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Zmluva o všeobecnom zákaze jadrových skúšok a jej význam pre globálnu bezpečnosť

The Comprehensive Nuclear-Test-Ban Treaty and Its Relevance for the Global Security

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Abstrakt

Zmluva o všeobecnom zákaze jadrových skúšok (CTBT) patrí v súčasnosti k významným medzinárodným nástrojom globálneho nešírenia jadrových zbraní a odzbrojenia. Jedným z jej pilierov je verifikačný mechanizmus budovaný ako medzinárodný systém detekcie nukleárneho testovania umožňujúci kontrolu záväzkov vyplývajúcich z tejto zmluvy. Napriek relevantnosti zmluvy z hľadiska globálnej bezpečnosti, CTBT nie je v súčasnosti v platnosti. Cieľom príspevku je poukázať na dôležitosť zmluvy CTBT a problematiku jej uvedenia do platnosti nielen z pohľadu medzinárodných vzťahov, ale aj z pohľadu technickej implementácie monitorovacieho systému.

Abstract

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) is one of important international nuclear non-proliferation and disarmament measures. One of its pillars is the verification mechanism that has been built as an international system of nuclear testing detection to enable the control of observance of the obligations anchored in the CTBT. Despite the great relevance to the global non-proliferation and disarmament efforts, the CTBT is still not in force. The main aim of the article is to summarize the importance of the CTBT and its entry into force not only from the international relations perspective but also from the perspective of the technical implementation of the monitoring system.

Kľúčové slová

Jadrové zbrane; testovanie; nešírenie; odzbrojenie; ratifikácia; verifikačný mechanizmus, monitorovací systém.

Keywords

Nuclear weapons; test explosions; non-proliferation; disarmament; ratification; verification mechanism, monitoring system.

INTRODUCTION

International efforts to stop and prevent testing of nuclear weapons can be identified back to the beginning of the Nuclear Age when the United States conducted the first nuclear test at a desert test site in Alamogordo, New Mexico, on 16th July 1945. Subsequently, the international community witnessed massive devastating effects of this category of weapons of mass destruction (WMD) on cities and inhabitants when nuclear weapons were used by the United States against Hiroshima and Nagasaki. Since these events, nuclear weapons began to determine relations between superpowers, as well as the global international security. The arms race became a dominant feature of the international political relations. Over the next five decades nuclear powers conducted more than 2050 nuclear tests, as nuclear weapons testing is a fundamental element for further development and improvement of weapons systems.¹

The intense nuclear proliferation and testing promoted efforts to limit the proliferation and development of nuclear weapons. The real progress on a test ban between the great powers came in 1963 when the Partial Test Ban Treaty (PTBT) was adopted. The PTBT banned nuclear testing in the atmosphere, underwater and in space; however, nuclear weapons testing continued underground. As a result, the PTBT was a significant instrument to address environmental issues rather than disarmament. A relevant progress in the ban of comprehensive nuclear testing was achieved in September 1996 when the UN General Assembly adopted the Comprehensive Nuclear-Test-Ban Treaty (CTBT). After its adoption, the five nuclear powers constituted by the Nuclear Non-Proliferation Treaty (NPT) decided to impose a moratorium on conducting of nuclear tests. Subsequently, concrete steps towards building one of the most important verification mechanisms to verify commitments to the non-proliferation of nuclear weapons have been implemented. Its primary task is to monitor the compliance with the obligations of the CTBT as well as to detect or deter any violations, so that the complex system serves as a global alarm and warning system. The verification mechanism consists of sophisticated verification tools and facilities that have been built and improved. Currently the system is completed only partially and operating in a test mode. Nevertheless, it proved to be capable of conducting the verification and detection specifically by DPRK nuclear tests in 2006, 2009 and 2013 and by Fukushima nuclear disaster in 2011.

Despite the importance of the CTBT and building of its sophisticated verification mechanism there is a crucial challenge for the international disarmament regime constituted by the NPT and the CTBT as the major pillars of the regime. Particularly alarming is the fact that the CTBT even after 17 years after its adoption did not enter into force that de facto undermines its relevance as a source of international law.

Under these circumstances the paper aims to characterize the CTBT and its verification regime in the context of the current global disarmament process. In the first part, the paper focuses on the characteristic of the CTBT. It explains the relevance of the treaty for the international nuclear non-proliferation and disarmament regime, describes the main characteristics and pillars of its verification process, and deals with its technical implementation. The second part of the paper focuses on main current setbacks for the CTBT entry into force. It deals with specific stances to the CTBT ratification of eight states - the United States, China, DPRK, Israel, Iran, Egypt, India and Pakistan, whose ratification is inevitable for its entry into force. Finally, the conclusion summarizes main ideas relevant to the CTBT as a pillar of the non-proliferation and disarmament regime and presents prospects for its entry into force in short and long-term perspectives.

¹ CTBTO PREPARATORY COMMISSION. Nuclear Testing. *CTBTO.org: Official portal of the Preparatory Commission for the CTBTO* [online]. Vienna, 2009 [cit. 2013-03-20]. Available from: <http://www.ctbto.org/nuclear-testing/history-of-nuclear-testing/nuclear-testing-1945-today/>

THE RELEVANCE OF THE CTBT FOR THE GLOBAL SECURITY

The CTBT is currently considered as one of the most important instruments in the process of global nuclear non-proliferation and disarmament. The fundamental obligation of the treaty contained in the first article constitutes a “general ban on the conduct of any tests of nuclear weapons on Earth for military or peaceful purposes and at the same time it prohibits and prevents states from carrying out nuclear tests anywhere under the jurisdiction of the state.”² In addition, under the CTBT, each of its signatories is prohibited from “encouraging or participating in the carrying out of any nuclear testing.”³ These provisions are an important complementary element to the NPT. However, the CTBT does not ban sub-critical testing with the amount of fissile material lower than the critical mass. Such testing is not considered as nuclear. Nevertheless, sub-critical testing is used by nuclear weapon states to verify the safety and reliability of stockpiles of nuclear weapons without conducting an explosion through a chain reaction.

The treaty provides for the establishment of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) based in Vienna, whose primary task will be to implement the provisions of the CTBT and to support and verify the Member States’ compliance with the obligations of the CTBT.⁴ The organization will consist of the Conference of the State Parties as the primary decision-making body that will assemble annually and the Executive Council whose main task will be the implementation of the norms of the treaty and monitoring of the compliance with the treaty. Moreover, a significant role of the Executive Council will be the approval of requests from Member States to carry out so called On-Site Inspections (OSI). Another important body of the CTBTO will be the Technical Secretariat whose main task will be to support the Member States, the Conference of the State Parties and the Executive Council in the implementation of the CTBT in its verification regime. In 1997, the Preparatory Commission for the CTBTO and the Provisional Technical Secretariat were established to take all necessary steps and measures to implement the functioning CTBT verification regime before the treaty enters into force.⁵

In case that there is a concern about a possible violation of the Articles of the CTBT in the future, the Member States will have the right to ask for launching of the consultation and events clarification process, while the Secretary General and the Executive Council will be required to provide relevant information to the Member States about the event. In addition, according to the treaty, Member States will have the right to request conducting of an OSI based on the information from the International Monitoring System (IMS) in order to clarify whether a nuclear weapon test has been carried out.

THE CTBT VERIFICATION REGIME

The verification regime is one of the pillars of the CTBT. Currently the international verification regime is being built to monitor the compliance with the comprehensive ban on nuclear tests according to the CTBT. The main task of the Preparatory Commission is to provide for the verification regime, which is supposed to be fully capable of operating by the time when the CTBT will have entered into force. Currently the regime is completed only partially and operating in a test mode. However, it proved to be capable of conducting the verification and detection. The regime was tested virtually by the DPRK nuclear tests in 2006, 2009 and 2013 when the IMS detected the magnitude and nature of the explosions. On the other hand, the sophisticated regime proved to be inevitable as a global

² UN GENERAL ASSEMBLY. Comprehensive Nuclear-Test-Ban Treaty. *CTBTO.org: Official portal of the Preparatory Commission for the CTBTO* [online]. Vienna, 1996 [cit. 2013-03-20]. Available from: http://www.ctbto.org/fileadmin/content/treaty/treaty_text.pdf

³ UN GENERAL ASSEMBLY, ref. 2

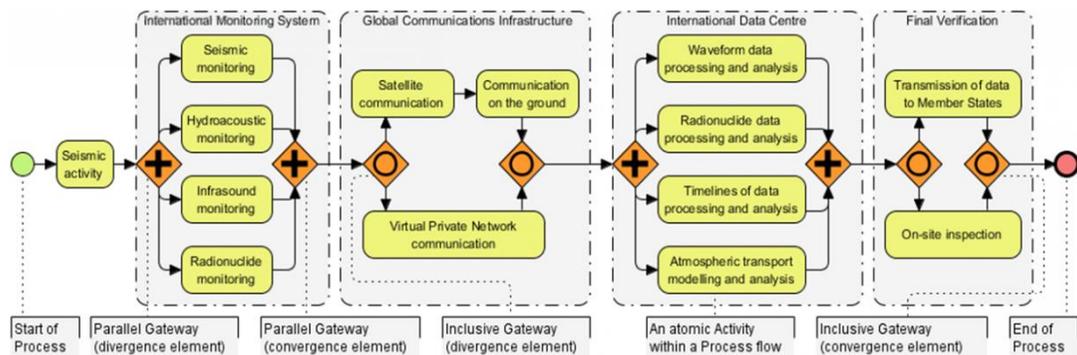
⁴ EVANS, Gareth et al. *Eliminating Nuclear Threats*. Canberra: International Commission on Nuclear Non-proliferation and Disarmament, 2009, 332 p. ISBN 978-1-921612-14-5.

⁵ EVANS, ref 4

warning system in time of natural disasters. In 2011, during the Fukushima nuclear disaster, the data from the CTBT verification facilities were used to activate the emergency response to the disaster.

For the description of the verification process the Business Process Modelling Notation (BPMN) has been used. The BPMN presents a standard for process modelling.⁶ Figure 1 shows the verification process of the CTBT at the highest level of abstraction, which also shows the main components of the regime under construction. There are the IMS, the Global Communications Infrastructure (GCI) International Data Centre (IDC) and the final verification.

Figure 1: CTBT Verification Process



Source: authors.

International Monitoring System

The treaty provides for the establishment of the International Monitoring System (IMS) which will comprise a total of 337 high-quality monitoring stations and laboratories to be deployed in 89 countries around the world in order to monitor compliance with the provisions of the treaty. Currently, about 85 percent of all planned IMS stations are already installed worldwide and about 80 percent of planned IMS stations are certified and fully functional.⁷ The IMS will be used for verification of compliance with the CTBT. The system has been built on the basis of monitoring stations, which are divided according to monitoring features into four types of networks:⁸

- *seismic monitoring network* - 170 stations for the detection of seismic waves;
- *radionuclide monitoring network* - 80 stations and 16 laboratories for the detection of radioactive fallout;
- *infrasound monitoring network* - 60 stations for the detection of infrasonic waves in the atmosphere;
- *hydro acoustic monitoring network* - 11 stations for the detection of sound waves underwater and T-waves.

The Global Seismic Monitoring Network will consist of 170 stations: 50 primary stations and 120 auxiliary stations. The role of primary seismic stations is to detect seismic events; the role

⁶ SILVER, Bruce. 2009. *BPMN Method and Style: A levels-based methodology for BPM process modelling and improvement using BPMN 2.0*. Cody: Cassidy Press, 2009. 236 p. ISBN 978-0-982368-10-7.

⁷ CTBTO PREPARATORY COMMISSION. Station Profiles. *CTBTO.org: Official portal of the Preparatory Commission for the CTBTO* [online]. Vienna, 2013 [cit. 2013-03-20]. Available from: <http://www.ctbto.org/verification-regime/station-profiles/>

⁸ CTBTO PREPARATORY COMMISSION. Verification Regime. *CTBTO.org: Official portal of the Preparatory Commission for the CTBTO* [online]. Vienna, 2009. [cit. 2013-03-20]. Available from: <http://www.ctbto.org/verification-regime/?Fsize=wpupaqsyzhttp://www.ctbto.org/nuclear-testing/history-of-nuclear-testing/nuclear-testing-1945-2009/page-1-nuclear-testing-1945-2009/?Fsize=a>

of auxiliary stations is to provide data necessary for the localization of detected events upon request of the IDC. Seismological stations must meet pre-defined technical criteria. The compliance with the criteria is controlled within the so-called certification process. There is no monitoring station in the Slovak Republic. In the Czech Republic there is a station operated by the Institute of Physics of the Earth, which is an auxiliary station of the International Monitoring System, codenamed AS26, and is located in the woods north of Brno, near the village Vranov.⁹

Global Communications Infrastructure

For the purpose of data transfer, 210 bi-directional satellite stations with parabolic antenna smaller than 3 meters (VSAT) are used, which were designed to ensure communication with the International Data Centre (IDC) in Vienna.¹⁰ In case that there are more monitoring stations in one place, one communication channel can be used for all the stations.

VSAT stations are connected via six communication satellites that are installed 36,000 km above the Earth's surface. The satellites have geosynchronous orbit, which is an orbit around the Earth with an orbital period of one sidereal day, matching the Earth's sidereal rotation period. Three satellites cover an area of the oceans, particularly the Atlantic, Pacific and Indian Ocean. Three other satellites are installed over the North America, Europe and the North Pacific to provide effective monitoring of the northern hemisphere. Communication links are subsequently transferred from satellites into three main nodes on the surface to create a direct channel of communication with the centre of the CTBTO in Vienna. Two of these nodes are located in the United States and one in Norway.

Besides satellite connection, alternative approaches to the data transmission can be used. In 2003, the CTBTO tested the use of a virtual private network (VPN) for the first time.¹¹ VPN enables to use public communication infrastructure (internet) in order to connect external users to the network of the organization. Specially designed cryptographic methods are applied to maintain the required level of security and protection against an unauthorized access.

International Data Centre

Numbers of gigabytes of source data come to International Data Centre based in Vienna from the IMS stations daily. Without subsequent processing the source data are of minimum value for the Member States. The most important questions (Has an event been detected? Where it occurred? What are its basic features? What was its extent? Is the event caused by natural or human factors?) need to be answered as soon as possible. The main aim of the data processing is to provide the Member States with answers to these questions, so that they could respond to any event promptly.

The IDC is the central element of the CTBT verification process. Its role is to collect, analyze and monitor the data coming from the facilities of the IMS. Processed data and results are then presented in the form of bulletins, newsletters and reports for Member States. Although the CTBT has not yet entered into force, the IDC has been fully operational since 1999. In order to facilitate the communication between a Member State and the CTBTO it is recommended to establish a National Data Centre (NDC). In the Czech Republic the State Office for Nuclear Safety located in Prague serves as a Czech national data centre, and the Nuclear Regulatory Authority located in Bratislava serves as a Slovak national data centre. Their role is to help Member States to gain, examine and analyse source data and reports coming from the IDC. Based on this information, the Member States may consider suspicious events and respond to them properly. International Data Centre also archives all data and

⁹ ŠVANCARA, Janet et al. *Monitoring by the seismological station VRAC in the framework of the global verification system of the CTBT*. Masaryk University, 2011. [cit. 2012-09-20]. Available from:

<http://www.ipe.muni.cz>

¹⁰ CTBTO Preparatory Commission, ref. 8

¹¹ Ibid.

results in its own computer centre. The monitoring and data processing can be supported by other approaches or instruments.¹²

Final Verification

Another important component of the CTBT verification process is an On-Site Inspection (OSI). The aim of the OSI is to verify compliance with the CTBT by Member States. This type of inspection enables to reveal if a nuclear explosion has been conducted on the site. It is possible to collect even more data during the OSI in order to identify any potential threats. According to the CTBT, it is the final verification measure to verify the compliance with the CTBT; however, it can be used as a relevant verification measure only after the CTBT entry into force.

The OSI has to be conducted in case of any suspected violation of the CTBT only upon a request of a Member State.¹³ A Member State which is the subject of this inspection cannot refuse the inspection proceedings. The principal advantage of the OSI will primarily be the fact that it will lead to a detailed survey of an event and will help to confirm or deny a suspected violation of the CTBT. As a result, the OSI will strengthen the credibility of the CTBT regime among Member States.

THE ENTRY INTO FORCE AS A MAIN CHALLENGE OF THE CTBT

Currently, the primary challenge of the CTBT verification regime remains to be the entry of the treaty into force, for which it is necessary to be ratified by a total of 44 states. This list includes countries whose official representatives participated in negotiations within the Conference on Disarmament in Geneva from 1994 to 1996, and at that time disposed of a nuclear potential and a research reactor. The list is included in the Annex II of the CTBT and as a result it is legally binding. Currently a total of eight countries in the list have not ratified the CTBT yet. These states are: the United States, China, DPRK, Israel, Iran, Egypt, India and Pakistan. Three of these states did not even sign the treaty. They are DPRK, India and Pakistan.

The USA and the Ratification of the CTBT

After the opening of the CTBT for the signature, the U.S. President Clinton signed the treaty in 1996 and sent it to the Senate. However, in 1999 the Senate expressed its opposition and rejected it. The following administration of President George W. Bush refused to ratify the CTBT and even did not rule out nuclear testing in order to make sure that the nuclear stockpile is reliable and safe.¹⁴ However, although the Bush administration did not support the CTBT, no nuclear tests were actually conducted.

On the other hand, the current U.S. President Barack Obama announced already in his speech in Prague in April 2009 that his administration “would work towards the elimination of nuclear weapons and would immediately and aggressively pursue ratification of the CTBT by the United States.”¹⁵ The same commitment was incorporated into the Nuclear Posture Review in 2010. The CTBT ratification became an integral part of the non-proliferation and arms control agenda within the foreign

¹² SCHLITTENHARDT, J.; CANTY, M.; GRUNBERG, I. Satellite Earth Observations Support CTBT Monitoring: A Case Study of the Nuclear Test in North Korea of Oct. 9, 2006 and Comparison with Seismic Results. *Pure and Applied Geophysics*. 2010, vol. 167, num. 05, p. 601 - 618. DOI 10.1007/s00024-009-0036-x. Available from: <http://adsabs.harvard.edu/abs/2010PApGe.167..601S>

¹³ CTBTO PREPARATORY COMMISSION, ref. 8

¹⁴ MEDALIA, Jonathan. Comprehensive Nuclear-Test-Ban Treaty: Background and Current Developments. *fas.org: Official portal of Federation of American Scientists* [online]. Washington D. C., 2013 [cit. 2013-03-20]. Available on internet: <http://www.fas.org/sgp/crs/nuke/RL33548.pdf>

¹⁵ OBAMA, Barack. Remarks of President Barack Obama in Prague. *whitehouse.gov: Official portal of the US White House* [online]. Washington D. C., 2009. [cit. 2013-03-20]. Available from: http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered

policy of the Obama administration, as it is viewed as contributing to the prevention of nuclear weapons proliferation and nuclear terrorism.¹⁶ However, the administration has not defined any firm timeframe for the ratification because the final decision on the ratification is made by the U.S. Senate.

The Senate consent to the ratifications has been a long-term challenge. The issue of the CTBT ratification faces contradictory attitudes of members of the Senate Foreign Relations Committee. According to the opponents, the ratification of the CTBT would result in a reduction of the significance and reliability of the U.S. nuclear arsenals and would undermine the credibility of the United States as a nuclear power.¹⁷ On the other hand, the advocates of the ratification argue that the U.S. have shown through the Stockpile Stewardship Program that is able to maintain safe, secure and reliable nuclear arsenals without testing. Moreover, the advocates agree that the CTBT verification system is reliable and its importance was documented while monitoring the North Korean nuclear weapons tests between 2006 and 2009.¹⁸

Currently the treaty still resides in the Senate Foreign Relations Committee calendar. The rejection to ratify the treaty has de facto led to the decline in interest in the CTBT and its entry into force on a global level within the international community. Despite this fact, since the adoption of the treaty the United States have been active in supporting the construction of the CTBT verification mechanism financially and have observed a moratorium imposed on nuclear weapons testing by President Clinton in 1994, that was later extended until the CTBT is in force.¹⁹

China and the Ratification of the CTBT

China became a signatory to the CTBT when it was opened for signature in September 1996. Already during the negotiations at the Conference on Disarmament, Chinese official representatives actively helped to negotiate the treaty provisions. Since 2000, the treaty has been dealt with as an issue in the National People's Congress within the ratification approval process. Although China is one of the states that have not ratified the CTBT yet, it made commitment to the "early ratification of the CTBT" already in 2008.²⁰ This commitment was later formally confirmed by the official representatives for several times in numerous major international conferences, including the NPT Review Conference in 2010. Moreover, the official representatives of the state declared that "until the CTBT enters into force, China is committed to observe a moratorium on the testing of nuclear weapons."²¹

In January 2011, at the meeting of Chinese President Hu Jintao and U.S. President Barack Obama, a joint statement was issued, in which both sides supported the early entry of the CTBT into force and agreed on a common approach to achieve this goal.²² The Chinese interests in supporting the CTBT were de facto proved by various activities and participation of Chinese representatives in the work of the CTBTO Preparatory Commission, engagement in the OSI issue, preparation of working procedures for inspectors, activities in the field of mobile noble gas detectors, etc.

¹⁶ KUCHARČÍK, Rudolf. Barack Obama na prahu volebného roka. *Siločiar*. 2012, vol. 10, num. 3, pp. 4- 6. ISSN 1336-4634

¹⁷ CONGRESSIONAL COMISSION ON THE STRATEGIC POSTURE OF THE UNITED STATES. America's Strategic Posture. *usip.org: Official portal* [online]. Washington D. C., 2009 [cit. 2013-03-20]. Available from: http://media.usip.org/reports/strat_posture_report.pdf

¹⁸ DAHLMAN, Ola et al. Detect and Deter: Can Countries Verify the Nuclear Test Ban? New York: Springer, 2011, 332 p. ISBN 978-9400716759.

¹⁹ MEDALIA, ref. 14

²⁰ EVANS, ref. 6

²¹ EVANS, ref. 6

²² DAHLMAN, ref. 18

DPRK and the Ratification of the CTBT

Despite the fact that the DPRK is generally considered to be an isolated state, its representatives actively participated in the negotiations at the Conference on Disarmament and at the same time they supported the adoption of the CTBT by the vote. However, the DPRK has never signed the treaty. In addition, in 2003 it withdrew from the NPT, and in 2006 and 2009, it conducted nuclear weapons tests.

At the end of 2010, North Korea has demonstrated that it has new modern facilities for the uranium enrichment and a light water reactor that lead not only to further debates about continuing military nuclear programme but also to the adoption of UN Security Council resolutions that request total termination of all DPRK nuclear programmes. The North Korean nuclear capability was proved at the beginning of 2013 when the third nuclear test was conducted.

The official representatives of the state have not expressed the stance on the question of the ratification of the CTBT for several years. Nevertheless, according to official statements, DPRK defends the country's right to test and possess nuclear weapons as a deterrent.²³ It can be assumed that any change in DPRK stance towards the CTBT ratification would depend on the stance of key nuclear states. According to the Ministry of Foreign Affairs of the DPRK, the country will support the CTBT only in case of a comprehensive and global nuclear disarmament process.²⁴ Moreover, it can be assumed that the stance of the DPRK would be influenced by its ally - China. If China ratified the treaty in the future, it can be presumed that it would increase pressure also on the leadership of the DPRK to take steps to sign and ratify the CTBT.

Egypt and the Ratification of the CTBT

Egypt was also one of the active participants in the Conference on Disarmament while negotiating the CTBT through its representative as Chairman of the Working Group on legal issues. Egypt is a key actor in the Middle East region, as well as within the Non-Aligned Movement. It is a signatory to the NPT, however, according to the statement of former President Mubarak, Egypt will not support any other international treaty on arms control and disarmament, if Israel does not ratify the NPT.²⁵ The same condition is imposed by the question of the establishment of a WMD-Free Zone in the Middle East, so it can be assumed that any progress in solving this issue will have an impact on the ratification of the CTBT and other treaties on non-proliferation and disarmament by Egypt.

This proposition was confirmed by Egypt at the Conference in 2009 to support the CTBT entry into force by the statement of the Egyptian delegation that the decision regarding the ratification of the CTBT would depend on the positive outcome of the NPT Review Conference in 2010 in relation to the issue of creating a WMD-Free Zone in the Middle East.²⁶ During the NPT Review Conference in 2010, it was decided to hold a conference on the establishment of the zone. The conference had been set for December 2012 in Helsinki, Finland. Nevertheless, it was called off because it became evident that Israel, as a key regional actor in the WMD proliferation, would not participate at the conference.

It can be assumed that the position of Egypt will on the one hand depend on the development of the WMD-Free Zone in the Middle East. However, currently it is improbable the issue would be solved due to the difficult and complex security situation in the region. On the other hand, the Egyptian ratification will depend on the prior Israeli ratification of the NPT. The new Egyptian government that emerged from the elections in late 2011 has not declared any change in this position yet.²⁷

²³ WEITZ, Richard. The Middle East and North Korea: CTBT Hard Cases. *sldinfo.com: Official portal of Second Line of Defence* [online]. 2012 [cit. 2013-03-20]. Available from: <http://www.sldinfo.com/the-middle-east-and-north-korea-ctbt-hard-cases/>

²⁴ MEDALIA, ref. 14

²⁵ DAHLMAN, ref. 18

²⁶ Ibid.

²⁷ WEITZ, ref. 23

Israel and the Ratification of the CTBT

Israel is viewed as the first and only state in the Middle East region possessing nuclear weapons. However, it maintains the policy of nuclear ambiguity, as Israeli authorities have never denied nor confirmed the possession of nuclear weapons. Israel participated in the negotiations on the CTBT as an observer that was not entitled to a veto, however, it could submit its own proposals to the provisions of the treaty. Israel's stance on CTBT ratification was expressed several times and there have always been problems related to issues such as: the nature of on-site inspections, equal position in the decision-making bodies of the organization or compliance with the treaty by other states of the Middle East region. In the final stages of the treaty negotiations in 1996, Israel imposed a condition to be represented in decision-making bodies. As a result, Israel is represented in the regional group of the Middle East and South Asia in the Executive Council. However, this Israeli representation is only formal.

Current Israel's positive stance towards the activities of the CTBTO Preparatory Commission can be seen in its active participation. Israel is particularly interested in the conditions for on-site inspection, as it had concerns about the possible misuse or an access to sensitive information. Israel was focused also on the issue of development and construction of the IMS and IDC devices while discussing the issue within the Preparatory Commission in Vienna.

Iran and the Ratification of the CTBT

Iran was one of the states participating actively in the negotiations of the CTBT. In spite of the fact that it did not join the final consensus of the treaty, its representatives signed the CTBT when it was opened for signature in the UN. Although Iran has never ratified the CTBT, it supports the treaty officially within the CTBTO Preparatory Commission.

Nevertheless, Iran assumes a reserved attitude towards the CTBT ratification issue. According to its officials, the CTBT bans only nuclear explosions and, in fact, does not lead to the nuclear disarmament. In addition to that, Iran criticises Israel and the United States for failing in the CTBT ratification.²⁸ This stance is presumably the result of the development of events associated with the Iranian nuclear programme.

India and the Ratification of the CTBT

In 1954, the Indian Prime Minister Jawaharlal Nehru called upon states to make efforts to prohibit the testing of nuclear weapons for the first time in history. The country's interest in the adoption of the CTBT was proved during the Conference on Disarmament in Geneva when the Indian representatives participated actively in the negotiations. One of their main aims was to anchor a timeframe of nuclear disarmament directly in the CTBT.²⁹

Despite the active participation in the negotiations of the CTBT, India has neither signed nor ratified the treaty. In June 1996, India even removed its four monitoring facilities from the IMS list included in the Protocol of the CTBT.³⁰ Since India carried out the two nuclear tests in 1998, it has observed the moratorium on nuclear testing. This was officially confirmed in a joint statement of the Indian Prime Minister Singh and the American president George W. Bush issued in 2005 at the beginning of the mutual bilateral cooperation within the civil nuclear programme. The Indian moratorium on nuclear testing was the U.S. fundamental precondition for its full cooperation. In 2009, the Indian Prime Minister Singh even stated that the Indian ratification of the CTBT would be influenced by the ratification of key actors - the USA and China. Their ratification would create a new situation and if

²⁸ WEITZ, ref. 23

²⁹ EVANS, ref. 6

³⁰ CTBTO PREPARATORY COMMISSION, ref. 8

there was a progress towards global disarmament, India would reassess its stance towards the CTBT ratification.³¹

Pakistan and the Ratification of the CTBT

Pakistan, as well as India, was actively participating in the negotiations over the CTBT adoption. Moreover, Pakistani representatives supported anchoring of the nuclear disarmament provisions into the treaty, as well as the provision that the CTBT will enter into force after all nuclear states have ratified it. In contrast to India, Pakistan voted for the adoption of the CTBT. In 1998, it carried out two nuclear tests as a consequence of Indian nuclear tests. Pakistan has set a condition on the ratification of the CTBT that is the previous ratification of the treaty by India. One of the factors that influence the Pakistani ratification is also the bilateral agreement between the USA and India signed in 2005 that, according to Pakistani official representatives, breaks mutual nuclear balance between India and Pakistan. Despite this involvement of events, Pakistan pursues the strategy to support the CTBT through observing of unilateral moratorium on nuclear testing and advocates the strategy according to which it will not use nuclear weapons as the first.

CONCLUSION

The CTBT presents an integral part of a complex approach towards nuclear weapons issue. Its entry into force would accomplish several aims and main ideas of global nuclear non-proliferation and disarmament. Firstly, the CTBT entry into force would de jure prevent states from qualitative improvement of existing nuclear weapons and from horizontal proliferation of nuclear weapons and the rise of nuclear weapons states. Secondly, all non-nuclear weapon states that signed the NPT would become actors of global CTBT verification regime and at the same time they would be able to monitor the compliance with the treaty. Thirdly, the CTBT entry into force would significantly support the treaty on global level and simultaneously it would lead to global nuclear disarmament.

From the short-term perspective, it is impossible to achieve any change in the legal status of the CTBT as it needs to be ratified by eight states. Current American administration of president Obama supports the CTBT entry into force; however, the final decision about the ratification has to be made in the American Senate, where the issue lacks enough support in the long term. Among other states, ratification of which is necessary for the entry into force, China is willing to ratify the treaty. However, the Chinese ratification is connected to the previous ratification by the United States, which means that in the case of American CTBT ratification, China is ready to take up the same stance. Currently the most problematic are the ratifications by Egypt, Israel and Iran, although all these states support the treaty in principal. The states impose reverse conditions on their ratification while they connect their own ratification with the previous ratification by key actors in the Middle East region. Regarding the complex and difficult security situation in the region, it is improbable to achieve the CTBT ratification by these actors in the near future. In Southeast Asia, Pakistan will probably follow the Indian stance in the CTBT ratification issue. India, despite the declared support for the CTBT, has never signed the treaty. According to its official representatives, India is ready to reassess the CTBT ratification after concrete measures towards global nuclear disarmament have been implemented. In case of DPRK, the stance towards the CTBT ratification issue is unclear. However, according to DPRK's nuclear ambitions, it is unlikely that DPRK would ratify the CTBT in the near future.

From the long-term perspective, the CTBT ratification by key international actors – the United States and China is necessary for its entry into force. It is generally accepted that the ratifications by official nuclear states would be an important event with positive implications on other states, ratification by which is necessary for the CTBT entry into force. It would be a significant impetus and signal of willingness of the nuclear states to progress in the process of global nuclear disarmament.

³¹ DAHLMAN, ref. 18

LIST OF ABBREVIATIONS

- BPMN** - Business Process Modelling Notation
CTBT - Comprehensive Nuclear-Test-Ban Treaty
CTBTO - Comprehensive Nuclear-Test-Ban Treaty Organization
DPRK - Democratic People's Republic of Korea
GCI - Global Communications Infrastructure
IDC - International Data Centre
IMS - International Monitoring System
NDC - National Data Centre
NPT - Nuclear Non-Proliferation Treaty
OSI - On-Site Inspection
PTBT - Partial Test Ban Treaty
VPN - virtual private network
WMD - weapons of mass destruction

