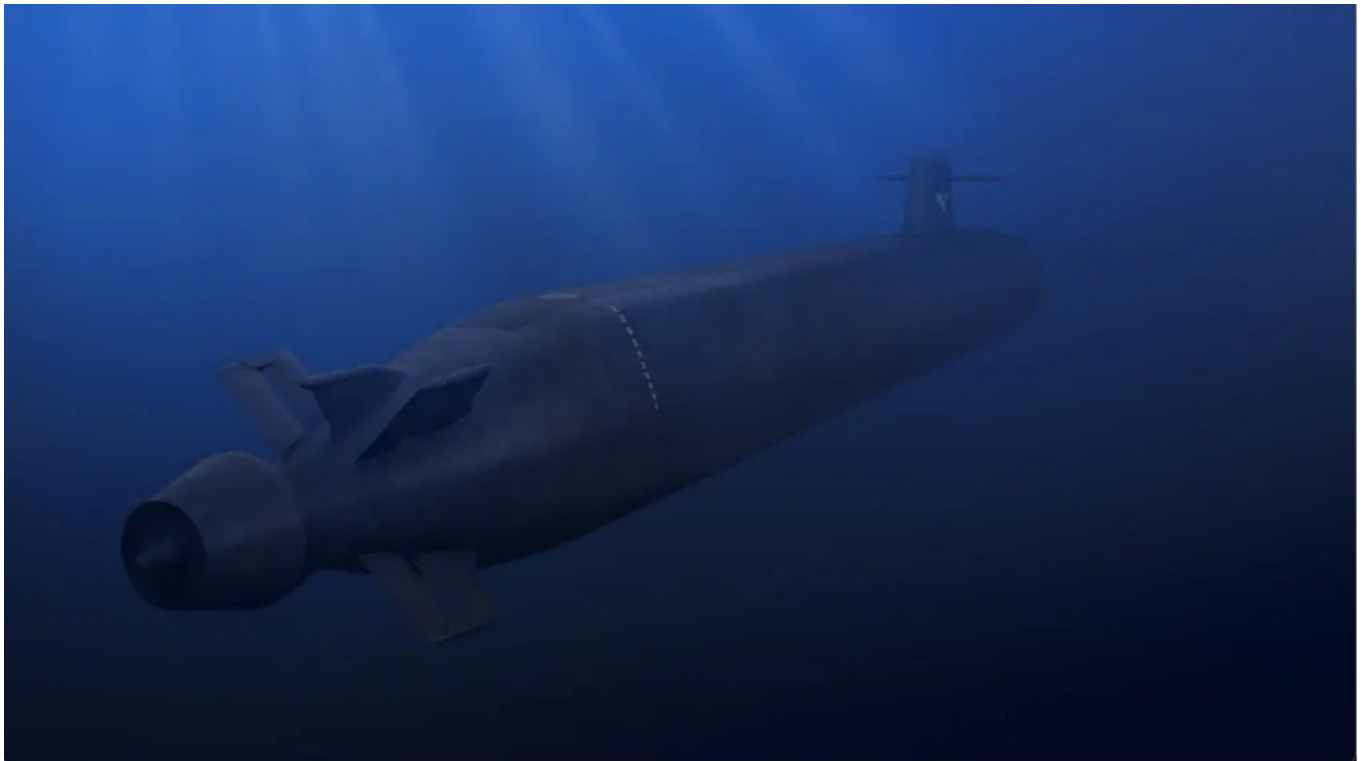




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An Update on French
Defense and Security
Policy: October 2020-
March 2021



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French Indo-Pac Strategy: A Balancing Act

03/11/2021

By Murielle Delaporte

‘Initiated and adopted by several nations in the past years, the concept of an Indo-Pacific theater does not mean the same for each one of them.

For France, which is the very first European nation to have replaced the traditional Asia-Pacific concept with a more assertive Indo-Pacific strategy, the key is the inclusion of India in the equation. The reason is tied to New Delhi’s political dimension which is crucial to counter-balance Beijing’s growing weight in this part of the world’, explains a French submariner familiar with this region.

Balance is indeed the *leit motiv* in the current Macron government’s approach to foreign affairs.

Fearing an escalation fueled by increasing military expenditures and growing tensions while dreading a replay of the Cold War – this time between the United States and China – France is once again positioning itself as a ‘stabilizing power’ in a zone which ‘*spans from Djibouti to Polynesia*’, as stressed in the 2019 ‘French Defence Strategy In the Indo-Pacific’ official document.

The latter followed President Macron’s Australian Garden Island speech, which he made a year earlier on his way to make an official visit to India.

The 2018 statement highlighted the concept of a ‘Paris-Dehli- Canberra axis,’ which his Minister of Foreign Affairs, Jean-Yves Le Drian had already promoted in 2016 when he was Minister of Defense in terms of a ‘France-India-Australia trilateral framework.

Sharing the exact same diagnostic as Washington (both under President Trump and President Biden) as far as the serious nature of Chinese aggressive action is concerned, the French government has not been shy in condemning Beijing on multiple grounds, ranging from the Uyghurs’ genocide to the Belt and Road Initiative.

Regarding the Indo-Pacific region, the concerns expressed by French officials are indeed specifically related to Beijing’s ability systematically to ‘fill the vacuum’ whenever an opportunity emerges and deny access to other players.

The ways and means progressively to evict other nations’ influence are limitless and include in particular:

- The polarization and militarization of international waters with the unilateral extension of territorial waters from 12 to 15 nautical miles (e.g., the Paracel Islands in 2017 in the South China Sea): according to a 2016 DoD estimate, 3,200 acres of land have been artificially created at the time.
- Investments in key strategic infrastructure via China’s One Belt One Road Initiative : the deep-water port of Kyaukpyu in Myanmar, the development of the Hambantota port in Sri Lanka or the operational control of the Gwadar port in Pakistan by the China Overseas Port Holding Company are all part of the Twenty-First Century Maritime Silk Road under way since 2013

designed to enhance connectivity throughout Southeast Asia, Oceania, the Indian Ocean, and East Africa.

- A growing military presence officially aimed at protecting Chinese communities abroad : the most telling example of such a strategic shift in Chinese military doctrine is the case of Djibouti. Beijing's footprint – and foothold in the Western Indian Ocean – has been growing since 2008 through various investments in salt, railway, and the port of Doraleh. Its naval military presence has evolved from anti-piracy operations to the inauguration in 2017 of its very first overseas naval base, which currently hosts an estimated 2,000 troops but has a capacity of 10,000. In ten years – from 2008 to 2018 -, China's 350-ship Navy trained about 100 ships and 26,000 sailors in the Gulf of Aden alone.

Such a trend privileging the policy of '*fait accompli*' has been enhanced by the Covid crisis, during which China has been multiplying its military maneuvers in the straights of Taiwan, Miyako and Bashi, while the very first deadly border clash with India in 45 years occurred last June in the Himalaya.

“In a region including seven out of ten of the highest defence budgets in the world (the United States, China, Saudi Arabia, India, France, Japan and South Korea), strategic and military imbalances constitute an underlying danger with global consequences.

While several open crises persist and new rivalries emerge, the breakdown of strategic stability, or a lasting deterioration in the regional security environment, would have an immediate impact on France's political, economic, and sovereign interests”, states the above-mentioned 2019 “French Defence Strategy In the Indo-Pacific” official document.

Having appointed last November and for the first time an Ambassador for the Indo-Pacific, France is indeed a riparian and sovereign Indo-Pacific nation with clear vested interests starting with the protection of some 1.6 million French citizens leaving in its seven overseas regions, departments and communities (called DROM-COM in French for '*Départements ou Régions français d'Outre-Mer*' and '*Collectivités d'Outre-Mer*').

In the Indian Ocean are Mayotte, Reunion, the French Southern and Antarctic territories (Kerguelen, Amsterdam and Saint-Paul islands, and the Crozet islands). In the Pacific are New Caledonia, Wallis & Futuna, and French Polynesia. In addition, 200.000 French citizens settled in the littoral countries of the Indian Ocean, in Asia and Oceania. Far away and tiny for some of them, these territories nevertheless represent all together 93% of France's Exclusive Economic Zone (EEZ) (9 out of 11 million square kilometers), making it the second in the world after the United States.

Stability, with the defense of Sea Lines of Communication (SLOC), and, more generally, of the Global Commons at a time when military competition knows no boundary and opens new ones ranging from seabeds to exoatmospheric altitudes, is indeed a main concern shared not only by Paris and Washington, but also and foremost by the regional players in the Indo-Pacific.

How to reduce threats in order to enhance stability and promote the ‘new Golden age’ many experts foresee in that part of the world is however where differences of approach compete.

Forging Alliances Among Like-Minded States

“The French strategy in the Indo-Pacific region lies on three axes: developing joint crisis management tools, enhancing bilateral relations and fomenting a rule-based multilateral framework”, describes a French diplomat formerly based in Beijing.

Reviving multilateralism in an inclusive manner as a way to contain a potential “Great Power Competition” clash or growing tensions is where France and the United States has till now differed since Washington’s position under President Trump was aiming more towards a policy of isolation against China.

This difference of approach has been highlighted in diplomatic terms, but tends also to translate in the military posture of both countries in the region (all proportion kept of course) : *“When the U.S. Navy will choose to deploy an aircraft carrier, the French Navy will show its willingness to defend the freedom of navigation (e.g. in the strait of Taiwan where for the first time a French Frigate – the Vendémiaire – was blocked by the Chinese Navy in April 2019) using a frigate or an amphibious assault helicopter carrier (PHA in French for ‘porte-hélicoptères amphibie’) and choosing to sail a straight course rather than demonstrating a more assertive posture”*, notes the French Commander.

Having concluded a strategic partnership with China along with the ones negotiated with India and Australia, France advocates less a policy of containment than a policy of coercion which does not preclude commercial ties.

A form of “Realpolitik” or “Pacific coexistence” which resonates with many of the states leaving in the region which economies are heavily dependent on good relations with China.

Clearly the more “like-minded” states the better to counter Chinese illegal endeavors in the region. *“Paris favors a regional multilateralism which is ideal to promote ad hoc structures best suited to address the challenges in this part of the world whether humanitarian, health-related, digital, environmental or else.*

Last September, was held for instance the first trilateral meeting between France, India and Australia with the participation of the General secretary of the minister of foreign affairs.

The goal is to include Japan next. More multilateral coordination for a common action to be effective is necessary”, stresses a French Quai d’Orsay official. Hence Paris’ recent request accepted last September to become a partner to the existing ASEAN (Association of Southeast Asian Nations), a multilateral framework created in 1967 (two years after France’s withdrawal from the Southeast Asia Treaty Organization or SEATO – i.e., the equivalent of NATO in Asia – because of disagreements between France and the United States over Vietnam).

In addition, Paris has been developing strong bilateral relationships over the years – in particular with India, Australia (both countries with which Paris has concluded global strategic partnerships) and more recently with Japan – as well as various fora of discussion ranging from commercial and technological exchanges, climate change and natural disaster anticipation, to the fight against transnational threats (illegal traffics, criminality, jihadism, etc.).

France is for instance – in chronological order and in a non-exhaustive way – a member of the Western Pacific Naval Symposium since 1988, concluded the FRANZ agreement with New Zealand and Australia for disaster relief in 1992, the Indian Ocean Rim Association (IORA) established in 1997, as well as the Quadrilateral Defence Coordination Groupe with the United States, Australia and New Zealand since 1998. France is also a founding member of the Indian Ocean Naval Symposium (IONS) established in 2008, belongs to the South Pacific Defence Ministers mechanism since 2013, as well as the Pacific Islands Forum with the participation of both New Caledonia and French Polynesia since 2016.

Because France has been itself a medium-sized Pacific power for more than two centuries, it feels directly threatened by the growing instability impacting its territories and communities, some of them in risk of vanishing because of climate change and consequent water rising.

Strengthening strategic autonomy is also a shared concern, hence the well-known Rafale deal with India and submarine ‘‘deal of the century’’ with Australia. But military ties between France and its main allies in the Pacific go increasingly way beyond industrial partnerships towards more comprehensive operational relations between not only ‘‘like-minded’’ states, but also comparable military formats.

Enhancing Joint Indo-Pac Power Projection

Protecting the sovereignty of its territories and the growing number of French citizens leaving in them always required an adequate military force composed of forward-based assets and troops. These ‘‘prepositioned’’ forces are called ‘‘presence forces’’ and include 7 to 8,000 permanent troops, as well as 700 temporary deployed personnel.

They are organized under five commands, three sovereign – in the Indian Ocean in Reunion and Mayotte (FAZSOI) and in the South Pacific in New Caledonia (FANC) and French Polynesia (FAPF) – and two in foreign countries – Djibouti (FFDj) and the United Arab Emirates (FFEAU) – for a ‘‘*permanent deployment in the Northern Indian Ocean*’’, as described by the French Ministry of the Armed Forces.

It is from the latter that the French armed forces participate to Allied operation Inherent Resolve against Daesh, and, before that, to Operation Enduring Freedom in Afghanistan (till 2012).

Very much like most NATO forces, the overseas sovereign forces were rather neglected in the name of the Peace dividends and a false sense of security. Although ‘‘*absolutely crucial to defend sovereign interests and participate to ad hoc coalitions*’’, as pointed out by the above-quoted French naval officer, it is only in the past few years that they started to be modernized and built back close to their 2008 level, while power projection from the mainland has become increasingly visible and inclusive with more and more allies beyond the traditional four, i.e., the United States, India, Australia and Japan.

‘‘As a maritime, air and spatial power, France possesses high level intelligence gathering means and significant force projection platforms. France is therefore able to contribute to each aspect of international security with its allies and partners.

France organizes regular multilateral exercises in the Indian Ocean (Papangue) and in the Pacific (Equateur, Croix du Sud, Marara). These exercises can gather up to several thousand military personnel coming from a dozen partner States.

France participates to many multilateral military exercises in Southeast Asia (Cobra Gold, Komodo, Pitch Black, Tempest Express, Coores, Marixs), in Northeast Asia (Khaan Quest, Ulchi Freedom Guardian, Key Resolve) and in the Pacific (Rimpac, Southern Katipo, Tafakula, Americal, Kakadu, Pacific Partnership). These exercises aim to increase mutual understanding and to create bonds between the different armed forces.

Many bilateral exercises are also organized at each French Navy and Air Force assets visits in the region. The regular high-level bilateral exercises Shakti (Army), Varuna (Navy) and Garuda (Air Force) embody the strategic partnership bonding France and India”, summarizes the 2019 “France and Security in the Indo-Pacific” official report.

In addition to the regular exercises traditionally organized in the Indian Ocean, such as the above-mentioned Varuna with India since 1993, as well as in the Pacific, such as the biannual “Croix du Sud” humanitarian and relief exercise held from New Caledonia, what is interesting to highlight is the recent ability of the French armed forces to project faster and further both at sea and in the air from the continent. Strategic depth has become the name of the game for French military planners and the technology makes it possible today in unprecedented ways.

The acquisition of the A330 multirole Tanker Transport (MRTT) Phenix as well as of the A400M has for instance been game-changers for the French Air and Space Force which can now conduct long-range and in-depth raids.

The MRTT is an asset particularly important for the airborne strategic nuclear forces which are the ones conducting these type missions. In 2018 the “Pegase” mission occurred in the aftermath to the French participation to the Australian “Pitch Black” exercise. Launching a new type of Air diplomacy able to be mixed and matched with the more traditional naval diplomacy, “Pegase” gathered three Rafale fighters, one A400M, one C-135 FR tanker and one A310 and 120 aviators and included stops in Indonesia, Malaysia, Vietnam, Singapore and India.

It might be noted as well that the acquisition of the European tanker by the Royal Australian Air Force, in turn, has been a gamechanger as well for the Aussies. It has allowed them to marry up with their C-17s to have global lift and reach.

From January 20th to February 5th, 2021, the French Air and Space Force conducted a long-range mission called Skyros which started in Djibouti to go to India, the United Arab Emirates, Egypt and Greece and involved four Rafale, one MRTT, one A400M and some 170 aviators. In June another power projection mission called “Heiphara”, is planned in the Indo-Pacific deploying again 170 personnel, with this time four Rafale, two MRTTs and one A400M straight to Tahiti and back via Norfolk to celebrate the 240th anniversary of the battle of Yorktown in the Fall. As a French Air and Space Force officer stressed, ‘*These kinds of exercises allow to improve our interoperability: with a country like India which traditionally purchases a third of its military equipment from Russia, a third from Israel and a third from NATO countries, it is interesting for Rafale and Sukoi 3 to train as wingmen...*’

The same goes in the maritime theater where the French Navy conducts operations all the time, such as the current deployment of the Frigate ‘‘Prairial’’ from Tahiti to monitor the embargo against North Korea in cooperation with Japan after a technical stop in Guam (a remake of the 2019 mission in that area).

The ‘‘Marianne mission’’ which deployed for eight months and for the first time since 2002 a nuclear attack submarine, the ‘‘Emeraude’’, with a support ship, the ‘‘Seine’’, just ended and was aimed at enhancing cooperation with France’s main naval partners, Australia, the United States and Japan.

A few days ago, the yearly training mission ‘‘Jeanne d’Arc’’ started and an Amphibious Ready Group (ARG) – including the PHA ‘‘Tonnerre’’, the Frigate ‘‘Surcouf’’, an amphibious task force armed with two ‘‘Gazelle’’ helicopters – departed for a five-month deployment period (instead of the usual four) through the Mediterranean, the Red Sea, the South China Sea, the Indian and Pacific Oceans. A mix of operational missions – counterterrorism, security, interoperability with NATO’s Combined task Force CFT 150, as well as humanitarian (with a Covid prism) – will be carried out, while conducting several bilateral exercises with some of the visited countries (Egypt twice, Djibouti, India, Indonesia, Vietnam, Japan twice, Singapore, Malaysia, Sri Lanka). An amphibious exercise is for instance planned with the US and Japan in the Senkaku Islands in May.

If the defense of French interests in the Indo-Pacific region has been re-affirmed under the Macron presidency, it is done under the umbrella of the same desire to get other European nations to join forces all around the world – whether in Sahel or in the Levant region – in order to weigh more in front of abusive authoritarian powers and/or transnational violence, as well as in the counter-proliferation field given the coexistence of several nuclear powers in the Indo-Pacific region. Besides the United Kingdom, another traditional Asia-Pacific power, but because of Brexit, France was for a while the only European nation to have a specifically laid-out Indo-Pacific strategy. Not anymore: Germany designed last September its own Indo-Pacific strategic guidelines and sent a ship for a show of presence in what is considered today the world’s economic lung.

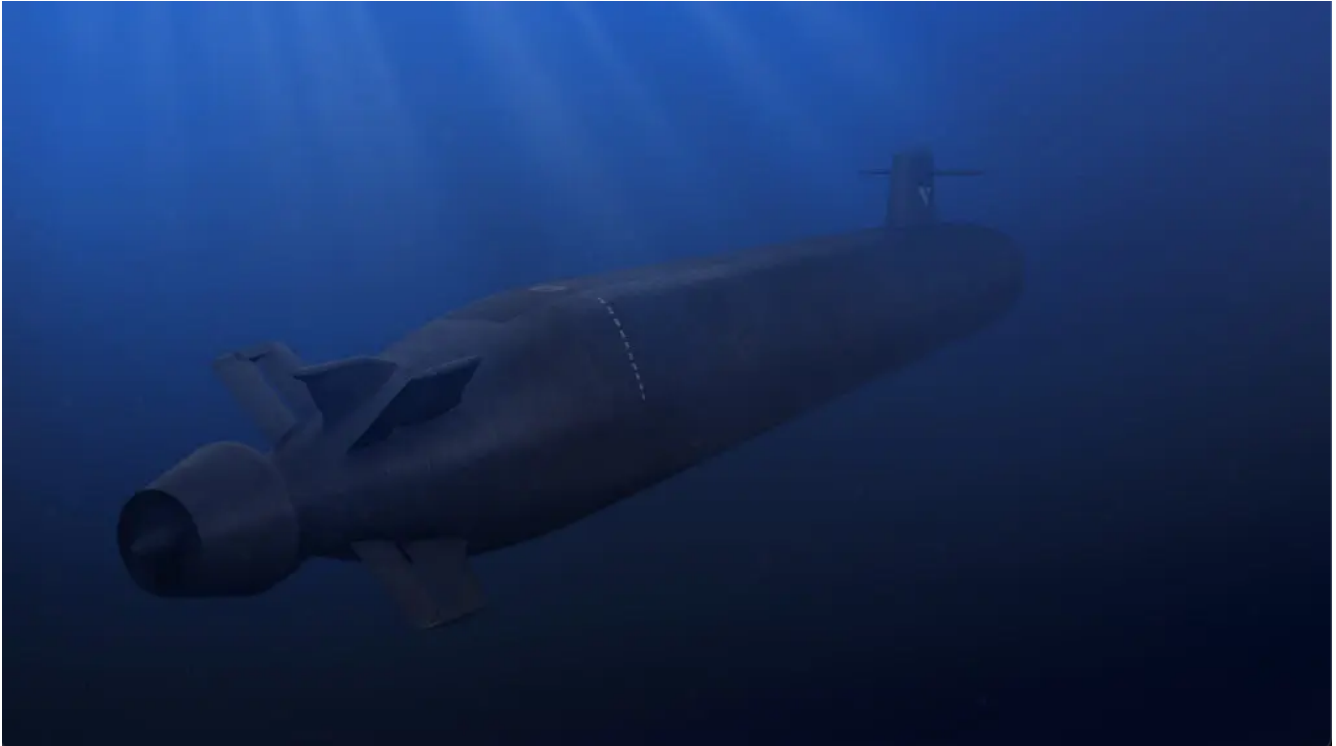
There has been increased concern about the rise of joint naval exercises carried by both China and Russia not only in the Western Pacific and South China Sea, but also in the Mediterranean, the Black Sea and the Baltics. Indeed, the Chinese entered the Baltic Sea for the first time during a Sino-Russian exercise called ‘‘Joint Sea 2017’’. Two years later, ‘‘Joint Sea 2019’’ was the theater for the very first joint sea-based live-fire air defense exercise involving the Chinese People’s Liberation Army Navy (PLAN) and Russian Navy. And this month, Russia, China and Iran are conducting joint naval exercise in the northern Indian Ocean.

The French government’s observation that a dangerous ‘‘contraction of the geopolitical space’’ is taking place due to globalization, the impact of climate change on the maritime roads (e.g., the Chinese goal to link the Baltic sea region to the polar silk region in the Arctic) and new great powers’ military assertiveness is rooted in such drastic evolutions.

A lot more than the eye can meet is therefore at stake and that is what Paris hopes to convey during its next European presidency during which a common European Union Indo-Pacific strategy could be born adding a little extra-weight in a region striving for the right and perennial balance of power.

The French Government Launches Next Gen SSBN Studies

02/23/2021



By Pierre Tran

Paris – France was launching design studies and starting to build first sections of a third-generation nuclear ballistic missile submarine, in a bid to maintain national sovereignty and military independence, the armed forces minister, Florence Parly, said Feb. 19.

A new generation nuclear missile boat signals French ambition to hold firmly to its world military rankings, shared with Britain, China, Russia and the US.

The operational and geopolitical importance can be seen in Parly’s proudly saying Feb. 8 on social media the Emeraude nuclear attack submarine had sailed through the South China Sea, an operation denounced by China as unwarranted intrusion.

“Today, what we are launching in concrete terms are the design studies and general industrial process, procurement, and construction of the most critical parts, as well as the preparation of our industrial capability,” she said at the hydrodynamics center of the Direction Générale de l’Armement procurement office, at Val de Rieu, northern France.

France will look to the four new boats to guarantee a “long-term operational credibility of the ocean-going element of the deterrent,” she said, adding the submarines will replace the Triomphant class of boats without a break in continuity.

The contracts are due to be signed in a few weeks or months, an industry source said.

There will be two prime contractors, with Naval Group as systems architect and building the boat, while TechnicAtome will build the nuclear engine. The DGA will manage the program, along with the CEA alternative energy and atomic energy commission.

The engine will be the K15 engine fitted on the Barracuda nuclear attack submarine, a TechnicAtome spokeswoman said.

The nuclear boiler room on the new boats will form a “link” between the boiler room of less power on the Barracuda and the nuclear boiler rooms – which will be more powerful – on the next-generation aircraft carrier, TechnicAtome said in a briefing note. The new aircraft carrier will be powered by the K22 engine.

Thales will supply a new sonar suite, which will use artificial intelligence and algorithms to handle a vast amount of data, the electronics company said.

The first of the boats will be delivered in 2035, a unit to be delivered every five years, and the fleet operating until 2090, Parly said, adding the submarines will be slightly longer and heavier than the Triomphant boats, and be more silent – no noisier than a shoal of shrimps.

Studies will be conducted for cybersecurity, improved “acoustic discretion,” and to boost the effectiveness of sensors, she said.

First steel is due to be cut in 2023. The new class of submarines will be armed with an updated version of the M51.3 ballistic missile.

Some €4.1 billion (\$5 billion) has been voted for funds for payment in the 2021 defense budget for maintaining and renewing the nuclear capability, which includes submarines, ballistic missiles, and the airborne nuclear-tipped missile. That amount is up seven percent from a year ago.

A detailed breakdown of the nuclear weapons budget is classified as top secret.

“It is too early to say what the bill will be,” said an official in the private office of the minister, regional newspaper Ouest France reported, adding that it was “too much” for those who rejected the nuclear deterrence, and “too expensive” as the missiles would only be fired in retaliation to a first strike.

On the planned sonar system, Thales has signed a memorandum of understanding with the DGA for development of a new generation of flank arrays, sonars fitted on the bow, and a towed array based on optical technology, the company said in a Feb. 19 statement.

There will also be equipment including intercept arrays, echo sounders and underwater telephones, the company said. The sonar kit will be a “significant break” from systems in service. The size of the arrays and frequency bands will deliver a higher level of precision in undersea 3D detection in terms of azimuth, elevation and range.

There will be a sensor data processing system, dubbed ALICIA or Analyse, Localisation, Identification Intégrées and Alertes, intended to allow the operator to handle the range and volume of data, and provide decision support, the company said.

The sonar system will be delivered in increments, with the technological building blocks and first versions to be fitted on the Triomphant class from 2025, and on the new-generation boats from 2035.

The new boat will be some 150 meters long, weigh 15,000 tons underwater, and carry a crew of some 100 strong, Naval News website reported. There will be 16 nuclear ballistic missiles, and four tubes for the F21 heavy torpedo and likely, a planned future cruise/anti-ship weapon.

The Téméraire submarine test fired an M51 ballistic missile in June 2020, without a nuclear warhead.

In a few weeks the DGA will mark 60 years since its founding under the then president Charles de Gaulle, Parly said, with the aim to be independent in arms, to give France a voice which would be heard and understood.

This year also marked 50 years since the first sailing of a French nuclear ballistic missile submarine, she added.

“France would not be France without its deterrence,” she said in her concluding remarks. “We reaffirm our determination of independence and sovereignty.”

Graphical Rendering of Next Gen SSBN: Credit: Naval Group

Leveraging an African Opportunity for the Counter-Terrorism Fight

03/01/2021



By Murielle Delaporte

Sahel is among the worst nightmares for any counter-terrorist expert and planner.

It feels like the old saying of getting rid of an enemy through the door before it comes back – regenerated or under a different form – via the window.

In some ways the level of danger and violence resembles the early 2000's with the same type of alliances between the Touaregs of Northern Mali and Al Qaida terror groups which triggered the Malian government to request Paris help to roll back the Islamist threat,

The Serval operation in 2013 became Barkhane in 2014 in order to enhance regional stability among the newly created G5 Sahel group which includes in addition to Mali, its neighbors Niger and Burkina Fasso, as well as Mauritania and Chad on each side.

Since 2013 a myriad of organizations and countries have been acting like fairy godmothers providing financial help for development and military support to fight violence, and the number is still growing as more European partners' special forces are in the process of joining the recently created Takuba Task Force.

The U.S.-supported but French-lead Barkhane operation has been successful in containing the Jihadist threat, but has not been able to fully eradicate it, as the negative spiral between terrorist attacks and the resulting increased poverty and migrations keep feeding each other.

The real origin of this centuries-old regional chaos has indeed mostly to do with the immensity and the harshness of the territory, making it difficult for any state authority to settle and provide governance, food, jobs, as well as education.

Terror groups come and go constantly adapting to the security posture and regenerating while living on the multiple traffics the geography allows (humans, drugs, arms, etc).

Figures of increased attacks and civilians' deaths would be enough to discourage any attempt to go on and try to get rid of a few thousands agile and deadly fighters bringing hell on a daily basis to terrorized populations.

However, they mask another reality on the ground, which is the breakthrough of having the G5 countries recognizing they have to unite to fight their common enemies. If bilateral or trilateral mixed patrols between Sahelian countries and Barkhane, as well as with Niger-based U.S. forces, have been existing since the Serval aftermath, the concept of an all-African regional military coordination allowing the conduct of operations is rather new. And such a force is tailored to deal precisely with jihadist groups grafting themselves on the misery of populations caught in the middle of multiple and multiform strife.

The G5 Joint Force in Sahel : A Promising Case Study of a Way Ahead

The G5 force was authorized by the African Union Peace and Security Council in April 2017 and was strengthened by the adoption of UN Security Council (UNSC) Resolution 2359 in June.

It was shaped on the basis of lessons learned from the Multinational Joint Task Force (a combined multinational formation comprising units from Benin, Cameroon, Chad, Niger, and Nigeria to fight Boko Haram) as well as other similar experiences (Somalia). The G5 Joint Force in Sahel (or FC-G5S

for “Force conjointe du G5 Sahel”) was meant in its current Commander (COMANFOR), general Oumarou Namata Gazama’s words, “to respond to the regional nature of the threat and to fill the trans-border security gap in order to accompany the G5 Sahel in carrying on with its credo : Security and Development.”

The approach has focused in countering the spillover of terror groups between Mali, Niger and Burkina Faso in the area known as “the three borders.” Before 2017, none of the armed forces of these countries were allowed to pursue their enemies in the neighbor’s territory. The terrorist groups took advantage of such a weakness to spread and hide before regrouping.

But now the G5 Joint Force can operate in three 200-kms sectors (it used to be only 100 kms and the area of operation keeps increasing, which is a sign of the existing virtual circle between success and confidence). After a false start caused by a deadly attack on their headquarters in Central Mali in 2018, the

G5 Joint Force in Sahel has been generating and training its forces (currently comprised of 7 battalions and a total of 4,000 men). These successes have been evident last year. The joint command has gathered not only the three African countries, but also French and U.S. military officers in Niamey, Niger, wide-ranging operations. And these operations were able to be planned and coordinated with others led by national armed forces, the Barkhane Force as well as with the United Nations Multidimensional Integrated Stabilization Mission in Mali initiated since 2013 (MINUSMA).

As an example of the typical multilateral cooperation that goes on the ground on a regular basis, a recent major operation designed to control a 300-mile wide specific area of the theater involved 3,000 troops, half of which originating from Mali and Niger. This operation was also not only supported by U.S., British and Danish air and ISR assets, but also (and for the very first time) by French and Estonian special forces from the Takuba Task Force. And these forces operated along with units from Mali and Niger as well.

Backing the efforts of the G5 Joint Force in Sahel provides an example of how Western and African forces can work together to not only contain but contribute to eradicate terrorist violence and control illegal trafficking in the region. And this is being done without a large contingent of western boots on the ground which would simply generate another endless war.

At the same time, the G5 Joint Force provides a way to continue Western engagement to work with Africans to deal with the ongoing terrorist challenges in Africa, Europe and beyond. Supporting a toolset such as the G5 Joint Force in Sahel constitutes in that sense a genuine springboard for future transnational stability, accountability and peace, as its main focus is cross-border operations coordination, which is key to fight the terrorist groups’ and counter their strategy.

Source for the photos: G5 Sahel facebook September 2019

France and the Barkhane Operation: Shaping a Way Ahead

01/17/2021



By Pierre Tran

Paris – France should pull out of Mali. That is the French media message to the Macron administration, as fatalities rise in what is highlighted as a quagmire.

The new year began with a deadly start, when a homemade road bomb killed Jan. 2 two French soldiers in an armored car, just five days after three soldiers were similarly slain.

That brought to 53 the number of French soldiers killed since 2013 in the Serval and Barkhane operations in the Sahel region, sub-Saharan Africa.

The Barkhane mission seeks to hit armed groups linked to the al Qaeda and Islamic State.

An Ifop opinion poll showed a swing away from public support, for the first time showing 51 percent against the mission in Mali, *Le Point* weekly magazine reported Jan. 11.

That negative sentiment extended to the French deployment of 5,100 troops in the five allied nations in the Barkhane operation, namely Burkino Faso, Chad, Mali, Mauretania, and Niger, Ifop director Jérôme Fourquet said.

The poll showed a drop of nine percentage points from November 2019, and down 24 points from February 2013. The poll was conducted Nov. 28-29.

A video report on *L'Opinion*, a news website, set out clearly the case for withdrawing troops: there has been no terrorist attack on French soil from the Sahel region, intelligence chiefs said. The “insurrections” can only be resolved by talks, as the conflicts reflect disputes that date back to before the French colonialism.

A French intervention in Mali may have been needed in 2013, ordered by the then president François Hollande, but today’s problem is how to pull the troops out while avoiding making it look like a failure, the video report said.

“What is France doing in Mali?” a leader in afternoon daily *Le Monde* asked. Eight years after the intervention ordered by Hollande, the answer is “less and less clear.”

The French forces have killed leaders of the insurgent forces and just manage to hold the line between the Sahel and Libya, with the latter a hornet’s nest, the leader said.

But they are unable to prevent strikes into the heart of Mali, nor the “contagion” into Niger and Burkino Faso, the leader said. France is ready to hold talks with certain elements of the insurgents.

A withdrawal is not just a military matter but a political move which should factor in the needs of local communities and maintain democratic freedom dearly bought, the leader said.

Frosty media relations

The public discussion in France has not been helped by a testy exchange between the press and the armed forces, criticized for what was seen as a slow denial of allegations from Mali of a wedding party hit by a Jan. 3 French air strike.

Armed forces minister Florence Parly denied Jan. 10 the allegations, insisting two Mirage fighter jets killed armed insurgents in the village of Bounti, central Mali, and that no women and children were hit.

There was mystery over the alleged strike of civilians by a helicopter and it was hard to get any information, Euronews, a news channel, reported three days after the action in Mali.

That difficulty over reporting a military strike added tension to the already strained relations between the French press and the defense ministry.

A defense blog, *Le Mamouth*, reported the ministry had planned to send 20 reporters on a press trip to the Barkhane mission last year, but that was cancelled due to two lockdowns.

France will likely start pulling out troops of the Barkhane operation, with decisions to be taken at a summit in February of the five African allied nations and France, Parly said. That reinforcement of 600 troops was temporary.

Last year, France sent in 600 troops to strengthen the 4,500 in the Sahel, a region stretching across central and western Africa, as vast as Europe. France already had some 4,500 troops in the former colonies before stepping them up to the counter-insurgency mission.

France gets logistical support from European nations, including the British RAF's three Chinook heavy lift helicopters. There is a UN peacekeeping mission in Mali, but the fighting is left to the overstretched French forces.

Meanwhile, there is concern over the arrival of 300 Russian military personnel to train troops in the Central African Republic, a nation with close ties to France.

There is also Turkey, which looks like expanding its interests in Africa, with the signature last July of a military training and cooperation agreement with Niger, as noted by the Jamestown Foundation, a think tank.

One of the moves of the outgoing Trump administration has been pulling U.S. troops out of Afghanistan, which may be reconsidered with the arrival of president-elect Joe Biden.

Biden has nominated Lloyd Austin, an ex-army general, as defense secretary, and Antony Blinken as state secretary. The latter was deputy national security adviser in the Obama administration, and attended a bilingual school, here.

France pulled out of Afghanistan in 2012, two years earlier than expected. That withdrawal was one of François Hollande's campaign promises when he ran for the presidency, and when he went out to Afghanistan as head of state and commander in chief, he told the French troops they would be home by Christmas.

It remains to be seen how Macron will shape the way ahead with regard to the Barkhane mission.

Featured Photo: Source: <https://www.nytimes.com/2020/03/29/world/africa/france-sahel-west-africa-.html>

A Hybrid Diesel-Electric Engine for the New Franco-German Tank?

03/14/2021



By Pierre Tran

Paris – Arquus, a French builder of light and medium armored vehicles, has pitched the concept of a hybrid diesel-electric as an alternative to a conventional diesel engine for a planned tank for the French and German armies, executive chairman Emmanuel Levacher said March 10.

“We have proposed a large hybrid engine,” he said on the sidelines of a news conference on 2020 financial results.

Arquus has pitched the concept to Nexter, the French systems integrator and prime contractor in the Main Ground Combat System, a cooperative project looking to replace the French Leclerc and German Leopard 2 heavy tanks in 2040.

Arquus is a subsidiary of Volvo, a Swedish truck maker.

A Nexter spokesman confirmed there were talks over the hybrid concept.

The hybrid concept draws on two motors, one diesel, the other electric, with the latter used to power electronic systems on board, with the diesel engine switched off while the tank is static.

An electric motor can recharge batteries, and offers stealth and silent operations, with the tank’s heat signature lowered when the diesel engine is turned off.

An electric motor could also power laser instruments fitted on the tank.

If Arquus were to supply a hybrid engine, the company would ship a military version of Volvo heavy truck motors, and its own electric motor.

The proof of concept is the Arquus Scarabée, an eight-ton, four-wheel drive light armored vehicle, which had a commercial launch at the Idex trade show for land weapons, which ran Feb. 21-25 in Abu Dhabi.

Arquus gave a live demonstration of the Scarabée in September, at Versailles, just outside the capital.

Much is riding on the Scarabée, a flagship offering Arquus will pitch as a replacement for the French army’s véhicule blindé léger (VBL) scout car. France has yet to launch a tender, but the company launched the project in 2018 and invested own funds to develop the vehicle in reconnaissance and combat versions.

The Scarabée is pitched at a high-end niche market, such as special forces, with a small number of potential client nations. Operators can opt for a version with a battle management system.

The company will need to convince prospective clients the hybrid vehicle is fast enough and has sufficient range, an arms specialist said. A hybrid car in town has nothing in common with a hybrid-powered combat vehicle in the field.

The French army has a 1,600-strong VBL fleet to be replaced, with a competition likely to be open to European suppliers.

Arquus has also set up a Hornet business unit, seeking export sales of its remote control weapon station, a system fitted on the Griffon multirole troop carrier, and Jaguar combat and reconnaissance vehicle, two key elements in the French army's Scorpion modernization program.

Arquus seeks to win five to 10 percent of world sales in remote weapon systems and will encounter stiff competition from Kongsberg, which holds an estimated 60 percent of the world market. Much of the value lies in the weapon system rather than the guns, with client nations free to choose weapons ranging from 7.62 mm machine guns to 40 mm grenade launchers.

On Arquus's 2020 profitability, the results were below those of the previous year and were "slightly positive," Levacher said. There were extra costs and a 50 percent drop in exports due to COVID 19. A foreign sale of 200 Bastion armored personnel carriers was postponed last year, reflecting increased uncertainty and budget cuts.

Budgets were slashed even if demand was there, he said.

"Competition is brutal," he said, with low barriers to entry into the market, with aggressive competition from emerging markets. There is competition from Turkey, South Korea and South Africa for light armored vehicles.

Armies trailed in the defense budget compared to the air force and navy, he said.

The outlook for 2021 was for a year of recovery, he said.

The aim for 2021 is to post a 10 percent rise in sales, following the 10 percent drop in 2020, he said. There had been fears of a bigger fall in sales. Sales in France rose 23 percent last year.

The target is an average annual sales growth of five percent, hitting €1 billion (\$1.2 billion) by 2030, seen as delivering critical mass, he said. Annual sales have been around €600 million.

The book-to-bill ratio of sales to orders was 1:1. The order book was stable at €5.5 billion, of which €1.3 billion were orders, with the remainder including optional tranches of orders.

There is need for some caution as there is "low visibility," but the company remained ambitious, he said. Service has contributed 42 percent of sales, and the aim is to increase that to 50 percent, with the balance coming from production.

The company is reorganizing four factories around specialization, with Saint-Nazaire, western France, working on service support; Marolles, near the capital, making military modifications to motors, and building and repairing vehicle parts; Garchizy, central France, building armored cabins and delivering spare parts; and Limoges, central France, building new vehicles.

Some €8 million is being spent on the Limoges plant, and €2.5 million over three years for Saint-Nazaire.

MTU supplies the diesel engine on the Leopard 2, while Leclerc has a Wartsila motor.

The FCAS “Bras de Fer”: A February 2021 Update

02/19/2021



By Pierre Tran

Paris – Dassault Aviation has insisted on protecting intellectual property rights over its fighter jet technology, while Airbus Defence and Space has sought full access to that privileged information, conflicting demands which have weighed on a Franco-German led project for a future combat air system.

French president Emmanuel Macron and German chancellor Angela Merkel called Feb. 5 for a resolution to differences on the FCAS project, pointing up the political significance of the industrial differences.

This was an important milestone, negotiating contracts for phases 1B and 2 of the FCAS project, and it was a “difficult moment to finalize negotiations,” Airbus chief executive Guillaume Faury said Feb. 18 in a video press conference on 2020 financial results.

European sovereignty was at stake, he said, adding that it was “important to get the right structure at the beginning.”

The FCAS is under French leadership, and German partners seek a “satisfactory level” of participation, while holding talks on the sharing of “intellectual property rights, tasks and leadership,” Merkel said at a bilateral defense and security council held by video. Agreement was likely to be reached in the coming weeks, in time for scrutiny by the parliamentary Bundestag budget committee, she added.

Similar differences had to be resolved on the main ground combat system, she said.

The MGCS project consists of a new tank linked up with manned and unmanned vehicles. German industry leads that land project.

Macron said he was confident a deal on FCAS would be reached in 15 days.

It remains to be seen what kind of agreement will be reached, with some French concern political pressure might be brought to bear on French industry to cave in to German demands for access and work share.

What is at stake is a two-phase 1B contract to build a technology demonstrator for a next generation fighter, a key element in the FCAS project. That contract is worth an estimated initial €2 billion (\$2.4 billion), rising to a total €4 billion by 2026 when the fighter is due to fly.

In the longer term, there are technology and work on a program estimated to be worth €100 billion over some 20 years, pitched as a political pledge for European sovereignty.

French armed forces minister Florence Parly was holding Feb. 18 a phone meeting with her German counterpart, Annegret Kramp-Karrenbauer.

Dassault and Airbus DS share the FCAS project 50:50 as joint prime contractors, with the French company taking the lead on the fighter, which will replace the Rafale and Eurofighter. Airbus DS is based in Germany, so this is essentially a Franco-German dispute.

The heads of Dassault, Airbus DS, Safran, MTU, and Joël Barre, head of the Direction Générale de l’Armement procurement office, and his German and Spanish counterparts met Feb. 17 in a bid to resolve the dispute, business daily Les Echos reported. That meeting was in the suburbs of the French capital.

Dassault was claiming 34 percent of work share after initially seeking 46 percent, with 20 percent for German, and 23 percent for Spanish partners, the report said. Spain is also an FCAS partner, and as Airbus is the major company there, that boosts the share of the work for the aircraft company.

Dassault seeks that Airbus DS accept that its technology is sealed in “black boxes,” rather than agreeing to full access for the German company.

“This is normal,” said François Lureau, a consultant with EuroFLconsult, and a former procurement chief. In negotiations, a partner will want a little bit more, and the program will be worth billions.

Macron has put on pressure and it will be up to the DGA to broker a deal, he said. That resistance to granting full access is standard practice, as can be seen in the F-35 program where the core technology is “American eyes only.”

The sensitivity over technology transfer could be seen in the denial of UK access to the source code on the F-35, despite that nation's status as the sole tier one industrial partner. The United Arab Emirates had sought access to source code on the F-16 block 60, when the Gulf state ordered its advanced Desert Falcon version, to no avail.

Deadlines concentrate the mind wonderfully, with budgetary approval by the German parliamentary committee due to meet in April or May, and general election in September.

“When time is tight, a solution has to be found,” Lureau said. “Urgency poses the question: do you want it or not?”

Strong German Industrial Lobby

In France, there is a perception that a powerful German industry lobby has won support from the Bundestag parliament and the chancellor, while it was uncertain the French government would back domestic industry.

“My concern is that there is search for a political solution, and the (French) defense industry will get its arm twisted,” Christian Cambon, chairman of the defense committee of the French senate, told Feb. 16 the defense journalists association in a video briefing. The scale of the FCAS program was some €100 billion, he said.

The stakes are high both in value and in a company's future know-how.

“Defense programmes like this are all about the development and acquisition of technology – and that is exactly what the Germans are holding out for,” said Sash Tusa, analyst at equity research firm Agency Partners.

“It is clearly important to address these issues as early as possible, but doing so has poisoned the Franco-German relationship at both industrial and political levels, and that is not good for SCAF (Système de Combat Aérien du Futur) as a program.”

To further strain the relations, the French plan to fly a Rafale [fighter jet] as the platform for the technology demonstrator has annoyed the German side, which has countered with a plan for a demonstrator based upon the Eurofighter, he said.

The contract for the demonstrator will set terms for who does what, and also “who knows what,” namely gaining access to the overall technology beyond the work assigned.

There is also the question how to divide the work, which is expected to be based on industrial expertise, rather than ambition to acquire new technology. That reflects the lessons learnt on building the A400M transport plane, which suffered a deadly crash and cost overrun.

In contract negotiations, there will be one subsystem plugging into another, much as there are overlaps in a Venn diagram. The subcontractors will need a certain amount of information, and the amount of information may be part of the contract talks. Airbus is reported to seek the maximum, while Dassault offers the minimum.

The companies must agree the work share on the seven FCAS sectors, or pillars, namely: the new fighter, remote carrier – or drone, combat cloud, engine, sensors, low observability, and simulation.

The Bundestag effectively sets the timetable, as the parliament must vote the budgetary approval for the FCAS contracts.

Drone Warfare: Working Countermeasures

02/07/2021

By Pierre Tran

Paris – The use of low-cost armed drones in bloody conflicts in central Europe, North Africa and the Middle East highlights the need for countermeasures, while the UK is showing interest in ordering these cheap and deadly weapons.

Armed unmanned aerial vehicles were used to wreak havoc in the disputed Nagorno-Karabakh region between Azerbaijan and Armenia, and military drones have flown in Libya, Saudi Arabia and Yemen.

Interest may have been heightened following a Jan. 26 air attack on Riyadh, just days after a Jan. 23 interception of a missile or drone in the skies over the Saudi capital.

Those air attacks were just the latest attempts to hit Saudi Arabia, with the Yemeni-based Houthis insurgents previously having sent armed drones.

The market for armed tactical drones appears to be thriving.

The Azeri use of the Turkish TB2 drone against Armenian forces sparked UK interest to acquire a similar weapon, daily *The Guardian* reported Dec. 29.

That type of UAV evades conventional air defenses, flying too slow and too low to be detected by older military radars and they escape missiles designed to hit fighter jets, incoming missiles and other airborne threats.

A lack of necessary kit fuels potential demand for countermeasures to detect, identify and disable the tactical drone.

In the pipeline of prospective threats, there are mini- and micro-drones carrying grenades, calling for further countermeasures, an industry executive said.

Lessons to be Learned

A Nov. 24 research note from the European Council on Foreign Relations, a think tank, pointed up the need for Europe to learn lessons from the critical Azeri use of tactical UAVs in the Azeri-Armenian conflict.

The Azeri forces flew drones to locate Armenian forces and hit them hard.

Armenia is armed with three Russian surface-to-air missiles developed in the 1980s, namely S-300PT and PS, and 9K37M Buk-M1, said the note, titled Military lessons from Nagorno-Karabakh: reason for Europe to worry.

“While the missiles are still potent, their sensors are designed to detect, identify and track fast-moving fighters, and their moving-target indicators disregard small, slow drones,” the note said.

Those missiles were modern, but the Armenians lacked computer systems for “plot fusion,” namely gathering and combining raw data from different radars to give a “aggregated situation report,” the note said.

That lack of radar network meant Armenian forces failed to detect and track advanced drones or stealthy aircraft, the report said, and they also lacked jammers to disrupt signals linking the Azeri drones to ground controllers.

It was only in the last days of the fighting, the Russian forces used an electronic warfare system, dubbed Krashukha or Belladonna, to disable Azeri drones on deep strike mission, the report said.

Those Azeri drones were supplied by a Turkish manufacturer, Bayraktar, *Asia Times* reported Oct. 20.

The Azeri forces deployed another weapon, the Harop drone from Israel Aerospace Industry, the ECFR note said. The Harop, known as a “loitering munition,” flew over the combat zone, waiting for an opportunistic strike, with no need for a command and control link to a ground station.

The outlook is that regional powers Israel, South Africa and Turkey, as well the major powers China, Russia and the US, will learn from the Azeri operations to develop artificial intelligence and lethal autonomous weapon systems, the note said. That is in contrast to a European move toward outlawing such deadly autonomous systems.

A military victory allowed Azerbaijan to secure control of Nagorno-Karabakh, and the retreat of Armenia from the disputed region.

The low-cost Turkish drone used in that Caucasus conflict drew UK interest in acquiring similar aircraft, The Guardian reported. Such an acquisition could be in the five-year defense review due to be unveiled in the coming months.

The UK defense minister, Ben Wallace, said in December the Turkish TB2 drones showed how other countries were “leading the way,” the report said. Those drones had destroyed hundreds of armored vehicles and even air defense systems, he said. There was also video evidence suggesting the drones killed many people in Nagorno-Karabakh, the report said.

A TB2 drone was estimated to cost \$1 million-\$2 million per unit, far less than the unit price of almost \$20 million the UK was paying for the General Atomics Protector next-generation drone, the report said.

Drone Wars

The proliferation of UAVs is such that the skies over Libya were “possibly the largest drone war theater now in the world,” the UN special representative to Libya, Ghassan Salame, said Sept. 25.

Both sides of the civil war flew drones, hitting civilian targets with a “collateral effect” of creating 120,000-130,000 refugees, he said.

On the one side, the Libyan National Army led by Khalifa Haftar, flew the Chinese Wing Loong drone, while on the other side, the Government of National Accord flew the Turkish TB2, broadcaster Al Jazeera reported May 28.

Ankara intervened in Libya December 2019 to support the UN-backed GNA, deploying the TB2 to counterattack the LNA seeking to seize Tripoli.

Those Turkish drones hit ground targets and provided air cover for GNA troops, helping to turn the tide against the advancing LNA forces.

Some of the Turkish know-how in drones has its roots in the engineers who worked with Airbus on the Talarion project for a European medium-altitude, long-endurance UAV, the executive said. Following cancellation of Talarion, the Turkish engineers were recalled, bearing knowledge of how to build a drone.

Meanwhile in Yemen, the Houthi rebels flew a bomb-bearing drone to strike the government in Aden, CBS News reported Dec. 30, reporting Al-Arabiya, a Saudi television channel. That UAV was downed.

Saudi Arabia bristles with weapons against air threats, with Patriot, Hawk, Crotale and Shahine missiles, backed by counter battery radars.

The air defense in September 2019 failed to prevent cruise missiles and drones hitting two Aramco installations, shutting down half of Saudi oil production.

That air strike effectively opened a sales window for anti-drone weapons.

Seeking Countermeasures

The ECFR note pointed up a general lack of European capability to fight back against drones — apart from France and Germany.

The need is for the right kind of radar, command and control systems, and weapons to detect, identify and “neutralize” low-flying, low-speed UAVs, the industry executive said. Satellites can also help fight against drones.

Hensoldt is delivering a first batch of 10 Spexer 2000 3D radars to Kongsberg Defence & Aerospace for the counter-unmanned aerial system for the German army, the German electronics company said in a July 28 2020 statement.

The Spexer anti-drone radar and remote control machine gun are on a Boxer armored vehicle, meeting Nato requirements for a very high readiness joint task force for 2023.

That technology stems from radars for surveillance of desert borders and harbors in Saudi Arabia, deals won by the then EADS, the executive said.

Hensoldt was formed from the divestment of Airbus's defense electronics business in 2018.

In France, there is radar which could spot drones, at the highly protected naval base for nuclear ballistic missile submarines at Ile Longue, western France.

European missile maker MBDA gave a demonstration Nov. 6 2019 to 15 foreign delegations the anti-drone capabilities of its Licorne command and control system, firing a Mistral missile against a UAV.

Communications & Systèmes, a systems integrator, has delivered two prototype "hard kill" weapon systems in the French Army's Arlad anti-drone project, CS director Egidio Cau said Jan. 28.

These technology demonstrators are fitted on armored vehicles, which could protect army bases and mobile deployments such as operations in Mali. CS delivered the first unit in December.

The first trials used conventional 12.7 mm machine gun rounds, with the next step of an armored vehicle firing a 40 mm canon with "intelligent munitions" programmed to explode in mid-air to create an airburst — a 5×5 meter cloud of metal — to destroy the drone in its flight path.

Trials on that airburst project are due to this year. There is a small amount of government funding on that project.

For a longer range 10-15 km interception of larger drones, CS plans to give a demonstration this year of a missile guided by a Saab Giraffe radar.

Cau declined to say which missile would be fired. The Boreades anti-drone command and control system was "agnostic" on weapons, which could be from MBDA, Thales, Rheinmetall or an Italian company.

CS is also testing a drone with 15 kg of payload to intercept an enemy drone, to jam or blow it up.

The company delivered in 2018 18 Milad anti-drone systems with 30 jamming guns to the French forces, based on its Boreades system.

CS is working on an overall command and control system to track drones and various anti-drone weapons, highlighting the need for interoperability as there are several anti-UAV defenses.

Other means to down drones are high powered electromagnetic and microwave weapons to disrupt the drone's signals. Electronic countermeasures can be used to blind the UAV, interfere with its GPS self-positioning, and redirect its flight.

There is work on wiring artificial intelligence into C2, seeking to make detection, identification and classification more sure.

The difficulty is to find countermeasures for micro and mini drones such as the Parrot and Quad, hard to detect and which could be adapted to carry a grenade.

Lasers Work in Progress

Lasers are also being developed to take down drones.

Cilas was testing its HELM-P laser weapon against UAVs at the Direction Générale de l'Armement Biscarosse missile base, southwest France, the technology office Agence d'Innovation de Defense said Nov. 9 on social media.

Cilas is a unit of the Ariane space rocket group.

"The first results are promising," AID said in a statement, adding that the laser could eventually be extended to hit rockets, artillery, and mortar rounds.

Cilas leads a 16-strong TALOS (Tactical Advanced Laser Optical System) consortium, in a three-year, €5.4 million study for a high-powered laser. The European Defense Agency backs that research project, a step toward development of a weapon.

MBDA is working in three laser projects, with Germany leading the way, a defense source said.

MBDA and its partner Rheinmetall won a German contract for a demonstrator for a naval laser weapon, the missile company said Jan. 28.

The deal, worth in the low 10s of millions of euros, will see Rheinmetall supply the laser and MBDA delivering the tracking, operator's console, and plugging the laser into the command and control system. The demonstrator is due to be tested onboard the F124 Sachsen frigate next year.

In the second project, MBDA leads the UK Dragonflyer consortium, which showcased a beam director turret at the 2017 DSEI trade show in London. That study is worth £30 million (\$41 million) and the consortium includes Arke, BAE Systems, GKN, Leonardo, Marshall, MBDA and Qinetiq.

MBDA is also in the European TALOS study.

The drone threat has fuelled export sales of a mature air defense system dubbed ForceShield, said Jean-Philippe Hardange, Thales director of strategy for integrated airspace protection systems.

"There is a lot of demand," he said, with sales growth in that sector clearly outstripping the two-three percent rise in defense budgets of Nato allies.

The UK is operating the system initially armed with Starstreak missiles, then with Lightweight Multi-role Missiles.

Export clients bought the weapon with Ground Master 200 radar and C2 system. The radar could pick up a tactical UAV at a nominal range of 50-100 km, while a smaller drone could be detected at a nominal range of 15-20 km.

France has ordered the RapidFire 40 mm naval gun to arm four fleet auxiliary ships being built, and the gun could down drones and hit fast moving boats, he said. The first ship is due for delivery next year and enter service in 2023.

Thales gave a demonstration of a land based RapidFire in 2013. There were no immediate orders. A sales pitch could point out how army, air force and navy could use that version to protect land bases.

The gun is supplied by CTAI, an Anglo-French joint venture of BAE Systems and Nexter.

Be Selective

There is clearly a market for anti-drone weapons, with a range of technologies. The question is which approach is the most practicable.

“There are limits to technology,” said Henry de Plinval, director of the drone program at Onera, a research office specializing in aerospace defense. “Technology is not magic.”

The office expects to complete by the end of this year Shield its two-year study into the technology and operational aspects of anti-drone measures under development, he said.

The study aims to give expert opinion on the limits of technology, to point government and industry in the right direction for countermeasures.

The aim is to be “more precise,” he said.

In research for drone detection, Onera is drawing on work on passive radar, using the general background of electromagnetic signals for devices such as televisions to detect UAVs.

There are studies of identification to confirm the object is a military drone and not a bird or a tree. That includes advanced research into laser imaging detection and ranging (LIDAR) for 3D identification of targets at long distance of “several kilometers,” he said.

To “neutralize” drones, there is the conventional GPS jamming, but there are strict rules on GPS, on which airlines depend, he said. A more sophisticated approach is GPS “spoofing,” to divert the drone to another flight path.

A “kinetic” hit is fine in open spaces such as deserts, but harder to use in urban combat, he said. Alternative measures will be needed.

There is an operational need, but technology needs time, he said.

Drones over the Med?

Meanwhile, tension between Greece and Turkey over territorial claims over the Eastern Mediterranean presents a marketing opportunity for drones.

A land and sea surveillance project dubbed Semaphore is seen to be of potential interest to the Greek forces, the executive said. That system offers a mix of border surveillance and flying mini UAVs over the sea.

Four fixed-wing drones, each flying eight hours, could provide 24-hour surveillance over the Eastern Mediterranean. A Greek coast guard patrol boat could launch a drone by catapult and recover with a net, or a drone could be launched from one of the Greek islands.

An extended network of UAVs and radars would allow Greece to track Turkish naval activity, and follow Turkish moves on the island of Cyprus, close to mainland Turkey and the subject of long standing dispute.

Greece and Turkey are in dispute over claims of exclusive economic zone in that part of the Mediterranean, where Ankara is looking for oil and gas reserves.

Athens has ordered 18 Rafale fighter jets and missiles in a deal worth €2.5 billion (\$3 billion), pointing up the tension with Ankara.

Dassault and the Future Combat Air System: March 2021 Update

03/07/2021



By Pierre Tran

Paris – Dassault Aviation has agreed to accepting a third of work share on the planned future combat system and its next-generation fighter jet, but there is dissent on working without a prime contractor on key systems such as flight control, executive chairman Eric Trappier said March 5.

There is need to resolve differences over the planned work packages as contracts need to be signed for phase 1B and 2 of the FCAS, a project seen as critical for French ambitions to maintain a military capability spurred by European sovereignty.

There is difficulty in accepting there would be joint work packages — without a prime contractor — on “sensitive, strategic” systems such as flight control, he said in a virtual news conference on the company’s 2020 financial results.

“If there is no prime, it is not possible,” he said. “It cannot work. A leader is needed.”

Airbus agreed that Dassault should have a prime contractor role in those key work packages, and it is up to the three partner nations to agree, he said.

“We are still in talks,” he said.

FUTURE COMBAT AIR SYSTEM (FCAS)

- February 2020: following the launch of the JCS (Joint Concept Studies), launch of phase 1A of the FCAS demonstrators, and in particular the New Generation Fighter
- December 2020: integration of Spain in the initial contract and new equilibrium
- 2021: preparation of phases 1B and 2 for the demonstrators. Proposals have been submitted. Equilibrium between the 3 states is tough: Dassault Aviation leader of the NGF, but the “3 thirds” rule to share workload and responsibilities (equal partners / quality balanced) leads Germany / Spain and Airbus to a disagreement with France and Dassault Aviation
- Difficulties pending on contractualisation: project management and intellectual property



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DASSAULT
AVIATION

France is the lead nation on the FCAS, with Germany and Spain as partner nations. Dassault will be prime contractor on the new fighter, which is due to replace the Rafale and Eurofighter Typhoon jets in 2040.

Work packages on the FCAS and the fighter will be shared out in thirds, as there are three partner nations, he said. Airbus is the lead company in Germany and Spain, so that company will get two thirds of the work packages, leaving one third for Dassault.

“That is the first difficulty, but it is a difficulty that Dassault has accepted,” he said.

Then there is the principle of joint work packages, proposed by Airbus, in which the partner companies work together and there is not a lead company, he said. About half the work packages are on that joint principle, with the other half shared out in a “fair way,” he said.

Dassault has also agreed to that, he said. It is the lack of a prime on the strategic systems which has placed a spanner in the contract works.

Agreement on the work packages is needed to allow contracts to be signed for the phase 1B and 2, needed for a fighter jet technology demonstrator to fly in 2026.

Getting the work packages right is seen as key, as they could set out the industrial structure of a European arms program estimated to be worth €100 billion (\$120 billion).

An agreement could be reached, he said, but a company chief needed to have a plan B in case plan A failed, while working hard to get plan A.

What price cooperation?

What price for the three nations if the program were pursued just for the sake of cooperation, Trappier said. France has the industrial capability with Dassault, Safran, Thales and MBDA to build and arm its own fighter.

President Emmanuel Macron and the outgoing German president, Angela Merkel, launched in 2017 the project for a European fighter jet. That fighter is part of the FCAS, which includes a communications network dubbed combat cloud, and remote carrier or drones.

On intellectual property rights, Dassault had no problem with sharing its future technology with Airbus on the FCAS, he said. Dassault would not pursue a US-style sealed black box approach on its work, as that was technology in the “foreground.”

But the “background” knowledge of Dassault’s more than 70 years of aeronautics would not be handed over, he said.

There would not an IPR problem as governments could look inside the black box on the European project, he said. The problem was the governments recognizing Dassault’s claim for prime contractor status in some of the work packages.

On exports of the fighter, there may be “a difference in perception” in France and Germany, but there would not be a governmental problem as there is an extension of the Debré-Schmidt agreement on foreign arms sales, he said, with Spain joining the partnership.

France and Germany signed a cooperation treaty on Jan. 22 last year, which included an arms export agreement, allowing either country to veto a prospective deal if its national content exceeded 20 percent of value. That pact extended the Debré-Schmidt agreement reached in the 1970s.

Asked about the outlook for sale of the Rafale to Switzerland, Finland, India and Croatia, Trappier said talks were going on and he had prospects of a deal this year.

Dassault reported a 51 percent fall in 2020 adjusted net profit to €396 million from €814 million in the previous year, on sales down to €5.5 billion from €7.3 billion. That drop in sales was expected, due to lower deliveries of the Rafale and the Falcon business jet, the company said. The outlook was for delivery of 25 Rafale and 25 Falcon this year, with a rise in net sales.

The adjusted net profit margin fell to 7.2 percent of sales from 11.1 percent.

Orders fell to €3.5 billion from €5.7 billion, while cash holdings fell to €3.4 billion from €4.6 billion.

Featured Photo: Éric Trappier, Chairman and CEO of Dassault Aviation. Credit: Dassault Aviation

An Update on the Future Combat Air System: March 2021

03/05/2021

By Pierre Tran

Paris – Thales will have a major role in the upcoming phase 1B in development of a technology demonstrator for the European future combat air system, including work on sensors and the combat cloud network, executive chairman Patrice Caine said March 4.

“We are one of the big partners in this initiative,” he said at a virtual press conference on the company’s 2020 financial results. “We are very much involved in at least two pillars – the sensors pillar and the pillar for the system of systems – or combat cloud.”

France has designated Thales as the “national champion” for studies on sensors and combat cloud, so much of the French spending in these two areas will flow to the electronics company, he said, declining to give any figures.

There are seven areas of work, dubbed pillars, on research and technology on the FCAS demonstrator, namely: a next-generation fighter; engine; remote carrier, or drone; command and communications network, or combat cloud; simulation; sensors; and stealth.

The Direction Générale de l’Armement signed a contract with Indra, with the Spanish company leading a three-nation consortium on the phase 1 study on sensors, Thales said in a Nov. 23 joint statement with its industrial partners.

Thales is the French partner in that consortium, along with the German FCMS group, comprising Diehl Defence, ESG, Hensoldt, and Rohde and Schwarz.

That phase 1A concept study for sensors ran for 12 months, with a possible extension of six more months, the statement said. The French procurement office signed on behalf of France, Germany and Spain.

The companies will work on the design of concepts for “a connected and distributed architecture of sensors,” including design of future sensor architectures and maturing of associated sensor technologies, the statement said.

Airbus, working out of Germany, is the lead company on study of the combat cloud, with Thales and Indra as partner companies.

The partner nations and companies are due to move on to phase 1B of the R&T work, perceived to be vital to building a demonstrator to fly in 2025/26.

France and Germany are each expected to pledge respectively some €1 billion (\$1.2 billion) for phase 1B, with Spain due to commit a similar amount, a defense analyst said. Such a commitment has raised doubt on whether Madrid would be able to find funds to join a project for a European unmanned aerial vehicle.

There has been much public debate on contracts for work in phase 1B, with Dassault Aviation reported to be seeking to protect intellectual property rights on work on the next-generation fighter, while Airbus seeks full access to sensitive information.

A Jan. 2 research note from the SWP German Institute for International and Security Affairs pointed up the need to resolve the issue of IPR.

“A crucial question that arises at this point concerns the protection of emerging or existing intellectual property: to what extent should companies disclose their processes and know-how, to what extent will technical specifications be made available to the other partners later?”

Resolving dispute over IPR is seen as vital for progress on the FCAS project and has an impact on other issues, said the note, titled Future Combat Air System: Too Big to Fail.

A related issue was whether maintenance and repairs would be reserved to the lead manufacturer, or would there be access to documents which allowed the armed forces to service the kit, backed up by industrial partners?

“If only the manufacturer can and is permitted to carry out certain parts of the maintenance, this might also affect operational readiness,” the note said.

A Feb. 16 research note from the Institut des Relations Internationales et Stratégique, a think tank, said a compromise was needed to allow a signing of the phase 1B agreement, as not a single European nation could afford such a complex program on its own.

“A destructive competition between our companies would lead to the loss of our industrial capability in military aeronautics,” the note said, adding that the stakes at risk on FCAS were not just European but of worldwide importance.

France and the Sale of Rafale to Egypt: Sans Meteor

03/03/2021

By Pierre Tran

Paris – France withheld the sale of the Meteor long-range, air-to-air missile to Egypt in response to a request from Israel, an arms specialist said.

That French decision to forego an order for the Meteor missile differed from an initial withholding of the Scalp cruise missile to Egypt, with the latter due to the US declining to authorize American components under the international traffic in arms regulations (ITAR).

France appears to have since delivered the cruise missile to Egypt.

A French arms sale in the foreign market requires approval from an interministerial committee, the commission interministérielle pour l’étude des exportations de matériels de guerre (CIEEMG). Any deal calls for a green light from the foreign ministry on the Quai d’Orsay.

Some arms exports can be seen as going too far, such as sales to Saudi Arabia and the war in Yemen, a foreign policy analyst said. The Quai d’Orsay may take a different track from the defense ministry on the interministerial committee.

Israel has a strong arms market, with the US as privileged partner and a commitment for Israel to maintain a qualitative military edge over Middle East nations.

An Egyptian Rafale fighter, armed with a Meteor missile, designed to hit targets beyond visual range, would “destabilize completely the forces,” a second arms specialist said. Israel would say no to that.

Israel, which is flying the F-35 fighter jet, developed its Derby air-to-air missile in response to an initial US rejection of a sale of the advanced medium-range air-to-air missile (AMRAAM), the second specialist said. There was eventually a policy switch, with Washington agreeing to allow sales of the AMRAAM for the Israeli F-35.

An Israeli opposition to Egyptian Rafales armed with the Meteor showed concern over the European long-range weapon, the second specialist said. There were moments when a stealth fighter lost its stealthy qualities, but a long-range missile remained long range.

On the sale of the French cruise missile to Egypt, an official Egyptian video appeared to show Cairo had received the Scalp, dubbed Black Shaheen.

The official video shows Egyptian and French Rafale fighters flying in the French Skyros exercise, with the Egyptian air force chief of staff, general Mohammed Abbas Helmy, standing in front of a Scalp missile in a hanger.

The French armed forces minister, Florence Parly, has previously said the US components on the Scalp would be replaced.

Egypt had requested the Meteor and Scalp missiles as part of a 2015 order worth €5.2 billion (\$6.3 billion) for 24 Rafale fighter jets, with an option for 12 more units.

France has sold relatively little in the way of weapons to Israel, with the 2020 government report to parliament on arms export showing €208.3 million of sales from 2010 to 2019.

The political ties in the Middle East have shifted, with the US, Israel and the United Arab Emirates signing up for cooperation under the Abraham Accords, an agreement that reflects a common concern over a perceived threat from Iran.

Among the commercial deals are Dubai Ports World and Israel Shipyards signing up as partners, reportedly to jointly buy Haifa port from Israel, and sailing ships from Dubai through the Red Sea to Eilat. That would bypass the Suez Canal, viewed as costly, and gain for Dubai alternative maritime access to the Mediterranean.

Egypt controls the Suez Canal and would see a loss of income.

The French air force flew from Jan. 20 to Feb. 5 Rafale fighters and A400M transport aircraft on the Skyros mission, deploying to India, the UAE, Egypt and Greece. Force projection, interoperability and cooperation were the aims of the exercise.

An Update on Rafale: January 2021

01/31/2021

By Pierre Tran

Paris – France has ordered a batch of 12 Dassault Aviation Rafale fighter jets to replace for those which the air force is handing over to Greece, the minister of the armed forces, Florence Parly, said Jan. 29.

“It is with great pleasure that today I announce an order for 12 Rafales for France,” she said at a Dassault factory at Argonay, near the Alps in southeast France.

The order is part of a speedy deal in which France sold 18 Rafales to Greece, with six new aircraft and 12 secondhand units from the French air force.

The Greek authorities signed the Rafale contract on Monday, marking the first European export order for the fighter.

The deal was worth some €2.5 billion (\$3.5 billion), of which some €500 million was for missiles, an industry executive said.

The 12 secondhand Rafales were worth €400 million, financial website *La Tribune* reported. The order includes the aircraft, service and training, and weapons including Scalp cruise missiles, Meteor and Mica air-to-air missiles, and Exocet AM 39 air-to-sea missiles.

The Greek order follows heightened tension with Turkey, which has pursued exploration for oil and gas in the eastern Mediterranean, a region over which Athens claims territorial rights.

The French air force will send its Rafales to Greece this summer, and those will be replaced with the latest F-35R version of the fighter, Parly said. The minister said she went to Athens on Monday to attend the “historic” contract signing.

“It is historic because it is the first time a European nation chose the Rafale as a fighter jet to assure air superiority,” she said.

“This is an industrial success for France and a capability success for Greece and above all a great victory for Europe.”

Greece joins Egypt, India and Qatar, on the Rafale export client list, while in Europe, Italy, the Netherlands, Norway and the UK have received the F-35 fighter.

The orders for Greece and replacement for the French air force come in time to plug a production gap which yawned for Dassault in 2025.

The aircraft builder is due to ship the last Rafale for India and Qatar by the end of 2022, while the last delivery of a 28-strong batch for the French air force is due by the end of 2024.

There is a further batch of Rafales to be negotiated and ordered, with delivery due between 2027 and 2030 for the French air force. Dassault is building two units per month for 11 months a year to meet its export schedule. The factories close for August, a traditional holiday month.

The Greek order shows the French effort in pursuing exports and allows the French air force to receive new fighters at the latest standard, a defense specialist said.

There are other export prospects for the Rafale and the Greek order is “good publicity,” the specialist said. There is stiff competition for arms exports between the Europe and the U.S., and it will be interesting to see what will happen with the Biden administration.

France hopes the fighter acquisition will lead to Greek orders for French warships.

“The excellence of the strategic and operational relations could also apply to a capability in the maritime sector,” Parly said when she was in Athens, adding that France would soon send proposals for Greek plans to renew its frigate fleet.

Paris could fly over the Rafale in just a few months, whereas a Greek order for the French frigate for defense and intervention would have meant a longer delivery time. The French navy is due to receive the first FDI in 2023.

That left Naval Group, the French shipbuilder, behind in the Greek race to buy weapons.

A Greek contract signing for two FDI Belharra warships and naval cruise missiles had been expected last July, but Athens had shifted sights. That two-ship deal was estimated to be worth €2 billion-€2.5 billion.

Naval Group is making an offer of four FDI frigates and service in the next few weeks, a company spokesman said.

That service included support for the four Meko frigates sailed by the Greek navy.

Dassault builds the flight control systems at the Argonay factory.

The International Fighter Conference 2020: Capabilities and Focus

12/18/2020

By Robbin Laird

The International Fighter Conference 2020 provided insights with regard to the evolution of combat airpower, notably with regard to enablers and effectors, and pathways to shaping greater force integration and multi-domain warfighting capabilities.

But to do what exactly?

And how best to do it?

The clear assumption of most of the presentations was that the conflict for which the fighter force was preparing was for the high-end fight against peer competitors or cutting through the ambiguity, China and Russia.

As these are nuclear powers, the question is and remains, how does the nuclear dimension weave itself into a major conventional war?

The only mention of the nuclear dimension was during a discussion about the French aircraft carrier Charles De Gaulle and its approach to operations. Here the readiness in being during deployment to deliver nuclear strike by onboard Rafales was discussed.

The French indeed have been the clearest among of the Western nuclear powers on the need for tactical air delivered strike and have continued their work, including modernization of weapons to indeed deliver this capability in their neighborhood as part of their deterrent posture.

As Pierre Tran has put it with regard to the most recent French defense budget: “The draft budget includes €1 billion of studies to develop the nuclear ballistic missile submarine, and a fourth generation nuclear-tipped, air-to-ground missile, the air-sol nucléaire 4ème génération (ASN4G) to replace the present nuclear-armed cruise missile, dubbed air-sol moyenne portée amélioré (ASMPA).”[1]

The training to execute an air delivered tactical nuclear mission, provides pilots with an overall understanding of a complex strike mission which then carried over into the capabilities to excel at non-nuclear strikes as well.

This was evident when the French Air Force participated in the 2018 strike against Syrian chemical weapons sites.

As Murielle Delaporte put it: “Achieving all this synchronicity, C2 integration, redundancy, target selection and precision strike require in other words a very high level of technicity, which tends to stem in France from the fact it has been a nuclear power for more than five decades. In fact the whole French armed forces model is built around deterrence. France’s quick reaction force is defined upon the rigor, reactivity 24/7, safety and ability to penetrate a theater first, far away and in depth.

“French Air Force Base 113 in Saint-Dizier is one of the historic fighter base and nuclear base and it is from there that long-range raids can be performed, such as the 10-hour flight that was performed from the mainland to Syria this month over a distance of 7,000 kilometers (which required a total of five air refuelings).”[2]

In addition to the core point, often forgotten or deliberately ignored, there will never a major conventional contingency against China or Russia that will not involve the nuclear dimension, certainly in terms of understanding how a campaign would be conducted.

There is also the critical issue that the attrition of the adversary’s ISR and C2 systems will inevitably affect those systems which are part of the nuclear warfighting system as well. And when there is a focus, as the conference did, upon enhanced machine-to-machine and man-machine interactions to speed up the ability to kill adversary forces, the question of which targets with which significance are we talking about?

This is especially important when considering one of the most challenging of the warfighting issues – how to deal with heavily fortified areas from which either China or Russia would project force and how best to go after those forces.

For the Russians, we are talking about Kaliningrad and the Kola Peninsula. With regard to the direct threat against the Baltic states, Russia would project power from their territory against these states under the assumption that they have a sanctuary and given the proximity to St. Petersburg, which certainly is protected in part by Russian tactical nuclear weapons, complicates the picture.

This is why the United States for one is working on longer range strike conventional weapons to ensure that the Russians don’t believe their own thinking too much about an ability to push a conventional force from their territory as if that territory is a sanctuary.

And with regard to the Chinese, one presentation did raise the new USMC Commandant’s focus upon Marines building an Inside Force that would operate inside the First Island Chain as envisaged by the

Chinese but that does raise questions of how the operations of such a force would affect Chinese nuclear as well as conventional calculations.

As Paul Bracken, the author of the second nuclear age, has put it: “The first thing is to realize it is woven into the entire fabric of a Pacific strategy. You don’t have to fire a nuclear weapon to use it. The existence of nuclear weapons, by itself, profoundly shapes conventional options.

The nuclear dimension changes the definition of what a reasonable war plan is for the U.S. military. And a reasonable war plan can be defined as follows: when you brief it to the president, he doesn’t throw you out of the office, because you’re triggering World War III.”[3]

You can have all of the Future Force Design 2030s or Future Combat Systems or Tempest discussions you want, but you have to be able to fight tonight, and that imperative is crucial for operational Air Forces, and any future capabilities take a back seat to that requirement.

Which raises the broader question: How do innovations being driven now shape how the future force will emerge? This certainly impacts on discussions about artificial intelligence and remotes or UAVs and what their role will actually be in the next decade as opposed to 2040 or 2050, which is long after I am dead.

The need to drive greater capability to make decisions more rapidly using ISR data and finding ways to execute decisions at the edge but ensure that the evolving strategic decisions are effective is a clear one.

Many of the presentations at the conference were indeed focused on technologies and approaches which were being shaped to ensure that the United States and its allies could operate their forces more effectively in a contested environment and to do so with the ability to draw upon the range of combat assets available now and in the future.

That is the real meaning of shaping multi-domain capabilities, for objectives are set by domain but the kill web approach looks to leverage combat assets in several domains to achieve those domain specific objectives.

The role of maritime air forces was discussed at the Conference as well. The role of sea-basing in generating capabilities which can be leveraged for full spectrum crisis management is expanding for sure. The impact of technologies and training are leading to ways to reimagine the role of amphibious and large deck carrier forces, and some of those changes were discussed at the conference.

In short, the International Fighter Conference 2020 although virtual was not simply that. It had some important impacts on the continuing process of rethinking the way ahead with the evolution of airpower in the reset of military strategy.

[1] Pierre Tran, “An Update on the French Nuclear Deterrent: The 2021 Budget,” Second Line of Defense (October 14, 2020), <https://sldinfo.com/2020/10/an-update-on-the-french-nuclear-deterrent-the-2021-budget/>.

[2] Murielle Delaporte, “French Quick Reaction Force Key to Syrian Missile Strikes,” *Breaking Defense* (May 2, 2018), <https://breakingdefense.com/2018/05/french-quick-reaction-force-key-to-syrian-missile-strikes/>.

[3] Robbin Laird, “Reshaping China Strategy: Reconsidering the Role and Place of the Military Dimension,” *Second Line of Defense* (April 14, 2020), <https://sldinfo.com/2020/04/reshaping-china-strategy-reconsidering-the-role-and-place-of-the-military-dimension/>.

Working a Way Ahead on European UAVs: The Perspective of Airbus Defence and Space

12/17/2020



By Pierre Tran

Paris – Airbus Defence and Space expected to sign a contract for a medium-altitude, long-endurance unmanned aerial vehicle in the first quarter of 2021, a deal the company saw as critical for European arms companies, chief executive Dirk Hoke said Dec. 9.

“Here, we are very confident because last week we got the confirmation from OCCAR (Organisation Conjointe de Coopération en matière d’Armement) that the nations approved to go towards a contract for early next year,” he told journalists on a virtual link to the Manching office, southern Germany.

“So we will be finalizing last steps, securing the budgets and if everything goes right, we expect a contract signature around the first quarter next year,” he said.

Hoke declined to disclose the budget, saying the amount was in line with the French request.

The French armed forces minister, Florence Parly, put public pressure on Airbus DS to meet a budget capped at €7.1 billion (\$8.6 billion) after submitting an initial offer worth almost €10 billion, business magazine *Challenges* reported. That budget will include development.

Challenges contested the government's financial case, with officials giving figures which sought to make the European drone cost less than the U.S. Reaper or SkyGuardian.

The revised offer was worth €7 billion or a little under, a source close to the deal said. The final agreement could be signed in January or February.

“Our ambition is clearly to remain at the forefront of unmanned flight in Europe,” Jana Rosenmann, head of Airbus DS unmanned aerial systems, said.

Airbus DS submitted its offer in June, prompting “interesting and lively negotiations with OCCAR,” she said.

There were “very respectful discussions. What we have now on the table is a very fair and reasonable offer for both sides,” she said.

The OCCAR program board and the four partners – France, Germany, Italy and Spain – approved Nov. 19 the offer and there was Dec. 2 a formal “go-ahead,” which allowed the nations to start their approval process, she said.

Each nation has its procedure, with the Bundestag parliament for Germany and the Direction Générale de l'Armement procurement office for France working on the deal, the source said.

The industrial partners, Airbus DS, Dassault Aviation, and Leonardo will work on an integrated digital platform in Manching and also on their own national digital platforms, Rosenmann said.

The UAV will be the first military development program to be worked on the basis of the Digital Design Manufacturing and Services approach, which will succeed a sequential path in the product life cycle, she said. This aimed to allow co-design and development, while considering the consequences for manufacturing and service once the aircraft was in operation.

There will be heavy use of virtual engineering and behavior simulation, to spot inconsistencies in design, seeking to avoid cost and time overruns, she said. The partners were expected to employ just over 7,000 highly skilled engineers.

The planned order was for 20 UAV systems, with three units per system, making a total fleet of 60 drones. First flight would be in 2025, with series production and delivery in 2028. The commercial wing of Airbus in Toulouse helped prepare the offer.

Significantly, there would be a single final assembly line in Germany, as opposed to the multiple final assembly line model of the Eurofighter.

Remote carrier tests

Airbus DS was also working on remote carriers, which will fly with manned aircraft, she said. The company took part in the Nato Timber Express exercise in June, supplying two simulated remote carriers, connected on the Link 16 data network on the ground and pilots flying Tornado, Eurofighter Typhoon, and H-145 helicopters, she said. That allowed high level commands to be made to RCs.

Tests with RCs will continue next year, with sensors, and flying with a Learjet and Tornado, she said. There was also work to integrate with Eurofighter and the future combat air system.

Negotiations were going on for a contract for RCs in phase 1B, after Airbus DS submitted its work in October, she said.

Phase 1B is the next step in design studies on FCAS, intended to fly technology demonstrators in 2026/27.

Airbus was working to mature RC technology up to technology readiness level six, she said.

TRL is a measure of the maturity of technology in an acquisition process.

There was work on small and expendable RCs, as well as larger, conventional units which could serve as loyal wingman, she said. The company was working with MBDA in France and Germany, and a Spanish consortium comprising Cena, GNV, and tecnobit.

The MALE UAV would be integrated with the FCAS system of systems, flying with RCs, the source said.

There would be a first wave of expendable RCs “lighting up” the air defense system, sending back the target information before they were hit.

A second wave might include the UAV, to provide more information, conduct electronic warfare or destroy radars, allowing a third wave of manned aircraft such as the next generation fighter to fly in.

There could be further waves of aircraft.

“We are in a very critical time,” Hoke said. “These are very important projects for European sovereignty and...the European defense industry.”

The featured photo: Jana Rosenmann, head of Airbus DS unmanned aerial systems, briefing reporters at the 2020 Airbus Defence and Space Trade Media Event, December 9, 2020.

Editor’s Note: The Australians are working with Boeing Australia to build a Loyal Wingman UAV, something akin to what the overall goal of the larger UAVs in FCAS might look like.

Recently, a senior Australian RAAF officer involved with the program highlighted a key challenge facing UAVs when operating in integrated airspace with combat aircraft as the key managers of the battlespace.

“The Loyal Wingman is challenged on a range of fronts, including future battlespace management frameworks, communications, and cyber standards, and the development of trusted AI algorithms, as these elements are critical to us being able to trust our Loyal Wingman on combat operations.”

This RAAF officer highlighted the key aspect of trust between the customer and the prime contractor to deliver the kind of development to production process which Rosenmann was talking about.

“Despite the many challenges the trust built between the Royal Australian Air Force and Boeing Australia has grown substantially over the course of the program and has contributed to its success so far.

“This trust is fundamental to the future flexibility needed to adapt this design, should we make further investments. It also provides the foundation for us to adapt quickly, when new designs are needed, and give our primes the ability to foresee needs, before we have fully had the chance to define them. This close partnership is a natural advantage for smaller air forces, which we can make the most of.

“Too much flexibility can also lead to deviating from the goal. And a key design challenge has been maintaining discipline within the program.”

Franco-German Consolidation: Next Steps at KNDS

12/16/2020



By Pierre Tran

Paris – KNDS, a Franco-German joint venture in land weapons, seeks a more streamlined management with the appointment of Philippe Petitcolin as chairman and Frank Haun as the sole chief executive, the French finance and defense ministries said Dec. 14 in a statement.

The appointment of a single chief executive officer of KNDS replaces the previous agreement of two CEOs, one drawn from France, the other from Germany, with Haun sharing the post with Stéphane Mayer.

Mayer now leaves the joint venture and also steps down as executive chairman of Nexter, the ministries said.

Nexter is the French partner of the 50/50 joint venture KMW and Nexter Defense Systems (KNDS), with privately owned Krauss-Maffei Wegmann its German partner. Setting up the joint holding company was a step toward European industrial consolidation in the land sector.

Meanwhile, KNDS's projects list includes building a new European main battle tank, to sell into the East European market, a defense executive said. That tank would be all new, distinct from a concept model presented at the 2018 Eurosatory trade show, built from a turret from the French Leclerc and chassis from the German Leopard 2.

On the KNDS appointments, these aimed for "greater efficiency and integration to the benefit of clients," the ministries said. A French successor to Mayer will be appointed as Nexter CEO in the next few weeks, and that executive will hold the post of operations director at KNDS.

KNDS will also be slimmed down to one board of directors.

"The shareholders have decided to streamline the governance structure by establishing a single board of directors replacing the existing supervisory and management boards," Nexter said Dec. 14 in a statement.

The chairman and CEO posts will rotate every four years, an industry executive said. The changes marked a milestone, granting more power to KNDS in the pursuit of integration.

There was no great surprise Haun was named as sole CEO, as news had leaked into the press last week, but the "brusque" departure of Mayer was unexpected, a defense official said.

The lack of a named successor to Mayer as Nexter CEO stood in contrast to KMW's announcement Ralf Ketzel will be its CEO, stepping up from his previous position as chief business development officer.

The slimmed down structure marked the end of a five-year trial period for KNDS.

In 2015, Emmanuel Macron, the then finance minister, told the French parliamentary lower house there would be a five-year trial period to see if the Franco-German alliance worked, and if it did not, the deal could be unwound.

The creation of separate chairman and CEO posts echoed the shakeup at Airbus, which previously, under political pressure, shared its top management between French and German executives based on passport rather than management skill.

The appointment of Haun and Petitcolin will be closely watched as both have strong personalities. The former was seen as the senior partner when the two CEO posts were held.

Petitcolin, who will take up the chairman's post March 1, is CEO of Safran, the aero-engine builder. Petitcolin has direct experience in working with tough industrial partners.

Safran is prime contractor on the new engine for the next generation fighter in the Future Combat Air System.

German partner MTU was reported to have been keen to share that pole position and it took some time to make clear the prized prime contractorship was reserved for Safran.

MTU finally accepted Safran's leadership and agreed to be main partner in the phase 1A study for FCAS, and only then the companies agreed to form an engine joint venture.

The main project for KNDS is to build the Main Ground Combat System, which consists of a heavy tank and associated vehicles to replace the Leclerc and Leopard 2.

There is a project for new artillery, the Common Indirect Fire System, to replace the Caesar, but there has not been much work on that recently, the executive said.

There is also the project for a new European main battle tank to replace the vast fleets of Russian tanks in Eastern Europe.

That new tank will need to carry a low-price tag, be well armed and well protected. There will be stiff competition from the Israeli Merkava and South Korean K2 Black Panther, the defense official said.

Featured photo of Frank Haun credited to Reuters.

An Update on the Future Combat Air System: December 2020

12/12/2020



By Pierre Tran

Paris – Five options for the architecture of a planned Future Combat Air System were handed over in September to the authorities, marking a major step toward definition and development of an ambitious European project, Bruno Fichfeux, head of FCAS at Airbus Defence & Space, said Dec. 9.

“We submitted also our selection, after extensive operational and technical assessment of potential FCAS architecture...in September, the five best architectures,” he told journalists in a livestream link up from Airbus DS office at Manching, southern Germany.

Those five options were selected from 10 architectures, and will be reduced to two by summer next year, said a source with knowledge of the project. The final architecture will be based on continuous analysis of work on the technology demonstrators.

That overall architecture included the combination of a next generation fighter and remote carrier drones, and will be fundamental for the following phases, Fichfeux said. The air chiefs of France, Germany and Spain – partner nations of the FCAS project – recently “validated” the selection of architecture options.

Those architecture options followed 18 months’ work on a joint concept study, and there is a further year’s work, he said. The companies were in intense talks with governments on the next phase, with work next year worth billions compared to the “few millions” so far.

Fichfeux declined to say how just how many billions.

A parliamentary report, titled 2040: The FCAS Odyssey, said there would be work worth an initial €2 billion (\$2.4 billion) under the second phase of a demonstrator contract, with a total €4 billion to be won by 2026, when technology demonstrators were due to fly.

Those amounts were close to the official figures, the source said. There will be one demonstrator contract with two phases spanning 2021 to 2026/7.

That compared to a phase 1A contract on the demonstrators, worth €155 million, signed July 12, shared between six companies and lasting 18 months. Airbus and Dassault began the joint concept study in February 2019. Indra was working on the study, following Spain’s joining the FCAS project.

“It’s a massive step forward we want to initiate next year with support of the governments,” Fichfeux said. “The timeline is very tight. We need to reach this point of commitment and funding...to give perspective to industry and the program.”

There was a “very tough road map,” consisting of definition, development, production, flight test and entry into service in 2040, he said.

Seven Pillars of Wisdom

The European FCAS plan differed from the UK Tempest fighter jet project as the latter sought to fly a prototype in 2035, effectively the first in series, the source said.

That was distinct from a demonstrator of the FCAS next generation fighter due to fly in 2026, along with other elements of the European project.

The official date for the demonstrators was 2026, but there was scope for slipping to early 2027, the source said.

The FCAS plan was to field a network of present and future fighters, and remote carriers, all linked up to ground, air, sea, and space in a system dubbed multi domain combat cloud.

The partners sought to de-risk and to mature technology before inserting it in development of the new fighter, remote carriers, combat cloud, sensors, and engine, Fichfeux said.

The phase 1A was for demonstration in 2026/27 of seven key elements, namely the new fighter, remote carrier, combat cloud, engine, sensors, low observability and simulation.

The latter was effectively a war game to consider the different performance of the architectures. Along with simulation, there was also work on linking up the seven “pillars” under phase 1A.

Indra has joined Airbus and Dassault on the joint concept study. The Spanish partner will also lead work on sensors, working with Dassault and the German FCMS consortium.

Demonstration of first operational capabilities was due in 2030, with full capabilities and entry into service in 2040, said the Airbus DS presentation.

Full capacity of the demonstrators is expected in 2030, with initial operating capabilities in 2040, the source said.

Airbus, Dassault and other partners were applying a digital design, manufacturing and services approach, helped by Dassault Systèmes, Fichfeux said. The aim was to shorten “feedback loops” and speed up the process. The joint concept study looked at how DDMS could “disrupt” the development phase.

Airbus said Feb. 6 2019 the company would install Dassault Systèmes’ 3DExperience software “to a move from sequential to parallel development processes.” That was intended to accelerate bringing new products to the market and boost customer service.

Ideas from the Civil World

Airbus and the German defense ministry looked to the civil sector for bright ideas in a project dubbed Innovations for FCAS, the company said Dec. 9 in a statement. Eighteen partners including start-ups, small and medium companies, and research institutes, applied themselves in the pilot phase to work on 14 FCAS projects, including combat cloud, connectivity, the new fighter and remote carriers. The ministry funded the project.

On interoperability with the British Tempest fighter, there was need for “common European endeavour,” but it was up to governments to decide, Fichfeux said. For industry, it was important not to lose time.

The communications network in the combat cloud would be critical for “collaborative engagement” with Tempest, FCAS, and Nato forces, pointing up the need for standards and connectivity, he said.

Stealth was significant, a core technology in the demonstrator for the new fighter jet, intended to mature, test and prove in flight. There would be stealth in remote carriers, engine heat signature, sensors and communications in the demonstrator phase.

The budget for stealth in the phase 1A study was fairly small, the source said.

“The irreversible path for FCAS development is flight of the demonstrator in 2026, opening way to development,” he said.

“For that we need speed.

“We need funding and we need a strong political commitment, which we see we have today and need to maintain into the future.”

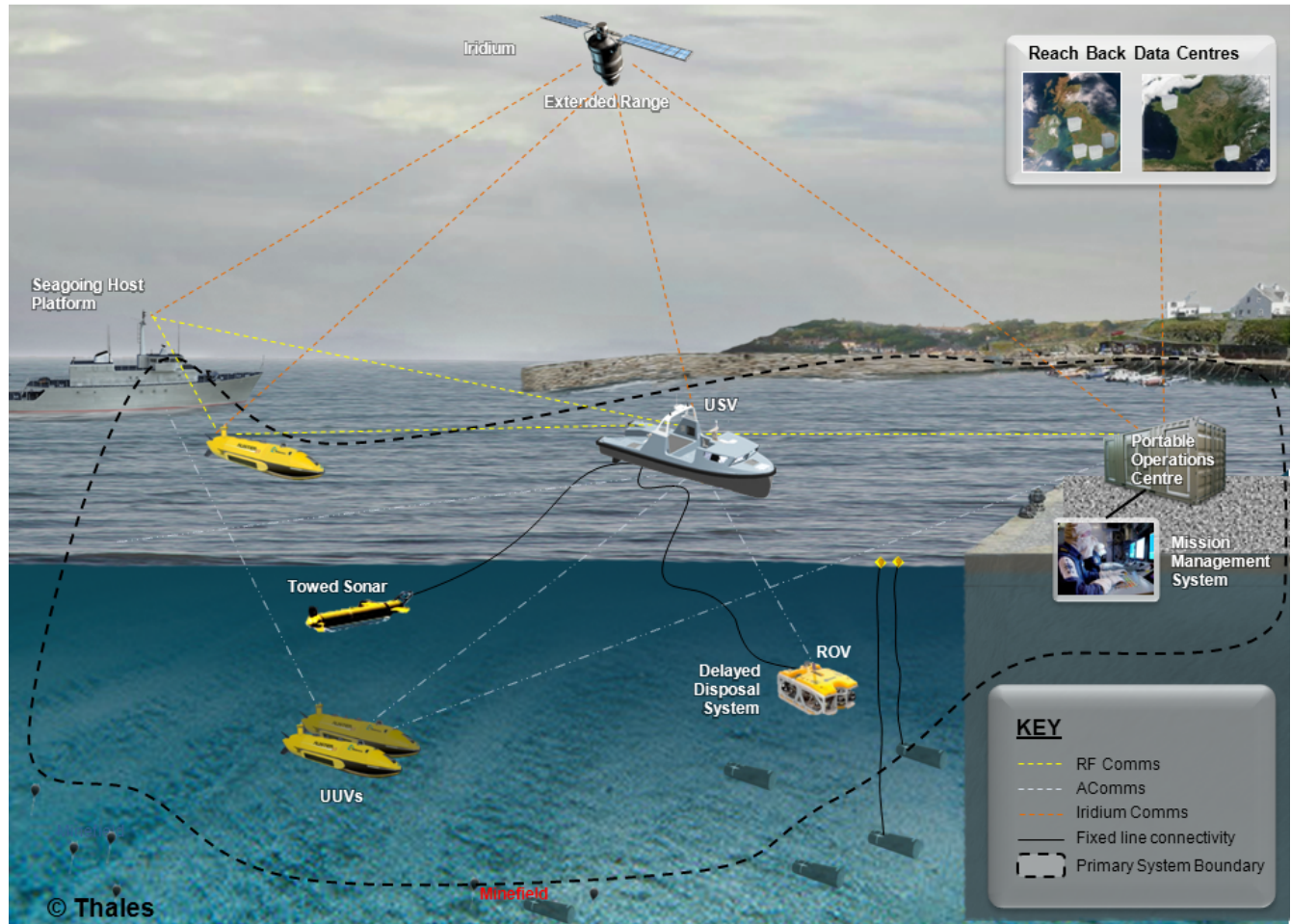
There has been call for a joint timetable for the FCAS project, amid concern over French and German elections holding up decisions and funding over the next couple of years.

“What worries me more than COVID 19 is the sequence of events,” Eric Trappier, executive chairman of Dassault, told May 14 the defense committee of the lower house National Assembly. Dassault is prime contractor for the fighter jet, the critical element in the next generation weapon system.

“We cannot wait for 2022 to start work on the rest of the program,” he said. “It is just not possible.”

Thales Maritime Mine Counter System: UK-French Defense Cooperation

12/01/2020



By Pierre Tran

Paris. The European arms procurement agency signed Nov. 16 a contract worth some €300 million (\$358 million) with Thales to build an unmanned surface and underwater minehunter system for the British and French navies, a source close to the deal said Nov. 27.

A production deal for an operational system, dubbed Maritime Mine Counter Measure, was seen as giving the British and French partners an edge in a highly competitive world market, with US industry the closest competitor.

The British part of the program was worth £184 million, the UK ministry of defense said in a Nov. 26 statement. That will cover four systems and service.

The overall value of the order was some €300 million, with the French part making up the rest, the source said.

The French armed forces minister, Florence Parly, said Nov. 26 the MMCM deal marked close ties between Britain and France fostered by the Lancaster House defense treaty signed 10 years ago.

“So, we are proud, with secretary (Ben) Wallace, to announce today, before the community of the Franco-British Council, the signing, which took place November 16, of a production contract for the Franco-British minehunter program,” she said at the opening of the virtual meeting of the high-level defense council.

The MMCM deal directly supported the French deterrence and helped “guarantee our sovereignty,” she said. “The proof, if any were needed, that combining our forces does not threaten our independence.”

Minehunters played a vital role in clearing the waters for the nuclear ballistic missile submarine and aircraft carrier, as well protecting ports, deployment of the naval task force, and sweeping contested waters, the French defense ministry said in a statement.

The MMCM unmanned system will eventually replace the present fleet of minehunters sailed by the Royal Navy and the French sister service.

France made an initial order for three systems, with the fourth to be placed next year. The latter order will be for the prototype with upgrades, including doubling the depth of an undersea drone to 200 meters.

The MMCM phase 2 order comprised eight systems, equally split between France and the UK, and followed a phase 1 2015 development contract worth €165 million. BAE Systems had been a partner on the initial deal but left in 2016.

Thales was prime contractor, with ECA, Kongsberg, L3 Harris, and Saab among subcontractors on the development contract. Thales signed the phase 2 contract with the European procurement agency Organisation Conjointe de Coopération en matière d’Armement (OCCAr).

Thales designed the system and will supply its SAMDIS sonar, the company said in a statement.

An MMCM system can cover an area as large as 30,000 football grounds and detect threats as small as a credit card, Alexis Morel, Thales vice president for underwater systems, said Nov. 27 in a telephone press conference. The British and French play soccer, so there was no confusion over feet or meters, he said.

For France, a new system will consist of one 12-meter long unmanned boat from L3 Harris and Thales, dubbed Unmanned Surface Vehicle, linked to a towed Thales sonar to detect and locate mines, and a Saab Remote Operated Vehicle (ROV) to place charges and destroy threats.

There will be a mobile operations center, which can be airlifted by A400M or C-17. France has ordered a training simulator.

ECA supplied six Espadon A27 Autonomous Underwater Vehicle drones for the prototype systems for Britain and France. Each navy had a demonstrator system, with three ECA AUV drones on the system.

The Royal Navy accepted the three ECA drones on its demonstrator but is expected to open next year a tender for new drones for the production contract.

First delivery of the MMCM was due by end-2022, with last shipment in 2025.

There was close interest in the MMCM from navies around the world, including the US, Australia, India, and the United Arab Emirates, Morel said. There were potential sales of tens of systems by the end of the decade.

There was marketing advantage in supplying the system to the British and French navies, seen as first class services, he said. The system avoided use of US components to bypass Washington oversight over exports through the International Traffic in Arms Regulations.

“With this contract, French and British navies equip themselves with the world’s first fully integrated unmanned mine countermeasures system of systems,” Thales said in a statement.

In the UK, the MMCM deal will support 215 jobs at Thales operations in Somerset and Plymouth, while L3 Harris works in Portsmouth, the defense ministry said.

In France, Thales will work on the program in Brest, western France.

Thales to Supply Key Systems for German Frigate: November 2020

11/20/2020



By Pierre Tran

Paris. Thales signed Nov. 17 a contract worth €1.5 billion (\$1.8 billion) to supply Dutch shipbuilder Damen with a radar, combat management and fire control systems for the German MKS-180 frigate, Philippe Duhamel, vice president for defense mission systems, said.

The deal with Damen was the third largest for Thales, following the sale five years ago of the Rafale fighter jet to India, and a contract 10 years ago for the FREMM multimission frigate for the French navy, he said Nov. 18 in a telephone press conference.

The budget for four MKS 180 multipurpose frigates is worth some €4.6 billion over 10 years.

Thales will supply its Tacticos combat management system, a fire control system dubbed Above Water Warfare System, and Active Phased Array Radar block 2 under the 10-year contract, the company said in a statement. There will also be service support, and test and training facilities on land.

The APAR block 2 will be a development of the block 1 version, which has been fitted on Danish, Dutch and German vessels, Duhamel said. That sensor is a naval variant of the active electronically scanned array, an airborne radar.

Development work will take some five years, followed by integration, allowing the first frigate to be operational in 2028, he said. There are options for two more units.

Some 70 percent of the work will take place in Germany, with 30 percent in the Netherlands, drawing on local subcontractors.

The German frigate deal followed Thales and Babcock winning a tender for the Royal Navy Type 31 frigate, and Thales supplying kit on the French navy FDI frigate for defense and intervention, he said.

The APAR radar differs from the Sea Fire on the French frigate, as the Dutch and German navies' concept of operations differed from the French, he said.

“The radar reflects the concept of operations,” he said.

The AWWWS fire control system seeks to handle a simultaneous and saturation attack from a broad range of new threats, such as surface drones and slow moving targets, as well as fighter jets and missiles, he said. Asked whether the system could handle hypersonic missiles, he said the first rank German navy seeks capabilities to manage future threats.

In other deals, Thales expects a Dutch competition in 2022 as Belgium and the Netherlands seek a replacement for their M frigate, he said. The Thales unit in the Netherlands developed the new fire control system.

Thales signed September 2019 a development contract for AWWWS for the Belgian and Dutch navies, the company said.

Thales beat German companies for the integrated systems, said Sash Tusa, analyst with equity research firm Agency Partners.

Hensoldt will supply its TRS-4D air defense radar in a deal worth €200 million. That contract could be seen as a goodwill gesture to a national champion which essentially lost to an outsider, he said.

“The stand-out factor is the German contract shows the big orders are now in mature markets in Europe, which is rearming, whereas previous big Thales arms contracts were in Saudi Arabia, with the Crotale short-range, surface-to-air missile, and the Sawari 1 and 2 frigate deals,” he said.

The drone attacks on Saudi oil refineries in 2019 highlighted the poor performance of such short-range air defense missiles, intended to protect the installations.

Damen has partnered with Blohm+Voss to meet a requirement for a local shipbuilder to be in the MKS 180 program.

The pick by the German authorities of a Dutch company has led to a German industrial consolidation, with family-owned

Lürssen and German Naval Yards forming a joint venture, leaving ThyssenKrupp Marine System out in the cold.

The European Defence Fund and European Defence: The Perspective of the EU Commissioner for the Internal Market

11/15/2020



By Pierre Tran

Paris. The European Union could raise a total of €30-€40 billion (\$35-\$47 billion) to finance work on defense and security projects, drawing on the €7 billion budget due to be pledged to the European Defense Fund, Thierry Breton, European commissioner for internal market, said Nov. 13.

“With 7 billion in equity, we can leverage 30-40 billion,” with backing from participants, he said in a video press conference with the Anglo-American Press Association of Paris.

Breton, speaking from Brussels, said the prospective total funding was more than the €30 billion he had expected to raise.

“What we have now is the tool, for first time in our history,” he said.

“We will not do this overnight.”

The European Defense Fund will finance research and development, inviting member states to invest in industrial projects proposed by small and medium companies, as well as prime contractors. The European commission, the executive arm of the EU, had pitched the launch of the fund with a €13 billion budget, with negotiations with member states whittling that down to €11 billion before arriving at €7 billion.

The fund would increase a collective approach in joint investment and widen European investment, particularly among member states such as Poland, Romania and Lithuania, Breton said.

There was much in history and geography which explained why nations in the north and east of Europe had felt “more comfortable” in relying on the U.S., he said.

“We all have our history in defense,” he said.

There were four or five member states with strong arms industries and the aim was to widen the pool of interest in investment.

There were 24 member states backing 16 programs, he said.

“We have room to be inclusive,” he said.

The commission has picked 16 defense industrial projects and three disruptive technology projects for €205 million of support under two pilot programs of the European Defense Fund, namely preparatory action on defense research, and European defense industrial development program, the commission said June 15.

Those projects included work on drones, space technology and unmanned ground vehicles, the commission said. There was also work on a high precision anti-tank missile, warships, airborne electronic attack capability, cybersecurity and active stealth technologies.

A European patrol corvette was one of the projects which has attracted backing from France, Greece, Italy, and Spain, with Italy taking the lead role.

Breton, in the video conference, got up from his desk to find and show a June 2016 report on a European Security and Defense Fund. Breton said he had drafted the report when he was a company chief executive, and had seen the need for higher defense spending in Europe.

The report was written at a time when the then president Barack Obama had called for increased European spending, which president Donald Trump had continued “in his own way,” he said.

Breton showed a picture of his presenting the report to the then French president François Hollande and German chancellor Angela Merkel. He had pitched the idea to the then commission president Jean-Claude Juncker, among other senior officials.

Breton was CEO of Atos, an information technology company, when he drafted the report.

“I played a little role in this,” he said.

Breton, who took up his post as European commissioner last year, was now setting up the fund, which seeks to prime the pump for R&D in military technology.

Breton taught at the Lycée Français school in New York when he was sent abroad under the civil alternative to French military conscription. Breton also taught at Harvard Business School 2007-2008, after serving as economy minister.

On the shelves behind Breton’s desk, there was a model of a Dassault Rafale fighter jet, Galileo navigation satellite — the European alternative to the U.S. GPS system, and a trilobite fossil, which he said was 460 million years old.

Featured Photo: European Commissioner for Internal Market Thierry Breton. [EPA-EFE/FRANCISCO SECO]

The Way Ahead for French Defense? A French Parliamentary Report Raises Significant Questions

By Pierre Tran

A scathing parliamentary report on the draft 2021 defense budget pointed up an imbalance of political power, with the executive arm withholding information from the legislature, while enjoying an exclusive right to approve the bill virtually unchanged.

“Not only is the budgetary initiative a monopoly of the executive arm, but the capacity for members of parliament and senators to amend the text is doubly limited...” said the special report, drafted by parliamentarian François Cornut-Gentille, who sits on the finance committee of the lower house National Assembly.

Article 40 of the constitution and the parliamentary majority effectively prevented amendment of the bill, the 370-page report said.

The government showed a lack of willingness to open the debate and communicate to the public through parliament, the report said.

No prime minister has spoken to parliament on the draft budget since 1992.

“Your rapporteur is surprised by the propensity of the armed forces ministry to limit the publicity of answers to written questions, which defies all logic,” the report said.

There was lack of disclosure on the A400M transport plane and Tiger attack helicopter, with the information taking on a significance which was all but incomprehensible.

The wide-ranging report urged a thorough rethink, calling on the government to take a broader view of a strategic industrial and technology base rather than purely defense.

That strategic approach highlighted the sovereignty issue, with the report calling for a French rescue plan for Photonis and Souriau, small companies which have been put up for sale and attracted attention from acquisitive U.S. companies.

Photonis is a specialist in night vision, while Souriau builds plugs for cable network connectivity.

Meanwhile, the ministry has created a post of spokesperson, which has been published in the official journal. That senior press officer will have a basic salary of €90,781-€118,725 (\$106,766-€139,639), depending on experience, plus a variable part of pay, Mammoth, a defense blog, reported Nov. 1.

That post sparked media interest as press relations with the office of the the armed forces minister, Florence Parly, have been strained, particularly over the coronavirus crisis.

The favored candidate was Hervé Grandjean, Parly’s industrial adviser, afternoon daily *Le Monde* reported.

Budget Crisis

gave a detailed financial account of major arms programs — noting there were gaps due to lack of information from the defense ministry — while raising a warning flag over the fiscal impact of the pandemic on the 2022 military budget.

A planned sale of 20 Rafale fighter jets to Greece has set off budgetary alarm bells.

France will order 12 Rafales from Dassault Aviation to replace that number of aircraft to be taken from the air force to supply Greece.

The remaining eight will be new aircraft.

The government will need to find more than €1 billion to fund that procurement for the French air force, as that had not been written into the multi-year military budget law.

That would be a good opportunity for the government to revise the budget law, Cornut-Gentille told Nov. 4 the Association des Journalistes de Defense, a press club, *Challenges* business magazine reported.

The defense budget was due to rise €1.7 billion in respectively 2021 and 2022, with the funding to rise €3 billion in respectively 2023, 2024 and 2025 under the 2019-25 military budget law.

But that planned increase was highly unlikely in the wake of the economic decline sparked by the pandemic.

“Steps of €3 billion per year is unprecedented, from any minister,” Cornut-Gentille said. There will be tough budgetary decisions and it will be questionable whether that spending can be maintained.

The report called for a complete rethink of future spending.

The French commitment to spend two percent of gross domestic product on the military is clearly “obsolete,” the report said, quoting Françoise Dumas, chairwoman of the National Assembly defense committee.

A Damocles sword hangs over the services, the report said.

“Everyone should know that the defense spending in 2024 and 2025 is not defined in absolute terms but as a percentage of GDP (two percent),” the report said.

“In the present state of the French economy, that indicates that the services will see their funding fall, undoing the effort of previous years.”

On the lack of preparation for the COVID 19 crisis, the report pointed up the 2008 defense white paper referred to pandemic and epidemic respectively 15 and six times, while the 2013 white paper referred respectively seven times and twice.

The 2017 strategic review for defense and national security failed to refer to pandemic and referred to epidemics twice.

Those official reports set the background for drafting the defense budget.

Thales and European Defense: October 2020

10/27/2020



By Pierre Tran

Paris – There has been little interest in big consolidation moves in the European defense industry, with the creation of EADS the last time there was a major merger, said Thales executive chairman Patrice Caine.

The European Aeronautics Defence and Space company, the previous name for Airbus, was formed 20 years ago, and since then there have been small steps with the creation of joint ventures, he told Oct. 23 the Anglo-American Press Association.

Nexter and KMW have formed a JV in land weapons, while Naval Group and Fincantieri have partnered in a naval JV, he said.

There is also a German naval joint venture being set up by Lürssen and German Naval Yards, seen as a defensive move following Berlin's pick of Damen, a Dutch shipbuilder, to build four MKS 180 warships.

Thales is partner with Damen on that German frigate deal, worth €4.6 billion (\$5.4 billion), which includes an option for two more units. That German contract is expected to boost Thales's orders in the fourth quarter, chief financial officer Pascal Bouchiat said Oct. 22, Reuters reported.

Apart from those joint ventures, there has not been a large scale consolidation move since the French, German and Spanish creation of EADS in response to a British mega-merger between BAE and GEC, an electronics company.

Consolidation moves have created large companies such as Airbus, BAE, Thales and Leonardo, with little scope for further deals, he said.

Thales holds 67 percent of a Franco-Italian satellite builder Thales Alenia Space, which competes directly with the Airbus space division. Calls for a rationalization in that sector have failed to deliver a merger.

Thales holds 35 percent of Naval Group (NG), with little sign of increasing that shareholding.

Asked about NG and Thales on their rival offers of naval combat systems, Caine said there was no competition between the two companies, as the former built ships and submarines, while the latter supplied electronics such as radar, sonar and electronic warfare systems.

NG describes itself as warship designer, builder and integrator, as well as providing service support and dismantling retired warships and submarines.

Caine said he sat on the board of directors of Naval Group when asked whether he talked often to Pierre Eric Pommellet, who became executive chairman of NG in April. Pommellet was a senior Thales executive before taking up the top job at NG.

France holds 62.25 percent of NG, with staff 1.88 percent, and Thales holding the rest.

The government holds 25.7 percent of Thales, with Dassault Aviation the second-largest shareholder with 24.6 percent. Staff hold 2.8 percent, with the rest traded on the stock market.

Thales sells naval combat management systems which are "platform neutral," competing with NG in world markets for warships.

The electronics company teamed with Belgian and French partners Engine Deck Repair, Chantiers de l'Atlantique, and Socarenam, to form the Sea Naval Solutions consortium in the Belgian-Dutch tender for 12 mine hunters.

NG won that competition with its partner ECA in a JV dubbed Belgium Naval & Robotics.

Thales promoted its unmanned system for mine countermeasures during the virtual Euronaval trade show, publishing pictures of the naval system, which had completed one and a half months of sea trials. That autonomous underwater system is due to equip mine countermeasure systems for the British and French navies.

Euronaval closed on Oct. 22.

Thales will supply subsystems on the prospective French next generation aircraft carrier, but its share of the value will be less than on frigates, as the carrier will be much larger than the frigates, he said.

Greece appeared to have dropped plans to order two French frigates for defense and intervention (FDI), but the Greek market was not seen as a lost cause as Athens has said there were plans to order 18 Rafale fighter jets.

Six of those fighters will be new, while the remaining 12 will be second hand from the French air force. Thales supplies the active electronically scanned array radar and other electronics, accounting for some 25 percent of the value of the Rafale.

On the planned launch of a European Defense Fund (EDF), it was positive there will be backing from the European Union — even if it will be reduced — when previously there was none, he said.

“It’s good news,” he said.

The EU EDF is due to be launched with €8 billion of backing for research and development, compared to a previous plan of €13 billion.

Thales’s subsidiary in the UK is focused on the British market and exports mainly outside the EU, he said.

Asked about the UK prospects after Brexit, he said, “Anyone got a crystal ball?”

Featured Photo: Patrice Caine, chairman and CEO of Thales Group. [Photo/VCG]

An Update on the French Nuclear Deterrent: The 2021 Budget

10/14/2020

By Pierre Tran

Paris – France recently published its 2021 draft defense budget, which set aside €5 billion (\$5.9 billion) for the nuclear deterrent, taking a chunk out of a total budget of €39.2 billion.

Hitting that nice round number showed the significance of nuclear weapons, on which France relies for its seat at the top table reserved for world military powers.

The draft budget includes €1 billion of studies to develop the nuclear ballistic missile submarine, and a fourth generation nuclear-tipped, air-to-ground missile, the air-sol nucléaire 4ème génération (ASN4G) to replace the present nuclear-armed cruise missile, dubbed air-sol moyenne portée amélioré (ASMPA).

France is proud of ownership of such weapons and its permanent seat on the UN security council, two possessions perhaps not unrelated. The five holders of that prized placement on the council are Britain, France, China, Russia and the US, all holders of thermonuclear arms.

There are other members on that UN council but they hold rotating posts.

Other nations are developing nuclear weapons, with India and Pakistan perhaps joining China, France and the UK in the ranks of “second order nuclear powers” by 2030, said an Oct. 2 report from the Fondation de Recherche Stratégique, a think tank.

The spread of Covid 19, however, has sown seeds of doubt, as there may be a “significant drop in investment” on the modernization of nuclear weapons if the crisis extends in time and depth, wrote the authors, Emmanuelle Maitre and Bruno Tertrais.

Why nuclear counts for France

The French nuclear spending reflects political importance as each president will make a keynote speech which seeks to set out a new view on atomic weapons. President Emmanuel Macron sought Feb. 7 to make a moral evaluation of weapons of mass destruction, while calling for stronger world government.

Meanwhile, even when the economy suffers from chronic weak growth, heavy national debt, or a pandemic, there will be a ballistic missile submarine out at sea, ready to take orders from the president, whose aide de camp carries a black briefcase which holds launch commands.

Perhaps ownership of that lightning bolt of the Elysée presidential office shows a determination never to repeat a history of setbacks. Germany defeated France in 1870, almost overwhelmed the French forces in 1914, and occupied the country in 1940.

A then little known army general, Charles de Gaulle, made June 18 1940 from London a rallying call on the BBC for France to fight back against the Nazis.

De Gaulle who went on as president to field in 1964 an independent capability with a 50-strong fleet of Dassault Mirage IV nuclear bombers. France left Nato in 1966, backed by that strategic airborne weapon. There may well be a Cold War, but France sought its own nuclear umbrella, free from the call of Washington or London.

The navy sailed its first nuclear ballistic missile submarine, the Redoutable, in 1972, boosting the French force de frappe.

France rejoined Nato in 2009, but stayed out of the nuclear planning group, which sets policy on the use of weapons. That empty chair approach reflects the French pursuit of strategic autonomy, a concept often to be found in ministerial speeches.

Submarines and airborne weapons

The nuclear weapon shapes French defense policy, with the ballistic missile submarines and missiles on fighter bombers taking the pole position in the race for funding.

Warheads must be maintained and developed, communication links boosted, and inflight refuelling from tanker aircraft upgraded. There are nuclear engines for six attack and four ballistic missile submarines, and atomic power plant for the sole aircraft carrier, the Charles de Gaulle, with the fleet air arm flying Rafale fighter bombers with nuclear-tipped missiles.

Two land-based squadrons fly the airborne nuclear weapon, and France recently speeded up acquisition of A330 multirole tanker and transport jets to refuel those fighter bombers.

That makes the navy and air force winners in the budget, with the army relegated to poor bloody infantry, after cancellation of the Pluton tactical nuclear missile in 1993.

The army's fight back for funding called for a brand name, Scorpion, seen as needed to sell its modernization drive.

Such a budgetary commitment to the nuclear weapon squeezes resources for other projects, such as a planned European medium-altitude, low-endurance unmanned aerial vehicle, which must lobby for scarce funds. A limited budget allows little room for compromise.

The French version of the next generation fighter in the planned Future Combat Air System will carry an airborne nuclear missile, which will help drive the design of the aircraft, along with requirements for stealth, speed and artificial intelligence.

That nuclear armed fighter will also be deployed on the next generation aircraft carrier, playing a key role in the architecture of that capital vessel. There has been lobbying the future carrier will be nuclear powered, a decision to be made by Macron.

There is some expectation there may be an announcement on the future carrier at the Euronaval virtual trade show, which opens Oct. 19. Naval Group, the shipbuilder, hopes the Elysée will pick the nuclear powered option.

Nuclear budget for 2021

The €5 billion in 2021 shows a steady climb in spending on nuclear deterrent, up from €4.7 billion in 2020 and €3.6 billion in 2019, with the latter accounting for the largest single item for that year and a 10 percent increase from the previous year.

In the 2021 budget, the funds for payment on nuclear work rise to €4.1 billion, up seven percent from the previous year, said parliamentarian Jean-Charles Larosneur, who sits on the defense committee of the lower house National Assembly.

However, authorized commitment to fund work fell 59 percent to €3.5 billion, signalling a sharp drop in future spending.

The €5 billion of nuclear work is drawn from a number of programs, including programs

144 and 178 for strategic research, 146 for equipment, and 212 for infrastructure.

Under program 146, which covers procurement and the deterrent, the largest single payment next year will be €1 billion of studies for "technological credibility," namely upgrade of the ballistic missile submarines and the fourth-generation air-to-ground nuclear missile, ASN4G.

Some €788 million has been earmarked for the M51.3 version of the M51 three-stage submarine ballistic missile. Work on the upgrade started in 2014, seeking to boost range.

Service support for deterrence will draw €700 million, while nuclear simulation will receive €650 million, with backing for the Mégajoule laser-based system and research on next generation computers.

Studies on engineering and de-risking technology on the third generation nuclear ballistic missile submarine will receive €365 million.

Some €112 million will be spent on a mid-life upgrade of the ASMPA air-to-ground missile.

The 2019-2023 military budget law has sent aside €25 billion for nuclear weapons, out of a total €198 billion in the multi-year program.

Tertrais and journalist Jean Guisnel forecast the modernization work would drive the annual nuclear budget to a peak of €6 billion some 10 years after their account of the French deterrent, *Le Président et La Bombe* (Odile Jacob), was published in 2016.

The overall 2021 defense budget, announced on Sept. 28, rose to €39.2 billion, up 4.5 percent from the previous year, with €22.3 billion for equipment, according to the armed forces ministry. No details were available on that spending strand.

There will be an overall 2021 authorized commitment of spending of €15 billion, while payment will be €7.6 billion, up 11 percent from the previous year.

It remains to be seen whether the 2022 budget will be maintained according to the multi-year military budget law, as the national purse will be severely depleted by the pandemic.

But it is likely work on nuclear arms will hold privileged position, even in straitened times.

For a look at the French QRA approach shaped for nuclear strike but in terms of its broader operational impact, see the following:

<https://breakingdefense.com/2018/05/french-quick-reaction-force-key-to-syrian-missile-strikes/>