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System of Systems Common Operating Environment (SOSCOE)

Description and Purpose: The System of Systems Common Operating Environment (SOSCOE) is the middleware that enables interoperability between and within common military and commercial command and control systems, including a host of battlefield applications and sensors. This versatile middleware connects individual software components or applications in a secure networked environment and is optimized for use within a wide range of systems all working in concert. SOSCOE's features are an asset to many types of systems development; typical applications are command and control applications operating over ad hoc networks. SOSCOE is available in a range of editions to fit on a variety of computing platforms – from PC-sized servers inside a Tactical Operations Center, to tiny embedded processors on sensors that have a fraction of the computing power of a modern cell phone.

The benefits of having a single, adaptable system controlling the tactical network are significant. These benefits directly translate to the effectiveness and safety of the warfighter and include:

- Important data is transferred over the tactical network with higher priority than less important data, allowing for timely information, decisions and action
- Rich collaboration such as chat and whiteboard aids warfighters in communicating efficiently while conserving bandwidth
- Interoperability with the Global Information Grid (GIG) allows warfighters to exchange data with support and command outside the battlefield

Customer(s): SOSCOE is a key element of the network architecture for the U.S. Army's restructured Brigade Combat Team Modernization program, formerly Future Combat Systems. It is part of the Network Integration Kit that provides the network connectivity needed to transfer sensor and communication data as part of the Army's modernization effort for infantry brigade combat teams. It connects a family of manned and unmanned systems and sensors, and provides the interface with Battle Command applications.

In addition, Boeing is looking to expand SOSCOE into other enterprises, such as the smart grid, and U.S. border security.

General Characteristics:

SOSCOE can provide:

- A uniform network configuration capability for an entire system of systems
- Secure communications over bandwidth constrained, ad-hoc communications networks
- Vertical and horizontal flow of command and control messaging and situational awareness
- Interoperability with existing systems
- Discoverable services that allow for remote processing, scalability and fault tolerance

Background:

SOSCOE is a proven product that is the result of significant investment by the U.S. Army during the past eight years, with more than 23 million source lines of code. SOSCOE has been demonstrated in a number of major experiments and tests, including multiple Joint Expeditionary Forces Experiments and Limited User and other tests in support of Infantry Brigade Combat Team modernization, as well as in other government programs. It is constantly being updated and enhanced with six qualified releases of SOSCOE to date.

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