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**Subject:** RIN 1219-AB79 Refuge Alternatives for Underground Coal Mines Comments  
**Attachments:** IWT MSHA RFI 2013-0033-0033 Response revA.pdf

**JAN 15 2016**

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**From:** Jim Silverstrim [<mailto:JSilverstrim@iwtwireless.com>]  
**Sent:** Friday, January 15, 2016 7:00 AM  
**To:** Davis, Leah - MSHA  
**Cc:** Eric Hansen; Phil Carrier; Steve Harrison  
**Subject:** RIN 1219-AB79 Refuge Alternatives for Underground Coal Mines Comments

Leah Davis,  
IWT comments on enhanced two-way voice communication when using escape breathing devices is attached.

Regards,

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January 12, 2016

RIN 1219-AB79 or Docket No. MSHA-2013-0033

Re: Refuge Alternatives for Underground Coal Mines

Topic: Enhanced two-way voice communication when using escape breathing devices

To: Leah Davis – MSHA

Electronic Mail: [davis.leah@dol.gov](mailto:davis.leah@dol.gov)

From: Jim Silverstrim, Senior Technologist, Innovative Wireless Technologies, Inc.

Innovative Wireless Technologies (IWT) is providing the following comments on miners communicating while using breathing devices during escape.

IWT has evaluated several approaches for voice communication while operating with self-contained breathing apparatus (SCBA) in association with the *SENTINEL*<sup>TM</sup> Mine Rescue Communications and Tracking system. Based on our evaluation, the best approach is to interface the SCBA to the user handset radio via the remote speaker-mic interface. This is a standard interface to the handset that is common for multiple accessory devices and has the following advantages:

- It has the same operation as standard speaker-mic units so there is no change in the user operation.
- The speaker and microphone are built-in the SCBA assembly for optimum design of audio performance and noise reduction.
- The speaker-mic cable provides a secure, reliable connection to the user handset.

A wireless Bluetooth (BT) interface was considered, but it has issues with interoperability among multiple BT chip vendors, it requires a change in user operation to pair the BT accessory with the user handset and there are potential interference issues when multiple BT users are in close proximity.

While the remote speaker-mic cable connection requires MSHA approval and certification, it provides advantages with respect to simple and reliable operation for the miners.

IWT is partnering with several vendors to obtain MSHA certification on their voice equipment using the speaker-mic interface.

IWT is a privately held employee owned company in Lynchburg, VA with over 15 years of experience in developing wireless communication products and sensor systems for first responder, defense, and industrial applications. This experience includes



development of the ACCOLADE® and *SENTINEL*™ Mine Communication and Tracking System, and the *SENTINEL*™ Mine Rescue Communications and Tracking system.

If you have any questions please contact me at 434-316-5230

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