

# NGRC Enters Concept Stage

By Dan Gettinger, Managing Editor

**O**n July 4, NATO issued its first request for proposal (RFP) for the Next Generation Rotorcraft Capability (NGRC) program. The RFP, which was published by the NATO Support and Procurement Agency (NSPA), calls for proposals for a “Novel Powerplant” for the future NGRC platform. It is the first such request in the Concept Stage of the NGRC program, launching a series of formal studies of emerging technologies, production methodologies and materials, among other topics.

In June 2022, six countries — France, Germany, Greece, Italy, the Netherlands and the UK — signed a memorandum of understanding committing to the Concept Stage (see “NGRC Gathers Steam,” *Vertiflite*, Sept/Oct 2022), with Canada, Spain and the US also engaged. Under the NGRC program, NATO is seeking to develop a medium-class, multi-role rotorcraft for initial service entry between 2035 and 2040.

The goal of the program is to realize an aircraft that is highly modular, survivable and capable of operating with or without crew members. NATO is aiming for an unrefueled range of greater than 900 nm (1,666 km), an endurance of five hours with a full crew and an internal payload, and the capacity to transport between 12 and 16 troops. It is seeking a fly away cost of less than €35M euros (\$39.3M).

That the aircraft should have a modular open systems approach (MOSA) is “absolutely key” to the long-term relevance and upgradability of this platform, said Pat Collins, Senior Fellow for Defence Equipment & Support at the UK Ministry of Defence, in a presentation on the NGRC at the Society’s 79th Annual Forum & Technology Display in West Palm Beach, Florida, in May (see [www.vtol.org/videos](http://www.vtol.org/videos) for a recording of the Forum 79 special session). Although MOSA has historically been regarded within the realm of mission systems, the NSPA and the NATO Industrial Advisory Group (NIAG) see an opportunity to expand the modularity to other aspects of the NGRC design, potentially to include the vehicle management systems (VMS) and powerplant, among other areas (as does the US Army).

“We know that adding modularity tends to add weight and costs, but the benefits that you get from it are insurmountable,” said Collins. “It allows a wide range of customers to buy ostensibly the same aircraft based on their requirements and, possibly more importantly, the size of their wallets.”



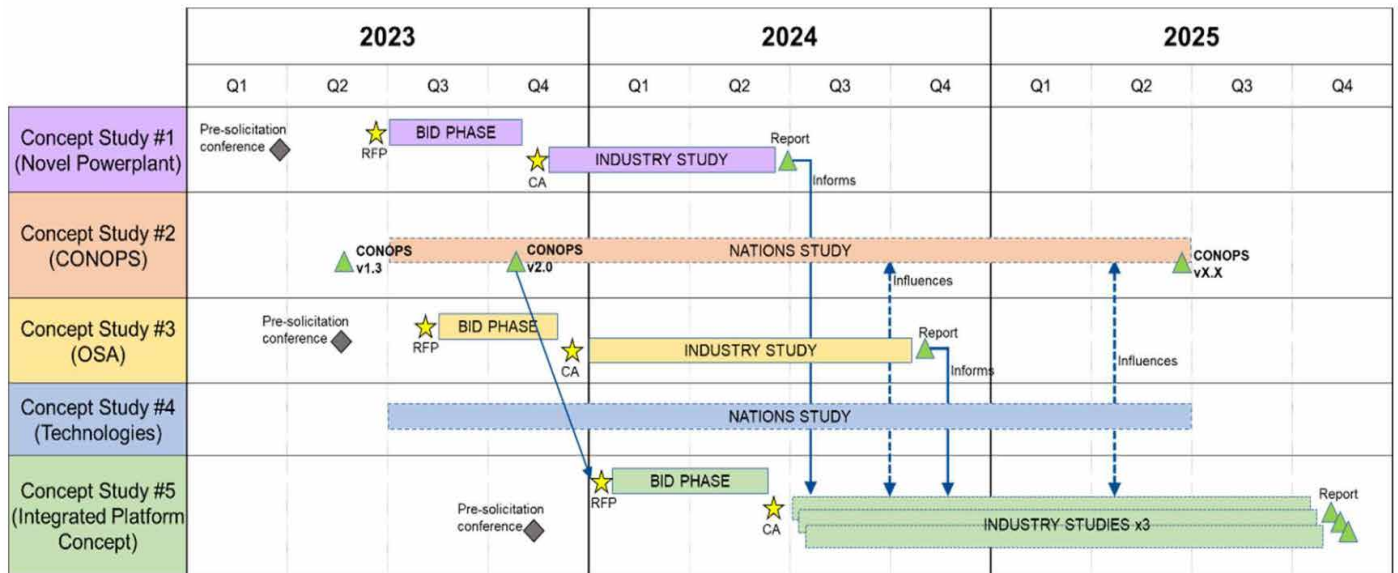
The modularity requirement was the primary conclusion of the NGRC Team of Experts in 2018, one of several NATO-sponsored activities convened since the organization first began studying the development of a next-generation rotorcraft in 2012 (see “US Army Working with NATO on DVE and Next Gen Rotorcraft,” *Vertiflite*, May/June 2017).

With the RFP for the “Novel Power Plant,” the NSPA is seeking information on any “potential conceptual or technological Powerplant solutions that go beyond established conventional solutions,” according to the text of the document. Possible examples include gas turbine engines, electric-powered or hydrogen-fueled or hybrid combinations. The NSPA expects to award a contract for the powerplant by November, with the study completed by mid-2024.

Unlike “a number of already existing studies on future aircraft propulsion and energy systems,” NSPA stated, the RFP is calling for proposals that are specifically tailored to military requirements. “Commercial/civil and military aviation operate within different flight regimes and vastly different environmental and logistical environments and situations,” it explained.

In all, the NSPA will engage in five concept studies between now and 2025, of which three are open to industry and two are restricted to government engagement. The next opportunity for industry involvement is Concept Study #3 on the open systems architecture (OSA), a contract for which is expected this year. The fifth concept study, one on the integrated platform concept (i.e., paper designs of the aircraft), represents the main thrust of the overall Concept Stage and is itself comprised of three, industry-led studies.

The Concept Stage will provide the foundation for the Development and Production Stage for Tranche 1 of the NGRC program, which will run between 2025 and 2035.



Two additional tranches of aircraft are expected, with the first beginning in 2035 and the second in 2042. In all, NATO expects that the NGRC could replace more than 900 medium multi-role helicopters that are currently in service with NATO member states — excluding those of the US — and that are expected to be retired by the mid-2040s.

“From the technology studies that we’ve done and those that are ongoing, we’ve identified that the state of the technology

is such that significantly enhanced capabilities will be available in the future,” said Collins at Forum 79. “Traditionally, it takes about 20 years to develop a platform, so we need to be getting on with it.”

After a decade of planning, the pressure is on to determine the novel solutions that will define a large swath of medium NATO helicopters far into the future.



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