

# Where are we with audio intelligibility in P25?

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## Audio Quality Testing

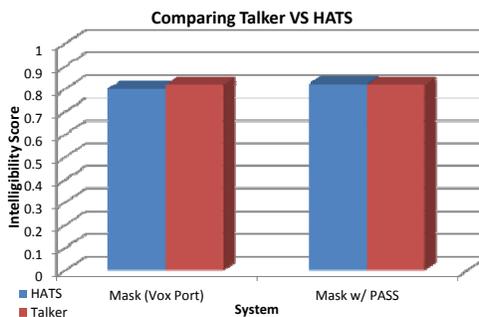
- Firefighter reports showed that some background noises created by firefighting equipment can interfere with digital communication.
- PSCR worked with practitioners to develop and implement tests that measure the operation of digital radios, and also tested mitigation techniques for the problems.



## How valid are the testing methods?



PSCR

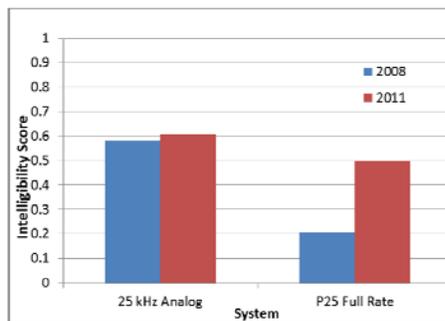


No significant differences were observed in intelligibility between the use of a talker vs the HATS.

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## Changes in P25 Intelligibility Since 2008

- Improvements to best practices and vocoder make a difference
- There are still differences between analog and P25, but the gaps are narrowing



Intelligibility scores of mask with voice port and PASS alarm noise.

PSCR

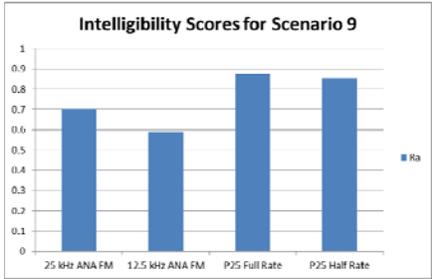
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### Changes in P25 Intelligibility Since 2008 (Audio Samples)

<b>Mask 2008</b> (no background noise)	<b>PASS Alarm 2008</b>
 <span style="font-size: 2em; vertical-align: middle;">59%</span>	 <span style="font-size: 2em; vertical-align: middle;">21%</span>
<b>Mask 2011</b> (updated best practices)	<b>PASS Alarm 2011</b> (updated vocoder)
 <span style="font-size: 2em; vertical-align: middle;">69%</span>	 <span style="font-size: 2em; vertical-align: middle;">50%</span>


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### New Information



Intelligibility scores for static degraded channels with no mask and no background noise.

- Different PASS alarms do not have different impacts on intelligibility
- Using a mask with an internal mic improves intelligibility, but comes at a price
- There are channel conditions where P25 has higher intelligibility than analog FM.


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# Demonstration

