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RADIO TESTS IN FIREGROUND ENVIRONMENT SET FOR EARLY 2010

Dec 10, 2009 3:40 PM, By Donny Jackson

A new round of testing to assess radio performance in fireground-noise environments will be conducted early next year, updating tests that have created considerable controversy in the firefighting community around the use of digital radios in such scenarios.

D.J. Atkinson, lead electronics engineer for the Public Safety Communications Research (PSCR), said his unit — a joint effort of the National Institute of Standards and Technology (NIST) and the Institute of Telecommunications Services (ITS) — will conduct the tests in late January through February.

Two years ago, the same lab conducted tests that showed that some digital radios did not perform as well as analog radios in certain fireground environments. The test results have had a significant impact in the fire community, with some fire departments demanding that they be allowed to use analog equipment instead of newer digital equipment.

Next year's tests will be similar to the previous tests, in that the same noise environments will be explored, Atkinson said. Key differences include the use of a mask with an internal microphone, use of radio reference systems to avoid manufacturer settings and the addition of "radio-channel impairments" that are designed to emulate the impact of a firefighter receiving a weaker signal when entering a building, he said.

The one digital radio that will be tested is a P25 radio with the new DVSI vocoder operating on a 12.5 kHz channel, Atkinson said. Digital radios with older vocoders were included in the previous test, so they will not be included in this tests. However, analog radios operating on 25 kHz channels and 12.5 kHz channels will be included, he said.

"Part of the assertion of the users is that they want their digital radio systems to be at least as intelligible ... as their 25 kHz analog radio systems that they've been using forever. So we need to keep that in there as a yardstick to measure from," Atkinson said, noting that another question is whether narrowbanding to 12.5 kHz channels would impact voice intelligibility.

Not included in the tests will be noise-cancelling technologies employed by vendors such as Motorola and Harris in their multiband radios that are expected to be commercially available next year, Atkinson said.

"I think that will be a test we'll do in the future," he said. "Adding that factor into this test would make it so complex that it would be almost impossible to conduct."

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