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French policy for the development of military-technical cooperation in Europe

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INTRODUCTION

The study of armament policies lies at the crossroads of numerous issues: military, strategic, economic, technological and industrial. The principle of an armament policy is to ensure a country's future capacity to acquire equipment essential to its security; in this thesis, we are interested in France's armament policy.

France has a powerful defence industry which it uses for military purposes and consists of manufacturing equipment for its army, but not only. Industrial purposes also come into line, which respond to an economic logic of creating wealth, jobs and skills. Finally, even if the defence industry has a unique dimension because of the nature of the equipment it produces, in other respects it is also an industry like any other that responds to the economic laws of supply and demand, of competitiveness based on price or innovation. The case of France is particularly interesting to analyse as it is a middle power whose armament policy since the 1960s has been to play in the « premier league ». However, due to its size, it has limited resources compared to the American, Russian or Chinese giants, and its armament policy has therefore long been turned towards military-technical cooperation.

The concept of military-technical cooperation is linked to Russian strategic thinking and is not yet widespread in Western countries. This concept considers armament cooperation from three main angles: cooperation in the development of military products, cooperation through arms imports and cooperation through arms exports. This concept therefore has the advantage of considering cooperation in a broad framework by taking into account the issue of imports and exports. In our study, we will merge armament cooperation in product development and cooperation in imports into the same category; that of procurement policy.

Exports are a separate category. They ensure the sustainability of the procurement policy by selling surplus production that national demand cannot guarantee. The issue of mutual reliability is essential for exports and therefore requires good political relations between the producer and the buyer country. Arms policy must therefore be thought out in a precise international context and the state must articulate industrial policy and foreign policy.

Procurement policy consists of a state making choices between different types of military equipment for its army. Its choices can be either equipment produced by national industries or equipment produced in a foreign country and then imported. This study examines France's procurement policy from the 1960s onwards. This allows both to show some of the inertia that still permeates the French armament system and to show the changes that have taken place in French armament policy. It is easier to understand France's current policy by putting it in the light of a retrospective. From the 1960s onwards, France evolved towards a procurement policy based on self-sufficiency by making itself capable of importing very little from outside its border. The best

illustration of this self-sufficiency, also called strategic autonomy, was France's decision to develop the Rafale fighter jet by its own means in the 1980s, while the other European countries jointly produced the Eurofighter Typhoon. This policy of self-sufficiency has undergone upheavals over the years until reaching the current situation where on 17 May 2021, France finalised an agreement with Germany and Spain to produce a new generation fighter aircraft in common. This is just one example of an overall trend in French defence industrial policy to move from French self-sufficiency to European self-sufficiency in the long term. The creation of a European industrial autonomy is a major challenge in the wider project of a European Defence.

The term European Defence has a hollow sound to it, which is normal given it is an ongoing project and therefore lacks depth and concrete reality. Europe is, by nature, a reality that is difficult to define because of its multiple facets: geographical, cultural and political, with a union comprising twenty-seven distinct countries. Many countries have their own vision and ambitions for Europe, particularly in the field of security and defence. The approach of this text is precisely to highlight a particular case, which is that of France and its defence policy aimed at creating European strategic autonomy. France by its military weight has a certain influence in Europe on the subject of defence and this is also why the case of France is interesting as it has the capacity to make things, actively change. Finally, we will not deviate to a global European vision leading to excessive complexity, even if it is necessary to understand the British and German cases that constitute the two other major military powers in Europe.

The core of our study will focus on explaining the following : **why France changed its approach to procurement and focused on European cooperation instead of self-sufficiency.**
There are related questions that follow on from this. The first is structural: to what extent can the deepening of European cooperation influence the historical French model based on autonomy?
The second is more cyclical: can this cooperation contribute to positively stimulating French production in economic and technical terms?
Finally, the third is subnational: can the French policy of military-technical cooperation in Europe help the constitution of a real European defence industry and the establishment of a Europe of Defence?

In order to answer all these questions, we will proceed with a three-part study. The first chapter will focus on French acquisition policy during the Cold War period, the second on the post-Cold War phase and the last chapter on the current period, which straddles the 2010s and future prospects.

Before starting our analysis, we will make an inventory of the available resources on which our study is based.

Among the **primary sources**, the French *Livres Blancs* (White Papers) are essential to take into account because the French defence doctrine is summarised there-in precisely. They mark breaks in the defence doctrine, each in relation to the previous one, and this is why we are interested in their content on armaments policy. They were published at irregular intervals, the first came in 1972 but it is not freely available on internet (only the first chapter of the document is available) while the others published in 1994[1], 2008[2], 2013[3] and in 2017[4] are available. We have also used state reports on armaments-related topics. For example, we used the 2018 report of the Cour des Comptes on the economic relevance of European cooperation, the Cour des Comptes is a French State body that informs representatives about the regularity of the state's financial accounts. Furthermore, since the end of the 1990s, France has published an annual report on arms exports, and we are using the latest one published in 2020[5] covering the year 2019. Secondly, the French Senate, which is the upper house of the French parliamentary system, publishes numerous reports on government policy and often provides statistical information. Finally, there are the official speeches of the French Presidents, such as Emmanuel Macron's speech in September 2017 at the Sorbonne[6] where he outlined his initiatives for the creation of a European defence.

Among the newspapers, La Tribune is considered a reference for information concerning the industrial sector, the journalist Michel Cabirol publishes on the defence industry and he is a specialist from whom we use many articles. Beyond this newspaper, we also use French reference newspapers such as Le Monde, Le Figaro, Les Echos, Libération, Marianne.

Among the **secondary sources**, there is an absence of long-term works like ours, whose content is both generalist and synthetic. The only article that adopts the same approach as ours to study a long period in a synthetic manner is that of the IFRI on the history of French export policy since the 1960s[7]. There is a large number of academic works and think tank articles that we had to cross-check in order to find essential bits of information and then put them in chronological order.

Among the academic works, the subject of armament is seen through different prisms; some use a historical and generalist prism, such as Maurice Vaïsse and his book on Armement et la Ve

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[1] Livre Blanc sur la Défense. 1994.

[2] Livre Blanc sur la Défense et la Sécurité Nationale, 2008

[3] Livre Blanc sur la Défense et la Sécurité Nationale, 2013

[4] Revue Stratégique de Défense et de Sécurité Nationale. 2017.

[5] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

[6] Initiative pour l'Europe - Discours d'Emmanuel Macron pour une Europe souveraine, unie, démocratique, Elysée, publié le 26 septembre 2017

[7] Béraud-Sureau Lucie, La Politique française de soutient à l'export de défense, Raisons et limites d'un succès, IFRI, Juin 2017

République[8] published by the CNRS (the CNRS is the French body in charge of research). It is a work of reference because it is one of the first books in 2002 to deal with the question of armament, which was previously ignored. We also use another book dating from 2002 which also takes a historical perspective by telling the story of the DGA (French armament agency) from the 1960s to the 1980s[9] and which was produced by the ancestor of the IHEDN (today the reference in terms of expertise on defence issues). There is another historical work that we use from the CNRS which dates from 2005 and retraces the entire history of French armament[10] but only the part on the years 1990-2000 interested us. When we come to the study of the post-1990 period, there are many more works that focus on more specific questions of armament. There may be an economic prism, as in Catherine Hoeffler's work on the phenomenon of liberalisation in the defence industry[11] in the years 1990-2000. There can be a political prism as in the work of the specialist Jean Joana on the relationship between the state and the defence industry[12]. Finally, to conclude on the academic work, we cited the IHEDN which today is the reference in terms of expertise on defence issues, this institute conducted a major study in January 2021 for the Revue Défense Nationale on the issue of European strategic autonomy[13] and this work of reflection has an important place in our study.

Concerning think tank articles, we used French research institutes such as the IFRI on French arms export policy[14], on Franco-German defence cooperation[15] or on European strategic autonomy[16]. To go deeper into the recent issue of European strategic autonomy, we use a fundamental article on the history of this concept by the Belgian research institute GRIP[17]. Finally, the SIPRI institute is the world reference for statistical reports on arms producing and importing countries, as well as on arms companies or exports, and with the exception of the Flemish Peace Institute, which is very effective on the issue of export regulation.

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[8] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

[9] Crémieux Alain, Pestre Dominique, Rasmussen Anne, Les origines de la Délégation générale pour l'armement, Comité pour l'histoire de l'Armement, 2002

[10] Barnier Frédérique, Pestre Dominique, Deux Siècles d'Histoire de l'Armement en France, De Gribeauval à la force de frappe, p. 399-410, CNRS Éditions, 2005

[11] Hoeffler Catherine, L'émergence du politique industrielle de défense libéral en Europe, Appréhender le changement de la politique d'armement par ses instruments, Gouvernement et action publique, p.641 à 665, 2013

[12] Joana Jean, Armée et industrie de défense : cousinage nécessaire et liaisons incestueuses, Pouvoirs, pages 43 à 54, 2008

[13] Union européenne et Enjeux de défense : les défis de l'Autonomie Stratégie Européenne, Comité d'études de Défense Nationale | « Revue Défense Nationale », 2021

[14] Béraud-Sureau Lucie, La Politique française de soutient à l'export de défense, Raisons et limites d'un succès, IFRI, Juin 2017

[15] Puhl Detlef, La coopération en matière d'armement entre la France et l'Allemagne. Un terrain d'entente impossible ? IFRI, novembre 2020

[16] Kempin. R. Kunz. B. France, Germany, and the Quest for European Strategic Autonomy. Franco German Defence Cooperation a New Era. SWP. IFRI. December 2017.

[17] Mauro. F. Autonomie Stratégique. Le Nouveau Graal de la Défense Européenne. Les Rapports du GRIP. GRIP. 2018.

Chapter I :

1960-1990 : French strategic independence - an industrial policy based on autonomy

This chapter aims to better understand the French relationship with military-technical cooperation and the fact that this relationship has not remained unchanged over time. If we want to make an in-depth examination of France's defence industrial policy at the present and near future, it is first necessary to retrace its foundations through a historical retrospective.

French strategic thinking with regard to its military-industrial complex entered a new era in the 1960s and the « Gaullist » period, characterised by a particularly ambitious policy. Therefore, in this chapter, the period we study begins in the 1960s, and ends in the 1990s, which marks the beginning of a much more determined policy of creating military-technical cooperation. The pin-pointing of these dates makes it possible to create a chronology based on trends, but they are obviously not the marker of sudden break, all the more so as the armaments industry and the field of defence are subjects of the long term. Two more precisions are to be made. The first is that a policy of strategic independence should not be confused with a policy of autarchy. It is necessary to move away from an overly rigid vision of independence, which contradicts the character of any industry that requires interaction to develop. The second point is that the role of the state must be relativised as it evolves in an environment where many other actors have their own will (companies, researchers, etc.). Here again, we must avoid the overly rigid vision of the state as a controller, but rather see the state as an actor that coordinates, supports and encourages efforts.

1.1 French strategic doctrine

An armaments policy is intrinsically linked to politics and international relations; as a consequence the first part focuses on the defence doctrine, institutional and political aspects as well as foreign policy. These elements have had immense repercussions on the way an arms industry is formed, on exports, on the establishment of cooperation with other states.

Strategic Independence as a political stance

In 1945, when the UN was created, France - which had managed to emerge from the war on the victorious side - obtained the status of permanent member of the Security Council of the new institution alongside the four other victorious powers, namely the United States, the USSR, the United Kingdom and China. The UN thus gave equal status to five great powers, but the war had already resulted in the advent of two giants that would divide the world, with the Americans and

their allies on one side and the Soviets and their allies on the other. The former European powers, France and Britain, were outmatched and had no choice but to side with the United States, economically through the Bretton Woods Agreement of 1944 and the Marshall Plan, and militarily through the creation of NATO in 1949. France inaugurated the Fourth Republic in 1946, which turned out to be a weak regime that plunged the country into political instability and into wars in Indochina (1946-1954) and Algeria (1954-1962). After a decade of international decline, the circumstances of the events called to power the man who had enabled the country to become a victorious power during the war, General de Gaulle.

In 1958, he established the Fifth Republic, a vertical regime conceived as an antidote to instability and decline, the spirit of which was derived from his own thinking and experience - later described as Gaullist thinking. He had a clear vision of the role to be played by the President who became the keystone of the new institutional system. His duty was and is still to be the « guarantor of national independence and territorial integrity » and in order to respect this function, has numerous rights, which grant the executive power a great freedom of action. From 1959 to 1969, de Gaulle, as President, pursued a policy based on the need for national independence in order for France to play a prominent role in the bipolar world of the Cold War. From a strategic point of view, France had the Soviet bloc in the East representing a so-called existential threat and the Americans in the West representing a frustrating hegemony. In this idea of independence, there was above all the idea of not being a power subordinate to another or to a bloc, and France implemented a diplomacy of balance between the two geostrategic giants. De Gaulle expressed this idea in 1959 in a speech that sums up his thinking: « The defence of France must be French [...] A country like France, if it has to wage war, it must be its war. Its effort must be its effort. »

We notice that its desire for a wider independence distinguished it from the United Kingdom (also a permanent member of the UN Security Council and which acquired nuclear weapons in the 1950's) that placed great importance on its military and economic partnership with the US, particularly through NATO and through cooperation in the military nuclear sector. France from its side wanted to step aside from the US hegemony even if it remained an ally of the United States, as shown by the French position during the tense moments of the Cold War, in particular the 1962 Cuban crisis, when France took up the cause of the Americans and showed that they were a reliable ally. It nonetheless distanced itself from NATO by withdrawing from the integrated command in 1966, expelling American bases from its territory but remaining a member of the Western bloc. This decision gave France a stronger position on the international scene, but it turned out to be a handicap for the export of French arms to allied countries[18]. This insubordination towards the United States is also seen in the economic side by the criticisms made of the international monetary system based on the dollar.

[18] Béraud-Sureau Lucie, La Politique française de soutient à l'export de défense, Raisons et limites d'un succès, IFRI, Juin 2017

A political stance relying on a practical autonomy

Beyond this strategic positioning, it was essential to give the state the means of its strong positioning on the international scene by not being susceptible to external pressure, in other words not being just formally independent but also being independent in practice. The policies pursued in the 1960s and later thus aimed to create de facto independence in all key sectors (economic, military, technological, energy related, etc.) The aspect that interests us is obviously the military aspect but it is important to remember that this is part of a wider ecosystem. This is also the reason why this chapter is called strategic independence. This concept was not used at the time we are describing - the term independence was used on its own - but it describes the reality of the policies of the time. Strategic independence has not a commonly accepted definition, it is related to a political strategy aimed to avoid a situation of dependence on certain issues that could lead to a subordination. The vagueness of the concept stems from the difficulty of assessing what domains are comprised in the definition, the degree of independence one wants, the effort one is willing to put into it, through what understanding and for what purpose. The military component is central to the practical reality of this concept, as military means are the most effective way to interfere directly or indirectly in the affairs of another country. But the concept has recently come back into the news with non military events such as the Covid-19 crisis, which shows how strategic health products are, and that relying solely on their import has created a situation of dependence[19]. We can also name other risks of dependence such as technological dependence[20] in the field of 5G, microprocessors etc...

The concept of Strategic independence and Strategic Autonomy are similar concepts but not totally synonym. Nowadays the concept of Strategic Autonomy appears more popular as it is widely used in French official vocabulary and in academic literature. The concept of strategic independence is, as we have said, a political posture on the international scene, based on global military and economic power; the concept of strategic autonomy has a more precise definition which focuses solely on the military and security aspect. Strategic autonomy is a de facto situation that must be seen as a means and not an end in itself and to better understand this concept, the joint note of IFRI and the SWP from December 2017 defines Strategic Autonomy very accurately as the sum of three component parts[21]. The first component is the political autonomy, which is « the ability to take security policy and act upon them », the second is the operational autonomy, which is « the capacity, based on the necessary institutional framework and the required capabilities, to independently plan for and conduct civilian and/or military operations » and finally the last one is the industrial autonomy defined as « the capacity to develop and build the capabilities required to attain operational autonomy ».

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[19] Mathoux Hadrien, Coronavirus : avec la crise sanitaire, la faillite stratégique de la France mise en lumière, Marianne, 21 April 2020

[20] Philippe Cécile, L'Europe face au défi de son indépendance dans le numérique, Les Echos, 30 nov. 2020

[21] Kempin. R. Kunz. B. France, Germany, and the Quest for European Strategic Autonomy. Franco German Defence Cooperation a New Era. SWP. IFRI. December 2017.

This definition is all the more useful as it makes it possible to focus solely on the military aspect and to understand the extent to which industrial autonomy is crucial, as it is the sine qua non of operational autonomy, which is itself necessary for political autonomy.

Defence industrial autonomy

Few countries can aspire to have an autonomous defence industry because it requires a country to have the necessary critical mass. For a country like France, which is a middle power, this required a significant political motivation and a long-term vision. Secondly, it required the setting in motion of very expensive programmes, thus relying on an efficient economy, the creation of synergies between the military and civilian industrial branches and a high degree of scientific performance. The end of the colonial empire in 1960 marked the beginning of an economic take-off which was accentuated by the end of the war in Algeria in 1962. France was then relieved of an immense economic burden, due in particular to the financing of the contingent, which allowed the military budget to be concentrated more on arms expenditure.

The french industrial policy was based on two major points; the most crucial point was to acquire a « strategic nuclear force » that would enable France not to be dependent on American nuclear umbrella. The programme was launched in 1954 after the defeat in Indochina, and from 1958 onwards it was stepped up to effectively and ultimately deter the Soviet threat. In 1964, the air vector of the French nuclear deterrent was achieved. It was the fruit of previous developments that were finalised with the nuclear warheads in itself, and the Mirage IV bomber as a delivery aircraft that entered service in 1964. The maritime and land delivery systems were the fruit of developments that began in the 1960s with the first class of SNLE (Ballistic missile submarines) which entered service in 1971, and the S2 ballistic missiles also in 1971, which enabled the country to join the nuclear triad at the same date. In addition, from 1973 onwards, pre-strategic armaments were added with the short-range Pluton missiles intended to reach the USSR's European cities.

The second priority was to create a powerful and autonomous arms industry, generally called a military-industrial complex or defence technological and industrial base (DTIB). It can be define as « the gathering of companies contributing directly or indirectly to the development, production or maintenance in operational condition of equipment or services participating in the organisation of national defence[22] ». It was not a creating of but rather a reorganisation of the French defence industry which was already performing well. After 1962 and the end of the Algerian war, the French defence doctrine became focused on the protection of its territory against the possibility of a conventional attack from the Eastern bloc. Conscription was a pillar of this territorial defence doctrine and the army thus had a large numbers of personnel. During the Cold War period, the

[22] Josselin François-Xavier, Peut-on encore avoir aujourd'hui en France une Politique Industrielle de Defense ? Ecole de guerre, 2016-2107

number of personnel remained between 500,000 and 600,000[23] . In order to supply the army, the state then, accordingly had a strong need for military equipment, which was mainly absorbed by national production, thus helping to stimulate the DTIB.

To be able to reach these two priorities, a coherent system of armament production was created from the 1960's onwards with the creation in 1961 of the DMA (*délégation ministérielle pour l'armement*) which was conceived as a « technical-scientific and administrative agency[24] » designed to supervise the various armament programmes. It was part of a global reform of the Ministry of Armed Forces, which was previously divided into three autonomous branches Ground, Air and Navy and each branch having a relative autonomous acquisition policy. In 1961, everything was merged into a unified ministry and a single armaments agency (DMA), which facilitated the implementation of major programmes to avoid redundancies in the production of transverse equipment. The DMA, through its various directorates composed of specialised engineering corps intended « to constitute an independent strategic nuclear force and to conduct the programmes that would provide the French armies with the conventional armaments they needed. »[25]. In order to effectively implement the military nuclear program, the DMA had three key competences at its disposal : atom, ballistic missiles and electronics[26]. On conventional armaments, four large and previously autonomous directorates were integrated into the agency, with one for land armaments (DEFA), one for naval armaments (DCCAN), another dedicated for aviation (DTI) and the last for ammunition (DP)[27]. These directorates had direct control over public facilities with many arsenals dedicated to land armaments production or shipbuilding, and airfields dedicated to aircraft testing and maintenance.

The philosophy behind the creation of the DMA was to foster a culture of technological excellence that would place the technical aspects above the financial and managerial aspects[28]. It was through this logic that major programmes were launched in the 1960s, which nevertheless respected a financial framework with, in particular, the closure of a large number of public facilities. The rest of it were grouped into unified industrial structures: the naval construction arsenals were merged into the DTCN in 1965 and the land arsenals were merged into the GIAT in 1971. The DMA had direct control over these structures from which it ordered the production of new equipment, but it was already clear at the time that this system could not be sustained. Indeed, these totally state-owned structures were out of step with the capitalist world and the 1957 Treaty of Rome had required their disappearance. The main flaw of this system was its financing, which

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[23] Delporte David, Entre réalité et prospective : L'armée de terre française en janvier 1989, 14 avril 2019

[24] Joana Jean, Armée et industrie de défense : cousinage nécessaire et liaisons incestueuses, Pouvoirs, pages 43 à 54, 2008

[25] Crémieux Alain, Pestre Dominique, Rasmussen Anne, Les origines de la Délégation générale pour l'armement, Comité pour l'histoire de l'Armement, 2002

[26] *Ibid.*

[27] *Ibid.*

[28] *Ibid.*

depended entirely on the state. However, through the inertia of the armament system, these structures were only transformed into companies in 1990 for GIAT, known as Nexter since 2006, and in 2003 for DTCN, known as Naval Group since 2018.

In the implementation of armament programmes, the DMA's second scheme was to sign contracts with national defence companies with which it had close links. In this option, the state finances the research and development and ensure a number of orders[29]. During the Cold War period, this scheme applied to automotive companies for the production of military vehicles and it applied to the aeronautical sector. Aviation companies worked together with the DMA in the development of military aircraft programmes but also civil aircraft such as the Concorde[30]. Two aeronautical companies emerged during this period: Aérospatiale, born from the merger of the large French public aeronautical companies (which gave rise to Airbus in the 2000s) and Dassault, a private company belonging to the tradition of French family industries. These companies were and are still present in both the military and civilian domains, each domain creating a synergy with the other.

Framework for political defence cooperation

From the 1960s onwards, France's cooperation policy was based on the search for a balance between fostering independence without falling into strategic isolation, encouraging alliances without falling into a subordinate relationship and developing technology without ruining the country[31]. A clarification should be made here that the term cooperation is a term that encompasses a wide variety of things and that B. Garette and P. Dussauge have described as follows, « from the cartel to the major international programmes such as Concorde, Ariane or Airbus, including marketing agreements, joint subsidiaries, licence assignments, shared research, etc., »[32]

France had to set up cooperation for economic, financial and technological reasons[33]. At that time, aeronautics took on an increasingly important role in the armed forces and consequently had very strong investment needs. It is therefore not surprising that it was in the aeronautics sector that the first industrial cooperation began, particularly with Germany and the United Kingdom.

After the end of the Second World War, Germany was not allowed to develop an aeronautical industry for ten years and from 1955 onwards, it undertook its reconstruction. Cooperation was a way for Germany to catch up, particularly from a technological point of view, as it was falling behind. Moreover, cooperation was a choice of German companies and not a political choice. After

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[29] Barnier Frédérique, Pestre Dominique, Deux Siècles d'Histoire de l'Armement en France, De Gribeauval à la force de frappe, p. 399-410, CNRS Éditions, 2005

[30] Crémieux Alain, Pestre Dominique, Rasmussen Anne, Les origines de la Délégation générale pour l'armement, Comité pour l'histoire de l'Armement, 2002

[31] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

[32] *Ibid.*

[33] *Ibid.*

1955, Germany implemented a very liberal model with a strong separation between state and companies.

The United Kingdom, on the other hand, was in the opposite situation; it had the most powerful aeronautical industry in Europe; in the mid-1960s, it had 250,000 employees compared with 90,000 in France and 34,000 in Germany[34]. But its industry was in crisis due to poor technological choices and cooperation with France was a way for it to maintain its leadership, which was increasingly challenged by the Americans in Europe. Franco-British cooperation - unlike Franco-German cooperation - was very political and began with a joint agreement in 1965.

Cooperation could also take the form of a simple import, which France did not deprive itself of, but always in very limited proportions. Moreover, in the other European countries that were members of NATO, there was a comparable desire to limit imports and to develop national defence industries. This led to the commissioning of a large number of different equipment within NATO.

On Europe, France wanted to strengthen the role of the European Economic Community (EEC) by giving it a political role that had not existed until then. In 1961, the Fouchet Plan was presented, which proposed the creation of cooperation between the member states in the fields of defence and foreign policy. After being amended and modified several times, it was finally rejected by France in 1962 on two main points: it did not accept the mention of NATO, as the political union should have been created on the basis of autonomy from the two superpowers, and it did not accept the will of the other members to bring Great Britain into the EEC. This failure was compensated a year later by the 1963 Elysée Treaty, which sealed the Franco-German friendship and cooperation between the two states in defence and foreign affairs. In the text of the treaty, France deliberately did not mention the United States, Great Britain, NATO or GATT (the forerunner of the WTO) in order to get the Federal Republic of Germany to take a step towards European autonomy and a step backwards in its proximity to the United States and the bodies under its influence. However, when the RFA ratified the treaty, a preamble was added which mentioned all these points and put the success of the treaty into perspective.

Continuation of the Strategic Independence policy by de Gaulle's successors

De Gaulle's successors only had to assume the office of President as designed by the Constitution. The second President of the Fifth Republic, G. Pompidou belonged to the same political current as General de Gaulle and placed his action in the steps of his predecessor. The first *Livre Blanc* (white paper) of the Fifth Republic was published under his presidency in 1972 where the defence and security strategy was set out and the content of which was developed through a long process of reflection. It enshrined the principle of autonomy of French defence, around which a national consensus had gradually formed, and the primordial role of nuclear deterrence. Military

[34] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

programming laws voted every 6 years had to be in harmony with the national strategy and create a stable and comprehensible national policy. Article 34 of the Constitution stipulates « military programming laws determine the objectives of defence policy and the financial resources devoted to it »[35]. This made it possible to have a long-term national policy that did not change with each new head of state. In this idea of having a long-term policy, the presidential election granted a mandate of 7 years, which was unique in Europe for its duration and helped the elected head of state to carry out his action over time. The subsequent presidents Valéry Giscard d'Estaing (1974-1981) and François Mitterand (1981-1995) each pursued this policy of independence with vigour. The concept of Gaullo-Mitterandism was even born and has flourished to this day.

The very statist and voluntarist defence policy however became less explainable with the repeated economic crises in the 1970s and 1980s when the country could not afford to be overly ambitious internationally. The country notably decided during the 1970's to build only one nuclear-powered aircraft carriers instead of two which will eventually pose the problem of availability when it is in maintenance. From 1975 onwards, the model based on continuous programme development in all areas of armaments began to reveal its shortcomings. Armaments programmes had become increasingly expensive, time-consuming and involved more and more electronics, which was partly due to the US and its technological race against the USSR. The large amounts of public expenditure to finance these programmes were only justified by the threat from the Eastern bloc and could not be envisaged without the return on investment they brought through exports and the thousands of industrial jobs to be protected. From the 1970s onwards, France became bogged down in a process of de-industrialisation that has not ended to this day. The armament sector escaped this phenomenon and while its model seemed problematic because it was too dependent on the State, interdependence was further accentuated through the partial nationalisation of Dassault in 1977 and 1981, and the nationalisation of Thomson-CSF in 1982, now known as Thalès, which is a leader in military electronics.

Ending on a financial note allows us to conclude that political decisions are made in a context where budgets remain limited, especially for a medium-sized power like France. Even if defence policy is of paramount importance for a state, the budgets allocated to the defence sector are budgets that will not be allocated to other major sectors. France's defence budgets as a percentage of GDP between 1960 and 1990 show a clear downward trend from 4% to about 2.5%.[36] This represented significant sums of funding for the state budget, and the state was then not opposed to the establishment of European cooperation to reduce these costs. Europe was not a blind spot in French policy and there was a desire to create a political structure encouraging defence cooperation, but this stumbled over disagreements, in particular on the relationship to have with NATO. Recalling these elements allows us to put the current European defence project carried by E.

[35] La politique de défense au travers des lois de programmation militaire. Vie Publique. 2019.

[36] Josselin François-Xavier, Peut-on encore avoir aujourd'hui en France une Politique Industrielle de Defense ? Ecole de guerre, 2016-2107

Macron into perspective in the light of the French proposal on European cooperation in the field of defence of the past. It can be noted that the current French proposals concerning the European strategic autonomy project receive the same criticism from its partners on the relationship to be developed with the American power.

We said earlier that the policy of strategic independence remains something vague in the sense that a state makes decisions that give it a greater or lesser degree of practical independence. These decisions are made on the basis of a cost-benefit calculation of whether to produce something entirely by oneself, to cooperate with foreign partners or to buy directly « off the shelf ». During the Cold War, France's choice was never to produce all these armaments itself (except equipment relative to nuclear deterrence) because this would have represented a huge economic cost without bringing any real benefits. However, the French policy has greatly encouraged the national industrial production of armaments through technical elements that we will now analyse.

1.2 A pro-active Procurement policy

Procurement policy allows the state to provide equipment to its military and is also an instrument for the state to stimulate its DTIB (defence technological and industrial base) when the equipment is domestically produced. This instrument must be linked to two other instruments. There is a legislative instrument that allows the state to protect its national companies, notably by blocking the arrival of foreign capital in these companies. And the last instrument is the direct participation of the state in the production of armaments through entities that it controls entirely (arsenals) and through the shares that it owns in public companies. The state, through its three instruments, can carry out two different types of industrial policies, either a protectionist policy, whose model places the survival of the defence industry in the state and its strong and regulatory actions, or a liberal policy, model in which the state creates the conditions of a defence industry autonomous from its action through the respect of the principles of free market and competition. These are ideal-typical models which are not found in this way in reality, but they are based on trends to which the state policy of certain countries can be linked, with France, for example, having a protectionist policy between 1960 and 1990 while Great Britain implemented a shift from interventionist policy to liberal policy during the 1980’s under Margaret Thatcher.

The French protectionist policy was carried out through the implementation of major armament programmes that we explained earlier, also through the impossibility for a foreign actor to take over the shares of a French defence company and finally through an acquisition policy characterised by a generous demand in equipment, mainly produced in French factories but also equipment produced in cooperation or imported directly from an allied country.

In France, the acquisition process of armament is totally controlled by the DMA and its doctrine is based on a division of armaments into three circles[37], according to their strategic importance:

-activities under exclusive sovereignty

-activities under shared sovereignty

-off-the-shelf purchases

Activities under exclusive sovereignty

In this category, we are beyond a question of profitability because the production of this equipment is closed to exports. This category mainly includes activities related to nuclear deterrence. Most of the financial means of the 1960s and beyond were destined to obtain an autonomous and credible nuclear strike force. The programme of acquisition of a nuclear deterrence was entrusted to the Commissariat de l'Energie Atomique (CEA), which specialised in nuclear energy. This public establishment created the Direction des applications militaires (DAM) which constitutes the interface between CEA and the army (thus the DMA). Between 1960 and 1990, CEA/DAM produced nuclear warheads as well as nuclear propulsion for ballistic missile submarines, and from 1987 onwards, it was involved in the construction programme for the new aircraft carrier, dealing with nuclear propulsion[38]. From the end of the 1950s, the development of ballistic missiles by the Americans and the Soviets made it clear that the air component based on dropping bombs would quickly prove to be obsolete. The Société d'étude et de réalisation d'engins balistiques (SEREB) was created in 1959, this company brought together all the major French aviation industry groups, with the aim of creating ballistic missiles. When the DMA was created in 1961, a department dedicated to ballistic missiles was essential to effectively support their development. At the beginning of the 1960s, France did not have the necessary technology to produce them, so the idea of a cooperation with the Americans and Boeing was first put forward, but it did not succeed[39]. With the Franco-American quarrel in the 1960s, France decided to develop the production of ballistic missiles from scratch.

In 1959, the French space programme was launched and led in 1961 to the creation of the Centre national d'études spatiales (CNES). CNES researchers quickly realised the synergy that could be achieved between civilian and military space rockets, and the decision was taken to work together to reduce costs in both areas. SEREB and CNES therefore worked together to develop the first French space launcher, Diamant A, which took off in 1965 with the first French satellite, Asterix, which was also designed together. This space launcher is the ancestor of the Ariane family of rockets launched in the 1980s and shows the positive industrial spin-offs that can result from a

[37] Josselin François-Xavier, Peut-on encore avoir aujourd'hui en France une Politique Industrielle de Defense ? Ecole de guerre, 2016-2107

[38] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

[39] Crémieux Alain, Pestre Dominique, Rasmussen Anne, Les origines de la Délégation générale pour l'armement, Comité pour l'histoire de l'Armement, 2002

weapons programme[40]. The Diamant space launcher will also become the theoretical model on which the future ballistic missiles will be designed. Despite the immense costs of having an autonomous nuclear deterrence, positive repercussions have resulted from this desire for independence. Indeed, this programme has had ramifications up to the present day, as the companies that participated in it have acquired technologies and expertise. Those companies are notably the ancestors of today's leading French companies in the missile field (MBDA), in space/ aviation field (Safran) and in electronic field (Thales).

The second main activity under exclusive sovereignty is information and communication activities. In the early 1960s, electronics was still at an early stage and was neglected until the creation of the DMA in 1961. It became increasingly clear that there was a great need to take an interest in this field and the creation of the electronics department made it possible to invest resources in the field of radar, communications, components, navigation and on-board aeronautical equipment. The development of electronics was seen as having a dual purpose, on the one hand to provide the army with sophisticated equipment and on the other to ensure spin-offs for civilian activities[41]. This electronic equipment is also indispensable in nuclear equipment, which gives it a sensitive aspect. The development of military electronics proved to be successful in the field of radar and telecommunication equipment[42], but did not find its equivalent in computers, where Europeans were technologically overtaken by American microprocessors and Japanese memories, and thus forced France to source a large part of its supplies from outside Europe, except for the most sensitive components.

Activities under shared sovereignty and off-the-shelf purchases

These two activities concentrate conventional armaments. The state has three possibilities in its armament acquisition policy: to procure from national production, to procure from a cooperation production between several countries and to import equipment directly from an allied country, which is called off-the-shelf purchasing. This last category concerns equipment mainly located in industrial and technological niches that France does not have (specialized equipment and components). These are generally not large contracts, with the exception of the acquisition of Boeing KC-135 tankers from 1964 and the acquisition of Lockheed Martin C-130 transport aircrafts from 1987.

Concerning the activities where sovereignty can be shared, the acquisition policy cannot be separated from the question of production as the programmes only see the light of day thanks to the

[40] Moulin Hervé, La France dans l'Espace 1959-1979 Contribution à l'effort spatial européen, Agence Spatiale Européenne, juin 2006

[41] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

[42] Crémieux Alain, Pestre Dominique, Rasmussen Anne, Les origines de la Délégation générale pour l'armement, Comité pour l'histoire de l'Armement, 2002

promise of a certain number of orders from the state. First of all, regarding the implementation of cooperation, numerous of them were implemented from 1960 but almost exclusively in the aeronautics sector[43]. France's major partners at the time were the United Kingdom and Germany, and bilateral cooperation with one or the other was born of common needs between the armies of the different countries. The countries were not interested in merging their industries but in creating cooperative ventures where each country remained on its own.

In the late 1950s, France and Germany expressed the need for a new transport aircraft, which they subsequently designed jointly in a consortium of French and German companies; the aircraft entered service in 1965 under the name Transall[44]. During the 1960s, France, Germany and the United Kingdom wanted to acquire a new aircraft that was versatile between ground attack and training use, resulting in two different but relatively similar models. On the one hand, an aircraft was born out of a Franco-British cooperation which resulted in the Jaguar ground attack aircraft from 1973[45]. On the other hand, an aircraft designed between France and Germany, the result of which was the Alpha Jet from 1977[46] (France had a version intended for training and Germany for ground attack). France was also eager to participate in the creation of a joint combat aircraft with its European neighbours from 1977 in order to control the costs of its defence sector. This did not come to fruition due to major disagreements on how to implement this cooperation and France eventually produced the Rafale on its own while the UK, Italy, Spain and Germany produced the Eurofighter Typhoon. Producing its own fighter aircraft from national means still remained justified from a strategic perspective in the context of the Cold War.

In the helicopter sector, a Franco-British agreement was signed in 1967[47] and marked the beginning of a joint project to produce three helicopters with different roles. This project was intended to break away from the American Bell and Sikorsky helicopters that were beginning to flood the market. This agreement resulted in the Puma transport helicopter in 1968, the Gazelle reconnaissance helicopter in 1973 and finally the Lynx land and naval combat helicopter in 1977. In addition to cooperation in aeronautics, France jointly developed with Germany the Milan (1972) and HOT (1978) anti-tank missiles as well as the Roland anti-aircraft missile (1977)[48].

Finally, here we end on the conventional armaments produced entirely by France. They are often the result of failed negotiations in the establishment of cooperation with the emblematic example of the Rafale. The decision to entrust Dassault with the autonomous production of the Rafale was the subject of strong criticism, arguing that it was a financial and technical failure before

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[43] Crémieux Alain, Pestre Dominique, Rasmussen Anne, Les origines de la Délégation générale pour l'armement, Comité pour l'histoire de l'Armement, 2002

[44] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

[45] *Ibid.*

[46] *Ibid.*

[47] *Ibid.*

[48] *Ibid.*

the aircraft was even completed - its development began in the early 1980s and it entered service in 2002. Before the Rafale and in chronological order, Dassault produced the Mirage series - aircraft that proved to be export successes - with the Mirage III in 1961, the Mirage 5 in 1970, the Mirage F1 in 1973, and the Mirage 2000 in 1984. Other industrial successes concerned the production of helicopters and armoured vehicles, whose names would be meaningless to enumerate. The last example is the emblematic case of the Leclerc tank, developed during the 1980s, which entered service in a post-Cold War world marked by the disappearance of a conventional threat and whose usefulness is still being questioned.

This section concludes with the fact that industrial autonomy was based on a pro-active acquisition policy coupled with very strong state intervention in both production and legislation. The sensitive nature of military nuclear power and the objective of credibility meant that it should only be produced nationally, which was the consensus in France. For a medium-sized nation such as France, this required significant financial resources which proved to have positive effects in the long term by creating synergy between the military and civilian industries and by allowing companies to acquire technological competence. Concerning conventional armaments, the state has pursued a protectionist policy aimed at supporting the survival of the defence industrial base through its action, which has the negative effect of strongly constraining the state financially. This strong imbrication of the state and the industrial complex began to cause problems in particular from the second half of the 1980s, years when arms exports dropped and which suggested an unsustainable model. Exports are indeed indispensable to reach a critical mass of production that is sufficient to make the French defence industry viable.

1.3 Creation of an export policy

Exports are one of the key component of military-technical cooperation and are based both on purely technical criteria regarding the performance of certain equipment and on political and geopolitical relations. In this section, we mainly focus on the political aspect and how the French state has set up a system to encourage exports.

Legal system

Despite the generous budgets allocated to the military during the Cold War, the size of the French domestic market has never had the capacity to absorb the demand necessary to sustain a powerful defence industry. This is why an export policy became essential and was created in 1961 with the creation of the DMA and its exportation department « International Affairs

Directorate » (DAI)[49] later transformed into the International Development Directorate (DI). State support for exports was provided through this body which negotiated export contracts. The authority also ensured export control procedures and bilateral relations between France and other countries on armaments; to fulfil this task, the authority was organised by geographical zones[50].

On the regulation of exports, a basic principle has persisted since the end of the Second World War, which states that arms exports are prohibited and therefore require the obtaining of export licences, which are approved or not by an interministerial commission (CIEEMG) created in 1949[51]. Exports were therefore fully under the control of the executive without going through parliament, and with the advent of the Fifth Republic in 1958, the executive power was considerably strengthened, which further accentuated the opaque nature of export-related decisions. In the 1960s, the issue of arms exports did not reach the public debate. French policy in those years tended to evacuate the strategic nature of arms exports and presented them as mere trade contracts. It was with the arrival of the first major contracts in 1970 that this question arose, notably with the signing of 110 Mirage aircraft for Libya. From those years on, the government had to explain the reason for delivering such quantities of arms to non-democratic regimes. Consequently, the *1972 Livre Blanc* (white paper) for the first time defined France's armament policy by articulating the economic and political aspects of exports. In the French view, but this is also the case for the UK, economic and political issues take precedence over a purely moralistic view. This view will repeatedly bring export policy into play with the boundaries of legality under international law. Arms supplies often slipped through the cracks left by US or UN restrictions or embargoes[52]. This included deliveries to the three southern European dictatorships (Portugal, Spain, Greece), South Africa or Arab countries.

Clients

Between 1960 and 1990, France positioned itself as a major exporting country (even if far behind the Americans and the Soviets) with the 1972-1984 in particular often described as the « golden age » of French arms exports. They were driven by three factors: the increase in the financial capacities of the arms importing countries, the quality of French armaments and by the France’s positioning on the international scene. On the first factor, the conflict situations of the Cold War led to an increase in the demand for armaments especially from oil-rich countries in the Middle East. Secondly, on the quality of armaments, the DMA, by placing technological excellence as the main criterion for armaments programmes, allowed the arrival on the market of very efficient and competitive products. Finally, on the last factor, France's policy of independence from the

[49] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

[50] Crémieux Alain, Pestre Dominique, Rasmussen Anne, Les origines de la Délégation générale pour l’armement, Comité pour l’histoire de l’Armement, 2002

[51] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

[52] *Ibid.*

Americans and Soviets gave a strong argument to many countries wishing to diversify their supplies and not to be locked into one bloc or another.

There is a certain permanence in history with the Middle East being the main importing region of French military products from the 1960s until today. This fact can also be linked to France's « Arab policy » based on distancing itself from American positions and on a cold stance towards Israel[53]. On the Israeli question, France made a break with Israel in 1967 within the framework of the Six Day War which marked the end of military cooperation between the two countries. While Israel had been an important buyer of French arms until then, after the break, the country would only buy from the United States. At the same time, this gave the Arab countries a firm argument to buy French arms[54].

Between 1961 and 1990, the Middle East represented 31% of French exports while Europe was at 27% and North America at 3%[55]. Over these thirty years, the trend that can be observed is a drop in exports to the European allies from the 1970s onwards, which turn almost entirely to American products, following France's withdrawal from the integrated command of NATO in 1966. The most flagrant demonstration of this observation is the impossibility for France to sell its fighter planes in Europe with the example of the Mirage F1[56] being a success internationally but a failure in Europe, with the exceptions of Spain and Greece. Positive export figures to these two southern European countries continue to this day, while northern Europe has continued to buy mostly American products. In the Middle East, exports rose sharply after the military break with Israel in 1967 and peaked during the Iran-Iraq war of the 1980s.

During this war, France and Iraq found themselves in a situation of interdependence: on the one hand, France was making advantageous economic contracts in arms and oil, and on the other, Iraq had a politically important ally that it rewarded economically. From 1986, Iraq no longer was solvent and France considerably reduced its arms exports, which marked the end of the golden age of French exports[57]. During the first half of the Iran-Iraq war, France's foreign policy was intertwined with the issue of exports. France supported Iraq as long as it continued to be an economic asset, which stopped from 1984 when it became insolvent. From then on, France adopted a neutral position in the conflict and stopped its arms deliveries[58]. This case shows that the policy of strategic autonomy, which aims to prevent subjugation to a foreign power, can however lead to a situation of dependence on importing countries.

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[53] El Karoui Hakim, Nouveau monde arabe, nouvelle « politique arabe » pour la France, Institut Montaigne, Rapport Août 2017

[54] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

[55] Béraud-Sureau Lucie, La Politique française de soutient à l'export de défense, Raisons et limites d'un succès, IFRI, Juin 2017

[56] *Ibid.*

[57] Libération, La France, la guerre Iran-Irak et les affaires, 2010

[58] *Ibid.*

To conclude on exports, we speak of a French arms export policy because these exports are conceived in a coherent system, through a foreign policy and a precise institutional framework. Arms legislation and regulations between then and now have not changed much overall, with decisions remaining centralised and vertical. Today, however, a European layer has been added to this system of arms export regulation. It can also be seen that the destination of exports has remained since then until today mainly oriented towards the Middle East region, while NATO countries still import relatively little French equipment. The criticism of the French government in the 1980s regarding its military support to Iraq is similar to the current criticism of arms exports to Saudi Arabia in the context of the war in Yemen. Unlike in the 1980s, France is now in a position to rebalance its exports from the Middle East to Europe for several reasons that will be explained in the following chapters.

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The period 1960-1990 laid the foundations of the French armament system based on the desire for autonomy and whose model was based on a precise international order that was that of the Cold War. The search for autonomy stemmed from a political will and a geostrategic vision. Defence industrial autonomy was the condition for achieving operational autonomy, which in turn was the condition for decision-making autonomy. These three elements form strategic autonomy, which is a de facto situation that few countries can claim. Being part of this small and restricted group of countries has allowed France to be free to act and to pursue a policy of independence characterised by a strong and non-aligned foreign policy. Autonomy must therefore be seen as a means and not an end in itself. On the subject of military-technical cooperation, exports are an essential component and they were largely encouraged from a political point of view to ensure the balance of the defence industry. Imports existed for equipment that was too complex to produce nationally. Finally, regarding cooperation in the development of military products, there was already significant cooperation with the United Kingdom and Germany at that time. The desire for autonomy was therefore compatible with cooperation, even if it obviously led to restrictions on imports.

By clarifying the theoretical and practical foundations of the armament system during the Cold War, this now allows us to apprehend the present era - 1990-today - by understanding the logical framework of events. The fall of the Eastern bloc in the early 1990s led to the reshaping of the international order and radically influenced French armament doctrine. The political authorities no longer had the political will to guarantee a high level of industrial autonomy and this led to a policy that was much more oriented towards technical-military cooperation.

Chapter II

Post Cold-War period : A defence industry in transition

The year 1991 marked the end of the bipolar world and the arrival of a radically different international order. A defence industry policy must be thought in terms of a specific strategic context and this paradigm shift therefore deeply affected the French model that entered a period of reflection, transition and adaptation. This French model, on the one hand, remained strongly impregnated with strategic and economic thinking based on the idea of national independence and on the other hand, tended to take important steps towards greater military cooperation in Europe.

During the Cold War years, there were many economic issues, but in the end, political and strategic considerations took precedence over managerial ones. After the Cold War, the situation changed and the economic aspect became over-determinant in all political decisions. In this chapter, the chronological framework starts in 1991 and ends with the arrival of a policy aimed at creating a European Defence, which can be dated to 2008 with the first semantic inflections but which really takes shape from 2017.

2.1 Adapting the policy of strategic independence to new challenges

The post-Cold War years brought profound changes in French policy, which experimented with new lines of thought regarding its defence policy, its foreign policy and its relationship with Europe.

From the bipolar world to the Pax Americana

At the very end of 1991, the Soviet Union collapsed, marking the end of the Cold War. That same year, the USSR, at the end of its life, was a helpless witness to the Gulf War, during which the United States, together with its allies, crushed Iraq. A few months later, this military and political victory of the USA was accompanied by the ideological and economic victory of one model over another. The end of the communist bloc gave the West the belief that democracy and free market would prevail in the world. This idea was embodied by Francis Fukuyama in his 1992 book *The End of History and the Last Man* in which he proclaimed the inevitable advent of liberal democracy in the world. The guarantee of this new international order was ensured by American military power intervening in Yugoslavia in 1995 and 1998. France, for its part, also participated in the Gulf and the Yugoslav Wars, but was entirely marginalised behind American power. The fact it intervened autonomously - not being part of NATO's integrated command - did not bring any overall added-

value in terms of efficiency and showed that Europe needed more military cooperation to effectively carry weight[59]. Moreover, intervening so promptly behind the United States was not unanimously supported, and the Minister of Defence Jean Pierre Chevènement resigned to demonstrate his disagreement with France's involvement in the Gulf War[60]. The sovereignist current believed it went against France's independence stance and its Arab policy.

France and the other Western powers had to radically adapt their strategic thinking to the new international order. The dissolution of the USSR meant an end to the threat of a conventional war in Europe; a scenario for which French doctrine planned to use its army. Between 1962 and 1990, the French army maintained a significant number of troops, between 500,000 and 600,000[61], intended above all to protect the national territory. The country no longer needed such a large number of men, coupled to military conscription. Military service ended in 1997 as part of a policy of professionalising the army from a territorial defence mission to a capacity for external intervention[62]. The number of soldiers was drastically reduced to 350,000 in 2000, then 300,000 in 2010, after which it remained globally stable. The threat of nuclear war was also greatly reduced with the end of the USSR and the arms control treaties signed shortly before in 1987 (INF) and 1991 (START I). As the threat of nuclear war became less likely, nuclear deterrence, which had been at the core of the defence policy initiated by General de Gaulle, became less crucial. In particular, the French land component of the nuclear deterrence was dismantled in 1996 in order to reduce non-essential costs.

The 2000s were profoundly marked by the fight against terrorism following the September 11 attacks that then ignited two wars. France participated in the first conflict in Afghanistan from 2001 onwards, while it refused to follow the United States in Iraq in 2003. The American response was to suspend all military cooperation with France with the most damaging aspect being was the cessation of delivery of « American components and spare parts for armaments in use by the French army »[63]. The French army imported relatively little military equipment from the United States and this incident did not cause major problems except concerns over the catapult parts for the Charles de Gaulle aircraft carrier[64]. In 2005, the situation between the two countries returned to normal. This example illustrates the usefulness for a country to be militarily autonomous.

The objective driving the 1990s was the reduction of costs wherever possible and yet despite the cuts that reduced the defence budget as a percentage of GDP from 2.5% in 1990 to 1.6% in

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[59] Mauro. F. Autonomie Stratégique. Le Nouveau Graal de la Défense Européenne. Les Rapports du GRIP. GRIP. 2018.

[60] Le Parisien, Dans le Retro. 29 janvier 1991 : Chevènement claque la porte

[61] Delporte David, Entre réalité et prospective : L'armée de terre française en janvier 1989, 14 avril 2019

[62] Mauro. F. Autonomie Stratégique. Le Nouveau Graal de la Défense Européenne. Les Rapports du GRIP. GRIP. 2018.

[63] Marianne. Petite histoire de la grandissante emprise des Etats-Unis sur notre armement militaire. 2019

[64] *Ibid.*

2000[65], the political goal was to maintain a strategic autonomy. In the *1994 Livre Blanc*, strategic autonomy was defined in two points, the first: nuclear deterrence and the second: an effective military apparatus deployable in external operations. These two ingredients combined might allow « freedom of political action »[66]. To ensure this policy of strategic autonomy, it was essential to maintain an independent industrial capacity. As a consequence, even if equipment spending fell sharply, an effort was made to keep it at a high enough level so as not to bankrupt French defence companies[67].

Strategic autonomy is deeply linked to the issue of sovereignty and as we saw in the previous chapter, the Fifth Republic was built around this principle. However, several elements in the post-1990s undermined French sovereignty, firstly the Maastricht Treaty of 1992, which shifted some French competences to Brussels, followed by the Amsterdam Treaty of 1997 and the Nice Treaty of 2001. A second important element was the transition from the seven year to the five year presidential term of office decided in 2000, which weakened the role of a President no longer able to take a long-term view. This institutional weakening was continued by Nicolas Sarkozy who signed the Lisbon Treaty of 2007 which gave even more national competences to the European level (while the French had shown their opposition during the 2005 Referendum on the European Constitution).

F. Mitterrand (1981-1995) and J. Chirac (1995-2007) remained attached to the defence of French strategic autonomy, one of the characteristics of which was to be outside the integrated command of NATO. Nicolas Sarkozy (2007-2012) had different views and implemented a strategic rapprochement with the United States sealed with the full return to NATO in 2009. He also handled this policy of multilateralism with strong decisions in the opposite direction. He engaged in Franco-Russian dialogue which culminated in 2011 with the signing of a controversial contract for two Mistral helicopter carriers sold to Russia. In 2010, he also signed the Lancaster House Agreement which marked an unprecedented rapprochement between France and the United Kingdom in the field of defence, whose last agreements dated from 1998 (Saint-Malo Summit). The 2010 treaty was much more ambitious given the number of issues it addresses; the strategic relationship between the two countries was to be deepened in three pillars: interoperability, armaments programmes and nuclear power. The main idea behind the treaty was to reduce defence costs by pooling them between the two countries.

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[65] Josselin François-Xavier, Peut-on encore avoir aujourd'hui en France une Politique Industrielle de Defense ? Ecole de guerre, 2016-2107

[66] Livre Blanc sur la Défense. 1994.

[67] Barnier Frédérique, Pestre Dominique, Deux Siècles d'Histoire de l'Armement en France, De Gribeauval à la force de frappe, p. 399-410, CNRS Éditions, 2005

Maintaining the DTIB while freeing up the state financially

The French State was no longer in a position to assume the maintenance of its DTIB on its own and to finance increasingly long and costly armament programmes. In the *1994 Livre Blanc*, it is stated that « the state will no longer be able to support its arms industry in all areas as in the past » and that « its action in this field will be restricted »[68].

The withdrawal of the state had a double objective: the first was always as part of this logic of cost reduction in the defence sector and the second was the will to make French defence companies competitive in the world. Furthermore, the model based on public capital became blaringly obsolete in the 1990s in a context of general economic liberalisation[69]. It was soon clear that the state was forced to privatise its companies even if it knew it would be a difficult task. Indeed, even if the French DTIB included powerful companies in terms of « their industrial and technical potential, skills and human resources », these companies suffered from under-funding due to thirty years of state ownership[70].

The French companies, due to their insufficient financial resources were not in a strong position to compete with the German and British ones. The British had privatised their defence industry by the early 1980s and the Germans had a long tradition of autonomous defence companies from the state; therefore, French companies were at a disadvantage because they were undervalued[71]. Before considering European mergers, the state had to take a radical step that can be called the « capitalisation » stage[72]. During this stage, the state's policy consisted in restoring the companies' equity (a phenomenon that went beyond the defence companies) by rationalising their operations and better defining their scope of activity. There were two options for requalifying the field of activity of these companies, either to create pure defence companies (a choice notably adopted by the United States between 1993 and 1997), or to consolidate the companies according to their business (aeronautics, electronics, propulsion, etc.). France chose the second option in 1998 by merging Aerospatiale and Matra (aeronautics) and by merging Alcatel's electronic activities with Thomson-CSF, which led to the creation of Thalès in 2000 (electronics). Matra and Alcatel being private companies, were more highly capitalised which allowed Aérospatiale and Thomson-CSF to be backed by them and thus allowed the state to privatise at a higher value. Later in 2005, the same principle was applied to Snecma - a public company - which merged with Sagem - a private company - and resulted in the creation of Safran (specialised in engines for aeronautics and space).

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[68] Livre Blanc sur la Défense. 1994.

[69] Barnier Frédérique, Pestre Dominique, Deux Siècles d'Histoire de l'Armement en France, De Gribeauval à la force de frappe, p. 399-410, CNRS Éditions, 2005

[70] *Ibid.*

[71] *Ibid.*

[72] *Ibid.*

The state, through its policy of capitalisation and privatisation, facilitated the emergence of large, financially solid defence companies, each of which was active in a different activity. Moreover, the defence activity of these companies was coupled with a civil activity allowing them to resist the combined decline of the national demand for arms and the decline of arms exports. The only pure military companies were the descendants of the state arsenals with GIAT (land armaments) and DTCN (shipbuilding). Even if they changed from public to private jurisdiction (GIAT in 1990 and DTCN in 2003) they remained publicly owned.

The implementation of liberal defence industrial policies in Europe

The privatisation of French companies opened the door to European mergers. Before 1990, the state formally prohibited any merger or acquisition that could potentially weaken French industrial autonomy[73]. But in the context of global liberalisation of the economy and European construction, the state gave itself the right to accept or refuse merger and acquisition proposals. The armaments sector remained particularly protected, as the withdrawal of the state was not total. Its policy could be described as a liberal industrial defence policy, which constituted a hybrid model between national protectionism and compliance with free market rules[74]. In the post-Cold War years, the three great European military industrial powers (France, the United Kingdom and Germany) converged headlong into this hybrid model.

National protectionism[75] was the policy applied by France between 1960 and 1990, based on the direct participation of the state in the productive apparatus through arsenals and public enterprises, this translated into a very proactive acquisition policy that emphazised the principle of technological excellence over budgetary considerations and launched major national armament programmes (and cooperation when it was really necessary). Finally, the state prevented any foreign influence in French arms companies by blocking mergers or acquisitions. The United Kingdom had this same model of national protectionism until the arrival of Margaret Thatcher in 1979, which marked a change towards a liberal industrial model[76]. This liberal model meant that free market mechanisms were respected and that the state did not interfere in the productive sphere. The British defence companies were therefore totally privatised and the procurement policy was opened to competition. Germany, on the other hand, had been experimenting with this liberal model since the

[73] Hoeffler Catherine, L'émergence du politique industrielle de défense libéral en Europe, Appréhender le changement de la politique d'armement par ses instruments, Gouvernement et action publique, p.641 à 665, 2013

[74] *Ibid.*

[75] *Ibid.*

[76] *Ibid.*

end of the Second World War. Too close a relationship between the state and defence companies was seen as something harmful because of german military history[77].

Between the end of the 1990s and the 2000s, all three countries moved to a hybrid policy that balanced national protectionism and the free market. France embarked on the liberalisation we have described, but the state remained strongly present with a minority stake in the companies, and it continued to have a relatively closed acquisition policy to competition and continued to firmly control foreign ownership. The UK, in the late 1990s, made a step back from a liberal policy and returned to an industrial strategy, while Germany, in the 2000s, became concerned about the French state's overly large stake in the European company EADS, which led to a greater willingness on the part of the German state to become more involved in the armaments sector. EADS (formerly Airbus) was created in 1999 from the merger between French Aérospatiale-Matra, the German DASA and the Spanish CASA. A recurring theme in Germany was the perception that France had come out on top in this merger by getting better industrial benefits. In the 2000s, discontent German governments finally decided to get more involved with Airbus (with strong push-back in Germany by liberals) and this led to the 2012 decision of France and Germany rebalancing Airbus, with the French State reducing its stake in the company from 15% to 12% and the German State buying out Germany's Daimler to be on par with the French at 12%[78].

The fact that European countries converged towards this liberal defence policy meant that on the one hand, they were inclined to participate in joint cooperation, but on the other, this made negotiations more complex. Each state, in its role as a strategic state, wanted to take advantage of cooperation. Achieving unanimity was then often difficult, particularly in programmes with multiple partners. The search for unanimity tended to lengthen deadlines and create additional costs. In addition, the German parliamentary system made the implementation of projects very laborious, with each stage of the programme requiring parliamentary approval.

More ambitious cooperation policies in Europe

During the Cold War, France had two main partners both the United Kingdom and Germany, and cooperation took place within a framework of bilateral discussions. After 1990, France maintained important relations with these two partners and also moved closer to Italy in the areas of shipbuilding, space and missiles[79]. Other partnerships remained marginal and only involved European countries and Turkey. Between 2007 and 2012, an evolution took place under the mandate of N. Sarkozy with the implementation of a policy of industrial cooperation with a wider scope than

[77] Hoeffler Catherine, L'émergence du politique industrielle de défense libéral en Europe, Appréhender le changement de la politique d'armement par ses instruments, Gouvernement et action publique, p.641 à 665, 2013

[78] Cabirol Michel, EADS : la France est-elle aux ordres de l'Allemagne ? La Tribune, 2012

[79] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

Europe. In 2011, he decided to particular favour the option of an Israeli drone IAI Heron made French by Dassault, against the European option of a drone produced by EADS[80].

One notable development that took place in the 1990's and beyond, was the arrival of a European cooperation framework, rather than just bilateral ones. In order to have more efficient and harmonised cooperation, it was necessary to have a single prime contractor and a single project manager.

The creation of Eurocopter in 1992, EADS in 1999 and MBDA (missile manufacturer) in 2001 further a step in the direction of a unified prime contractor was taken. In 1992, the helicopter branch of Aerospatiale merged with the helicopter branch of the German DASA in order to facilitate industrial cooperation and this gave rise to Eurocopter, now known as Airbus Helicopter. Since 1986, Aerospatiale and DASA had already been engaged in the joint production of an attack helicopter called the Tiger and the merger of the two companies facilitated the realisation of the programme. EADS was created in 1999 from the merger of French, German and Spanish companies and its branch dedicated to military activities was specially created in 1999 to respond to the call for tenders with a project called A400M - a military transport aircraft. In 2000, EADS included Eurocopter. MBDA was created in 2001 following the merger of the missile activities of EADS (its missile activity was mainly French), BAE Systems (UK) and Finmeccanica (Italy - formerly Leonardo). Airbus and MBDA are European companies, referring to European Community law. But in reality, Airbus is rather morea Franco-German-Spanish, while MBDA can be described as a Franco-Anglo-Italian company.

The new cooperation programmes were carried out under the supervision of a new body created in 1996: OCCAR. This body was created to coordinate European armaments programmes and avoid the pitfalls of past cooperation, which suffered from a lack of harmonisation leading to cost overruns. The founding member states were France, Germany, the United Kingdom and Italy, later joined by Belgium in 2003 and Spain in 2005, bringing the number of permanent members to six[81]. The states retained control through the OCCAR Supervisory Board, composed of the armaments delegates of each member country (DGA for France). Moreover, the armaments programmes were managed autonomously from each other, which allowed each State to retain control of each programme individually. France actively supported the creation of a single coordinator at European level, its aim being to reduce costs as much as possible.

This European cooperation in the field of armaments took place in parallel with political attempts to create the beginnings of a European Defence. With the Maastricht Treaty in 1992, the EEC - a primarily economic union - was transformed into the EU, which was a political union. In

[80] Cabirol Michel, Drones : l'histoire d'un incroyable fiasco français, La Tribune, 30 Mai 2013

[81] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

order to establish this political Europe under construction, the texts of the Maastricht Summit provided for « the eventual framing of a common defence policy which might in time lead to a common defence »[82]. There was a French desire to create an autonomous European force within NATO, which could have allowed European countries to intervene without having to go through the United States. This desire culminated in 1998 at the Franco-British summit in Saint-Malo and was very encouraging; the British for the first time spoke out in favour of giving the European Union a military capability having been previously very hostile to it[83]. However, words were not translated into deeds and the Iraq war of 2003 highlighted the divisions within Europe on this issue, the pro-American side - led by Great Britain and Italy - on the one, and the anti-war side - led by France and Germany - on the other. It was not until the 2010s that progress was made on the European defence front.

The Cold War years were characterised by a clear policy of aimed French strategic autonomy. After 1990, we entered a transitional phase where the policy tended to be unclear and permanently forced to adapt. The French defence policy however retained the same fundamentals based on the idea of strategic independence and even with a certain vehemence as could be witnessed 2003 by its opposition to the war in Iraq.

During this period, a greater interdependence between France and its European neighbours was taking place politically and economically. And even if this phenomenon is still today in its infancy, it will lead to further European rapprochement in the field of defence becoming even more pronounced in future.

2.2 Procurement policy under budgetary restrictions (1990-2019)

Overall, the procurement system remained based on the same three circles: exclusive sovereignty activities, shared sovereignty activities and off-the-shelf procurement. The difference is that equipment spending was reduced in each of these three categories.

The changing role of the DGA

The DGA (Délégation Générale de l'Armement) is the name that replaced the DMA since 1977 without profoundly changing the functioning of the armament agency. Paradoxically, while equipment spending declined throughout the 1990s and beyond, DGA's role was strengthened in relation to the armed forces and defence industry. In 1996, a reform put an end to the technical

[82] Mauro. F. Autonomie Stratégique. Le Nouveau Graal de la Défense Européenne. Les Rapports du GRIP. GRIP. 2018.

[83] *Ibid.*

directorates[84] (land, air, sea) and replaced it with a trans-disciplinary organisation. At this point, the definition of the armies' needs evolved from the acquisition of equipment to counter an identified enemy in favour of equipment capable of fighting against diffused threats[85]. The aim of this reform was to adapt the French army to the new challenges, but above all to reduce the costs of armament programmes by around 30%[86] and to do this, each programme was accompanied by managers, responsible for monitoring the legal and financial aspects. This emphasis on cost reduction led the DGA to move from a model based on technological excellence to a management model[87].

The DGA was very pleased with the creation of OCCAR, the project management for European cooperation programmes. DGA's new philosophy was in line with the principles established in European cooperation based on a commercial approach[88]. Both bodies defended the principle of the « best athlete », which awards the different parts of a programme to the company that wins the competition. This principle had the effect of weakening the influence of industrial players who could no longer rely on their long-standing privileged relationship to obtain contracts. At the end of the day, the European level of « best athlete » principle was not fully respected as all the partner countries in the programme, particularly on the A400M, logically wanted industrial benefits in proportion to their financial investment. This had negative consequences for the A400M on the development of its engine because the German engine manufacturer MTU did not have the necessary technical expertise to carry out its part dedicated to engine control and the monitoring system (Fadec). This process led to delays due to failure and regrettably to the crash of an A400M[89].

An acquisition policy still based on strategic autonomy

Following the end of the Cold War, military nuclear power lost a level of importance but investments remained substantial to ensure the doctrine of nuclear deterrence, the military nuclear domain remained a category of activities under exclusive sovereignty and even if it is difficult to evaluate the cost of military nuclear power, in the 1960s and 1970s it represented about 30% of the defence budget, whereas in the 2000s it had shrink to about 10% of the budget.[90] This decrease was primarily due to the closure of the Albion Plateau in 1996, which put an end to the land-based component of the nuclear capability. The same year, in 1996, France stopped nuclear testing and it signed the Comprehensive Nuclear Test Ban Treaty which induced it to invest in the development of

[84] Joana Jean, Armée et industrie de défense : cousinage nécessaire et liaisons incestueuses, CAIRN 2008

[85] *Ibid.*

[86] *Ibid.*

[87] *Ibid.*

[88] *Ibid.*

[89] Cabirol Michel, MTU, le motoriste allemand qui dit "nein" à Berlin et Paris, La Tribune 2019

[90] Le Figaro, Combien coûte la dissuasion nucléaire française ? 2012

a nuclear test simulation system. On the maritime side of the strike force, four second-generation SNLE (Ballistic missile submarines) were produced between 1997 and 2008, which can be compared to the six first-generation SNLE produced between 1971 and 1985. To ensure a credible nuclear deterrence, it was readily admitted that a number of six was necessary. Finally, the nuclear-powered aircraft carrier programme ordered in 1986 came into service in 2001 under the name Charles de Gaulle. It was capable of carrying strike force aircraft and made France the only country, alongside the United States, to have a nuclear-powered aircraft carrier. But here again, a single ship made it insufficient to ensure a permanent capacity of action because of its regular maintenance in harbour for several months.

There was a first shift in French policy on military nuclear power in 2010 with the signature of the Franco-British Lancaster House Agreement. France and the UK agreed to share new simulation facilities, notably at the Valduc site in France. Little information was shared with the public about this project other than that it is due to be completed in 2022 for up to fifty years of operation[91].

In military equipment not subject to sovereignty, the DGA continued to strongly encourage the acquisition of domestically produced equipment. Imports therefore remained very limited and there were no major import contracts signed during this period. In the 1990s and 2000s, the only major programme launched solely from national resources was the VBCI (Armoured Infantry Fighting Vehicle) which came about as the result of failed European negotiations. In parallel, the development of major programmes launched before 1990 were deployed within French armies (Mirage 2000, Rafale, Char Leclerc) and a very large part of the budget was used to complete the development of the Rafale; in hindsight, the cost of the development of this multi-role aircraft is now estimated at around 43 billion €[92].

The difference with the Cold War years was the high focus on European cooperation. In chronological order, the main cooperations in the 1990s were the Tiger helicopter between France and Germany and the NH90 helicopter between France, Germany, the UK and Italy. Then, in the 2000s, came the A400M transport aircraft, a joint project between seven countries (France, Belgium, Germany, Luxembourg, Spain, Turkey, United Kingdom) and lastly the FREMM frigates which are multi-role frigates produced by France and Italy. The Tiger is an attack helicopter that was launched in the early 1990s and entered service with the French army in 2005. It became indispensable to France in external theatres of operations but its lack of availability and inability to be exported did not ensure a sustainable industrial model[93]. The NH90 in contrast was a multi-role helicopter that could be operated in tactical transport or in a maritime environment and its export

[91] Guibert Nathalie, Le nucléaire, cheville de la relation de défense franco-britannique, Le Monde, 19 janvier 2018

[92] L'Usine Nouvelle, Les sénateurs réévaluent le prix du Rafale, 2011

[93] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

success and fewer technical problems than the Tiger, ensured it became an industrial success[94]. More recently, the A400M was the largest cooperative programme France has ever participated in. It is an ambitious transport aircraft from a technical point of view, but has been subject to numerous delays and additional costs. The programme is currently running out around €30 billion[95]. The FREMM frigates are multi-role frigates that France uses for anti-submarine warfare (6 frigates) or anti-aircraft purposes (2 frigates). Finally, in the field of missiles, France and Italy have successfully cooperated in the development of the Aster missile, initially designed as an anti-aircraft missile (SAMPT) of the same type as the American Patriot missile. A maritime version was then developed (PAAMS), again with Italy and the United Kingdom in addition[96].

Weapons programmes under cost reduction

In number, new weapons programmes have been much less numerous than during the Cold War period, but in terms of size, they have been individually more expensive and have taken longer. To reduce costs, the first decision was to reform the functioning of the DGA and give it a managerial role.

The second decision was to launch cooperative programmes. These programmes were technically feasible on their own, but France was not in a position to finance them. France financed 50% of the Tiger programme, 42% of the NH90 programme and 31% of the A400M programme[97]. Moreover, the partners not only financed the development but also the maintenance of the production chain through their orders and ensured a lower cost per unit at the end of the chain thanks to economies of scale.

The third decision to lower costs was to reduce the number of orders for the French army. In 1986, during the development of the Leclerc tank, 1,500 units were planned for the French army, but only about 400 were produced in the 2000s[98]. The same became true for the Rafale where the quantity ear-marked for the French army was 286 units at the beginning of the 1990s but was constantly revised down to be only 180 today[99]. On cooperative programmes, orders also decreased, with the sharpest drop for the Tiger from 215 to 71 aircraft between 2005 and 2014[100]. Only orders for the A400M remained fixed at 50 units, but they were greatly spaced out over time in order to

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[94] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

[95] Challenges, L'Airbus A400M, l'avion qui valait 30 milliards, 2018

[96] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

[97] *Ibid.*

[98] Carjager. Char Leclerc : chute de mur fatale pour bijou technologique ! 2015

[99] Challenges. Rafale: l'Etat revoit à la baisse sa commande à 225 exemplaires, 2013

[100] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

spread out the costs; from the 50 aircraft planned for 2019, these have dropped to 25 aircraft delivered in 2025[101].

2010's : The pragmatic reliance of imports

In the context of a decreasing defence budget, some programmes were botched, due to a lack of investment, as in the field of drones, where France completely missed the technological kick-off[102]. The first programmes of MALE drone (Medium Altitude Long Endurance) began in 2004 but with lack of funds, lack of interest from European partners in the UAV, and political indecision, this has led to an industrial failure from which France has still not emerged today. During this wasted time, the United States and Israel took a considerable lead with the introduction of the Reaper UAV for the US and IAI Heron Israel. This equipment became indispensable to modern armies and in the skies of all theatres of operation. Consequently, due to the lack of a French offer, France bought twelve Reaper UAVs in 2013[103] and put an end to the Israeli Heron drone project made French by Dassault. Currently, France is not the only one in Europe to depend on the United States for drones; the United Kingdom, Italy, Spain, the Netherlands and Belgium fly American while Germany has bought Israeli drones.

The technical problems encountered by the A400M put France in a dilemma in 2015; on the one hand it had to replace its ageing Transall transport aircraft models and on the other hand the A400M was technically unable to meet certain requirements that had become indispensable for the conduct of certain operations in the Sahel such as in-flight refuelling for helicopters. It was therefore decided to buy four second-hand C130 Lockheed Martin aircraft off the shelf for €1.5 billion[104].

Overall, if the French DTIB succeeded in adapting to the post-Cold War world however other industries such as firearms did not survive. Indeed in 2001, the Manufacture d'armes de Saint-Étienne which had been producing guns for the French army since the 19th century closed permanently. In the long run, this meant the French army had no other option but to turn to gun procurement from its European partners. From 2017, the DGA chose to gradually replace the French FAMAS assault rifle by the German HK416. Today, France no longer has a sovereign small-calibre industry, with the attendant loss of jobs and skills, nor a secure supply. The DGA does not wish to support or reconstitute a French industry due to lack of economic profitability[105].

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[101] Cabirol Michel, Airbus : A400M Atlas, cet avion enfin prêt pour sa seconde vie, La Tribune, 2019

[102] Cabirol Michel, Drones : l'histoire d'un incroyable fiasco français, La Tribune, 30 Mai 2013

[103] Cabirol Michel, Drones MALE : la France volera américain, La Tribune, 11 Juin 2013

[104] Cabirol Michel, Pourquoi la France va acheter des avions de transport tactique américains, La Tribune, 28 Sept 2015

[105] Le groupe de réflexions Mars, Industrie de défense terrestre : l'Etat peut faire mieux, La Tribune, 31 Mars 2021

France's industrial policy in the 1990s and 2000s was deeply marked by budgetary restrictions. The aim was to maintain industrial autonomy despite the lack of funds putting a number of programmes under great pressure because public orders were the minimum required to keep production lines running. Remarkably despite this, France maintained itself from a technological point of view in most of its equipment. In view of the budget cuts, this was a success. The Rafale is an illustration of it as it is today considered as one of the most technically capable, which shows that technological excellence has been maintained.

2.3 The slump in French exports (1986-2014)

Between 1960 and 1990, the industrial model of armament was based on prolific exports; indeed, in the context of an arms race between the United States and the USSR, France followed the two giants by launching armament programmes in almost all fields. However, due to its size as a middle power, this « programmatic model »[106] could only function through powerful exports. This led some to say that the French industrial system was already in crisis from 1975 onwards[107], as it had entered a situation of overheating requiring ever more exports. From 1986 onwards, exports collapsed, which contributed greatly to the changes in French industrial policy described above: i.e. a policy of seeking savings wherever possible (while trying to maintain strategic autonomy but to a lesser degree) and launching cooperative arms programmes.

French exports fell from 1986 onwards due to unfavourable world economic conditions. All producing countries were affected by a general decline in arms spending worldwide. At the same time, the need for exports increased as domestic orders decreased and this increased the competition between producing countries for export markets.

The decline in French exports began in 1986 with the end of French arms deliveries to Iraq and was followed by a ten-year downward spiral to its lowest level in 1994. Between 1986 and 1994, deliveries went from 60 billion francs to 20 billion francs (the calculation is made in constant 2000 francs)[108]. The way to resist this decline was, as we have explained, to capitalise, privatise and merge companies in order to make them more solid. With the drop in arms production, these companies saw their civil sector take over from their defence sector. Dassault, for example, saw its civil sector overtake its defence sector for the first time in its history in 1999[109]. Dassault suffered throughout the 2000s from the Rafale's zero score in exports and kept afloat thanks to the good

[106] Barnier Frédérique, Pestre Dominique, Deux Siècles d'Histoire de l'Armement en France, De Gribeauval à la force de frappe, p. 399-410, CNRS Éditions, 2005

[107] *Ibid.*

[108] Vaïsse Maurice, Armement et Ve République, Fin des années 1950 - fin des années 1960, CNRS Editions, 2002

[109] Dassault, L'importance des exportations

results of the Mirage 2000 in exports. In addition, to avoid dependence on exports, European cooperation was encouraged as it guaranteed a sufficient number of pre-established orders.

The Gulf War of 1991 and other conflicts led to an awareness of the need to regulate the arms trade. This led to the establishment of two international regimes, the first being the ban on anti-personnel mines with the 1997 Ottawa Treaty and the second on cluster munitions with a 2008 convention. France participates in both regimes while other major countries in terms of defence industry still do not participate (USA, Russia, China, India). Between 1997 and 2000, reforms were undertaken to improve the coordination of public support for exports and to simplify control procedures[110]. In addition, an effort was also made to improve the transparency of exports with the introduction of an annual report on arms exports. In 2008, arms export regulation was also deepen with the adoption of the EU Common Position establishing 8 European criteria for arms exports[111]. This allowed for fairer competition between European industries that had to meet the same export conditions. The Conventional Arms Export Group (COARM) was created to allow EU countries to share information on export licence denials to third countries. If an export licence was refused by an EU country, another member country could not claim the refused contract for a period of three years.

Exports started to rise again in the early 2000s in the context of the wars in Afghanistan and Iraq. Between 1998 and 2002[112], France exported 80% to the Middle East or Asia, the main clients being the United Arab Emirates, Taiwan and Pakistan, then between 2003 and 2012, this share remained high at 70%. On the other hand, Europe was almost absent with a share of between 10 and 15%, whereas it still represented 27% between 1961 and 1990. The financial crisis of 2007 then caused defence spending and exports to fall again everywhere except in the Middle East, which remained at high levels of spending[113].

In 2011, after more than a year of negotiations, France signed a €1.2 billion contract with Russia for the delivery of two Mistral-class amphibious assault ships[114]. This contract had a purely technical reason linked to Russia's desire to modernise its navy but it also marked the culmination of a diplomatic rapprochement between France and Russia. For Nicolas Sarkozy, it was a matter of « gradually building a partnership [with the] conviction [...] that the Cold War is over [...] and that we must consider Russia as a friendly country and reflect with it on the constitution of a vast space

[110] Béraud-Sureau Lucie, La Politique française de soutient à l'export de défense, Raisons et limites d'un succès, IFRI, Juin 2017

[111] Cops. D. Duquet. N. Reviewing the EU Common Position on arms exports: Whither EU arms transfer controls? Flemish Peace Institute. 2019.

[112] Béraud-Sureau Lucie, La Politique française de soutient à l'export de défense, Raisons et limites d'un succès, IFRI, Juin 2017

[113] *Ibid.*

[114] Guillemin Dominique, La vente des bâtiments de projection et de commandement Mistral dans la politique étrangère de la France 2009-2015, CAIRN

of security and prosperity together »[115]. This kind of statement was part of an effort to ease tensions and criticism of the deal, especially from NATO's military allies, who viewed it negatively. Indeed, at that time, the Russian intervention in Georgia in 2008 was still on everyone's mind and the Mistrals contract was perceived by some as a threat to the security of NATO countries[116]. In 2014, in the midst of the Ukrainian crisis, France found itself in the middle of criticism over its upcoming delivery of two Mistrals to Russia. The situation quickly became untenable, and in September 2014 François Hollande declared that « the conditions for France to authorise the delivery of the first projection and command ship have not yet been met »[117]. Finally, in August 2015, France and Russia reached an agreement to end the contract. France agreed to reimburse Russia without any penalty other than the reimbursement of the training costs of the Russian sailors, amounting to €949.7 million[118]. A few days later, a Franco-Egyptian agreement was reached for the delivery of the two ships to Egypt for the sum of €950 million[119].

During the period going from 1986 to 2014, France remained in fourth position in the world ranking of countries by arms exploration behind the United States, Russia and the United Kingdom. This is not a uniform period for exports; we can distinguish different trends with that of 1986-1994, which is a total collapse, that of 1995-2007, which is a period of recovery but fluctuating, and that of 2007-2014, which is marked by the financial crisis of 2007 which is finally quickly absorbed. This period also saw the arrival of new players such as Turkey or South Korea and especially China.

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This post-1990 period can be seen as a transition period for the French model, disoriented by the end of the bipolar world and which is looking for a stable replacement model. This stability was difficult to achieve when, between 1990 and 2019, military expenditure has been constantly decreasing. This period marked the arrival of a new paradigm for French defence industrial policy. We moved from an interventionist policy based on large national programmes to a policy driven by the will to reduce costs through a restrictive acquisition policy and through the set up of European cooperations. Strategic autonomy was not denied, but the budgetary restrictions of the 1990s and 2000s were felt in the 2010s when the country had to import equipment that it could not afford to produce itself.

The thinking of the French political authorities concerning cooperation remained the same between the pre- and post-Cold War years, a thinking that saw cooperation through an economic,

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[115] Gallois Dominique, La vente de quatre porte-hélicoptères Mistral à la Russie est bouclée, Nicolas Sarkozy a annoncé que les derniers obstacles à la signature du contrat avaient été levés. Le Monde, 27 mai 2011

[116] Guillemin Dominique, La vente des bâtiments de projection et de commandement Mistral dans la politique étrangère de la France 2009-2015, CAIRN

[117] *Ibid.*

[118] *Ibid.*

[119] *Ibid.*

financial and technological prism while the political aspect remained marginal. This is also in line with the philosophical model of the European Union, which did not ask itself the question of power until very recently; it can be linked to the all-powerful liberal thinking of the 1990s, which almost envisaged « the End of History » and saw power as an element of the past.

From 2008 onwards, France made a first change to this policy by using in its official vocabulary the term « European strategic autonomy » and what looked like a semantic change gradually took on a concrete reality especially from 2017 onwards. This is what we will now examine.

Chapter III

Since 2008: an unavoidable rapprochement between French and European Strategic Autonomy

The European defence project is an old one, with some proposals dating back to the 1960s under de Gaulle and we could go back even further with the project of the early 1950s for a European Defence Community. But the idea of a European defence then faded into the background during the Cold War only to return in the 1990s, and as we've explained, it remained more about speech than concrete action. The year 2007 marked the beginning of a much more promising policy on this aspect of European defence with the election of N. Sarkozy. He belonged to a family of thought that stood out from his predecessors and this had a significant impact on the defence doctrine going toward, notably with the writing of the third *Livre Blanc* on defence in 2008. This marked the setting in stone of a new concept, that of European strategic autonomy. It is always worth bearing in mind that dates do not mark abrupt breaks but rather the progressive setting in motion of new trends. Between 2007 and today, France's defence doctrine tends to seek, in the long term, to merge French strategic autonomy into European strategic autonomy. As the project of a European defence is an ongoing one, this chapter overlaps the observed developments of the past and the possible developments of the future.

3.1 French defence doctrine: towards European Strategic Autonomy

This period is characterised by three *Livre Blanc* published in close succession, in 2008, 2013 and 2017. Each publication is linked to a different presidential term, that of N. Sarkozy (2007-2012), of F. Hollande (2012-2017) and E. Macron's current term (2017-2022). As presidents replace one another and oppose the legacy of the previous incumbent, this does not help to establish a stable political line over time. The *2008 Livre Blanc* marked the most pronounced doctrinal break, while the *2013 Livre Blanc* brought not much change, and finally the *2017 Livre Blanc* turned out to be a continuation of the European logic initiated in the 2008 document.

France's defence doctrine aims to ensure that Europe - which is a great economic power on a par with the United States or China - becomes a real political power. The former Belgian Prime Minister, Mark Eyskens, said in 1991 that Europe was « an economic giant, a political dwarf and a military larva ». In order to make Europe a political power, it is necessary to build a real military power and since the 2010s, France has been undertaking military-technical cooperation not only from an economic, financial and technological point of view but also with a political aim; the principle being that cooperation in the field of armaments strengthens Europe from a political standpoint.

The concept of European Strategic Autonomy in French official statements

The *2008 Livre Blanc* mentioned for the first time the need to create a « strategic autonomy of the European Union »[120]. The *2008 Livre Blanc* was timid on attributing a European strategic autonomy by only speaking of « greater intelligence sharing », and « a permanent and autonomous European strategic planning capability »[121]. While common intelligence is essential for a common appreciation of strategic issues in Europe, its other important point concerned the operational and political aspect of freedom to conduct operations without needing the United States.

In the *2013 Livre Blanc*, there was no longer any mention of European strategic autonomy; the text was driven by the question of external interventions, as France launched Operation Serval in Mali in 2013 without the support of any European country. The *2013 Livre Blanc* was a reaffirmation of the principle of strategic autonomy but only on a national scale. It observed France's isolation in Mali and therefore concluded that France's defence policy must keep « capabilities that give it autonomy of assessment, planning and command, as well as critical capabilities that are the basis for its autonomy of operational decision and action »[122].

In the *2017 Livre Blanc* (officially called the Strategic Defence and Security Review), European strategic autonomy makes an asserted reappearance. It is first mentioned in the preface signed by President Emmanuel Macron, the most Europhile President ever elected and it is therefore no coincidence that the European defence project would experience an acceleration after his election. European strategic autonomy contains a whole sub-section in the official document but the boundaries of the concept also became broader and blurred as it is said « strategic autonomy cannot be thought of in exclusively military terms »[123]. Civilian instruments (diplomatic or development) are supposed to play a role in Strategic Autonomy, but it is still not clear how.

Noticeably throughout the three *Livre Blanc*, the concept of European strategic autonomy lacks clarity. The best way to understand France's current policy on the creation of a European Defence is to read the transcript of Emmanuel Macron's speech in September 2017 at the Sorbonne. He states: « In terms of defence, our objective must be Europe's capacity for autonomous action, as a complement to NATO. The basis for this autonomy has been laid, with historic progress in recent months. Last June, we laid the foundations of this Europe of Defence; permanent structured cooperation, enabling us to make greater commitments, to move forward together and to coordinate better; but also a European Defence Fund to finance our capabilities and our research. We are in the

[120] Livre Blanc sur la Défense et la Sécurité Nationale, 2008

[121] Livre Blanc sur la Défense et la Sécurité Nationale, 2008

[122] Livre Blanc sur la Défense et la Sécurité Nationale, 2013

[123] Revue Stratégique de Défense et de Sécurité Nationale. 2017.

process of giving substance to this essential foundation through the exchanges of the various member states that wish to move in this direction. »[124]

Through this excerpt, we have all the constituent elements of European strategic autonomy: the operational and political autonomy of Europe in defence and industrial autonomy (we will only focus on the industrial aspect so as not to deviate from the topic). Finally, he addresses of the creation of a common strategic culture with the « member states that wish to move in this direction ».

The need to create a common European strategic culture

European strategic autonomy is the application of Strategic Autonomy - originally only referring to France - at the European level in the face of the challenges of the 21st century for Europe. As the EU doesn't have the attributes of a state, the application of the concept of strategic autonomy to the European dimension is therefore done through more complex mechanisms. Speaking of European strategic autonomy is not insignificant because it cannot be separated from the French paradigm and the history of French strategic thinking. It stems from France's desire to influence the elaboration of a common strategic culture in Europe.

The fact that this concept is specific to the French paradigm raises the problem of it being understood by France's European partners. From a French point of view, strategic autonomy is linked to sovereignty. Talking about European strategic autonomy therefore inevitably leads to talking about « European sovereignty ». For many European countries, delegating Europe's security to the American ally is not in itself problematic for Europe's sovereignty and allows them to spend relatively little on their security[125]. France, in order to advance the idea of a common defence in Europe, must therefore take on a double mission: the first is to set its partners to accept the break with dependence on the United States and the second is to make them accept the necessity of assuming the costs of this autonomy[126].

In order to achieve these objectives, France is therefore working to create a common strategic culture in Europe. Its policy has led to the concept of strategic autonomy being included in the EU's Global Strategy in 2016[127]. However, much remains to be done to obtain acceptance of this principle and the Revue Défense Nationale (monthly defence magazine), in its January 2021 edition

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[124] Initiative pour l'Europe - Discours d'Emmanuel Macron pour une Europe souveraine, unie, démocratique, Elysée, publié le 26 septembre 2017

[125] Union européenne et Enjeux de défense : les défis de l'Autonomie Stratégie Européenne, Comité d'études de Défense Nationale | « Revue Défense Nationale », 2021

[126] *Ibid.*

[127] *Ibid.*

about European Strategic Autonomy, summarises what France must do to help create this common European culture.

Firstly, the feasibility or otherwise of a Defence Europe depends on the strength of Europe as a political union. In order to gain support for a Defence Europe, it is first necessary to rally support for the European project as a whole. On this point, however, many countries in Europe are not on the same wavelength as regards the values, objectives and interests shared in Europe[128]. In order to move towards a common strategic culture in Europe, it is therefore necessary first and foremost to strengthen the feeling of belonging to the same political entity and to make this political entity attractive to be part of. Today, Europe is poorly regarded by the different nations and in particular by the French people, whose level of Euroscepticism ranks amongst the highest in Europe. This puts Europe in front of a possible existential crisis, the solution being only to answer to questions that interest its citizens, i.e. security, health, food, environment, energy, bio-diversity, digital, economy[129].

Secondly, France needs an effective communication strategy to boost the interests of European countries in moving towards strategic autonomy. This political communication has to reach both internal actors - European politicians and citizens - and external actors - in particular the United States and other non-EU NATO members[130]. This communication should aim to create a consensus in Europe and beyond, taking particular care not to scaremonger the NATO issue. On this point, Emmanuel Macron's statement in 2019 on the « brain death of NATO »[131] is a a communication error. The sentence was a reaction to Turkey's action in Syria, which had just launched an assault on the Kurds - allies of the West. However, it would have been possible, to criticise this Turkish incursion without using such strong language and led to a very strong rebuke from President D. Trump. Presently, despite these words, in reality, France is increasing its involvement in NATO, notably with the NATO 2030 plan, which aims to increase the interdependence between Europe and the United States on an operational and political level. Semantics and words matter and certain terms such as « European army » do not enjoy consensus (even in France) and French representatives should therefore stop using them. The term (European) strategic autonomy is less criticized and finally, the fact that the concept has a vague definition in the official French vocabulary is rather positive as it leaves every country form their own idea.[132].

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[128] Union européenne et Enjeux de défense : les défis de l'Autonomie Stratégie Européenne, Comité d'études de Défense Nationale | « Revue Défense Nationale », 2021

[129] *Ibid.*

[130] Union européenne et Enjeux de défense : les défis de l'Autonomie Stratégie Européenne, Comité d'études de Défense Nationale | « Revue Défense Nationale », 2021

[131] Emmanuel Macron warns Europe: NATO is becoming brain-dead. The Economist. November 2019.

[132] Union européenne et Enjeux de défense : les défis de l'Autonomie Stratégie Européenne, Comité d'études de Défense Nationale | « Revue Défense Nationale », 2021

Finally, the European defence project must be inclusive, especially towards the United Kingdom, which no longer is part of the EU but remains a major player in Europe in the field of defence. In particular, it is a first order partner for France, which in 2010 mutually relaunched the bilateral relationship in the defence sector with the Lancaster House agreements. E. Macron came to power a year after the UK's exit from the European Union, which meant that the EU's defence policy had to be adapted. Pragmatically, neither side had an interest in cutting itself off from the other. This may explain why between 2008 and 2017 we moved from the concept of « Strategic Autonomy of the European Union » to « European Strategic Autonomy »[133], the geographical term of Europe being more inclusive. Brexit in 2016 didn't formally undermine this cooperation based on a bilateral agreement, but it reduced the willingness to develop joint industrial cooperation in the defence sector. France, which until then had maintained balanced partnerships with the United Kingdom and Germany began seriously leaning towards a privileged relationship with Berlon from 2017 onwards.

Current situation of defence industry in France and Europe

The concept of strategic autonomy emphasises the industrial dimension because industrial autonomy is indispensable for operational autonomy, which in turn is indispensable for autonomy in decision-making. The industrial dimension is therefore essential, but presupposes to create a European DTIB (EBITB) and that European countries drastically reduce their imports of American equipment. Before speculating on the possible creation of an EDTIB, let us first look at the current situation of the defence industries in Europe.

We previously described the process of mergers in France and Europe which that created French and European defence champions. In the SIPRI list of the 100 largest arms companies in the world in 2018 in terms of arms sales in $ (not including China)[134], there were 43 US companies (including the top 5 in ranking), 27 European companies and 10 Russian companies. Amongst the European ones, the United Kingdom ranks 8 companies, France 6, Germany 4, Italy 2, and Spain, Poland, Switzerland, Sweden and Ukraine 1. Then we should add two European companies, Airbus and MBDA, but as explained, Airbus being Franco-German-Spanish and MBDA being Franco-English-Italian. If we add up again, we find 9 British, 8 French and 5 German companies. This ranking reflects the order of size of the industrial reality in the defence sector in Europe. However, it is important to put into perspective that companies in this ranking are of various sizes. BAE System (UK) is ranked 6th, well ahead of Airbus (EU) 7th, Leonardo (Italy) 8th and finally Thalès (France) 10th.

[133] Mauro. F. Autonomie Stratégique. Le Nouveau Graal de la Défense Européenne. Les Rapports du GRIP. GRIP. 2018.

[134] The SIPRI TOP 100 Arms−Producing and Military Services Companies, 2018

Amongst French DTIBs, we find Naval Group in 21st position, MBDA 23rd, Safran 31st, Dassault 34th, CEA (nuclear energy establishment) 47th and Nexter 83rd[135]. The French DTIB also includes a network of around 500 small and medium-sized companies described as strategic, many of which are sub-contractors and subsidiaries of the large groups mentioned. The French military industry employs about 200,000 people both directly and indirectly, accounting for 13% of total industrial employment in France[136]. For the country, this allows a reduction on its foreign trade deficit; in 2019 the arms sector represented a 6 billion euro surplus, which made it one of the rare sectors with a positive trade balance. Good figures of the armaments sector were driven by good figures of the aeronautical sector, being one of the only industrial sectors not to have undergone deindustrialisation between the mid-1970s and today. The reason for this resilience can be seen in the nature of this sector : a high-tech and high added-value sector. On the contrary, low-end activities (textiles) or mid-range activities (automobiles) have undergone brutal relocations.

The current situation in the European defence industry is fragmentation. European companies are in competition with one another in developing equipment. Added to which, this competition between countries is still incomplete and many exemptions to the single market rule exist. Finally, there is a lack of coordination on armaments policies in Europe and some countries prefer to buy American than European. There are however concrete steps forward such as the alliance between the French Nexter (manufacturer of the main battle tank Leclerc) and the German KMW (manufacturer of the main battle tank Leopard 2) to form KNDS - a European defence industry holding company. This alliance was formed with the aim of jointly producing a combat tank that would meet today's technological challenges and could enter service by the end of the 2020s.

The creation of a EDTIB

The creation of an EDTIB (European defence technological and industrial base) would be a political asset for Europe but above all a technological asset. Today, it is clear that European countries are completely overtaken by the United States or China in the field of electronics and new technologies. The absence of digital champions in France and Europe creates a dependency because Europe has to import its « microprocessors, the operating system for machines, computer applications and even part of the telecommunications networks… »[137] In the military field, this reliance is accentuated by American law which, through its *ITAR* legislation, seriously undermines the sovereignty of European countries. According to *ITAR* legislation « Any product that incorporates U.S. origin components, hardware subassemblies, software, or is produced using U.S. origin technology or software is subject to export restrictions due to the extraterritorial application

[135] The SIPRI TOP 100 Arms−Producing and Military Services Companies, 2018

[136] Rapport au Parlement sur les exportations d'armement de la France. Ministère des Armées. 2020

[137] Union européenne et Enjeux de défense : les défis de l'Autonomie Stratégie Européenne, Comité d'études de Défense Nationale | « Revue Défense Nationale », 2021

of U.S. regulations »[138]. Many French and European companies integrate American components, particularly electronic components, into a wide range of equipment, especially in the aeronautics and space sectors. This American legislation undermines French interests based on freedom of export. For example, in 2018 Washington vetoed the French arms industry by banning the export of MBDA's Scalp cruise missile to Egypt, and this decision had the effect of slowing down the sale of 24 additional Rafales to Cairo[139]. According to the french Minister of Armies, France will be « extremely attentive to ensure that our equipment of tomorrow is less sensitive to foreign components, notably for *ITAR* »[140]. But realistically, it is unthinkable at this time to do without American imports, and France does not have the means to develop certain advanced technologies in its own which in turn leads to a preference for European partnership.

Europe failed to grasp disruptive technologies of the past, but it is also poorly prepared for the emergence of new ones[141] :

-Big data: the world's armies will be moving towards digitisation, which will have very visible effects in terms of obtaining information and therefore the ability to assess.

-Artificial intelligence: with the digitisation of all human activity, there is a need to manage all the data through artificial intelligence.

-The cloud: it enables better communication and therefore improves the possibilities of collaborative combat.

The creation of a EDTIB must be done with a view to not missing these new disruptive technologies. To do so, it is also a question of creating a synergy between the military domain and the start-ups of the digital world. The creation of a EDTIB requires state action, but this action must be carried out with a view to encouraging and not controlling. The creation of the European Defence Fund (EDF) in 2017 is a step in this direction. The first test period of its activity will be 2021-2027, when it will use substantial European funding (€8 billion over these six years) to finance R&D for European armaments programmes and to promote links between European companies. If we assume that Europe acquires a common strategic culture and that the state and economic players become aware of the need for rapprochement, then by 2030-2040, Europe will have an EDTIB[142] according to the Revue Défense National that we mentioned before.

How to articulate the French Strategic Autonomy with the European Strategic Autonomy ?

[138] Lemercier. M. Norme ITAR, l'exposition des technologies françaises aux restrictions américaines. Centre de Ressource et d'Information sur l'Intelligence économique et Stratégique. 2019

[139] Cabirol Michel, M. Réglementation ITAR : Etats-Unis, cet ami qui ne veut pas que du bien à la France. La Tribune. 2018.

[140] *Ibid.*

[141] Union européenne et Enjeux de défense : les défis de l'Autonomie Stratégie Européenne, Comité d'études de Défense Nationale | « Revue Défense Nationale », 2021

[142] Union européenne et Enjeux de défense : les défis de l'Autonomie Stratégie Européenne, Comité d'études de Défense Nationale | « Revue Défense Nationale », 2021

European Strategic Autonomy is a project of which we can only see the beginnings today; if the French strategy carried by Emmanuel Macron and its European colleagues works, we will only really see concrete elements of it in the years 2030-2040. In the meantime, France continues to focus on its own military autonomy, the *2017 Livre Blanc* recalled that « France must maintain a twofold ambition: to preserve its strategic autonomy and to build a more robust Europe, in order to face the multiplying of common challenges »[143]

For a long time, France will retain certain attributes of power that cannot be merged with Europe. On the nuclear side, apart from the Franco-British cooperation in nuclear test simulation, no other initiatives towards other sharing come into play. France will even increase its military nuclear spending from an average annual cost of €2-3bn (2014-2019) to €5bn (2019-2025)[144]. It has launched the third-generation SNLE programme (Ballistic missile submarine), of which there will be four; the first is scheduled to enter service in 2035 and the fourth in 2050 (costs are secret). It has also decided to build a new nuclear-powered aircraft carrier at a cost of €4.5 billion, which should replace the current one in 2038[145].

On conventional equipment, France remains involved in programmes on a purely national basis. Recourse to national resources was made in 2010 when the country launched the Optical Space Component (OSC) programme alone, initially consisting of two satellites. This unilateral decision put an end to France's participation in the European MUSIS72 programme entrusted to OCCAR in 2001, which had accumulated delays due to technical reasons and lack of budget on the part of certain partners. Moreover, in 2015, Germany joined France in financing a third satellite. In 2014, France also made a national choice to modernise its fleet of armoured vehicles with the Scorpion programme, which provides for the delivery of Griffon transport armoured vehicles and Jaguar fire support armoured vehicles from 2019 for a total amount of €5 billion[146]. Finally, the third main piece of equipment of national production is the light joint helicopter (HIL), this helicopter is planned for 2028 and its development model is based on an entirely different logic to that of the Tiger: it is produced nationally, it is a military version of a civilian helicopter and its priority is robustness and not sophistication.

Through all the examples presented, it is plain to see that strategic autonomy of a national nature cannot be written off as a political will to invest significant sums in national programmes still continues. In parallel, the French arms industry will be more and more inseparable from Europe

[143] Revue Stratégique de Défense et de Sécurité Nationale. 2017.

[144] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

[145] Cabirol Michel, Pourquoi le futur porte-avions de la Marine nationale sera à propulsion nucléaire, La Tribune, 08 Déc 2020

[146] Gallois Dominique, Coup d'envoi du programme Scorpion de modernisation de l'armée de terre, Le Monde, 05 décembre 2014

because the major programmes that will structure tomorrow's defence industry will be carried out on a European scale; when they come to an end around 2030-2040, we'll be able to talk about a European armaments industry.

3.2 The revival of French exports (2014 until today)

The defence sector is today a healthy sector in France and the reason is largely due to the very good export figures since 2014. The upturn of exports occurred onwards from the mandate of François Hollande (2012-2017) with a significant increase in exports resulting form cyclical factors thanks to the signing of giant contracts particularly concerning the Rafale. Over 2015-2019[147], France placed itself in third place in the world for arms exports ($) with 7.9% of total sales. Between 2010-2014 and 2015-2019, French exports increased by 72%, rising from $30.8 billion to $56.4 billion. Over 2015-2019, 44% of exports went to the Middle East, while only 13.6% went to European Union countries. Exports were shared out between three main countries: Egypt with 26%, Qatar with 14% and India with 14%.

However, these exports have a double-edge, on the one hand they offer a financial stimulus but on the other they create a form of economic and political dependence on the importing countries. For some years, France's policy has been to rebalance arms exports from the Middle East to Europe[148]. The low level of French exports to Europe can be explained by the situation inherited from the cold war, when France's strategy of national independence led it to opt out of European cooperation and European armaments programmes such as the Eurofighter in the 1980s. Moreover, being able in the past to produce almost all military equipment itself, the country had no need to import European equipment, which did not create a situation of reciprocity. In 2014, the European countries belonging to NATO took the decision to devote at least 2% of their GDP to military expenditure by 2024, as part of their commitment to security in Europe of « burden sharing ».[149] If European countries are moving each other towards European preference through a *Buy European Act*, then the increase in budget spending will primarily benefit European exporters. This is one more element that has enabled France to envisage a readjustment of French exports from the Middle East to Europe.

And this shift towards Europe already happened in French exports. The share of the EU in the total amount of exports has risen from 7.1% in 2017, to 25.9% in 2018 and 41% in 2019[150]. Three

[147] Trends in International Arms Transfers, SIPRI, 2019

[148] Béraud-Sureau Lucie, La Politique française de soutient à l'export de défense, Raisons et limites d'un succès, IFRI, Juin 2017

[149] Mehta Aaron, B. Larter David, NATO's defense spending targets now 'gold standard' all allies should meet, key Trump officials say, Defense News 2020

[150] Rapport au Parlement sur les exportations d'armement de la France. Ministère des Armées. 2020

European countries, Belgium (contract relating to mine hunters), Hungary (helicopter sales contracts), and Spain (sale of two telecommunications satellites) were among France's top five customers in 2019.[151] On 28 May, Croatia officially selected the Rafale in a contract worth around €1 billion for 12 second-hand aircrafts. The Rafale is also currently in the running for contracts with Switzerland and Finland (where it is in a challenger position to the US aircraft).

This positive export trend gives France the leeway for facing the future with confidence and the certainty that French industrial capacity will be predominant in a future European defence industry.

3.3 A new framework for armaments cooperation in Europe

French acquisition policy was marked after 1990 and for some thirty years awards by budgetary restrictions. We are now witnessing the end of this period of decline and moving towards an ascendant phase. Indeed, in 2018, France passed the 2019-2025 military programming law, whose objective is to reach a defence budget of 2% of GDP in 2025[152]. Despite the context of the Coronavirus pandemic, the trajectory has not been corrected. Spending on conventional armament programmes will rise from an annual average of 7-8 billion euros (2014-2019) to 10 billion euros[153]. The same trend is present on a European scale as for Germany, where its part is set to reach 1.5% of GDP in 2025, representing a substantial effort, given that it started from a lower level of 1.2% of GDP in 2018[154], compared to 1.8% for France.

This variation is fundamental for understanding the current logic of armament programmes, being carried out under lesser financial constraints than before. This is particularly true for current highly ambitious European armaments programmes.

France's strategic partnerships in armaments

In 2010, the Franco-British Lancaster-House agreements opened a bilateral dialogue between the two countries undertaking numerous discussions on the joint development of various equipment. Discussions on UAVs did not come to fruition, while those on missiles and Maritime Mines Counter Measures did, resulting in joint programmes whose products are expected to enter service in the early 2020s. But despite these two successes, they did not involve large-scale programmes. BREXIT in 2016 put a strain on the bilateral dialogue which stalled due to lack of political will. At

[151] Rapport au Parlement sur les exportations d'armement de la France. Ministère des Armées. 2020

[152] Cabirol Michel, Près de 300 milliards d'euros pour les armées entre 2019 et 2025, La Tribune, 08 Févr 2018

[153] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

[154] Germany aims to spend 1.5 percent of GDP on defense by 2025: minister, Reuters, MAY 14, 2018

the time of its signature, the bilateral agreement had focussed a lot of expectations and was indeed promising; in the face of the disappointments and its overall failure, expectations now turn to the Franco-German partnership. The renewal of this partnership was sealed in 2019 with the Treaty of Aachen, presented as the direct successor to the 1963 Elysée Treaty.

Today, France and Germany are by far the two largest European military powers (excluding the UK); this agreement was therefore essential for structuring future European strategic autonomy. Article 4 of the treaty states: « The two states (...) shall intensify the development of joint defence programmes and their extension to partners. In so doing, they intend to promote the competitiveness and consolidation of the European defence technological and industrial base »[155]. The two countries have been discussing joint projects for several years and this new treaty, through the political will behind it, seriously improves the required conditions for their realisation. The main project is the FCAS - Future Combat Air System, which will eventually replace the Rafale on the French side and the Eurofighter Typhoon on the German side (from 2040). The two countries also want to work together on the development of a new combat tank to replace the French Leclerc and the German Leopard 2. This will be a second attempt for the two countries in this sector, who also agreed in 1963 on the production of a common tank until negotiations failed. Both projects are the focus of intensive negotiations, as neither country wants to repeat the mistakes of the past. Key issues for both countries to resolve were the division of labour and the question of exports. The Treaty of Aachen begins to address the task-sharing issue and helps to harmonise Franco-German export policies.

This agreement was necessary due to the differences between the French and German export systems. Germany, with its parliamentary system and history, is more sensitive to these issues of arms export control. For example, it has adopted strict regulations as in 2015 when it suspended its arms deliveries to Saudi Arabia. France, with its vertical political system, is less sensitive to parliamentary influence and public opinion. In 2015, it continued to deliver arms to Saudi Arabia even though the Arab kingdom has still refused to sign the Arms Trade Treaty since 2013.

The Aachen Treaty establishes a common « public and legally binding » approach to arms exports[156] with the need to converge export policies towards a common approach: it is agreed that « no Contracting Party shall oppose a transfer or export to a third party desired by the other Party, except in exceptional cases »[157]. Each country has to now amend its own legislation with the problem that they do not have the same appreciation of the « exceptional » clause means. France would rather this clause to be so exceptional that it would never happen, as it is well aware that future orders from the three partner countries will not be sufficient to ensure a viable economic model; exports outside Europe will therefore be indispensable. Germany tends to agree with this

[155] Puhl Detlef, La coopération en matière d'armement entre la France et l'Allemagne. Un terrain d'entente impossible ? IFRI, novembre 2020

[156] Rapport au Parlement sur les exportations d'armement de la France. Ministère des Armées. 2020

[157] Puhl Detlef, La coopération en matière d'armement entre la France et l'Allemagne. Un terrain d'entente impossible ? IFRI, novembre 2020

view but among the German political parties, the Greens - currently in opposition - are much firmer on this point than the ruling party[158], and as we speak they are in a good position to win the next federal elections in September 2021.

Current European armaments programmes

As we speak, France is involved in three major weapons projects in Europe. The first is the Eurodrone project, an old project having difficulty seeing the light of day. Then two more recent projects: the MGCS - Main Ground Combat System project between France and Germany; and the FCAS - Future Combat Air System project between France, Germany and Spain.

The French and Germans are also discussing the modernisation of the Tiger to Mark 3 standard[159] and the MAWS (Maritime Airborne Warfare System) programme to replace the French Navy's Atlantique 2 maritime patrol aircraft and the German Navy's P-3 Orion. On both these programmes, France is waiting for Germany's approval, which is showing pusillanimity[160].

-Eurodrone: The project to develop a European MALE (Medium Altitude Long Endurance) drone had been in the works for many years and began to take shape in 2013 with the decision of European industrialists - Airbus (EU), Dassault (France) and Finmeccanica (Italy) - to form a consortium for its production. But the lack of budget, political will and serious industrial proposals meant that the proposals never came to anything[161]. It is only from 2019 that things began moving in the right direction with an agreement between States and manufacturers on a total price (development and acquisition) of €7.1 billion and on technical performance (the UAV will not be armed at first). The programme is due to start in the second quarter of 2021 and enter service in 2028. Germany has the leadership of the project, assuming €3.1 billion, and France, Spain and Italy complete the picture[162].

-European tank of the future: This project brings together three partners, the French Nexter and the German KMW united in the holding company KNDS, and another German company Rheinmetall, which was recently invited to participate after strong lobbying efforts. This third partner is currently blocking the programme after making demands for the sharing of tasks deemed non-acceptable to its two partners. Negotiations are therefore stalling in particular over armament that Rheinmetall considers as its own preserve[163]. If the partners manage to reach an agreement, this

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158 Puhl Detlef, La coopération en matière d'armement entre la France et l'Allemagne. Un terrain d'entente impossible ? IFRI, novembre 2020

159 Cabirol Michel, SCAF, Eurodrone, Tigre, MGCS, MAWS : d'un hiver désespérant à un été prometteur ? La Tribune, 18 Mai 2021

160 *Ibid.*

161 Cabirol Michel, Drones : l'histoire d'un incroyable fiasco français, La Tribune, 30 Mai 2013

162 Cabirol Michel, Le Bundestag approuve le financement de l'Eurodrone (drone Male européen), La Tribune, 15 Avr 2021

163 Cabirol Michel, SCAF, Eurodrone, Tigre, MGCS, MAWS : d'un hiver désespérant à un été prometteur ? La Tribune, 18 Mai 2021

cooperation will lead to the entry into service of the successor to the French Leclerc and the German Leopard 2 in the late 2020s.

-New generation aircraft: The FCAS is the largest cooperation project in which France has ever participated. The choice of a Franco-German development was made in line with the Aachen Treaty of 2019; Spain some time later joined the project. This project is directly set opposite to the Tempest project launched by the United Kingdom in 2020 in partnership with Sweden and Italy. The two projects facing each other poses a problem for the creation of an EDTIB, as the two projects do not intersect, thus repeating the situation of the 1980s when European countries embarked on different projects with the Rafale, the Eurofighter Typhoon and the Saab Gripen (Sweden). In the long term, therefore, if the political choices are confirmed, we'll go from three military aircraft in Europe down to two, arguably still a step forward. The fact that the United Kingdom is running a competing project is not so problematic in itself as it now sits outside the European Union, for Sweden neither as it is a minor country; for Italy however, a real problem arises, as it is an indispensable partner for the creation of an EDTIB.

On the FCAS, France, Germany and Spain have completed phase 1A[164], which consisted in agreeing on the sharing of tasks and a roadmap. Each country has a proportional share of 1/3 of the industrial output; however, France has pushed to introduce a vertical organisation to the programme and taken the lead after much negotiation. The DGA has the role of international coordinator and is replaced at national level by three national coordinators (Dassault for France, Airbus for Germany and Indra for Spain). The programme is divided into 7 pillars, the principle being that each country has a leading national company on at least two pillars[165].

France is leader on the aircraft pillar with Dassault (seconded by Airbus), and given the importance of this pillar this makes it the leader of the programme. It is also the leader on the engine pillar with Safran, seconded by the German MTU. Germany is the leader in the UAV and combat cloud pillar with Airbus Germany. The fifth pillar is that of « overall coherence » and therefore brings together all the players. Finally, when Spain joined the project in 2020, it became the leader on the last two pillars with sensors for Indra and stealth for Airbus Spain

After agreeing on the organisation of the programme, in May 2021, the partners initiated the start of phase 1B which will run from 2021 to 2024; each country will share a bill of €3.5 billion. It is the definition phase for a demonstration version of the aircraft, which should fly by 2026-2027[166].

For the FCAS programme to be successful, the partner countries must not repeat the mistakes of past cooperation. Already one positive point is this programme does not bring together more than three partners because we've seen the problems encountered with programmes having large

[164] Cabiro Michel, Et l'Allemagne, l'Espagne et la France finalisent enfin un nouveau jalon sur le SCAF, La Tribune, 17 Mai 2021

[165] 2040, l'odyssée du SCAF - Le système de combat aérien du futur, mai 2021

[166] Cabiro Michel, Et l'Allemagne, l'Espagne et la France finalisent enfin un nouveau jalon sur le SCAF, La Tribune, 17 Mai 2021

committees, lengthening the deadlines. Earlier, we regretted the absence of Italy in the FCAS programme, but it would clearly have been very complex to carry out the programme with four partners in view of the current complexity with three partners.

On the previous cooperations, the Court of Auditors assessed three problems that have hindered their success[167].

-The lack of harmonisation of the finished product: products leaving the factory often poorly harmonised, with several different versions depending on the desired use by the partner countries. The Tiger, NH90 and FREMM were the least harmonized products while the A400M had only one main version based on the CSA plateforme.

-Non-sharing of maintenance: each country responsible for maintaining the product in operational condition.

-Lack of technological adaptation: cooperation was based on overly rigid roadmaps that left little room for adaptation when technological innovations occurred during a programme.

Finally, from a French point of view, one of the challenges of the FCAS programme is that of intellectual property. By developing the Rafale independently, France has accumulated, through Dassault and others, considerable technological patents thanks to large state expenditure (total cost of the Rafale programme: €43 billion). Countries are still not in agreement on the issue of intellectual property rights and the French State is caught in a dilemma: on the one hand, Germany pushing hard to open up property rights as much as possible (officially to facilitate the development of the programme and unofficially to capture skills at lower cost and move upmarket) and on the other, Dassault extremely firm on the fact that it is not prepared to share decades of research.

France should not be fooled by German motivations. Since Germany was allowed to rebuild a defence industry after the Second World War, its defence industrial policy has been based on the same idea: catching up. Cooperation is a way for Germany to achieve this notably by obtaining French concessions through political pressure. It now remains to be seen whether the French political authorities will lie down or not.

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The period of the 2010s saw the introduction of a policy that was increasingly clear about its intentions to build a European strategic autonomy. The 2008 White Paper led to a change more in semantics than in practice but from 2017 onwards some very important developments have occurred, needing to be monitored month by month as they are happening so quickly. These recent developments allow us to bring concrete material evidence to our analysis, thus avoiding speculative what ifs. The only point where French policy may be ambiguous is on the relationship between a futur European defence and NATO, where it is careful not to upset its partners. As far as

[167] La Coopération Européenne en matière d'armement, Un renforcement nécessaire, soumis à des conditions exigeantes, La Cour des Comptes, 2018

armaments are concerned, as we speak (May 2021), the project of a European defence industry is most definitely on-track.

CONCLUSION

The method we have followed in this thesis is simple. First, we've layed out the foundations of the model of French arms policy, then divided into several major sections: foreign policy, industrial policy, detailing of acquisition policy and export policy. We then explain how each of these elements of armaments policy has evolved due to multi-factorial reasons. This work allows us to now summarise why France changed its approach to acquisition policy and focused on European cooperation rather than self-sufficiency.

In the 1960s, the ultimate goal of French defence policy was to become a first-rate power from a geostrategic point of view and in order to achieve this goal, France proceeded with a policy aimed at becoming militarily autonomous at several levels: political (being the sole judge of its decisions), operational (being able to carry out a military intervention on its own) and industrial (not being dependent on foreign military equipment) and these three characteristics combined formed strategic autonomy. Nowadays, the goal of French policy since the 2010s is to make Europe a geostrategic power and in order to achieve this goal, France is finally applying what it has done in the past for itself but at the European level. It therefore seeks to create a European strategic autonomy that is also political, operational and industrial.

The reason for the paradigm shift from the national to the European level lies in the inherent logic of the European Union. In the 1990s, we moved from an economic union to a political union, the integration of which became more and more pronounced as a result of treaties and crises. The construction of Europe is a permanent movement in which each State gradually transfers some of its national competences to the EU in a coordinated manner. This responds to the principle of subsidiarity, which requires that all competences deemed irrelevant at national level be passed on to the next level of governance. Therefore, if France decided from 2008 and more concretely from 2017 onwards to work on the construction of a European Defence, this means that it considered it irrelevant to keep an exclusive sovereignty in the field of defence including the defence industry.

Already by the 1990s and 2000s, France did not consider it relevant to retain full sovereignty in the defence industry for economic reasons. These years saw the French State abandon its interventionist policy based on a pro-active acquisition policy and a strong involvement in production and legislation. This model placed the survival of the defence industry on the state and therefore required a strong political will to ensure the resulting expenditure. However, when the Cold War ended, the state was no longer willing to maintain the same level of spending, which inevitably thrust the model into an existential crisis; co-incidentally, exports collapsed prompting the political authorities to react forcefully. The state then heavily reduced its involvement in the armaments

system in order to reduce its spending then let the defence industries flourish on their own. Moreover, thanks to the implementation of European armaments programmes, it pooled the development costs of certain equipment with its European neighbours, which also guaranteed complete production lines. European cooperation at this time was seen through an economic prism, as the aim was to soften the consequences of budgetary austerity, which only really ended in 2019.

The 2010s became a new era because the state now considered it irrelevant to retain a large degree of sovereignty in the defence industry for political reasons. The pervasive observation in French doctrine is that France is too small to really weigh in a world made of giants such as the United States, China or Russia. But Europe theoretically has the means to become a major military industrial manufacturer, becoming a pillar of a future European military power. In addition to this political reasoning, there is also a technological cause, as a European industry would be better prepared to turn the corner of new technologies such as artificial intelligence, big data, the combat cloud, etc.

Important steps have already been taken in the direction of a European Defence. First of all, there has been the creation of European institutional structures in charge of armaments (OCCAR, European Defence Fund), there is the beginning of a common acquisition policy thanks to the setting up of European armaments programmes and there is legislation that tends to harmonise related exports. But there are still many obstacles to its development.

The European Union is not a state but an inter-state organisation, so it is more complex and time-consuming to get things moving at European level than at national level. The European states do not have the same vision of a Europe of Defence, in particular on the relationship to be given to NATO, which is a real pebble in the shoe of the European defence policy. There is therefore, as we have shown, work to be done on the creation of a common strategic culture which should ultimately allow us to be able to take decisions on the defence aspect without having fundamental disagreements.

A second limitation lies in the lack of efficiency of certain European armaments programmes, which have accumulated technical slitches and delays. However, this can be attributed to mistakes made in the past which have been taken into account in the setting up of new armaments programmes. One can imagine that if the development of the FCAS starts to encounter setbacks, for example due to the Spanish side not being able to do its part of the work, the programme will receive a raft of criticism about the danger of not making the equipment itself. These criticisms would be all the more merited as, at the same time, the domestically produced Rafale is racking up export contracts.

Finally, the nature of Europe means that certain competences cannot be entrusted to it (at least in the long term), the most obvious being military nuclear power, which, due to its sensitive nature,

requires total control and can therefore only be managed at national level. Therefore, even if we experience progress in the future on the European defence front, the European Union will not be considered a geostrategic power on a par with the United States, China or Russia.

As we show in our analysis, the first concrete results allowing for a real European defence industry will come in the years 2030-2040, when the major European armaments projects launched recently will come into service. The industrial aspect is probably the most encouraging aspect of the European defence project, but to be able to say this with certainty, one would also have to analyse the prospects for the creation of a rapidly deployable and operationally effective European intervention force. Even if it were created, it would probably be more or less dependent on NATO.

Finally, let us end on a topical note, as we find the world still entangled with the Coronavirus pandemic, it is interesting to note that Europe has often used crises as a pretext for deepening its competencies and has for example, taken on competencies in Health that it did not have before the pandemic crisis. The question that we can ask ourselves, and which is open because we do not have the necessary hindsight, is whether or not this crisis will also contribute to the deepening of Europe's competences in the area of defence.

Abbreviations

CASA: Spanish aeronautics and defence company, merged in 1999 with DASA and Aérospatiale to form EADS

CNES: French public establishment in charge of the French space programme

DASA: German aeronautics and defence company, merged in 1999 with CASA and Aérospatiale to form EADS

DMA: French Armaments Agency, renamed DGA in 1977

DGA: Current French Armaments Agency, successor of DMA

DTCN: French naval construction, renamed Naval Group in 2018

DTIB: Defence technological and industrial base

EADS: Ancestor of Airbus

EDTIB: European defence technological and industrial base

FCAS: Future Combat Air System, successor to the Rafale from 2040

FREMM: Franco-Italian multi-role frigate

GIAT: Land arsenals, ancestor of the public company Nexter

HIL: Airbus helicopter H160 militarised version, scheduled to enter service in 2028

INF: US-Soviet Nuclear Arms Control Treaty signed in 1987

KMW: German land-based armaments company

KNDS: Franco-German holding company bringing together Nexter and KMW since 2015

MALE: Medium Altitude Long Endurance Drone

MAWS: Maritime Patrol Aircraft

MGCS: Franco-German combat tank project

MTU: German aircraft engine company

OCCAR: European armaments programme contractor created in 1996

PAAMS: Naval Anti-Aircraft Missile

SAMPT : Anti-aircraft and anti-air ballistic missile

SEREB: French company in charge of missiles carrying atomic weapons, integrated into Aérospatiale in 1970

SNLE: Nuclear-powered submarines with nuclear strike force

START 1: US-Soviet nuclear arms control treaty signed in 1991

UAV: Unmanned aerial vehicle (drone)

VBCI: French infantry fighting vehicle

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