

2040, AN FCAS ODYSSEY

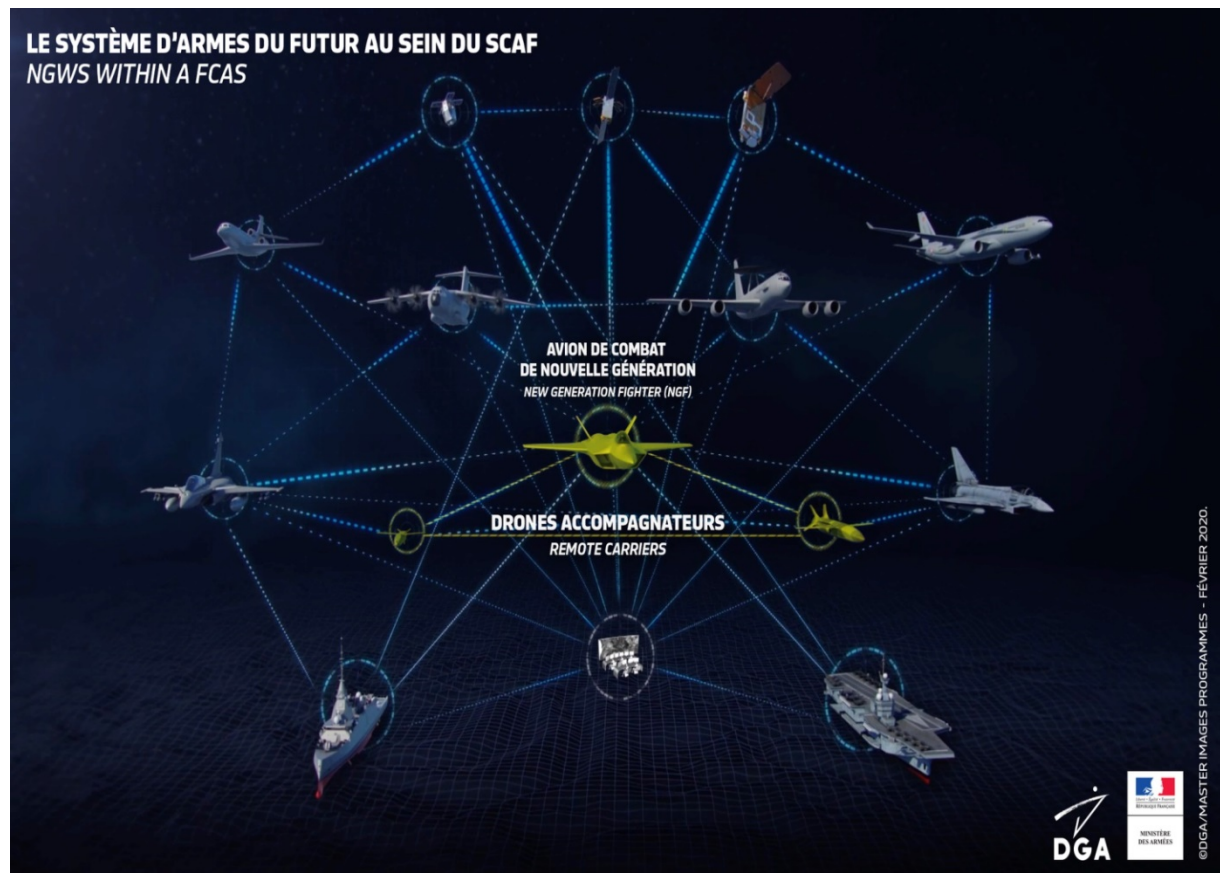
THE FUTURE COMBAT AIR SYSTEM

Information report by Mr Ronan Le Gleut and Ms Hélène Conway-Mouret,
on behalf of the Foreign Affairs, Defence and Armed Forces Committee

The Future Combat Air System (FCAS) programme is essential to the renewal of combat aviation in France, Germany and Spain by 2040 (the end-of-service date for the Rafale and Eurofighter Typhoon). It is also essential to **preserving Europe's strategic autonomy and its defence technological and industrial base**.

Building a next-gen air combat system with our German and Spanish partners will allow us to have the best technology and address all threats in the coming decades.

At the end of its work, the mission identified **four main challenges** for the FCAS programme: reach a new milestone in early 2021 to make the programme irreversible, rise to the challenges of 2040-2080 (the FCAS's probable lifespan), make industrial cooperation as efficient as possible while avoiding the pitfalls encountered by some of the previous cooperation programmes, and take into account the European aspect as well as the existence of a competing programme, the Tempest. For each of these stakes, the mission presents concrete proposals.



1. MAKE THE FCAS PROGRAMME IRREVERSIBLE BY THE MIDDLE OF 2021

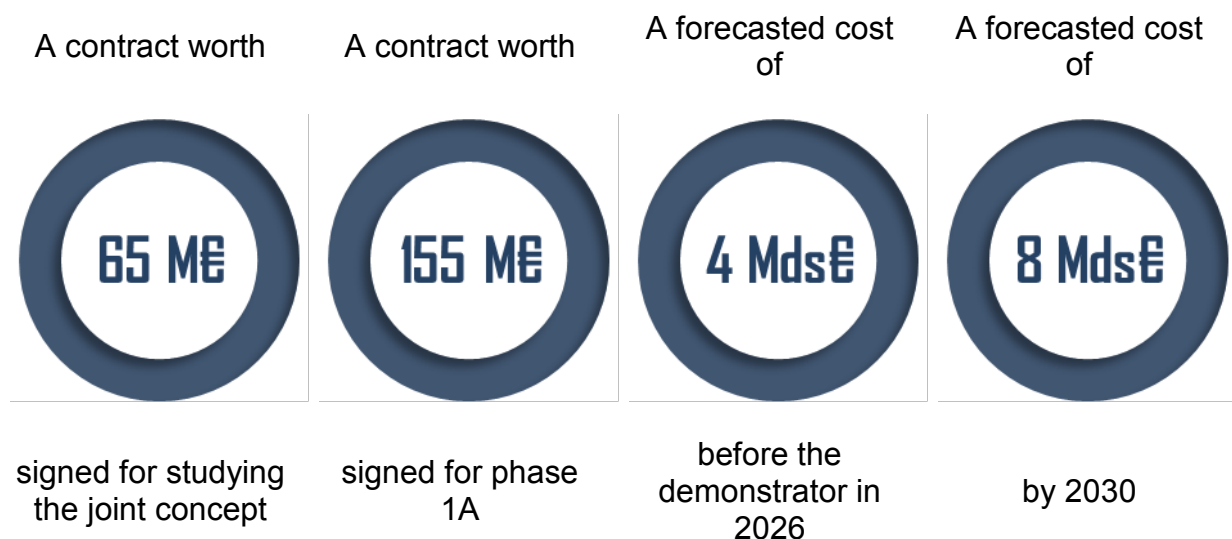
The FCAS is essential and will structure the coming decades. The current financial commitment, with an initial contract of €65 million for the study of the joint concept and then a second contract of €155 million for phase 1A to develop the demonstrator, nevertheless remains too limited to prevent any turning back. The negotiations, which resulted in the Franco-German agreement on the first stage of the programme, were laborious. Vigilance is required to make sure the programme does not encounter a definitive blockage or too significant a delay. In this context, the next twelve months will be crucial to finding a new agreement, particularly on the issue of industrial property and on the "stealth" pillar and speeding up the programme's implementation.

Proposal 1: Prioritise signing an overall framework agreement at the start of 2021 to continue developing the FCAS demonstrator through 2025/2026 rather than a succession of contracts requiring repeated political approval.

Proposal 2: Improve reciprocal understanding between the three partners; identify and publish a "joint industrial defence strategy" that includes a provisional schedule of the joint projects.

Proposal 3: Encourage the three partners to accelerate the FCAS schedule so that it is part of the post-coronavirus economic stimulus plans. Plan for the programme to be completed by 2040.

Proposal 4: Invite our German partners to sign an agreement with Spain regarding arms exports similar to the one signed with France



2. DEVELOP THE TECHNOLOGY NEEDED TO MAKE THE FCAS TRULY REVOLUTIONARY IN 2040

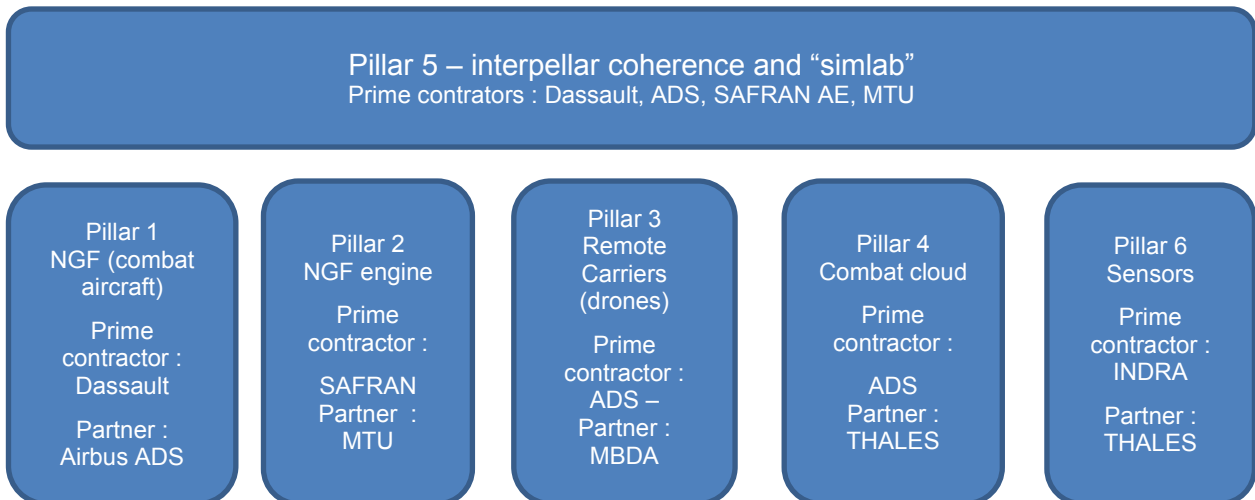
The FCAS must replace the current air combat systems (Rafale and Eurofighter) by 2040 and remain in service until 2080 and, perhaps, beyond. The speed at which technology changes, in terms of not only combat aviation, but artificial intelligence, data exchanges, combat cloud, electronic war or hyper-speed missiles as well as the efforts made by our main adversaries and allies to develop ever-more effective systems, requires us to look beyond 2040. The goal is **to avoid developing a combat system that will be obsolete as soon as it is commissioned**. The ethical and legal aspect of artificial intelligence must also be taken into account within the programme's framework.

Proposal 5: Consider artificial intelligence as a "transversal pillar" of the FCAS that must be developed with the broadest possible scope of application. Resume international discussions on lethal autonomous weapons (LAW) to arrive at a clear legal framework that is consistent with ethics and the principles of international humanitarian law.

Proposal 6: Make the "combat cloud" pillar as much of a priority as the plane and the engine. Begin preparing the integration of the FCAS combat cloud with the Scorpion Command Information System (CIS) immediately.

Proposal 7: Make the investments necessary to equip the demonstrator planned for 2026 with the M88 engine (the Rafale engine) or a new version of it.

Proposal 8: Include environmental concerns from the start of the FCAS programme while seeking the best performance possible.



3. FOR BALANCED AND EFFECTIVE INDUSTRIAL COOPERATION

The experience of certain international defence cooperation programmes such as the A400M has led to the implementation of a highly structured industrial organisation for the FCAS. This system is thus organised around seven pillars: the aircraft, the engine, remote carriers, combat cloud, simulation/coherence, and, soon, stealth and sensors. A prime contractor and a main partner have been appointed for each of these pillars. While France can count on its first-rate defence manufacturers, who have already demonstrated their know-how in the principal fields concerned by the programme, sub-contractors' position must not be neglected to maintain an overall industrial balance. It is also necessary to resolve the issue of industrial property in accordance with the main principles already approved by the Franco-German agreement of December 2019.

Proposal 9: Support the "Best Athlete" principle (the one who has demonstrated competency is the prime contractor) throughout the duration of the FCAS programme to avoid the errors of the A400M programme, while ensuring that French small and medium defence companies participate in the programme.

Proposal 10: Strengthen Spain's position on the "sensors" pillar.

Proposal 11: Protect manufacturers' background in terms of intellectual property. Provide for balanced use of the foreground (the technologies that emerge during development): ensure that each of the participating countries can maintain or make changes to the FCAS after it is commissioned and ensure an adequate protection of innovations.



Proposal 12: Integrate ONERA into the FCAS programme at a fair level given its eminent expertise in combat aviation. Encourage manufacturers to rely on ONERA for sub-contracting.

4. GIVE THE FCAS PROGRAMME A EUROPEAN DIMENSION

While the FCAS programme is currently a French, German and Spanish project, the opportunity of finding synergies with European instruments of defence as well as the goal of exportation must lead us to consider enlarging cooperation when the moment is right. Furthermore, it would be imprudent not to take the Tempest programme into account.

Proposal 13: Work to enlarge the FCAS programme to new European countries in future stages (post-2026). Synergies should then be developed with European instruments of defence (EDIDP, PESCO, EDF), in particular with a view to implementing European interoperability standards.

Proposal 14: Take into account the Tempest's simultaneous existence as a competitor to the FCAS; the coexistence of the two programmes makes it more difficult to build the European defence technological and industrial base (EDTIB).

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