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The statements made by the author are his own responsibility

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# INTRODUCTION

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Today, the air weapon is the cornerstone of modern warfare, where flexibility and precision go hand in hand with superiority on the ground. As the main supplier of fire in the defeat mechanisms, air superiority over the adversary is a prerequisite.

Today, Dassault Aviation's fighter jet is being used for this so-called "air superiority". Launched in 1986 and entering service in 2002, the Rafale has been slow to sell itself. After multiple failures to win bids in South Korea, the Netherlands, Singapore, Morocco and Brazil, the French fighter has had to contend with a reputation as an unsaleable aircraft. But it seems that the year is 2021 opening up with particularly promising prospects for the French fighter. The Rafale has gradually established itself as a real operational system, having acquired a certain technical maturity and proven itself in theaters of operation, making it possible to position it today as the flagship of the French armament industry.

Taking advantage of French foreign policy and its status as an alternative to U.S. ITAR<sup>1</sup> weapons, the Rafale is also presented on the market as a means of promoting France's international influence. The chronic instability that affects today's societies has led to a need for defense equipment for several countries, prompting the French government to conclude several strategic partnerships.

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<sup>1</sup> International Traffic in Arms Regulations



# The Rafale, an omni-role aircraft with many advantages

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Today, the Rafale has established itself as a truly operational system that has acquired a certain technical maturity, as demonstrated by most of the external operations carried out by France, whether in Afghanistan, Libya or the Sahel. It is what we call a "*combat proven*" aircraft.

Although the fighter faces multiple competitors such as the American F-35A, it nevertheless has real operational added value. First, it should be noted that the Rafale is described as an "omni-role" aircraft, meaning that it is capable of carrying out several types of missions during a single flight. Indeed, the fighter is capable of carrying out ground attacks, anti-ship warfare, reconnaissance, aerial refueling and even nuclear missions. Another notable advantage is that it is the only fighter on the market capable of carrying up to twice its weight in fuel and weapons. This quality not only allows it to carry out longer missions, but also increases its aptitude for persistence on the ground, which is essential for acquiring depth in a theater of operations. Therefore, this system finally engages a reduction of the OODA<sup>2</sup> loop in the field.

In addition, the payload (describing an aircraft's ability to carry weapons) is modular, allowing armies to adapt weapons to their missions. The Rafale's weapons system can be legitimately described as versatile, ranging from the 30-mm cannon to the Mica air-to-air missile and the AASM bomb. The F3R, the latest version of the fighter, can also carry the Meteor long-range air-to-air missile built by MBDA. The Rafale/Meteor combination is therefore an additional selling point for the French fighter. The European leader's missile has a very long range, as well as an<sup>3</sup> extended "No Escape Zone", which sets it apart from the AIM-120 AMRAAM, its American competitor. General Eric Charpentier, commander of the French fighter aviation brigade, said

*"the performance of the Rafale/Meteor pair is such that it will undoubtedly become a*

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<sup>2</sup> Observation, Orientation, Decision, Action

<sup>3</sup> Interception zone assured



"This is a "game changer", as was the formidable M2000-5/Mica tandem, in the conduct of air operations.<sup>4</sup>

The Rafale is also the first and only European fighter to be equipped with an electronically-scanned radar (RBE2) supplied by Thales. According to Dassault, this electronically scanned radar provides "*unparalleled tactical situational awareness, with improved detection and tracking in multi-target environments.*"<sup>5</sup> It turns out that accuracy, along with stealth, are the technological factors that enable parallel, effects-based operations.

The French fighter has thus clearly seized a window of opportunity in the fighter market. Its main competitor, the F-35, has many shortcomings. While it is cheaper to buy than the Rafale, the American model has a number of shortcomings, not to mention the fact that it is not multi-role, unlike the French aircraft. Dassault Aviation is now developing the new F4 version of the Rafale, which should be released in a program 2024. worth around two billion euros, this new model is presented as a

The Rafale is a "*technological, industrial and strategic leap forward*"<sup>6</sup>, and will surely confirm the hypothesis that the Rafale is becoming the air superiority vector.

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<sup>4</sup> Huberdeau Emmanuel, " Le couple Rafale-Meteor deviendra un game changer ", *Air&Cosmos*, janvier 04 URL 2018. : [air-cosmos.com/article/le-couple-rafale-meteor-deviendra-un-game-changer-3281](https://air-cosmos.com/article/le-couple-rafale-meteor-deviendra-un-game-changer-3281)

<sup>5</sup> Dassault website. URL: <https://www.dassault-aviation.com/fr/defense/rafale/un-large-eventail-de-capteurs-intelligent-and-discrete/>

<sup>6</sup> AFP, " Le Rafale, fleuron de l'aéronautique française qui confirme son succès à l'export ", *AtlasInfo.fr*, January 29 URL 2021. : <https://atlasinfo.fr/le-rafale-fleuron-de-laeronautique-francaise-qui-confirme-son-succes-a-llexport.html>



# The Rafale is a key player in strategic partnerships for France, which are essential to the dynamism of our defense industry

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Maintaining a powerful French defense industrial and technological base appears to be an undeniable issue of sovereignty and security. While the various French arms sales throughout the world are subject to numerous criticisms, they are in fact essential to guarantee our own strategic autonomy. The mastery of high-performance technologies as well as the ability to guarantee our supplies is necessary in order to maintain a capacity for action, on the one hand, but also to maintain a place of choice in operational decisions. Our DTIB<sup>7</sup> cannot achieve excellence through national orders alone. In this respect, the Rafale cannot be maintained in conditions of technological excellence without a minimum level of production - the more the fighter is produced in large quantities and exported, the more unit costs decrease and innovation improves.

*"The development of new modular avionics for the export of the Mirage 2000-9 has benefited the Rafale program. Another example of a capability in the pipeline is the front-end optronics for the Indian Rafale program, which will be used on future versions of the French Rafale."<sup>8</sup>*

The past few years have shown that Dassault Aviation has made a major shift in its export strategy for the Rafale, as shown in the chart below. Numerous contracts have been signed with foreign powers, reflecting solid cooperation commitments driven by the French government. But more than just economic gain, it is through a response to security needs that Paris has become involved in regional and international challenges.

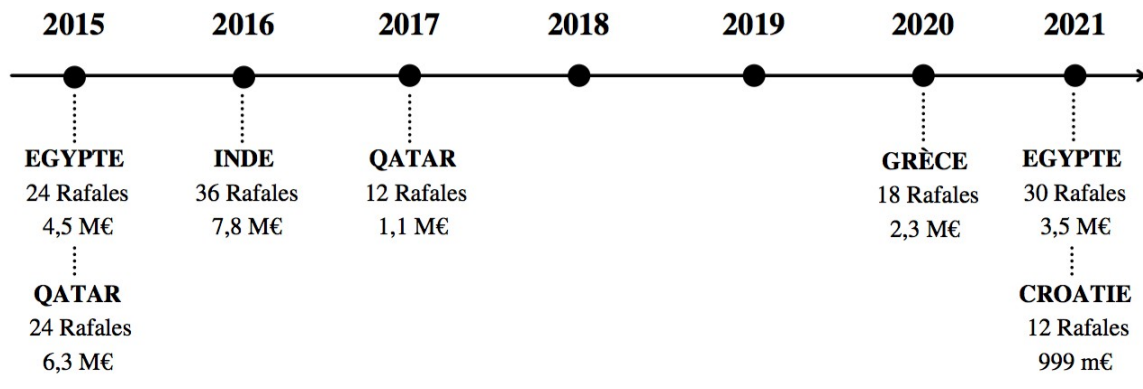
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<sup>7</sup> Defence industrial and technological base

<sup>8</sup> *Report to Parliament on French arms exports*, Ministry of the Army, June 2021. Available at: <https://www.defense.gouv.fr/actualites/articles/report-to-parliament-2021-on-french-arms-exports>



policies. What strategic contributions can we identify through the various contracts signed by the aeronautics industry?



### *A first step towards a European defense?*

*"The fact that a European country chooses the offer of another European country is a strong sign that goes beyond the symbol. We are building, brick by brick, the fundamentals of a culture European strategic"<sup>9</sup>.*

These are the words of Florence Parly following the confirmation of the purchase of Rafale12 by Croatia last month. Indeed, in 2020 and 2021 Greece and Croatia respectively affirmed the purchase of Rafale to the French manufacturer Dassault Aviation. Incontestable renewal of France in the European arms market, these intra-EU purchases are a new stone in the building of a progressive collective defense. As a market dominated by the United States, this common approach also appears to be a means of reducing dependence on the American industry, as well as on NATO. It should nevertheless be noted that this "European effort" is taking place above all in a climate of tension in the Eastern Mediterranean, against a backdrop of energy issues.

On January 25, 2021, France signed a contract in Athens for the sale of 18 Rafales to the Greek Air Force, worth billions2,5 of euros. Built jointly by Dassault Aviation, which oversees 60% of the aircraft's value, electronics manufacturer Thales (22%), engine manufacturer Safran (18%), which supplies the M-88 engine, and MBDA, which supplies the missiles, this is the

<sup>9</sup> Lamigeon Vincent , " Greece, Egypt, Croatia: the incredible triple of the Rafale in 2021 ", *Challenge*, 28 May



2021. URL :[https://www.challenges.fr/entreprise/defense/grece-egypte-croatie-l-incroyable-triple-du-rafale-en-2021\\_766695](https://www.challenges.fr/entreprise/defense/grece-egypte-croatie-l-incroyable-triple-du-rafale-en-2021_766695)





first time the French fighter has been exported to Europe. While in early 2021 France and Greece jointly conducted the *Skyros* and *Inochios* exercises in the Mediterranean with Rafales, this Athenian purchase is a concrete example of cooperation between the two European states.

Greece has been facing the Turkish threat for several months. Indeed, it would seem that Ankara no longer hides its hegemonic ambitions in the eastern Mediterranean Sea, particularly in the context of research and exploitation of hydrocarbons. Against the backdrop of an Exclusive Economic Zone (EEZ) with blurred borders, the two countries have engaged in a real tug of war. The purchase of second-hand Rafale fighter jets allows Greece to quickly acquire high-performance fighters at a lower cost and capable of taking off from an aircraft carrier, sending a warning to Turkey. Greek Defense Minister Nikos Panagiotopoulos said, *"Our objective in supplying the Rafale, as well as the related actions that are being launched, is to upgrade the national factor in the correlation of power and maximum possible deterrence capability."*<sup>10</sup>

While France's relations with Ankara have been somewhat complex of late, particularly around the issues of Syria, Libya and the conflict in Nagorno-Karabakh, some see this sale as an affirmation of its position. It would thus seem that Paris is assuming its strong disapproval of Turkey's maneuvers in the eastern Mediterranean and its obvious support for the Hellenic state.

In a second phase, a contract for the sale of 12 Rafales to the Croatian government was confirmed last month. In direct competition with new American F-16s, used Israeli F-16s and new Swedish Gripens, Croatia finally chose the French. If Zagreb is not in a climate of tension, it would seem that these fighter purchases are part of an effort to stabilize and secure the Balkans. The Mediterranean arc is facing challenges related to maritime, migratory, terrorist and energy issues. It is known that Croatia has extensive expertise in the exploitation of hydrocarbons, but also a geographically strategic position in order to transport oil to the transalpine pipeline that supplies part of Europe. It can be estimated today that if the exploitation of offshore deposits in Greek and Egyptian waters were to succeed, Croatia would become an essential point of passage.

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<sup>10</sup> "Rafales will give a strategic advantage to the Greek armed forces", *RNF24*, December 08 URL2021. : <https://rnf24.com/8074/>



### ***From India to Egypt, partnerships against a background of security concerns***

We recently learned that the contract with Indonesia for the sale of 36 Rafales is well underway, although nothing has been officially confirmed. Already sold to India in 2016, France's leading arms importer over the past ten years, Dassault's fighter jet is establishing itself in the Indo-Pacific as a viable choice. The Indo-Pacific region is becoming increasingly competitive and conflict-ridden, and stability is becoming a key issue. Indeed, the risks concerning maritime law, global warming, nuclear and military ambitions, terrorism and energy ambitions are constantly growing in the region. However, France, in addition to being the only European Union nation to permanently maintain armed forces in the region, maintains and develops strong strategic relationships. Among these structuring partnerships in terms of defense equipment, we find India and Indonesia - also allowing us to promote "equipment communities", in order to eventually envisage joint operations through system interoperability.

The debate is also raging around the sale of 30 Rafale aircraft to Egypt, with some protesters pointing to the failings of Al-Sissi's regime with respect to human rights. Nevertheless, it would seem that France is adopting a pragmatic attitude, in a resolutely complex geopolitical context. A major ally in the eastern Mediterranean basin, Egypt benefits from a strategic geographic location with regard to regional security issues: the fight against terrorism, tensions around Turkey, proximity to the Middle East. Added to this, the country is prey to multiple external threats. Terrorist proliferation in West Africa, the Libyan war, and maritime piracy are all reasons that are pushing the Egyptian state to develop its fleet, supplied by the French fighter.

The strategic partnerships signed are in line with the guidelines of French diplomacy. Whether in Greece, Croatia, the Indo-Pacific region or Egypt, current and future threats require military anticipation in both defensive and deterrent logics, offering a window of opportunity for the Rafale. The dynamic undertaken by the European Union and France is gradually developing the diplomatic fabric and alliance network on a regional and international scale.



## Conclusion

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While the Covid-19 crisis has significantly affected economies around the world, global defense spending has continued to grow, increasing by 3.9% for the year 2020<sup>11</sup>. While this trend should be confirmed in the coming years, the Rafale seems to be going ground internationally, with bids in the United Arab Emirates, Finland, India and Switzerland.

For the future, and still in an effort to achieve a "European defense," France, Germany and Spain have launched the SCAF<sup>12</sup> project, which would replace the Rafale and Eurofighter by 2040. Nevertheless, it would seem that the contract is currently on the line, with each party not seeing the added value of its interests. Dassault Aviation does not appear ready to hand over what it considers to be the company's technological wealth. Germany, for its part, does not intend to finance a military aircraft over which it will not have control regarding "*Intellectual Property Rights*". Both legitimate points of view, the question of the success of this program remains unanswered for the moment.

In the fiercely competitive armaments market, French government and industry form a dynamic dipole. The very essence of France's strategic ambitions, the export of the Rafale is confirmed as inherent to the sustainability of the DTIB.

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<sup>11</sup> *Report to Parliament on French arms exports*, Ministry of the Army, June 2021. Available at: <https://www.defense.gouv.fr/actualites/articles/report-to-parliament-2021-on-french-arms-exports>

<sup>12</sup> Air combat system of the future