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Author(s)	Chew, Alvin
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# IDSS COMMENTARIES (23/2005)

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## **Singapore's Next Fighter Project: Why the Eurofighter Typhoon is out of the race**

Alvin Chew<sup>\*</sup>

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DESPITE being the smallest nation in Asia, Singapore has one of the most modern air, land and naval forces in its region. Its defence budget, consistently in the range of 5% of its GDP, has been invested in state-of-the-art technologies to boost its military capabilities and deter external threats.

To build a formidable fighting force, Singapore embarked on the Next Fighter Replacement Programme (NFRP) to select a warplane to replace the ageing A-4SU Super Skyhawks, which had served the RSAF in its defensive role for the past 20 years. In October 2003, the Ministry of Defence (Mindef), with the help of the Defence Science and Technology Agency (DSTA), narrowed down its options from 6 warplanes to just 3 contenders for its final phase of evaluation. The three are the Eurofighter Typhoon by a European consortium led by BAE Systems, the Rafale by France's Dassault Aviation and the F-15T Strike Eagle by Boeing of the United States. More than US\$1 billion is expected to be invested to procure the 20 replacement fighters.

On 21 April 2005, according to Jane's Defence Weekly, the Eurofighter's race in the NFRP took a nosedive when Singapore issued a letter of rejection to BAE Systems' local office. Mindef said in a statement on the same day that although the Eurofighter was a very capable aircraft, the committed schedule for the delivery of the plane and its systems did not meet the requirements of the RSAF. The decision came as a shock to many watchers within the defence manufacturing industry. Both DSTA and BAE have refused to officially comment further on the issue.

### **How the Eurofighter Typhoon lost out**

The race for the replacement fighter is closely watched by players in the international arms market due to Singapore's reputation as a demanding buyer whose choice could influence the other customers. The Eurofighter is a multi-role combat fighter developed by GmbH, which is based in Munich. It is wholly-owned by the United Kingdom's BAE Systems, Alenia Aeronautica of Italy, and EADS of Germany as well as Spain. The first production of the fighters for these four participating nations took their maiden flights in February 2003, and two of the RAF Typhoons flew to Singapore in June 2004 for the evaluation process, a few months after the Asian Aerospace.

Defence Minister Teo Chee Hean, has recently been quoted as saying: "We will make our

acquisition decisions based on what is the most cost-effective option for us to meet our operational requirements.” What is exactly meant by cost-effective and does Singapore already have a set of well-defined operational requirements?

The Eurofighter is believed to come with a hefty upfront price tag. However, the strategy for the Republic’s defence procurement lies not in buying commercially-off-the-shelf products, but also in sustaining the aircraft through possible upgrading schemes to suit its operational conditions. Considerable advantages can be derived in terms of cost savings in manufacturing as well as in the transfer of technology and knowledge. This is the case with Singapore’s naval Formidable Class Frigates, for which the first of its class was built in France and the subsequent five others are to be built locally by Singapore Technologies.

Having a consortium of owners for a particular product, as in the case of the Eurofighter, could also have been a factor. Reaching mutual agreement amongst the consortium partners might not be easy. Hence, one could postulate the possible complications in getting the Eurofighter’s technology transferred to the buyers.

While the Eurofighter has sophisticated features, such as its supercruise capabilities to enhance its stealth technology, it is not equipped with an Active Electronically Scanned Array (AESA). This is an area where the RSAF could possibly look into given the Revolution in Military Affairs (RMA) where the current drive is to invest in boosting sensing technology. Most of the major new fighter programmes in the world are incorporating this competency into their new planes to enhance their roles and performance. The Rafale, which is currently fitted with RBE2 radar set, will upgrade all of its aircraft with the AESA variant from the current supplier, Thales, while the F-15Ts are to be retrofitted with AESA radars from Raytheon.

As for the Eurofighter, its own development programme for the AESA radar under the joint Thales-BAE Systems will not be available till 2010, which is much later than the scheduled arrival of the next replacement fighters. Furthermore, the Eurofighter does not have an affirmative plan to proceed with Phase 3 of the fighter production, which leaves much doubt over the development of the AESA radars.

### **RMA influence on the decision**

Proponents of current RMA trends see the need to invest in sensor technology to boost the capabilities of military systems in information gathering. With its limited resources in manpower, Singapore strongly believes in acquiring leading-edge technology as a force multiplier to heighten its military capabilities. With the new generation of combat fighters being fitted with AESA radars, the RSAF would inevitably need to invest in the latest sensing equipment, hence aligning itself with the current technology-driven RMA.

Sensor technology is of paramount importance in the military domain. The ability to detect faster and further translates to an added time advantage for the planning and mobilisation of its forces. Base camps and headquarters can receive real-time information at the frontline via advanced sensors and communication devices. In the recent Iraq war, the allied forces’ swift victory was attributed to their initial air bombardments in disrupting the communication lines of their enemy.

In line with technological advances comes the factor of cost-effectiveness. Force

miniaturisation is a concept of having smaller equipment to enhance the operational capabilities of the SAF through greater mobility. The AESA radar is much smaller than the conventional radar. It achieves a more superior performance with the use of numerous small modules, each of which scans a specific area, as compared to the mechanical dish of an antenna. Furthermore, in doing away with the mechanical rotation of conventional radars, the AESA is also relatively cheaper to maintain.

### **Who will emerge the winner?**

The French government has been pushing aggressively for its Rafale, offering incentives such as technology partnership as well as training facilities. In technology transfer, generous offers such as a willingness to share their source codes would allow us to modify the software to suit our operational needs if necessary. In a sense, Singapore's decision to narrow down the options in the NFRP to the Rafale and the F-15T could be seen as a possible move to tap into the French defence industries and highlights the active collaboration between the two countries in recent years. In the defence arena, alliances have been established between Singapore's DSTA and French-based giants Thales and Onera. The Republic's strategic move to build strong relations with France broadens its defence cooperation with partners in Europe, complementing its already strong ties in America.

Boeing is however confident that the F-15T will emerge the winner in the NFRP because it is able to provide an adaptable platform that allows the fighter to be upgraded and sustained for a longer period before the F-35 JSF arrives to replace the current obsolete F-5s or F-16s. Furthermore, the F-15s had been tried out in real war scenarios, with favourable statistics highlighting its air supremacy as well as multi-role combat abilities in the Iraq war.

Mindef, currently in the process of evaluation, is in no hurry to announce its final decision for the NFRP. Whichever choice it ultimately makes, we can be confident that the new fighter will function well and adapt to the future theatre of war.

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\* Dr Alvin Chew is an Associate Research Fellow with the Institute of Defence and Strategic Studies, Nanyang Technological University.