COMMENTS OF THE AWARN ALLIANCE

Before the

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Authorizing Permissive Use of the "Next Generation" Broadcast Television Standard	)	GN Docket No. 16-142

May 9, 2017

TABLE OF CONTENTS

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I. EXECUTIVE SUMMARY

Advanced emergency alerting from the Advanced Warning and Response Network (AWARN) will be one of the major public benefits of the "Next Generation" broadcast television (Next Gen TV) transmission standard, also known as ATSC 3.0, if the Commission approves its proposed rules.[1] AWARN will enable distribution of geo-targeted, rich media alerts simultaneously to an unlimited number of enabled fixed, mobile, and hand-held devices, indoors and outdoors, across an entire television broadcast contour. These advanced alerting capabilities, designed to meet a wide range of threats both new and old, will significantly improve the content, pervasiveness, accessibility, and reliability of America's emergency alerting systems. AWARN capabilities will far exceed those available to the American public today.

The AWARN Alliance applauds the Commission for unanimously approving the Notice of Proposed Rulemaking (NPRM) and strongly supports adoption of the proposed rules to allow

[1] *Authorizing Permissive Use of the "Next Generation" Broadcast Television Standard*, *Notice of Proposed Rulemaking*, GN Docket No. 16-142, FCC 17-13 (Feb. 24, 2017) (NPRM).

television broadcasters to begin transmission in the new standard.

II. AWARN ALLIANCE MEMBERSHIP

The AWARN Alliance ("the Alliance") is a voluntary coalition of commercial and public broadcasters, consumer electronics and allied technology companies, national trade groups, and service providers who have come together to develop and deploy AWARN. The Alliance is one of four signatories (along with America's Public Television Stations (APTS), the Consumer Technology Association (CTA), and the National Association of Broadcasters (NAB)) to the "*Joint Petition for Rulemaking Seeking to Authorize Permissive Use of the 'Next Generation TV' Broadcast Television Standard*."[2] The Petition describes the many consumer benefits of Next Generation Television, including advanced emergency alerting (AEA) and other core capabilities of the new standard on which AWARN is being built.

At the one-year anniversary of the Alliance's founding, its membership has grown rapidly. Notably, its commercial and public broadcaster members reach over 85 percent of U.S. television households. Together with consumer electronics and professional equipment manufacturers and service providers, Alliance members already represent major elements of the emerging Next Gen TV "ecosystem," and continued growth in membership is expected. (Please see Appendix for a complete list of current members.)

III. ALERTING AND THE FIRST IP-BASED TV TRANSMISSION PLATFORM

As the world's first Internet Protocol (IP)-based terrestrial television transmission platform, Next Gen TV presents major new capabilities for emergency communications. AWARN will leverage the native features of Next Gen TV/ATSC 3.0 – defined as "use cases" by the Advanced Television Systems Committee (ATSC) which developed them – to achieve its major improvements in emergency communications.[3] For consumer devices that enable these features, examples include:

- Geo-targeting: Although all devices in a transmitter coverage area may physically receive the AWARN alert message, adding geocodes to the message by alert originators,

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[2] *See Media Bureau Seeks Comment on Joint Petition for Rulemaking of America's Public Television Stations, The AWARN Alliance, The Consumer Technology Association, and The National Association of Broadcasters Seeking to Authorize Permissive Use of the "Next Generation TV" Broadcast Television Standard*, *Public Notice*, GN Docket No. 16-142, DA 16-451 (rel. Apr. 26, 2016)

[3] The 13 "use cases" representing the foundation of ATSC 3.0 are: Flexible Use of Spectrum; Robustness; Mobile; Ultra HD; Hybrid Services; Multi-view/Multi-screen; 3D Content (Video); Enhanced & Immersive Audio; Accessibility; Advanced Emergency Alerting; Personalization/Interactivity; Advanced Monetization; and Common World Standard

combined with devices being "aware" of their location (either through GPS or user setup), means that only alerts intended for a specific geographic area will be displayed on enabled devices in that area. Thus, AWARN geo-targeting can help minimize the widely-recognized problem of over-alerting.

- Personalization/Interactivity: Users will have the option to display alerts intended for another geographic area, such as a child's school when the parent is away at work. Except for Presidential alerts, which are broadly disseminated by law and regulation, personalization also will allow users to pre-determine the types of alerts or hazard levels that will trigger the display of an alert on their devices.
- Robustness and Mobile: Because ATSC 3.0 signals can penetrate deep indoors, AWARN alerts will be able to reach a large percentage of the population on a range of devices. As broadcasters build out infrastructure to reach mobile devices, AWARN alerts, using the one-to-many architecture of broadcasting, will be able to simultaneously reach an unlimited number of handheld devices, connected automobiles, and other moving vehicles.
- Hybrid Services: Because ATSC 3.0 is built on the Internet Protocol (IP), recipients of AWARN alerts can use whichever "return path" is available to their receive device (principally broadband or LTE networks) to report information to authorities, such as in response to an AMBER alert when an abducted child is sighted. Importantly, the AWARN alert can provide rich media emergency messages to enabled devices even if the Internet or cellular networks are not functional and the return path is not available.

As noted in the Petition, advanced alerts also can leverage another powerful feature of ATSC 3.0 – signaling that permits receivers to alert people of an emergency even when the receiver is powered off. This "wake up" functionality allows enabled receivers to process emergency alert information – an invaluable advance in the face of tornadoes, earthquakes and other sudden disasters, in addition to sudden man-made emergencies, such as bomb threats.

IV. CREATION OF FIRST AWARN ALERT SIMULATIONS

A key goal of the Alliance is to develop AWARN models so that, pending Commission approval of voluntary use of the ATSC 3.0 standard, AWARN alerting is ready for beta testing as ATSC 3.0 is launched by early adopter stations. Although a great deal of work remains, the Alliance is making steady progress toward that goal.

- Last summer, WRAL-TV in Raleigh, North Carolina broadcast an AWARN alert simulation based on Hurricane Irene over their ATSC 3.0 experimental station, using equipment from Triveni Digital, Monroe Electronics, and LG Electronics and its Zenith affiliate, proving that the technology works over-the-air.

- With the support of the National Center for Missing and Exploited Children (NCMEC), WJLA in Arlington, Virginia, LG/Zenith, and Triveni, the Alliance has produced a Next Gen TV AMBER alert simulation.
- With ABC 33/40 in Birmingham, Alabama, LG/Zenith, and Triveni, the Alliance has produced a simulated tornado warning based on the real events of April 27, 2011, a "super outbreak" that claimed more than 250 lives in the Birmingham-Tuscaloosa area of Alabama.
- With WJLA, Monroe Electronics, LG/Zenith, and Triveni, the Alliance has produced a simulated "HazMat" chemical spill alert, loosely based on the May 2016 CSX train derailment in Northeast Washington, DC.
- WRAL-TV, with the support of UNC-TV in Chapel Hill and other partners, currently is producing a simulated active shooter alert with both a public alerting component and encrypted content for first responders.
- NAB PILOT has taken the AMBER and HazMat alert content and re-encoded it as HTML5 apps that can be broadcast through the ATSC 3.0 signal. At the NAB Show 2017 in Las Vegas (April 2017) the AMBER and HazMat simulations were displayed simultaneously on fixed television sets and handheld tablet devices via a WiFi connection to an ATSC 3.0 home gateway receiver.

These early examples of advanced alerts have been demonstrated, so far, to officials with the Federal Emergency Management Agency (FEMA), the National Weather Service (NWS), NCMEC, APCO International, FirstNet, the Consumer Technology Association, and the broadcasting and wireless industries, as well as the Commission's Media and Public Safety and Homeland Security Bureaus.[4] The AWARN models were displayed at the APTS Public Media Summit, the NAB State Leadership Conference, and the NAB Show 2017, as noted above. Alliance members also have made presentations to public safety conferences, including APCO International's Emerging Technology Forum in Raleigh, North Carolina in February 2017 and the Committee on the Future of Emergency Alert and Warning Systems of the National Academies of Sciences, Engineering, and Medicine at the University of California-San Diego in January 2017.

V. FLEXIBILITY NEEDED IN SIMULCASTING OF ADVANCED SERVICES

The NPRM asks for comments on the necessity of a mandate to ensure that Next Gen TV broadcasters simulcast their ATSC 3.0 stream in ATSC 1.0 format.[5] As it did in the Petition, the AWARN Alliance supports simulcasting agreements between stations to ensure that viewers

[4] See *Ex Parte Notices*, AWARN Alliance: GN Docket No. 16-142, *Authorizing Permissive Use of the "Next Generation" Broadcast Television Standard*, March 7 and April 20, 2017
[5] NPRM at ¶ 11

maintain access to programming when a station voluntarily transitions to the Next Gen TV format. However, we caution against a mandate that all content and services be identical. Such a rule would deprive consumers of the benefits only available through the advanced technology of Next Gen TV.

Advanced emergency alerting through Next Gen TV is a prime example of the need for flexibility. ATSC 3.0 has the ability to provide alerting capabilities that are not available with an ATSC 1.0 signal, including geo-targeting, rich media messaging, personalization, deep indoor and mobile reception, and hybrid networks utilizing IP. Another key advantage of Next Gen TV is that it enables broadcasters to distribute an AWARN alert on an opt-in basis with otherwise minimal disruption to program viewing for users, and no disruption to those outside of the geo-targeted danger zone. Currently, even a voluntary alert from the Emergency Alert System (EAS) using ATSC 1.0 must be broadcast to the whole viewing audience even if it only affects a small segment.

Therefore, the Alliance opposes simulcasting rules that could impair or delay the ability of broadcasters to offer enhancements and new services, such as AWARN, over their ATSC 3.0 signals. In terms of the impact of what the NPRM terms as "deviations" from a simulcasting requirement, the Alliance suggests that the availability of enhancements and new services on ATSC 3.0 stations will help drive consumer adoption of the Next Gen TV standard and should be allowed and encouraged to flourish.

VI. POTENTIAL DEPLOYMENT ALTERNATIVES TO ACCELERATE ADOPTION

The Commission asks commenters to address potential deployment alternatives that might accelerate adoption of the ATSC 3.0 standard, apart from the host station model set forth in the Petition.[6] The Alliance supports any reasonable steps by the Commission to support voluntary adoption of Next Gen TV by broadcasters, device makers, and consumers. These steps include approval of the example cited, *i.e.,* allowing broadcasters to use vacant in-band channels remaining in a market after the incentive auction repack to serve as temporary host facilities for ATSC 1.0 or ATSC 3.0 programming by multiple broadcasters. This use would of course be under Commission rules, which might include advanced alerting "test bed" provisions, and last only for the duration of the consumer transition. The sooner that Next Gen TV is adopted, the sooner that consumers can benefit from AWARN and other enhancements and new services made possible by ATSC 3.0.

[6] NPRM at ¶ 14

VII. VOLUNTARY APPROACH IS DRIVING INNOVATION

In the NPRM, the Commission has declined to "initiate a general reexamination of broadcaster public interest obligations at this time."[7] However, the Commission seeks comment on specific consumer issues related to the enhanced capabilities that may be available through the use of ATSC 3.0 transmissions, including improvements to the legacy EAS. As the Commission noted, the signatories to the Joint Petition ("the Petitioners") have taken the position that "no changes to the relevant rules are needed to conform them to an environment in which television licensees will transmit in either the ATSC 1.0 or the ATSC 3.0 standard."

The Petitioners, including the AWARN Alliance, are not advocating that broadcasters be relieved of any public interest obligations, including those for EAS. At the same time, the advanced alerting and complementary capabilities built into the ATSC 3.0 standard and the future AWARN service that will actualize those capabilities have been developed on a purely voluntary basis. The growth in Alliance membership after just one year of launch reflects the strong support from broadcasters, technology companies, and service providers to develop and deploy AWARN.

The Alliance's voluntary approach is also consistent with the Commission's goal of "dialogue" for creation of "a voluntary industry roadmap for further enhancing the capability of the nation's alerting infrastructure…", as stated in the March 2016 Notice of Proposed Rulemaking *In the Matters of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System and Wireless Emergency Alerts* ("Alerting Paradigm *Notice*").[8] Both ATSC 3.0 and AWARN are the products of the voluntary commitment of resources from many organizations. Innovation in next generation emergency alerting, developing alongside current public safety regulations and requirements, is most likely to lead to the continuing improvement that AWARN represents.

It is important to note that, while transmission of *only* Presidential alerts is mandatory for EAS participants, broadcasters have for many decades carried state and local alerts voluntarily and at their discretion to serve their viewers' needs.[9] This arrangement has served local communities

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[7] NPRM at ¶ 69

[8] *See Notice of Proposed Rulemaking: In the Matters of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System,* PS Docket No. 15-94; Wireless Emergency Alerts PS Docket No. 15-91 at ¶ 75

[9] *See* 47 C.F.R. § 11.55(a); see also *First Report and Order and Further Notice of Proposed Rulemaking*, 20 FCC Rcd at 18628 ¶ 8

and the nation well and continues to be the backbone of our alerting system at all levels. This voluntary cooperation among the various federal, state, local, and tribal alert originators, broadcasters, and other stakeholders will continue as the IP-based AWARN creates greatly expanded, yet targeted, alerting capabilities.

VIII. TECHNOLOGICAL POTENTIAL FOR IMPROVEMENTS IN ACCESSIBILITY

The Commission also asked for comments on the accessibility features of Next Generation Television.[10] Accessibility is another use case of ATSC 3.0 that AWARN leverages to transmit both multilingual and accessible alerts. Features such as text-to-speech and vibrate-upon-alert for mobile devices, along with rich media content available to users, mean that AWARN alerts can reach many more people, including non-English speakers and people with hearing or sight disabilities.

IX. CONTENT FROM ALERT ORIGINATORS

It is anticipated that AWARN alerting content will in large part be created and aggregated by authorized alert originators, and then, under agreements established with local broadcasters, passed through Next Gen TV stations to the public. The AWARN format also provides for seamless integration of news content from local stations into an alert, building on the vital role of local stations as "first informers." Stations that do not produce local news may choose to offer regular programming during an alert as a live picture-in-picture feature. One role of the proposed AWARN Advisory Committee (see below) will be to explore the design of templates and protocols for alert originators to populate AWARN alerts with geo-targeted, rich media content and pass them through the Integrated Public Alert and Warning System (IPAWS) to the TV station transmission chain.

X. TUNER MANDATE NOT NEEDED

The Commission seeks comment on its tentative conclusion that "a Next Gen TV tuner mandate is not necessary at this time because a potential transition would be voluntary and market-driven, and under our proposal current-generation ATSC 1.0 broadcasting would continue indefinitely."[11] The Alliance, along with other Petitioners, agrees with the Commission's

[10] NPRM at ¶ 69

[11] NPRM at ¶¶71-72

tentative conclusion and does not seek a tuner mandate for reception of AWARN alerts or any other ATSC 3.0 services. AWARN will be the most advanced alerting system in the world. It has been developed through the voluntary, inter-industry cooperation of broadcasters, consumer electronics manufacturers, other technology companies, service providers, and public safety organizations. A regulatory mandate for ATSC 3.0 or AWARN could stifle the innovation that is driving continued development and eventual deployment of AWARN.

The Alliance's reliance on market forces is grounded in the proposition that, as Americans become aware that AWARN alerts can provide lifesaving information instantaneously to their homes, worksites, schools, and to mobile devices literally at their fingertips, consumers will demand the service and manufacturers and service providers will respond for competitive purposes. For this reason, as well as the need for continuous innovation, we believe that a voluntary inter-industry process should be allowed and encouraged.

XI. AWARN ADVISORY COMMITTEE

The Alliance has established the AWARN Advisory Committee (AAC) to organize input from the alert originator community to regularly advise the Alliance on technical matters, interfaces, protocols, and content requirements for AWARN. Organizations participating in the AAC serve in a purely advisory capacity and are not members or affiliates of the Alliance. NWS, FEMA-IPAWS, and NCMEC are the first organizations to join the AAC and are all major alert originators – NWS alone generates 90 percent of all EAS activations.[12] The Alliance is inviting other public safety organizations and social scientists to join the AAC.

The Alliance plans to convene user groups during the second half of 2017. These will bring alert originators and others in the AAC together with Alliance members to begin defining how AWARN will be implemented at the local and national levels. We would welcome and encourage participation by the Public Safety and Homeland Security Bureau and any other Commission staff, as directed by the Commission.

XII. COORDINATION WITH OTHER ALERTING SYSTEMS

As noted above, the Commission in its Alerting Paradigm NPRM called for a dialogue for creation of "a voluntary industry roadmap for further enhancing the capability of the nation's

[12] *EAS Factsheet*, National Oceanographic and Atmospheric Administration, April 2016

alerting infrastructure…"[13] In its comments in that proceeding, the Alliance suggested a "holistic, multi-faceted approach to improving alerting" with a complementary "division of labor" among systems and stakeholders.[14] Alliance members remain committed to working within the broadcasting industry, with the Commission, alert originators, the wireless industry, and consumer device manufacturers on implementation strategies for coordination between AWARN, EAS, and Wireless Emergency Alerts (WEAs). Along with coordination, it is important to note that a certain level of redundancy is highly desirable in emergency communications.

As mobile devices that can receive ATSC 3.0 signals enter the market, it will be especially important that broadcasters, the wireless industry, device makers, and alert originators find ways to coordinate WEA text messages (of any length) with the AWARN messages. In its September 2016 order, *Wireless Emergency Alerts; Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, the Commission required carriers to increase the number of characters from the current 90 to 360 and to include embedded "clickable" URLs and phone numbers.[15] The wireless industry has since filed a petition for reconsideration on the grounds the timetable for implementation of the new rules is "unworkable and infeasible" and could lead to network congestion.[16]

The AWARN Alliance recognizes the vital importance of WEAs and applauds the wireless industry for its voluntary deployment of the WEA system. AWARN alerts also can provide great benefits to the public but also, potentially, to wireless carriers by off-loading some WEA alerting data from their current networks. The rich media content carried by AWARN (such as storm tracks, shelter-in-place instructions, or evacuation maps) also can reduce the need for people to click URLs for information not available in a text message, thus addressing the wireless industry's understandable concerns about network congestion.

At a minimum, as with EAS, AWARN alerts and WEAs should work synergistically to provide

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[13] *See Notice of Proposed Rulemaking: In the Matters of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94; Wireless Emergency Alerts PS Docket No. 15-91 at ¶ 75.

[14] *See Comments of the AWARN Alliance in Notice of Proposed Rulemaking: In the Matters of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System* PS Docket No. 15-94; Wireless Emergency Alerts PS Docket No. 15-91 (filed June 8, 2016)

[15] *See Wireless Emergency Alerts*; *Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket Nos. 15-91 and 15-94, Report and Order and Further Notice of Proposed Rulemaking, FCC 16-127 (rel. Sept. 29, 2016) ("*Order*") ¶ 11-29.

[16] *See* CTIA Petition for Reconsideration, Docket No. 15-91 (filed Dec. 1, 2016).

the greatest public benefit. Without imposing new rules or requirements, the AWARN Alliance believes the Commission can and should play a constructive role in promoting an inter-industry dialogue between Alliance members and the wireless industry to ensure coordination for the benefit of consumers. As stated in its filing in the Alerting Paradigm NPRM, the Alliance stands ready for constructive discussions.[17]

XIII. SUMMARY

AWARN presents a rare opportunity to dramatically improve America's public safety communications capability. AWARN alerting can provide this public benefit by dual-use of the nation's existing television broadcasting transmission capacity and the new technology of Next Gen TV. Both AWARN and Next Gen are on track for voluntary U.S. deployment. The AWARN Alliance urges the Commission to adopt the proposed rules to allow the permissive use of the Next Generation broadcast television transmission standard and hasten the day when the American public can take full advantage of AWARN's many benefits.

AWARN ALLIANCE

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[17] *Supra* at 15

APPENDIX

Members of the AWARN Alliance (as of May 9, 2017)

Broadcasters (Commercial)
Capitol Broadcasting Company
National Association of Broadcasters
Pearl TV[18]
Sinclair Broadcast Group

Broadcasters (Public)
America's Public Television Stations
Kentucky Educational Television
KPBS/California State University-San Diego
UNC-TV/University of North Carolina
Vegas PBS/Las Vegas
WKAR/Michigan State University
WNET/New York

Technology Organizations
Consumer Technology Association
LG Electronics/Zenith
Lokita Solutions/DigiCap
ONE Media
Monroe Electronics/Digital Alert Systems
Triveni Digital

Service Providers
Advanced Emergency Alerting Implementation Team
Convergence Services, Inc.
Interactive Television Alliance
MHz Networks
Wiley Rein LLC

[18] Pearl TV is a business organization whose membership, comprising 220 network-affiliated TV stations, consists of nine of the largest broadcast companies in America: Cox Media Group, the E.W. Scripps Company, Graham Media Group, Hearst Television Inc., Nexstar Media Group, Meredith Local Media Group, Raycom Media, and TEGNA, Inc.