
OMG approval scheduled for fall

SOFTWARE-DEFINED RADIO EXPERTS TRY TO IMPROVE ON JTRS ARCHITECTURE

Date: January 31, 2005

Military and industry officials met last week to discuss improvements to a standard for the architecture of future military radios that could increase the portability of waveforms and signal processing, said an expert on the policy.

At the industry and government workshop, officials discussed scores of “change proposals,” or ways to improve upon plans for the software-defined Joint Tactical Radio System architecture, known as the Software Communications Architecture, said Col. Steven MacLaird, program director for JTRS.

Originally, JTRS radios were designed to replace legacy radios operating on frequencies between 2 megahertz and 2 gigahertz. The original software communications architecture policy addressed frequencies in that range. A policy issued last year changed the standards for the architecture of future radios to include frequencies above 2 GHz, so radios could eventually communicate using satellites and other high-bandwidth datalinks. (*Inside the Army*, Sept. 27, 2004, p1).

Frequencies higher than 2 GHz are used by satellite communications technologies and high-capacity line-of-sight datalinks, which for the purpose of radios enhance communications beyond line of sight, improve redundancy and support access to the military’s future Global Information Grid, according to an Army statement from the JTRS joint program office.

At the meeting, teams of experts grouped improvements in “buckets” -- areas like security, interfaces and administrative applications, MacLaird told *Inside the Army* Jan. 26. Those working groups will continue sorting and refining proposals that can eventually be incorporated into an even newer version of the SCA -- version 3.1.

Changes discussed during the workshop will be sorted and finalized during the spring, MacLaird said. If all goes well, the policy will be submitted to the “Object Management Group” for approval in the fall, said the policy expert.

The OMG is an international open-membership, not-for-profit consortium that produces and maintains computer industry specifications. The group focuses on enterprise and embedded capabilities and layered standards in radio communications, according to an Army statement.

Unclear is how changes to the architecture will affect the time lines for JTRS versions like the Army’s Cluster One ground and aerial vehicle radio and Cluster Five, the service’s hand-held and manpack variants, MacLaird said.

Radios like the Cluster One variants, which are scheduled to reach full-rate production in 2007, may require updating after the fact. JTRS programs with a longer time line will be more likely to incorporate changes from the start, he said. Changes to specific programs won't be finalized until after the OMG approves the architecture.

In addition to finalizing standards, other JTRS challenges include antenna systems, network management systems and enhanced spectrum management, MacLaird said during a speech at a Institute for Defense and Government Advancement conference.

Antenna systems that can match the evolving capabilities for software-defined radios are "giving us a run for our money," MacLaird said. The reason is that while industry produces many narrow-band antennas, a broadband antenna that can span the range of 2 MHz to 2 GHz is harder to find. MacLaird asked for industry's help in locating a broader-band antenna.

Spectrum management is another sticking point. "I can't operate the [wideband networking waveform] where [Single Channel Ground and Airborne Radio System] operates. Why not?" MacLaird asked, saying that the soldiers don't care what waveform they are operating on -- they just want the capability.

The JTRS joint program office is working to build the waveform to add wireless communications. It will have several major functions, including over-the-air capabilities, a mobile ad-hoc network, internet protocol internetworking and network management, he said.

As the JTRS programs continue to develop, a November 2004 memo from the assistant secretary of defense for networks and information integration regarding waivers required to buy radios while JTRS is in development was circulated on the JTRS web site last week.

The policy restricts the purchase of radios already on the market by requiring commanders to show an urgent need for radios before purchasing them. The move is intended to spur development of JTRS. The memo spells out the process for obtaining waivers.

In the conference report accompanying the 2005 Defense Appropriations Act, House and Senate appropriators criticized the waiver policy, saying it had created "a bottleneck in meeting the needs of operational commanders." The law directs the ASD/NII to report to Congress by Jan. 3 on a new plan that allows rapid fielding of radios needed for operations in Iraq and Afghanistan, or for counterterrorism purposes, even if they do not comply with JTRS.

The policy, issued Nov. 24, 2004, lays out time lines for a board to review waiver requests. The policy mandates that requests will receive one hearing by the governing board within 45 days. The goal for processing urgent requests is to not exceed four days.

Formal hearings are not required for urgent requests, the policy states. However, if one of the joint officials reviewing the request “deems a waiver request is not urgent, it becomes routine and goes to a hearing,” according to the document.

Army Land Warrior program officials last year requested a waiver for the purchase of approximately 6,000 Microlight radios and waited far longer than 45 days for a ruling.

After months of review, program officials recently received verbal confirmation that ASD/NII has approved the first increment of its request for a JTRS waiver to acquire 395 Microlight radios, which will serve as the communications systems for the Dismounted Battle Command System. Another waiver request for the Stryker-interoperable version of Land Warrior is pending, according to a spokeswoman for the program executive office soldier.

The ASD/NII has not responded to repeated requests for comment on the policy. -- *Jen DiMascio*

ARMY-17-4-10

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