

AMERICAN THIRD OFFSET STRATEGY – IMPLICATIONS FOR EUROPE

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Abstract: Existing quantitative advantage in combat capabilities of likely the United States prospective adversaries has been offset by technological superiority, however access to innovative technology is no longer a domain of the United States. The aim of the paper is to present crucial assumptions of American Third Offset Strategy in confrontation with European dilemmas in this area. As a result of the quantitative and qualitative analysis it was found that key element of the strategy is to reverse the negative trend leading to a loss of technological superiority by the United States with maintaining its ability to global power projection, giving it the status of a global superpower. On the other hand, there are concerns about the technological closure of the United States to partners, and thus the technological gap between them and the allies (also within NATO and the European Union) will continue to deepen.

Keywords: The Third Offset Strategy, modern technologies, NATO, autonomous systems, European Union.

AMERYKAŃSKA STRATEGIA TRZECIEGO OFFSETU – IMPLIKACJE DLA EUROPY

Streszczenie: Dotychczasowa przewaga ilościowa w zdolnościach bojowych prawdopodobnych przeciwników Stanów Zjednoczonych była równoważona przewagą technologiczną, jednakże dostęp do innowacyjnych rozwiązań technologicznych nie jest już domeną tylko Stanów Zjednoczonych. Celem artykułu jest prezentacja zasadniczych założeń amerykańskiej strategii trzeciego offsetu w konfrontacji do europejskich dylematów w tym obszarze. W wyniku przeprowadzonej analizy ilościowo-jakościowej stwierdzono, że kluczowe w prezentowanej strategii jest odwrócenie negatywnego trendu prowadzącego do utraty przewagi technologicznej przez Stany Zjednoczone, a w konsekwencji zachowanie zdolności do globalnej projekcji siły, dającej status globalnego supermocarstwa. Z drugiej strony, istnieją obawy związane z technologicznym zamknięciem się USA na partnerów, a tym samym luka technologiczna pomiędzy nimi, a sojusznikami (również w ramach NATO i Unii Europejskiej) będzie się dalej pogłębiać.

Słowa kluczowe: strategia trzeciego offsetu, nowoczesne technologie, NATO, systemy autonomiczne, Unia Europejska.

1. Introduction

Started by the speech of then Defence Secretary, Chuck Hagel that took place in November 2014, the Defence Innovation Initiative (Walton, 2016), which includes the third offset strategy, is focused on a comprehensive effort for the American defence community in the search for innovative solutions aimed at maintaining and increasing US military superiority adequate to XXI century. The last three decades of US involvement in conflicts and resolving of crisis situations clearly indicate that domination of the US military forces is eroding in key military areas, mainly due to the limited budget. As indicated by Chuck Hagel, "the history of XXI century, along with its challenges, is educational. The USA changed the security landscape in 70s and 80s of XX century with the technology of precision strikes, *stealth*, reconnaissance and observation. We will identify the third offset strategy, which will provide a competitive advantage for the American projection of power in the coming decades" (Hagel, 2014). Assumptions articulated in this initiative for the benefit of defence innovations indicate the need to refresh institutional efficiency, which would accelerate innovations in the field of defence in selected associated areas, mainly taking into account: leadership and management in the defence sector, long-term research and development programs. Through identification and development of breakthrough technologies, with the use of simulations, it will be possible to develop and test alternative methods for the achievement of strategic goals (Hagel, 2014). On the other hand, the use of cutting-edge operational concepts, which utilize available and future resources, will allow to achieve greater strategic effects. Subsequent secretary of defence in the administration of President Barack Obama, Ashton Carter expanded the vision of Hagel's third offset strategy. Research associated with the assessment of capabilities supporting new operational concepts was carried out, so that the administration of a new president could determine requirements in the scope of priority investments, which will shape the American military strategy in XXI century. Carter's deputy, Robert Work who was supervising the implementation of assumption of the third offset strategy emphasized in his numerous speeches and presentations that this strategy represents "technologically supported operational and organizational constructs that provide an advantage to the combined forces – above all at operational level, but also at tactical level – thus strengthening the conventional deterrence" (Pellerin, 2016).

2. Essence of the third offset strategy

Representatives of the department of defence emphasize that the third offset strategy is not aimed against strategic competitors (e.g. Russia, China). Its fundamental idea is based on the

assumption that the dissemination of advanced military technologies in key military domains: outer space, around outer space, cyberspace and underwater, by potential enemies may significantly limit the freedom of operation and operational effectiveness of the United States in future conflicts or crisis situations. From the US perspective, particularly dangerous are those technologies that allow to create anti-access and area denial – A2/AD zones in regions, where the United States has strategic interests. These zones limit military capabilities of the United States in the scope of maintaining local superiority at the sea, in the air, outer space, cyberspace and in the scope of performing tasks in individual environments in a combined manner. These concerns are strengthened by the growing military power of China, whose armed forces are in the process of modernization and they are currently growing to be a regional great power. China, using advanced technologies, creates anti-access and area denial zones, limiting the freedom of US operation in specific regions (e.g. area of three seas: Yellow Sea, East China Sea and South China Seas). Similar threats are visible from Russia and Iran, which have more and more advanced military technologies that allow them to create anti-access and area denial zones. It should be assumed that access to this type of technologies will be more common and therefore, the threats to US interests will appear in an increasing number of places around the world. These threats increase the potential costs of conflicts with participation of the United States, undermine the credibility of security guarantees for its allies and partners, increase the costs of long-term competition, as well as the risk of failure of deterrence. As a consequence, there may occur a multi-level strategic and operational risk for American forces deployed outside the continental bases.

As the name suggests, it is the third strategy of this type. The first offset strategy took place in the 50s of XX century as the "new look" of President Eisenhower's administration at the increasing quantitative advantage of conventional potential of the Soviet Union and satellite states: 175 Soviet divisions against 92 allied divisions. Eisenhower ordered the development of a new strategy, which would eliminate quantitative advantage of the enemy. This resulted in the first offset, which consisted of expansion of the nuclear potential as a credible deterrent that limited the quantitative advantage of the Warsaw Pact countries. Thus, the doctrine of massive retaliation was implemented, compensating for the conventional capabilities of the Soviet Union in Europe (Martinage, 02.12.2017). The first offset strategy was successfully applied until 70s of XX century, when the Soviet Union managed to catch up with development of nuclear weapon (for tactical and strategic applications), both in terms of quantity and quality. This state of affairs forced the United States to initiate the second offset strategy at the end of Vietnam War. In 1973, a small office within the department of defence, which in future transformed into globally renowned Defence Advanced Research Projects Agency (DARPA), started to implement a long-term program of planning and development of research. Its aim was to increase the effectiveness and conventional capabilities of the US armed forces and their allies against the armed forces of the Warsaw Pact countries, without relying on the use of nuclear weapons. As a result, various types of conceptual, technological and organizational

innovations appeared within the framework of second offset strategy, which became known as "revolution in military affairs" in the post-Cold War decades. The use of advanced digital-electronic systems and information technologies on the battlefield, which were unknown to the Soviet Union, allowed to introduce a new generation of intelligent weapons, sensors, means of command and visualisation of combat operations. They were applied to the air-land battle concept, along with a whole range of new combat assets, which abruptly increased the potential of US armed forces in Europe (Martinage, 02.12.2017). Their usefulness was positively verified during the Gulf War (1991), air force operations in Kosovo (1999), and then during the war in Iraq and Afghanistan (2003-2014).

In order to understand the essence of third offset strategy, first it is necessary to understand the challenges and trends that imply its future implementation. In this context, the key meaning has the initiative for the benefit of defence innovations, which was initiated by the former defence secretary, Hagel. The previous technological superiority of the United States was undisputed, which in effect provided the US armed forces with military domination in many areas. However, the treatment of technological advantage by the United States as *status quo* is at least doubtful in the last decade, mainly due to emergence of asymmetric capabilities, which reduce the conventional capabilities of the US armed forces. As indicated by the decision makers of the US department of defence, the previous technological innovations gained by the United States gave an advantage over potential enemies for a long period of time. However, the pace of development of technological innovations and their dissemination around the world mean that most new technological solutions are able to provide the US armed forces only with a temporary advantage, which according to the experts lasts no more than five years. In recent years, advances in the development of A2AD technologies have begun to threaten the previously practically unlimited capabilities of the United States in the scope of projection of military power anywhere in the world. Within the last decade, similar capabilities were gained by potential enemies of the United States, who expanded them to the area of cyberspace, which as a consequence leads to the loss of previous domination in the area of command, reconnaissance and observation, as well as other areas that were previously commonly recognized as the domain of the US armed forces.

According to leaders of the department of defence, the third offset strategy includes efforts focused on the implementation of innovative solutions associated with the development of capabilities in the scope of conventional deterrence. These solutions include areas that will allow to counteract the capabilities developed by potential enemies of the United States. The key issue in the scope of defining the third offset strategy corresponds with the following question: which capabilities of potential enemies should the implemented strategy compensate? For example, the strategies of the first and second offset balanced the quantitative values of conventional capabilities of the Warsaw Pact forces. Meanwhile, as emphasized by the former defence secretary, Ashton Carter in his speech, the current decrease in technological advantage of the United States is not related to the quantitative advantage of enemies or increase in value

of investments in the military sector, but it is dictated by the global and commercial nature of the innovative environment and growing possibilities of using commercial technologies for military operations (Ellman, Samp, and Coll, 2017). Enemies are able to use the available technologies that allow them to develop their own innovative operational concepts, which currently constitute a challenge for the United States and its allies. Moreover, the third offset strategy should not be treated as a solution to the above problems, but rather as a framework plan. In other words, the third offset strategy should provide an answer to the following question: what set of analytical and ultimately operational tools should be used to solve current and future operational problems? The answer to this question will allow to implement a series of solutions in the future, many of which will be predicted only in the future. The third offset strategy is also an attempt to answer the question of how the department of defence intends to coordinate efforts in the scope of technological, operational and organizational innovations, along with the management of civilian and military capabilities, in order to counteract the growing threats to conventional deterrence and maintenance of the US technological advantage? Experts point out that the above-mentioned question may remain without an answer, unless the department of defence will invest in the development of civilian and military personnel, which in consequence will contribute to the development of technological innovations, preparation of innovative operational concepts or innovative management of organizations (Ellman, Samp, and Coll, 2017). Without this, the department of defence will not be able to successfully identify and acquire new technologies, unless it will enable cooperation with the commercial sector, both in the country and internationally. Similarly, it will be impossible to effectively use new technologies without effective development of new operational concepts, which will take into account the use of new technologies that in turn will allow to build an advantage and reduce the threats.

Technologically, the third offset strategy is supposed to be based on five key areas: autonomous deep-learning systems; human-machine collaborative decision-making, assisted human operations, advanced manned-unmanned system operations, network-enable, semi-autonomous weapons hardened to operate in a future cyber environment. Advances in these specific identified technological areas will increase the current conventional capabilities in relation to the potential enemies and will allow for development of new conventional capabilities that go beyond current and predictable capabilities assigned to the potential enemies. The idea of third offset strategy also includes experimenting on many fields of innovation and not just investing in the indicated key areas. Such approach may bring additional benefits in the form of completely new areas, which may turn out to be even more interesting in the context of conventional deterrence capabilities. It will be fostered by close relations of the commercial environment and scientific environment (Ellman, Samp, and Coll, 2017).

On the other hand, according to Carter, who is the former secretary of defence, the introduction of organizational innovations requires implementation of a plan in accordance with recommendations issued by the Defence Science Board and the newly created Defence

Innovation Board. The purpose of these two bodies is to advise the department of defence in the scope of introduction of innovative organizational practices functioning in private sector into the state entities. It is obvious that not all solutions functioning in commercial sector can be introduced into the state sector, hence three recommendations were determined in this area. Firstly, the information technologies should be the fundamental competence within the department of defence (in relation to the third offset strategy). Secondly, it is necessary to create the position of Innovation Director in the Department of Defence, in order to identify, promote and sponsor innovative solutions. Thirdly, it is necessary to create investment incentives through open competitions, funding of awards in areas that are crucial for the development of future defence industry, including in the area of artificial intelligence and virtual environment (Ellman, Samp, and Coll, 2017). As a consequence of undertaken actions, there should occur a quick process of changes in the institutional culture allowing for the introduction of innovation at organizational level, which should result in increased creativity of institutions responsible, among others, for the development of doctrines or simulation systems. Representatives of the department of defence also indicate the need for quick adaptation of the military to new technologies. Development of the artificial intelligence, whose elements are more visible in the civilian environment than in the military environment, is mentioned as an example. The third offset strategy will also require the development of initiatives that will allow the department of defence to acquire and maintain civilian and military personnel, which will enable it to function as an innovative organization. It can be noticed that organizational element of the third offset strategy is treated very seriously and it is considered to be the basis for building subsequent undertakings within the same strategy. Attracting young talents representing key areas for the department of defence, dynamization of career development paths for young scientists and proper staff management are just some of the important areas that require the introduction of innovative solutions in the organizational aspect.

Undoubtedly, the identification and acquisition of innovative technologies constitute a serious challenge for the department of defence, however this challenge will not be completed after achievement of these two. Subsequent challenge for the department of defence will be the integration of new capabilities and new operational concepts resulting from these capabilities within the existing organizational culture of the armed forces, which is not always susceptible to changes. Experienced officers indicated the fact that the current military generation is ready for changes resulting from the use of modern, innovative technologies due to the fact that they practically grew up on modern technical solutions. However, on the other hand, they should rely on the experiences of older generation, which can combine the implementation of new technologies with operational constructs.

From the point of view of military personnel, the problem may turn out to be the time of implementation of modern solutions to the operational plans. The military personnel cannot wait 20-30 years for the decision, whether the given technology provides the necessary capabilities and whether it is possible to implement it to the operational plans. In addition to

building trust for understanding of new technologies and new operational concepts resulting from it, equally important is the understanding of their limitations. Experts mainly indicate the limitations associated with the security of network-centric environment, which is inseparably connected to the implementation of modern technologies.

The third offset strategy may be also defined as a set of rules aimed at the use of new technological innovations and operational concepts in order to manage technological potential equally with the potential enemies, and in consequence, to maintain the ability to project conventional strength and deterrence. There are differences visible between the third offset strategy and two previous strategies. Firstly, a different image of threats creates the necessity of a technological race with potential enemies. During the Cold War, the enemy was clearly defined and its combat potential was known, therefore it was easier to adapt technological development to a specific type of threat. The third offset strategy must address various threats, often at the strategic level. Also, it is worth to emphasize the economic context. The previous two offset strategies did not have problems with funding due to the focus on the security policy associated with the constant threat from the Warsaw Pact countries. The current defence budget of the United States is subjected to constant cuts, and the funding of projects in many areas, associated with the necessity of making a technological leap, may be doubtful. Despite the fact that the USA maintains a military technological advantage thanks to innovation and spends much more financial resources for defence than the other countries, the resources necessary to maintain and increase military technological advantage may be unavailable in the future in a size providing advantage over other countries. In the future, the budgetary pressure may force a new look at the methods used to promote innovative defence solutions (Ellman, Samp, and Coll, 2017).

In relation to the third offset strategy, it is also necessary not to forget about the potential personnel costs associated with its development, generated by various sources within the innovations themselves. Reduction of costs associated with the military personnel will be natural in connection with technologically advanced solutions, such as robot factories or unmanned combat systems on the battlefield. Undoubtedly, they will reduce the number of military personnel. The previous two offset strategies were preceded by an increase in the number of military personnel, which was followed by a significant drop in the number of military personnel. In the period of first offset strategy (1954-1959), the military personnel was reduced by approx. 800 000 soldiers in all types of armed forces. On the other hand, the strategy of the second offset resulted in nearly 1 000 000 redundancies of military personnel in all types of armed forces (DMDC, 02.12.2017). In terms of analogy, it can be assumed that another offset strategy aimed at automation and robotics of the battlefield will also result in a significant reduction of military personnel.

3. European dilemmas in the context of third offset strategy

In the autumn of 2015, team of experts started a discussion regarding the implications of third offset strategy for Europe. Experts considered a series of issues combining strategic, defence and industrial problems in relation to the subject strategy. It was agreed that the understanding of all implications resulting from the third offset strategy for the armed forces of European countries and the defence industry is a continuous process. It was concluded that an in-depth dialogue is necessary on the subject of impact of the third offset strategy on transatlantic cooperation (Fiot, 2015).

There is no doubt that the third offset strategy should be an alarm bell for European NATO countries – governments, institutions and industry. The above-mentioned strategy raises the fundamental issues associated with the military strategy, defence innovations, interoperability, demonstration of own capabilities, which have great importance for Europe in the context of changes taking place in European defence policy. Additionally, the issues covering third offset strategy match to the assumptions of European global strategy and the proposal of European white paper in the field of defence.

Experts indicated that while the first two offset strategies focused on a specific enemy (Warsaw Pact countries during the Cold War), the current strategy does not refer directly to the surroundings of European countries, but rather focuses on American interests within Asia and Pacific. Thus, the experts concluded that Europe should independently implement its own defence strategy, including clear determination of necessary defence capabilities, as well as the scope of funding and investing in modern technologies. It is more necessary due to the fact that the idea of establishing European army is becoming more and more real (Fiot, 2015).

In opinion of the experts, in the context of deterrence, Europe faces a challenge associated with the need to reduce the risks resulting from the creation of anti-access and area denial zones on the NATO's eastern flank. In this scope, it is necessary to provide capabilities including the access to: underwater naval forces, offensive capacities in cyberspace, beam weapons, reconnaissance and observation systems, as well as unmanned systems, as priority. The assumptions of third offset strategy come across these areas, and technologies resulting from the works within this offset may be very beneficial for Europe.

The experts also noted a potential enlargement of technological gap resulting from the third offset strategy between the United States and European NATO countries. Counteracting this threat requires increased investment of European countries in research and development programs, as well as technology demonstrators. In other words, Europe should be able to take an investment risk in the scope of research and development (Fiot, 2015).

In opinion of the experts, the transatlantic cooperation should constitute a key element of the third offset strategy. Any burdens associated with operational cooperation in the transatlantic context should entail cooperation in the technological aspect. It is supposed to be an element of mutual trust and strengthening of transatlantic ties.

It should be noted that there always was a visible technological gap in the North Atlantic Alliance between the United States and other countries. As it was noted over ten year ago: "for several decades, large disproportions in funding in the field of defence and technology by NATO members have resulted in widening of the technological gap, which threatens to result in significant discrepancies" (Daniel, 2004, pp. 1-6). Potentially, two solutions can prevent the above-mentioned technological gap. The first one relies on the need to increase funding by European NATO countries for research and development in the field of military technologies. The second solution requires the increased US participation in sharing available technological solutions with its allies. Insurmountable barriers should be expected in both cases. Despite the visible trend among European NATO countries consisting of increasing the defence budgets, it should be assumed that Europeans will only in a small part spend money on research and development of modern technologies in the field of defence. On the other hand, it should be expected that there will be restrictions in the scope of transfer of modern technologies from the USA to other member states (Hensel, 2016). Thus, it can be assumed that the implementation of technological solutions resulting from the third offset strategy will deepen the technological gap between the United States and Europe, particularly if in reality there will be no increased financial expenditures for research and development on the European side. Therefore, what can Americans expect from their allies and what role the European NATO countries may play within the third offset strategy?

It seems that the first task for both parties is to convince each other about the need to implement a new offset strategy. It was pointed out by Robert Work that "everyone together [NATO member states] should decide, whether these innovations are a priority or not, i.e. whether the effort is purposeful. And we can't just stop at this level of resources, which the Alliance provides for defence right now" (Work, 2015). In this statement of the former deputy secretary of defence, there can be heard a question addressed to European allies about an increase in expenditures for defence. Even if the European part of NATO will invest more financial resources in modern technologies, developed outside the third offset strategy, the question arises, whether these countries will want to transfer technology to the Americans. There is no doubt that the USA sees NATO's huge role in providing collective defence, but at the same time demands increased financial commitment for the benefit of defence in other member states. On the other hand, statements on the American side suggest that Europe will be treated more like doctrinal and operational partner, than technological or industrial partner (National Military Strategy, 2015). In this context, the industrial role of European companies in American third offset strategy seems to be at least doubtful. Important step on the path to standardization in this area could be a facilitation of export of European defence industry (and not only) companies to the United States, which would prove the mutual commitment of allies in the development of third offset strategy. Unfortunately, the American politicians are far from recognizing the role of European armaments companies in the technological revival of the United States.

Another question that should be asked in the context of third offset strategy is how the third offset strategy implemented in the United States can affect Europe in a strategic and industrial dimension. It must be noted that the idea of third offset strategy coincided in terms of time with the change of strategic orientation of the United States towards Asia and Pacific. Therefore, it can be assumed that China is the key to understanding the change in orientation, as well as partially in the subject strategy, while the countries located in the area of Asia and Pacific may be keenly interested in this strategy (Dombrowski, 2015). "Friends of the USA and its allies hope and expect that partner cooperation will be rewarded with economic and technological benefits" (Neuman, 2006, p. 429-451). This is visible among Asian countries that are partners of the United States, which are searching for the possibility to import the American defence technologies in order to improve their own security, but at the same time to transfer technologies that will increase their industrial capabilities in the field of defence – mainly in relation to the main actor in this region, China (Heidenkamp et al., 2014). The USA takes advantage of this trend, which in consequence serves to increase interoperability and strategic cohesion in the region, and on the other hand strengthens the American industry. Partnerships with such countries as: Australia, India, Indonesia, Japan, Malaysia, Mongolia, Philippines, South Korea, Taiwan, Thailand and Vietnam without a doubt increase the position of the United States in this region and contribute to its stabilization.

It is necessary to recognize an interesting fact that the Americans shape a different type of defence-industrial partnership with Asian countries compared to the partnership with NATO allies. It was always important for Europeans to ensure the principle of balance by the United States, which consists of transatlantic transfer of technology. This means the possibility of purchasing the products of American defence industry by European countries from the Americans, with the simultaneous access to the American defence market. In reference to the third offset strategy, it is necessary to expect that this principle will be maintained, even if it will only mean a doctrinal and operational contribution, and not the actual technological transfer from the Americans.

What should the Europeans do in order to have access to modern technologies within the American third offset strategy? Two options seem to be probable. Just like in the case of Asian countries, the first option means the purchasing of modern equipment and technologies from the United States. This will ensure increased interoperability with the US army and allow to import state-of-the-art military technologies, as well as open the way for industrial cooperation between companies on both sides of the Atlantic. It can be assumed that the above-mentioned factors were taken into account by the European countries (Denmark, Italy, Netherlands, Norway, United Kingdom) that purchased fifth generation fighter aircrafts, Lockheed Martin F-35 Joint Strike Fighter from the Americans. The second option that may be selected by the Europeans includes the need to significantly increase expenditures in the scope of defence. This is not only about purchasing military equipment, but mainly about investing in research and development programs, which in the future will result in modern technologies and

operational constructs that may find their place within the framework of American third offset strategy. The development of ground-breaking technologies in European countries would certainly strengthen their position in the context of third offset strategy. On the other hand, it is obvious that European countries are currently unable to invest in the development of modern technologies at the level enabling competition with the United States (Fiott, 03.12.2017).

It should be assumed that the European governments will use both these options simultaneously, i.e. the purchases and gradual increase in expenditures for research and development programs in the scope of defence. On the other hand, the USA seems to be willing to invest more in the industrial-defence development of the region of Asia and Pacific, as well as Persian Gulf countries, than in Europe. Europe should not treat this as a threat and it should positively respond to the concept of third offset strategy, which has been done already by some countries (e.g. United Kingdom).

4. Summary

The third offset strategy is the American attempt to keep status quo, consisting of technological advantage over potential enemies that have quantitative advantage. Its assumptions refer not only to innovative technological solutions, but are also supposed to combine cutting-edge organizational and doctrinal solutions in the field of defence. Thus, the idea is to use this strategy to maintain the status of a global superpower, capable to project capabilities in global perspective and therefore to deter potential adversaries.

The American third offset strategy also raises several important issues for Europe. Firstly, the need to understand the essence of the strategy itself. If it is only one of the internal policies of the USA, and particularly the debate on priorities of budgetary expenditures for defence, then the European countries should not get involved in the development of this strategy. Secondly, the implementation of assumptions of the third offset strategy may lead to deepening of the technological gap between the United States and other NATO countries. In connection with the above-mentioned issue, the European part of NATO will have to decide, whether it agrees with the basic assumptions that constitute the base of the third offset strategy. Taking into account their own problems of regional security, interest in the third offset strategy focused on technologies associated with the change in strategic orientation of the USA towards Asia and Pacific may turn out to be minimal. Thirdly, the lack of strategic involvement of US allies in the third offset strategy does not exclude the possibility of commercial use of technologies resulting from the works associated with this strategy. On the other hand, it should be assumed that ambitions of the European countries are definitely higher and there will be increase in expenditures for research and development programs in the field of defence as a consequence of this.

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