

Defense Innovation and the Future of Transatlantic Strategic Superiority: A French Perspective

By Sylvie Matelly

The Defense Innovation Initiative — also referred to as the Third Offset Strategy — was announced in November 2014, aiming to “identify and invest in innovative ways to sustain and advance U.S. military dominance for the 21st century.” To address the erosion of U.S. technological superiority and conventional deterrence, the U.S. Department of Defense announced an ambitious innovation-based program to offset the competition particularly from states in a long-term perspective. The assessments that served as the basis for this strategy — the rapid modernization of China’s defense, emerging Russian ambitions and capabilities, the need to foster exchanges between public and commercial actors in defense innovation, and the general spread of precision munitions and guided weapon systems — have remained relevant after the 2016 elections, and U.S. allies must consider how this initiative may affect their military cooperation in the long run. This analysis is part of a series of responses to the initiative from U.S. allies.

The election of President Macron came as a surprise in many ways. He was a relative newcomer to the political stage, his program provided many structural reforms, and he was openly Europhile in an Eurosceptic climate. In the summer of 2017, he enacted the reforms that he had promised by launching a Strategic Review of Defense and National Security (SRDNS). Published at the end of October, it lays out the reforms for France’s defense policy. However, it is difficult to argue that the SRDNS marks a break with the previous reviews: threats remain the same, alliances live on, and the will to preserve national strategic autonomy remains a central focus. On the other hand, the new president appears to take a more realistic approach to budgeting, since the recent Military Planning Law for 2019–2025 plans to increase the defense budget by €10 billion in order to reach 2 percent of GDP by 2025. For years, French defense ambitions were let down by inadequate funding — under Macron, this seems to be changing.

President Macron supports the various initiatives launched by the European Commission and EU member states on defense cooperation at the European Council in December 2016. At the same time, France is losing its closest EU defense policy ally as a result of Brexit. Its defense relationship with the United Kingdom is defined by several initiatives, including the 2010 Lancaster House Treaty. Once the U.K. officially leaves the EU, France will be the only EU country to have a permanent seat on the UN Security Council and the only EU nuclear military power.

Meanwhile, threats in the neighborhood abound, and the terrorist threat in France remains high. The evolution of the relationship with Russia and developments in



the Middle East constitute other priorities. Finally, uncertainty about the future of the United States' engagement in European security has increased since the election of Donald Trump.

France is very attached to its alliance with the United States within NATO and beyond. "Allied but not aligned" with the United States, France has always defended its right to free speech, a tendency which has been alternately welcomed and criticized by Washington, depending on the context and administration. Strategic autonomy was and is the main objective of France's defense policy. The country has therefore always maintained military capabilities and a credible defense industry, which has been both a driver and an obstacle to industrial cooperation with the United States.

France's Reaction

France's 2017 SRDNS is not a reaction to the United States' Third Offset Strategy (TOS), but a reaction to the same challenges that inspired the initiative. It was designed to present the threat perceptions and priorities of the new president and his government, and to reaffirm the sovereignty and strategic autonomy of France. The SRDNS therefore does not directly and explicitly refer to the TOS. However, the context in which the French armed forces operate is quite comparable to that for which the TOS was written. For example, the threat perceptions in each documents are similar. Both underline the rise of cyber-threats and the proliferation of civilian technologies that can lead to new threats or to weapons development by non-states actors. In the case of France, this has led to a redeployment of the investment of the Ministry of the Armed Forces in critical technologies.

The awareness of rising threats and of their implications for defense innovation in France has coincided with the development of the TOS in the United States. Before the SRDNS was written, the French defense procurement agency (*Direction Générale de l'Armement*) launched a reflection on this topic and published a science and technology policy document at the end of 2014, defining science and technology as the new denomination for Ministry of the Armed Forces research and innovation. This

notion expands the spectrum of defense innovation, integrating an upstream approach with the need to better understand the geopolitical, economic, technical, and technological context. It also aims to include the public and private sectors to improve spin-offs between civilian and military research.

Several elements introduced in the 2017 SRDNS bring the French strategic analysis closer to the U.S. TOS — in particular agility, civilian innovations, and budgets. One example is the emergence of the notion of military agility, understood as the need to better adapt to a changing and ever more complex environment. The SRDNS defines the concept as "a quick and reversible adaptation to a given situation, without preventing otherwise long-term actions."¹ In the TOS, the same idea is used and defined as "the ability to act appropriately in a changing context and to embrace the strengths of flexibility, adaptability, and responsiveness."²

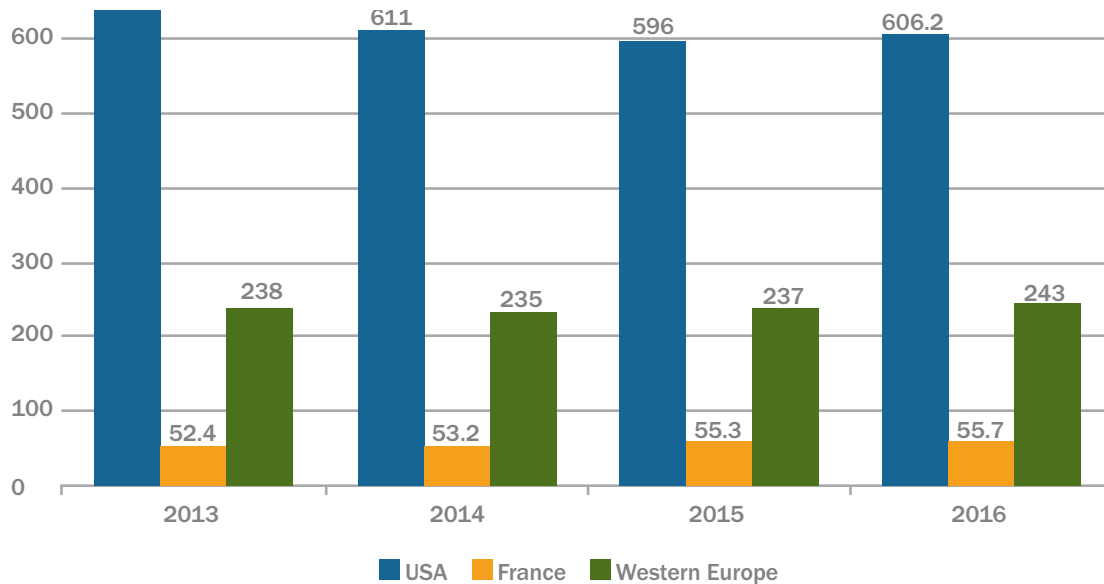
France has also reached the same conclusions as the United States concerning the dynamism of the civilian sector in generating innovations and its capacity to produce cheaper and particularly effective technologies. This may be an opportunity but also a threat, as they can allow the military to access innovative technologies faster and at a lower cost. At the same time, they accelerate technological progress to such a degree that the military needs to innovate faster and faster to preserve its capabilities and superiority. The SRDNS concludes that it is imperative that necessary skills be acquired in order to minimize risks and to exploit possibilities.

“ **Introduced in the French Strategic Review, agility, civilian innovations, and budgets are elements bringing French strategic analysis closer to TOS.** ”

1 French Strategic Review on Defense and National Security, 2017, <http://www.defense.gouv.fr/dgris/la-dgris/evenements/revue-strategique-de-defense-et-de-securite-nationale-2017>.

2 David Walker, Deputy Assistant Secretary of the Air Force for Science, Technology and Engineering, Office of the Assistant Secretary of the Air Force for Acquisition during the Subcommittees "Emerging Threats and Capabilities (114th Congress) Hearing of 24 February 2016, in the framework of the Department of Defense Fiscal Year 2017 Science and Technology Programs: Defense Innovation to Create the Future Military Force.

Military expenditures by the United States, France, and Western Europe (USD, 2015)



Source: SIPRI (2017), Military expenditures database

Western European countries included: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherland, Norway, Portugal, Spain, Sweden, Switzerland, and the U.K.

The TOS also addresses the need to increase the relevant U.S. defense budgets in order to deal with the rising costs of innovation. Given the size of its defense budget in comparison to that of the United States, France is much more affected by this issue, and it is therefore necessary for it to rethink its innovation policy. The SRDNS calls for a change in the culture of the Ministry of the Armed Forces in order for it to reach out further to the civilian research centers and the private sector, including supporting national, European, and international cooperation.

The 2013 White Paper on Defense and National Security defines defense research as a priority. Following the release of the White Paper, the 2014–2019 Military Planning Law increased significantly the budget for research and development, while the French procurement agency launched a reform of its defense research. The reform was presented in 2015 under the term science and technology,³ which means "science, research, technology, and innovation"

³ <https://www.defense.gouv.fr/english/dga/actualite/tout-savoir-sur-l-orientation-de-l-effort-de-recherche-pour-la-defense>

and includes all the spectrum of defense research from upstream research stages to the realization of demonstrators. It has the ambition to federate private and public actors, defense, dual-use, and commercial industries to strengthen the French innovation system and develop spin-off.

As in the case of the TOS, the challenge is that the new science and technology policy has an impact not only on the technological innovations produce by the procurement agency in the next 30 years, but also on the entire French industrial production supporting in return the French Defense and Technological Industrial Base (DTIB). This could affect the innovation process but also the methods of acquisition, and more generally the conduct of armaments' programs.

The TOS could eventually have consequences on the level of interoperability between French and American forces, as well as on armaments or research and technology programs conducted by the U.S. Department of Defense and private American

companies in partnership with European actors. As of today, however, there are so far no indications that French policy is reacting to this possibility. In this context, and as was often the case in the past, France sees European cooperation as a way to improve both interoperability with the United States and European autonomy at the same time. Within that perspective, it largely supports the momentum for European defense cooperation since December 2016. Clearly, this includes the need to develop European security capabilities in order to become less dependent on the United States. Another important objective is to support a European security and defense policy. France has always emphasized strategic autonomy: nationally during the Cold War, and within the context of the EU since the collapse of the Soviet Union.

Threat perceptions

France's military is engaged in crisis theaters that are widely dispersed. It focuses mainly on the fight against terrorism at home (*Opération Sentinelle*) and abroad (in the Sahel region and the Near East). These commitments place a great deal of stress on capabilities and resources. President Macron promised new means to deal with this stress along with an increase in the military's budget in 2018, aiming to comply with NATO's threshold of 2 percent of GDP by 2025.

The 2017 SRDNS highlights the fact that the threats and risks identified in the 2013 Defense and National Security White Paper developed more rapidly and more intensely than anticipated.⁴ Perhaps as a result, according to one government source at the time, "The president's will is to go fast, to quickly look at the strategic context, to examine our interests, to prioritize them, to define our ambitions," in a European perspective.⁵ In the French assessment, the main threat is jihadist terrorism. According to the SRDNS, this threat is evolving, spreading to new regions, and flourishing in situations of chaos, civil

⁴ The 2017 Strategic Review was officially introduced on October 13, 2017. It replaces the 2013 Defense White Paper. In addition, the new military planning law LINK released in February 2018, defined the means to defense and national security for the 2019-2025. <http://www.livreblancdefenseetsecurite.gouv.fr/>.

⁵ Quoted by Sophie Louet, "La prochaine loi de programmation militaire sur les rails", Reuters, 29 juin 2017.

wars, and fragile states. More broadly, the SRDNS says that crises and threats are getting closer to Europe, which has experienced a return of war and use of force along its borders. The migration crisis, vulnerabilities in the Sahel-Saharan belt, and lasting destabilization in the Near and Middle East are cited as persisting threats. Moreover, threats and vulnerabilities tend to be amplified by other developments, such as climate change, organized crime, and pandemics.

Finally, the rise of mass-technologies in cyberspace and in the information field weakens societies and their security. They create growing requirements for defense and protection means to prevent and fight malicious actions and interferences, the consequences of which could be significant. The assertion of military power by several emerging countries is also a notable threat. It is changing the balance of power and risk. It also feeds the logic of competition for access to natural resources and control of strategic spaces (maritime, air, exoatmospheric, and digital)

Technology and Military Capabilities

New *modi operandi* based on the ambiguity of opponents' intentions are being developed by enemies. They use a wide range of civilian and military techniques to intimidate and destabilize people, generating higher risks of escalation. In addition, an increasing number of actors are able to acquire advanced military capacities thanks to technological developments and the diffusion of civilian technologies. These developments challenge the operational and technological superiority of Western militaries in land, sea, and air as well as in the digital space, which is becoming an area of potential confrontation. The SRDNS underlines that this could also become the case in exoatmospheric space.

In this context, military commitments have become increasingly complex and expensive. The United States, Russia, and China focus on the development of high technologies, and the fear of a decline in European capabilities is clearly underlined by the SRDNS. Moreover, civilian technologies have the potential to proliferate, particularly in artificial intelligence, robotics, networking systems, and

biotechnology. In the coming years, France's military must ensure its ability to integrate these fields to maintain its operational superiority.

In 2016, the Ministry of the Armed Forces stopped nearly 24,000 cyber-attacks. Their objectives were diverse, ranging from civilian to military. Then Minister of Defense Jean-Yves Le Drian said: "digital combat is now at the heart of all defense and security issues."⁶ Thus, the digital space is now considered as a fifth battlespace and requires extensive coordination and complementarity between military actions and those carried out by other government services. Characterized by the multiplicity of actors in a still underdeveloped legal framework, cyberspace is a crucial vector of new vulnerabilities. The SRDNS defines the concept of digital sovereignty as a priority issue, and calls for strengthening the previous permanent cybersecurity posture by developing offensive and defensive capabilities.

Short-Term and Long-Term Priorities

The SRDNS has defined strategic autonomy as the primary objective for France. The military must be able to act autonomously in the fields of nuclear deterrence, territorial protection, intelligence, operations command, special operations, and the digital space. This is an amplification of the framework of strategic autonomy compared to what was defined in the 2013 White Paper. Furthermore, more than transatlantic cooperation, European cooperation must become the norm in defense research and security, unless real conflicts of interest are revealed in the long run. Targeted cooperation with other countries can also lead to interesting opportunities. Finally, in the long term, the use of civilian research will have to be optimized in order to better exploit the duality of technologies. Therefore, dialogue with civilian organizations, as well as their awareness of defense and security issues, must be reinforced considerably.

The financial resources dedicated to science and technology — including science, research, technology, and innovation — were already increased

in 2016 and 2017, a trend that is likely to continue in the coming years. Investment is envisioned in fields such as hypervelocity, sensor fusion, and active stealth. It will also build on breakthroughs in civilian technologies (such as artificial intelligence, robotics and decisional autonomy, systems networking, new materials, biotechnologies) to better prepare the next generation of systems that should be capable of conferring operational superiority and be competitive in an increasingly competitive export market. After the SRDNS, a new document is expected at the end of 2018 to propose a revised policy to support innovation, identify, generate, capture, and experiment technologies.

Organization

When he formed his government, President Macron changed the name of the Ministry of Defense to the Ministry of the Armed Forces. Some viewed this as a willingness to fully play his role of chief of the armed forces. However, this new name may reveal another objective. The concept of national defense increasingly includes new concerns (such a security, public order, social integration, and development) that are addressed by other state institutions such as the Ministries of Home Affairs, Justice, and Education. Renaming the ministry underlines the fact that it is dedicated to military affairs and is only one actor among others dealing with defense issues.

Promoting a comprehensive vision of defense and security, the 2017 SRDNS states that defense policy must focus on innovation and the digital revolution, and on introducing more agility and flexibility into the design and operational management of weapons programs. Beyond the technological dimension, defense policy should foster relationships between the defense world and other areas of research.

Strategy

France's national defense posture is organized around five strategic functions defined by the 2013 White Paper and included in the 2017 SRDNS: deterrence, protection, knowledge and anticipation, intervention, and prevention. These will structure the identification

⁶ Espace numérique, un nouveau champ de bataille, Dossier Grand Angle in Armées d'aujourd'hui, n° 415, Avril 2017

of new defense priorities in innovation. The SRDNS identifies the following key areas in which innovation is expected to contribute.

- Human intelligence, including electromagnetic, radar, optical, digital diversifying platforms, sensors, and operating methods (manned aircraft and remotely piloted aircraft, naval units, space means).
- Capabilities to analyze an exponentially growing volume of data by improving the interconnection between different systems. A special effort will be made to increase support for intelligence analysis (big data, artificial intelligence).
- Knowledge of the exoatmospheric environment, which has become one of increasing vulnerability for command and surveillance means. The monitoring of low-orbiting objects — especially the monitoring of geostationary orbits, planned in particular within the framework of the Command and Control System for Aerospace Operations — is essential for ensuring the security of space assets and the conduct of operations.
- Early-warning capabilities to better identify ballistic threats, determine the origin of a shot, and assess the target area.
- Command and control capabilities and strategic, operational, and also tactical planning capabilities (air, naval, and ground components), including deployable modules, as well as human resources trained to take into account the multiplicity of commitments.

Stance on Innovation

France's defense procurement agency (*Direction Générale de l'Armement*, DGA), is responsible for innovation within the Ministry of the Armed Forces. The innovation process in defense is based on several strategic documents:

- The White Paper on Defense and National Security and the SRDNS define the guidelines as previously described.

- The 30-year Prospective Plan (PP30) is the main tool for the identification of equipment needs, and for the orientation of defense studies and research. It is developed by military staff officers and DGA engineers.
- The Research and Technology Strategic Plan is based on the major guidelines set out in the PP30. It describes the "DGA's overall action to anticipate and control those technologies that are necessary and can be used in future defense and security systems."⁷ It develops two different approaches. First, a capacity-based one that aims to identify technological developments prior the effective launch of programs to minimize risks of failure. Second, a more prospective one with the purpose of identifying promising technological possibilities and opportunities for future programs.
- The Policy and Scientific Objectives, published by the Mission for Research and Scientific Innovation (MRIS) of the DGA, aims to foster discussions with the scientific community. Updated every two years, it focuses on very low-maturity technologies, from basic research to early laboratory experiments. The MRIS was created to structure and reinforce the collaboration between the ministry and the academic and industrial scientific community. It is directed by the scientific adviser of the DGA.
- Research studies, defined by the ministry as "applied research and studies contributing to support and develop the Defense Technological and industrial base (DTIB) as well as the technical expertise needed by the Ministry of the Armed Forces to carry out the operations of armament."⁸

The report attached to the Military Planning Act 2014–2019 identifies the following priorities for these studies:

- Preparation for the renewal of the two components, — maritime and airborne — of deterrence.

⁷ PS R&T: Research and technology strategic plan, Direction Générale de l'Armement, Ministère de la Défense, 2009, https://www.ixarm.com/IMG/pdf/2A4_PSR_T_eng.pdf

⁸ Finance Law Bill, Program 144 « Environment and Defense Policy », section 7-3

- The conception of the future combat aircraft through a mutual dependency organized around the Franco-British cooperation, the processing of future developments of the Rafale fighter, self-protection and specifically military work on helicopters, the drones' insertion in air traffic within the Single European Sky Air Traffic Management Research Joint Undertaking (SESAR JU), and the increasing rationalization of the Franco-British defense industry for the renewal and renovation of missile systems.
- Submarine warfare, modular naval combat systems, operating in networks, and innovative architectures for surface vessels.
- The rise of cyber defense.
- The continuing efforts on the protection of vehicles, crews, and combatants, the monitoring of routes, and innovative technologies for ammunition.
- The preparation of future space programs for surveillance, observation, and communication; continued efforts on image processing, electronic warfare, exploitation and processing of intelligence data, digitization of the geophysical environment, and changes in radio navigation systems.
- The fight against remotely piloted aircraft.

In 2015, a document presenting the Orientation of Science and Technology was published by the DGA for the first time.⁹ It supports the new definition of the objectives of the ministry in terms of innovation, the overhaul of the organization of research, and the financial means dedicated to innovation for defense and security purposes. It will be updated if substantial changes occur in policy orientation and, in any case, no later than each new Military Planning Act.

The Science and Technology concept includes:

- Research studies

⁹ Document de Présentation de l'Orientation de la S&T, Période 2014-2019, Direction Générale de l'Armement, Ministère de la Défense, 2009, https://www.ixarm.com/IMG/pdf/post_dga_2014_2019.pdf

- Grants to various research organizations, including for dual-use research
- Prospective and strategic studies, as they allow to anticipate major changes in the strategic context
- Operational and technical-operational studies
- Research from the Atomic Energy Commission

The Orientation of Science and Technology document defines 14 aggregates, each of which constitutes a coherent subset of defense and security science and technology that will form the framework used by the DGA to manage and stimulate innovation. They are: combat aeronautics, cybersecurity, communication and networks, information systems, intelligence and surveillance, land systems and ammunition, naval combat and underwater fighting, nuclear submarines and propulsion, ballistic missiles, missiles and bombs, combat helicopters and transport aircraft, support for innovation, transversal skills, health and human factors, and chemical, biological, radiological, and nuclear defense.

The budget allocated by the Ministry of the Armed Forces for "Defense: Environment and Defense Policy Foresight" was €1 billion in 2016 and €1.34 billion in 2017. (The reform initiated in 2015 was also an opportunity to increase these investments.) This rise also reflects the increase in the scope of research, technological, and defense studies. The Finance Act for 2018 provides another, less significant, increase of 4.5 percent to €1.4 billion in the funds allocated to this program.

Government Departments and Agencies

The context of geopolitical uncertainty, an ever-more dynamic civilian research sector, and the challenges of innovation for French industry and national competitiveness have pushed the DGA to widen its fields of research and to diversify the actors involved. This has been based on greater coordination and a more systematic search for synergies between public and private actors, and between civilian and military actors, as well as the development of new sources of funding. Collaborative

links may be based on contractual relationships, formal partnership agreements, or the participation of defense staff in civilian research bodies and vice versa. Partnerships can be strategic (strategic analysis, orientation, evaluation) and/or operational (expertise, co-financing of projects, exchange of results, exchanges of scientists).

The 2017 SRDNS sets the following three objectives for defense innovation.

- Designing the technologies necessary for the development and evolution of systems.
- Strengthening industrial skills to carry out future programs.
- Identifying and supporting innovative small and medium-sized enterprises (SMEs) and industries as well as civilian research organizations in areas of interest for the defense and security sector.

The scarcity of available funds has led the ministry to rationalize as much as possible the use of defense research and development credits, focusing on defense research and letting other public bodies or departments fund dual-use research. Finally, cooperation between the different actors is supposed to benefit strongly from military spin-offs of dual-use research. Therefore, the DGA has institutionalized its relations with several public and private organizations: the Ministry of Education and Research, with which the DGA is involved in the development of the National Strategy for Research and Innovation; the National Research Agency (ANR), partly financed by the DGA since its creation in 2005 and with which it manages the ASTRID (*Accompagnement Spécifique des Travaux de Recherches et d'Innovation Défense*) financing program; and the majority of French public research organizations — the National Center for Scientific Research, the Atomic Energy Commission, the National Institute for Research in Computer Science and Automation, the National Center for Space Studies, the National Office for Aerospace Studies and Research, and universities — with which the DGA has signed cooperation agreements.

The preparation of future weapons programs also requires the involvement of private actors including SMEs as well as large industrial prime contractors. Several financing mechanisms exist in which the DGA participates significantly. Each fund is dedicated to research depending on the Technology Readiness Level as explained in the table on the following page.

Finally, the DGA has been directly involved in the activities of certain competitive clusters since 2005. These are “networks of companies, higher education institutions and public or private research organizations on a same territory that aim to work in cooperation to implement local economic development and innovation.”¹⁰ There are more than 70 such clusters in France. More than 50 percent of the ANR's funds for innovation is used to support projects hosted by clusters. The DGA has a leading position in nine of them and is associated with others in cooperation with the Ministry of the Economy. Finally, the DGA is also the second-largest financial contributor to the Unique Interministerial Fund, a program designed to support applied research and collaborative research and development projects (involving, for example, large companies, SMEs, and laboratories).

Conclusion

Defense cooperation between the United States and France will remain significant as the Ministry of the Armed Forces and Department of Defense have worked closely together for years and their militaries cooperate in NATO and ad hoc operations. Through its technological and capability advantages, the United States is an essential defense partner for France in the public and private sectors. However, cooperation in the field of defense innovation opposes two contradictory arguments. On the one hand, France's authorities as well as its research actors and companies regularly express the fear that the country would experience a serious strategic and technological downgrading if cooperation with

¹⁰ Finance Law n° 2004-1484, 30 December 2004

Policy Brief

Facilities	RAPID*	ASTRID**	ASTRID Maturation	Unique Interministerial Fund
Who	SMEs with less than 2,000 employees	Research organizations	SMEs and research organizations	Companies
Partnership	Possibility of association with one research organization and/or one company	Possibility of association with other research organizations and/or companies	Need to involve at least one research organization and one SME, one of which may be the project leader. One of the partners must have participated in an initial ASTRID project	Need to involve at least two companies (including the project leader) and a research or training organization
Kind of Projects	Industrial research or experimental development with strong technological potential	Fundamental or industrial research	Industrial research and experimental development	Development of a new product or service with a strong innovative content. Project labeled by at least one competitive cluster
Technology Readiness Level	3 to 6	1 to 4	3 to 6	4 to 7
Maximal Amount by Project		< €300,000	< €500,000	Possibility to be funded for more than €750,000

*Dual-use Innovation Support Regime for SMEs (RAPID - Régime d'Appui pour l'Innovation Duale)

**Specific support for Research and Innovation Works (ASTRID - Accompagnement Spécifique des Travaux de Recherches et d'Innovation)

the United States is not deepened. On the other hand, however, the prospect of weakening France's strategic autonomy by increasing its already considerable defense dependence on U.S. technologies and capabilities is also a source of concern. Finding the right

balance of cooperation in order to guarantee France's security without jeopardizing its independence will be key to innovation cooperation in the future.

The views expressed in GMF publications and commentary are the views of the author alone.

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About the Transatlantic Security Project

GMF's Transatlantic Strategic Superiority in the 21st Century project aims to study key transatlantic perspectives on defense innovation and its implications for defense cooperation in the 21st century. The project, led by GMF's Paris office in partnership with Airbus, addresses the strategic and industrial aspects of defense innovation in the United States, France, Germany, and the United Kingdom, and fosters transatlantic dialogue on such issues.

About GMF

The German Marshall Fund of the United States (GMF) strengthens transatlantic cooperation on regional, national, and global challenges and opportunities in the spirit of the Marshall Plan. GMF does this by supporting individuals and institutions working in the transatlantic sphere, by convening leaders and members of the policy and business communities, by contributing research and analysis on transatlantic topics, and by providing exchange opportunities to foster renewed commitment to the transatlantic relationship. In addition, GMF supports a number of initiatives to strengthen democracies. Founded in 1972 as a non-partisan, non-profit organization through a gift from Germany as a permanent memorial to Marshall Plan assistance, GMF maintains a strong presence on both sides of the Atlantic. In addition to its headquarters in Washington, DC, GMF has offices in Berlin, Paris, Brussels, Belgrade, Ankara, Bucharest, and Warsaw. GMF also has smaller representations in Bratislava, Turin, and Stockholm.

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