

IAFC Digital Problem Working Group Report
Updated November 21, 2007
Submitted by
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In 2006, a couple of U.S. fire departments discovered that the voice audio from digital radios in the presence of background noises (common to the fireground operations) may cause distortion to the degree of becoming unintelligible. Communications during firefighting operations is critical.

The International Association of Fire Chiefs (IAFC) Communications Committee Chair Doug Aiken established a Digital Problem Working Group and appointed Charlottesville Fire Chief Charles Werner to serve as the Working Group Chair. The Working Group met on May 8th, 2007, at the Dunn Loring Volunteer Fire Department in Fairfax, Virginia. The Working Group consists of members of the fire service, radio manufacturers, equipment manufacturers and technical experts, who are working collectively to fully understand the vocoder affect, identify techniques to overcome both technically and behaviorally.

Actions Taken to Date

- March 20, 2007, the IAFC issued a Member Alert and published and continues to publish updated information on the IAFC website:
(<http://www.iafc.org/displayindustryarticle.cfm?articlenbr=33118>).
- The IAFC also approved the formation of a Working Group to determine the scope of the problem and work with manufacturers and other stakeholders to identify and/or develop short and long term solutions.
- On May 8, 2007, the Working Group convened and established two sub groups (Testing and Best Practices)
- The Testing Group is focused on more long term solutions while the Best Practices Group is focused on quicker solutions through behavior and/or operational modifications.
- Since May 8, 2007 both subgroups have conducted meetings in person and by conference call.
- In July, the Testing Group (Chair – Paul Roberts, Boise Fire) met in Denver and worked with NIST to develop a practical testing strategy. This group is set to reconvene in Denver in late November to the actual testing.
- On July 24, 2007, the Best Practices Group (Chair – Dallas Lipp, Montgomery County Fire & Rescue) met and forwarded its recommendation report to the Working Group and to the Testing Group for follow-up.
- On August 22, 2007 at Fire Rescue International – the Communications Committee requested that the Best Practices Group develop a PowerPoint presentation (based on their findings) to be used as a training tool for fire and public safety agencies on effective radio techniques that can minimize the affect of background noise. Additionally, segments of the PowerPoint presentation will be developed and maintained by the radio manufacturers and provide up to date links to their respective websites. The PowerPoint presentation will be tentatively available in December 2007.

Brief Summary

- There is unanimous acknowledgement by all stakeholders present that the “vocoder”, which is a hardware/software component in every digital radio that converts analog voice to digital, can distort audio when operating in environments with high levels of background noise.
- Another consensus reached is that all equipment used by firefighters in a firefighting environment must be viewed as a system and considerations must be observed for

overall operation and noise effect. In this regard, the Equipment Manufacturers have also been engaged in this process.

- In addition to fire service stakeholder agencies, the following radio manufacturers have been active and supportive participants throughout this process (listed alphabetically): E.F. Johnson, Kenwood, MA/-COM, and Motorola.
- Scott Health and Safety is also represented on the Working Group. The Working Group is also working with other SCBA manufacturers that have agreed to provide samples of their equipment for the testing.
- The Responder Knowledge Base is assisting the IAFC by jointly disseminating information to the emergency response community and coordinating cooperation from equipment manufacturers.
- Outreach has been made with law enforcement and the National Public Safety Telecommunications Council (NPSTC).

Additional information available on the IAFC website at www.iafc.org/digitalProblem.