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Geostationary Belt – State's Territory or Province of Mankind?

The only orbit like this

Outer space, however infinite it seems, has its limitations. The area that definitely cannot be called infinite is the geostationary orbit. It is a circular orbit that runs at an altitude of 35786 km above the Earth, that is 42160 km from the centre of our planet. It is a special type of a geosynchronous orbit which is characterized by an identical orbital period as the Earth rotation time (24 hours). The geostationary orbit is a geosychronical orbit with an inclination (tilt) of 0 degrees. The inclination of the orbit is the angle between the orbit plane and the reference plane, in this case the plane of the Earth's equator. The inclination of 0 degrees means that the orbit plane coincides with the equator plane.

Describing the geostationary orbit as perfectly circular is of course an approximation. Satellites maintain the about-geostationary orbit due to gravitational disturbances. Uneven mass distribution of the Earth[1] causes disturbances on the East-West line, and the gravitational effect of the Sun and the Moon on the North-South line. In practice, the inclination deviates between 3-5 degrees and the orbit height can fluctuate by plus or minus 50-75 km from the nominal geostationary orbit.

A characteristic feature of the geostationary orbit is the fact that an object that moves from West to East with an angular velocity equal to the angular velocity of the Earth is constantly above one particular point of the planet. The satellite seems to be "fixed" in the sky above a given point of the Earth, and for the observer from the Earth it seems to be immovable.

For the first time, the concept of the geostationary orbit was suggested by Herman Potočnik in 1928 in his book *Das Problem der Befahrung des Weltraums*[2]. Next, this or-

[1] G.E. Cook, *Perturbations of satellite orbits by tesseral harmonics in the earth's gravitational potential*, "Planetary and Space Science" 1963, No. 11(7), p. 797.

[2] A. Soucek, *International law* [in:] *Outer Space in Society, Politics and Law*, edit. Ch. Brünner, A. Soucek, Wien-New York 2011, p. 388.

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bit appeared in short stories by George O. Smith from the *Venus Equilateral* series. It was a collection of 13 sci-fi stories, published in the years 1942-1945 in the magazine "Astounding Science Fiction". The stories were connected by the Venus Equilateral station which was an interplanetary hub between Venus, Earth and Mars, located at the L4 Lagrangian point of the Sun-Venus system. The concept of the geostationary orbit was described in more detail by Arthur C. Clarke in the article *Extra-Terrestrial Relays – Can Rocket Stations Give Worldwide Radio Coverage?* published in 1945 in "Wireless World". Clarke drew attention to the usefulness of this orbit for communication and broadcasting. Therefore, the geostationary orbit is sometimes referred to as Clarke's orbit. The first satellite placed on the geostationary orbit was the American satellite Syncom 3 (the name comes from a synchronous communication satellite) launched in 1964. It was used to broadcast the 1964 Tokyo Summer Olympic Games on television to the USA.

The features of the geostationary orbit make it particularly useful for communication, television, remote sensing and meteorology. One can even say that it is commercially the most-desired orbit. Because a satellite is "hung" above a given point of the Earth a tracking station or satellite dish do not have to be moving to be in contact with the satellite[3]. Moreover, high orbits, one of which is the geostationary orbit, offer maximum coverage of the Earth's surface using the minimum number of satellites. Three evenly spaced satellites in the geostationary orbit are enough to cover the entire planet to about latitude 70 degrees North and South[4]. Due to the low placement of the satellite above the horizon, only polar regions are outside the sphere of effective coverage, and highly-elliptical orbits (e.g. Molniya orbit) are more useful there.

The geostationary orbit is the only one, and it is the only orbit that allows the satellite to be placed "stationary" above a given point of the Earth. Its capacity, however, is limited – a specific number of satellites can operate on it. This makes the geostationary orbit become the area of the game of interest of states, international organizations and commercial entities.

First come, first served

There is no international organization that would directly manage the geostationary orbit activity. Although it is not a managing body, the International Telecommunication Union (ITU) plays a significant role in the allocation of slots and frequencies. It is an international organization based in Geneva, which has the status of a specialized UN agency. Its task is to publish international telecommunications standards and coordinate research and development in telecommunications. Its roots date back to the estab-

[3] E.C. Dolman, *Astropolitik. Classical Geopolitics in the Space Age*, Frank Cass, London-Portland 2005, p. 55.

[4] D. Wright, L. Grego, L. Groblund, *The Physics of Space Security. A Reference Manual*, Cambridge 2005, p. 43.

lishment of the International Telegraph Union in Paris on May 17, 1865. The organization brings together member states as well as private entities. Its tasks include granting and registration of radio frequencies and related positions (slots) in the geostationary orbit[5]. Within ITU, the allocation of satellites is done by the Radiocommunication Sector (ITU-R), responsible for coordination procedures and recording in the Master International Frequency Register (MIFR)[6].

Article 44 of the ITU Constitution points out that the frequencies and positions in the geostationary orbit must be regulated because this orbit is not infinite, but constitutes limited natural resources. Therefore, "they must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to both"[7]. More detailed regulations and procedures are included in the Radio Regulations (RR)[8].

Article 44 paragraph 2 of the Constitution of the International Telecommunication Union points out that in terms of radio frequencies and associated orbits, special needs of the developing countries and geographical situation of particular countries must be taken into account[9].

Therefore, the ITU Constitution formulates two main principles: on the one hand, efficient, rational and cost-effective utilization[10], and on the other hand equal access to the electromagnetic spectrum and orbits. The problem is how to apply in practice these rather abstract, and to some extent contradictory, principles, given that they refer to a commodity of a limited type. Therefore, any actions are generally based on the first come, first served rule[11].

This rule and the fact that there is no time limit for an entity to use its slot and frequency in the orbit (they are granted "for an indefinite period") may lead to "filling up" the orbit[12].. Moreover, it hinders the activity of entities that want to enter the market. The uninterrupted use of "parking spaces" in the geostationary orbit can thus be considered to be in conflict with the right of states to free and equal access to the orbit and frequencies[13].

In the 1970s, when the benefits of using the geostationary orbit were already well known, and the ITU's first come, first served rule favoured states with highly developed

[5] M. Polkowska, *Prawo kosmiczne w obliczu nowych problemów współczesności*, Warszawa 2011, p. 130.
[6] F. Tronchetti, *Fundamentals of Space Law and Policy*, New York-Heidelberg-Dordrecht-London 2013, p. 40.
[7] *Constitution of the International Telecommunication Union*, Chapter VII, Art 44. Collection of the basic texts adopted by the Plenipotentiary Conference.
[8] *ITU Radio Regulations*, https://www.itu.int/pub/R-REG-RR-2016 [access on: 20.01.2018].
[9] *Constitution...*, *op. cit*.
[10] Y. Henri, *Orbit/Spectrum Allocation Procedures. Registration Mechanism*, Mexico City 2001.
[11] M. Polkowska, *Prawo kosmiczne…*, *op. cit.*, p. 131.
[12] D.M Bielicki, *Gruz kosmiczny – problem Polski, Europy i Świata*, [in:] *Wykorzystanie przestrzeni kosmicznej. Świat – Europa – Polska*, edit. Z. Galicki, T. Kamiński, K. Myszona-Kostrzewa, Warszawa 2010, p. 119.
[13] L. Łukaszuk, *Współpraca i rywalizacja w przestrzeni kosmicznej*, Toruń 2012, p. 101.

space technology, non-space states recognized the danger of the orbit being dominated by space powers before they themselves could place their satellites in the orbit. The increasing number of satellites in the geostationary orbit (with a huge disproportion in favour of developed countries) and plans to place more objects made these fears realistic. These fears and the protest against treating the orbit as a global resource resulted in actions that aim at either defying the international law regime regulating access to the orbit, or attempting to use its loopholes.

…it must not be considered part of the outer space

The most notorious case of contesting not only the principles of access to the geostationary orbit, but also the whole international space management system was the Bogotá declaration. The meeting of the equatorial states held from November 29 to December 3, 1976, was organized by Colombia[14]. Its outcome was the Bogotá declaration signed by eight equatorial states (Brazil, Ecuador, Indonesia, Kenya, Colombia, Congo, Uganda and Zaire). Two equatorial states – Gabon and Somalia – supported the declaration, although they did not send their representatives to the meeting[15].

Its key point stated that

> the geostationary synchronous orbit is a physical fact linked to the reality of our planet because its existence depends exclusively on its relation to gravitational phenomena generated by the Earth, and that is why it must not be considered part of the outer space. Therefore, the segments of geostationary synchronous orbit are part of the territory over which Equatorial states exercise their national sovereignty. The geostationary orbit is a scarce natural resource, whose importance and value increase rapidly together with the development of space technology and with the growing need for communication; therefore, the Equatorial countries meeting in Bogota have decided to proclaim and defend on behalf of their peoples, the existence of their sovereignty over this natural resource [16].

The demand for national sovereignty over the relevant sections of the geostationary orbit (located over individual states) was in clear contradiction to one of the basic principles of the Outer Space Treaty (OST) of 1967, according to which space is not subject to appropriation[17]. The main assumptions of the Bogotá declaration were also contrary to the approach perceiving the geostationary orbit as a *res extra commercium* (in this

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[14] O.A. Arenales-Vergara, *Colombia: reasons to create a national space agency*, "Advances in Space Research" 2004, No. 34, p. 2210.

[15] Y. Schmidt, *International space law and developing countries*, [in:] *Outer Space in Society, Politics and Law*, edit. Ch. Brünner, A. Soucek, Wien-New York 2011, p. 701.

[16] *Declaration of first Meeting of Equatorial Countries, Adopted on December 3, 1976*, https://bogotadeclaration.wordpress.com/declaration-of-1976/ [access on: 15.01.2018].

[17] *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*, Art II.

context it referred to the regions of common freedom)[18]. The proclamation of sovereign power over sections of the orbit presupposes that the permanent placement of a device (satellite) should require the prior and explicit consent of the state over which the given section is located. The operation of this device must also be in accordance with the internal law of that country[19].

The declaration was generally rejected by other countries. This negative reaction was evident during the proceedings of the UN Legal Subcommittee in 1977. Colombia argued that the current space law rewarded the interests of a small group of the richest countries and corporations (this resulted from the principle of freedom in space and the lack of treaty delimitation of space), which prompted the equatorial states to proclaim the sovereignty over the geostationary orbit to protect their own interests and interests of states in similar position[20].

The equatorial states based their stance on the arguments of two types, which instead of strengthening them had the opposite effect. The duality of argumentation is also pointed out by Andrzej Górbiel[21]. On the one hand, the equatorial states drew attention to the lack of the definition and delimitation of outer space in the OST treaty. In their opinion, this allowed to consider the geostationary orbit not to be part of outer space if physical arguments were taken into account. However, this argument was quite risky because it assumed that the Earth and its gravity made the existence of the geostationary orbit possible. In consequence, according to the equatorial states, it was necessary to recognize that this orbit is part of the Earth, not outer space. On the other hand, the equatorial states questioned the importance of the OST treaty claiming that it was formed under the dictation of developed countries and for their benefits, while developing countries did not have scientific and technical skills at that time to analyze and assess all the consequences of the treaty provisions. Thus, the treaty should not be treated as a final solution to the problem of regulation of activity in outer space.

Within the framework of the Committee on the Peaceful Uses of Outer Space (COPUOS), a long debate was held on the possibility of excluding the geostationary orbit from outer space, which finished after the Czech delegation presented a report in 2000 that undermined the arguments of the equatorial states. This leads to the recognition that all regulations resulting from space law also apply to the geostationary orbit.

However, the issue of the definition and delimitation of outer space remains unsolved. It has been on the COPUOS agenda and its Legal Subcommittee practically since the be-

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[18] K. Mills, *Who will own outer space? Governance over space resources in the age of human apace exploration* [in:] *Humans in Outer Space – Interdisciplinary Perspectives*, edit. U. Landfester, N-L. Remuss, K-U. Schrogl, J-C. Worms, Wien-New York 2011, p. 19.

[19] M. Polkowska, *Prawo kosmiczne…*, *op. cit.*, p. 145.

[20] *Ibidem*, p. 146.

[21] A. Górbiel, *Międzynarodowe prawo kosmiczne*, Warszawa 1985, pp. 190-198.

ginning, that is, since the *ad hoc* creation of the Committee for the Peaceful Use of Outer Space in 1958 (later it became a permanent committee)[22]. This issue directly refers to the legitimacy of the concept of sovereign control over certain areas of the outer space[23].

Outer space, unlike airspace, is not under the jurisdiction of states, but is the legacy of all mankind. This term also refers to the territorial dimension, as the term province of all mankind is used interchangeably. A certain analogy can be made to those norms of international law that apply to territories beyond the jurisdiction of states, in particular the law of the sea. This analogy implies a reference to the principle of the freedom of the seas as justification for freedom in the use of outer space.

Neither the OST nor other acts of international law define, however, where airspace ends and outer space begins. Moreover, the 1944 Convention on International Civil Aviation signed in Chicago also does not specify the extent of airspace. At present, there is no general agreement whether the delimitation and definition of outer space is needed and necessary[24]. The proponents of this solution usually refer to one of the two approaches identified in the *Background Paper* prepared in 1970 by the Secretariat and the Legal Committee. This document pointed to a spatial and functional approach[25]. Spatial approach proponents underline the importance of precise, spatial separation of outer space from airspace. Functional approach proponents, in turn, opt for the criterion of the nature of the activity undertaken and its means (spacecraft) and establishing the border on this basis. The most common approach to the delimitation between outer space and airspace refers to Karman line theory. It indicates the limit of aerodynamic flight beyond 100 km above sea level – any aircraft would have to fly faster than orbital speed to get sufficient aerodynamic lift[26]. This line of demarcation is accepted by the Fédération Aéronautique Internationale (FIA). However, FIA is a non-governmental organisation and it must not impose its vision on countries.

After the Bogotá Declaration was adopted, the equatorial states embarked on a diplomatic offensive within the UN and other international organizations to change Article 2 of the OST, so that the provision – prohibiting the appropriation of outer space – did not refer to the geostationary orbit. However, in view of the negative reaction of other states, since the UNISPACE II conference in 1982, the focus of the discussion has shifted from the question of sovereignty over parts of the orbit to the issue of a more equi-

[22] Z. Galicki, *Prawna delimitacja przestrzeni kosmicznej – problem nadal nierozwiązany*, [in:] *Wykorzystanie przestrzeni kosmicznej. Świat – Europa – Polska*, edit. Z. Galicki, T. Kamiński, K. Myszona-Kostrzewa, Warszawa 2010, p. 17.

[23] A. Harris, R. Harris, *The need for air space and outer space demarcation*, "Space Policy" 2006, No. 22, p. 5.

[24] M. Kułaga, *Współczesne tendencje regulacyjne międzynarodowego prawa kosmicznego*, „Kwartalnik Prawa Publicznego" 2007, No. 7(4), p. 72.

[25] J. Berry, *Unearthing global natures: Outer space and scalar politics*, "Political Geography" 2016, No. 55, pp. 97-98.

[26] T. Neger, E. Walter, *Space law – an independent branch of the legal system* [in:] *Outer Space in Society, Politics and Law*, edit. Ch. Brünner, A. Soucek, Wien-New York 2011, p. 240.

table regulatory policy in this regard[27]. Thus, it is justified to ask whether the intention of the equatorial states was just to publicize the problem of unequal access (detrimental to developing countries) to outer space resources[28].

Paper satellites

Since the 1980s and the privatization of operators such as Inmarsat, Intelast or Eutelsat, one has observed a growing interest in the geostationary orbit, which results in an increase in the number of satellites placed there and the risk of over-filling. States that do not belong to the spacefaring group decided to reserve slots either to use them in the future (and to prevent slots from being used by others) or to sell or rent them and have economic benefits.

Thus, some slots are occupied by the so-called paper satellites. These objects, although not in orbit, occupy a nominal position on the ITU list, which means that they require coordination with other satellites in the geostationary orbit[29].

Paper satellites attracted attention when the government of Tonga filed an application to the ITU for 16 slots in 1990 and after its consideration they received 6 slots in 1991. Of course, Tonga did not have any real plans to put there satellites. Instead, the satellite "operator" Tongasat from Tonga rented slots to other entities charging 2 million USD a year for each slot. Interestingly, Tonga had never tried to hide that it planned to get financial benefits from selling or renting the slots[30]. What Tonga did was not a violation of the ITU regulations literally, although it certainly violated their spirit. The issue of this type of practice was raised during the World Radio Conference in 1995, but it was limited only to the launch of the review of the ITU procedures and the preparation of a report on slots[31].

The issue of paper satellites returned in the context of the Iranian space programme. Iran planned to put two communications satellites Zohrer 1 and 2, and therefore received the orbits and frequencies. After seven years and lack of indicators that could indicate that the satellites were in the orbits, the ITU decided to investigate the matter in detail. Finally, the Radio Regulation Board informed Iran that its reservations had been cancelled[32].

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27 C.G. Gomez, Y.L. Cordoba, *The Equitable Access to the GEO for Developing Countries: A Pending Challenge*, 56th Colloquium on the Law of Outer Space: International Regulations of Space Communications: Current Issues, IAC-13,E7,3,1,x18622, p. 2.

28 F. Lyall, P.B. Larsen, *Space Law. A Treatise*, London-New York 2009, p. 256.

29 M. Polkowska, *Prawo kosmiczne…*, *op.cit.*, p. 88.

30 J.C. Thompson, *Space for Rent: The International Telecommunications Union, Space Law, and Orbit/Spectrum Leasing*, "Journal of Air Law and Commerce" 1996, No. 62, pp. 61-62.

31 I-D. Galeriu, *"Paper satellites" and the free use of outer space*, Hauser Global Law School Program, New York University School of Law, New York 2015, http://www.nyulawglobal.org/globalex/Paper_satellites_free_use_outer_space.html [access on: 20.01.2018].

32 *Ibidem.*

The problem of paper satellites also appeared after a slot had been granted to the states of the Andean Community (Bolivia, Colombia, Ecuador, Peru) within the policy of equal access to the geostationary orbit. For about a decade, this organization tried to place a satellite system there, but these efforts were unsuccessful. After warning from the ITU, threatening that they would lose the slot, the Andean Community decided to commercialize its position and frequency and in 2010 handed them over to the Dutch company SES Word Skies[33].

Parking crisis

The issues of Tongan and Iranian satellites made the ITU concern about the phenomenon of paper satellites. In 2009, studies were undertaken to clarify how many satellites were really launched and how many were located on the position specified in the Master International Frequency Register. It turned out that about 45% of the satellites reported were not in orbits[34].

These activities worsen the "parking crisis" in the geostationary orbit. Theoretically, the possible number of satellites placed there is about 2,000[35]. The number of slots is limited, as the satellites must be located about 2 degrees apart to avoid collisions and disturbances. This is the reason for the constant rivalry between states and telecommunications operators, especially regarding those places in the orbit that cover important areas on the Earth. The congestion of the orbit depends on the longitude. Of course, there are fewer satellites above the empty spaces of the Pacific than over geographical latitudes corresponding to areas that are attractive for economic (densely populated and rich) or political reasons. The problem of the congestion in the orbit results to a lesser extent from the mere physical presence of satellites in a limited space and the fear of collision, as to a greater extent it is a consequence of the need to avoid interference between nearby satellites[36]. This limitation applies particularly to communications satellites and broadcast satellites that are very common in the geostationary orbit, and to a lesser extent, observation satellites (e.g. weather satellites). When assigning slots the ITU takes into account the dual nature of the geostationary orbit – as a location and as an electromagnetic spectrum.

Operators apply to the ITU through national administrations. Allocation does not mean granting ownership of the slot, but it gives the exclusive right to use this natural

[33] C.G. Gomez, Y.L. Cordoba, *The Equitable Access…*, *op. cit.*, p. 4.

[34] Y. Henri, *Satellite matters, Serving the satellite community: Efficient use of the spectrum/orbit resource*, International Telecommunication Union, http://www.itu.int/net/newsroom/wrc/2012/features/satellite_matters.aspx [access on: 15.01.2018].

[35] M.J. Finchs, *Limited Space: Allocating the Geostationary Orbit*, "Northwestern Journal of International Law & Business" 1986, No. 7(4), p. 789.

[36] G. Penent, *Introduction* [in:] *Governing the Geostationary Orbit. Orbital Slots and Spectrum Use in an Era of Interference*, edit. G. Penent, Paris-Brussels 2014, p. 14.

resource. There is no time limit which would determine how long after receiving the slot the entity can occupy it. Although the average lifetime of a satellite is 15 years, there is no obligation to return the slot after this time, even if the satellite is not physically in the orbit. In practice, therefore, operators receive a slot for an indefinite period and use it, replacing the old satellite with a new one. This blocks the slot for other operators, making it difficult for new entities to enter the market[37].

The case of Tonga has made the ITU more stringent in the allocation of slots. The basis of its activity is the assumption that slots are to be allocated only to entities that have the real intentions of using them. Operators, however, often ask for more slots than they need, claiming that it is to protect them from the risk of satellite failure. However, the real reason is often the desire to block slots from the competition or the intention to exchange slots with other operators in order to obtain slots that are more desirable for their business (e.g. those geographically covering specific areas). In view of such practices, the ITU decided that operators have five years from being allocated the slot to actually using it, with the possibility of extending this period to a maximum of seven years. Then the right to use the slot is to be forfeited. Removal from the list of MIFR is, however, the only sanction for the failure to launch a satellite at a particular time, no financial (or other) penalties are foreseen for blocking slots. This may be an incentive to continue such activities. Moreover, if the state informs the ITU that the satellite has been placed on the position, the ITU does not question this declaration. This was the case with the Iranian satellites. This results in a significant extension of the procedure. In the case of Zoher 2, Iran notified its placement in the orbit in 1995, and the case ended in 2012[38].

Self-regulation

The question arises whether the practice of renting slots, which circumvents the ITU regulations (such as Tonga case) is indeed reprehensible and deserves to be condemned. To some extent, it is paradoxically a solution to the dilemma between the efficiency of managing the geostationary orbit as a limited natural resource and the right to equal access to this resource. It can be said that this solution most effectively settles the conflict between these two values[39]. A state that does not have the potential to put a satellite in the orbit at a given moment receives economic benefits and reserves a slot for the future, and the operator quickly receives the slot that they need without being engaged in the long-term ITU procedure. What is more, the formal operator of the slot can show that the slot is not blocked but has been "put into service".

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[37] Ch. Billing, *There's a parking crisis in space – and you should be worried about it*, "The Conversation" 2017, http://theconversation.com/theres-a-parking-crisis-in-space-and-you-should-be-worried-about-it-83479 [access on: 20.01.2018].

[38] I.-D. Galeriu, *"Paper satellites"*..., *op. cit.*

[39] *Ibidem*.

To some extent, the same can be said about the practice of slots occupied by the state not yet ready to launch satellites, but without the intention of renting them, as in the case of Iran. It is a form of reserving positions and frequencies for the future. On the one hand, it uses a loophole in the ITU regulations, and on the other hand it is a response to the insufficiently adequate practices of the ITU concerning equal access. Here, however, the effect is shifting the focus from economic efficiency to access equality, assuming that earlier in the unauthorized manner the greater weight was attached to the first factor[40].

These actions are examples of a specific self-regulation of the geostationary orbit system. It is interesting to note that in the case of this orbit – unlike other orbits – it is a defined and regulated international regime. Moreover, most states feel responsible for maintaining this situation and take voluntary action to ensure the further usability of the geostationary orbit. An example is an effort to remove inactive satellites from the orbit and not to generate debris in this way. Due to the fact that the geostationary orbit is a high orbit, it is economically unjustified to direct a satellite to a deorbitative trajectory in order to burn it in the atmosphere or – in the case of larger satellites that can survive this manoeuvre – to let the remains fall in the so-called satellite cemetery in the South Pacific (the so-called Nemo Point). This would require too much fuel, which in the case of satellites is always a critical factor (it is the amount of fuel needed for orbital stabilization manoeuvres that is a limiting factor for the satellite's operation time). Deactivated satellites are thus removed into a circular orbit located several hundred kilometres above the geostationary orbit (IADC has guidelines for these orbits). This is called graveyard orbits, also known as junk orbit[41].

Conclusions

The geostationary orbit is a special piece of outer space. It is true that the efforts of the equatorial states to recognize it as part of the national territory did not bring any effect. This orbit, however, focuses problems associated with the practical dimension of treating outer space as *res communis usus*. The freedom to use outer space by all states without any discrimination, which is a general principle of space exploration, in specific circumstances is not so obvious and as a result of compromise with other principles (economic efficiency and rationality principles) detailed regulations and procedures, as well as informal forms of activity emerge.

In relation to the geostationary orbit, the postulate of creating separate rules, to some extent analogous to the rules of using the seabed, is raised. Their observance would be supervised by an organization of the geostationary orbit established for this purpose, or more broadly – an organization regulating the outer space activity. However, the states

[40] *Ibidem*.

[41] R. Jehn, V. Agapov, C. Hernández, *End-Of Disposal of Geostationary Satellites*, Proceedings of the 4th European Conference on Space Debris, Darmstadt 2005.

that are already conducting intensive space activities are rather reluctant to the idea of imposing additional regulations on them, in addition to the applicable provisions of space law, which they treat as sufficient. Then other countries applied a specific adaptation strategy, using the loopholes in the applicable regulations to their benefits. It seems, therefore, that this complicated, problematic but in a way self-regulating mechanism has long prospects ahead.

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Abstract: The geostationary orbit is a special area in outer space. Because of its distinctive characteristics, it has constantly been the subject of economic and political desirability. Space powers, taking advantage of their technological superiority and rules applied by the International Telecommunication Union (ITU) retained a privileged position. Developing countries, responding to this state of affairs, have taken a number of measures to improve their positions. Some of them posed a challenge to the main regulation of space law (Bogotá declaration was an attempt to exercise a national sovereignty over the segments of the geostationary orbit), some are based on the use of the legal gaps in ITU regulations. Given these circumstances, the specific case of geostationary belt contributes to the debate on the regulations governing space exploration.
Keywords: Geostationary orbit, paper satellites, orbital slots, Bogotá declaration

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