human resources and to built up infrastructure that gave the country considerable capabilities to design, produce and launch its own satellites.

The AEB has arisen at a critical time. It is crucial today the necessity to preserve and to make a good use of all our achievements in space activities, as well as to reassess what has already been done, to rationalize the efforts, to redefine the priorities and to adopt as much as possible a creative, dynamic and persuasive conduct.

However, the key motivation for its creation, at least in this initial stage, seems to be concentrated in the current governmental effort to unblock international channels of negotiations and cooperation. It is hoped that this will allow an effective transfer of advanced technology to Brazil.

1) Why was the civil AEB created only now?

The Brazilian space activities, since their beginning in the 60's, inclusive when they have been conducted by civilian, were led and stimulated by the Ministry of Aeronautics (Air Force). This Ministry very soon revealed itself as the only prepared official institution to deal with the questions raised by the Space Age, inaugurated by Sputnik I from the former USSR in October 1957.

On the 3rd of August, 1961, a few days later the visit to Brazil of the first Cosmonaut Yuri Gagarin, the Brazilian government created by decree the first Brazilian official space institution: the Organizing Group for the National Commission on Space Activities (GOCNAE), as a unit subordinated to the National Research Council (CNPq), with attributes which included the execution of space research projects, and the coordination, incentivation and support of activities related to space. The formal inauguration of GOCNAE' first directorate took place on the 22nd of January, 1962, under the presidency of Col. Aldo Vieira da Rosa (Air Force). In 1963, GOCNAE received permanent installations built on the area of ground provided by the Ministry of Aeronautics, next door to the Aerospace Technical Center (CTA) and its associated engineering school, Technological Institute of Aeronautics (ITA). (5)

The military regime established in Brazil since April 1964 enlarged the predominance of the Ministry of Aeronautics in the space activities. These activities became viewed from the point of view of the national security doctrine in the context of the Cold War, in a world bipolarized by the logic of confrontation between two great powers. Brazil abandoned its so called independent external policy and adhered to one side.

In June 1964, the Ministry of Aeronautics created the Executive Group for Space Studies and Projects (GETEPE) (6), with the initial mission of implanting the Barreira do Inferno Rocket Range (CLFBI), at Natal, in the state of Rio Grande do Norte in Brazilian Northeast. The CLFBI was inaugurated on December 15th., 1965, with the launch and tracking of a Nike-Apache, a small American rocket, in a joint operation between GOCNAE, the Ministry of Aeronautics and Nasa.

The RADAM project (Amazon Radar), the results of which constitute, even today, the most complete survey of the Brazilian Amazon region, was made possible through an agreement between NASA and GOCNAE in 1969. Thus, the USA had access to the data about this strategic region.

On January 20th., 1971, Gen. Emílio Garrastazu Medici, President of the Republic, signed decree N° 68.099, creating the Brazilian Commission for Space Activities (COBAE). Its mandate was to assist the President in planning and implementing national priorities in space research via the National Plan for the Development of Space Activities (PNDAE). COBAE was headed by the Chairman of the Joint Chiefs of Staff (EMFA). The main lines of action contained in the PNDAE had been sent to President Medici in December, 1970,

by the National Security Council. Three months after the creation of COBAE, on April 22nd., President Medici signed decree No 68.532, extinguishing GOCNAE and creating the Institute of Space Research (INPE), subordinated to the National Research Council (CNPq).

In 1972, INPE, which was following the development of the American space program, installed in Cuiabá, in the state of Mato Grosso, a ground station, produced by American firms, for receiving ERTS-1 data on South America. ERTS-1 soon after launch on July 23, 1972, was renamed LANDSAT-1. Brazil was the third country, after the USA and Canada, to have an operational system for receiving data from remote sensing satellites.

In November 1979, COBAE held a special Seminar to define the future of Brazilian space activities. There was already a decision about this question. The government had refused, as a too expensive, the French proposal to bilateral cooperation involving the development of a launch vehicle and three satellites (two for data retransmission and the third for remote sensing). It approved the purely Brazilian proposal, the Brazilian Complete Space Mission (MECB), in which all the technological development necessary would be carried out in Brazil. Within this program the Institute for Space Activities (IEA), at the Aerospace Technical Center (CTA) would developed the launch vehicle (VLS), and INPE would be responsible for the development of two data collection and two remote sensing satellites, together with the installations for launching, tracking and control and data reception.

In February 1985, some weeks before the entry of a new, civilian Brazilian government, the last military government promulgated a decree establishing the basis of the National Space Policy, prepared by the EMFA. However this decree had not been published, since it was classified as secret. "Not only its contents, but also the existence of the policy is virtually unknown by the scientific community and by the public opinion in general", wrote in 1992 Aydano Carleial, INPE researcher and former manager of the SCD-1 project.

That is why Carleial stressed: "It is necessary and urgent to revise the Brazilian space policy in order to give him visibility, legitimacy and efficacy. The visibility or transparency of the space policy will be the direct effect of an open process of its elaboration. The space policy will be as much legitimate and efficacious so much open to those who have ideas to contribute. It is important that it could be well understood and backed by the government, private sector and society in general. In the same way, it is necessary that the space program should formulated and implemented in an environment of free transit of information and critics, assuring maximum opportunities for the exercise of competencies of individuals with relevant scientific, technological, managerial or industrial capacities." (7)

Thus, the delay on the creation of the civil AEB was motivated by the fact that for a long time the Brazilian government understood that the country's space activities were necessarily a domain controlled by the military area. In that sense, their implication on national security were overestimated and, on the other hand, they underestimated the benefits of international cooperation that could bring a faster development of the area in the country. They bet on a com-

plete autonomy and even admitted the possibility of establishing a powerful military space industry (8). In this environment, a civil space agency seemed to be absolutely unnecessary and it could even damage their intentions.

The democratization of the country, started in 1985, allowed the government to give special support to the civilian activities of the space program, during a certain period of time. That reflected in things such as the dynamization of INPE, the construction of its Tests and Integration Laboratory (the only one of its type in the Southern Hemisphere), in the fast development of the SCD-1 and in the conclusion of the agreement with China, in June 1988, for the joint construction of two professional earth resources satellites.

The agreement with China, that at the time was considered as the first major space cooperation program between two developing countries, was negotiated by civilian ministry, the Ministry of Science and Technology, created in March 1985, and signed by the President of Republic. Cobae remained aside from this agreement.

Nevertheless, these advancements were still not sufficient to remove the barriers that existed for the creation of a civil space agency. It is clear that the idea had gained more projection at the time. But the leaders of the Ministry of Aeronautics were not convinced of its necessity.

2) Why was the AEB finally created?

The great changes ocurred in the world with the end of the Cold War, the increasing internal economical difficulties, which affected especially the military areas, and the every day more arduous access to advanced high technology, certainly had conducted the Ministry of Aeronautics leaderships to review their position. The revision result was to set foreground the task for removing the existing obstacles in transferring the space technology from the space developed countries to Brazil. Within this perspective, it become necessary and urgent to create the AEB.

The AEB raised to succeed the Cobae, that as a military institution has been a great impediment in the international space cooperation, particulary on transferring space technology.

The Emfa's headman, in his report on April 15, 1993, recognized that "the Cobae structure, responsible for management of the Brazilian space program, is determining large restrictions to full development of the space program."

The Cobae's last meeting took place on September 16, 1994. Its contract rights and obligations were transferred to the AEB.

It's important to emphasize that the Cobae end and the AEB creation, in order to open way for the end-technology transference to Brazil, integrated a decision set adopted by the government to meet this purpose.

Among these decisions must be emphasized: the resolutions to put into effect the 1967 Tlatelolco Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribee (9), and to sign and homologate the Quadripartite Agreement between Argentina, Brazil, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) and the International Atomic Energy Agency

(IAEA). ABACC is the agency responsible for inspecting all unsafeguarded nuclear facilities in the two countries. The Quadripartite Agreement provides for "full-scope" safeguards, as does the 1967 Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

By the Constitution of 1988 Brazil had already fixed the compromise to use the nuclear energy only for peaceful purposes. However, Brazil had not signed the 1968 Nuclear Weapons Non-Proliferation Treaty, considering it a discriminatory document. In spite of this, Brazil had already offered high legal warranties to the international community, assuming that it won't involve itself with nuclear, chemical and biological weapons or any other kind of weapons of mass destruction, including their launching vehicles. So, all the arguments claimed to close the country access to sensible technologies, of dual utilization, civil and military, among them the space, were undone.

3) How was the AEB created?

The current President Itamar Franco has sent the AEB creation project to the National Congress on April 24, 1993. It replaced the project prepared by the commission appointed on December 5, 1991, by Fernando Collor de Mello, who was the President in that period, but it was not submitted to Congress.

The Senate approved the AEB creation project, in urgency regime, on February 2nd 1994, without modifying the text approved by the House of Representatives on November 10, 1993, in urgency regime too. So the text approved was a result of an agreement between the National Congress leaders and Ministries of Foreign Affairs, Aeronautics, Science and Technology and Emfa.

However, during its elaboration process the government did not give voice to the scientists, engineers, technicians and the representatives of the private sector, who were direct or indirectly envolved with the space activities, many of them with many years of experience. Proposals and warnings about this matter were presented and almost ignored.

In September 1992, Aydano Carleial released a proposal on the modernization of the space sector in Brazil.

In May and June 1993, INPE's high level staff (PhD's and space specialists) had written documents about the creation of a space agency and had sent it to some representatives, including the Government leader. But they didn't have the opportunity to discuss the matter at the Government and Congress level. The suggestion for calling a public audience, to get opinions and proposals from the parts concerned, had not sensibilized representatives and senators. They were pressed by the urgency required by the government in the National Congress.

In this relation, it is also necessary also take in account the political timidity of the sectors that deal with space activities in Brazil. Otherwise, it would be difficult to understand how it was possible that the AEB creation project, considered of strategycal relevance to the country, has been approved, without the proper discussion within and outside of National Congress Houses.

The decision on closing the AEB to wide discussion,

inevitably, reminds the top secret regime that surrounded our space activities during the military period. The rules of transparency and the public rendering of accounts were not applied to these activities.

Strangely, it was a civilian and democratic government that required urgency for Congress appreciation of the AEB project, in this way avoiding a larger and opened discussion about it. Such a discussion would be much instructive and useful to the essential construction of a large support basis in the National Congress and the public opinion, that don't know enought about the matter.

"The urgency is justified considering the international conjuncture," affirmed the same Emfa's report on April 15, 1993, presenting the "reasons that justify the urgency." The document mentions "the difficulties met in the space technology transference, especially to the development of Satellite Launch Vehicle (VLS), since the Cobae takes part of a military organization (EMFA)." It emphasizes also that "these difficulties, among others, have their origin on the technology transference restriction policy imposed by MTCR."

Therefore, the external reasons weighed more than the internal ones during the AEB creation process. Thus, it was not considered necessary to mobilize the inner sectors.

4) How is the AEB defined?

According to the 1st and 2nd articles of its law, the AEB "civilian nature" is a "federal autarchy linked to the President of Republic, whose purpose is to promote the space activities development of national interest" and "to respond directly to the President of Republic". It has administrative and financial autonomy.

So, the AEB civilian nature is established in the direct subordination to the President of Republic, and not to a military organization. The AEB High Council also has representatives of civilian organization. These representatives were not foresaw in the project, that was sent by the Executive to the National Congress.

Even thought the AEB is conceived to be a civilian organization, it is not even formally compromised with peaceful activities or "exclusively with peaceful," like some other space agencies. For instance, the law creating the Argentine National Commission of Space Activities, on May 28, 1991, establishes that "Argentine Republic rejects all military offensive space activities and recognizes its will to work in this field with high sense of peace, responsibility and transparency."

The major engagement of the AEB, as mentioned in the law, is with "space activities of national interest", that can be interpreted as including military activities or from a military organization.

In fact, at least two of the most important space organizations, which are now linked to the AEB for operational functions, remain as subordinates to the Ministry of Aeronautics, even thought this Ministry is not mentioned in the law. One of these is the Aerospace Technical Center (CTA), responsible for constructing the VLS rocket, and the Alcantara Launching Center (CLA), that is constructing the major space port within the country, 2,4 South next to the

equator line, in Maranhão state.

Therefore, it's important to remember that when President Itamar Franco announced his project for the creation of AEB, on April 2nd 1993, he declared that "the project of creating the Brazilian Space Agency reaffirms our effort for the peaceful uses of outer space."

5) What is the position of the AEB in the government?

The AEB responds directly to the President of Republic.
The AEB project developed by the commission designated by President Fernando Collor de Mello linked the AEB to the Secretariat of Strategic Affairs, what generated still more suspicions on military connections.

In the beginning of 1993, when President Itamar Franco had remade the project, he subordinated the AEB directly to the Government head office. There were not explanations about, but it's presumed that this change looked on strengthening the civilian nature of the new organization.

The AEB is the central body of a system on Brazilian space activities.

The law mentions the AEB as a "systemic organization." The organizations that constitute the system are simultaneously subordinated to AEB and its currently Ministries. The subordination to AEB is operational. The subordination to the Ministries is administrative. So, the Alcantara Launching Center (CLA) and the Aerospace Technical Center (CTA) remain in the Ministry of Aeronautics, while the National Institute for Space Research (INPE) stays in the Ministry of Science and Technology. But they are all operationally dependent on AEB.

Depending on the circumstances, the doble links can weaken the AEB, affecting its indispensable authority and efficiency. If to the AEB President it had been conferred the minister level, this negative hypothesis could be divided. With the minister level, the AEB President could deal in equal conditions with the ministers, who have administrative responsibility on the organizations that the agency can count on to work. However, this situation is not in the law.

It is true that the AEB has in its side the main power in a presidencialist regime, like Brazil's one: the President of Republic. The ABE is directly linked to this major authority, without intermediates. There are no doubts that this advantage can not be disdained. Even so, it would be convenient to create a relationship system between the AEB and the Ministries that could dispense with presidential intervention as much as possible. The ideal is a system able to work by itself.

Certainly, the systemic solution was the possible and logical alternative in this current conjuncture, where there is an attempt to conciliate a military past with a future maybe civilian. It would be unthinkable and insensate to remove the CTA and CLA from the Ministry of Aeronautics and consign them to an organization that is just beginning to be built. The vital question is not to know who administrates, but who decides the policy and the operation. The practice itself will not delay in pointing out if the systemic solution is working in reality and what is necessary to be done to improve it, in benefit of the good space activities performance.

6) Which are the functions of the AEB?

The AEB has the following duties:

- To accomplish and to order the execution of the National Policy of Space Activities Development (PNDAE), as well as to propose the guidelines and its implementing actions therefrom this policy.
 - To propose the updating for the National Policy;
- To prepare and update the Space Activities National Programs (PNAE) and the corresponding budget proposals:
- To promote internal and foreign relationship with similar institutions;
- To analyze international space cooperation agreements proposals and to sign them, in liaison with the Minatory of Foreign Affairs and the Ministry of Science and Technology, and to monitor their implementation;
- To issue opinions, in liaison with the Minatory of Foreign Affairs and the Ministry of Science and Technology on space related matters in international organizations, and to participate in their meetings;
- To stimulate Universities and other educational, research and development institutions in the space programs;
- To stimulate the private sectors participation in space activities;
- To identify opportunities for the participation of the private sector in the provision of services and manufacture of goods in space related areas;
- To stimulate the joint use of technical space facilities, integrating their means and optimizing their use; and
- To issue standards and regulations for the space activities in the country.

The AEB will perform its functions directly or through national or international agreements.

The law emphasizes still that "the AEB, while performing its activities, can actuate directly or indirectly through national or international contracts, pacts and agreements."

Curiously, the AEB does not have the duty to propose the PNDAE, but only to execute it and propose its updating. It is reasonable to assume that only the President of the Republic can propose the PNDAE, since the law does not make clear who have the sight to do it.

In spite of this limitation, the widely mentioned attributions define AEB as an organization able to create policyadministration action in higher level.

However, the AEB was not created to be involved on the job operations, as it is with NASA, European Space Agency (ESA), new Russian Agency and others important ones.

Because of that, it's necessary to avoid, since the beginning and through all means, the predominance of wayactivities on the end-activities. This would be fatal for AEB.

INPE's experience in functioning as a provisional space agency, shows the convenience of a larger structural nearness and operational mesh between the policy-administrative command and the execution by scientific and technical areas.

The AEB can supply this apparent gap with the dynamic, capable and effective leadership, that knows how to command, emphasizing more the performance quality than simple law determination. As an autarchy, it has a higher supervision power than Cobae.

7) What is the AEB administrative structure?

The President of Republic nominates all the AEB high level staff: the President, General Director, five Department Headmen (Administration, Planning and Coordination, Space Programms, Technical and Scientific Development and Cooperation), besides all the High Council members. Among them there are one from the scientific community and another from the private sector.

The AEB functions are under the President direction, supported by a General Director and by Department Headmen.

The High Council has a deliberative character. It's composed by 19 members, according to presidential decree on July 7th. Besides the AEB President, who governs it, the High Council is composed by the General Director, 13 Ministries representatives (Treassury, Education, Communications, Science and Technology, Foreign Affairs, Agriculture, Industry and Commerce, Environment and Legal Amazonia, Mines and Energy, Marine, Aeronautics, Army, and Emfa), 2 State Secretariats (Planning - Seplan and Strategic Affairs) and 2 civil society representatives - one from the scientific community and another from private sector.

However, 17 of the 19 Council members are from the government and only 2 are from civil society. In this point, the law could be wider and more ambitious. It could be useful to enrich the Council with a higher number of representatives from different civil society sectors. Even if they were kept in minority, it is extremely convenient to increase the interest and active participation of the academy and industrial areas with important and specific capacities. Such civilian participation could renew the AEB permanently, contributing to remove any eventual tendency to its bureaucratization.

The Council should approve, still this year, the institution internal rules. At the same time, it is elaborating a new space policy proposal to be submitted to President of Republic, although this is no a function of the AEB, as we sought.

8) Is it a good beginning?

The AEB direct link to the President of Republic will be able to give a new impulse to the Brazilian space efforts, especially if this advantageous dependency turns up into an effective policy priority, stable and of long-range, with great national support and free of governmental oscillations, as space activities require.

Because of that, it's important to pay attention to eventual losses, due to the excessive dependence to the President of turn, to the detriment of a solid and permanent program able to survive with any kind of government.

At the final balance, in spite of some old and serious bad habits, the AEB creation is a positive fact. The AEB satisfies real, present and future needs. The AEB can play a fundamental role in the Brazilian space activities's development, which presently are dispersed, without a common goal to follow, with insufficient and irregular financing and unknown by the public opinion.

Senator João Calmon, during a plenary meeting, had the courage to affirm in his evaluation report that the AEB will allow "to revert the degradation process of Brazilian space policy."

Brazil is a continental country, owning an evident space vocation. It has a privileged geographical localization, vast natural resources and an increasing demand in telecommunication, natural resources and environment remote sensing, as well as meteorology satellites into a diverse range of their applications.

Hardly this country will be able to take a qualitative jump in its history — up to now it is not as much outstanding as would be desired in the crucial areas as: education, science and technology — without a great commitment with the endtechnology, innovations and space technologies' benefits.

These are the AEB major patrimony and responsibility. Because of that, to fully justify itself, the AEB must not think small, in short term, narrow-mind and mediocre. It must think big, with deep awareness of the country interests, including a solid scientific, technological and industry rationality and with wide perspectives. After all, the AEB has the great and historic opportunity to help the country to decide what kind of space program makes sense for us and our cooperative partners, not only now, but also in the next century.

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