5G: What Opportunities for the European Union?

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Although the European Union (EU) has been caught between the United States (US)-China military and economic rivalry over the last decade, it is now starting to find its path, exploiting new technological opportunities arising. In detail, in the past few years, the EU has oriented its efforts towards several emerging technologies, including cybersecurity, artificial intelligence (AI) and last but not least, 5G. According to the European Commission, "5G provides virtually universal, ultra-high bandwidth, and low latency 'connectivity' not only to individual users but also to connected objects"[1]. From the civilian perspective, the fifth-generation wireless technology can be applied to many different sectors, for instance, to connect automated mobility, eHealth and energy management. By accelerating and making connectivity more flexible, this generation will be at the centre of the future digital economy. As recognised in the EU's 5G toolbox in 2020, 5G networks would be the "future backbone of our increasingly digitalised economies and societies."[2] From the military perspective instead, , 5G will be a crucial player when it comes to AI systems, given that not only it will provide real-time data collection and analysis, but "it also will bring the cloud to a new dimension by enabling the distribution of computing and storage, such as edge cloud, and mobile edge computing, throughout the infrastructure." In other words, what differentiates the 5G from the 4G is the fact that "it allows for the combining of multiple services, and covers the entire frequency spectrum through one single and unified technology"[3], Atos' senior vice president said, Cyril Dujardin. Still, 5G tech can find many different applications within the military world, but three of them are worth mentioning:[4]

1.Integrated access and backhauling (IAB), or the convergence of the radio access (the link between the user equipment and base station) and the backhauling (the link between the base station and the core network);

2.Multi-hop configurations: User equipment can serve as relays for other user equipment, which could be interesting in a situation where the mobile is not in direct contact with the base station;

3.Proximity services: 5G enables better implementation of proximity networking technologies, such as device-to-device transmission, vehicle-to-everything transmission, etc. That can be of great interest in the context of collaborative combat.

However, not all that glitters is gold since the 5G tech is "imported" from the civilian domain. Like many other tools imported from the civilian domain, it needs adaptations and modifications to be correctly implemented and adopted in the military world. For instance, it needs "to be resilient, as well as resist jamming and all types of attacks (physical, electromagnetic, cybersecurity)."[5]

[1] European Commission (2022, February 1). 5G. [Online] Available at: https://digital-strategy.ec.europa.eu/en/policies/5g
[2] ibidem.
[3] Machi, V. (2022, February 14). Atos' Cyril Dujardin on European defense opportunities in 5G tech. C4ISRNET. [Online] Available at: https://www.c4isrnet.com/smr/5g/2022/02/14/interview-atos-cyril-dujardin-on-european-defense-opportunities-in-5g-tech/
[4] ibidem.
[5] ibidem.

Considering the significant increase in the number of cyberattacks, 5G tech is receiving a lot of attention, becoming a focus in NATO discussions. In this regard, the fact that all German telecommunication networks are permeated by Chinese equipment could represent a potential threat. According to the Chinese law, "the government can request and be granted access to the data of any private company in China, putting at risk all data on a Chinese 5G cloud".[6] This also explains the necessity for more robust infrastructures and the need to replace them with European types.

Military speaking, both threats and potentialities concerning 5G are paving the way for the emergence of European cooperation. Some European countries, such as France, have tried to go on their own, with poor results. The global dimension of the threats related to 5G requires a collective approach, and that is why EU countries have begun to move towards collaborative models over the last few years. In this regard, the European Defense Fund, created in 2017 and linked to the EDA – European Defense Agency – can be seen as the first comprehensive attempt to create a solid European defence ecosystem, although resources are still not sufficient, Dujardin says.

However, it set the stage for the new joint venture created by Atos and Thales, namely Althea. Officially announced on 27 May 2021 in Paris, Athea is "a joint venture that will develop a sovereign big data and artificial intelligence platform for public and private sector players in the defence, intelligence and internal state security communities".[7] Easily predictable, Athea was created by mixing the experiences of both companies in these sectors. Yet the collaboration did not stop there. Indeed, through the Athea joint venture, Atos and Thales teams will continue to expand their cooperation, as the case of the "Artemis" Program, aimed at "optimizing and preparing the full-scale roll-out of the big data platform of the French Ministry of Armed Forces", which will be deployed soon. That said, for now, Athea's efforts are going to be focused on "the sovereign bi-data and AI market, as a priority in France, [while], in the near future, it will address the European and international market."[8]

In conclusion, although there is a long way ahead for the European Union when it comes to 5G tech, the approach based on the cooperation established by Atos and Thales can be easily interpreted as the first – right – step toward a new institutionalised dimension of the European cooperation.

[6] Pallanch, J. & Zhang, A. Y. (2021, October 22). China, 5G, and NATO Security. The German Marshall Fund of the United States. [Online] Available at: https://www.gmfus.org/download/article/19997

[7] Press Release (2021, May 27). Thales and Atos create the European champion in big data and artificial intelligence for defence and security. [Online] Available at: https://atos.net/wp-content/uploads/2021/05/Thales-and-Atos-create-the-European-champion-in-big-data-and-artificial-intelligence-for-defence-and-security.pdf

[8] Machi (2022, February 14).

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