NUCLEAR ASSURANCE AND THE MONITORING THE OUTER SPACE

Andreea Emilia DUTA[1]

ABSTRACT:
STRATEGIC STABILITY HAS TWO DIMENSIONS: STABILITY THROUGH THE BALANCE OF ARMS RACE AND CRISIS STABILITY, IN AN ENVIRONMENT CHARACTERIZED BY A HIGH LEVEL OF DISTRUST AND HOSTILITY. NUCLEAR GUARANTEE IS A FORM OF ASSURANCE IN INTERNATIONAL RELATIONS, CUSTOMIZED ACCORDING TO THE CONTEXT IN WHICH THE PROVISION MUST WORK. ASSURANCE APPEARS IN TWO FORMS - ASSURANCE/POSITIVE GUARANTEE AND NEGATIVE ASSURANCE. THE ASIA-PACIFIC REGION BECOMES A STRATEGIC ENVIRONMENT OF POWER CHANGE AND UNCERTAINTY.
IN THE CASE OF SOUTH KOREA IS GOING TO DEVELOP ITS OWN INDIGENOUS NUCLEAR ARSENAL, JAPAN WILL PROCEED IN A SIMILAR MANNER, BEING LIKELY THAT AUSTRALIA SHOULD DO THE SAME.
APART FROM THE AMERICAN AND RUSSIAN ACTIVITIES IN SPACE, OVER 60 STATES NATIONAL CONSORTIUMS, COMMERCIAL BODIES AND ACADEMICAL INSTITUTION HAVE MANY ACTIVITIES IN SPACE. THE SPACE FRAGMENTS ISSUE HAS SERIOUS CONSEQUENCES UPON THE MILITARY AND INTELLIGENCE SATELLITES SYSTEMS; THE PROBABILITY OF A CATASTROPHICALLY COLLISION - ACCIDENTAL OR INTENDED - BEING GREAT

KEYWORDS*:* STRATEGIC STABILITY, NUCLEAR GUARANTEE, THE SPACE FREAGMENTS, CATASTROPHICALLY COLLISION

THE CREDIBILITY FACTOR OF THE NUCLEAR ASSURANCE

According to some opinions, strategic stability has two dimensions: stability through the balance of arms race and crisis stability, in an environment characterized by a high level of distrust and hostility.[2] There have been produced tens of thousands of warheads, in a competition between the two superpowers to overcome each other through the same strategy of arming.[3]

[1] Andreea Emilia DUȚĂ attends the Bucharest University and actually is engaged a study program within ”A.S. Puskin” Institute, Moscow. Email: deea.emilia@ymail.com
[2] See, Russett, *The prisoners of insecurity* (San Francisco: Freeman, 1983).
[3] The credibility of the U.S. policy of giving nuclear assurances to its allies was intended to support a growing dominance. Concerns about the stability of crisis were similar to concerns about the stability of arms race: there were tens of thousands of warheads at one time; it was particularly important to make sure that the scale of enlargement should be under strict control. Specific crises, such as the Cuban missile crisis, reinforced this idea. See, Jefrey W. Knopf, ed., *Security assurances and nuclear non-proliferation* (Stanford, CA: Stanford University Press, 2012), 9.

Strategic stability built on nuclear arsenals with long-range action transport vectors becomes the major component of the international policy. The size of a nuclear arsenal that would provide a deterrent function that is to provide a "deep noise" specific to nuclear strategies needed to be taken into account. We appreciate that one cannot speak of an arsenal which sustains deterrence without a minimum number of 50 warheads; under this limit there is a risk that a possible opponent should be tempted to run a preemptive attack.

In the literature of the field, they point out that U.S. offer extended nuclear guarantees for "nearly 40" countries around the world, mainly in Europe, East Asia and the Middle East.[4]

Nuclear guarantee is a form of assurance in international relations, customized according to the context in which the provision must work. Assurance appears in two forms.

Assurance/positive guarantee derives from the specific commitments that a country takes in relationship with another; regarding its behavior under certain circumstances - provide guarantees through a specific behavior. U.S. agrees to take nuclear risks on behalf of their friends and allies. As a general rule, this form of assurance/guarantee can be as strong as the alliance, and it is considered to be reliable. The reliability of the Alliance - which represents the extent to which the allies carry out their commitments within the alliance, in fact their alliance - in general, function at about 75 percent of the specific promises of alliances, but only at about 27 percent if the unclear text is ignored.[5]

But the basic principle of the concept should be restricted to the relationship between the state that assures and the assured one. The assured group hopes to see in the assures, a state which is naturally a creator of agenda and its strategic priorities are stated - a factor which takes seriously the fundamental strategic issues of a protected state. Nuclear positive assurance is faced with a series of special challenges, namely, nuclear security is a bigger problem than conventional assurance, since special circumstances increase the need for specific arrangements.[6]

Negative assurance is derived from the specific commitments that the country offers to possible opponents regarding issues that it will not do - offers guarantees through a non-specific behavior, if I may say so.[7] Nuclear assurance relations are a complex strategic mechanism with well-defined ratio-nuclear weapons isn't the kind of object that A gives to B just to make B feel strong as owner of such weapons. The relationship of strategic nuclear policy does not require the removal of nuclear weapons from the superpower armory to the

[4] A definitive list of those countries was not published by Washington; largely, it is believed that this would be useless in U.S. diplomatic relations and, perhaps, even regarding the relationships between neighbors in various regions of the world. It is quite simple to conclude that most guaranteed countries fit into the NATO Alliance, and an increase in the current format of NATO's 28 member states was obviously a key factor in increasing the total amount to "nearly 40".*Nuclear deterrence and nuclear assurance in the NATO area* (WP1101), 12–15 June 2011, http://www.wiltonpark.org.uk/wp-content/uploads/WP1101-Report.pdf, 2. (Accessed at 7 December 2014).

[5] However, there is no adequate research on the strength of these specific commitments that could bear extremely high costs-the typical scenario in case of extensive nuclear assurance. No nuclear power has ever directly used nuclear weapons in response to an attack on an ally, and neither has it suffered nuclear retaliation in consequence of such use, so the evidence is alarmingly (some would say luckily) little. See, Brett Ashley Leeds, Andrew G. Long and Sara McLaughlin Mitchell, 'Re-evaluating alliance reliability: specific threats, specific promises', *Journal of Conflict Resolution* 44: 5, 2000, 686–99.

[6] Extended nuclear assurance faces a terrible problem: "How to give confidence to future members of an alliance when nuclear energy had, for various reasons, not to focus in their hands, but mostly in the hands of the last member, from the other side of the ocean." This means that nuclear assurance must be "extended" to the latest allies that find themselves near a threat more aggressive than from the part of the U.S., and latest allies must rely on assurance/guarantee in difficult situations. The test to assure/nuclear guarantee is not whether it is credible in strategic peaceful times but whether it is credible in strategic hard times. See, Tanya Ogilvie-White, ed., *On nuclear deterrence: the correspondence of Sir Michael Quinlan* (London: Routledge, 2011), 169.

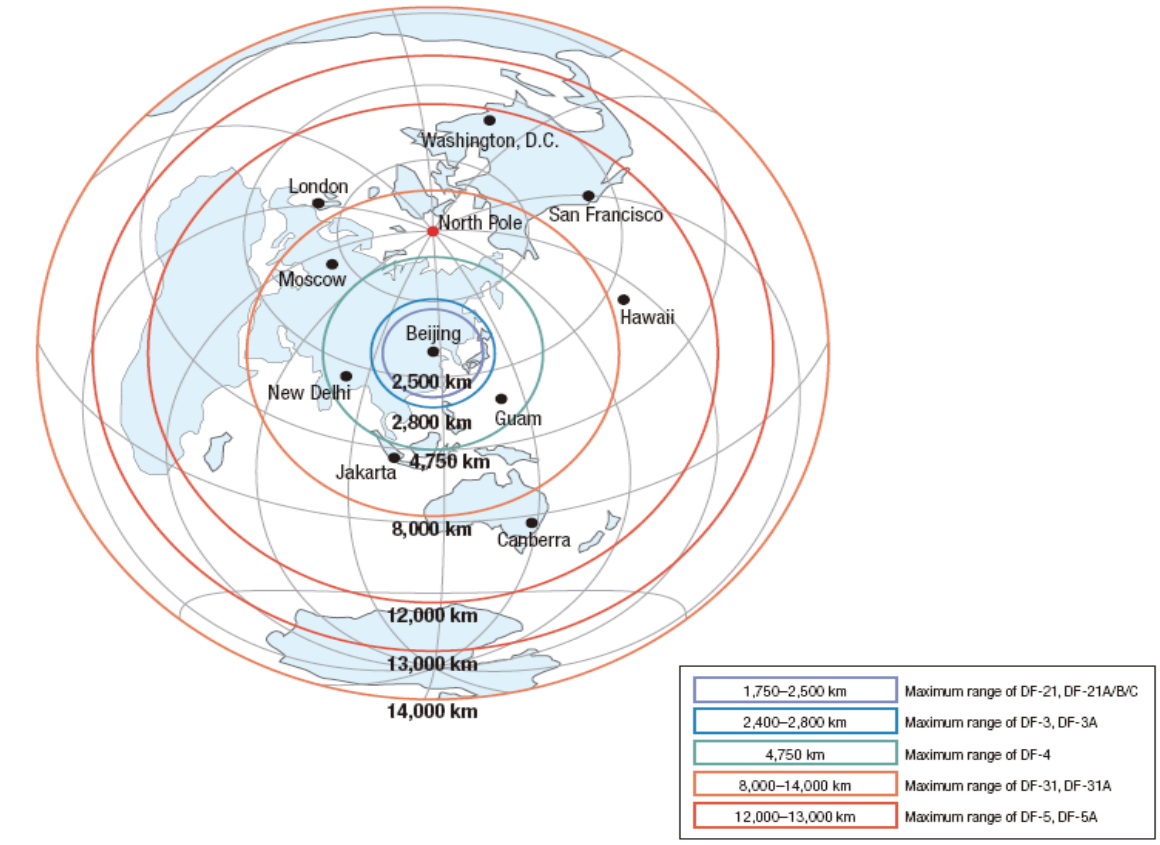
[7]According to the *Nuclear Posture Review*, for example, U.S. is committed not to respond in case of use of chemical weapons and not to resort to nuclear weapons.

assured nation endowment. The decision to use these weapons still belongs to A and the assured nation has assured privileges but not such as the fact that nuclear weapons may be used in any occasion, but only in well-defined cases of major nuclear threat.

From the point of view of relations between states, the credibility factor of the nuclear assurance is strongly dependent on the quantification of nuclear deterrence or nuclear-conventional combination, which relates to developments in the global security environment and regional levels. According to some opinions, extensive nuclear assurance equals nuclear capabilities multiplied by the will of resorting to extended nuclear use where both variables are perceived by an ally.[8] Thus, we can reduce the extended nuclear assurance concept to the field of nuclear deterrence, but certain nuances call for certain reservations in respect of the reductionist perspective.

Nuclear assurance must be adapted to changes in the strategic environment; the continuous increase in the number of nuclear powers and nuclear warheads in Asia is already a reality that cannot be ignored. Therefore, it requires a much more substantial attention and what is happening in Europe has become less important.

From a general continental perspective, Asia does not share a common strategic vision of its future, being a sum of different policies and doctrines of the purposes and roles of nuclear weapons (Picture no. 1).



Note: The above image shows a simplified indication of the potential reach of each type of missile taking Beijing as a central point.

Picture no. 1 – The radii of the impact of China's ballistic missile[9]

[8] If Denis Healey was right when he stated in the 1960s, that it takes only 5% possibilities so that the nuclear threats become credible so as to deter an adversary, and 95% possibilities to be credible to assure an ally, assurance is about 19 times (95 divided by 5) more difficult to achieve than deterrence. So far, math makes no sense, extended nuclear assurance is in fact extended nuclear deterrence divided by 19. See, Ian Clark, "China and the United States: A Succession of Hegemonies?" *International Affairs*, Vol. 87, No. 1, 2011, pp. 13-28.

[9] See *Defence of Japan Digest 2014*, 37.

If in the Euro-Atlantic area we are seeking ways to reduce the number of nuclear weapons - strategic and non-strategic; Asian states' policies ignore the goal of setting an as low as possible limit regarding nuclear weapons. We can speak of a strategic stability in the Asian region, built on deterrence and nuclear asymmetries - key to the strategic equation. Asian nuclear arsenals dimensions do not allow significant decreases. [10]

The phenomenon of nuclear disarmament develops under the doctrine of key countries in the region which give an important role to nuclear weapons so that the future equations of the balance of power in Asia will suffer influences from the part of the nuclear superpowers.

Currently there is a tendency to develop capabilities of secure second hits, which grounds the ratio of deterrence between superpowers, but the differences of shades become obscure when the criteria for extended nuclear deterrence and extended nuclear assurance are enunciated. Mutual assured destruction is becoming a common technology but in fact this reality does not ensure a carefree strategic stability.[11]

The size, the structure and the protection of nuclear arsenals against a preemptive attack outlines the strategic stability and shapes doctrinal and foreign policy postulates. They define the political messages addressed to both allies and to potential adversaries.

First of all, strategic stability has become the label of power balance between U.S. and Russia.

Secondly, the strategic stability refers to the balance of power on the European continent.

Thirdly, Asia is becoming a continent that is beginning to become increasingly interesting, more from the perspective of strategic stability, because of the post-war conflicts and crises, most of them becoming intense.

The nuclear arsenals of the two superpowers have secured a certain strategic stability in the Asian region, in conditions of competition and sometimes dealing with controversial issues.[12]

The Asian issue can be analyzed from the perspective of post-Cold War Europe. Asia is multipolar and asymmetrical, while Europe was bipolar and symmetric.[13] From the cultural point of view, Asia is different from the U.S., whereas Europe was culturally similar.[14] Because US-China relations are also "competitive", America's Asian allies are preoccupied by the prospect of a G2 that sets aside their interests. The patterns of coercion in Asia are unusual - and they involve not only military threats but also economic pressures.

The geopolitical structure of alliances in Asia is different; NATO unites most of Europe into a single block, while separate bilateral and distinct alliances that characterize American commitments in Asia seem to move towards a more fragile structure. Another important difference of the American developments in the Asia-Pacific region in contrast

[10] See Rory Medcalf and Fiona Cunningham, eds, *Disarming doubt: the future of extended nuclear deterrence in East Asia*, (Sydney: Lowy Institute for International Policy, 2012), 118.

[11] During the Cold War, the strategic stability was a success. See, David S. Yost, 'Strategic stability in the Cold War: lessons for continuing challenges', *Proliferation Papers*, no.36 (Paris: Institut Français des Relations Internationales Security Studies Centre, 2011).

[12] "If strategic stability means simply avoiding a major power war, it is doubtful whether any model generally based on the properties of the force structure of the potential antagonists can provide cogent perspectives." See Yost, *Strategic stability in the Cold War*, 35.

[13] This leads to a region full of games which theorist Thomas Schelling which would call "games with mixed causes." Mixed causes games are difficult to be represented on the map, indeed; they are characterized by "poor partnerships and incomplete antagonisms." Thomas Schelling, *The strategy of conflict* (Cambridge, MA: Harvard University Press, 1960), 15.

[14] Asia is marked by a "competitive" strategic environment-a mix of cooperation and competition. See, Rod Lyon, *Strategic contours: the rise of Asia and Australian strategic policy* (Canberra: Australian Strategic Policy Institute, July 2012).

with the European region is that the East Asian model is "based on expansion capabilities over a specific period of time, rather than on remote deployed systems"[15], that is the U.S. nuclear forces are deployed on the U.S. territories in the Asia-Pacific region and they are not stationed on the territory of allies and partners. We may not exclude future deployment.

As to the deterrent military structures, no one in Asia wants a massive American nuclear presence.

Secondly, the structure of deployed nuclear forces and the requirements of extensive nuclear deterrence raise a series of questions which are difficult to answer to, because of the successive reductions of nuclear warheads in the U.S. since the 1990s. It is to be noted that Washington's allies in Asia have forced reassertion of extensive nuclear assurance rather than the extended nuclear deterrence, but it would be wrong to believe that U.S. allies in Asia are seeking declaratory reaffirmation and they are not interested in the size and configuration of the U.S. arsenal.[16]

Nuclear deterrence of American extended nuclear forces in the Asia-Pacific region is justified through more serious developments: North Korea's nuclear testing,[17] the increase of Chinese conventional forces, the change of nuclear balance against South Korea. Japan estimates that it will become the weakest of the four great players (USA, China, India and Japan), but the only Asian power that does not have an indigenous nuclear arsenal.[18]

The Asia-Pacific region becomes a strategic environment of power change and uncertainty, thus raising the question referring to which option is the best: providing extended nuclear assurance or extended nuclear deterrence? If South Korea is going to develop its own indigenous nuclear arsenal, Japan will proceed in a similar manner, being likely that Australia should do the same.

Deterrence still plays a major role in the Asia-Pacific area, but it should not be the main pillar of the U.S.-China relations, as China is not Russia.

From the perspective of several American theorists, the future profile of nuclear weapons is uncertain. Nuclear warheads survive on "prolonging life" nuclear programs and transportation vectors appear to be out-of-date with limited prospects of modernization,[19] and the range tactic arsenal has been substantially reduced in compliance with INF (1987).[20]

The U.S. commitments to reduce the strategic triad will collide with its nuclear commitments. In the case of reductions to the level of 1,000 nuclear warheads strategically deployed, the support of reliability in almost 40 nuclear extended assurance relationships will

---

[15] See *Report of the Wilton Park Conference, 'Nuclear deterrence and nuclear assurance in the NATO area'*, 3.

[16] "Perhaps surprisingly, the urge to reassert the role of extended nuclear deterrence came from Washington's allies, rather than from a U.S. seeking to assert authority in the region, in the context of a Chine in ascent. In short, strengthening nuclear deterrence in East Asia resulted from demand pressures rather than from supply pressures. See, Andrew O'Neil, 'Extended nuclear deterrence in East Asia: redundant or resurgent?', *International Affairs* 87: 6, Nov. 2011, 1439–57 la 1455.

[17] Washington believes that Phenian is a weak country surrounded by powerful countries and discouraged by a series of measures that put the emphasis on prompt conventional hit and ballistic missile defense. See Medcalf Rory and Cunningham Fiona, eds., *Disarming doubt: the future of extended nuclear deterrence in East Asia, (*Sydney: Lowy Institute for International Policy, 2012), 76-72.

[18] Tokyo's worries about nuclear weapons loom changes of great powers, rather than direct threats, and the fears that Japanese interests could be marginalized in U.S. strategic policy. See O'Neil Andrew, 'Extended nuclear deterrence in East Asia: redundant or resurgent?', *International Affairs* 87: 6, Nov. 2011, 45.

[19] Nuclear weapons are increasingly regarded as relics of an era of mass war - an era that began in the modern world, from Napoleon's period and peaked during World War II. We may sense that the Obama Administration does not hurry to embrace the idea of "second nuclear age" or that of new requirements that such an era would impose upon U.S. strategic nuclear policy. See U.S. Department of Defense, "The Military Balance 2014", www.defense.gov/ The_Military_Balance_2014.pdf. (Accessed 2 December 2014).

[20] Tomahawk cruise missiles launched at sea withdrew from operation, despite Japanese protests.

be difficult.[21] Special attention should be given to the Asia-Pacific area, and finding the ideal figure should be compliant with "the deep noise."

In American nuclear policy, shifting the emphasis of "extended nuclear deterrence" to "extended deterrence" means nuclear risk-taking. The use of conventional weapons is critical, thus avoiding the use of nuclear weapons in the context of the gradual improvements in ballistic missile defense. In strategic terms we shift from "deterrence by denial," but we do not exclude the traditional "deterrence through punishment."[22]

The opinion that the future of nuclear weapons in U.S. strategy is on the downward slope is becoming stronger, thus the credibility of extended nuclear assurance being questionable.

The nuclear future of the Asia-Pacific area can support a tolerant pattern to a degree of selective re-nuclearization, and more than that to a continuing re-nuclearization.[23]

The Asia-Pacific area is characterized by strategic dynamism, generated by spectacular strategic changes in regional relations, impetuous transformational trends on the world stage in crisis with some Western powers that are facing serious problems, within the frame of the re-appearance of historical friction reasons among major Asian regional actors.

The strategic transformation of Asia is subject to public debate focused on the role of nuclear weapons in the future, and we may not exclude a wave of uncontrolled proliferation in East Asia.[24]

THE MONITORING OR REGLEMENTATION OF THE OUTER SPACE

Starting 1960, The USA and Russia have tested the ballistic missile defense (BMD),[25] a fact that caused a lot of fragments from the targets and interceptors to float in outer space. In 2008, America successfully tested a BMD-Aegis missile, promising there would be no problems with the remains.[26]

---

[21] Some analysts even predict a future U.S. strategic nuclear arsenal of perhaps 300 warheads which amounts to about eight warheads per nuclear extended assurance, assuming that U.S. don't save anything for their own defense. Of course, arithmetic is not strategy. See U.S. Department of Defense, *Sustaining U.S. Global Leadership: Priorities for the 21st Century Defense*, Washington, DC: U.S. Department of Defense, January 2012, www.defense.gov/news/Defense_Strategic_Guidance.pdf.

[22] The argument regarding usability is questionable. Nuclear weapons were "used" every day during the Cold War. It is wrong to believe that nuclear weapons are not "usable" at present, either during the conflict (to discourage expansion), or as a formative force in an environment of strategic transformation. We should take into account the difference between the gravitational use of force and direct use of force when considering this topic. Nuclear weapons are classically suitable for the gravitational use to create an environment rather than cause damage. See, Robert Art, 'The fungibility of force', in Robert Art and Kenneth Waltz, eds, *The use of force: military power and international politics*, 6th edn (Lanham, MD: Rowman & Littlefeld, 2004), 3–22.

[23] For the Western world which lived with the belief that the number of nuclear weapons are on a downward slope toward zero, even the smallest increases in number could be unbearable. See Yost David S., 'Strategic stability in the Cold War: lessons for continuing challenges', *Proliferation Papers*, no.36 (Paris: Institut Français des Relations Internationales Security Studies Centre, 2011), 14-19.

[24] Proliferation of chains is not unusual in nuclear history – the Chinese, the Indian and the Pakistani proliferations are already demonstrating such a chain. Since then, the world has been accustomed to proliferation as an activity which is slowly and rather laboriously monitored by the solitary states, but the proliferation regarding adherent states, which are technologically advanced, would be significantly faster. See Walker William, *A perpetual menace: nuclear weapons and international order* (Londra: Routledge, 2012), 23-34.

[25] BMD - ballistic missile defense tests.

[26] NASA Academy of Program/Project & Engineering Leadership, *Orbital Debris Management & Risk Mitigation*, September 2012, 7,
http://www.nasa.gov/pdf/692076main_Orbital_Debris_Management _and_Risk_Mitigation.pdf. (Accessed 2 December 2014).

The outer space is crucial for important activities: military (supervising the war theatre, the wars, the command, control and communications system, and the navigation assistance), informations (SIGINT[27], IMINT[28], MASINT[29]), and civilian (exploring, monitoring the weather and agriculture), commercial (location television, radio). The trajectories of most of the objects floating in space cannot be modified, the number of the satellites able to maneuver in order to avoid collision being small.[30]

Apart from the American and Russian activities in space, over 60 states national consortiums, commercial bodies and academical institution have many activities in space. There are many states with capabilities to launch objects in space. All these activities left in space many objects that can no longer serve their initial purpose; there are around 23.000 objects larger that 10 cm in diameter that are monitored permanently (hundreds of thousands are smaller than 10 cm. in diameter and, therefore are not monitored as potential threats to satellites).[31]

Together with other threats - anti-satellite weapons, micro-meteorites, space climate changing spatial, radio interferences, and cybernetic attacks -, the retired satellites and the remains of the satellites left on the orbit are potential threats for future activities.[32]

The quantity of fragments increases constantly, due to collisions, while the measures taken by the international community aren't enough to control the situation; a cascade effect to increase the number of catastrofic collisions is estimated[33]

The outer space around the planet, especially the closer area[34] is overcrowded by objects that are already a problem to new activities in space; especially that 5% of these objects are active satellites. Retired satellites become a potential danger to the active ones.[35]

The destruction of the satellites and space vehicles, apart from spreading fragments in space can affect other states' vehicles; the increase of the number of fragments is due to the explosions of the parts of the rockets abandoned with remaining fuel[36] and to the side effects of the anti-satellite weapons tests performed by some states.[37]

---

[27] SIGINT - signals intelligence such as communications intelligence, electronic intelligence, and automated data from space vehicles

[28] IMINT - imagery intelligence such as imagery collection and processing.

[29] MASINT - measurement and signature intelligence, as in measuring specific events such as nuclear explosions.

[30] See European Commission, "Avoiding damage from space debris - space surveillance and tracking proposal," press release, February 28, 2013, http://europa.eu/rapid/press-release_MEMO-13-149_en.htm. (Accessed 13 December 2014).

[31] A 10 cm. in diameter object produces a catastrophe when colliding with a standard satellite; one of 1 cm in diameter seriously affects a space ship and one of only 1 mm destroys a satellite's subsystem. NASA Orbital Debris Program Office, http://orbitaldebris.jsc.nasa.gov/faqs/html. (Accessed 2 December 2014).

[32] "Space systems enable our modern way of war. They allow our war fighters to strike with precision, to navigate with accuracy, to communicate with certainty, and to see the battlefield with clarity. Without them, many of our most important military advantages evaporate." See William J. Lynn, III, "A Military Strategy for the New Space Environment," *The Washington Quarterly*, vol. 34, no. 3 (Summer 2011), 7.

[33] See J.-C. Liou, A. Rossi, and H. Krag, et al., *Stability of the Future LEO Environment*, Inter-Agency Space Debris Coordination Committee, IADC-12-08, January 2013.

[34] Low-Earth Orbit (LEO) –2000 km above the terrestrial surface.

[35] In 2009, an American communications satellite, "Iridium 33" crashed into a retired Russian one, "Cosmos 2251" producing over 2.100 fragments larger than 10 cm. See T.S. Kelso, *Iridium 33/Cosmos 2251 Collision*, CelesTrak, July 15, 2009, http://celestrak.com/events/collision.asp. (Accessed 11 December 2014).

[36] Practice from the 8th decade of the last century. See the NASA Orbital Debris Program Office, http://orbitaldebris.jsc.nasa.gov/faqs/html. (Accessed 2 December 2014).

[37] Fragments from a Chinese clima research satellite Fengyun-1C destroyed by a Chinese interceptor of an anti-satellite weapon program in 2007generated 3.000 fragments of 10 cm and over 15.000 fragments under 1 cm. It is supposed that fragments from this test affected a satellite six years later. See Leonard David, "Russian

Efforts are made to adopt international standards in politics,[38] to open international communication channels for the satellites operators in order to avoid the collision risks in space and to consolidate the trust and transparency measures,[39] to pragmatically involve The UNO to reglement space activities.[40] The very serious issue of the space fragments is the object some international reglementation projects,[41] even though some of them were not agreed by The USA which prefers to keep monitoring the outer space.[42]

There is unanimity regarding the elimination of space objects by means of focused measures, aiming to ”repair” including to ”actively repair.”[43]

The technologies to ”actively repair” also presents the capability to be integrated into anti-satellite programs, not giving solutions for very small pieces (5 mm – 10 cm) which creates some legal issues, too. There is a legal definition of the term of – ”space object”, but no definition internationally accepted for the fragment in the space - ”space debris”[44] - and its property regime, this causing serious complications with the owner.[45]

The procedure to evaluate damages that can be produced during the ”active repairing”, especially when the owners are several governs, is very elaborate.[46] An ”active repair” means also the access to certain technical data of the respective data, some of them very sensitive, a fact that complicates the process a lot.

The space fragments issue has serious consequences upon the military and intelligence satellites systems; the probability of a catastrophically collision - accidental or intended - being great; thus, the need for an international reglementation as soon as possible.

Satellite Hit by Debris from Chinese Anti-Satellite Test,” *Space.com*, March 8, 2013, http://www.space.com/20138-russian-satellite-chinese-space-junk.html. (Accessed 3 December 2014).

[38] See The United Nations Space Debris Mitigation Guidelines

[39] The transparency and confidence-building measures (TCBMs)

[40] The United Nations Committee on the Peaceful Uses of Outer Space (UN COPUOS), un working group to present a guide for the space activities in 2015.

[41] See European Union, *International Code of Conduct for Outer Space Activities*, Draft, September 16, 2013, http://eeas.europa.eu/non-proliferation-and-disarmament/pdf/space_code_conduct_draft_vers_16_sept_2013_en.pdf. (Accessed 4 December 2014); See The Stimson Center, *Model Code of Conduct*, October 2007, http://www.stimson.org/research-pages/model-code-ofconduct/.(Accessed 2 December 2014).

[42] The Space Surveillance Network, able to monitor objects up to 2 cm. in diameter; still, smaller objects remain very dangerous. The agreement plan from 2008 made by China and Russia “Prevention of Placement of Weapons in Outer Space Treaty” was refused by The USA.

[43] Apart from keeping the rule of "the 25 years” (an object must not leave more that 25 years after ending its mission), eliminating at least 5 intact objects of large dimensions in the next 100 years could stabilize LEO for the next 200 years. See J.-C. Liou, A. Rossi, and H. Krag, et al., *Stability of the Future LEO Environment*, Inter-Agency Space Debris Coordination Committee, IADC-12-08, January 2013, 20.

[44] Article VIII of the 1967 Outer Space Treaty declares that space objects continue to belong to the country or countries that launched them. The launching state retains “jurisdiction and control” for a space object while it is in outer space, on a celestial body, and upon its return to Earth. The launching state never loses authority over the object, and no other nation has the legal authority to remove or otherwise interfere with it without authorization from the state of registry.

[45] “There is no right of salvage analogous to the right found in maritime law, which means that even though a satellite or some other space object may not be functioning, it does not imply that it has been abandoned by the nation that launched it.” See Michael Listner, “Legal issues surrounding space debris remediation,” *The Space Review*, August 6, 2012, http://www.thespacereview.com/article/2130/1. (Accessed 4 December 2014).

[46] Article II of the 1972 Convention on International Liability for Damage Caused by Space Objects (Liability Convention) states that the launching state is absolutely liable for damage caused by its space object on the surface of the Earth or to aircraft flight. When space objects cause damage in outer space, however, a fault standard is applied.

REFERENCES

1. **Art Robert and Waltz Kenneth**, eds, *The use of force: military power and international politics*, 6th edn (Lanham, MD: Rowman & Littlefeld, 2004).
2. **Clark Ian**, "China and the United States: A Succession of Hegemonies?" *International Affairs*, Vol. 87, No. 1, 2011.
3. *** *Defence of Japan Digest 2014*.
4. **Knopf Jeffrey W**., ed., *Security assurances and nuclear non-proliferation* (Stanford, CA: Stanford University Press, 2012).
5. **Leeds Brett Ashley, Long Andrew G. and Sara McLaughlin Mitchell**, 'Re-evaluating alliance reliability: specific threats, specific promises', *Journal of Conflict Resolution* 44: 5, 2000.
6. **Lyon Rod**, *Strategic contours: the rise of Asia and Australian strategic policy* (Canberra: Australian Strategic Policy Institute, July 2012).
7. **Medcalf Rory and Cunningham Fiona**, eds, *Disarming doubt: the future of extended nuclear deterrence in East Asia,* (Sydney: Lowy Institute for International Policy, 2012).
8. *** *Nuclear deterrence and nuclear assurance in the NATO area* (WP1101), 12–15 June 2011, http://www.wiltonpark.org.uk/wp-content/uploads/WP1101-Report.pdf.
9. **O'Neil Andrew**, 'Extended nuclear deterrence in East Asia: redundant or resurgent?', *International Affairs* 87: 6, Nov. 2011.
10. **Ogilvie-White Tanya**, ed., On nuclear deterrence: the correspondence of Sir Michael Quinlan (London: Routledge, 2011).
11. *** *Report of the Wilton Park Conference*, 'Nuclear deterrence and nuclear assurance in the NATO area'.
12. **Schelling Thomas**, *The strategy of conflict* (Cambridge, MA: Harvard University Press, 1960).
13. *** U.S. Department of Defense, *The Military Balance 2014*, www.defense.gov/ The_Military_Balance_2014.pdf.
14. *** U.S. Department of Defense, *Sustaining U.S. Global Leadership: Priorities for the 21st Century Defense*, Washington, DC: U.S. Department of Defense, January 2012, www.defense.gov/news/Defense_Strategic_ Guidance.pdf.
15. **Walker William**, *A perpetual menace: nuclear weapons and international order* (Londra: Routledge, 2012).
16. **Yost David S.**, 'Strategic stability in the Cold War: lessons for continuing challenges', *Proliferation Papers*, no.36 (Paris: Institut Français des Relations Internationales Security Studies Centre, 2011).