Terms of Reference Document

Future Naval Use of COTS Networking Infrastructure
NRAC Summer Study 2009

Objective

Study the Navy's use of commercial architectures, software, and hardware in its networks. This study will examine the related emerging networking approaches under development in the commercial world as well as the development and operational practices associated with them, and suggest strategies for leveraging ongoing civilian investment for Navy needs, including identifying S&T to adapt the commercial technologies to Navy operational and administrative requirements where necessary.

Background

Naval operations of all types, ranging from routine administrative activities to delivery of weapons on time and on target, increasingly depend on networked computer systems. A directive issued in early December 2008 requires the Navy to integrate existing Navy IT networks, services, and systems into a system currently labeled the Next Generation Enterprise Network (NGen). The NGen project will also support the broader Global Information Grid and Net-Centric Enterprise Services; the CIO of the Navy has even used the term "weapons system" to describe the NGen. It is reasonable to assume (certainly from the standpoint of cost) that the network architecture upon which NGen is built will make the maximum use of commercial developments. The adoption of technology that originated outside the control of the DOD for networking Navy/Marine Corps systems and people can create substantial challenges and risks.

Specific Tasking

- Compare and contrast the Navy/Marine Corps needs to maintain secure network functionality in the face of dramatically changing bandwidth availability, uncertain connectivity, and large latencies with capabilities offered by existing and emerging commercial technology.

- Explore how the integrity of Navy/Marine Corps networks can be assured with commercially developed components, e.g. when personnel developing commercial software will most certainly include non-US citizens.

- Review current Navy S&T and develop a set of actionable recommendations for new investments as well as changes to current investments that must be made by the Navy in its S&T portfolio to exploit commercial networking technologies.