



PISM

POLSKI INSTYTUT SPRAW MIĘDZYNARODOWYCH
THE POLISH INSTITUTE OF INTERNATIONAL AFFAIRS

BULLETIN

No. 77 (1323), 6 June 2019 © PISM

Editors: Sławomir Dębski • Patrycja Sasnal • Rafał Tarnogórski

Sebastian Płóciennik • Justyna Szczudlik • Daniel Szeligowski
Jolanta Szymańska • Marcin Terlikowski • Szymon Zaręba • Tomasz Żornaczuk

U.S.-Chinese Competition in Artificial Intelligence: Consequences for the U.S. and Its Allies

Andrzej Dąbrowski

The Trump administration has presented a strategy for the development of Artificial Intelligence (AI). The U.S. goal is to maintain a technological, market, and military advantage over China, whose government financially and politically supports AI research and implementation. Progress in this area will be increasingly important for the security of the U.S. and its allies.

AI, understood as a computer program that utilises data analysis to change its activity by adapting to reality without human intervention, is used to control electronic systems and physical devices and is treated as a dual-use instrument, which means solutions for civilian markets will also be used in military technologies. The leader in AI is the U.S., as indicated by the number of companies in the industry and the value of the market, which in 2017 reached about \$700 billion. The projected development of the AI sector in China may threaten the American position in the coming years, which would result in negative economic, political, and security consequences for the U.S.

U.S. Activities in the Development of AI. In recent months, the Trump administration has intensified efforts to support the development of AI in civilian and military sectors. The steps taken by the government are a response to the lack of regulations at the federal level, but above all, to investments made by Chinese companies in the U.S. AI market and plans for intensive support of the industry by the Chinese government. In February, the White House published the U.S. AI development strategy and the Department of Defense (DoD) presented a summary of its classified plan for implementing AI for defence purposes. The DoD document establishes a new body with a wide range of competences—the Joint Artificial Intelligence Center—and has allocated \$1.7 billion to its operations. The general administration strategy focuses mainly on eliminating formal obstacles to the implementation of AI, setting security standards, and defining the threats. The document delegates the task of coordinating the “American AI Initiative” to the National Science and Technology Council and includes the promotion of AI research and development, access to federal institutional resources, and the harmonisation of activities aimed at creating technologies resistant to attack. The heads of federal agencies are required to consider AI as part of future budgetary planning.

In November 2018, the administration limited the possibilities of foreign mergers and investments in 14 technology categories, including AI, machine learning, data analysis, and robotics. This move was justified as the need to protect intellectual property. In the coming months, the administration plans to announce similar regulations regarding the export of such technology. These steps may prove to be too late, as Chinese companies have already invested about \$1.3 billion in 2010-2017 in the U.S. AI industry.

The Chinese Approach to AI. [The strategy for the development and implementation of AI in China](#) was formulated by the government in its “Next Generation of Artificial Intelligence Development Plan” of 2017 and a three-year action plan for the implementation of AI in industry. China’s goal is to become the AI

leader by 2030, which it believes will give it technological and military supremacy over the U.S. and provide Chinese enterprises with a global competitive advantage.

The Chinese authorities undertake strategic cooperation with their national AI industry companies, financing their research projects and implementing new technologies. Thanks to this, the Chinese government can control the direction of work on AI. Tasked with this mission is the Commission for Civil-Military Consolidation, established in 2017. The government's assumption is that the Chinese AI sector is expected to be worth at least \$150 billion in the coming years. At the same time, the government touts previous achievements by industry in implementing it in the civilian sector (autonomous vehicles, facial recognition, analysis of social behaviour) and military (including autonomous cruise missiles and drones).

AI Challenges for the U.S. The loss of U.S. domination over AI may negatively affect the competitiveness and profitability of many sectors of the American economy. The implementation of AI, especially in connection with fifth-generation mobile network technology (5G), considered a key element of what has been described as the fourth industrial revolution, and in the long term can determine the paths of economic development of many countries, including U.S. allies.

Future actions taken by the U.S. government towards supporting the development of AI will be influenced by the fear of China's growing capabilities, which may directly threaten U.S. allies. Competition for domination of AI will probably be similar to the [dispute over the spread of Chinese 5G technology](#). China will encourage European countries to implement AI solutions created based on Chinese standards, and thus burdened with the risk of foreign state access to critical infrastructure. At the same time, China will maintain the policy of not allowing foreign investors into its AI industry while sector products will serve the interests of the authorities. The U.S., similar to its actions regarding 5G, will try to hinder the spread of Chinese technology that may threaten the operational capabilities of U.S. forces deployed abroad. The U.S. perceives Chinese competition in the field of AI as a threat to the global interests of American companies and also fears that third countries will begin implementing technological and legal standards shaped by the Chinese authorities.

AI may also be used as an instrument of unconventional actions against the U.S., for example, in attempts to destabilise the American political system. The use of AI in cyberoperations aimed at interfering with the election process (including disinformation, hacking, generating deep-fake materials, use of AI to attack critical infrastructure), similar to what happened in the 2016 election, could result in a crisis of public trust in U.S. institutions and federal and state authorities.

Implications. From the point of view of the development of AI, a general threat may be the development of asymmetry in the implementation of this technology in the U.S. armed forces and its allies. In a few years, NATO countries may face the risk of backwardness in AI and the inability to compensate for the resulting gap in interoperability with American forces. This may become one of the issues in the debate on burden-sharing in the Alliance and could increase U.S. scepticism of the Europeans' ability to support American military operations. The emerging technological gap between the U.S. and its European allies will be difficult to overcome without significant investment and system-based solutions addressed to companies and research institutions. It would be in the interest of U.S. allies to [prepare their institutions and develop solutions \(including within the European Union\) that will support areas of AI](#) development that can create technological and market niches. The EU should stimulate the development of AI for defence purposes of the Member States through the Permanent Structured Cooperation (PESCO) mechanism to invest in European companies and research projects. An important threat to the EU AI market may be the outflow of skilled labour from the industry to the U.S. and China. In making decisions about the architecture of the 5G network and planning the implementation of AI solutions, U.S. allies should weight the likelihood of an intensification of the U.S. rivalry with China in this area. It should be assumed that future U.S. administrations may be sceptical of deepening cooperation with countries that exhibit a high saturation with Chinese AI technology.