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Rethinking the Urgency of Geo Stationary Orbit for Indonesia (The Case of Privatization of Indosat in Space Law Perspective)

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Abstract: GSO is an orbit which is approximately 35.786 km from the earth's surface which is strategic for the placement of satellites. Creating justice in the GSO, the International Telecommunication Union (ITU) ensures the availability of a number of slots for equatorial countries. In 2002 the phenomenon of privatization and foreign direct investment has changed the share ownership structure in Indonesia. The telecommunications sector was also affected where the Government of Indonesia now only owns 14.29% of PT. Indosat Tbk. ("Indosat"). Qatar Telcom via Ooredo Asia Pte. Ltd. become the majority shareholder of Indosat (65%); while the rest (20.71%) is owned by the public. This article aims to analyze the urgency of the satellite placed in the GSO and propose analyze the impact of privatization of Indosat in space law perspective. The research method used is normative juridical, with secondary data sources. Qualitative analysis with deductive conclusions. Based on the results of the research, it is known that GSO is a limited natural resource which is regulated in Article 33 paragraph (2) in the 1973 ITU Convention, the 1994 ITU Constitution and also in the Radio Regulation. In Article 19 paragraph (11 point a) and Article 44 of the Constitution of the ITU which are limited in nature so that they must be used efficiently, rationally and economically, the Papers Satellites proposed by countries will actually be able to reduce the optimization in utilization and are very strategic for placing satellites in the GSO. There are two legal impacts of privatization of Indosat, first Indonesia has lost a slot in GSO. Second, according to the Liability Convention 1972 and Registration Convention 1972, Indonesia has responsibility for a damage caused by the satellite because Indonesia is the registering State. As a solution The Indonesian government can make a policy that requires the origin country where the Indosat shareholder company to take responsibility.

Keywords. GSO, Indosat, State Responsibility, Space law

INTRODUCTION

Today, space commercialization is occurring in many areas including, space transportation system power plant, insurance, mining, space tourism, remote sensing and communication.[1] As known, the communication satellite organizing system utilizes *Geostationary Orbit* (thereafter called GSO).[2] GSO is a ring-shaped orbit approximately 35.786 from earth surface and having 42.146 km radius.[3] Orbit is very unique because a space object like the space laboratory satellites put onto GSO are as if motionless to earth surface.[4]

The principle of *first come first served* has brought competition circumstance in and led to the birth of *technological appropriation* in space activities. It results in the quarrel between developed countries, particularly United States of

America and Soviet Union, and equator countries and other developing countries. Equator states want a regulation not harmful to their position in the attempt of utilizing GSO resource. From the beginning, the equator states have tried to fight for the fairer placement of GOS as mentioned in the Declaration of Bogota in 1976.[5]

GSO mastery issue is an old one that will be getting more urgent along with the rampant privatization and commercialization in space activities. An idea related to the potential benefit of commercial space activities, when the states around the equator are given *sovereign rights* over GSO territory, will encourage the states to do renegotiation.[6]

Satellites have an important role in Indonesia as an archipelagic state. Indonesia is consisting of 17,508 large and small islands with a population of more than 200 million. Therefore, the utilization of GSO is particularly closely related to the support of telecommunication development. Indonesia's interest can be realized, among others, through GSO utilization, as optimally as possible to support the national development.[7]

In 1996, Indonesia collaborate with China has launched "Palapa D" satellite, on slot 113° East Longitude in GSO. The slot on GSO is very strategic to telecommunication development in Indonesia. Initially, Palapa D satellite was managed by PT. Indosat at that time still being a State-Owned Enterprise. In 2002, Indonesian government under Megawati Soekarno Putri's leadership sold 41.94% of Indosat's share to a Singapore Tehnologies Telemedia (STT) company coming from Singapore, then in 2008, STT sold all the shares to Qatar Telecom coming from Qatar (now called Ooredoo). Indosat's share ownership is now divided into 65% belonging to Ooredoo, 14.3% to Republic of Indonesia, 5.42% to US Skagen, and 15.29% to the public. The rumor of Indosat's share buyback arose at the presidential debate campaign on June 22nd, 2014. At that time, Joko Widodo stated that if he is elected to be the President of Indonesia, he will buyback the Indosat's share. The issue of buying back Indosat shares appears again in presidential election campaign in 2019. But up to 2021 there has been no attempt taken by Indonesian government to buyback PT. Indosat.

The divestment of the sale of Indosat shares is very unfortunate because it affects Indonesia legally, economically, and politically. Indonesia has successfully gotten slot 113° East Longitude in GSO; this is very important to communication development but it was detached easily. Indonesia as if has sold its sovereignty over the slot it has had. Viewed from the perspective of space law, this problem will result in legal consequence related to the responsibility of the state launching the satellite. Therefore, this article explores the following research questions first, what is the urgency of satellite placement in GSO for Indonesia and second, what is the legal consequence of PT. Indosat's divestment in space law perspective?

METHOD

This study was a doctrinal research conducted using statute, analytical, and case approaches. Data source used was secondary data which consisting of journals and books. The secondary data was analyzed qualitatively.[8]

RESULT AND DISCUSSION

The Urgency of Satellite Placement in GSO for Indonesia

Geostationary Orbit (hereafter called GSO) is a very potential track for placing the satellite, particularly communication satellite. GSO is a ring-shaped orbit located between six earth radiants on the equator, at 35,786 km altitude.[9] With its specific natural characteristics, GSO has some certain advantage: that satellite and other space objects put onto GSO seem to be stationary when seen from the earth surface, as it rotating period is nearly as same as the earth's.[10] The strength of GSO is that if a satellite is put onto the track, in addition to immobile, even the 17o-wide communication satellite can cover a third of earth area. Technically, GSO is a limited natural resource because it can be occupied by limited number of space objects; thus, if it is utilized and placed in such a way that surpassing its supportability, it will be saturated. [11]

GSO is an efficient, stationary, and economic slot to place communication satellite. GSO is more flexible than the marine fiber optic cable and can cover a broad area, while terrestrial communication system through earth surface is vulnerable to the effect of earth environment such as earthquake, electric storm, landslide, volcanic explosion, sea wave, flood, sabotage, etc. Satellite communication system put on GSO track is free of those negative effects.

International legal principle applying to space area is *res communis* meaning a region may not subjected to a state's

sovereignty until it belongs to Common Heritage of Mankind. Juridically, GSO utilization by some states recently builds on the principles of provision contained in Article II of *Space Treaty* 1967. The article states that space, including GSO, may not be an object of national ownership with the sovereignty claim over the object, but in fact it is as if the developed countries that have the tract. Developed countries implements the principle *first come first served* profitable to those with high technology.[12]

The struggle has been attempted by Indonesia and equator states to utilize GSO since 1976 and eventually, the Legal Sub Committee Meeting UNCOPUOS in Geneva has successfully included Working Paper No. A/AC .105/C.2/L.147 into a session held on March 29th, 1984. This working paper contains the principle to be complied with by states. The principles proposed are as follows: [13]

The regulation on technical aspect of GSO use is discussed and issued by ITU. ITU convention in 1973 released the provision related to GSO, as follows:

a. Because GSO is limited natural resource, it should be used economically and efficiently.
b. The equitable use should be adjusted with the need and the technical facilities it has.

Referring to point b, the implementation of principle *first come first served* is profitable only to the states with scientific and technological abilities.

Indonesia is a big market to GSO satellite service provider. Its geographical archipelagic condition and its location on equator make Indonesians dependent on GSO satellite technology for telecommunication need, from internet service to banking transaction. This large need cannot be fulfilled completely by domestic companies like Telkom, PSN, BRISAT and Indosat. Even, most of Indonesian national needs are fulfilled by foreign satellites. Figure 7 shows that the five Indonesia-owned GSO satellite can just fulfill 70% of national Fixed Satellite Service need, while the rest of 30% is fulfilled by 37 foreign GSO satellites.

in 1977, Bogota Declaration was firstly announced and fought for by equatorial countries. The declaration asserts the claim against GSO over territorial area of equator states consisting of Brazil, Columbia, Ecuador, Kenya, Zaire and Indonesia. Those states indict the utilization of GSO still building on the doctrine *first come first served* leading to the discrepancy between developing and developed countries. However, the developed country groups, particularly United States of America always emphasizes on the efficiency of GSO use as the priority to be achieved in problem solving and avoiding a legal resolution.[14]

In UNISPACE II Meeting in 1982 in Vienna and ITU meeting in Nairobi, the Article 33 clause 2 of ITU Convention was revoked and changed into, among other: …." ... *all countries have equal access for space radio communication services and position in the GSO* " With the new formulation, all states get equal opportunity or access to GSO use.[5] In the next meeting in UN and ITU, an international consensus was achieved, that every state is given the right of 1 slot (with certain frequency) regardless their capability and need. The relationship between GSO location and frequency spectrum use is emphasized on, because GSO is a limited natural resource, the use of which is based on equitable principle.[15] In fact, the easy and efficient frequency (6/4 GHz and 8/7 GHz) has been distributed (used up) completely (Indonesia is still lucky, because PALAPA A, B, and C satellites have gotten it first since 1975). The slot given evenly is only for the frequency of 80/70 GHz and higher, constituting the difficult and complicated one requiring high technology that will likely be mastered in the next 50 years.

Indonesia's struggle in international forum still on going today. Indonesia still attempt to get *sui generis regime* status for GSO, meaning that it is regulated specifically as preservation right in international law. The recognition of GSO as a limited natural resource should consider the interests of the states below. In this context, the application of sovereign right in Exclusive Economic Zone in the law of the sea can be applied.[16]

The regulation of GSO use has been discusse in two international forums: International Telecommunication Union (ITU) and United Nations Committee on Peaceful Uses of Outer Space (UNCOPUOS). Technical regulation of GSO use has been discussed and released by ITU and it has always been updated along with the telecommunication technology progress and the states' demand, to accommodate the interest of all states using and providing telecommunication service. ITU Convention of 1973 contains the provisions of ITU related to GSO including, among others: (a) GSO is a limited natural resource that should be used economically and efficiently, and (b) the equitable use is adjusted with the need and the technical facilities it has. The principle first come first served applying to GSO use leads to the competitive situation among the states and makes the developing states, particularly the equator ones feel more harmed.

Actually, Indonesian national interest is as mentioned in the Preamble of 1945 Constitution. Particularly the use of GSO is closely related to the support to communication via satellite for Indonesian interest.

Regarding this, the basic national interests needing to be defended and fought for by Indonesians are, among others, (1) the protection of Indonesians and the integrity of Republic of Indonesia national territory in facing any challenges, threats, obstacles, and disruption coming from either inside or outside, (i) the creation and the maintenance of national stability, and the establishment regional and international stabilities for the sake of the successful further Indonesian national development, and (iii) the maintenance of world orderliness based on eternal independence and peace, and social justice. Indonesian interests can be realized, among others, through using GSO, by utilizing the product of science and technology advance and GSO potency as optimally as possible to support the national development.

The use of GSO satellite still faces some challenges, either administratively or due to urgent need for global communication. The location of GSO satellite has been determined by ITU. The point needing consideration is related to the limitation of at least 225 kilometer considered as the safe distance to avoid signal interference. Up to 2019, Indonesia has had 9 communication satellite. The list of satellites owned by Indonesia includes Palapa A1, Palapa A2, Palapa B1, Palapa B2, Palapa B2P, Palapa B2R, palapa B4, Palapa C1, Palapa C2, indostar I, telkom I, Garuda 1, Telkom 2, INASAT, LAPAN TUBSAT, Indostar, Satelit Palapa D and Telkom 3.

GSO over Indonesian territory is valuable viewed from economic, cultural, strategic, safety, defense, and educational aspects, and the future of Indonesian national development. As a limited natural resource, frequency has the following characteristics: cannot be produced by human, cannot be utilized without coordination with international organization . GSO is also potential to be used for other utilities; therefore Indonesian will possibly utilize GSO for the utilities beyond the application areas aforementioned. With the condition and status of multipurpose GSO utilization, GSO has been a very vital area of Indonesian interests.

Rethinking to buy back Indosat shares by Indonesia in Space Law perspective

As aforementioned, GSO is a very strategic orbit to place satellite and a limited natural resource located on equator only. One of satellites placed on GSO is Palapa D satellite located on slot 113° East Longitude managed by Indosat. Slot is the base point of frequency where Indosat satellite has position on GSO and has value, viewed from economic, cultural, strategic, safety, defense, and educational aspects, and the future of Indonesian national development.

The national absolute access to a satellite system like Indosat will be able to improve human resource through national education and development, because the need for skilled and trained workers will be better to be filled in by Indonesians. The utilization of GSO satellites as communication media originally, particularly in Indonesia consisting of many islands, in fact is beneficial more broadly. The use of GSO satellite give benefits commercially, through providing cheaper, efficient, and effective communication.

Initialy, Palapa D satellite was managed by PT. Indosat at time still being a State-Owned Enterprise. In 2002, Indonesian government under Megawati Soekarno Putri's leadership sold 41.94% of Indosat's share to a Singapore Tehnologies Telemedia (STT) company coming from Singapore, then in 2008, STT sold all the shares to Qatar Telecom (now called Oredoo). Indosat's share ownership is now divided into 65% belonging to Ooredoo, 14.3% to Republic of Indonesia, 5.42% to US Skagen, and 15.29% to the public. The rumor of Indosat's share buyback arose at the presidential debate campaign on June 22nd, 2014. At that time, Jokowi stated that if he is elected to be the President of Indonesia, he will buyback the Indosat's share. On the other hand, the President Director of PT Telekomunikasi Indonesia Tbk, Arief Yahya, said that there is no longer urgency to buy back the shares of PT Indosat Tbk, because Telkom has had telecommunication facilities and infrastructure.

Indonesia's Government under President Jokowi has not contacted Oredoo Group yet per December 2015 concerning the buyback of PT. Indosat Tbk (ISAT). The Qatar-based company instead signaled the increase of its investment in Indonesia. CEO of Ooredoo Group, Nasser Marafih, stated that there is no discussion with Indonesian government concerning the buyback of 65% of Indosat shares mastered by Oredoo since 2008.

Indosat privatization case can be viewed from the aspects of economic and space laws. From economic law aspect, see first the preamble of 1945's Constitution stating that the objective of Indonesians are "….to improve public welfare, to educate the life of the people and to participate toward the establishment of a world order …." In performing the economic activities and utilizing its natural resource, Indonesia has Article 33 of UUD 1945 as its legal foundation. The Article 33 of UUD 1945 also implies that the state should maintain what it contains, including safety, economic resilience, and state's wealth from the mastery by certain groups or individuals, and should mastery the important production branches including public facilities, the utilization of which is intended to the people's interest and welfare.

Based on Article 33 clause 2 and 3, Indonesia should remain to use the state's right to control over PT. Indosat. It is because Indosat is the manager of satellite located on GSO slot. Originally, on the slot we have had very strategic place and frequency to telecommunication development in Indonesia. Indosat is a business sector still becoming public interest and very strategic. It is confirmed, among others, in some legal products: (1) the Explanation of Article 4 clause (1) of Law No. 36/1999 about Telecommunication stating that: "Recalling that telecommunication is one of important and strategic production branches in national life, the mastery of it is held by the state that in its organization is intended to the people's interest and prosperity as maximally as possible"; (2) Article 6 of Law No. 1/1967 about foreign investment stating that: telecommunication is a business sector closed to foreign investment as it is an area important to the state and dominates the lives of many people."

The divestment of 41.9% shares of PT. Indosat Tbk leads to the potential loss to Indonesia because the price of share is far below the strategic value of PT Indosat Tbk. Meanwhile, the strategic values of PT Indosat Tbk lie on, among others: (Kurniasih, 2007).

a. Indosat is the holder of cellular GSM frequency license for a total of 15 Mhz frequency, the best one compared with 12.5 Mhz held by Telkomsel and Exelcom.
b. License owned by Indosat Group includes cellular, local phone, distant connection phone, international connection phone (SLI) 001 and 008, satellite, Network Access Point Internet, 2 pieces of VOIP, cable TV and multimedia;
c. Indosat's customers consist of: (1) 3.1 million customers of Satelindo cellular; (2) 500,000 customers of IM-3, (3) 100% of SLI 001 (Indosat) and 008 (Satelindo) customers; (4) Customers of Lintasarta, IM2 involving data communication, internet, multimedia, 75% of Indonesian banking, 30,000 customers of IM2 internet, 300 customers of IM2 cable TV.
d. Technological device: (1) 4 (four) central technological gates, (2) 2 (two) international marine cable stations, (3) 5 (five) satellite earth stations, (4) Palapa satellite (for domestic purposes), and Intelsat & Inmarsat (for international purpose).

This privatization of Indosat also breaks the Law No. 36/1999 about Telecommunication. In the General Explanation of Telecommunication Law, it has been mentioned that: "…. Any thing pertaining to the utilization of radio frequency spectrum and satellite orbit constituting the limited natural resource is mastered by the State". The privatization of Indosat leads to the switch of controller shareholder status from Indonesian government to STT, so that the implementation of divestment is not in line with the principle and spirit mentioned in Telecommunication Law. Article 3 of Telecommunication Law states that "Telecommunication is organized with an objective to support the national unity and integrity, to improve the people's welfare and prosperity justly and evenly, to support economic life and governmental activity, and to improve the inter-state relation".

Indonesia should implement the state's right to master over PT. Indosat because telecommunication satellite is very vital to telecommunication development in Indonesia recently. The State's Right to Master, according to Aminudin Ilmar, is defined as: … the State's right to master (mastery) should not involve the state as the direct organizer of corresponding production branches by establishing state enterprise but it can be implemented through developing regulation or economic policy, aiming primarily to secure the interests of the state and many people. In other words, the State's right to master is not in the sense of owning the branches of production important to the state and dominating the lives of many people, but limited to an authority of organizing the branches of production for the sake of many people's welfare.[17]

Viewed from the aspect of space law, the sale of PT Indosat share affects Indonesia legally. Some attempts have been taken to fight for GSO use since 1973 and Indonesia has successfully gotten and managed slot 113° East Longitude on GSO but the government detached it easily. The sale of Indosat share can be interpreted into Indonesia that has sold its sovereignty over the slot it has had because satellite can be equated with Indonesia's territory where Indonesia is sovereign on GSO. (Abdurasyid, 2003). So, the transfer of 41.94% shares implies that we have given Indonesia's territory to foreigners and the sovereignty right is shared with Singapore. Now the sovereignty is shared with Qatar having 65% of shares. The existence of Indosat is intended to strengthen big data system.

Considering Article II of *Convention on International Liability for Damage Caused by Space Object* (*Liability Convention*) 1972, the launcher state is accountable for paying compensation to the damage resulting from its space object. Indonesia has ratified *Liability Convention* 1972 with Presidential Decree (thereafter called Kepres) No 20 of 1996. International instrument related to the State's responsibility generated by the space object is the *Registration Convention 1975* that been ratified through Presidential Decree No.5 of 1997. So, if other states suffer from some losses due to Palapa satellite now managed by Indosat Ooredoo in which most of its shares are owned by foreigners,

Indonesia remains to be responsible to the third party for the damage or loss due to Palapa satellite as it has been registered as the states registering Palapa D satellite in UN's secretariat. So, although Qatar has had 65 percents of PT Indosat, if there is a claim generating some losses in other states, Indonesia will be indicted as the owner, because Indonesia as the launching and the register State.

The space activities have been governed in space law conventions among others: *the Outer Space Treaty of 1967*, *the Space Liability Convention of 1972*, and *the Registration Convention of 1975*. Indonesian government has ratified the conventions as the manifestation of goodwill for the state responsibility related to its space activities , particularly in the context of Palapa Satellite operation.

Ratification is defined as Indonesian Government's readiness to be responsible to the third State for any damages and loses generated by Indonesian corporate, either state-owned enterprises or private, in relation to the *satellite* operation. The satellite operation has very broad coverage, from the launching of satellite to the orbit to the death of satellite being the space waste. It means that Indonesian Government potentially pays compensation if the component of satellite falls down or damages other active satellite or even space station.

The President Director of Telkom's argument stating that Indonesian government unnecessarily buys back PT Indosat currently as PT Telkom as mastered all cellular technologies is not fully true. This abandonment of *status* quo is potentially more harmful to the State. The ownership of 65% of Indosat shares by Ooredoo Asia Pte. Ltd. ("Oredoo") implies that Ooredoo has effective control over Indosat management. As the holder of majority share, any business development plans and important decision of the company should get Ooredoo's approval. Ooredoo should also be accountable, at least as same as its share ownership portion for Indosat that generates loss in the third party.

This opinion cannot be applied easily in discussing Indosat's responsibility for its satellite operation. Indosat formerly established as Indonesian corporate is not the operator of Palapa D Satellite. The launching of satellite was *conducted* in 2009 from Xichang Satellite Launch Center, China. Considering this fact, Indonesia as the state of registry and China as the launching state are the ones that will be accountable for the potential loss to the third party. It is noteworthy that responsibility is on the state's shoulder, so that the payment of compensation is done between governments. National law determines how the governmental mechanism is to withdraw fund from its national companies generating the loss.

The status of Indosat as a public company with 20% of shares owned by the public complicates the shareholder's responsibility. Without the existing of legal instrument, the chance to escape from responsibility is opened widely if Indosat should pay compensation. Indonesian government should immediately develop the rule of law, so that law can function as the regulator instrument or the media of development to fill in legal vacuum. The ownership of PT Indosat's shares by foreigners also endangers the state's safety and defense because other states can easily monitor all communications, banking transactions, and state's secrets.

CONCLUSION

The utilization of GSO is very important to Indonesia to support the development in telecommunication sector. Indonesia is currently fighting for the legal status of GSO as *sui generis* in international forum. The states which have gotten slot on GSO tend to maintain and view it as its jurisdictional expansion. Viewed from the aspect of space law, the privatization of Indosat leading to the management of Palapa D by foreigners implies that Indonesia has sold its sovereignty over GSO slot. Indonesia remains to be responsible to other parties for any damages or losses caused by Palapa D satellite as it has been registered as the state of registry in UN's Secretariat based on *Liability Convention 1972* and *Registration Convention 1975*.

REFERENCES

1. Zhao, Y. & Zhao, Y. Space Commercialization and the Development of Space Law. *Oxford Res. Encycl. Planet. Sci.* 1–21 (2018) doi:10.1093/acrefore/9780190647926.013.42.
2. Alfathimy, D. H. A., Sudjatmiko, T. & Susilawati, E. Ketimpangan Pemanfaatan Orbit Geostasioner (GSO) dalam Lingkungan Sistem Dunia. *Intermestic J. Int. Stud.* **4**, 88 (2019).
3. Finch, M. J. Limited Space : Allocating the Geostationary Orbit Limited Space : Allocating the. **7**, (1986).
4. Rudy, T. M. *Hukum Internasional Bagian 2*. (Refika Aditama, 2002).

5. Pramono, A. Orbit Geostasioner (GSO) dalam Hukum Internasional dan Kepentingan Nasional Indonesia. *Pandecta J. Penelit. Ilmu Huk. (Research Law Journal)* **6**, (2013).
6. Hukum, F., Airlangga, U., Indonesia, P. & Antariksa, H. Indonesia dalam Persimpangan Hukum Antariksa : Posisi Indonesia dalam Pengaturan GSO di Era Privatisasi Aktivitas Keantariksaan. 187–194 (1977).
7. Yuniarti, D. Studi Perkembangan dan Kondisi Satelit Indonesia The Study of Development and Condition of Indonesian Satellites. *Bul. Pos dan Telekomun.* **11**, 121–136 (2013).
8. Marzuki, P. M. *Penelitian Hukum*. (Kencana, 2005).
9. Wiessner, S. The Public Order of the Geostationary Orbit : Blueprints for the Future. *Yale J. World Public Order* **9**, (1983).
10. Mauna, B. *Hukum Internasional, Pengertian, Peranan dan Fungsi Dalam Era Dinamika Global*. (Alumni, 2005).
11. Kusumaningtyas, M. R. Geostationary Orbit (GSO) dalam Perspektif Hubungan Utara-Selatan . *Pros. Semin. Nas. Kebijak. Penerbangan dan Antariksa III (Sinas KPA-III) 2018* 195–203 (2020) doi:10.30536/p.sinaskpa.iii.14.
12. Collis, C. The geostationary orbit: A critical legal geography of space's most valuable real estate. *Down to Earth Satell. Technol. Ind. Cult.* 61–81 (2012) doi:10.36019/9780813553337-005.
13. Law, I. Geostationary Orbit: Legal, Technical and Political Issues Surrounding Its Use in World Telecommunications. *Case West. Reserve J. Int. Law* **16**, (1984).
14. Sumarji, J. *Hukum Ruang Angkasa (Suatu Pengantar*. (Pradnya Paramita, 1996).
15. Engleman, H. & Traa, .L. Van. *Commercial Utilization of Outer Space : Law and Practice*. (Martinus Nijhoff, 1993).
16. Arafah, A. R. Souvereign Right of GSO. *Indones. Law Rev.* **2**, 121 (2012).
17. Ilmar, A. *Hak Menguasai Negara Dalam Privatisasi BUMN*. (Kencana, 2005).

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