



**Hearing on
“Future of Emergency Alerting”**

**United States House of Representatives
Committee on Energy and Commerce**

***Subcommittee on Communications and
Technology***

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**Statement of Sam Matheny
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National Association of Broadcasters

Good morning, Chairman Blackburn, Ranking Member Doyle and members of the Subcommittee. My name is Sam Matheny and I am the chief technology officer at the National Association of Broadcasters (NAB). Thank you for inviting me to testify on how broadcasters are innovating to better serve our communities with advancements in emergency alerting. All NAB members – the thousands of free, local radio and television broadcasters in your hometowns – take seriously their role as first informers in times of emergency. I will be focusing today on the advanced emergency alerting capabilities enabled by the voluntary upgrade that television broadcasters are planning to make to the Next Generation broadcast television (Next Gen TV) transmission standard, also known as ATSC 3.0. Further, I bring a unique perspective on the indispensable role of broadcasters as first informers given my nearly 20 years of experience at Capitol Broadcasting Company, parent to WRAL-TV, an industry leader with a long history of technological innovation that has saved the lives of viewers in Raleigh, N.C., during times of disaster.

Broadcasters' Unique Role and Experience in Emergency Alerting

As the most trusted source of news and emergency updates, Americans' first choice is to turn to local television and radio stations to get the information they need to keep safe. Local stations are part of the communities they serve, and broadcasters do not hesitate to put themselves in harm's way to bring critical information to their neighbors. Whether it's preparing listeners and viewers for the coming storm, helping them access needed supplies and shelter during the disaster or helping towns and cities rebuild in the aftermath, local broadcasters take seriously their commitment to protecting the public.

Broadcasters invest heavily to ensure they remain on the air in times of disaster. Facilities often have redundant power sources, automatic fail-over processes, generator back up and substantial fuel reserves. Because of the strength of the broadcast infrastructure and the power of the airwaves, local radio and TV stations are often the only available communications medium during disaster situations, even when cell phone and wireless networks can be unreliable. During 2012's Hurricane Sandy, which affected the East Coast from Florida to Maine and ultimately made landfall in New Jersey, broadcasters provided round the clock coverage and were true lifelines to viewers and listeners. Federal Emergency Management Agency officials have noted that in times of emergency there is no more reliable source of information than local broadcasters.

This unique combination of trust and reliability is why, in addition to our on-going, comprehensive news coverage of emergencies, broadcasters form the backbone of the Emergency Alert System (EAS). We have all seen or heard the familiar announcement "The following is a test of the Emergency Alert System. This is only a test." EAS connects over-the-air broadcast radio, television and cable systems, and is used during sudden, unpredictable or unforeseen events. EAS participation is technically voluntary, yet virtually all radio and television stations participate, and do so proudly, even purchasing EAS equipment at their own expense. But the system and the emergency managers that originate messages are not perfect, and below I will detail how Next Gen TV's advanced alerting capabilities could be used in emergencies like the tragic fire in Gatlinburg, Tennessee to better alert those in harm's way and save lives.

The Next Gen TV Standard: A Primer

Next Gen TV has the potential to revolutionize broadcasting by using the world's first Internet Protocol (IP)-based terrestrial television transmission standard, ATSC 3.0. In 2016, NAB, the Consumer Technology Association (CTA), America's Public Television Stations (APTS) and the Advanced Warning and Response Network (AWARN) Alliance petitioned the Federal Communications Commission (FCC), requesting permission for stations and television receiver manufacturers to voluntarily adopt Next Gen TV. We were pleased that the FCC unanimously approved a Notice of Proposed Rulemaking in February and are optimistic that the FCC will authorize the new standard this year.

As broadcasters, we are simply asking to be able to use our spectrum licenses more efficiently and to better serve our viewers. We are not asking for any additional spectrum, government funds or mandates. Unlike other communications providers, broadcasters are the only licensees that must ask the FCC for permission to innovate with regard to our transmission standard. However, by adopting Next Gen TV, broadcasters will have much greater flexibility to innovate going forward.

For viewers, Next Gen TV combines the best of broadcast and broadband. Next Gen TV will provide the capacity necessary for broadcasters to transmit stunning ultra-high definition pictures with brighter and more vibrant colors, together with highly immersive and customizable audio. Next Gen TV also uses familiar web design languages to create interactive experiences for users on the television and in combination with "second-screen" devices such as tablets or cell phones. The result is a higher-quality, interactive viewing experience where the viewer has more control. Next

Gen TV will also provide enhanced opportunities for diverse programming by allowing broadcasters to transmit multiple programming streams, while also creating the potential to allow more robust signals for better in-home and even mobile reception. Most importantly, these same Next Gen TV characteristics and capabilities will enable significant life-saving advances in emergency communications.

Advanced Emergency Alerting

If the FCC approves Next Gen TV, a television broadcaster will be able to simultaneously deliver geo-targeted, rich media alerts to an unlimited number of enabled fixed, mobile and handheld devices across their entire coverage area. For example, rather than simply running an EAS alert or crawl over regularly scheduled broadcast programming for an entire market's viewing audience (and then only reaching those who are watching), a Next Gen TV signal could wake up enabled devices and reach the entire universe of devices within its contour, at the consumer's discretion. Using the rich-media capabilities of Next Gen TV, broadcasters can provide targeted neighborhood-specific alerts that include text, graphics (such as Doppler radar animations or an evacuation route), pictures and even detailed video-on-demand descriptions. The public will have access to all of this life-saving information even if the power goes out or cellular wireless networks fail. Further, compare that to today's 90-character Wireless Emergency Alert (WEA) text message (which often directs users to seek additional information from local media, i.e., broadcasters) and the Next Gen TV capabilities and the public safety benefits are obvious. In addition to simply greater capacity, here are some of the most promising features of Next Gen TV that build on broadcasting's unique trust and resiliency:

- “Wake up” functionality – Next Gen TV enabled receivers can be “woken up” to process alerts even when they are powered off. This feature could be utilized during sudden and unexpected emergencies like tornados or bomb threats.
- Reach – Using the one-to-many architecture of broadcasting, alerts can be sent simultaneously to an unlimited number of enabled devices: both fixed and mobile devices, including automobiles within a broadcaster’s service contour.
- Geo-targeting – Utilizing an enabled device’s location through GPS or otherwise, alerts can be geo-targeted to deliver specific alerts to specific areas, such as storm paths or evacuation routes. This Next Gen TV feature can mitigate the problem of so-called “over-alerting.”
- Personalization – Users will be able to pre-determine the types of alerts or hazard levels that will trigger the display of an alert on their devices, and even potentially select alerts for another geographic area (such as a child’s school).
- Hybrid/ Interactive services – Because Next Gen TV is IP-based and able to connect to communications return paths such as broadband and LTE networks, recipients of alerts can send information back to authorities that originated an alert. For example, a recipient of an AMBER alert regarding a missing child could immediately report seeing the child and the precise location and direction of a suspect vehicle in real time.

The recent and tragic fire in Gatlinburg, Tennessee exposed some of the weaknesses of the legacy Emergency Alert System and opportunities for Next Gen-

enabled advanced alerting to both complement existing systems and mitigate their shortcomings. Last year, on the day before Thanksgiving, Tennessee firefighters began closely monitoring a wildfire in the Smoky Mountains. Three days later, the fire was eight acres in size. As wind and fire conditions began to intensify, emergency managers started to inform the public of the fire two days later, and both the downtown Gatlinburg siren system and door-to-door evacuations began that afternoon. By late that night, 100-mile per hour winds swept and fed the now 17,000-acre fire down the mountain through Gatlinburg, forcing hurried, last-minute evacuations for those that remained in harm's way. However, an 8:30 p.m. evacuation communication from emergency managers using EAS alerts and WEA text messages to warn residents was never issued due to phone, internet and electrical failures. Emergency managers were eventually able to send out messages to evacuate and a request to stay off communication services, but many residents were unable to receive the messages due to either cellular network failure or congestion. Tragically, 14 lives were lost in Gatlinburg that night.

While there are many lessons from Gatlinburg, a more effective and advanced alerting system could have changed the outcome. A Next Gen TV-enabled device that had been turned off for the evening could have been woken up to alert a sleeping owner of the imminent danger. Residents could have received regular alerts, including wind-pattern maps, evacuation routes specific to their location and even video-on-demand with the latest detailed information about the fire. Not only would the content of these alerts be more detailed and interactive than what is available today, but they would travel on the more resilient broadcast architecture and not be subject to cellular wireless

network failure or congestion. This actually has the added benefit of clearing congestion from cellular networks so they can be used for increased communication. As this unfortunate example shows, the public safety benefits of Next Gen TV and advanced emergency alerting can significantly improve the content, pervasiveness, accessibility and reliability of America's emergency alerting systems and hopefully save lives.

Avoiding Unnecessary Delays to Deployment

Before I conclude, I must highlight one issue currently before Congress that could prevent emergency alerts from reaching local broadcast viewers and listeners, while also undermining the deployment of Next Gen TV and the realization of the public safety benefits of advanced emergency alerting. I'm referring to the relocation – or repacking – of nearly 1,000 broadcast television stations in the final and most complicated phase of the broadcast spectrum incentive auction. With the conclusion of the auction, there will be less spectrum allocated for broadcasting and fewer stations. In order to compete and continue to serve our communities, broadcasters will need to innovate and provide the types of compelling services like those enabled by Next Gen TV. NAB asks that policymakers ensure that broadcasters have adequate time and resources to successfully relocate, not only to keep Congress's promise that broadcasters would be held harmless, but also to provide the certainty that an investment in Next Gen TV requires. Broadcasters are willing and ready to make the necessary investments in our infrastructure to provide what we believe will be truly groundbreaking improvements to free, over-the-air television for the benefit of viewers across the country.

Thank you again for inviting me here today. I look forward to answering any questions.