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Developments in Sixth Generation Warfare Methods

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Abstract

Sixth generation warfare is a new form of warfare characterized by the use of artificial intelligence and other advanced technologies to create military superiority. The sixth-generation war is based on the concept of "networked warfare", where all weapons, systems and operations are integrated into an integrated system. The sixth-generation war constitutes a revolution in the nature of war, as it is characterized by a set of new methods that increase the accuracy of combat and reduce human losses, tools of generation war. VI is still under development, but is expected to play an important role in future wars. These tools can help make warfare more accurate and with fewer casualties. However, they can also increase the risk of conflict, as they can make it easier for states to use military force.

Keywords: Sixth Generation Wars, Remote Engagement, Remote Defense, Artificial Intelligence.

Introduction

War, one of the important topics in the field of international relations, continues to attract attention as a dynamic issue. Despite attempts to prevent war for many years, it still exists with changes in its methods and strategies. Likewise, the concept of war management is a concept that is renewed and develops itself over the years. There is no doubt that development and renewal is reflected in methods, strategies and plans. In the twenty-first century, it has been noted Frequently referred to as sixth generation wars (non-contact wars), they depend on modern techniques and information technology to fight remotely to impose complete control over the opponent's state and are often classified today as a form of war even though it is a new generation in the process of maturation and completion.

More recently, remote-based warfare (sixth generation warfare), modern military technologies and dual-use technologies, and scientific and technological progress in a variety of fields, starting with the emergence of new types of weapons and military equipment and ending with information and communications technology, have led to a change in the nature of management. Modern wars relying on long-range, high-precision non-nuclear weapons in widespread service, reformulating military plans and re-equipping the armed forces, carried out by the leading world powers in accordance with the inventions and technological trends of the 21st century to achieve decisive victory over the enemy.

First: the concept of sixth generation (contactless) warfare:

The first person to predict the sixth generation of war was the Vice President of the Russian Academy of Military Sciences, Vladimir Slipchenko. In his interview with the reporter, Valery Alexin, he made a prediction about the nature of future war and its content from 2007 to 2030. Vladimir used numerical terms, including the term generation. VI, in which he argues that "in these wars, the decisive role is not assigned to a large number of nuclear weapons, but to high-precision conventional strikes, defensive weapons and weapons created on new material

foundations. The most powerful information strikes and massive strikes will be delivered by high-precision unmanned weapons." From different bases, the main goal of sixth generation warfare is to defeat the enemy's economic capabilities to change the political system (Home, 2022).

Sixth generation wars are classified as wars that are managed entirely remotelyNo-Contact Warfar in terms of the capabilities of individuals or weapons used, as it begins targeting people themselves from a distance using tactical weapons and managing information and economic conflict (Muhammad, 2019).

Sixth generation warfare is a mixed war closely intertwined with information, psychological and irregular wars. Its weapons are launched from land, sea, air and space platforms. In this type of war, long-term clashes are dealt with (Shankarnarayanan, 2020).

As for the basic goals of the sixth generation that it seeks to achieve: 1) Defeating the enemy's armed forces, which usually takes place inside its territory; 2) Destroying the enemy's economic capabilities; 3) Overthrowing or replacing an enemy's political system.

If these three victories are achieved simultaneously, the victory is considered complete and the war ends according to what was announced, but if success is not achieved in one of the three directions, the victory will not be complete (Read more, 2022).

Second: sixth generation elements:

New generation wars are manifested in five basic elements (Kipp, 2012): a) Political pressure: through agents of influence, propaganda, media operations, exposing local authorities to danger, etc; b) Indirect influence: by organizing cyber attacks, disrupting transportation infrastructure, training and arming insurgents, etc; c) Military intervention: through the clear advancement of their forces to the border, organizing joint volunteer arms formations, unifying the efforts of rebel groups with parts of the Russian army, etc; d) Coercive deterrence: through aggressive air border patrols, transfer of tactical nuclear weapons systems, theater- or continent-wide troop maneuvers, etc; e) Negotiating manipulation: through manipulating ceasefire agreements, creating discord in the camp of Western countries with the help of economic motives, etc.

Third: Characteristics of the sixth generation:

The sixth generation has a number of characteristics, the most important of which are: a) Using smart weapons to destroy the foundations of the state and make it fail through the use of full conscription and the Internet; b) Complete recruitment of animals, fish and birds for the purposes of espionage and remote damage (Ahmed, 2019): 1) The decisive factor in sixth generation wars is complete domination of space, as the fighting intensifies by air forces and satellite channels, as operations on the ground play the role of support only (Ali, 2023): 1) In this generation, terrorism and global gang formations are being created (Hameed, 2022) It is managed through networks to carry out identity theft and fraud operations and causes the loss of dollars. In this aspect, it uses political influence and pumps money to armed groups so that there is a proxy war. Here we find that the beneficiary of the battle did not offer a single blood sacrifice in order to achieve his goals (Ali, 2023); 2) Targeting civil society, political leadership, and the population in military operations (Alwan et al., 2023). By influencing people's minds and behavior, causing hereditary, genetic, or environmental damage, this damage is called war, hardship (Alwan et al., 2021).

Fourth: Features and features of the sixth generation of warfare:

The emergence and use of autonomous weapons that rely on artificial intelligence techniques that are self-programmed to deal with engagement during battles without human intervention

or semi-autonomous unmanned vehicles that are controlled remotely, has led to (Younis, 2022) These weapons appeared as a result of the development in the arms industry and the establishment of specialized research centers, especially in Russia and America, to make the means of combat more capable and effective in terms of speed and cost. (Fadel, 2016) Such as directed energy weapons systems, high-precision primary weapons, more powerful explosives, deep-penetrating ammunition, and electronic warfare equipment. Work on developing highly accurate weapons has begun in an intense and extremely intense manner, gaining power, as this is a weapon in which the possibility of hitting the target is close to Intercontinental level even under adverse climatic conditions (Read more, 2022).

Adding an information character to traditional wars and developing precision strike systems and means of combat by going deeper into fighting enemy systems as a result of the revolution in military affairs led to relying on new principles and conducting remote operations without communication, and since this conflict brought about major military reforms. (Kipp, 2012) And the emergence of contemporary technologies such as artificial intelligence has entered into the manufacture of smart weapons, which is a group of guided and precise weapons, which consists of applying smart power by launching precision-guided munitions (achieving awareness of the battlefield through the British Navy's Tomahawk cruise missile guided by a GPS system)GPS) which can hit a target the size of a small room a thousand miles away, and smart weapons have greatly increased the destructive power compared to what it was yesterday. (Maezi, 2022) The use of surveillance aircraft and unmanned aerial vehicles in conflicts between states or armed non-state actors, such as drones, is a breakthrough in manufacturing that has changed the military doctrines of armies and thus new forms of war in the future, as they are used to carry out effective attacks on vital platforms. (Ibrahim, 2020) And expanding the use of military robots to replace soldiers on battlefields, or at least to support them, in a way that achieves many advantages for armies, including reducing human losses and the ability to carry out tasks in circumstances that are difficult for a human soldier to carry out. The equipment of these robots can also be equipped with electronic parts and sensors that can provide information to the monitoring centers that will complete the attack missions remotely. In addition to this, military satellites are spread in space, where they are mostly used for communications, navigation, and intelligence gathering. Some satellites have also been developed for early warning of approaching missiles. Although Russia was the first country to place a satellite in space, the United States has the largest number of military satellites in space in 2023, numbering (123) Russia (74) satellites Military industrially, while China has (68) military satellites, these three countries have the largest number of military satellites, and there are many other countries that have military satellites as well, as shown in Map No. 1 (World Population Review, 2023).

It must be noted that the most important features of new generation wars are the presence of two opposing world powers competing in times of peace and war, because development does not come as a result of developing weapons for a specific "superpower."

Fifth: Sixth generation methods in managing wars.

The revolution in military affairs leads to fundamental and qualitative changes that occur under the influence of scientific and technological progress in the methods of conducting military operations and the means of armed struggle. (Yassin & Kazem, 2023) which also radically changed the construction and training of the armed forces, and war in the world, as the sixth revolution began in military affairs and was linked to the emergence of high-precision conventional weapons, along with methods and non-contact warfare of the sixth generation, which is characterized by the attacking party directing massive, long-range, high-precision strikes. To any country, in order to destroy its economy and deprive it of basic life capabilities

without violating its land and sea borders with impunity and international question, so these wars will become a powerful factor to destabilize stability and security in the world (Unknown, 2018).

Remote engagement:

Scientific and technological progress has allowed a retreat from armed conflict and a shift to the use of non-military methods and indirect military methods (informational, economic, diplomatic, political, cyber, and cultural), as armed conflict between countries is viewed as an extreme matter that should be avoided whenever possible. (Unknown, 2022) The goal of war from these indirect strategic methods is the complete annihilation of the political power, the existence of the nation, the economy and the culture of the enemy country and at the same time the establishment of a new state that serves its interests. The main thing is to completely dissolve the state, crush it and paralyze the political and economic structure of the enemy and its spiritual potential, and thus make the actions of its forces Armed without effect.

In sixth generation warfare, states increasingly resort to using covert methods of confrontation to achieve their goals. The main method of this non-military form of conflict is information warfare. On the one hand, methods of managing information warfare allow for a highly effective and low-budget means of influence, if not victory. Other, it allows the formation of the required "information" that will ensure the management of public opinion in confirmation of the necessity, legality and effectiveness of the use of force, because the strong informational and psychological influence on members of the armed forces and the population of the country will significantly weaken the systems of state administration and military administration and make the task of ensuring the sustainability of administration one of the main tasks. There is a group of methods that depend on the goals that the attacker seeks to achieve through information wars, including:

Methods of physical attack: This attack aims to destroy or disable vital electronic infrastructure, such as communications systems or data centers, and this is done using guided bombs, smart bombs, or automatic weapons. (van Niekerk & Ramluckan, 2019) such as the attack by Russian forces on vital infrastructure in Ukraine in 2022, which included the destruction of power plants, bridges, hospitals, care institutions, and entire cities (Al-Bashir, 2023).

Methods of economic attack: Economic warfare uses a variety of methods to destroy or disrupt the economy of the target nation. (Hameed, 2022) These methods include attacking financial networks and systems to disrupt commercial transactions and financial services, or stealing financial, industrial, or governmental data to create economic crises, leading to significant financial losses as a result of damage to their commercial or industrial interests. (Haddad, 2020) For example, a company was exposedColonial Pipeline), an American fuel transportation company, suffered an economic attack in 2021 that disrupted its services for a long period (Mahrous, & Saleh, 2022).

Electronic attack methods: This attack aims to penetrate computer systems, networks, and communications systems, and extract, destroy, or disable information. This is done through the use of various means, such as viruses, malware or malicious attacks, (Al-Shaiti, 2020) Such as the cyber attack that the company was subjected to (Equifax, an American credit agency, in 2017) led to the theft of millions of people's data (Fruhlinger, 2020).

Methods of information attack: This attack aims to influence public opinion and mislead the opponent by broadcasting misleading information and media blackout, with the aim of weakening the enemy's morale or surprising him with military action by media exaggeration of his losses and glorifying his psychological defeat. This is done through the use of various means, such as social media. or electronic advertising, (Al-Taie, 2022) For example, in 2021,

Russia announced that it did not intend to invade Ukraine, and then the Western media responded that Russian President (Vladimir Putin) was planning to attack Ukraine. The methods of engagement in sixth-generation wars pass through two stages. In the first stage, achieving the goals that can be achieved using methods of remote engagement. If the military and political objectives are not achieved, the second stage will begin - the direct armed confrontation of previous generations using high-precision conventional weapons, as it proceeds. The process of armed confrontation quickly, according to the rules of the side that is most prepared to implement achievements and the most advanced in the military and technological fields, as sixth generation wars are short, lightning-fast, unlike the long wars that past generations fought. Speed, synchronization, and speed of control become the decisive factors that determine the success of military operations, and will be Carrying out control of troops and weapons in almost real time, high-precision weapons will increase the efficiency of operations tenfold. Superiority over the enemy in mobility, accuracy and information support will make it possible to conduct combat operations at such a pace and intensity that the potential enemy will not be able to withstand, due to Being in a difficult and constantly deteriorating situation, the enemy will not be able to take the initiative and plan and control the actions of his forces effectively (Hameed, 2020).

Long range defense:

The era of state dominance over wars has ended, and the state monopoly has ended (Al-Ali, 2022) For the capabilities associated with directing precise and long-range strikes, which led to any active entity in the global strategic environment being easily targeted and exposed to threat, which prompted the development of strategic defense capabilities in conjunction with technological development to shift to what is called (long-range defense method), which is the method of defense in wars. Modern uses various weapons or devices to protect against enemy attacks from a distance. Remote defense can include the following methods: Air and missile defense methods: They are a type of strategic defense designed to protect countries from air attacks and incoming missiles, such as drones, intercontinental ballistic missiles, or tactical ballistic missiles. (Shaker, 2023) These systems consist of a variety of components, including (Congressional Research Service, 2021): a) Radar devices operating at different wavelengths and in multiple modes capable of detecting air targets and providing warnings; b) Electronic centers to manage basic and alternative central air defense operations, or distributed throughout the entire combat sector to manage engagement with air targets; c) A multi-layered missile network in Abda at the state level, medium-range and short-range; d) For hybrid systems (missiles/cannons) to defend tactical units and sensitive and valuable targets; e) Anti-aircraft guns accompanying ground units in their movements to defend important targets, all of which is accompanied by electronic procedures, including camouflage and passive defense procedures.

As a result, remote defense works by linking multiple types of ground-based radars (e.g., long-range surveillance radar, engagement radar) with mobile command centers and air and space capabilities to provide a larger, more comprehensive picture of the battlefield (Figure 1). This creates A challenge to the enemy forces because there is no single sensor or missile to neutralize it, but rather a distributed network to deal with it, and the United States, China, Russia, India and France have each developed their methods of integrated air and missile defense that has the ability and high speed to respond to deter any air or missile threat from In order to achieve the desired level of air control.

Electronic defense methods: It is a method designed to protect against electronic attacks through electronic protection measures, also known as electronic countermeasures, the purpose of which is to undermine the enemy’s attempts to deny him the use of the electromagnetic

spectrum. * The common method is to quickly switch frequency channels according to a specific pattern, known only to the sender and receiver. (Khalifa, 2021) Electronic reconnaissance can also be used to identify potential threat sources and assess risks by identifying the radio frequencies used by the enemy and then using electronic jamming stations to prevent the enemy from using radio frequencies or satellites. (Al-Sharq News, 2022) One of the most famous examples of cyber defense, according to statements by the head of the Cyber Security Department in the Ukrainian Security Service (Ilya Vityuk) in an interview with "My Ukrain" TV, is that Ukraine will confront more than 4,500 Russian cyber attacks during the year 2022 (Berzina, 2020).

These new capabilities require new defensive methods that focus on a set of characteristics, the most important of which are: 1) Defense is multidimensional: A defense strategy must be able to deal with a variety of threats, including traditional attacks, cyber attacks, and hybrid attacks; 2) Intelligent integration: Integrating different defense capabilities with each other effectively to provide comprehensive defense; 3) Sustainability: The defensive strategy must be able to withstand intense attacks for long periods of time, in addition to adapting the tools and methods used to the changing conditions of the external environment (Al-Obaidi, 2024); 4) Relying on artificial intelligence: Artificial intelligence can be used to improve many aspects of defense (Araya & King) to discover and identify air, sea and land targets through surveillance, reconnaissance, command and control, and this can help protect forces and infrastructure from attacks.

It should be noted here that the main efforts in sixth generation warfare defense methods aim to protect economic facilities from attacks with high-precision weapons, by intercepting the carriers of these weapons before they are launched. As a result, such a battle is carried out through a complex combat defense system with a strategic scope and use. The state's strategic defense forces, in addition to a group of high-precision defense systems that were created and linked to the goals, objectives, place and time of combat operations, and these combat operations are carried out according to a single plan and concept in the air, land and sea to defeat high-precision air and sea carriers and others to protect the means and economic capabilities of the country. From being subjected to an enemy retaliatory strike (Mutani & Abdul-Ilah, 2023).

Sixth: Weak points in the sixth generation's methods of managing wars:

There are several points that can be diagnosed in the methods of sixth generation warfare, perhaps the most important of which are: 1) Increased complexity in obtaining and controlling correct and complete information about the situation in the theater of operations without distortion or distortion (Majeed, 2024); 2) Conflict The widespread use of information networks can lead to an excessive flow of information, which in turn will lead to difficulties in selecting the most important target and determining who is in the best position to attack (Shaker, 2023); 3) Organized armed forces are, first and foremost, intended to conduct short-term combat operations; Wars may lead to a long-term state of conflict; 4) Almost all military weapons systems and infrastructure become significantly more complex due to the installation of complex electronic systems on them; 5)Military electronic systems are vulnerable and can be disabled, in particular, by the electromagnetic spectrum.

Conclusion

Sixth generation methods are the response of military science to fundamental changes in revolutions in military affairs as a result of fundamental changes in military technologies and scientific knowledge, which in turn made it possible to create more advanced types of weapons and come up with new methods of warfare. Sixth generation wars involve the use of all the

advantages of technologies. Information and computers for conducting combat operations of a completely new type centered the use of paramilitary means (political, economic, informational, etc.), which turned out to be more destructive than weapons of classical wars.

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