

# DGAP POLICY BRIEF

## The Tornado Complex

### Conflicting Goals & Possible Solutions for the New German Combat Aircraft



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The decision about the successor aircraft for the Tornado is important not just for Europe's security and for Germany's role in NATO. It also has consequences for the future of the defense industry in Germany and Europe. Finally, whether the choice is made in favor of a European or a US solution will impact both the transatlantic and the Franco-German relationship.

- As carrier for US nuclear weapons in Europe, Germany should purchase the combat aircraft best suited to meeting the military requirements. For this reason, Germany's federal government should resume considering the purchase of F-35 aircraft.
- Germany should further develop the Eurofighter to strengthen its combat effectiveness against enemy air defense and to drive innovation in the defense industry.
- In parallel, the federal government should commit to developing and building the "Future Combat Air System" (FCAS) together with France. This would support the consolidation of the European defense industry and reduce dependence on the United States.

Since 2017, Germany's federal government has been considering how to replace the outdated Tornado combat aircraft.<sup>1</sup> Since the beginning of this review, however, the security situation has evolved. While NATO had already begun to reinforce its deterrence and defense posture after the Russian invasion of Ukraine in 2014, Russia's deployment of new, nuclear-capable, intermediate-range missiles in its western regions has increased the potential threat. Hence, NATO's nuclear capacity is becoming more important.

This should play a role in the pending decision about the Tornado succession. Germany's federal government should consider every solution that would be effective from a military point of view, including the purchase of state-of-the-art F-35 US combat aircraft. To overcome the increasingly effective Russian air defense, the Bundeswehr's combat aircraft for conventional and nuclear missions needs to have effective capabilities for electronic warfare and suppressing enemy air defense.

In political reality, the procurement of major armaments systems means that beyond military requirements, there are also technological and industrial interests which need to be considered. Also, Germany must try to achieve a balance between the different and possibly conflicting goals of its partners. Therefore, the consequences for the transatlantic and the Franco-German relations as well as for Germany's role in NATO and the EU should be taken into account.

## REQUIREMENTS FOR THE TORNADO SUCCESSOR

The decision to be taken for replacing the aging Tornado combat aircraft has far-reaching consequences. It will influence almost every aspect of Germany's security, alliance, and armaments policies. The different objectives and interests involved are well-known. Where they are in contradiction with each other, they need to be reconciled.<sup>2</sup>

1. Germany wants to make its contribution to both European military capabilities and NATO's deterrence posture, particularly to nuclear sharing and risk sharing within NATO.
2. It continues to be politically and militarily dependent on transatlantic cooperation.
3. Germany wants to improve Europe's defense technological and industrial competence vis-à-vis the United States in the field of military aviation and ensure its own share.
4. It intends to strengthen the Franco-German cooperation and with it, the European Union's ability for military action.

For the Bundeswehr and for NATO, **the Tornado fulfills four functions:** first, to carry out conventional air-to-ground attacks; second, to suppress enemy air defense (SEAD); third, to conduct tactical air reconnaissance<sup>3</sup>; and fourth, to carry US nuclear bombs. With this last function, Germa-

ny makes its contribution to nuclear sharing and risk sharing within NATO.<sup>4</sup>

For the succession of the Tornado, the federal government is so far reviewing the following options: buying American FA-18 combat aircraft for the conventional fighter aircraft and the nuclear role, combined with EA-18 Growler for the SEAD role; or refitting Eurofighter aircraft for the nuclear and the SEAD roles. A mix of models and roles is also possible. FA-18 and Eurofighter are so-called 4<sup>th</sup> generation combat aircraft. Their technology dates from the last century. The obvious choice of including today's most modern western combat aircraft, the F-35 (5<sup>th</sup> generation), which seven other European NATO allies have opted for, was stopped by Germany. Reportedly under pressure from Paris, Berlin decided in early 2019 to limit its review to only two options.<sup>5</sup>

It is clear that the German combat aircraft fleet should continue to consist of more than one type of aircraft.<sup>6</sup> This has the desired effect of keeping up capabilities, but it also means that a technical defect that concerns one model will not paralyze the entire fleet. The disadvantage of a heterogeneous fleet are higher maintenance costs because of the lack of scale. This would be particularly negatively felt if Germany were the only user. Conversely, platforms that are used by other partners as well allow for multinational cooperation during missions and maintenance.

1 Publication of the Federal Ministry of Defense, April 24, 2018; <https://www.bmvg.de/de/aktuelles/naechster-meilenstein-in-richtung-tornado-nachfolge-24054> (accessed on February 3, 2020).

2 Christian Mölling, Torben Schütz: Tornado-Nachfolge und FCAS. Doppelentscheidung konfrontiert Deutschland mit Zielkonflikten, DGAPkompakt 32, December 6, 2018; <https://dgap.org/de/forschung/publikationen/tornado-nachfolge-und-fcas> (accessed on February 3, 2020).

3 This analysis does not discuss this function.

4 For the political-military factors and criteria in the framework of NATO that the Tornado's successor needs to meet, see Heinrich Brauss, Christian Mölling: The Purchasing Decision for the Tornado's Successor: Germany's Role in NATO's Nuclear Sharing, DGAP Policy Brief Nr 1, Februar 2020, <https://dgap.org/en/node/33382> (accessed on February 3, 2020).

5 Werner Sonne: *Leben mit der Bombe*, Wiesbaden 2020, 2. edition, pp 48-49.

6 Germany's military aviation strategy recommends using two different types of combat aircraft in parallel as a matter of principle, see BMVg – Militärische Luftfahrtstrategie 2016, p. 17 <https://www.bmvg.de/resource/blob/11504/3e76c83b114f3d151393f115e88f1ffb/c-19-01-16-download-verteidigungsministerium-veroeffentlicht-militaerische-luftfahrtstrategie-data.pdf> (accessed on February 3, 2020).

## A NEW POLITICAL-MILITARY SITUATION<sup>7</sup>

Taking part in nuclear deterrence has always been unpopular in Germany. But in view of the deterioration of the security environment in Europe, replacing the Tornado aircraft has become even more important, as the authors explain in a study published in parallel (Brauss/Mölling 2020). In response to Russia's aggression against Ukraine in 2014, NATO has been strengthening its deterrence and defense posture.

Most recently – and in violation of the INF treaty – Russia has deployed nuclear-capable, highly accurate, ground-based cruise missiles capable of threatening large parts of Europe. Yet NATO will not respond with a symmetric “counter deployment,” for instance with ground-based, nuclear cruise missiles of its own. Instead, it is planning a balanced package of mostly conventional measures to maintain its ability to deter.

In addition, and to safeguard the overall credibility of its deterrence posture, NATO also needs to keep its nuclear deterrence credible. This includes the nuclear capabilities in Europe.<sup>8</sup> A nuclear mission must have a high likelihood of success; only then will its political message of deterrence be credible and capable of contributing to maintaining peace. As a core element of this approach, an aircraft is needed that in all likelihood can overcome the enemy's air defense, launch its nuclear bomb, and safely return with its pilots.

For any enemy, defending against a nuclear attack will have the highest priority. For this reason, these missions are the most demanding and dangerous for the pilots and the aircraft.

Germany's federal government therefore has a particular responsibility to provide its pilots with the best suited aircraft. In addition, allies involved in a mission must be able to work together effectively and smoothly. Finally, credibility also requires a certain minimum

## *Taking part in nuclear deterrence has always been unpopular in Germany*

number of aircraft and their guaranteed availability even in peace time.<sup>9</sup>

### THE POLITICAL, INDUSTRIAL AND TECHNOLOGICAL ENVIRONMENT

In addition to security policy considerations, the political decision about the succession of the Tornado needs to take into account Germany's interests in defense technology and industries as well as the effects on alliance politics in a European context.

#### Critical Timelines

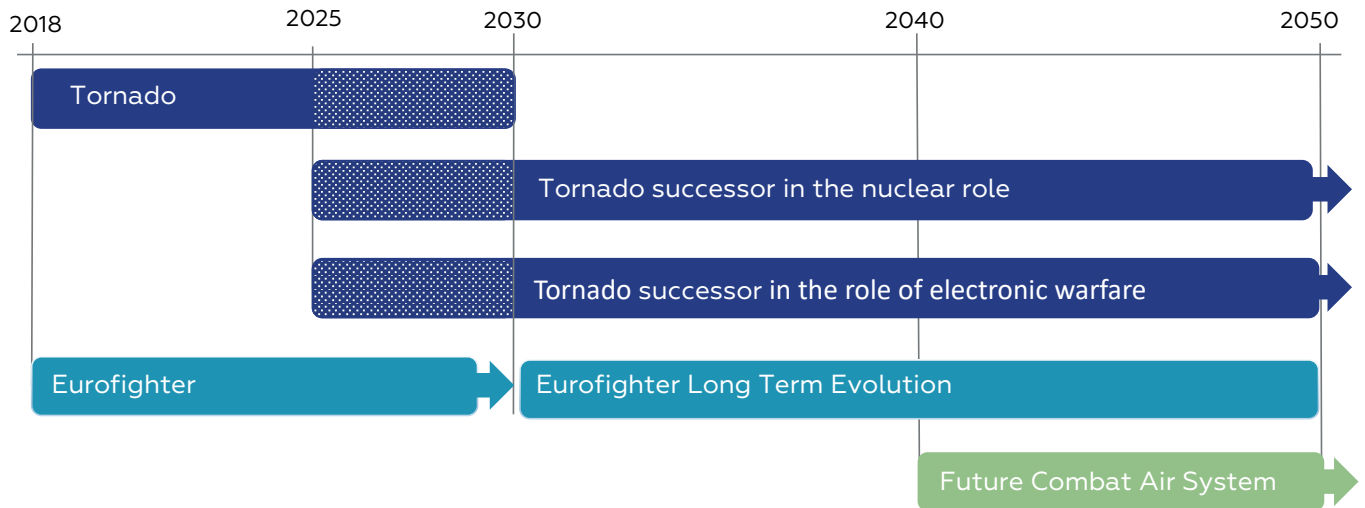
Timelines play an important role in both the procurement of military capabilities and the retention of industrial capacities. The Tornado is meant to be decommissioned step by step as of 2025. To keep it operating even until 2030 would be technically risky as well as very costly.<sup>10</sup>

<sup>7</sup> For more depth and detail about this aspect, see Brauss/Mölling 2020.

<sup>8</sup> This concerns the approximately 150 American B-61 nuclear bombs that, according to media reports, are stored under US supervision in Belgium, Germany, the Netherlands, and Italy (it is unclear whether any US nuclear bombs are still stored in Turkey). It is also relevant for the carrier systems provided by European allies.

<sup>9</sup> For details, see Brauss/Mölling 2020.

<sup>10</sup> According to earlier calculations of the German defense ministry, the costs for continuing operation of the Tornados until 2030 would amount to about EUR 7 billion, with another EUR 13 billion for the time from 2030 to 2035.

**Figure 1: Timeline for the procurement/upkeep of capabilities and technologies**

Source: Authors' own elaboration

As of 2040, Germany intends to bring the „Future Combat Air System“ (FCAS), which is to be built with France, into service. The 6<sup>th</sup> generation FCAS will be a system of systems, consisting not of a separate aircraft but of a combination of manned combat aircraft – the „New Generation Fighter (NGF)“ – and unmanned systems. FCAS/NGF will for the most part replace the Eurofighter and the French Rafale. To keep to the timetable, France and Germany need to start with the development of new technologies and platforms now. The planned upgrade of the Eurofighter jets will contribute some of the required new technologies. So far, there has been no discussion of having the FCAS/NGF take over the nuclear role.

An important aspect of these projects is to develop new technologies in Germany and to make full use the country's capacities for research and development as well as production. The last Eurofighter has just been delivered. If Germany wants to continue to play an important role in the military aviation industry, it needs to keep engineers and technicians in research and development. Otherwise, they will not be available for FCAS, either.

### Transatlantic Partnership

For its security and stability, Europe remains dependent on the military presence of the United States and its extended nuclear deterrence. While the transatlantic reinsurance has become less certain with the current president's contradictory statements, European security and transatlantic cooperation are too important to allow decisions of long-term importance to largely depend on who is currently US president.

### Europe's industrial and technological capability to act

The options for the succession of the Tornado show the sharp decline in Europe's industrial and technological capabilities since the 1980s. The Tornado had been developed by European industry, and mainly with European technology. Yet in terms of its technological and military capabilities, it was a match for other aircraft; in some ways it was even superior.

Europe, however, failed to jointly develop the successor generation, whereas the United States pushed the development of its aircraft. As a result, Europe – and Germany – lack

an option of their own to replace the Tornado.

Restoring Europe’s technological and industrial edge is an important objective for the pending decisions and investments, but it can only be achieved over the longer term. Therefore, Europe and Germany should adopt a combined industrial and technological strategy: Whenever possible, European resources should be invested in innovations in Europe. US solutions must be considered when the European alternatives are inferior, or when purchases in the United States would help improve Europe’s technological and industrial performance, for instance through the import of technology.

Against this backdrop, the FCAS project is essential: It is the most important European procurement project in European history. It will send out a major impulse for the consolidation of Europe’s defense industry, going well beyond the aerospace sector. This boost is needed if Europe wants to regain its ability to cooperate with the United States on an equal base and reduce the dependencies over the coming decades. It will also increase the European’s ability to act in terms of security policy. For the time being, European companies are too small to prevail in the medium term against US competitors and the growing pressure of Asian competitors.

**The Paris-Berlin Tie-Up**

Technically, FCAS and the succession of the Tornado are two different projects in terms of timeline and content. Yet France has objected to Germany purchasing the F-35 as a successor for the Tornado.<sup>11</sup> It is worried that buying the US system could undermine the joint development of FCAS: Resources intended for FCAS would be redirected to the US solution, endangering the plans for FCAS. In addition, further development of the Eurofighter could be ham-

pered, which would impair the development of technologies needed for FCAS.

These concerns have their roots in France’s experiences with the United Kingdom. Originally, Paris had wanted to develop FCAS together with London. But Britain pulled out of the joint project in favor of the F-35. To avoid a déjà-vu, France seeks to firmly hold onto the remaining European partner with the industrial and technological potential for developing FCAS. This is one of the reasons for France’s resistance against Germany buying other US aircraft, too.

Yet the budgets for the Tornado succession and for FCAS are not linked. The Tornado succession must soon be sorted out, independently of FCAS. Decisions about the budget for procuring FCAS will only be taken much later. FCAS isn’t a successor system for the Tornado, either. A direct displacement effect as feared by Paris is not very plausible.

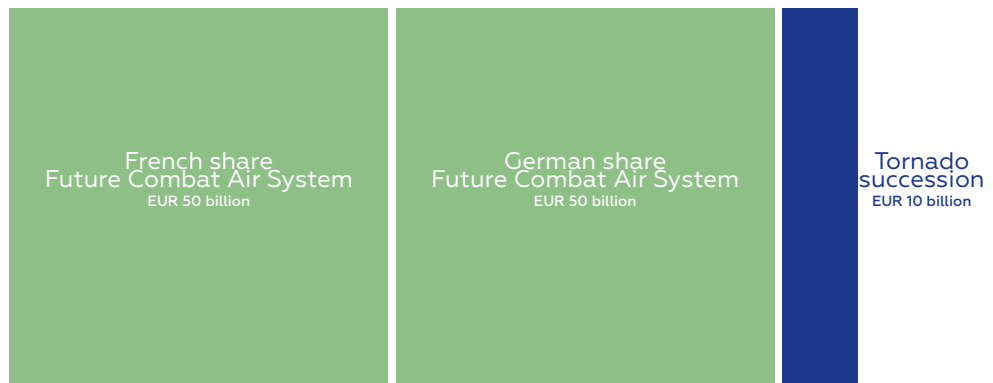
It is true that the decisions about the succession of the Tornado and about the development of FCAS shift resources into different channels.

Depending on the option, Germany’s money will either go toward innovating its own (and the European) industry and building up a German 6<sup>th</sup> generation fleet, or toward US-produced combat aircraft of the 4<sup>th</sup> and 5<sup>th</sup> generation.

Nevertheless, the volumes differ considerably. FCAS is estimated to cost around EUR 100 billion just for the development phase. So far, Germany and France are expected to share the costs. For the procurement of a Tornado successor, Berlin will only need to spend about EUR 10 billion until 2030.<sup>12</sup> There is not much of a cost difference between solutions that are better or worse according to military, political, industrial, or technological criteria.

With a (partial) purchase of US systems, Germany would strengthen the transatlantic partnership and maintain nuclear risk sharing and participation in NATO’s nuclear sharing arrangements, thereby enhancing alliance solidarity. At the same time, Berlin could invest EUR 50 billion into a promising major European project and into the European industry’s innovative capability, lessening dependence on the United States in the future.

**Figure 2: Budget estimate for the Future Combat Air System (development phase) and the Tornado successor**



Source: Authors’ own elaboration

11 Sonne 2020.

12 Depending on the option chosen for the successor, costs are estimated at approximately EUR 8 to 12 billion.

## SUCCESSION OPTIONS

The decision about the Tornado succession is important not just for the security of Europe and for Germany's role in NATO. It also has implications for the future of the defense industry in Germany and Europe. Finally, whether a European or an American solution is chosen will have an impact on transatlantic and Franco-German relations.

### European Solution: Eurofighter

The Eurofighter will remain the backbone of the German Luftwaffe's combat aircraft fleet for at least another three decades, particularly for the air defense role. To continue developing its combat capabilities in the framework of the Long-Term Evolution (LTE)<sup>13</sup> is therefore necessary and appropriate.

It is unclear whether the Eurofighter could be adapted for the SEAD role in time. German and French companies believe this should be possible if the decision is taken soon. This would close the technological gap that Germany caused by not investing enough in the past, and which is even now considerably and adversely affecting mission security for German crews.

With a national development program, Germany would also be able to maintain control over the software and the highly sensitive databases. Another possibility that would need less time and reduce development risks would be to buy equipment for the Eurofighters from Germany's partners. Such equipment would, however, need national certification. A mix – buy first, then switch to national or joint development – could be taken into consideration as well.

As for the role in nuclear sharing, it is highly unlikely that a version of the Eurofighter could be ready in time. Though refitting appears to be technically possible, it would take a lot of time. Only once that was done, certification for the nuclear role could start. It would likely take several more years to accomplish.

In addition, Germany would have to get permission for this step from the other nations involved in the Eurofighter. This could prove to be difficult: First, the other European allies have decided to purchase F-35 aircraft and not the Eurofighter for this purpose. Second, this version of the Eurofighter could not be exported; and third, the United States would gain insight during certification into what would then be the most modern version of the Eurofighter. In any case, Germany would have to carry the cost of development and certification on its own.

Finally, due to its construction and technical design, the aircraft would only have a limited chance to prevail and survive when faced with a high-performing air defense. The Eurofighter has no stealth capability. In contrast to the Tornado, it can't compensate for this deficiency even partially by performing low altitude or even NOE (Nap of the Earth) flights. For a nuclear mission, the Eurofighter would have to be accompanied by additional aircraft in the SEAD role capable of suppressing enemy air defense from a distance. This would require greater numbers on a mission and extend the risk to additional support aircraft, for instance for electronic warfare. This would also lead to higher costs for keeping a higher number of combat aircraft available even in peacetime.<sup>14</sup>

<sup>13</sup> This is about the architecture of the missions' system. Among other, this consists of controlling the increasing amount of data on board and their transmission to the surface, resistance to cyberattacks, a Defensive Aids Sub System), refitting to meet future threats (up to 2050), refurbishing the cockpit and avionics, improving interoperability, integration new weapons systems and more flexible cargo configurations, improving the drive system, increasing the reach and reliability while also improving survivability, and improving the steering system. See Gerhard Heiming, *Europäische Sicherheit & Technik*, June 21, 2019.

<sup>14</sup> Thomas Wiegold, "Merkposten – Airbus sieht Eurofighter auch bei Electronic Warfare als Tornado-Nachfolger



## US Systems

**F/A-18E/F Super Hornet and EA-18 Growler:** Like the Eurofighter, the American F-18 is also a 4<sup>th</sup> generation combat aircraft. The US Navy has equipped its aircraft carriers with F-18 but will gradually replace them with F-35 over the coming years. Germany could employ the F-18 as a fighter bomber. According to reports, the manufacturer Boeing also pledges to be able to technically equip the F-18E/F for Germany for nuclear missions until 2025. However, this version would also need to be certified.<sup>15</sup>

The aircraft's radar signature is smaller in comparison to older versions, so enemy sensors would find it more difficult to detect the aircraft. But it provides less protection than a stealth capability. The ability to prevail and survive therefore is better than that of a current Eurofighter. Nevertheless, a F-18E/F in the nuclear role would have to operate together with support aircraft that have been optimized for electronic warfare and can strike or at least suppress enemy air defense systems. This could be a suitable version of the Eurofighter or a variety of the F-18, the EA-18 Growler. All in all, this option would also require a larger combat aircraft fleet with correspondingly higher risks and costs.

Having F-35 aircraft take part in the mission together with one of these other types of aircraft would make the entire air operation visible for enemy air defense, because it would be able to detect the electronic emissions by the participating legacy aircraft and the required communication between them. From a military point of view, these different types of aircraft would not operate together in a nuclear mission, as the much more effective F-35

aircraft would then become vulnerable. The German contribution to nuclear deterrence could become questionable. An alternative might be to refrain from using Bundeswehr aircraft for such a NATO operation. Yet this would severely harm Germany's credibility and reputation among allies.

**F-35A:** The F-35A, also a US system, is currently the most modern 5<sup>th</sup> generation combat aircraft in existence. It is specifically designed as a carrier for tactical nuclear weapons and will replace the US Air Force's F-15 and F-16 aircraft in this role until the middle of the decade. Among experts, there is no doubt that the F-35A currently has the

hensive situation picture. This gives the pilots clear information superiority in the area of operation. At the same time, their aircraft do not issue traceable electronic emissions, so enemy air defense will only be able to detect and target invading combat aircraft at a very late stage or not at all. In addition, the F-35 have effective capabilities for electronic warfare and for actively suppressing and combatting enemy air defense (SEAD).

If Germany was to purchase the F-35A, the nuclear role would indeed be performed by US aircraft for the foreseeable future. Nevertheless, the argument that a US solution for the nuclear

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*FCAS is estimated to cost around EUR 100 billionn just for the development phase.*

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best and most credible performance for the core military functions of prevalence and therefore penetration, and survival. This increases the probability of being able to successfully accomplish the mission, reducing the risk for the pilots. Because of the lower loss ratio and the fact that no support aircraft is required, fewer aircraft are needed to be planned for.

Apart from the stealth capability, the F-35 has state-of-the-art target control to attack ground targets. A multitude of internal and external sensors<sup>16</sup> supply information that can be matched with the data provided by the other 5<sup>th</sup> generation combat aircraft and assembled into a compre-

role would prevent a (later) European solution for other roles does not appear pertinent. The solutions for the Tornado succession in the nuclear role and the resulting choice of aircraft for nuclear missions are largely independent of the question of FCAS. It remains doubtful whether the "New Generation Fighter" (NGF) would be certified for US bombs. Paris and probably Berlin, too, would hardly give the United States the necessary access to its most modern weapons system. Even if they did, it would be uncertain whether the US would certify the NGF and how long this would take.

France ought to have a considerable interest in Germany continuing to take

(Nachtrag)," in Augen geradeaus!, November 5, 2019, <https://augengeradeaus.net/2019/11/merkposten-airbus-sieht-eurofighter-auch-bei-electronic-warfare-als-tornado-nachfolger/> (accessed on February 2, 2020).

15 Thomas Wiegold: "Tornado -Nachfolge: Entscheidung zwischen Eurofighter und F/A-18 – F-35 aus dem Rennen," in: Augen geradeaus!, Januar 31, 2019, <https://augengeradeaus.net/2019/01/tornado-nachfolge-entscheidung-zwischen-eurofighter-und-f-a-18-f-35-aus-dem-rennen/> (accessed on February 3, 2020).

16 Radar, infrared, passive across the entire electro-optical and electromagnetic reach as well as externally: TacRadar, AWACS, SAT, detection sensors from other military branches.

part in the nuclear sharing of NATO and making an effective contribution. Though France has its own nuclear capacity, it benefits from the American nuclear umbrella safeguarding European security. In return, Paris should accept that Germany will possibly opt for a US aircraft for its role in nuclear sharing if it can make a credible contribution to the alliance that way.

### Possible Combinations

For the successor of the Tornado, the following combinations would be possible from today's point of view:

- Procurement of a mix of F/A-18E/F and EA-18G to the extent needed for the nuclear role, and replacement of the remaining Tornados for conventional air-to-ground missions by Eurofighter aircraft. For nuclear sharing and to escort the carriers, a squadron of about 50 F-18E/F and EA-18G combat aircraft would be needed. In addition to that, Germany would need to purchase 35 to 40 Eurofighter aircraft for a second squadron that could take over the remaining functions of the Tornado for conventional air attack and tactical air reconnaissance. These Eurofighter planes would likely be replaced by FCAS/NGF from 2040 onward. Independently of that, a decision would have to be taken around that date for replacing of the F-18 model in the nuclear role.
- Procurement of F-35 for the nuclear role, which would only require about 40 aircraft, as no additional planes would be needed to escort the carriers. The remaining Tornados in the conventional air-to-surface role would be replaced by Eurofighter aircraft.

- Replacement of the entire Tornado fleet either with F-18 or F-35. If the decision was taken to entirely replace them with Eurofighter aircraft, it would need to be taken into consideration that this would require life extension of the Tornados into the next decade – with enormous risks and costs.

### ELEMENTS OF A SOLUTION

In view of this comprehensive analysis, the political decision about the Tornado succession should be part of a package<sup>17</sup> based on three essential measures: (1) Choice of the aircraft that best fulfils the political-military criteria for the nuclear role and the underlying conventional performance; (2) implementation of the long-term program to increase the combat capacity of the Eurofighter until at least 2040 and replacement of the remaining Tornados; and (3) undiminished investment in research for and development of FCAS/NGF.

Producing an incentive for arms control: Arms control is a necessary complement of deterrence. Both serve the same objective: security and stability in Europe. A Germany that is committed to credible deterrence can make a more effective case for arms control as it can more credibly insist on the dual approach<sup>18</sup> agreed by NATO in 2016. Allies would recognize that Germany is acting in solidarity and taking an active role in nuclear sharing. This would give Berlin the legitimacy to push for arms control. At the same time, credible deterrence could also increase Moscow's interest in arms control measures. So far, there is no reason to negotiate from a Russian point of view.

A solution that takes the interests and concerns outlined here into account could be based on the following elements:

1. If Germany opts in favor of a US solution or combination, this step should be decoupled from Europe's investments into its own industrial and technological capabilities. This course of action would take both French concerns and German interests into account.
2. The number of US systems should be limited. For the nuclear role, no more than 40 to 50 aircraft would be required. Also, the aircraft do not need to be bought but could be leased. In that case, Germany should pay for flying hours including maintenance, and a rate of minimum availability should be guaranteed. A leasing solution with a price guarantee or a maximum price could also limit the risk of ballooning costs.
3. In addition, it should be considered that purchasing a US carrier will increase pressure on France to develop FCAS as a genuinely joint system with Germany. Conversely, France would see its position strengthened if the US systems were excluded because Germany would then be solely dependent on its cooperation with France.
4. In parallel to the Tornado succession, the build-up of European technologies and the consolidation of the defense sectors should be pushed forward through FCAS. If Germany's federal government and the Bundestag were to undertake a politically binding commitment for the development of FCAS, this would be an important signal not just for Paris.

<sup>17</sup> Mölling/Schütz 2019.

<sup>18</sup> The dual approach of credible deterrence/collective defense and dialogue with Russia and limited cooperation for arms control is based on the 1967 Harmel report and has been accepted by all NATO allies in principle.



5. Continued development of the Eurofighter aircraft as a driver for innovation, both for technologies that will be relevant to FCAS and those needed for SEAD. If this turns out to take too long, there is the option of buying some of the technology as well as anti-radar missiles. This would, however, carry the risk of technological decoupling.

If Germany decides against the Eurofighter for the nuclear role, it is left with two American options<sup>19</sup>. In that case, and given the purpose of the aircraft, it would be difficult to understand why Germany would not choose the most modern, best and most cost-effective aircraft for the nuclear role, particularly as this could ensure fulfillment of the task for several decades.

The decision about the Tornado succession will have a significant bearing on Germany's future contribution to the security of Europe. In spite of the conflicts of objectives, a solution package seems possible that does justice to Germany's most important interests in this context, demands only minor concessions from all the parties involved, and, at the same time, provides Germany's European partners with the assurance that Germany will not compromise over the common security.

<sup>19</sup> The daily Süddeutsche Zeitung reported on October 4, 2019, that Germany's defense ministry was inching toward a preference for the F-18 vis-à-vis the Eurofighter. "Bundeswehr muss vermutlich „F-18“-Kampffjets aus den USA kaufen," <https://www.sueddeutsche.de/politik/bundeswehr-kampffjet-f-18-eurofighter-1.4625463> (accessed on February 3, 2020).

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