

Cisco Naval and Maritime Solutions: Enable Collaboration, Mobility, and Security



Introduction

Improved communications and collaboration are increasingly vital for geographically dispersed maritime personnel. For this reason, U.S. Naval and Global Maritime Forces are intensely focused on the communications, computers, and intelligence aspects of Command, Control, Communications, Computers and Intelligence (C4I) systems. U.S. defense agencies, including the Marines, Navy, and Coast Guard, are now investing in network-centric operations initiatives to develop and deploy the mission-critical information they require.

The Global Maritime Strategy and the U.S. Department of Navy objectives call for thorough understanding of the global maritime domain and of factors that affect the safety, security, economy, and environment of the United States. As the leader in defense networking, Cisco® provides mission-critical solutions to enable these objectives. Beyond routing and switching, Cisco offers end-to-end service architectures that enable the convergence of data, voice, and video to establish secure, high-availability communications wherever and whenever they are needed.

Improving Mission Effectiveness

An intelligent network strengthens mission effectiveness, helping naval and maritime forces to increase situational awareness and provide unprecedented capabilities at sea and ashore. It gives dispersed personnel the power to respond to each situation accurately and collaboratively. But to deliver mission-critical information, the network must be responsive enough to support multiple information types, from multiple sources, to provide the highest degree of maritime domain awareness.

A Cisco intelligent information network improves naval and maritime communications, coordination, and collaboration to create greater operational efficiencies. Cisco Unified Communications systems integrate data, voice, and video networks into powerful, converged networks based on the Internet Protocol (IP). The result is a faster, simplified communications tool that is available anytime, anywhere—while lowering the demand on IT technicians to manage and maintain disparate networks.

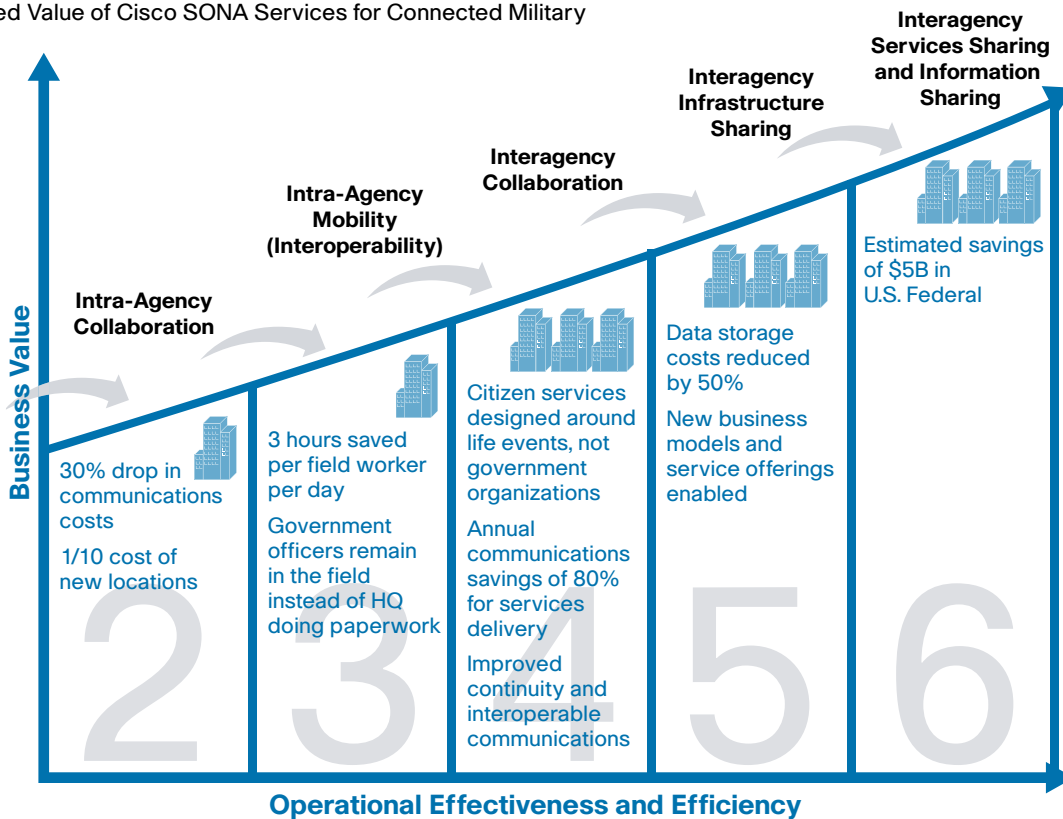
Extending the Value of the Network

The U.S. Department of Navy’s strategy for information management and technology calls for a move to a service-oriented architecture that gives fighters and those who support them better access to the tools and data they need, regardless of location or operating platform. Cisco answers this need with the Service-Oriented Network Architecture (SONA), a unique framework that delivers network services such as security and mobility. Cisco SONA virtualizes IT resources and automates processes, transforming the enterprise network into a strategic advantage. With Cisco SONA, the network grows more agile, facilitates new technology adoption, and provides greater efficiencies.

By integrating the advanced network services that Cisco SONA supports, government organizations can simplify their network, lower costs, enhance system resiliency and flexibility, and raise the value of networked assets. This next-generation architecture helps organizations align IT resources with their operations, resulting in greater success toward achieving their mission. Figure 1 shows how Cisco SONA provides increased value, operational effectiveness, and efficiency.



Figure 1. Phased Value of Cisco SONA Services for Connected Military





Cisco leads the unified communications industry with collaborative innovations such as Cisco TelePresence, which delivers a unique, “in-person” experience over the network.

Enabling Ad Hoc Operations

Naval and maritime forces require a network infrastructure as agile and ubiquitous as they are. A secure network architecture that encompasses mobile and wireless communications solutions can support instantaneous collaboration between U.S. Naval Forces, other service branches, as well as interagency and coalition partners.

The wireless and mobility capabilities delivered by Cisco enable commanders to create networks anywhere, any time. Cisco offers a host of mobile and wireless solutions, from commercial, off-the-shelf (COTS) wireless products to military-specific applications. Its industry-standard technologies extend the distance from which military personnel communicate, giving them unprecedented ability to address high-risk situations, wherever they occur.

Consider the following scenario: COTS radio technologies, such as 802.11 and 802.16e, can be loaded onto small craft at the onset of an exercise or operation. These solutions support real-time video feeds between vessels and small craft. Voice and tactical data can be exchanged over extended ranges, in any weather conditions.

Safeguarding Vital Assets

The U.S. naval and maritime information management and technology strategy calls for protecting and defending critical infrastructures, networks, and information to maximize mission assurance. Cisco offers a wide range of highly reinforced, tightly integrated, end-to-end security solutions, including threat defense and identity-based networking, for rapid response to maritime threats.

Security begins with protecting network access. The Cisco Self-Defending Network incorporates many risk-reducing security features that apply to every part of the network. The industry-leading Cisco Network Admission Control (NAC), for example, controls access while enabling IT administrators to automatically quarantine and remediate noncompliant endpoints. Mitigating worm attacks and circumventing denial-of-service attacks, these solutions conform to government regulations and include encryption technology that is certified for use in government and military applications.

Additionally for storage-area networks (SANs), the fibre channel fabric on Cisco storage-area switches presents an array of defenses, such as fibre channel zoning, which eliminate the risk of a host gaining unauthorized access to a disk used by another host. Cisco’s multilayered approach to protecting assets from external and internal threats, both known and unknown, delivers rapid response to security issues. This comprehensive safeguarding of network assets enables military organizations to maximize network uptime and productivity while minimizing threat impact.

Enabling Cross-Domain Solutions

Maritime domain awareness requires more effective information sharing among communities of interest. The global naval network, with its vision for the “thousand-ship navy,” relies on technology that connects all the players and enables the effective flow of information, intelligence, and communications.

IP-based Cisco products and the Cisco Service-Oriented Network Architecture provide a common computing infrastructure that allows the sharing of confidential information across secure network connections. With support for capabilities such as virtual LANs, organizations can create highly secure closed user groups that span buildings or hemispheres.

Fostering Collaboration

Interoperability enabled by IP networks allows commanders to collaborate with others on a truly global scale. The IP network unifies and enhances collaboration among military personnel, joint forces, coalition partners, and other federal and civilian agencies. Cisco’s converged IP systems and unified communications solutions pave the way for new technology advances, such as the replacement of legacy telephones with IP-based systems. These converged platforms improve collaboration and effectiveness while lowering total cost of ownership (TCO).

Providing Interoperable Solutions and Recommended Practices

To ensure highly interoperable solutions, Cisco augments its technologies with an experienced consulting organization and a wide array of partners that can provide guidance on implementation and use. Cisco also provides a comprehensive set of leading practices—including deployment blueprints, advanced technical capabilities, case studies, and workshops—that help align the network with operations and maintain those operations through any disruption.

Cisco cofounded the Network-Centric Operations Industry Consortium (NCOIC), in which industry members work together to provide governments with robust, network-centric environments. The consortium's mission is to increase interoperability within and between all levels of the U.S. government and allies involved in joint, interagency, and multinational operations.

The Cisco Global Government Solutions Group supports defense agencies around the world by delivering innovative, integrated mission capabilities through thought leadership, advanced technologies, and services. The group comprises a team of top experts from all levels of government around the world. They not only understand unique military challenges; they bring years of experience to solve them.

Why Cisco?

Cisco provides integrated solutions that securely and smoothly connect the entire chain of command to mission-critical information. Cisco has been a part of the U.S. Naval Forces infrastructure, both afloat and ashore, for more than a decade. With innovative technology such as the Service-Oriented Network Architecture, Cisco technology and solutions protect investments today and well into the future.

Learn More

For more information about Cisco naval and maritime solutions, visit www.cisco.com/go/defense.



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