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Troubled Twins: The FCAS and MGCS Weapon Systems and Franco-German Co-operation

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Summary

The Future Combat Air System (FCAS) and the Main Ground Combat System (MGCS) represent the latest chapter in a more than seven decades-long history of Franco-German defense co-operation. The success or failure of these politically driven twinned weapon programs, undertaken jointly with other European partners, carries special significance. FCAS and MGCS are meant to incarnate Franco-German co-operation, supposed to be at the heart of the European project. And the development of sophisticated military equipment by European actors on European soil is presented as contributing to European Union (EU) strategic autonomy and industrial sovereignty.

Since their official start in 2017, both programs have been plagued by infighting over workshare and product specifications, provoking repeated delays, which could only be resolved by interventions at the highest political level. Two contrasting realities thus seem to co-exist, creating cognitive dissonance: a political one, which insists on the promise of Franco-German co-operation, and an industrial one, in which key firms vocally criticize ongoing co-operation efforts.

Co-operation between sovereign states, no matter how strategically aligned they might be, tends to be a difficult undertaking. Despite numerous factors, some new, some old, weighing on the MGCS and the FCAS, and on the bilateral relationship in general, it would be hasty to read those very real difficulties as signs of an imminent Franco-German demise. Just as there is a “cost of non-Europe”, there is a “cost of non-Franco-German”, as both protagonists and EU member countries in general are reminded of in our times of multiple crises.

Four scenarios, “Battling on”, “Mission abort”, “Rescue operations” and “Let’s agree to disagree” will sketch possible futures of the two twinned Franco-German armament programs, and Franco-German defense co-operation in general.

Résumé

Le système de combat aérien du futur (SCAF) et le char du futur (MGCS) sont les derniers projets issus d'une coopération d'armement, franco-allemande s'étendant sur les 70 dernières années. Le SCAF et le MGCS incarnent une coopération franco-allemande ancrée au cœur du projet européen. Le développement par des acteurs européens d'équipements militaires sophistiqués, produits par la base industrielle et de défense européenne, participe de l'autonomie stratégique et de la souveraineté industrielle européennes. La réussite ou l'échec de ces programmes d'armement, qui ont réussi à fédérer entre-temps d'autres partenaires européens, revêt par conséquent une grande valeur symbolique et politique.

Depuis leur lancement en 2017, les deux programmes ont été l'objet de luttes internes portant sur le partage du travail et les spécifications des équipements, ce qui a entraîné des retards répétés, qui ont nécessité des interventions au plus haut niveau politique. Deux réalités contrastées semblent ainsi coexister, créant une dissonance cognitive : une réalité politique, qui insiste sur la promesse d'une coopération franco-allemande, et une réalité industrielle, dans laquelle des entreprises clés critiquent haut et fort la coopération en cours.

La coopération entre États souverains, quel que soit leur alignement stratégique, est par nature une entreprise difficile. Même si de nombreux facteurs, nouveaux ou anciens, pèsent sur le développement du MGCS et du SCAF, et plus largement sur la relation bilatérale, il serait hâtif d'interpréter ces difficultés bien réelles comme les signes annonciateurs de la fin imminente de ces programmes. Tout comme il y a un « coût de la non-Europe », il y a un « coût de la non-coopération franco-allemande ».

L'avenir des deux programmes d'armement franco-allemand et plus généralement de la coopération de défense franco-allemande s'articulera autour de quatre scénarios : « Continuer la bataille », « Abandon de la mission », « Opérations de sauvetage » et « Acceptons d'être en désaccord ».

Table of contents

INTRODUCTION	7
Joint European weapons development: rationale and difficulties.....	7
Drivers of Franco-German defense co-operation, then and now	8
FCAS AND MGCS:	
POLITICAL RATHER THAN INDUSTRY-DRIVEN TWINS	11
The complex anatomy of two planned “system-of-systems”	11
Franco-German defense industrial strife and political arbitration	16
DIVERGING NATIONAL STRATEGIES,	
“CONVERGING” FRANCO-GERMAN INSTITUTIONS	21
France and Germany: geographically close, strategically far apart ...	21
The institutional nuts and bolts of Franco-German relations	24
A CHALLENGING STRATEGIC ENVIRONMENT FOR THE FCAS-MGCS,	
AND CLASHING FRANCO-GERMAN INTERESTS.....	27
A difficult economic and political context for European weapons programs.....	27
European strategic autonomy, collateral damage of Russian aggression?	31
Competitors in the armament field	35
DEVELOPMENT SCENARIOS FOR THE FCAS AND THE MGCS	39
Battling on.....	39
Mission abort	41
Rescue operations	43
<i>Let’s agree to disagree!</i>	45
FCAS, MGCS, AND THE COST OF “NON-FRANCO-GERMAN”	46
ABBREVIATIONS	48

Introduction

The Future Combat Air System (FCAS) and the Main Ground Combat System (MGCS) represent the latest chapter in a more than seven decades-long history of Franco-German defense co-operation. The success or failure of these politically driven twinned weapon programs, undertaken jointly with other European partners, carries special significance. FCAS and MGCS are meant to incarnate Franco-German co-operation, supposed to be at the heart of the European project. And the development of sophisticated military equipment by European actors on European soil is presented as contributing to EU strategic autonomy and industrial sovereignty.

Yet Russia's war against Ukraine has unleashed centrifugal forces shaking the foundations of the "bilateral relationship at the service of Europe". France and Germany currently disagree on matters pertaining to monetary, industrial, trade, energy, foreign and procurement policy.¹ Diverging strategic outlooks and industrial logics weigh heavily on the future prospects of the FCAS and the MGCS.² How will the two flagship programs fare, and what does this mean for Franco-German relations, and for Europe?

Joint European weapons development: rationale and difficulties

Rather than a choice, European defense industrial co-operation is a necessity, as national defense budgets do not allow for the costly development of complex weapon systems. Despite many strategy papers written, Europe's fragmented arms industry continues to resist consolidation.³ No procurement agency exists at the European level, which could commission and finance joint armament projects.⁴ Countries

1. É.-A. Martin, "La relation franco-allemande au défi du « changement d'époque »", *Diplomatie*, March-April 2023, No. 120, pp. 58-61.

2. L. Charrier, "Gebrochene Achse. Die Konfrontation zwischen Paris und Berlin kommt immer klarer zum Vorschein. Insbesondere Frankreich hadert mit seiner neuen geopolitischen Rolle", *IPG Journal*, March 20, 2023.

3. If consolidation appears necessary to be able to compete internationally, it also augments the dominance of firms that already enjoy an advantage in size and market share. A pool of suppliers, also from outside of Europe, provides a hedging strategy against European firms' monopoly power. See A. Calcara and L. Simón, "Market Size and the Political Economy of European Defense", *Security Studies*, 30:5, 2021, pp. 860-892.

4. The Organization for Joint Armament Co-operation, known under its French acronym OCCAR, is a Franco-German initiative founded in 1995. It facilitates and manages joint armament programs by harmonizing product specifications, opening competition between participating countries (member and non-member countries) and aiming for a multi-program "balanced return" over several years.

agreeing to co-operate are betting on several forms of possible cost savings. They hope to share the financial development burden, to create national markets for jointly produced defense goods, and to achieve cost savings over the life cycle of the finished “product”.

However, co-operation among European peers is notoriously difficult. In an ideal world, only states with matching military doctrines, development timeframes and export policies should jointly develop arms. It is recommended to share work according to the “best athlete” principle, and to limit the number of co-operation partners.⁵ In reality, “just return” very often carries the day, and additional partners are invited to join projects.⁶ Different conceptions of military power hinder the coherence of weapon specifications, causing delays and raising program costs. This in turn may lead to fewer orders, rendering void hoped-for production and lifecycle economies of scale. Co-operation implies the difficult sharing of intellectual property and the transfer of technology. It also requires the definition of a joint export policy.⁷ Personal, industrial, and national interests may, and do clash, with some participating countries deserting joint projects, and this augmenting the burden for those who remain.

Drivers of Franco-German defense co-operation, then and now

Past Franco-German armament co-operations have produced success stories, such as the *Transall C-160* military transport aircraft developed in the 1950s, the Dassault/Dornier light attack jet and trainer aircraft *Alpha-Jet* produced in the 1960s, and the *MILAN* and *HOT* anti-tank missiles, as well as the *ROLAND* surface-to-air missile built in the 1970s. But they have also led to some less successful results, such as the *Tiger* attack helicopter, the military transport helicopter *NH-90*, and the Airbus military transport plane *A-400 M* launched in the 1980s in co-operation with other European partners – all plagued by technical difficulties, delays, and cost overruns. And there have been past failures, such as a joint Franco-German battle tank, a project abandoned twice, once in 1963, and again in 1982,⁸ and the failed joint acquisition of a fourth-generation fighter plane, with France

The European Defence Agency (EDA), established in 2004, has the task of enabling and facilitating collaborative European defense projects. A European defense procurement agency would most likely be seen as interfering with NATO defense planning and non-EU weapons purchases.

5. As a rule of thumb, costs and delays increase by the square of the number of co-operating partners.

6. The principle of “best athlete” is to favor the most capable and able firm as prime contractor for a particular armament project. Yet critics point out that it renders workshare negotiations difficult. It may also contribute to the impression that all collaborators other than the firm chosen as the “best athlete” merely play a secondary role.

7. Co-operation partners can block exports to third countries if they feel vital interests are at stake.

8. See, for example, Detlef Puhl, “La coopération en matière d’armement entre la France et l’Allemagne. Un terrain d’entente impossible?”, *Visions franco-allemandes*, n° 31, November 2020.

opting for a French-only solution, the Dassault *Rafale*, and Germany for the *Eurofighter* built by Airbus Group (formerly EADS).⁹

If there have been no new Franco-German structuring weapons programs since the 1990s,¹⁰ this is also testimony to the profound transformations that Franco-German relations, the public sector, and the defense industry have undergone in the last thirty years.

Under its policy of Western integration, West Germany had taken the role of France's junior partner, and not only in joint armament projects. Unification brought about the gradual normalization of German power, which equalized the dynamics of the relationship. And while France has always considered its defense industry as being of the highest strategic importance, Germany has gradually shifted from a more "laissez faire" approach to a defense industrial policy more attentive to guarding key technologies.¹¹

After the end of the Cold War, the neoliberal turn in statecraft bid farewell to the "Etat stratège" and its state-led investment programs, while peace dividends drastically reduced military expenditure. In addition to reduced national orders, defense industry actors had to contend with strong international competition. Today, French, and German industrial actors which have an international client base and straddle the military-civilian divide dispose of more autonomy from governments than in the past. Industrial logics can and do defy political ambitions. And governments have comparatively less experience in planning and executing big armament programs compared with Cold War times, whether individually or jointly.

Another difference with an earlier Franco-German defense industrial period concerns the playing fields on which conflicts are fought. In the past, rivaling configurations of industry, politics, and government actors, occasionally forming alliances across borders,¹² battled it out mostly behind closed doors. Difficulties were occasionally revealed in parliamentary hearings or in newspaper articles. These days, social media provide a resonance chamber for industrial and political actors, alone or in coalitions, trying to influence discourse, and thereby their bargaining power and

9. The Eurofighter *Typhoon* is the product of a history of co-operation that began with the Tornado in the 1960s-1970s. See, for example, C. Hoeffler and F. Mérand, "Avions de combat. Pourquoi n'y a-t-il pas d'eupéanisation ?", *Politique européenne*, Vol. 48, No. 2, 2015, pp. 52-80. See also J.-D. Merchet, "Voler de ses propres ailes", *Géoéconomie*, 2009/2 (No. 49), pp. 9-15.

10. B. Slaski and F. Schumann, "Coopération franco-allemande dans l'industrie de défense. Bilan et perspectives", *Policy Papers, CEIS*, June 2015. See also, J.-P. Hébert and J. Hamiot, *Histoire de la coopération européenne dans l'armement*, Paris : CNRS Éditions, 2004.

11. See, for example, "Strategiepapier der Bundesregierung zur Stärkung der Verteidigungsindustrie in Deutschland Berlin, *Bundesregierung*, July 8, 2015, available at: <https://bdi.eu>.

12. See S. B. H. Faure, *Avec ou sans l'Europe. Le dilemme de la politique française d'armement*, Brussels: Éditions de l'Université de Bruxelles, 2020.

program prospects. And parliaments, especially the Bundestag, make use of their power of the purse to shape armament projects.¹³

The following section will present in more detail these complex dynamics animating the FCAS and the MGCS.

13. Parliamentary control of defense expenditure and debate about strategic orientations are a vital feature of democracies. On the differing roles of the French and German parliaments when it comes to authorising the use of force, see, for example, D. Deschaux-Dutard, “Usage de la force militaire et contrôle démocratique. Le rôle des arènes parlementaires en France et en Allemagne”, *Revue internationale de politique comparée*, Vol. 24, No. 3, 2017, pp. 201-231. On export control, see L. Béraud-Sudreau *et al.*, “Réguler le commerce des armes par le Parlement et l’opinion publique. Comparaison du contrôle des exportations d’armement en Allemagne, France, Royaume-Uni et Suède”, *Politique européenne* 2015/2 (No. 48), pp. 82-121.

FCAS and MGCS: political rather than industry-driven twins

The two flagship programs were initiated at the beginning of Emmanuel Macron's first presidency, which placed a strong emphasis on Europe, and on France playing a leading role in it. The launch of the FCAS-MGCS took place within a challenging international context. Russia's annexation of Crimea and its fomenting of war in eastern Ukraine, the UK's decision to leave the European Union (EU), and Donald Trump's election to the US presidency and his subsequent putting into question of the US security guarantee within North Atlantic Treaty Organization (NATO): Europeans had to show they could think and act strategically.

German Chancellor Angela Merkel and French President Emmanuel Macron announced the MGCS and the FCAS in July 2017, together with additional joint armament projects, such as the *Common Indirect Fire System* (CIFS, artillery), the *Maritime Airborne Warfare System* (MAWS, maritime patrol), and the development of the *Tiger MkIII* (attack helicopter).¹⁴ The two Franco-German projects were made public just after or ahead of the launching of three major EU instruments meant to encourage European defense co-operation, innovation and industrial consolidation: the European Defence Fund, Permanent Structured Co-operation, and the Coordinated Annual Review on Defence.¹⁵

The complex anatomy of two planned "system-of-systems"

The FCAS-MGCS joint armament programs stand out for their political and industrial ambition, but also their technical (and human) complexity. The

14. In 2016, Germany, France, Italy, and Spain had already initiated work on the European Medium Altitude Long Endurance Remotely Piloted Aircraft System (MALE RPAS), or Eurodrone. See: www.occar.int. On German difficulties to embrace drones for military use, see for example L. Borzillo, "La politisation des nouvelles technologies militaires : le cas de l'Allemagne et des drones armés", in: P. Bourgeois and O. Zubeldia (eds.), *Les Puissances démocratiques et les nouvelles technologies militaires*, Lille: Presses universitaires du Septentrion, 2023.

15. The European Defence Fund (EDF) co-financing research and development of joint defense projects was established in June 2017. Permanent Structured Co-operation (PESCo) promoting enhanced co-operation in defense debuted in December 2017, its first wave of projects starting in 2018. And CARD (Coordinated Annual Review on Defense) was introduced in 2017/2018, with the hope of fostering joint European defense planning.

programs have been twinned, at the latest by a decision of the German parliament in 2019, with progress of one co-operative endeavor explicitly tied to the other. Inspired by American visions of networked-based warfare, the aim is to recruit artificial intelligence for the war effort and to mobilize connectivity, robotics, and advanced sensors. The FCAS and the MGCS both aimed to build “systems of systems” that would structure both air and terrestrial combat for decades to come.

The FCAS¹⁶ refers to a planned network (“system-of-systems”, SoS) of airborne manned and/or unmanned, existing and future weapon systems that should be available for offensive and defensive air operations from 2040 onwards.¹⁷ At the heart of the FCAS is a Next Generation Weapon System¹⁸ (NGWS), also following an SoS approach, which combines a New Generation Fighter (NGF, supposed to be a sixth-generation command jet fighter) with other air assets such as drones (remote carriers, RCs) and sensors. It is jointly developed by France, whose Dassault Aviation is the main contractor, Germany (Airbus Defence and Space) and Spain (Indra Sistemas).¹⁹ The main contracting authority for the FCAS is the *Direction Générale de l’Armement* (DGA). While co-operating on the NGWS, there will be distinct French, German and Spanish versions of the FCAS, as each country is adding distinct legacy assets to the system.

For the NGF, Dassault is the prime contractor, and Airbus the main partner. For the RCs, the prime contractor is Airbus, and its main partner MBDA, a multinational developer and manufacturer of missiles that merged French, British and Italian missile systems companies. The jet and drones are planned to be linked via a combat cloud, whose prime contractor is Airbus, partnered with Thales, a French group specialized in aerospace and defense electronics. Spain’s Indra Sistemas will work on sensors as prime contractor, with Thales and FCMS, a German consortium specialized in defense networks, as partners. Aircraft engines are to be built by EUMET, joining the French firm Safran Aircraft Engines and the German MTU Aero Engines, with the Spanish ITP Aero turbine manufacturer as main partner. The NGF is to replace the current French *Rafales*, German *Eurofighter Typhoons* and Spanish EF-18 *Hornets* by 2040, which would

16. SCAF, “Système de combat aérien du futur” in French.

17. “Bericht des Bundesministeriums der Verteidigung zu Rüstungsangelegenheiten”, Teil 1, *Bundesverteidigungsministerium*, June 2023, p. 96 and following (ff).

18. In French, the NGWS is referred to as “Système d’armes de nouvelle génération” (SAGN), thus translated as “New Generation Weapon System”.

19. Spain joined the FCAS program in 2020 as equal partner to France and Germany in terms of investment and workshare, testimony to the quality its aerospace defense industry, with significant investments in research and development, as well as in multilateral projects. Assessing Spain’s role in the FCAS, its strategy and leverage are unfortunately beyond the realm of this study.

amount to several hundred planes. Overall preliminary study costs are estimated at €10.4 billion.²⁰

On the ground, the MGCS is conceived as a cloud-networked land combat system with manned and unmanned components. Preparations started in 2012, and, in December 2015, the French firm Nexter, producing the *Leclerc*, and the German firm Krauss Maffei Wegmann (KMW), manufacturing *Leopard 2*, tanks merged: a rare European consolidation in the terrestrial armament industry. Share ownership and governance structure put the French and German state as well as French and German firms at exactly 50/50.

MGCS, specifically the Enhanced Main Battle Tank (EMBT) at its core, is to replace *Leopard 2* tanks, which are supposed to be decommissioned starting in 2030, and the *Leclerc*, starting in 2035 (2040 marks the end of the bridging *Scorpion* modernization program).²¹ About 8,000 tanks and 3,500 artillery systems currently in service in the European armed forces are to be replaced by 2035 – a market of an estimated €100 billion, not counting export possibilities.²² The main contracting authority for MGCS is the Bundesamt für Ausrüstung, Informationstechnik und Nutzung der Bundeswehr (Federal Office for Equipment, Information Technology and In-Service Support of the Bundeswehr, BAAINBw), with the KNDS as the main contractor. Preliminary study costs for the MGCS are estimated at around €1.5 billion.²³

Yet from the start, it was difficult to imagine that Rheinmetall, a leading international defense systems supplier, could be excluded from a program potentially dominating the European battle-tank market for decades to come. On the decision of the German government, the German industrial group Rheinmetall joined in 2019, uprooting carefully crafted political and industrial equilibria.

20. “BRIEFER: Future Combat Air System (FCAS)”, *Defense and Security Monitor*, June 28, 2023, available at: <https://dsm.forecastinternational.com> (viewed on August 10, 2023).

21. Under the *Scorpion* program, which is rejuvenating the whole French armored vehicle fleet, 160 *Leclercs* will be renovated by 2030, to which 40 additional *Leclerc Mk2* will be added by 2035. See for example “The *Scorpion* Program”, *Ministère des Armées*, available at: www.defense.gouv.fr (viewed on September 15, 2023).

22. S. Meyer, président général Nexter, audition Defense Commission of French Parliament, May 15, 2019, available at: <https://2017-2022.nosdeputes.fr> (viewed on August 8, 2023).

23. “New European Main Battle Tank”, European Security and Defence, March 16, 2020, available at: <https://euro-sd.com> (viewed on August 15, 2023).

Box 1: Timeline of main events FCAS-MGCS

FCAS/ MGCS	
July 13, 2017	Franco-German Defense and Security Council, Macron-Merkel: Programs launch announcement (together with <i>CIFS</i> artillery, <i>MAWS</i> maritime patrol, <i>Tiger MkIII</i> helicopter upgrade programs)
June 19, 2018	Meseberg summit, Macron-Merkel: Signing of letters of intent (LoIs) FCAS and MGCS
November 19, 2018	Project lead announcement, Germany: MGCS and France: FCAS
January 22, 2019	Signing of the Aachen Treaty, Treaty on Franco-German Cooperation, and Integration, mentioning defense industry co-operation and exports ²⁴
June 14, 2019	German parliament links progress of FCAS to progress on MGCS
October 17, 2019	Signing by Macron-Merkel of legally binding deal on arms export control rules for jointly developed armament programs
FCAS	MGCS
February 2020 Phase 1A Initial framework contract awarded	June 2018 KNDS presents its European Main Battle Tank (EMBT)
December 2020 Spain officially joins program (initial announcement made in June 2019)	June 2019 Rheinmetall joins program. Bundestag links progress/ funding on FCAS to progress on MGCS
Spring/ summer 2021 Élysée and Chancellery impose compromise solution, validation of financing of Phase 1A by Bundestag	August 2019 KNDS presents its Enhanced Main Battle Tank (EMBT), possible intermediate solution between modernized <i>Leclerc</i> and MGCS
March 2022 Germany to purchase <i>F-35s</i> to replace Tornados	December 2019 ARGE (Arbeitsgemeinschaft) KMW (25%), Nexter (50%) and Rheinmetall (25%) founded
May 2022 French, German, and Spanish defense ministers meet to iron out difficulties	May 2020 System Architecture Definition Study – Part 1 is awarded to Rheinmetall and KNDS
December 2022 Macron-Scholz agreement on Phase 1B Demonstrator phase	June 2022 Rheinmetall presents the Panther KF51 (next-generation capabilities) prototype

24. Article 4 (3), “(...) They shall foster the closest possible cooperation between their defense industries based on mutual trust. The two countries will develop a common approach on arms exports regarding joint projects.” Translation, Treaty between the Federal Republic of Germany and the French Republic on Franco-German Cooperation and Integration, *Auswärtiges Amt*, available at: www.auswaertigesamt.de.

<p>April 2023 Spanish, French, and German defense ministers meet to discuss FCAS progress</p>	<p>May 2023 KMW/KNDS presents <i>Leopard 2A8</i> as intermediate solution between <i>Leopard 2</i> and MGCS</p>
<p>June 2023 <i>Loi de Programmation Militaire (LPM) 2024-2030</i>, development and financing of <i>Rafale F5</i> to be open to “<i>Rafale Club</i>”</p>	<p>June 2023 LPM 2024-30 budgets for feasibility study (<i>Leclerc Mk3</i>²⁵ as possible interim solution mitigating delays of the MGCS²⁶)</p>
<p>June 2023 Belgium becomes observer contributing €360 million</p>	<p>July 2023 French and German defense ministers agree on elaboration of joint high-level command operations requirements document</p>
<p>August 2023 Dassault invokes the <i>Rafale F5</i> (to be ready by 2030-35) as “priority”²⁷</p>	<p>September 2023 Announcement of a future <i>Leopard 2AX</i>, a possible synthesis between A8 and KF51 Panther of Rheinmetall</p>
<p>August 2023 Germany announces consortium for FCAS artificial intelligence infrastructures, which includes IBM Deutschland GmbH²⁸</p>	<p>September 2023 Germany (KMW und Rheinmetall), Italy, Sweden, and Spain to develop a joint battle tank, applying for EDF subsidies²⁹</p>
	<p>September 2023 Defense ministers Lecornu and Pistorius validate military system requirements. Italy and Spain could be admitted later. Which country will lead which main technology developments not to be decided until December 2023. Entry into service pushed back to 2040-2045.</p>

25. Sénat Commission des Affaires Étrangères, “Projet de Loi de Programmation militaire 2024-2030”, Amendement, available at: www.senat.fr (viewed on August 8, 2023).

26. “4 arguments in favor of the development of a *Leclerc 2* tank ahead of the Franco-German MGCS program”, Meta Defense, November 14, 2022, available at: <https://meta-defense.fr> (viewed on August 27, 2023).

27. “Pour Dassault Aviation, la priorité est le *Rafale F5*, bien avant le FCAS”, BFMTV, August 29, août 2023, available at: www.bfmtv.com (viewed on September 1, 2023).

28. “Press Release: BAAlNBw Commissions AI Backbone for FCAS”, *Helsing*, August 30, 2023, available at: <https://helsing.ai> (viewed on September 1, 2023).

29. “Leopard-2-Nachfolger Deutschland startet neue Kampfpanzer-Allianz”, *Handelsblatt*, September 8, 2023, available at: www.handelsblatt.com (viewed on September 9, 2023). Berlin does not see this project as in direct competition with the MGCS; see “Deutschland und Frankreich: Panzerplan mit Nebenwirkung”, *SZ*, September 7, 2023, available at: www.sueddeutsche.de (viewed on September 1, 2023).

Franco-German defense industrial strife and political arbitration

Since their official start in 2017, both programs have been plagued by infighting over workshare and product specifications, provoking repeated delays, which could only be resolved by interventions at the highest political level.³⁰ Despite an agreement reached between Paris and Berlin in October 2019,³¹ how to regulate exports of jointly produced defense goods constitutes another big co-operation stumbling block.

As for the FCAS, in December 2020 Spain officially joined the program, resulting in a workshare of 33% for each of the three participating countries, to the chagrin of Dassault Aviation, the NGF prime contractor. After the initial framework contract was awarded in February 2020, it took until spring/summer of 2021 for the Élysée and the Chancellery to impose a compromise, and for the Bundestag to validate financing of Phase 1A. Disagreement over intellectual property and workshare persisted. Increasingly dark clouds forming over the FCAS could only be dissipated after President Macron and Chancellor Scholz hammered out an agreement that launched the Phase 1B Demonstrator phase in December 2022.³²

Concerning the MGCS, Rheinmetall joining in June 2019 upset carefully calibrated national and industrial symmetries, for example regarding the role of French subcontractors such as Thales, MBDA, Safran and Atos. The heat was turned up by the German parliament which decided to link progress and thereby funding of the FCAS to progress of the MGCS. A compromise was found over the summer of that year, with Rheinmetall abandoning its plan to become team leader by purchasing the German parts of KNDS. A “combat project team” (*ARGE, Arbeitsgemeinschaft*) was formed in December 2019, with France retaining 50% of the workshare.

In 2019, KNDS presented its Enhanced Main Battle Tank (EMBT), a possible intermediate solution between the modernized *Leclerc* and the MGCS. In May 2020, the System Architecture Definition Study – Part 1 was awarded to Rheinmetall and KNDS. Yet it took until July 2023 for the French and German defense ministers to even agree on the elaboration of a joint high-level command operations requirements document.

30. To be fair, both programs also had to battle with a viral enemy; Covid-19 accounts for some of the delays. See for example, “COVID-19 and European Defense. Voices from the Capitals,” DGAP, November 3, 2020, available at: <https://dgap.org/en>.

31. See for example “Armement : accord franco-allemand sur les exportations”, *L’Opinion*, October 17, 2019, available at: www.lopinion.fr (viewed August 8, 2023). In this agreement, negotiated for more than a year, that held up joint projects, Germany promises not to block French exports if their “German share” is less than 20%, a solution that does not seem to work for joint Franco-German projects such as the FCAS and the MGCS.

32. This agreement took place against the backdrop of strong Franco-German tensions over EU energy and armament policy, with a joint summit planned for October 2022 postponed until January 2023, to celebrate the 50th birthday of the Élysée Treaty.

In 2022, Rheinmetall presented a competitor model to the KNDS EMBT: the KF-51 Battle tank *Panther*. In May 2023, KMW showcased the *Leopard 2A8* as an intermediate solution between *Leopard 2* and MGCS. In the context of armed conflict in Europe, orders for around 400 *Leopard 2A8* have come in.³³ On the German side, MGCS's planned development schedule is thus increasingly seen as inopportune, clashing with massive sales of *Leopard 2A8*. Pouring additional salt into French wounds, in September 2023 KMW und Rheinmetall brought the *Leopard 2AX* into play, a possible synthesis between the A8 and KF51 *Panther* of Rheinmetall. Also in September, Germany (KMW und Rheinmetall), Italy, Sweden and Spain jointly applied for EDF financing to develop a joint battle tank.³⁴

Despite such somber perspectives, fueling speculation that the program was destined to fail, in the same month defense ministers Sébastien Lecornu and Boris Pistorius gave MGCS a new lease of life. They validated the MGCS military system requirements, roughly six years after the start of the program. Italy and Spain could possibly be admitted later, and which country would lead which main development “pillars” was to be decided by December 2023. In an effort to manage expectations, entry into service of the MGCS was pushed back to 2040-45.³⁵

Yet co-operation difficulties are not only about workshare, but also about military requirements. For the FCAS, France needs a NGF that can carry nuclear weapons, and land on/take off from an aircraft carrier, which are specifications of little concern for Germany and Spain. Germany's decision to purchase 35 *F-35* poses among other questions of data sharing and interoperability between the FCAS and the *F-35s*.

On the terrestrial front, different military needs can also be observed, with Germany favoring a heavier, better protected tank, and France traditionally putting the emphasis on agility. At the heart of the MGCS, a fight over its heavy weapon system is brewing, opposing Nexter, with its 140 mm *Ascalon* (Autoloaded and SCALable Outperforming guN, to be fully mature by 2025), which could accommodate a wider range of ammunitions,

33. The Bundeswehr has ordered 123 *Leopard 2A8s*, the Czech Republic is expected to order 77, Lithuania 54, Italy 133, and Norway and the Netherlands possibly several dozen. To overcome German production bottlenecks, the Czech Republic is expected to host a production line for its own and Lithuania's tanks, with Italy possibly following suit. See “Germany Learns to Be a Team Player”, Politico, August 1, 2023, available at: www.politico.eu (viewed August 3, 2023).

34. “Leopard-2-Nachfolger Deutschland startet neue Kampfpanzer-Allianz”, *Handelsblatt*, September 8, 2023, available at: www.handelsblatt.com (viewed on September 9, 2023). This project is not seen by Berlin as directly competing with the MGCS; see “Deutschland und Frankreich: Panzerplan mit Nebenwirkung”, *SZ*, September 7, 2023, available at: www.sueddeutsche.de (viewed on September 11, 2023).

35. “MGCS: Timetable for future main battle tank system significantly extended”, *Europäische Sicherheit und Technik*, September 26, 2023, available at: <https://esut.de> (viewed on September 29, 2023).

and Rheinmetall, pushing for the adoption of its 130 mm *Rh-130 L52*. The outcome will determine the future NATO ammunition caliber standard.

Lastly, for both the FCAS and MGCS, slipping deadlines for initial operational capability risk creating capability gaps. But French and German partners face asymmetric pressures. In the realm of fighter planes, Germany's decision in 2022 to purchase American *F-35s* to replace its 40-year-old *Tornados* solves the immediate needs of the *Luftwaffe*. The stealth fighters are fitted to carry American nuclear bombs as part of the NATO nuclear sharing agreement. In contrast, France is looking for partners to develop and produce the replacement for the *Rafale* for 2035, seeking to guard a defense industrial sector it deems of vital strategic importance. According to the French minister of defense, development, and financing of the *Rafale F5*, a 5th generation fighter, plus unmanned combat aerial vehicles (UCAVs) derived from the Neuron drone will be open to the "Rafale Club".³⁶

From a military point of view, the MGCS program delays already encountered put a question mark on the orderly replacement of the roughly 200 existing *Leclercs*. But whereas Germany theoretically disposes of several alternatives, France needs the MGCS to fill battle tank capability gaps, to emerge by 2035.³⁷ In contrast to its neighbor, France closed its tank assembly facility about 15 years ago.³⁸ While spare parts continue to be produced for the *Leclercs* currently in service, and specialists work on their renovation in the framework of the "Scorpion" program, to restart French battle-tank production would take time, and would be very costly.

36. Current, Egypt, Qatar, India, Greece, and future: Indonesia, Croatia, United Arab Emirates.

37. This also applies for Italy, whose *Ariete* tanks need to be replaced at the same time as the *Leclercs*, and which had asked to be admitted to the MGCS program in the past.

38. "Le char *Leclerc* en pleine cure de rajeunissement", *Le Monde*, July 5, 2023, available at: www.lemonde.fr (viewed on August 10, 2023).

Box 2: Planned program phases, estimated costs and encountered delays

FCAS ³⁹	MGCS ⁴⁰
<p>2018/19: Delays of 12 months due to export policy negotiations.</p> <p>Early 2019, Joint Concept Studies (JCS), awarded (duration 24 months, €65 million).</p> <p>Phase 1:</p> <p>February 2020, Phase 1A, initial framework contract awarded (duration 18 months, €155 million bilateral funding), delays of 17 months due to contractor disagreements (plus Covid pandemic).</p> <p>December 2022, Agreement on Phase 1 B demonstrator contract (duration 36 months, €3.2 billion trilateral funding), test flight of demonstrator: 2027 (initially 2026).</p> <p>Phase 2:</p> <p>Contract to be finalized by 2025, €5 billion trilateral funding until 2030. Remote Carrier demonstrator flight in 2028, NGF in-flight demonstrations in 2029 (initially 2028).</p> <p>System production: 2030s Entry into service: 2040 (2042-2044?)</p> <p>Total estimated costs preliminary studies: €10.4 billion⁴¹</p>	<p>2018/19: Delays of 12 months due to export policy negotiations.</p> <p>May 2020, System Architecture Definition Study (SADS) – Part 1 awarded (duration 18 months, €150 million), ongoing in 2023, delays of an estimated 22 months due to contractor disagreements (plus Covid pandemic).</p> <p>SADS – Part 2 2025 (initially 2024) study and manufacture of main technology demonstrators (MTDs).</p> <p>System demonstrator development 2025-2028, estimated ca. €1.5 billion (initially foreseen 2024-2027).</p> <p>Implementation phase to start 2029 (initially foreseen 2028), demonstrator delivered 2030-2035 (initially 2025-2030).</p> <p>System production: 2035 (2040?) Entry into service: 2040⁴² (2045?)</p> <p>Total estimated costs preliminary studies: €1.5 billion</p>

39. "BRIEFER: Future Combat Air System (FCAS)", *Defense and Security Monitor*, June 28, 2023, available at: <https://dsm.forecastinternational.com> (viewed on August 10, 2023).

40. For MGCS timeline and cost estimates, see: M. Chassilan, "MGCS, ménage à trois or more, *EDR Magazine*, No. 63, June 2022, available at: <https://issuu.com> (viewed on August 10, 2023).

41. The French Senate's Study on the FCAS – "2040, l'odyssée du SCAF – Le système de combat aérien du futur", Rapport d'information du Sénat n° 642 (2019-2020), tome II, July 15, 2020, available at: www.senat.fr (p. 54) – puts the overall program cost at €50 to €80 billion. Others estimate the overall cost at more than €100 billion. For comparison: total cost of the *Rafale* is calculated to be €46.4 billion, and that of the Eurofighter Typhoon UK model €43.6 billion.

42. "Main Ground Combat System (MGCS) – Status and Path Forward", *Forecast International*, May 18, 2021, available at: <https://dsm.forecastinternational.com> (viewed on August 10, 2023).

Two contrasting realities thus seem to co-exist, creating cognitive dissonance: a political one, which stresses the promise of Franco-German co-operation, and an industrial one, in which dominating firms vocally criticize ongoing co-operation efforts. All actors involved suspect their respective counterparts of lobbying for a bigger part of the “co-operation cake”. Which version of reality will prevail is anybody’s guess. Hence the importance of exploring national strategies and existing institutions that underpin Franco-German armament co-operation.

Diverging national strategies, “converging” Franco-German institutions

The French and German leadership are faced with a strategic environment uprooting decades-old certitude. Despite signaling a change of epoch in foreign and defense policy, both countries struggle to meet the challenges resulting from Russia’s war against Ukraine. Scrambling to adapt to a new geopolitical reality, France and Germany struggle to integrate their respective partner into their strategic visions. Existing bilateral institutions have not been designed to resolve Franco-German friction in times of acute crisis.

France and Germany: geographically close, strategically far apart

France posits itself as a “puissance d’équilibres,”⁴³ an “equilibria power” that tries to balance a continental European policy and an “ultramarine” global policy, with traditionally both Europe and Africa as a driving force and lever.⁴⁴ The independent nuclear deterrent was and remains of paramount strategic importance for France. Managing the gap between a strategic narrative of independence and autonomy, and the reality of dependence on partners and allies is a key dilemma of French foreign and defense policy.⁴⁵

Russia’s open war on Ukraine constitutes a geopolitical calamity for France. Having insisted that Russia could be fitted into a collaborative European security architecture, the French president had to urgently conceive of a new strategic approach. Emmanuel Macron’s speech at the Globsec conference in Slovakia on May 31, 2023, constituted his *Zeitenwende* (epochal tectonic shift), less noticed than its German equivalent but no less significant. It overturned traditional French opposition to further EU and NATO enlargement, delivering a belated *mea culpa* of having neglected the vital strategic interests of central and

43. See “Revue Nationale Stratégique”, November 2022, available at: <https://medias.vie-publique.fr>. The plural form, *équilibres*, that appears six times in the text is noteworthy.

44. The growing number of military coups in the Sahel and West Africa, often accompanied by anti-French demonstrations and forcing the retreat of French troops, is weakening France’s influence on the continent.

45. See for example, A. Pannier and O. Schmitt, *French Defence Policy Since the End of the Cold War*, Abingdon: Routledge, 2020.

Eastern Europe in the past.⁴⁶ At the NATO summit in Vilnius in July 2023, France stood with the United Kingdom, Poland, and the Baltic countries to support fast-track Ukrainian membership.

Emmanuel Macron understands that European strategic autonomy will be all but impossible to achieve without getting Eastern Europe, especially Poland, a new heavyweight in European defense and traditional United States (US) ally, on board. And without convincing Northern, Central and Eastern European EU members that the EU needs to deepen as well as to widen, French-supported EU reform plans will fail.⁴⁷

The “National Strategic Review” published in November 2022 put France’s stated goal of being “an exemplary ally in the Euro-Atlantic area” ahead of “driving force behind Europe’s strategic autonomy”.⁴⁸ Yet is France taking its commitment to NATO seriously, gearing up for high-intensity warfare with a peer adversary, namely Russia?⁴⁹ The *Loi de Programmation Militaire (LPM) 2024-2030* and its €413 billion budget voted in June 2023 represent a serious defense investment effort, destined to protect both France and its overseas territories with the help of the French nuclear deterrent, its armed forces and its sovereign defense industrial and technological base.⁵⁰ Serious for a strategic situation before February 2022, that is: Experts and allies alike assess the sums budgeted against France’s global ambitions, and ponder the nature of French engagement in the European theater.⁵¹ And Germany wonders how it could fit into French global plans.

Up to February 2022, a united Germany anchored in both the transatlantic community and the European project had enjoyed an enviable strategic position. At peace with its neighbors and at the heart of a European economic and financial system that met its needs as an exporting nation, its privileged relations with Russia guaranteed it cheap gas imports.⁵² As a geoeconomic power, it had externalized questions of “hard” power to the North Atlantic Alliance, dodging ever more irritated US calls to spend more on defense at least since 2014. French overtures during the first

46. See President Macron’s speech at the Globsec conference, Bratislava, on May 31, 2023, available at: www.elysee.fr.

47. J. De Weck, “Why Macron Is Now Embracing EU and NATO Enlargement”, *Internationale Politik*, June 29, 2023, available at: <https://ip-quarterly.com>. In August 2023, Macron floated plans for a multi-speed Europe, see: “Macron: EU Should Consider ‘Multi-speed Europe’ to Cope with Enlargement”, *Politico*, August 28, 2023, available at: www.politico.eu (viewed on September 10, 2023).

48. See “Revue Nationale Stratégique”, *op. cit.*, p. 39 ff.

49. M. Shurkin, “Why the French Army Will Continue to Prioritize Quality Over Mass”, *War on the Rocks*, April 28, 2023.

50. See “Loi de programmation militaire 2024-2030 : les 5 choses à savoir”, available at: www.defense.gouv.fr.

51. See, for example, É. Tenenbaum, “Armées françaises : les limites de la stratégie de club”, *Éditoriaux de l’Ifri*, Ifri, May 26, 2023.

52. In this regard, the French historian Françoise Thom has coined the term “parasitic coexistence”.

Macron presidency to build up European defense capabilities, jointly, and at the EU level were politely welcomed, but pursued with less than vigor.

Russia's war against Ukraine uprooted the very foundations of Germany's (geo)economic model and sent it scrambling for immediate uni- and bilateral solutions.⁵³ In his *Zeitenwende* speech on February 27, 2022, German Chancellor Olaf Scholz announced the establishment of a €100 billion special fund to rearm the Bundeswehr, in a dilapidated state after decades of underinvestment and procurement mismanagement. Yet a sense of urgency seems to have given way to a bureaucratic tempo of implementation. The first ever German "National Security Strategy", published in June 2023, announced as an important step along the difficult path to more German responsibility in the realm of European and international security, is a coalition government compromise.⁵⁴ The government seems hesitant to formally commit to continuous defense investment via budgetary spending,⁵⁵ which is needed if the Bundeswehr is to prepare for a challenging future, rather than just plugging the most urgent holes, often with American rather than European weapon systems.⁵⁶

After past attempts to put in place a working procurement system for its armed forces, current mostly untested structures risk buckling under the monumental task of transforming the German military into a credible fighting force. Human resources to form three mechanised divisions in the next five to eight years are lacking, and it will be a challenge to even maintain the current personnel level.⁵⁷ And a structural reform of the German armed forces, recommended in 2021 by the Military Command Council, the highest military body of the Bundeswehr, to streamline forces

53. A German gas buying spree to secure industrial needs drove up European prices throughout 2022. To support its exporting industry, Germany sought unilateral arrangements with the US and China, without coordinating with the EU.

54. See, for example, B. Schreier, "Germany's First-ever National Security Strategy", *IISS Online Analysis*, June 20, 2023, available at: www.iiss.org (viewed on September 20, 2023) and G. Schnitzler, "Première stratégie de sécurité nationale allemande : quels enjeux ?", *Analyses IRIS*, June 15, 2023, available at: www.iris-france.org (viewed on November 10, 2023).

55. Germany has since refrained from enshrining the 2% goal in law, preferring a promise of meeting the goal as a five-year average, as announced in its long-awaited security strategy. See: "Haushaltsgesetz: Bundesregierung streicht Passus zu Zwei-Prozent-Ziel", *FAZ*, August 17, 2023, available at: www.faz.net (viewed on September 12, 2023). The November 15, 2023 decision of the German Constitutional Court invalidating a supplementary budget act reappropriating Covid funds has thrown spending plans of the "traffic light" coalition into dramatic disarray, putting into question not only future defense expenditure. See "Zweites Nachtragshaushaltsgesetz 2021 ist nichtig", Pressemitteilung No. 101/2023, Bundesverfassungsgericht, November 15, 2023, available at: www.bundesverfassungsgericht.de (viewed on November 24, 2023).

56. The German air force has earmarked €41 billion to procure American stealth jets and drones. Some €19 billion will go to the German navy, which is to spend it on maritime reconnaissance, combat ships and multipurpose combat vessels, again heavily slanted toward American arms purchases. Nearly €17 billion is destined for upgrading armored infantry fighting vehicles. Finally, €20 billion will be spent on modernising communications.

57. "Experte Neitzel zur Bundeswehr 'Pistorius versucht gerade alles, um nicht messbar zu sein'", *NTV*, September 25, 2023, available at: www.n-tv.de (viewed on October 1, 2023).

according to their Alliance obligations in the East has been abandoned.⁵⁸ As a NATO “framework nation” cultivating strong bonds with the US, Germany has made the military-industrial choice to serve as the terrestrial backbone of the Alliance’s European pillar grouping smaller partner nations around it that will most likely also purchase its defense goods.⁵⁹ Just how and where the Franco-German relationship fits into this military-industrial strategy is not quite clear.

The institutional nuts and bolts of Franco-German relations

In international relations, Franco-German relations are unique among bilateral arrangements. They stand out by their breadth and ambition, as well as by the degree of their institutionalization. And they differ by the political capital invested into what is described by protagonists and observers alike as a demanding relationship.

For its main protagonists, the West European founding myth of Franco-German reconciliation is not a love story. It is a constant effort to work with a partner who is indispensable yet very different, and whose concerns remain distinct despite exchanges of key personnel, institutionalized dialogue and firmly established bilateral structures. For each area of co-operation, the two countries have to come to a compromise from occasionally diametrically opposed directions. Once a solution has been found, often after long and bitter high-level discussions, parties may feel that too much has been conceded. Despite a highly institutionalized, “embedded” bilateralism,⁶⁰ it is striking how often important political initiatives do not seem to have benefited from prior agreement, or at least a prior briefing between partners. Yet, despite frustrations and attempts to identify other, more suitable partners matching in strategic outlook, the Franco-German relationship endures.⁶¹

Since the beginnings of Franco-German reconciliation enshrined in the Schuman Declaration of May 9, 1950, “le Franco-allemand” has come a long way, encompassing wide-ranging governmental, societal, and parliamentary consultation and co-operation, which nestle within the wider projects of European and Euro-Atlantic integration. The Élysée Treaty of 1963, although failing to lock in a Gaullist alternative course to the European communities and to NATO, set in motion not only twice-yearly

58. “Nein zur Bundeswehr-Reform. Jetzt bekommt Pistorius’ Image als Anpacker deutliche Risse”, *Die Welt*, September 16, 2023, available at: www.welt.de (viewed on September 16, 2023).

59. É. Tenenbaum and L. Péria-Peigné “Zeitenwende : La Bundeswehr face au changement d’ère”, *Focus stratégique*, No. 116, Ifri, September 2023.

60. See U. Krotz and J. Schild, *Shaping Europe: France, Germany, and Embedded Bilateralism from the Elysée Treaty to Twenty-First Century Politics*, Oxford: Oxford University Press, 2013.

61. See for example, S. B. H. Faure, “La politique du « flexilatéralisme » : le cas de la politique française d’armement dans le contexte du Brexit », *Les Champs de Mars*, Vol. 30, No. 1, 2018, pp. 73-101.

high-level government summits, but also working relations among civil servants and civil society representatives.

To mark the 25th anniversary of the Treaty, on January 22, 1988, an Additional Protocol enshrined new consultation and co-operation structures, such as the Franco-German Defence and Security Council and the Franco-German Brigade, among others. Starting in 2001, the “Blaesheim process” increased the frequency of informal high-level meetings. The 40th anniversary of the signing of the Élysée Treaty was marked by the creation of the Franco-German Council of Ministers and the appointment of a Secretary-General for Franco-German relations in each country, responsible for coordinating the preparation and follow-up of political decisions. This rich tapestry of governmental and administrative contacts and collaborations was complemented in 2019 by the creation of the Franco-German Parliamentary Assembly in the framework of the Aachen Treaty.⁶² This latest piece of the bilateral edifice stands out for the number of policy areas that should benefit from Franco-German coordination, among them defense.⁶³ Meant to reaffirm, invigorate and broaden bilateral relations, the Aachen Treaty can be read as an incantation of convergence through process.

Yet Franco-German institutions and the co-operation style that has governed them over the decades are found lacking in this respect. When divergences, disagreements and misunderstandings do occur, as expected in any co-operation, the ritualized and sacralized routines of the Franco-German relationship seem unable to either pre-empt or solve them. Conflicts, sometimes over details, can only be arbitrated at the very top.

Differences in political organization and bureaucratic routines are certainly a factor, with the French power vertical meeting a more collegial, consensus-oriented German system. But the biggest obstacle seems to be that the two very different partners are treaty-bound to converge: without knowing the end state of such convergence, and without being transparent about conflicting national priorities.⁶⁴ This results in considerable ambiguity. In the area of defense, strategically vital questions – how to conjugate European strategic autonomy and transatlantic relations, how to define national interests in defense, how to conceptualize military power, including the nuclear deterrent – are not discussed, or sparingly so.

62. C. Demesmay *et al.*, “La relation franco-allemande malgré tout”, *Allemagne d’aujourd’hui*, vol. 244, No. 2, 2023, pp. 3-9.

63. Article 4 of the Aachen Treaty enshrines joint Franco-German security interests and their intent to strengthen both the EU and NATO reinforcing their DITB via defense industry co-operation “based on mutual trust” and a joint export policy.

64. See, for example, G. Winter, “Garantir l’ambition d’une relation franco-allemande de défense plus étroite”, *Defense&Industries*, No. 10, December 2017.

Among French and German defense industrial actors, such lack of strategic clarity and guidance creates a “problem landscape”⁶⁵ of co-operation.

Franco-German relations thus present a number of paradoxes. They bring together countries that are culturally different, and whose strategic interests often diverge profoundly. Secondly, while the institutional density of relations should guarantee a high degree of familiarity with the privileged partner and a high quality of exchange, this does not appear to be the case. Thirdly, by ostensibly avoiding politization, the existing institutions fail to express and therefore to bridge differences. Yet the resilience of Franco-German relations is striking, built to survive periodically occurring crises.

The following section will detail how Franco-German relations are currently stress-tested on multiple policy divergences, which also shape the future of the FCAS and the MGCS.

65. See C. Mölling and J.-P. Maulny, “Consent, Dissent, Misunderstandings: The Problem Landscape of Franco-German Defense Industrial Cooperation”, DGAP, January 2020, available at: <https://dgap.org>.

A challenging strategic environment for the FCAS-MGCS, and clashing Franco-German interests

The two Franco-German flagship co-operations, intended to advance Europe's strategic autonomy and preserve its defense technological and industrial base, face financial, economic and (geo)political headwinds, as well as homegrown and international competition. Russia's war against Ukraine has fundamentally altered the global and European strategic landscape. In crisis mode, France, and Germany clash over monetary, industrial and energy policy, as well as armament procurement.

A difficult economic and political context for European weapons programs

A global pandemic and a war at Europe's eastern borders may have temporarily halted strict budgetary rules of the Eurozone, as well as corresponding procedures to cut deficits and debts. But discussions on EU reforms of fiscal rules are ongoing, pitting traditionally frugal and less frugal countries against each other, with Germany and France each representing one camp.⁶⁶ At stake: a return to fiscal "normalcy", without stifling economic growth and provoking popular resentment with budgetary cuts.⁶⁷ Another point of contention is the option to jointly borrow by issuing mutualized euro debt. This financial instrument is resisted by frugal Eurozone members such as Germany, but advocated by others, such as France. Agreed upon in 2020 at the height of the Covid pandemic as a major Franco-German feat,⁶⁸ the NextGenerationEU (NGEU), a major

66. A. Eisl, "Politique budgétaire en France et en Allemagne : des divergences insurmontables ?", *Visions franco-allemandes*, No. 34, Ifri, September 2023.

67. Just how much discretion in reigning in their finances should Eurozone countries be allowed is the subject of debate. "EU Reforms of Fiscal Rules Hit Resistance Among Big Capitals", *Financial Times*, April 26, 2023, available at: www.ft.com (viewed August 9, 2023).

68. See U. Krotz and L. Schramm, "Embedded Bilateralism, Integration Theory, and European Crisis Politics: France, Germany, and the Birth of the EU Corona Recovery Fund", *Journal of Common Market Studies*, Vol. 60, No. 3, May 2022, pp. 526-544.

lending program of up to €806.9 billion aimed at Europe's recovery, constituted a historic first in its scale and scope.⁶⁹

The idea has been floated to exclude defense investment from counting towards public debt calculations. Whatever new compromise fiscal rules may emerge, stability and growth tethered together in a “pact”⁷⁰ are destined to clash. And multi-billion-euro defense programs, especially those running over time and therefore over budget, competing with other spending items could attract scrutiny from both budget hawks and activists favoring other budgetary priorities.

Next to financial constraints, joint weapons programs will not be able to escape the fall-out from another consequence of the Russian war against Ukraine: risen energy prices stoking inflation. It remains to be seen whether consumer prices will mirror this downward trend in gas prices, but recent data, at least in some economies, point to an easing.⁷¹ Inflationary pressures have two consequences that could affect armament projects that rely on multi-annual funding and require periodical green-lighting. On the one hand, inflation depletes funds available to purchase or invest in defense goods. This is diminishing spending packages such as the €100 billion *Sondervermögen der Bundeswehr* voted in summer 2022, or the *Loi de Programmation Militaire (2024-2030)*, the pluriannual French defense spending law earmarking €413 billion (roughly €59 billion per year), which was approved in July 2023. Given the need to replace arms delivered to Ukraine and to build up bigger inventories in the context of rising weapons prices, sums allotted risk being just enough to restore but not develop armed forces.

On the other hand, a cost-of-living crisis, as well as opposition to ecological transition, could alter the equilibria in European and national politics, which in turn could change the outlook for the FCAS and MGCS programs. Polling trends for upcoming European elections are showing losses for Green and Leftist parties and gains on the extreme right of the spectrum.⁷² EU elections will be seen as a “prequel” to national elections in

69. NextGenerationEU, whose Recovery and Resilience facility of €723.8 is split 50/50 in grants and loans is supposed to also drive the EU's green transition. See for example: European Commission, Directorate-General for Budget, *EU Budget Policy Brief – The EU as an Issuer: the NextGenerationEU Transformation*, No. 3, July 2022, Publications Office of the European Union, 2022, available at: <https://op.europa.eu> (viewed August 10, 2023). Similarly, EU member countries are supporting Ukraine via the Macro-Financial Assistance program for Ukraine (up to €18 billion agreed in 2022, €10 billion to be disbursed in loans in 2023). “Questions and Answers: Unified Funding Approach to EU Borrowing”, European Commission, December 19, 2022, available at: <https://ec.europa.eu> (viewed on August 9, 2023).

70. “Stability and Growth Pact”, Directorate-General for Budget, European Commission, available at: <https://economy-finance.ec.europa.eu> (viewed on August 9, 2023).

71. See “OECD Economic Outlook”, Interim Report September 2023, *OECD*, available at: www.oecd.org.

72. Projections for the upcoming European parliamentary elections in 2024 predict a tie for centrists (Renew Europe) and right-wing Eurosceptics (ECR) in third place (89 seats each), behind the center right EPP (165) and the centre-left Socialists and Democrats (145). See “Poll of Polls – Polling from across Europe, Updated Daily”, Politico, available at: www.politico.eu (viewed August 10, 2023).

Germany in 2025 and France in 2027. They will also have an influence on the continued debate on reforming the Stability and Growth Pact, as well as on a more proactive industrial policy, both defining budgetary room for maneuver also in the defense realm.

A second Donald Trump/US Republican victory in 2024, even without the nightmarish scenario of the US pulling out of NATO and cutting all aid to Ukraine, would further ramp up European defense spending efforts. Yet there would be added pressure to step up support for Ukraine, which could possibly disrupt spending on the FCAS and MGCS programs. Lastly, political change in Germany and/or France could have a significant impact on co-operation. Both the next Bundestag elections and the next round of French presidential and parliamentary elections could bring to power parties more critical of the European Union and/or of Franco-German co-operations.

However, not only financial, and political factors are potentially weighing on the outlook of the FCAS and the MGCS. The industrial policy of the United States, especially regarding energy prices, could further complicate matters. In contrast to the Cold War period, when Europe's prosperity and military prowess was of key importance in the struggle pitting the United States against the Soviet Union, Europe is at best a secondary theater for the US in its current confrontation with China. Add to that Europe's security dependence on the United States. European allies were barely consulted when the Biden administration presented the American Inflation Reduction Act (IRA) in 2021, a massive subsidy program to reindustrialize America:⁷³ \$370 billion, out of which \$270 billion in tax breaks will support American energy transition and reindustrialization.⁷⁴ Given that American electricity prices for industrial use are already half the EU's, the future of European industrial production is at serious risk.⁷⁵

As a response to a global subsidy race started by the US, in February 2023 EU policymakers earmarked €250 billion of existing EU funds for the greening of industry, including offering tax breaks to businesses investing in net-zero technologies. Among other measures, it is planned to loosen EU state aid rules, as well as to set up a European Sovereignty Fund meant to foster critical and emerging technologies.⁷⁶ Both initiatives are applauded by France. But Germany is hesitant to reciprocate in kind to the Americans, as it fears the ghosts of the 1930s, when trade wars fueled economic crises

73. See J. Puglierin and J. Shapiro, "The Art of Vassalisation: How Russia's War on Ukraine Has Transformed Transatlantic Relations," *Policy Brief*, ECFR, April 4, 2023, available at: <https://ecfr.eu> (viewed on August 19, 2023).

74. Observers estimate the actual value closer to \$1 trillion. "American Green Subsidies Change the Investment Landscape", *Financial Times*, January 5, 2023, available at: www.ft.com (viewed August 10, 2023).

75. J. Pisani-Ferry: "The US Inflation Reduction Act Raises Questions about the EU's Climate Strategy", *Le Monde*, February 27, 2023, available at: www.lemonde.fr (viewed on August 10, 2023).

76. See: <https://ces.ufl.edu>.

and international strife.⁷⁷ It is also critical of the European Commission's probe into possibly illegal subsidies of Chinese electrical vehicles, with Olaf Scholz strongly coming out against "protectionism".⁷⁸ As a country that still has a substantial manufacturing base, Germany is keenly aware that its economy would take disproportionate hits in contrast to other EU members should retaliation from the US and China occur. In addition, loosening state aid rules could damage the internal market and set member countries against each other, something that does not only worry Germany.

Additional economic bones of Franco-German contention are linked to the decarbonization of EU economies, to be achieved by 2050. Here, conflict arises because of differing positions on nuclear energy, and differing energy price levels between France and Germany. Germany and France are on the opposing spectrum when it comes to splitting atoms, with Germany phasing out its last reactors in the middle of an ongoing energy crisis, and France embarking on a vast program of renovation and rejuvenation of its aging reactor park. For this gigantic investment, France needs financial support. Last year, it scored a first "energy taxonomy" victory, with both gas and nuclear receiving provisional "green" labels clearing them as investment-worthy, albeit with caveats.⁷⁹ This spring, the European Commission tabled legislation that would allow member states to subsidize the production of nuclear energy from existing or future installations, which is something that Germany firmly opposes.⁸⁰

Regarding energy provision and prices, the original European "Green Deal" from 2019 bet heavily on natural gas from Russia as an intermediate solution to phase out coal and fuel oil. Russian gas also had been attributed the role of a stop-gap in times of lacking sun and wind, awaiting sustainable hydrogen and renewable electricity storage solutions. After the Russian attack on Ukraine, the European Power Benchmark averaged €230/MWh, 121% higher than in 2021. Record gas prices tied to electricity prices, the exceptionally low output of Europe's nuclear reactors park, and reduced hydro output due to drought had created a perfect storm.⁸¹ Electricity prices have decreased since, but divergences prevail, competitively disadvantaging Germany. Its electricity price of 40 cents per KWh contrasts unfavorably with the 28 cents/KWh in France, hence Germany is anxious that its firms

77. P. Escando, "Massive US Subsidies Disrupt International Trade and Pose a Serious Problem for Europe", *Le Monde*, February 28, 2023, available at: www.lemonde.fr.

78. See "Germany's Scholz Warns Against Protectionism in China Electric Car Probe", Politico, September 28, 2023, available at: www.politico.eu (viewed on September 28, 2023).

79. See "Taxonomy Complementary Climate Delegated Act", with nuclear projects permitted until 2045 supported, available at: <https://finance.ec.europa.eu>.

80. "Energy Crisis: France and Germany at Odds over Nuclear Power Market Reform. As the European Union Is Drafting a Bill to Curb the Volatility of Electricity Prices, France Is Clashing with Germany and its Allies", *Le Monde*, July 30, 2023, available at: www.lemonde.fr (viewed on September 29, 2023).

81. Directorate for Energy, European Commission, May 17, 2023, *op. cit.*

set up production sites in France.⁸² But even France has to fear departure of key industries because of energy prices, as well as green transition and decarbonization trajectories.⁸³

Box 3: Franco-German disagreements

EU monetary and budgetary policy: Reform of Stability and Growth Pact, joint borrowing
EU industrial policy: Reform of state aid rules, “geopolitical” trade and investment policy
EU energy/green transition policy: “Green taxonomy”, nuclear energy
Foreign and defense policy: Non-European weapons purchases, abandoning of joint programs

European strategic autonomy, collateral damage of Russian aggression?

Putin’s war of aggression is putting tremendous pressure on European countries to ramp up their defense capacities and to modernize their armed forces, currently unable to fulfill their collective defense obligations. Historically, European efforts to co-develop their own security and defense capabilities, both within the European Union and bi- or multilaterally, have correlated strongly with a marginalization of nuclear weapons, as well as with a more disengaged United States.⁸⁴ None of the above factors currently applies. Nuclear weapons, which form part of Russia’s approach of an “integrated coercive mechanism” combining nuclear, conventional and informational (cyber) instruments of influence, have been shaping the conflict since the beginning.⁸⁵ And although the viability of the American security guarantee of a nuclear and conventional nature is in doubt after

82. 50% of the German tariff is made up of temporary taxes put in place to finance the green transition. Whereas energy totals between 2% and 10% of production costs on average, it is 15% in Germany. For comparison: the price of electricity in China is estimated to be between 3 and 18 cents. Source: P. Commun, “Le moteur allemand est-il en panne ?”, France Culture, September 12, 2023, available at: www.radiofrance.fr. German plans to subsidize electricity costs for energy-intensive industries, as well as to continue to protect consumers are in disarray after the November 15, 2023 ruling of Germany’s Constitutional Court uprooting the ruling coalition’s budgetary policy (see also Footnote no. 55).

83. See, for example, “Pourquoi la future usine de Safran prévue près de Lyon pourrait finalement atterrir... aux États-Unis ou au Canada”, *L’Usine Nouvelle*, September 22, 2023, available at: www.usinenouvelle.com (viewed on September 26, 2023).

84. G. De Rouge, “France, Germany, and Nuclear Deterrence Since the End of the Cold War: From Estrangement to Rapprochement?”, in: N. Badalassi and F. Gloriant (eds.), *The Franco-German Duo and Nuclear Deterrence: Between Misgivings, Misunderstandings, and Implicit Convergences (from 1954 until today)*, Oxford: Berghahn Books, 2020.

85. See D. Adamsky (Dima), “From Moscow with Coercion: Russian Deterrence Theory and Strategic Culture,” *Journal of Strategic Studies*, Vol. 41, No. 1-2, 2018, pp. 33-60. The war has further contributed to correlating nuclear and conventional weapons, which had been seen as separate at least since the 1960s. See for example T. De Champchesnel, “The Return of Tactical Nuclear Weapons?”, Report No. 105, IRSEM, April 2023.

(and possibly before) a Trump presidency, Russia's military aggression has had a seemingly paradoxical effect: the US and the NATO, sole addressees of Russian ultimatums to Europe in the run-up to the war, emerge reinvigorated from the current crisis.

Russia's war has boosted a long-promised but slow-in-the-making NATO military investment effort, enshrining 2% of gross domestic product (GDP) as a lower limit to be permanently invested in defense at the Vilnius Summit in July 2023.⁸⁶ Billions of euros are currently disbursed to compensate for three decades of underinvestment in defense.⁸⁷ Countries scramble to replenish very low defense stocks, their peacetime levels further depleted by military support given to Ukraine. In fact, three different "defense markets" – for platforms, for ammunition and for military tech and artificial intelligence – are under pressure.⁸⁸ European production bottlenecks, underinvestment and depleted stocks encourage "off-the-shelf" purchases from non-European weapons manufacturers.⁸⁹ In addition, current purchases of American platforms are seen by a number of European NATO allies as a way to cement long-term security relationships with the US.

The European Union has created mechanisms and financial instruments to promote European defense co-operation as well as the development of a European defense technological and industrial base.⁹⁰ But even before February 2022, European countries saw these mechanisms as ways to primarily strengthen their NATO capabilities. Despite the fact that EU member states have already committed to joint defense investment of 35%, in 2021, only 18% of all capacity developments were undertaken jointly. But without a strong, competitive European defense industry mastering technologies of the future, Europe will lose crucial strategic

86. About 80% of the so-called strategic enablers in NATO are still provided by the United States. See paragraph 27 of the Vilnius Summit Communiqué issued by NATO Heads of State and Government participating in the meeting of the North Atlantic Council in Vilnius on July 11, 2023, available at: www.nato.int (viewed on August 16, 2023). NATO members had already committed to spending 2% of GDP on defense in 2006. In 2014, the Allies endorsed the Defence Investment Pledge committing to not only meet the 2% goal by 2024, but also to spend 20% of annual defense expenditure on major new equipment purchases. "Funding NATO", Factsheet, NATO, updated in July 2023, available at: www.nato.int (viewed on August 14, 2023).

87. "Europe's Defense Spending Sluggish Despite Ukraine War", *Defense One*, September 12, 2023, available at: www.defenseone.com (viewed on September 22, 2023).

88. J. D. Caverley, "Horses, Nails, and Messages: Three Defense Industries of the Ukraine War", *Contemporary Security Policy*, September 2023.

89. Since February 2022, only 22% of European defense acquisitions have come from the EU. See D. Fiott, "Purchasing Power: Towards Joint Procurement and Planning in European Defense?", *CSDS Policy Brief*, September 2023, available at: <https://csds.vub.be>.

90. Next to the "European Defence Fund" (EDF) investing €8 billion in joint defense innovation and prototyping until 2027 and "Permanent Structured co-operation" (PESCO), there is the 2022 "European Defence Industry Reinforcement Through Common Procurement Act" (EDIRPA), which earmarks €300 million for joint weapons purchases until 2024, as well as the "Act in Support of Ammunition Production" (ASAP), which sets aside €500 million for procuring ammunition. The most recent addition, the "European Defence Investment Programme" (EDIP), should at least provide €9 billion for the period from 2024 to 2027. See D. Fiott, "Purchasing Power: Towards Joint Procurement and Planning in European Defense?", *op. cit.*

leverage and political room for maneuver, and also as a pillar of NATO.⁹¹ A squaring of the circle between security needs, market access for non-EU countries and protecting European industries is needed.⁹²

In the field of armament co-operation, French frustration with its German partner is mounting, adding to existing industrial tensions around the FCAS and the MGCS. Several procurement decisions, either to abandon joint projects or to buy American or Israeli-American military equipment, have caused deep exasperation.

In 2017, France and Germany announced the planned modernization of their jointly developed Eurocopter *Tiger* attack helicopter, as well as the joint development of a Maritime Airborne Warfare System (MAWS) and of a Common Indirect Fire System (CIFS). In 2018, the *Tiger MkIII* midlife upgrade program was launched to equip the *Tiger* for collaborative combat and with new avionics, among other features. In 2021, Germany withdrew from the program, leaving France and Spain to carry it forward alone.⁹³ Abandoning the upgrade of the *Tiger* helicopter could jeopardize European capabilities in the realm of aircraft development and production.⁹⁴

In November 2021, Germany also withdrew from the MAWS, initiated in 2018 and intended to replace both countries' maritime surveillance planes with a SoS approach in the early 2030s. Under pressure from NATO partners to rapidly ramp up German anti-submarine capabilities, in June 2021 the Bundestag instead validated the purchase of five *P-A8 Poseidon* planes made by Boeing for €1.43 billion. France had offered four upgraded *Atlantique 2* maritime patrol aircraft as an intermediate solution, to no avail.⁹⁵ The CIFS, a French-German program to develop a 155mm self-propelled artillery gun also launched in 2017 and taken on by KNDS, has seemingly been downgraded in its ambition.

Germany justifies recent American or Israeli-American “off-the-shelf” purchases by pointing to market availability and proven track record to

91. J. Puglierin and J. Shapiro, “The Art of Vassalisation: How Russia’s War on Ukraine Has Transformed Transatlantic Relations”, op. cit.

92. See C. Mölling, “Europe Needs a New Defense-industrial Playbook to Stay Relevant”, *Defense News*, September 12, 2023, available at: www.defensenews.com (viewed on September 26, 2023). See also “Let the US in to EU Arms Deals, Says Lithuanian Minister. But Powerful EU Countries such as France Argue that European Defense Money Should Go to the Continent’s Companies”, *Politico*, September 12, 2023, available at: www.politico.eu (viewed on September 20, 2023).

93. Struggling with the low availability of its *Tigers* (in spring 2022, only nine out of 51 were operational), Germany has preferred an alternative solution. Ignoring Bundeswehr concerns about their suitability for combat, the Ministry of Defense seems intent on purchasing 82 *Airbus H-145M* civilian helicopters for €3.05 billion and arming 24 of them with anti-tank missiles. “Germany to Buy *Airbus* Civil Helicopter and Convert for Combat, *Business Insider Reports*”, *Reuters*, March 18, 2023, available at: www.reuters.com (viewed on August 7, 2023).

94. S. Arnold and F. Schöne, “Der deutsche Kampfhubschrauber ‘Tiger’ steht vor dem Aus. Aktuelle Handlungsmöglichkeiten der Bundesregierung”, *SWP-Aktuell 2022/A 06*, January 20, 2022, available at: www.swp-berlin.org (viewed August 7, 2023).

95. L. Lagneau, “Le Parlement allemand valide l’achat de cinq avions de patrouille maritime P-8A Poseidon”, *Opex360*, June 23, 2021, available at: www.opex360.com (viewed August 7, 2023).

quickly close capability gaps. But recent procurement decisions could be found lacking on both accounts. For example, last year, Germany announced that it was buying 60 CH-47 *Chinook* heavy-lift helicopters from Boeing to replace its aging CH-53 for close to €8 billion, a decision keenly awaited as Germany has been lacking in that capability for decades.⁹⁶ But instead of purchasing the “Block I” variant widely used by the US and its allies, the Ministry of Defense has opted instead for the “Block II” upgrade, which hasn’t even been operationally tested and approved by the US armed forces themselves – a choice with considerable cost risks.⁹⁷

A similar observation can be made regarding the German-led *European Sky Shield Initiative* (ESSI), meant to strengthen NATO Integrated Air and Missile Defence (IAMD) capabilities, with 19 participating countries in July 2023.⁹⁸ ESSI foresees the joint procurement of missile defense “layers”, intervening against airborne threats at low, medium, and high altitude.⁹⁹ This procurement initiative constitutes a serious irritant for France, for several reasons. French partners were apparently blindsided by the German announcement touching a French area of highest strategic importance: the initiative is seen as potentially upsetting the subtle equation of nuclear deterrence and strategic stability in Europe. In addition, an American anti-aircraft/anti-missile weapon system, *Patriot*, was preferred to an available European one with comparable characteristics, the *Aster Sol Air Moyenne Portée/Terrestre*, *SAMP-T* (Surface-to-Air Medium Range/Terrestrial) named *Mamba*, co-produced by France and Italy. Lastly, with this initiative Germany is seen as questioning France’s traditional lead in defense matters in Europe, while favoring its own defense industry to boot. At the Munich Security Conference in February 2023, Emmanuel Macron announced a meeting in June 2023 to present a European alternative solution. Yet, by summer

96. “Germany to Buy 60 Chinooks for Up to 8 Billion Euros, Lawmakers Say”, Reuters, July 5, 2023, available at: www.reuters.com (viewed on August 10, 2023).

97. “Regierung verschweigt Risiken von milliardenschwerem Rüstungsdeal,” *Die Welt*, July 5, 2023, available at: www.welt.de.

98. The initiative was announced by the German chancellor in a speech in Prague in August 2022, and launched in October 2022 at a NATO defense ministers’ meeting. Participating nations include not only current NATO members and Sweden, but also traditionally neutral countries such as Austria and Switzerland. In addition to France and Italy, Spain and Poland have not joined ESSI.

99. For the lowest to medium level, the German-produced *IRIS-T* SLM (Infra-Red Imaging System Tail/Thrust Vector-Controlled) system is foreseen. Endoatmospherically, ESSI plans to use the American MIM-104 *Patriot* (Phased Array Tracking Radar to Intercept of Target) medium to long-range system. Both the low and the medium layer will be integrated into NATO’s IAMD, which is supposed to protect against longer-range missiles from Iran and short-range missiles from Russia. Lastly, the Arrow-3 missile defense system, based on a hypersonic and exoatmospheric anti-ballistic missile system, financed, developed, and produced jointly by Israel and the United States, will be protecting the highest layer – for the time being for German use only. See “Germany’s Missile Defense Plans: European Ambition and the Russian Missile Threat,” Online event with Dr Jeffrey Lewis, Middlebury Institute of International Studies at Monterey, Dr Frank Sauer, University of the Bundeswehr Munich, Ms Lydia Wachs, Stockholm University, moderated by Mr Jeff Rathke, AGI President, American German Institute, September 18, 2023, available at: <https://americangerman.institute>.

2023, it had become clear that the French president had failed to rally a sizable portion of European partners to follow his lead.

Apart from French grievances, there are other criticisms from a broader European perspective. First, ESSI constitutes a procurement initiative and not a response to an actual identified threat; it is politico-industrial rather than strategic in nature. For one, it allows the German government to show reactivity in the context of war in Ukraine. By providing “defensive” capabilities in a NATO framework, it dodges the uncomfortable yet essential discussion as to what offensive capabilities would be needed to deter Russia.¹⁰⁰ The procurement decisions not only exclude the French-Italian medium- to long-range Aster SAMP/T system, but also the short- to medium-range British MBDA’s Common Anti-Air Modular Missile (CAMP) and the Norwegian short- to medium-range Advanced Surface-to-Air Missile System (NASAMS) built by Kongsberg.

The German decision to purchase the exoatmospheric Israeli-American system “Arrow 3” is particularly intriguing. It allots 4 out of €5 billion earmarked for ESSI from the *Bundeswehr Sondervermögen* to a system designed specifically to match an Iranian threat in an Israeli context, while next to all ballistic missiles that Germany would need to defend against tend to be endoatmospheric. Thus, a sizable sum of money will not be available to foster European air defense capabilities.¹⁰¹ Lastly, there is no link between the ESSI and EU programs working on anti-aircraft/anti-missile capabilities, for example with a Permanent Structured Co-operation (PESCO) project such as “Twister”, which is supposed to develop a new anti-ballistic defense system that would be effective against hypervelocity missiles and gliders.¹⁰²

Competitors in the armament field

A review of the strategic environment of the FCAS and MGCS programs would be incomplete without scrutinizing their defense industrial challengers. The FCAS and MGCS have both direct competitors in the shape of ambitious SoS weapons programs built around a central platform, and intermediate competitors. Scrutinizing direct competitors to the FCAS in the SoS realm, there is the US “Next Generation Air Dominance” (NGAD)

100. S. Arnold and T. Arnold, “Germany’s Fragile Leadership Role in European Air Defense. The Need for Adjustments at All Levels of the European Sky Shield Initiative”, *SWP Comment*, No. 6, February 2023.

101. Germany’s suggestion that “Arrow 3” would in time be made available to partners and be fitted into NATO’s Integrated Air and Missile Defence system raises additional questions: first, what threat the layered missile defense system is meant to counter and, secondly, how it would be made interoperable with existing NATO equipment. German announcements that “Arrow 3” protected against intercontinental ballistic missiles is deemed erroneous by experts.

102. This initiative had been proposed in 2019 by France, including Italy, Finland, the Netherlands, and Portugal, later joined by Germany. The Commission awarded the project in 2022 to a consortium including Spain, Germany, Belgium, Poland, the Czech Republic, and Sweden, as well as non-EU Norway, to the surprise and consternation, one can surmise, of the non-German initial “Twister” participants.

programs, in a class of its own. The US Air Force has been flying demonstrators developed by the Defense Advanced Research Projects Agency (DARPA) since 2020. It has already invested \$6 billion in NGAD research, with \$22 billion earmarked for the next five years. In contrast to all other fighter aircraft competitors, the US has already developed a fifth-generation plane.

Another SoS competitor is the “Global Combat Air Programme” (GCAP), bringing together the UK, Italy, and Japan. Both GCAP and the FCAS have their roots in the 2001 “European Technology Acquisition Programme” (ETAP), which included Germany, France, the UK, Italy, Sweden, and Spain. Out of the ETAP evolved a “Franco-British Future Combat Aircraft System” (FCAS-DPPP) which started in 2012, and which was discontinued in 2018, as France had launched the FCAS together with Germany in 2017.

The United Kingdom and Italy then presented a rival program in 2018, “Tempest”, an industry partnership involving Rolls Royce, BAE Systems, Leonardo, and MBDA to replace British and Italian *Eurofighter Typhoon* combat planes. In 2022, the UK and Japan agreed to merge their respective next-generation “Tempest” and F-X fighter jet programs, forming the GCAP which plans to have a demonstrator flying by 2027 and its aircraft operational by 2035.¹⁰³

However, even though the GCAP seems to be currently taking flight, turbulences can be expected: Three very different countries will have to work together, without prior joint experience of managing vast cultural differences, and without institutional “scaffolding” as in Franco-German co-operation. Possibly diverging military requirements seem not to have been actively discussed yet. The UK’s defense ambitions also collide with budget constraints and armed forces eroded by numerous rounds of cost savings. In addition, in the case of conflict, the primacy of the relationship with the United States will take precedence over all other strategic considerations.

When it comes to ascertaining the next-generation fighter ambitions of strategic opponents, assessing the prospects of Russian and Chinese programs is more difficult. Is Russia working on an enhanced 5th-generation (or, more realistically, 4.5th-generation) Su-57, in the context of its war against Ukraine, with restrictions imposed on imports of crucial technology? Even though sanctions on importing technology are bypassed by routing components through countries such as Turkey and Georgia, financial

103. In summer 2023, Saudi Arabia expressed its interest in joining but Japan rebuffed the offer. Available at: www.theguardian.com (viewed August 17, 2023). In addition to fearing program delays, Japan is keen to protect its intellectual property.

pressures could hinder program progress.¹⁰⁴ Chinese developments seem to be closely following the generation of NGAD and F/A XX technology.¹⁰⁵

Yet both FCAS and MGCS also face intermediate competitors: upgrades of existing fighter aircraft and battle tanks, which will integrate lessons learned from the war in Ukraine. In the future, rather than scouting or shooting themselves, platforms will increasingly take the role of coordinating drones as vectors and effectors.¹⁰⁶ Intermediate competitors could absorb market share for years to come. Their specifications and costs may appear more discernible than ambitious future developments. It is striking that the strongest intermediate competition comes from within the Franco-German context, with French and German industrialists taking shots at the two flagship programs.

In the intermediate competition “air” segment, it is Dassault Aviation, itself the main NGF contractor of the French-led NGWS program within FCAS, that is advertising future *Rafale* developments, such as the *Rafale F5*, as a bridging solution to a European and global clientele. Dassault is also seemingly eyeing an SoS approach, presenting alternatives to the FCAS’s combat cloud, as well as to the “Loyal Wingmen”, with deliveries expected by 2030.¹⁰⁷

For the German fixed-wing market, purchasing existing or future US jets is considered a suitable option. It needs to be stressed that Germany’s decision to buy US defense goods, such as *F-35s*, goes beyond a mere procurement decision. With it, Germany is joining weapons programs that will have a structuring impact for several decades, through both costs and, perhaps more importantly, the dominance of American technical norms. Germany’s decision will also have repercussions on the FCAS program, posing questions of interoperability between the two systems, including the question of protecting intellectual property, which will arise in the context of data sharing. Finally, it will have an industrial effect in Germany, with Rheinmetall producing *F-35* airplane parts for all markets outside of the US in the future.¹⁰⁸

104. See “Russia Overcomes Sanctions to Expand Missile Production, Officials Say”, *The New York Times*, September 13, 2023, available at: www.nytimes.com (viewed on September 14, 2023).

105. Given the technological difficulties at play, it would perhaps be more accurate to state that most countries still have to make the qualitative “jump” to a fifth-generation fighter before embarking into a sixth-generation future.

106. See, for example, “Next Generation Air Force Jet Companion Drones”, *Next Big Future*, August 27, 2023, available at: www.nextbigfuture.com (viewed on September 9, 2023).

107. See, for example, “Le *Rafale* F5 pourrait être associé à un drone de combat hérité du programme nEUROn”, *Gifas*, May 23, 2023, available at: www.gifas.fr (viewed on August 10, 2023). See also: “Drängt Dassault Airbus aus dem FCAS-Programm?”, *Militär Aktuell*, September 7, 2023, available at: <https://militaeraktuell.at> (viewed on September 15, 2023).

108. “Rheinmetall-Chef: “Kein Land in Europa ist gut auf einen Überfall vorbereitet”, *Redaktionsnetzwerk Deutschland*, June 10, 2023, available at: www.rnd.de (viewed on August 10, 2023).

On the ground, there is no direct competitor to the MGCS, but a fleet of intermediate competitors, chief among them models fielded by German manufacturers. The Americans announced in summer 2023 that, rather than developing a new battle tank, they are upgrading their *M1 Abrams* to field the *M1E3 Abrams* model by 2030, which will include an integrated, rather than added-on, active passive defense system.¹⁰⁹ Rheinmetall is working on upgrades for the UK *Challengers*. But the biggest threats to the MGCS managed by Germany are German-grown and/or German-led: Orders for the *Leopard 2* successor are pouring in: The 2A8 model is supposed to include promising recent technological advances.¹¹⁰ KNDS and Rheinmetall have announced the *Leopard AX*, a fusion of their respective EMBT/KF-51 Panther models, to be available in the 2030s. In addition, a German-led consortium is competing for EDF financing to jointly develop a battle tank.¹¹¹ Such stiff German competition as well as French operational needs are sparking discussions on the development of a new version of the *Leclerc*, with France looking for partners to join.

Meanwhile, advanced battle-tank developments by adversaries do not seem to be an immediate cause for concern. The Russian *T14 Armata* appears to still be struggling with technical problems ten years after being fielded, which could mean that integrated high tech, for example, in the field of robotics has not yet been perfectly mastered by the Russian defense industry.¹¹² Whether China is developing a replacement for its main battle tank *ZTZ-99*, in service since 2001, is not entirely clear.

Having scrutinized external and internal factors shaping the strategic environment in which the FCAS and the MGCS evolve, together with French and German national and co-operation strategies, the following section will be devoted to developing future scenarios of the two Franco-German flagship programs.

109. ABRAMS SEPV4 + ABRAMS-X = M1E3, *Blablachar*, September 7, 2023, available at: <https://blablachars.blogspot.com> (viewed on September 15, 2023).

110. In 2021, the German Federal Office of Bundeswehr Equipment, Information Technology, and In-Service Support (BAAINBw) signed a government-to-government agreement with Israel to equip its *Leopard 2* Main Battle Tanks with Rafael's Trophy Hard Kill Active Protection Systems (APS), which counters anti-tank guided missiles (ATGMs), rocket-propelled grenades (RPGs), anti-tank rockets, and high-explosive anti-tank HEAT rounds.

111. See, for example, "So startet Deutschland eine neue Kampfpanzer-Allianz", *Handelsblatt*, September 11, 2023, available at: www.handelsblatt.com (viewed on September 11, 2023).

112. "Russia to Receive Advanced Armata Tanks in 2022", *The Moscow Times*, March 4, 2021, available at: www.themoscowtimes.com (viewed on August 25, 2023).

Development scenarios for the FCAS and the MGCS

Foresight, looking prospectively into the future, sheds light above all on ourselves, on our frustrations and hopes in the present moment.¹¹³ With this caveat in mind, four scenarios, “Battling on”, “Mission abort”, “Rescue operations” and “Let’s agree to disagree” will sketch possible futures of the two twinned Franco-German armament programs, and Franco-German defense co-operation in general.

Battling on

Given the political and industrial ambition of the two programs, and the sunk political, financial, and symbolic costs, the French and German leadership will most likely do their best to battle on with the FCAS and MGCS programs, despite a lack of strategic synergies, internal quarrels among participating industrialists, delays, and cost-overruns. The ostensible failure of one or two of such high-level programs would compromise Franco-German co-operation in the field of armament for years, if not decades to come. It would damage the bilateral relationship in general, as well as Franco-German ambitions for European leadership.

At a time when the EU is set to transform into an enlarged, multi-speed Europe, lighthouse projects such as the FCAS and the MGCS would most likely gain additional symbolic weight by representing the possibility of combining widening with deepening co-operation. Given the number of strategic *dossiers* that France and Germany currently disagree on, the two flagship programs could serve as bargaining chips to work towards compromise in other areas.

Already encountered program delays threaten French operational capabilities in the area of battle tanks by 2035, and of fighter planes by 2040. Additional programs, such as a successor model to the *Leopard 2* or the *Rafale F5*, could function as a bridge, diminishing the chances of the co-operation partners deserting the MGCS and FCAS. Should the German-led consortium competing for European Defence Fund financing to develop a main battle tank be selected, it could produce prototype “bricks” for the MGCS. In addition, a transition fleet of new French combat aircraft such as

113. S. Sur, “L’avenir en débat : anticipation, prévision, prospective”, in: P. Dahan (ed.), *Prévoir le monde de demain*, Paris : CNRS Éditions, 2020, p. 61.

the *Rafale F5* could help prepare the ground for the NGF at the heart of the FCAS, demonstrating existing know-how and technical sophistication.

Occasionally, being late can turn out to be an advantage. The fact that both programs are just starting to discuss military requirements will allow them to consider lessons learned from Russia's war against Ukraine, especially regarding drones, and trade-offs between sophisticated equipment, availability and robustness.

Perseverance could also possibly allow both partners to go beyond the building of "just" next-generation platforms, such as planes and tanks, to jointly build "systems of systems". However, SoS ambitions could open the door to new conflicts: Mastery of platforms, such as planes and tanks, whose technology is more than a century old will gradually lose importance. In the future, commanding significant elements of system architecture and strategic system components, or being in a position to integrate said systems could be the decisive element in achieving superiority, both on the battle field and in co-operative relationships.

Muddling through, however, could encounter political obstacles. Several important electoral dates beckon, from the European parliamentary and US elections in 2024 to Bundestag elections in 2025 and French presidential and parliamentary elections in 2027. Each could modify the outlook for the two joint programs. The European parliamentary elections in 2024 will function as a mood barometer and could concentrate the minds of decision-makers in the Élysée and the Chancellery. Both the next Bundestag elections and the next round of French presidential and parliamentary elections might bring to power parties that are more critical of the EU and/or of Franco-German co-operations. The political will would then be lacking to closely engage to keep the programs on track, which could make them falter eventually.

However, even with continued support at the heads of state and government level, in national contexts marked by political divisions, volatile majorities and budget constraints, both the FCAS and the MGCS could be vulnerable to parliamentary opposition.¹¹⁴ For the FCAS, the *Loi de Programmation Militaire (LPM) 2024-2030* enshrined a governmental obligation to present a report to parliament at the end of Phase 1B, preceding the decision to greenlight Phase 2, expected in 2025. Likewise, in 2025, the French government has to present an MGCS progress report to parliament. And the German parliament has to vote on all military spending of €25 million and above.

A strategy of battling on could prevail against the many odds outlined in this study, but it would benefit from more proactive political project

114. The Assemblée Nationale may have just voted the "*Loi de Programmation Militaire 2024-2030*", but, periodically, public expenditures are discussed and voted on in the framework of the "*Lois de finances*".

management. Given the difficulties of tabling and resolving conflicts at working level within the Franco-German institutional framework, regular political interventions would most likely be necessary to defuse tensions and impose arbitration in order to proceed. Policymakers would have to find new ways to integrate industrial actors and the military into strategic planning.

Mission abort

Next to muddling through in the face of persistent difficulties, another development scenario would be the abandoning of one or two programs due to disagreements over workshare, partners, armament specifications and subcontracting parties. Such difficulties could in part stem from asymmetric dependence on future operational capabilities, as well as from reluctance to share intellectual property. Under such a scenario, partners would decide to depart from one or both ventures and embark on programs alone, or with other European and international partners.

Should the MGCS be abandoned, the need for a new heavy battle tank to replace those currently in service, such as the *Leopard 2*, the *Leclerc*, the British *Challenger 3* or Italy's *Ariete*, would nevertheless remain. Two different European programs could emerge, structured around Germany and France, respectively, with each trying to attract interested parties.

Indeed, for German manufacturers involved in the production of the *Leopard 2A8*, such as KMW, MTU and RENK, but also for Rheinmetall, aiming for the completion of the MGCS by 2035 would make little industrial sense given other commercialization opportunities. Germany has the industrial clout to develop a successor to the *Leopard 2* line, and no shortage of current and potential customers. First in line are those that have ordered *Leopard 2A8*, such as Norway, the Czech Republic, Lithuania, and Italy, but also partners like the UK, whose *Challenger 3* evolution will be largely provided by Rheinmetall, the Netherlands, Sweden, Finland and possibly in the future even Poland.¹¹⁵

A French tank “cluster” around Nexter would be more difficult to implement given expected delays and high costs involved in relaunching battle-tank production in France. And producing a few hundred heavy tanks, armored vehicles and next-generation effectors alone would be prohibitively expensive. Paris had counted on Rome as privileged partner to develop a successor to the *Leclerc*, as they not only share the same battle-tank replacement timetable, but also product specifications due to similar doctrines favoring maneuver and mobility over firepower and armor. But

115. For the time being, Poland, followed by Romania, has opted for the purchase of American *M1A2 Abrams* tanks (250, in the case of Poland, 54 for Romania), as well as for the Korean *K2 Black Panther* (1,000 for Poland). Concerning the choice of purchasing Korean, technology transfer and local production seem to be major arguments.

given that Italy and Spain hope to participate in an EDF-financed German-led battle-tank development,¹¹⁶ Paris might have to identify other partners.

Regarding a next-generation fighter and a “system of systems” built around it, France’s aeronautical industrial and technological base is one of only five in the world capable of such an engineering feat. Hence Dassault Aviation, encouraged by the LPM funding perspective for its *Rafale F5*, is showcasing “French-only” solutions, pointing to the (belated) success story of its *Rafale* produced solo.¹¹⁷ Cost estimates for the development and production of a French-only FCAS and MGCS together would amount to €3.5-€4.5 billion per year, for over more than twenty years. This would represent additional costs of €2-€3 billion per year, especially in the development phase – an extra €20 billion for the LPM 2024-2030 alone.¹¹⁸

Given the strategic role of a fighter plane capable of carrying atomic weapons for French nuclear deterrence, France would always commit to building one, even if it had to do so alone. But, given the steep costs involved, France would be looking for alternative partners to share the financial burden of developing a next-generation fighter and to secure exports. Here, a change in armament co-operation and export policy announced by French Defense Minister Sébastien Lecornu in summer 2023 marks a departure from established practice. While, in the past, France has preferred to develop key weapons programs with fellow Europeans and to export French defense goods to a wider circle of partners worldwide, it has decided to open development of the *Rafale F5* to the members of the “Club Rafale”.¹¹⁹

In this respect, India is identified by some as a potential partner. Indeed, design requirements would be quite similar. Both France and India use multi-role fighter jets as part of their nuclear triad, and both would want their planes to be able to land on aircraft carriers. The two countries favor strategic autonomy and are hesitant to include American or British technology in their weapons systems. Both are united in wanting to protect their own strategic specificities.¹²⁰ From a commercial and cost-sharing point of view, India could order more airplanes than Germany and Spain

116. See “Kampfpanzer Allianz”, *Handelsblatt*, *op. cit.*

117. As to what brought about the decision, see, for example, S. B. H. Faure, “Quitter la défense européenne. Le choix de la France pour l’avion de combat *Rafale*”, *Politique européenne*, Vol. 67, No. 1, 2020, pp. 84-115, available at: <https://samuelbhfauredotcom.files.wordpress.com>. The French armed forces paid a steep price for this procurement decision, missing out on other needed equipment, with the *Rafale* initially gathering dust before becoming an export success.

118. “Can France Develop the MGCS and FCAS Programs without Germany?”, *Meta Defense*, September 11, 2023, available at: <https://meta-defense.fr> (viewed on September 12, 2023).

119. Countries that have purchased, or plan to purchase the *Rafale*. “Le Ministère des Armées veut co-développer le *Rafale F5* avec le ‘Club *Rafale*’ pour 2030”, *Meta Défense*, June 8, 2023, available at: <https://meta-defense.fr> (viewed on August 20, 2023).

120. See, for example, F. Grare, M. Levaillant and T. Varma, “Par-delà les grands contrats, la relation de sécurité et de défense franco-indienne”, *Le Grand Continent*, September 8, 2023, available at: <https://legrandcontinent.eu> (viewed on September 15, 2023).

together. Yet such an unprecedented choice would come with specific risks. The current Indian government's fostering of extreme Hindu nationalism is a cause for concern. India's strategy of geopolitical hedging, including regarding Russia, would make it a tricky co-operation partner. There is also the sensitivity of technology transfers "neighboring" France's nuclear deterrent to a non-European partner. Lastly, the decision to build a fighter plane with India would be closely watched by European partners, possibly sowing doubts about France's commitment to Europe.

In scenarios of "Mission abort", an additional headache concerns the twinned nature of the FCAS and the MGCS, and how political authorities would react should one program unravel. Political pressure would be strong to keep one program going despite the failure of the other, which could possibly lead to difficult renegotiations of workshare, in an effort to re-establish equity among partners.

Rescue operations

In a third scenario, as a way out of the multiple co-operation dilemmas outlined, the programs, or at least parts of them, could be salvaged by considering lessons learned from current Franco-German co-operations in the defense field, and possibly from the war in Ukraine.

Assessing how recent Franco-German co-operation efforts have fared, two insights stand out. First, project ambitions tended to be downgraded once projects got underway. Reducing the overall level of ambition has allowed the two partners to work together within a much smaller co-operation perimeter, focusing on specific capabilities useful for both countries. This might be disappointing when observing the starting point, but at least it allows for arrival at a worthwhile destination. Secondly, projects seemed to function better with each partner concentrating on a specific integral "pillar" rather than dividing workshare by pillar components. Such arrangements would nevertheless imply acceptance that not everything can be divided perfectly equally when co-operating.

Both the FCAS and the MGCS place an expensive platform, a manned fighter, and a crewed tank at the heart of their "system of systems". The planned six-generation plane and enhanced battle tank will constitute feats of engineering in themselves, and integrate and/or fuel advances in materials, mechanics, electronics, etc. But the innovative value-added of the FCAS and MGCS is expected mostly in the development of systems architecture and unmanned components linking a wide array of battlefield participants, effectors, and sensors in each theater and beyond. Automated and/or semi/autonomous systems will drive advances in sensors, optics, robotics, missile technology, computer networks, algorithms, and satellite communication, among other features, with value for both the military and the civilian sector.

One rescue attempt for the FCAS and the MGCS could therefore be to reduce the overall ambition of the programs, to focus on system architecture and its unmanned components, for example, rather than on central expensive platforms. Such a reorientation would also be an opportunity to consider lessons learned from the war in Ukraine, which highlight the need for robust and rather inexpensive defense goods that can be mass-produced and repaired, in addition to costly strategic enablers. Observing the Ukrainian battlefield, several trade-offs become immediately apparent. In situations of sustained confrontation, availability and robustness of weapons systems beat sophistication, and well-trained human resources are very precious.

Salvaging the FCAS and MGCS, however, could take yet a different road. Given the drastically changed security environment since February 2022, it would make sense to realign Franco-German plans with actual European defense priorities and needs. In March 2022, the European Council of the European Union presented the Strategic Compass, a strategy document to strengthen EU defense and security by 2030.¹²¹ Putting the FCAS and MGCS side by side with its objectives delivers only a partial matching. While investing in next-generation capabilities is deemed important, strategic enablers, such as strategic and tactical airlift, command and control (C2), as well as intelligence, surveillance and reconnaissance (ISR), have not only been identified as crucial for decades, with European countries critically depending on American support; strategic enablers also represent a precondition for next-generation technology, both in the air and the land domain, to function independently.¹²²

Given the task of gearing up European defense for an expected long-term stand-off with Russia, the exercise of the Strategic Compass would most likely have to be redone. But it is already clear that capabilities in cyber, space and air defense, as well as the ability to protect the global commons, are as important as tanks and planes. European security will continue to depend on NATO, with NATO's European pillar hopefully reinforced by European autonomous capabilities. Faced with American, but also Israeli, South Korean, or Turkish competition, the European defense industry will have to find innovative ways to collaborate.

Whether reducing ambitions or aiming for broader European security objectives, the FCAS and the MGCS could be salvaged by modifying, possibly rebranding, and rebooting one or both programs.

121. See "A Strategic Compass for a Stronger EU Security and Defense in the Next Decade", Press Release, European Council of the European Union, March 21, 2022, available at: www.consilium.europa.eu (viewed on August 24, 2023).

122. For the importance of strategic enablers for next-generation air systems, see, for example: C. Wall and J. Christianson, "Europe's Missing Piece: The Case for Air Domain Enablers", *CSIS Brief*, CSIS, April 17, 2023, available at: www.csis.org (viewed on August 24, 2023).

Let's agree to disagree!

What if there were another way out of the multiple Franco-German defense industrial conundrums outlined, one that could dynamize both the Franco-German tandem and European defense? Given ongoing French and German difficulties in driving forward two politically motivated armament programs, the two partners could take stock of their diverging strategic outlook in defense matters and decide to part ways in this co-operation area. Paris and Berlin could concentrate instead on specific military-industrial capabilities and focus on co-ordinating defense efforts within a European context.

A form of convergence seems to already be at work when it comes to European defense capabilities. Countries are grouping around predominant strategic players, such as Germany and France, creating poles of competence in terms of military capabilities.¹²³ This form of convergence is based on affinity with the national strategies of cluster “core” countries regarding threat perceptions, concepts of military power and co-operation formats, reinforced by the element of geographical proximity. The dynamics of defense co-operation in Europe lead *de facto* to geographic and functional specialization, prompting respective defense industries to supply such clusters with specific defense goods.¹²⁴ The particularity of these defense clusters is that most of them have emerged within a NATO framework, and that it is the co-operation style of the “framework nation” that governs the intensity and durability of co-operation, thereby defining specialized military capabilities.

In the “Let's agree to disagree” scenario, France could animate an airforce/navy military-industrial cluster, and Germany could concentrate on land warfare in terms of military capabilities and defense industry, respectively. Both partners would use Franco-German co-operation formats to co-ordinate defense-industrial initiatives. Agreeing to disagree could thus benefit both Franco-German relations and European defense.

123. J. J. Anderson, S. Biscop, B. Giegerich, C. Mölling and T. Tardy, “Envisioning European Defense. Five Futures,” *Chaillot Paper*, No. 137, March 2016, EUISS, Paris, available at: www.iss.europa.eu.

124. J. Möhring, “Pari impossible, pari indispensable : la France, l'Allemagne, le Royaume-Uni et l'avenir de la coopération en matière de défense en Europe”, Doctoral thesis, March 2022.

FCAS, MGCS, and the cost of “non-Franco-German”

Pondering the travails of France and Germany trying to steer highly complex joint armament projects, it bears repeating that co-operation between sovereign states, no matter how strategically aligned they might be, tends to be a difficult undertaking. Despite numerous factors, some new, some old, weighing on the MGCS and the FCAS, and on the bilateral relationship in general, it would be hasty to read those very real difficulties as signs of an imminent Franco-German demise. Just as there is a “cost of non-Europe”,¹²⁵ there is a “cost of non-Franco-German”, as both protagonists and EU member countries in general are reminded of in our times of multiple crises.

France and Germany, as the largest member states, totaling about 40% of the EU’s GDP, still dispose of unrivaled political, diplomatic, financial, institutional, and symbolic resources to shape European politics and polity.¹²⁶ It is precisely the fact that they often hold opposite views on key strategic questions that has allowed them to shape political bargains and rally groups of EU member states holding opposing views. Their embedded bilateralism allows them to scout out common ground and to jointly advance on various topics.¹²⁷ But given the number of issues on which Germany and France hold opposing views, the ability and will to create compromise will most likely remain reserved for times of serious crisis that require bilateral and broader European action. Both will continue to look for more like-minded countries, both in and outside Europe, to pursue specific policy priorities. And both will continue to find that other partners come with their own particular idiosyncrasies, as well as specific “baggage” in terms of security needs and expectations.

Despite a conflictual bilateral outlook, France and Germany nevertheless have a responsibility proportionate to their political weight and privileged relationship vis-à-vis their European partners. A leadership role in Europe depends on individual and joint credibility. Despite other security challenges, it is collective defense and deterrence on NATO’s

125. The term was coined about thirty years ago to describe trade-related welfare gains reaped from European Union membership and the completion of the Single Market.

126. See U. Krotz and L. Schramm, “Embedded Bilateralism, Integration Theory, and European Crisis Politics: France, Germany, and the Birth of the EU Corona Recovery Fund”, *op. cit.*

127. One recent example of the many formal and informal exchanges is the report “Sailing on High Seas: Reforming and Enlarging the EU for the 21st Century”, *Report of the Franco-German Working Group on EU Institutional Reform*, Paris-Berlin, September 18, 2023, available at: www.politico.eu.

eastern flank that will structure European military efforts for years, if not decades to come. For this to take shape, both countries are asked by their fellow Europeans to step out of their respective strategic comfort zones. Ambivalent messages risk sowing doubts over French willingness to truly engage militarily in and for Europe. Germany's continued difficulties in investing in its armed forces to restore them to strength are eroding the trust of Germany's closest allies, which rely on its military capacities for their security.

Fundamental questions remain: What visions do France and Germany have for the future, their own, and that of the EU? And what role does their respective counterpart play in these scenarios? Despite the apparent absence of strategic convergence, France and Germany have many joint interests and shared projects. For Franco-German co-operation to work, it needs to be enhanced, promoted, and invested in. Both countries would have much to gain by accepting frank, political discussion, accompanied with renewed efforts to truly get to know their partner, and to continuously learn about and with each other.

With Germany deeply wedded to its transatlantic ties and to NATO, and France to its legacy of autonomy, what should be the goal of Franco-German relations in defense and security, especially in the industrial sphere? Perhaps it is indeed time to permanently “agree to disagree” in this domain, and to specialize and co-ordinate instead. France could be energizing capability and associated industry clusters in air and naval warfare, with Germany focusing on mechanised ground combat and assorted defense goods. European capabilities and defense industries would be boosted as a result.

From a national and European perspective, joint armament programs should ideally match identified military capability gaps and strategic priorities. In the absence of a magic formula that could square military needs, prioritization of capabilities and investment planning,¹²⁸ defense industrial co-operation will most likely continue to defy the laws of political and economic gravity to some extent – at the expense of taxpayers, defense planners, and European security alike.

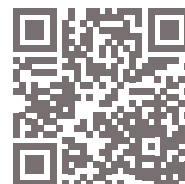
128. D. Fiott, “Purchasing Power: Towards Joint Procurement and Planning in European Defense?”, *CSDS Policy Brief*, September 2023.

Abbreviations

ARGE	Arbeitsgemeinschaft, Working Group
ASAP	Act in Support of Ammunition Production
BAAINBw	German Federal Office of Bundeswehr Equipment, Information Technology, and In-Service Support
DGA	Direction Générale de l'Armement
EDF	European Defence Fund
EDIP	European Defence Investment Programme
EDIRPA	European Defence Industry Reinforcement through Common Procurement Act
EMBT	Enhanced Main Battle Tank
EU	European Union
ESSI	European Sky Shield Initiative
FCAS	Future Combat Air System
GCAP	Global Combat Air Programme
IAMD	Integrated Air and Missile Defence (NATO)
LPM	Loi de Programmation Militaire
LoI	Letter of Intent
NATO	North Atlantic Treaty Organization
NGAD	Next Generation Air Dominance (US)
NGWS	Next Generation Weapon System
MGCS	Main Ground Combat System
NGF	New Generation Fighter
PESCo	Permanent Structured Co-operation
RC	Remote Carrier
SAGN	Système d'armes de nouvelle génération, see NGWS
SCAF	Système de combat aérien du futur, see FCAS
UAV	Unmanned aerial vehicle
UCAV	Unmanned combat aerial vehicle

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