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**OVERCOMING CHALLENGES:
ADVANCING THE MGCS
FUTURE MAIN BATTLE TANK**

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On 10 July of this year, German Defence Minister Boris Pistorius and his French counterpart Sebastien Lecornu met in Berlin to discuss the advancement of the long-planned MGCS (Main Ground Combat System) project. The two ministers reinforced the willingness of their respective governments to push forward with the joint procurement of a new generation tank capable of integrating the technologies and characteristics needed on the battlefield of the future, drawing from the lessons of the ongoing Ukrainian war (“Berlin and Paris vow to press ahead with long-delayed joint tank venture”, (Siebold & Irish, 2023). The cooperation between the two countries on the MGCS tanks was part of a larger package of joint procurements agreed upon between Macron and Merkel's administrations in January 2019. It included a fighter jet (FCAS), an armed drone, artillery systems and a maritime reconnaissance aircraft (Seliger, 2019).

Revolutionising Armoured Warfare: Key Characteristics of the MGCS Tank

The new generation tank would completely overhaul the features of today's most common European Main Battle Tanks (MBT), such as the Leopard. It would be extensively integrated with AI technologies to assist with aiming techniques and situation awareness. The barrel gun will be enlarged to 130mm or 140mm from the current 120mm standard, granting superiority to any Russian MBT, both in terms of range and power. Secondary weapons, such as the machine gun turret, would be rendered automated and possibly autonomous. Direct energy weapons are considered a possibility, and slots are made available to accommodate them in the future. The MGCS is also planned to include a hypersonic guided effector, which could serve as an anti-tank weapon capable of overcoming reactive armour and active protection systems. Supplementary armaments and additional weapon systems of the MGCS are likely to include Loitering Munitions, Counter-Unmanned Aerial Vehicle (C-UAV) System, and Electronic Warfare Suite. The large set of possible armaments is open to extensive modifications during the development phase; furthermore, it leads to possible cooperation with additional EU and NATO partners, particularly in the field of electronics (Dean, 2023).

The MGCS is expected to be part of a set of other vehicles which would act in synergy as a single formation, some of them autonomous, tasked with increasing the survivability of the formation by focusing on air defence, infantry transport, as well as command and control. MGCS will not be a single vehicle; rather, it is conceived of as an array of systems built around a manned heavy combat vehicle. For decades, the cumulative strength of MBTs has been defined by a triad of characteristics: firepower, protection and mobility. However, changing battlefields have meant that conditions required for future MBTs need to be defined by an expanded set of attributes, which includes mobility, survivability, effectors, C4I (Command, Control, Communications, Computers, and Intelligence) and SDRI+T (Surveillance, Detection, Recognition, and Identification plus Targeting) (Dean, 2023). According to the plans, the MBT should reach the production phase in 2030 and be rendered fully operational in 2040.

Navigating Obstacles: Addressing Challenges in the MGCS Project Development

Nevertheless, the project has been stalling for several years now and is still in the research and design phase. Political divergences and internal infighting among the procuring companies made the prospect of realising the tank by 2035 (the target date for the operational phase) bleak (Dean, 2023).

Political constraints

On the political side, technology sharing is the main obstacle, with both countries trying to get the most for their own industry (Seliger, 2019). In principle, there was an agreement granting the Germans leadership in the MGCS while the French would lead the FCAS efforts. This was due to the comparative advantages that the two countries' industries have in their respective fields. However, the French government has pushed for a larger role for its domestic armoured industry in the MGCS. Furthermore, it has requested the tank to be interoperable with its SCORPION armoured formation, leading to specific modifications. Germany, on the other hand, is trying to assert its industrial and political interests in the new Fighter Jet program, attempting to reduce the dominant position of Airbus in the project (Szymanski, 2023). Berlin's recent decision to buy 35 US-made F35 fighter aircraft has increased French mistrust regarding Germany's commitment to the FCAS program (Eshel et al., 2020).

Additionally, disagreements arose regarding the different arms exporting rules of the two countries. In fact, Germany's exports have traditionally been tough and restrictive, especially regarding exports to non-allies and non-democratic regimes. On the contrary, military exports have always been one of France's prominent sectors, and thus, it expects the MGCS to be an asset in its export strategy in the long term. So far, negotiations for a common framework towards military hardware exports still need to be reached between the two countries, as it would be a necessary step for the continuous development of the MGCS (Seliger, 2019). Lastly, funds were scarce until 2022; in 2019, the economic downturn in Germany led to forecasted slashes in the defence budget, and the 2020 pandemic completely diverted the priorities of government budgets in the EU. Only in 2022, after Russia's illegal invasion of Ukraine, did the MGCS program regain momentum and the attention of Paris and Berlin.

Corporate and Industrial Considerations

Even more complex is the situation at the corporate level. Relations between the companies in charge of developing the tank appear to be strained (Lagneau, 2022). The program is currently run by KMW+NEXTER Defense System (KNDS) and Rheinmetall. KNDS arose from the merger of Krauss-Maffei Wegmann and Nexter, two of the leading European manufacturers of military land systems, based in Germany and France respectively (KNDS Group, 2022.). Krauss-Maffei Wegmann (KMW) has for long been Rheinmetall's main competitor in armoured vehicle production in Germany and has strongly pushed for its incorporation in the MGCS project.

The Federal Office of Bundeswehr Equipment, Information Technology, and In-Service Support (BAAINB), which acts as the lead in the program's joint procurement authority, acting in the name of both Germany and France, supported the request and thus Rheinmetall joined the consortium. Making the start of the MGCS procurement program, KNDS and Rheinmetall AG established an "ARGE", or "working group". Under German law, the ARGE serves as the contractual partner of the procurement authority (BAAINBw). During the first phase of the programme in December 2019 the partners and the BAAINB signed a contract for the "System Architecture Definition Study - Part 1" (Defence Turkey 2020).

Initially, the program had a straightforward and mutually agreed-upon structure, with both the German and French counterparts equally committed to it. However, when the new German player joined, this introduction disrupted the previously established balance. The need for a new procurement split has led to infighting among the companies on the design of some of the main features of the MBT (Lagneau, 2022). The main point of contention is the main gun design. Nexter is proposing the newly developed ASCALON (Autoloaded and Scalable Outperforming Gun) as the MBT's main gun. The 140mm ASCALON would accommodate a wide range of munitions and enable operators to choose among various desired terminal effects. The firm predicts that the technical solutions on which ASCALON is based will be fully developed by 2025. On the contrary, KNDS' ARGE partner Rheinmetall is advocating for its 130mm Rh-130 L/52 autoloaded smoothbore gun, which also promises a significant improvement in the rate of fire, range and penetration over current MBT artillery (Eshel et al., 2020).

Interestingly, Rheinmetall's main gun proposal is the same as the one implemented in its newly presented MBT, the KF51. In addition to that, the KF51 has many of the main features proposed in the MGCS, thus creating problems regarding possible interference with the projects. As a result, this raises questions concerning the commercial viability of the MGCS since the KF51 is expected to be readily available within a few year's time, possibly absorbing a large share of potential customers for the MGCS, especially due to the increased attention that European armies are giving to tank procurements (Lagneau, 2022). Furthermore, KMW recently revealed the latest update of its world-renowned Leopard MBT version 2A8. Several European armies, such as those of Norway, the Czech Republic, Italy and the Netherlands have already stated their interest, though internal forecasts by the company only expect roughly 600 models to be produced from now until the release of the MGCS (Meta-Defense, 2023). This situation could, in turn, push forward the final delivery date of the MGCS, a prospect that would be unacceptable for the French due to their increasingly obsolete tank fleet, mainly comprised of Leclerc MBTs, and would risk completely overhauling the work while in production due to the necessary adjustments needed (Meta-Defense, 2023).

Conclusion

In conclusion, the recent meeting between the French and German Defence Ministers regarding the MGCS project signifies a renewed commitment to address the challenges that have hindered the project's progress. The agreement to roll out a calendar for the next steps as well as plan proposals demonstrates a willingness to move forward and find practical solutions. The MGCS project represents a critical joint effort to develop a technologically advanced and interoperable tank system that can meet the demands of modern warfare and enhance the defence capabilities of both nations. However, past obstacles such as political divergences and internal disagreements, have slowed down the project's advancement.

With the commitment to hold another meeting in September, it is clear that both Germany and France recognise the strategic importance of the MGCS and the potential benefits it can bring to their armed forces. Effective collaboration, compromise and a shared vision for the future of armoured warfare are crucial elements to make this project a success. The successful completion of the MGCS will strengthen both nations' defence capabilities and reinforce their positions within the broader European security landscape. It will signal their ability to work together on complex defence projects and solidify their partnership.

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