

## Boeing's universal translator makes sense of computerspeak

By Peggy Mason

You hear it a lot in reference to laptops, tablets, smartphones and other computing devices.

"There's an app for that!"

An app is software that works seamlessly on a computing device, enabling the user to easily perform singular or multiple related tasks. Apps work because something that resembles a universal translator, or middleware, allows the app to talk to the operating system of the computing device.

Boeing's customers—both military and civilian—are looking for universal

translators that can connect all of the various software programs that make up each computer's program package while offering a high level of security to protect both users and information on the network.

That's where employees such as Network and Tactical Systems software engineers Mark Boyd and Jennifer Woodward apply their expertise and creativity.

"It's not enough to meet requirements—we have to develop something that will perform to make the warfighter's life safer, easier," said Boyd. He's chief engineer for the program that goes by the unwieldy name of SOSCOE, or System of Systems Common Operating Environment.

SOSCOE is Boeing's universal translator, ensuring that older and newer apps on computer systems talk with one another in a secure environment.

It started out as part of the Boeing program known as Future Combat Systems.

In 2003, when Future Combat Systems was more idea than reality, the concept was a secure, underlying middleware to allow the U.S. Army's existing systems to work seamlessly with the new tools and equipment that were part of Future Combat Systems.

That was a "monstrous task," said Paul Schoen, director of infrastructure software development for SOSCOE.

Future Combat Systems has since evolved into the Brigade Combat Team Modernization program, which will provide new capabilities to all of the Army's brigade combat teams.

Meanwhile, SOSCOE has moved beyond just the Army into other areas. The U.S. Department for Homeland Security currently uses SOSCOE for border security.

Schoen fully expects elements of the software to be useful for international customers such as Australia, Canada, the United Kingdom and several European countries. Additionally, he hopes to move into commercial markets as a service provider, similar to software companies, and offer a tool kit based on Boeing's secure software that is used to create applications.

Boyd, Woodward and about 70 of their teammates with Network and Tactical Systems are helping refine SOSCOE, mostly in Southern California at the Huntington Beach site.

Woodward, a former intern, was hired by Boeing upon graduation from California State University at Long Beach. She started integrating Lean+ on the C-17 program, and when her manager recommended her as a good candidate for

middleware creation, she jumped at the chance to be on the leading edge of some of the world's most advanced software technology.

"I'm not one for complacency," said Woodward, execution lead for SOSCOE. "I get bored if I don't have something to reach for."

Fortunately for Woodward and her teammates, working on this middleware offers such a broad range of challenges that boredom is never an issue.

Woodward urges current interns and new hires to consider joining the team. "We still have challenges that would intrigue new interns," she said, but warns that "it's tough because of the fast pace."

Boyd is a Boeing Technical Fellow specializing in graphical user interfaces.

He echoed Woodward's sentiments about the pace. "This is a quick-moving environment."

"If you come into work every day and ask, 'What's possible?' that's the right thing," Boyd added. "If you don't show progress, you lose your customer. The rate at which technology is moving forward is accelerating, as are the changing needs of our customers. Teams must show that they are keeping up, and producing products that meet the customers' needs to remain relevant." ■

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# Kick-apps



**PHOTOS:** Boeing's universal translator, known as SOSCOE, was developed for its U.S. Army customer to enable software programs and sensors to work together seamlessly to produce improved network performance. But it is now being used beyond the military. **RICH RAU/BOEING** (Employee insets, from left) Paul Schoen, Jennifer Woodward and Mark Boyd of Boeing Network and Tactical Systems. **PAUL PINNER/BOEING**