

Beyond 2032

U.S. naval strategy in 2032 and beyond will adapt to the challenges of a changing world environment to operate jointly and with partners at sea, on land, and in the air, space, and cyberspace. As an extension of naval power, Naval Aviation will develop new platforms, sensors, and weapons to meet future threats with novel capabilities that will replace aging systems. Emphasis will be placed on reducing costs, manpower, and development time. Technological advances will increase automation and decrease manpower requirements in maintenance, fueling, arming, and logistics. Naval Aviation platforms and sensors, along with space-based systems and joint assets, will provide nearly omniscient intelligence. Sensor technology advances will result in increased performance with reduced size, weight, and power. Information from intelligence and surveillance resources will be seamlessly integrated to build an overall picture of the strategic and tactical situation, and directed energy weapons will revolutionize our ability to address hostile threats.

Naval Aviation beyond 2032 will consist of carriers and air wings equipped to deter and to defeat future threats to our national security. Enhanced levels of cooperation with allies will be required to execute the core capabilities of the Navy and Marine Corps. Warfare beyond 2032 will require the use of cyber technology to combat hostile forces successfully and to survive unconventional attacks on our platforms and infrastructure. On carriers, manned strike fighters will be complemented by unmanned tactical aircraft. These advanced aircraft will refuel other aircraft; deliver cargo to carriers; gather intelligence, surveillance, and reconnaissance data; and carry out air-to-air, air-to-surface, and electronic attack missions. The rotary-wing force will perform critical anti-surface and anti-submarine warfare, mine countermeasures, and humanitarian missions.

In the next 20 years, new aircraft in many Navy and Marine Corps mission areas will commence development to replace their aging counterparts and provide the bridge to the future. It is paramount that Naval Aviation's resources be marshaled wisely to acquire the optimum mix of aircraft and weapon systems to meet the nation's security needs.



FORCEnet and Collaborative Warfare

Throughout history, military leaders have faced the challenges of understanding the battlefield, exploiting information, and how best to achieve victory. The key is to obtain an optimum vantage point and quickly employ and maneuver forces to achieve desired effects. Modern Naval Aviation's desired effects can be realized through a number of enhancements, including compressing timelines, reducing or eliminating fratricide and collateral damage, increasing survivability, and enhancing lethality. A key enabler to these enhancements is the tactical network that can accelerate the rate at which information is collected, processed, comprehended, and translated into action – enabling friendly forces to collaborate and act more quickly than the enemy. This concept is the essence of collaborative warfare – the operational application of networks to optimize transactions between platforms to achieve desired effects during military operations.

THE NAVAL AVIATION COLLABORATIVE WARFARE PROCESS

Collaborative warfare is the Naval Aviation component of FORCEnet, which is a Navy and Marine Corps operational construct and architectural framework for network-centric warfare. To leverage warfighting capability in a time of decreasing resources, it is paramount that platforms and their requisite weapon systems collaborate to the greatest extent possible. The Naval Aviation collaborative warfare process aligns requirements, resources, and acquisition strategies with a myriad of capability enablers, such as platforms, weapons, sensors, communications systems, waveforms, and computing systems to deliver coherent and relevant warfighting capability. Essential to the success of this process is prototyping an “environment,” or network, that must be integrated into Naval Aviation platforms. This collaborative warfare environment consists of the necessary platforms, weapons, and avionics that enhance mission performance and, ultimately, warfighting capability. Rapid prototyping offers cost savings benefits, allowing the NAE to refine the functionality of an advanced small combat network prior to making multibillion-dollar investment decisions.

NAVAL AVIATION COLLABORATIVE WARFARE VISION 2032: DYNAMIC MISSION EXECUTION

The Naval Aviation collaborative warfare vision is divided into two primary “increments.” The first of these is the integration of sensor fusion, electronic warfare, fire control, and netted weapons throughout carrier air wings. This first increment quantifies: the advanced functionality and mission applications required for fiscal year 2012; full integration and fielding in 2014; and a potential initial operational capability in 2016. The second increment is dynamic mission execution, which is the ability of numerous survivable small combat networks simultaneously and dynamically to execute multiple missions, culminating in a campaign or set of military operations. This increment will also provide the overarching capability that an advanced tactical network enterprise provides to joint task force commanders or combatant commanders. Making dynamic mission execution a reality, with 2032 as the target for increment II, will involve the creation of a family of mission applications for multiple Naval Aviation platforms.

