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BRAZIL-UKRAINE PARTNERSHIP FOR THE USE OF THE ALCANTARA LAUNCH CENTER

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"To prohibit a great people from making all that they can of every part of their own produce, or from employing their stock and their industry in the way they judge most advantageous to themselves, is a manifest violation of the sacred rights of mankind." Adam Smith[2].

Introduction

The paper analyzes the motivations, the goals and the legal aspects of the Brazil-Ukraine Technological Safeguard Agreement and the Memorandum of Understanding relating to the commercial use of the Brazilian Alcantara Launch Center (CLA) by Ukrainian rockets Cyclon-4. Both documents have been signed during the Brazilian Presidential delegation visit to Kiev, January 16-17, 2002.

The paper also examines the relationship between the Brazil-Ukraine Agreement and the 2000 Brazil-US Technological Safeguard on the use of Alcantara Center by US private enterprises.

The Brazilian-Ukrainian Agreement depends on the success of the Brazil-US Agreement in view of the predominant position of US clients in the world the use of Alcantara Center by US private enterprises.

The Brazilian-Ukrainian Agreement depends on the success of the Brazil-US Agreement in view of the predominant position of US clients in the world commercial launch market.

However, the Brazil-Ukraine arrangements (Agreement plus Memorandum) are wider, more ambitious and go far beyond the technological safeguard concerns: they envisage some co-operative projects that can improve the space position of both countries.

While the Brazil-US Agreement prevents any possibility of space technological transfer, the Brazil-Ukraine arrangements foresee joint work in launch vehicle technology, which is a very difficult enterprise to implement. But if the Brazil-Ukraine Agreement succeeds, maybe we will see a new star in the sky of the space activities of our days.

This paper begins with a discussion of the logistics of the creation of the Alcantara Space Center, examines the restrictions imposed by the US on the export of launching technologies from the CLA and the hopeful agreement with Ukraine, and draws some conclusions on

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the obstacles that the safeguards on transfer of technology impose on the growth of space activities for the "benefit of mankind."[3]

The Brazilian Launching Center In Alcantara (CLA)

The Alcantara Spaceport is located in the State of Maranhão, in the north of Brazil, only 2.18 south of the Equator, offering advantageous position for launchings into the Geostationary Transfer Orbit. This location permits: a) launches to the East with great fuel savings thanks to the Earth's rotation in relation to the tangential velocity of the vehicle, and b) excellent condition for equatorial and polar launch.

Construction of the Alcantara Spaceport began in 1983, with the first satellite launching six years later, after nearly US$ 300 million had been spent on roads, electricity, a command center, an airport and other infrastructure. Since then, 276 satellites and rockets have been launched from Alcantara Spaceport, including 36 by NASA, though the great majority of these were suborbital rockets.[4]

The Alcantara Spaceport occupies an area of 620 sq. km. and an infrastructure able to hold many launch pads and area available to install new commercial launch sites for space vehicles. Now it has around 580 employees.

Since undertaking the commercialization of Alcantara Spaceport, Infraero has seventeen enterprises interested in using it. Among them the most important are:

- FiatAvio/Yuznoye , a consortium interested in launching the rocket Cyclone-4;
- Lockheed Martin (USA), interested in negotiating the temporary installation of a platform for the launching of its rocket Athena;
- Orbital Sciences Corporation (USA) interested in launching its rocket Pegasus and in installing a platform for the launching of its rocket Taurus;
- Mart Macron Space (France/Israel), interested in launching the French-Israeli rocket Leolink;
- Boeing (USA), interested in installing a complex for launching its rocket Delta IV;
- Beal Aerospace (USA), requesting conditions and costs for the implementation of a launching site for its rocket BA-2;
- International Launching System (USA/Russia) interested in installing a launching site for its rocket Angara/Atlas V;
- Mitsubishi (Japan), interested in the installation of a launching site for its vehicle J-II.

The Commercialization of Alcantara

In December 1997, the Brazilian State Company Infraero, then in charge of the commercialization of the Alcantara Spaceport, was negotiating with the Italian Corporation Fiat Avio an agreement for a program of launchings. On April 7th, 1998, Infraero had signed a Memorandum of Understanding with Fiat Avio and the Ukranian Enterprises Yuzhnoye and Yuzhny, for the launching of the Ukrainian rocket Tsyklon-4 (a liquid-fuel, three-stage rocket based on the Soviet SS-9 ballistic missile). Before this event, Fiat Avio and Yuzhnoye, on behalf of the two Ukrainian enterprises, signed a strategic Agreement, creating a joint venture for the commercialization of the Tsyklon-4 rocket launchings. They estimated that this rocket would be an efficient vehicle for launching satellites, being reliable, economic and therefore, competitive. Fiat Avia saw an excellent opportunity for a global cellular telephone company. Thus, the interest in having an Agreement with Infraero.

The American enterprise Motorola, asked by Fiat Avio to participate in the business with its own satellites, consulted the US Government on the subject, in accordance with the US legislation. Then, the US Government sent a "non paper" — an officially unpublished document — to the Italian Government recommending that an agreement on Brazilian spaceport should not be concluded.

This non-paper stopped completely the negotiations between Fiat Avio and Infraero. Both the Italian and Ukrainian companies lost interest, because they sensed that the deal was not welcome by the US State Department.

At this stage, the Brazilian diplomacy had been mobilized to try to overcome the obstacle placed in the first opportunity for an international business using the Alcantara Spaceport.

The first attempts of Brazilian authorities o approach the US Government were unsuccessful. The first positive results of the Brazilian efforts were on June 11, 1999, during an official visit of the Brazilian President Fernando Henrique Cardoso to US President Bill Clinton, who decided to open discussion on CLA. Then a Brazilian delegation was received in the State Department, and the US non-paper was included in the official conversations. On June 12, 1999, the National Security Council received the Brazilian delegation. On April 18, 2000 the Agreement was signed, and is now pending ratification by both Houses of the Brazilian Congress to enter into force.

The Agreement between USA and Brazil[5]

In the first paragraph of the Agreement's Preamble, the Government of US and Brazil stress their desire "to expand the successful cooperation carried out under the Framework Agreement on the Cooperation in the Peaceful Uses of Outer Space of March 1, 1996", signed by them. In fact, as we will see, the Agreement is not exactly an instrument of cooperation, but of technological safeguards. It would be a true instrument of cooperation if it would provide some technological transfer, training human resources or contribution to the development of the Brazilian national space program. That is not the case.

The main purpose of the Agreement is to prevent all unauthorized US vehicle and satellite technology transfer to Brazilian institutions and enterprises at the Alcantara Spaceport. In return, Brazil is to benefit from this agreement to the extent that US enterprises launch in the future from Alcantara Spaceport, taking advantage of its positioning and security.

But for the US the safeguards aim at the VLS Brazilian program, since the US never accepted the VLS program. To the US, the VLS could be used for military purposes. In 1988, the US led the Missile Technology Control Regime, known as MTCR [6]— to block the construction of VLS. Since 1994, Brazil took steps to approach the MTCR, creating the needed dual technology export control legislation. In October 1995, Brazil's membership in the MTCR was approved unanimously at the regime's 10th plenary meeting in Bonn, Germany. Acceptance in the MTCR was the outcome of a series of policy changes initiated by Brazil in early 1994 to address international missile proliferation concerns. that Brazil joined, without reservation, the Missile Technology Control Regime (MTCR), in 27 October 1995, after long negotiations with the USA Government, which led Brazil to adopt the Law 9.112/95, establishing internal controls on dual use technologies, particularly missiles and parts of missiles.

The measures adopted by the Brazilian Government in this matter were considered a firm compromise not to

produce and not to export any means of delivery (missiles) of mass destruction armaments. In February 1994 Brazil created the Brazilian Space Agency of civil character and in 1995 the Brazilian National Congress approved of control of export of dual technology. Moreover, Brazil reiterated the purpose of using outer space exclusively for peaceful purposes. But, apparently, Brazil's decision to join the MTCR does not guarantee to Brazil a more trustworthy and flexible treatment by the US.[7]

A very important aspect of the USA-Brazil Agreement is that it also rules on agreements with other governments having jurisdiction and control over entities substantially involved in Launch Activities with the participation of American enterprises. The substantive scope and provisions of such agreements are to be equivalent to those of the USA-Brazil Agreement, and as otherwise agreed between the Parties. In particular, such agreements shall obligate such other governments to require their Licensees to abide by arrangements substantively equivalent to the Technology Control Plans that the USA Government shall ensure that US Participants abide by pursuant to paragraph 4 of Article IV to this Agreement.[8]

Thus the Brazilian Government has to sign with other countries safeguard agreements with the same scope and the same contents as this one. Moreover, the USA-Brazil Agreement obliges other governments to require from their licensees — industries that have developed their own space technology – that they avoid technology transfers, in the same way that the US treats its own licensees.

The Agreement signed between Ukraine and Brazil

In the 60s and 70's Ukraine came to host factories and research institutes from the USSR directed to military space activities. When the USSR was dissolved, Ukraine, as an independent country was left with a well-endowed space sector, including the factories for the rocket Zenit, Ciclone and Dniepr. In order to keep its space industries alive, Ukraine start looking for partners, and signed 30 cooperative agreements, three being with Brazil.[9]

The first agreement with Brazil, for Friendly Relations and Cooperation, dates from October 25, 1995.

On November 18, 1999, the two countries signed a Framework Agreement for Cooperation in the peaceful Uses of Outer Space. Its article 3 listed the areas of cooperation as including space launching systems; research and development, and operation of space launching vehicles, satellites and other space systems – all being areas which directly relate to the Alcantara Space center.

Furthermore, Article 5 opened the doors to the participation of other entities of third countries in the Cooperation programs. Article 7 favored the participation of public and private sectors of both countries.

Later on, the Safeguard Agreement was signed together with a Memorandum of Understanding (MOU). This MOU has 8 paragraphs defining the commercial use of Alcantara by means of Ukrainian rockets. By means of the MOU the Brazilian Space Agency (AEB) and the National Ukraine Space Agency(NSAU) would start to launch Cyclone rockets.

It clarifies that:

- the Launching at CLA would be for peaceful and commercial purposes exclusively,
- both countries would try their best to finance the project.
- Issues relating to the property of equipment and new construction, distribution of work and the launching program would be defined by

complementary mutual agreements to the Framework Agreement.

Regarding international legislation, the parties agreed to move towards a joint policy to define "the Launching state", to meet a key requirement of the Convention on Responsibility for Damage caused by Space Objects", as well as to regulate questions regarding licenses and insurance.

The MOU also addresses environmental issues. A key aspect of the MOU also was its affirmation of the non-exclusive nature of the bilateral cooperation, clearly stating that the Agreement would not pose any obstacle to cooperation with other countries.

In 2002, Brazil and Ukraine were obliged to reach a further agreement to comply with the provisions of the US Technological Safeguards that any country should sign a similar safeguard agreement with Brazil, if it were participating in Alcantara launch-related activities that included US enterprises and industries. To observe this requirement, Brazil and Ukraine signed a Safeguard Agreement in Kiev on January 17, 2002.

The Brazil-Ukraine agreement, along with the safeguard agreement earlier signed with the US, are now under review by the Brazilian Congress before a final decision is made on their implementation. Some observers expect the Ukrainian agreement to be approved before action is taken on the US agreement, whose provisions are considered too restrictive by many in the Brazilian Congress. The outcome of this decision could be crucial, given that US companies are considered potential customers of the Brazil- Ukrainian efforts as well as potential providers of launch services.

While the approval of the Safeguard agreements are pending, NSAU representatives, including its President, visited AEB last April and signed a New MOU for a detailed plan of action. A Working group has been established to examine the technical conditions and the infrastructure needed to establish a join-venture to manage the enterprise, including the construction of a new platform for the launching of the Cyclone 4 in Alcantara. The tasks of the Working group include preparing:

- costs of the project
- definition and responsibilities of each country
- evaluation of the world launching market
- the return on investments to be made, and
- analysis of legal questions and the documentation required for the formal creation of the joint venture, including participation of state enterprises of both countries.

Studies already performed indicate that the joint venture could launch annually from 5 to 10 satellites, which could generate an income of up to US$500 million. It is expected that from 2006 CLA would be able to launch from Cyclone 4 up to 6 satellites per year, at a cost of Us$40 million per launching.[10] As the negotiations within this Working Group are now well advanced, Brazil faces an urgent need reach a final decision on ratifying the technological Safeguards Agreement with the USA to fully commercialize Alcantara.

Major differences between the Agreements

The basic difference between the US and the Ukrainian agreements is that the Brazil-USA agreement seeks to close any opportunity for transfer of technology and cooperation. It further reinforces obstacles, in Article 3 of the Agreement, to the development of the VLS program. This is to prevent Brazil from using resources from launching activities from Alcantara to further the development of the VLS program in Brazil or other countries. This Article

conforms to US policy regarding the Non-proliferation of Missile technology (MCTR).

The Technology Safeguard Agreement between Ukraine-Ukraine does not have any similar provision. Ukraine and Brazil welcome each other's development, including an option for further development of joint programs. Both countries aim to solve their financial problems by joining efforts in finding innovative solutions to satisfy global market demand. The Ukrainian Government appears to sense more possibilities for cooperation and mutual benefit if Alcantara enters the world market.

Conclusions

The success of the Brazil- Ukraine Agreement depends on the approval by the Brazilian Congress of the US- Brazil Agreement. But the ratification of the US agreement by the Brazilian Congress, does not assure the success of the program. The success depends on the US Government also authorizing the American private companies to launch from Alcantara.

Brazil and Ukraine are hopeful that the US Government will apply the proposed safeguards in a positive and constructive way. Otherwise, it will raise uncertainties about the launching market and the participation of the American enterprises. US firms as well as others in the global market will clearly have their "free enterprise" activities curtailed and profits cut because of these restrictions. Even key conservative politicians in the US have recognized that its US Export Administration Act "represents a compromise between two conflicting goals, protecting national security and promoting US business interests abroad", as remarked Senator Phil Gramm, Texas Republican during the review of the US Export Administration Act. [11]

At a time of growing polarization in international relations, the importance is rising of international cooperation in the area of space activities, especially launching activities. Neutral systems are needed to avoid technological dominance and likely ensuing market concentration. Steps to build trust among foreign partners in opening space could strengthen relationships between established and emerging spacefaring powers.

Laws and policies which qualify almost all satellites as 'arms' (subject to strict export controls) and mix the concepts of security and trade, discourage cooperation between launch companies, will certainly slow down the development of safe, depolilticized, and affordable access to space – and raise opportunities for collusion and concentration of power on the part of favored launching organizations. [12]

The US Government considers that potential threats from emerging economies pose a challenge to the country's security interests and defense capabilities. Yet national security controls and restrictions can be misused for trade-related reasons (that is, prevention of the entrance of other countries in the controlled market) and not exclusively for the prevention of transfers of arms of mass destruction (national security concerns).

Thus, if the uses of outer space are truly to "benefit all mankind," a new approach to promote the international use of the technology applied in outer space should be in place. Bilateral restrictions imposed by governments on the export of technologies applied in commercial space ventures, such as the ones contained in the Brazil-US Technological Safeguards agreement, pose a bottleneck for the growth of activities that could bring economic and social development to the less developed countries. In their place, international mechanisms should emerge that release

constraints upon peaceful cooperation and commercial development in space. Such frameworks could accelerate technological and scientific developments, lead to reductions in launch costs, and engage the aspirations of people around the planet. All of these steps can help ease international tensions.

If the US-Brazil Alcantara Agreement enters into force, and Brazil does gain ground in the international launching market, this will be the result of a particular bilateral understanding.

However, it would be even better if the use of launching facilities around the world would be the result of a global agreement, which when put into place could benefit several countries and private enterprises, following accepted international principles of fair competition and global democracy to develop space for the benefit of mankind.

Taken with national licensing systems on commercial space launching, it is clear that bilateral technological safeguard Agreements limit opportunities for commercial launch organizations to operate in a truly international and depoliticized manner. From the standpoint of free access to space by all countries and its enterprises, the restrictions imposed reflect further insights from Adam Smith:

"*People of the same trade seldom meet together, even for merriment and diversion, but the conversion ends in a conspiracy against the public, or in some contrivance to raise prices*"

"A monopoly granted either to an individual or to a trading company has the same effect as a secret in trade or manufactures. The monopolists, by keeping the market constantly under stocked, by never fully supplying the effectual demand, sell their commodities much above the natural price, and raise their emoluments... greatly above their natural rate."[13]

References:

1) Valnora Leister is a Brazilian Attorney, working in Washington DC. The views expressed are personal opinions from the author and do not reflect the views of her employer.

2) Adam Smith, in the year of the Declaration of Independence passing a judgment upon the system of control which for more than a century England had exercised over the economic activity of her colonies.

3) See the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies- UN Resolution of 13/12/63, adopted by the UN General Assembly in December 19, 1966, opened for signature in January 27, 1967 and in force since October 10, 1967.

4) Commercial Use of the Alcantara Space Center- Report of the Brazilian Space Agency, April 18, 2000- Http://www.agespacial.gov.br

5) For further details see the paper on "Brazil-USA Agreement on Alcantara Launch Center, Proceedings of the Forty-Third Colloquium on the Law of Outer Space, 2-6 October 2000, Rio de Janeiro, Brazil, by Monserrat Filho, José and Leister, Valnora.

6) The Missile Technology Control Regime (MTCR) is an informal political arrangement to control the proliferation of rocket and unmanned air vehicle systems capable of delivering weapons of mass destruction and their associated equipment and technology. The MCTR was formed in 1987 by Canada, France, Germany, Italy, Japan, the United Kingdom and the United States. Membership has expanded to 29 countries as of June 1998. The MCTR is not a treaty but a voluntary agreement among member countries sharing a common interest in controlling missile proliferation. MCTR members meet at least once a year in a plenary session to exchange information, discuss policy issues, and examine ways to improve the Regime in *the MTCR Annex Handbook, a on line publication designed to assist in implementing export controls on MCTR Items.*

7) Brazil has demonstrated in the national as in the international level, its firm compromise with the disarmament cause and the non-proliferation of dual use technologies. Brazil has stopped its incipient nuclear program, and the following measures were taken: i. the Federal Constitution (Article XXIII, Article 21) prohibits nuclear activities not for peaceful purposes; ii. Brazil has moved its space program from the military arena to civilian jurisdiction under the Brazilian Space Agency (APB) reporting to the

Ministry of Science and Technology and, iii. Brazil has ratified agreements and treaties for disarmament (such as the Agreement signed with Argentina, and the International Agency of Atomic Energy, the Tlateloco Treaty, the Treaty on the Non-Proliferation of Nuclear Weapons ***[NPT]***, the Convention on the Prohibition of Chemical Weapons and the Ottawa Convention on Territorial Mines). The Report also points out that Brazil joined, without reservation, the Missile Technology Control Regime (MTCR), in 27 October 1995, after long negotiations with the USA Government, which led Brazil to adopt the Law 9.112/95, establishing internal controls on dual use technologies, particularly missiles and parts of missiles.

8) This paragraph states that "Each party shall ensure that all persons under the jurisdiction and/or control of that Party's state who participate in or otherwise have access to Launch Activities shall adhere to the procedures specified in this Agreement.The Government of the US shall require US Licensees involved in Launch Activities at the Alcantara Spaceport to conclude a Technology Control Plan reflecting and containing the relevant elements of this Agreement. The Government of the Federative Republic of Brazil shall ensure that Brazilian Representatives comply with their obligations as set forth in Technology Control Plans. The Government of the US shall ensure that US Participants comply with their obligations as set forth in the Technology Control Plans."

9) See Monserrat Filho, José, "A Parceria Brazil e Ucrania para o Uso Comercial do Centro de Lançamento de Alcantara" Paper presented at the 5th Annual reunion of SBPC, University of Goias, July, 2002.

10) News Release from the Brazilian Space Agency, dated September 18, 2002.

11) The Commercial Space Launch Act 1988 applies to any launching activity conducted in the territories of the US and also to overseas launching activities of any foreign corporation in which a US national holds a controlling interest – the office of the Assistant Administrator for Commercial Transportation (AST) provides a licensing system for commercial operations and requires the operators to take out liability insurance up to the amount of maximum probable loss.

12) In the US, exports of technologies used for launching spacecraft are considered of dual use and therefore subject to the control of the government The Arms Export Control Act (22USC 2778(a) and 2794(7) revised in 1993 provides that the President shall designate the articles and services deemed to be defense articles and defense purposes. The items so designated constitute the United States Munitions List, whose designations are made by the Department of State with the concurrence of the Department of Defense. This list includes among others: Missile technology, launch vehicles, rockets (including but not limited to meteorological and other sounding rockets), missile and space launch vehicle power plants and all specifically designed or modified components, parts, accessories, attachments and associated equipment for the articles in this category. Also, technical data directly related to the manufacture or production of any defense articles are designated as significant military equipment. The regulations require that "any person who engages in the US in the business or either manufacturing or exporting defense articles is required to register with the Office of Defense Trade Controls."

13) The Wealth of Nations, vol. 1,bk. 1, ch.10 and ch.7