026
Standards Based Collaboration
Allowing better utilization of existing client applications

Fits in the area of: C2 Decision making or Network Centric Applications

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Abstract
The military has made a significant investment in collaborative technologies to facilitate faster planning, better situation awareness and more seamless coordination among dispersed forces. Despite this investment the actual impact of collaboration on the conduct of military operations has proved hard to measure. There are a number of problems that keep the military from recognizing the full benefit from the collaborative information environment. Among the noted problems is the lack of emphasis on adherence to industry standards to permit interaction among vendor specific synchronous collaborative tools. This paper will focus on improving collaboration among operational forces by using established standards to interconnect collaboration client endpoints. These endpoints include tool suites such as SameTime, DCTS (Defense Collaborative Tool Suite), H323 compliant devices, and CISCO IP Phones. Without standards based tool suites the information flow within the military will continue to be hampered by vendor specific collaboration stovepipes. The findings in this paper are based on observations and analysis from Fleet Battle Experiments and Limited Objective Experiments conducted by the Navy Warfare Develop Command (NWDC).

Introduction
Collaborative tools can be divided into two major groupings, asynchronous and synchronous. Asynchronous tools allow collaboration between groups where participants are not aware of when other participants will be engaged. Email, newsgroups and web
portals are examples of asynchronous collaborative tools. Synchronous tools allow collaboration between groups by participants being engaged simultaneously. Examples of synchronous tools include instant messaging, video teleconferencing, application sharing (Whiteboard, collaborative document development) and text based chat.

The types of collaborative tools employed will largely depend on the mission and infrastructure available to the organization. If the mission is long range planning among action officers much of the interaction will involve email, web portal and document management tools. If the mission is the execution of plans collaborative tools that permit voice over IP, video and document sharing may be more appropriate. At some point the long-range planners need to turn the plans over to the executers. The people executing the plan will have questions and need to coordinate and collaborate with the planners. With the two organizations using different collaborative tools there needs to be common standards to allow these two groups to share information.

In the area of asynchronous collaboration the standards are well established and adhered to among venders. This permits a user on Lotus Notes to send an email to a Microsoft Outlook user, using the SMTP (Simple Mail Transfer Protocol) standard. Web browsers can open up pages built on HTML (Hyper Text Markup Language) and XML (eXtensible Markup Language) standards originating from a multitude of source types.

Although synchronous collaboration has similar standards (SIP, H.323, T.120), the standards are continually being defined. Liberal adherence to these standards can cause interaction between the tools to be problematic. Most of the more sophisticated tools like SAMETIME and Click to Meet have a proprietary collaboration standard as well as the ability to communicate using accepted H.323 and/or SIP standards. Even with these standards interoperability is not a given. Until synchronous collaboration standards are followed and implemented, like SMTP, interoperability will be limited to the venders' implementation of standards. The implementation of standards in many cases is inadequate for the required collaboration tools and services now being used.

The search for tools, that best fulfills individual service requirements, has led the different military services to adapt multiple collaborative tools. The problem is exasperated by the limited bandwidth available to afloat and forward deployed forces and different functions each service needs the tools to perform. These multiple tools have resulted in island of collaboration that impede cross component planning and information sharing. There are many reasons why moving towards an accepted standard would be beneficial. These reasons include:

- Preserve the investment services have already made in collaborative technology
- Allow staff members to join conference on different collaboration servers through a single endpoint client
- Allow services to use specific endpoint tools optimized to operate in a limited bandwidth environment
- Allow services to use tools with special functionality not needed by other services. Allow the employment of client tools with a simplified interface for infrequent users.
- Allow endpoint to endpoint awareness and collaboration
This paper will focus on using standards to allow the interconnection of collaborative endpoints (IP Phones, Room VTC, Desktop Collaboration tools) from different vendors to address the six reasons listed above. Desktop collaboration tools are those that provide team rooms, applications sharing, audio/video conferencing and whiteboard. Using standards allows sharing of information and services between vendor tool sets and allows each functional group (planners, logistics, operations) to use tools best suited for their purposes and still join planning sessions and exchange information with other participants.