



Dr Ishan Samjeva Daniel Solomon and Indira Priyadarshini Byaparam, Defence Science & Technology (DST) Consulting

Enhancements to the Collins Class Submarines over the next 10-15 Years

The life of the 6 Collins class submarines (SSKs), which were constructed between 1990-2003, needs to be extended into the late 2030s, or early 2040s, to prevent a capability gap for the Royal Australian Navy (RAN). HMAS Collins, for example, would need to operate for over 40 years, which is a long time for a naval platform. Any delays in obtaining and operating the 3-5 Virginia class submarines (SSNs), or building and operating the AUKUS submarines (called SSN-AUKUS), could result in the Collins SSKs needing to operate for 45 years, while still being a credible deterrent to countries with state-of-the-art submarines built in the 2030s and 2040s.

This paper presents enhancements that should be considered for the Collins SSKs over the next 10-15 years, to prevent a capability gap before the RAN obtains the Virginia SSNs and the SSN-AUKUS boats. Enhancements suggested are to the hull, anechoic tiles, propulsion, engines, batteries, combat management system, sonars, weapons, communications, electronic warfare, radar and uncrewed vehicles. This presentation will develop on a prior paper by the authors, titled "*Enhancing the Collins Class Submarines to prevent a Capability Gap*" and it is a companion presentation to "*Future Uncrewed Vehicles for enhancing Australia's Submarine Capability*", which will be presented at this conference.